



**ACS**  
Chemistry for Life®

Meeting  
updates

# 252nd American Chemical Society National Meeting & Exposition

August 21 – 25, 2016 • Philadelphia, PA

# Chemistry

of the People, by the People, for the People

#acsPhiladelphia

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



Download the ACS Philadelphia Mobile App or access the Digital Meeting Program at [www.acs.org/philadelphia2016](http://www.acs.org/philadelphia2016) for up-to-date meeting information.



[www.acs.org/meetingapp](http://www.acs.org/meetingapp)



\*Online version is also available for internet enabled devices.





of the People, by the People, for the People

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## Satellite Registration Onsite Program Purchase & Pickup

Printed copies of the Onsite Program Book will no longer be available for free.

In support of the ACS's sustainability efforts, we encourage our meeting attendees to download the ACS Philadelphia mobile app or access the ACS Philadelphia Digital Meeting Program with Author Index in early-August.

### Prefer a Printed Onsite Program?

Copies of the Onsite Program Book are available for \$20.

In response to numerous requests, the author index will be included in the printed program booklet.

Satellite Registration and Onsite Program Purchase/Pick-up locations are at the Sheraton Philadelphia Downtown Hotel, Liberty Ballroom Foyer and Sonesta Philadelphia Downtown, Homer Room Foyer. Credit cards, debit cards and checks will be accepted at these locations.

Saturday, 3 to 6 PM

Sunday, 7:30 AM to 7:30 PM

Monday, 7:30 AM to 9 PM

Tuesday, 7:30 AM to 5 PM

(Hours subject to change according to traffic flow)

**Registration & Program Purchase & Pickup available at the  
Pennsylvania Convention Center, Grand Hall during the standard schedule.  
Credit cards, debit cards, checks, and cash accepted.**

Learn more about the ACS National Meetings  
Sustainability Efforts at [www.acs.org/greenermeetings.com](http://www.acs.org/greenermeetings.com)

Please note that if you misplace your purchased Onsite Program,  
you will be charged \$20 for a replacement.

# 252nd American Chemical Society National Meeting & Exposition

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### ACS OPERATIONS OFFICES

- **Pennsylvania Convention Center (Bridge West):** 215-418-2350
- **DoubleTree by Hilton Hotel Philadelphia Center City (Rhapsody):** 215-896-1601
- **Hilton Garden Inn Philadelphia Center City (Executive Boardroom):** 215-701-5712
- **Loews Philadelphia Hotel (P1 Parlor):** 215-627-1200
- **Philadelphia Downtown Courtyard by Marriott (Mezzanine):** 215-832-3050
- **Philadelphia Marriott Downtown (Room 406):** 215-409-4002
- **Sheraton Philadelphia Downtown Hotel (Franklin):** 215-448-2709
- **Sofitel Philadelphia (Cannes):** 215-564-7102
- **Sonesta Philadelphia Downtown (Pollack):** 215-825-7811
- **Westin Philadelphia (Liberty):** 215-575-6945

### INFORMATION CONTACTS

- **Attendee Registration— Pennsylvania Convention Center, Grand Hall:** 215-418-2361
- **Career Fair Information Center— Pennsylvania Convention Center, Hall C:** 215-418-2366
- **Exhibitor Registration— Pennsylvania Convention Center, Bridge East, Lobby A:** 215-418-2364
- **Finance Office— Pennsylvania Convention Center, TC Grand Hall:** 215-418-2360
- **Host Local Section Booth— Pennsylvania Convention Center, near room 107:** 215-418-2368
- **Housing Assistance— Pennsylvania Convention Center, Grand Hall:** 215-418-2362
- **Member Services— Pennsylvania Convention Center, Grand Hall:** 215-418-2367
- **Press Center— Pennsylvania Convention Center, Room 307:** 215-418-2357
- **Shuttle Desk— Pennsylvania Convention Center, 12th Street:** 215-418-2369
- **Society Program Office, Rooms 411/412:** 215-409-4004
- **Governance Office— Philadelphia Marriott Downtown, Rooms 407-409,** 215-409-4000

### ACS OFFICERS

Donna J. Nelson, President  
Diane Grob-Schmidt, Immediate Past President  
Pat N. Confalone, Chair, Board of Directors  
Thomas M. Connelly, Executive Director & CEO  
Flint H. Lewis, Secretary & General Counsel  
Brian A. Bernstein, Treasurer & CFO

### American Chemical Society

1155 16th Street, NW, Washington, DC 20036  
Tel: 800-227-5558 (US only) or 202-872-4600  
Fax: 202-872-4615 E-mail: [help@acs.org](mailto:help@acs.org) Website: [www.acs.org](http://www.acs.org)

The American Chemical Society is a self-governed individual membership organization of members at all degree levels and in all fields of chemistry. The Society provides a broad range of opportunities for peer interaction and career development, regardless of professional or scientific interests. The programs and activities conducted by ACS today are the products of a tradition of excellence in meeting member needs that dates from the Society's founding in 1876.

This On-site Meeting Program is published by the American Chemical Society as a service to its attendees. Information contained herein is subject to change without notice. While every effort is made to ensure accuracy, ACS makes no warranties, expressed or implied, related to the information. For the official technical program for the 252nd National Meeting & Exposition, refer to [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016). All Philadelphia photos in this program are courtesy of the Philadelphia Convention and Visitors Bureau and Shutterstock.



# ACS NO RECORDING POLICY

The use of any device to capture images (e.g., cameras and camera phones) or sound (e.g., tape and digital recorders) or stream, upload or rebroadcast speakers or presentations is strictly prohibited at all official ACS meetings and events without express written consent from the ACS.

## EMBRACING SUSTAINABILITY PRACTICES

The American Chemical Society continues to be a sustainability leader within the meeting and events community with most recently being the co-winner of the 2016 UFI Sustainable Development Award, 2016 RISE Award finalists, and the 2014 Trade Show Executive's Gold 100 Award as the show with the Most Commendable Green Initiatives. ACS and the Greener Meetings Program have also been showcased in Convene Magazine's August 2015 annual Best in Show issue for the "Best CSR Initiatives" and awarded the 2011 and 2012 PCMA Capital Chapter Green Leader Award.

Efforts of our sustainability practices are briefly noted below. These changes not only support a greener meeting but also improve your meeting experience.

- Condensed Onsite Program book with enhancing the mobile application and digital options
- Decreased print-run of the Onsite Program book due to digital and mobile applications
- Reformatted National Meeting website based on viewer analytics
- Free WiFi inside public areas at the Convention Center and many contracted hotels
- Established partnership with American Forests to offset carbon missions
- Audited contracted hotels on their sustainability efforts
- Partnered with Convention Center to source local foods for designated events
- Increased usage of digital signage
- Partnered with vendors that engaged in sustainability practices
- Increased attendee engagement through the Greener Meetings Challenge
- Adjusted meeting room temperature to 70° F for energy conservation

Thank you for your support in making ACS a leader in sustainability. Further information can be found at: [www.acs.org/greenermeetings](http://www.acs.org/greenermeetings). There you will find the ACS 2015 Sustainability Report including information on how to join the Greener Meetings Pledge.





# ACS Philadelphia Mobile App Help Desk

Download the Free  
ACS Philadelphia Mobile App Today!

Access the full and up-to-date program

- Use your ACS ID to sync your schedule
- Take notes and share them via email.
- Quick access to the full technical program, maps, and search features.
- Connect your meeting experience with social media and more!
- Build your schedule. Browse by day, division, theme topics, exhibitors or authors.
- Network with other meeting attendees using Peer Finder.

New!

Please visit us here at the Mobile App Desk if you have questions.

Saturday 3PM – 6 PM  
 Sunday 8AM – 3 PM  
 Monday 8AM – 3 PM  
 Tuesday 8AM – 3 PM

Email - [mobileapp@services.acs.org](mailto:mobileapp@services.acs.org)



## **Welcome to Philadelphia and the 252nd ACS National Meeting**

**T**wenty-seven technical divisions and five committees are hosting original programming based on the meeting theme of Chemistry of the People, by the People, for the People. More than 9,000 papers will be presented, and nearly 2,800 poster presentations will take place at the meeting. As well, there are a number of special events planned throughout the meeting. The ACS Board of Directors Regular Session on Sunday will be an opportunity for you and your colleagues to provide input on the topic of ACS National Meetings of the Future. Please join me and my Board colleagues from noon to 1:00 p.m. in Ballroom A (Level 300) of the Pennsylvania Convention Center.



**Donna J. Nelson**  
ACS President

Four presidential symposia will highlight the role of chemistry through international partnerships and collaborations around the world, including Chemical Sciences & Human Rights on Sunday, a two-day symposium Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation, a poster session titled Building International Communities on Sunday, and a symposium on Broadening Participation in Global Chemistry Experiences: Why Engaging Diverse Chemistry Communities in Global Research is Critical.

Other presidential symposia are sure to generate interest for their variety of topics and issues they address. On Sunday morning there will be a symposium to honor the 2016 Citation for Chemical Breakthrough Awards - developed in 2006 by the Division of the History of Chemistry. Several ACS symposia have tackled the science and environmental implications of hydraulic fracturing, and I hope to see many of you Monday morning at Fracking: Economics vs. Environment. On Monday afternoon, I invite you to attend a symposium on NSF Opportunities. Finally, as part of the meeting theme, and to celebrate our host city of Philadelphia, I am organizing an all-day symposium on Tuesday titled Chemical Business of the People, by the People, for the People.

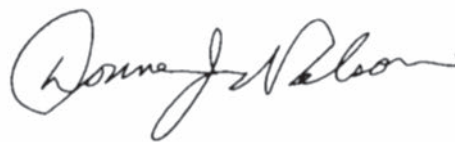
On Monday afternoon, Dr. Omar Farha, Research Professor of Chemistry at Northwestern University will deliver The Kavli

Foundation Emerging Leader in Chemistry Lecture on Bioinspired Sponges: Metal-Organic Frameworks for Combating Nerve Agents and Toxic Gases. Immediately following, Dr. Chad Mirkin will give The Fred Kavli Innovations in Chemistry Lecture and will speak on Establishing a Genetic Code for Unnatural Materials. Dr. Chad Mirkin is the Director of the International Institute for Nanotechnology, the George B. Rathmann Professor of Chemistry, Professor of Chemical and Biological Engineering, Professor of Biomedical Engineering, Professor of Materials Science & Engineering, and Professor of Medicine at Northwestern University.

Many education-focused programs for high school teachers, undergraduate and graduate students, post-docs, and chemical professionals will be offered. A range of professional development courses will be available; ACS Professional Education Short Courses have a separate registration and fee. For job seekers and employers, the career fair will provide opportunities for on-site interviews, one-on-one career assistance, and career-related workshops.

The exposition will feature more than 250 companies showcasing services, instruments, books, and lab equipment in more than 300 booths.

I express thanks to the members of the Philadelphia Section; the Committee on Meetings and Expositions; the divisional program chairs and symposium chairs responsible for organizing this meeting's technical sessions; and the ACS staff for making it all happen. And thanks to you for participating and contributing to the success of this meeting.



Donna J. Nelson  
ACS President



## Welcome Message from Rudy Baum, Philadelphia Thematic Program Chair

The Fall 2016 ACS National Meeting will be held August 21–25 in Philadelphia, PA, the City of Brotherly Love and the birthplace of our nation. Fittingly, the meeting theme is Chemistry of the People, by the People, for the People.

The plenary session on Sunday afternoon, August 21, will inaugurate the theme with three invited lectures: Prof. Kimberly Prather (University of California, San Diego) will discuss “The Chemical Link Between our Oceans, Clouds, and Climate;” Prof. Rolf Halden (Arizona State University) will discuss “Urban Metrology: A New Discipline Elucidating the Human Condition in Cities Around the World;” and Dr. Willie May (Undersecretary of Commerce and Director, National Institute of Standards & Technology) will discuss “Metrology: A Catalyst for Change— How Better Measurements Enable a Better Future.” Following the three talks, Dr. Prather, Dr. Halden, and Dr. May will participate in a panel discussion and will welcome questions and comments from the audience.

The afternoon of Monday, August 22, will feature the Kavli Foundation Emerging Leader in Chemistry Lecture by Prof. Omar Farha (Northwestern University) on “Bioinspired Sponges: Metal-Organic Frameworks for Combating Nerve Agents and Toxic Gases” and the Fred Kavli Innovations in Chemistry Lecture by Prof. Chad A. Mirkin (Northwestern University) on “Establishing a Genetic Code for Unnatural Materials.

The technical program constructed by the ACS divisions includes 105 symposia that support the theme of the meeting. Divisions and committees with symposia supporting the theme include ANYL, BIOL, CHAS, CHED, CINF, CMA, COMSCI, ENFL, ENVR, FLUO, HIST, PHYS, POLY, PRES, PROF, WCC, YCC. Of particular note, the Multidisciplinary Program Planning Group (MPPG) is cosponsoring with CHED a two-day symposium on “Chemistry



Rudy Baum  
Philadelphia Thematic  
Program Chair

of the People, by the People, for the People” at which representatives from some 20 ACS technical divisions and committees will discuss how the chemistry their division or committee represents impacts humanity. MPPG is cosponsoring a total of 34 symposia.

Philadelphia is redolent with symbols of our nation’s history, from Independence Hall to the Liberty Bell. The Philadelphia ACS Local Section plans to highlight the People, Places, and Programs that make the section great and invites meeting participants to visit the section’s booth at the exhibition to learn more about the importance of ACS and the chemical enterprise in Philadelphia. The Presidential Outreach Event, “Exploring Our World

through Chemistry,” will be held on Saturday, August 20, from 10:00 a.m. to 2:00 p.m. at the Franklin Institute, 222 N. 20th St., and will feature hands-on activities and chemistry demonstrations for kids of all ages. For more information, contact [outreach@acs.org](mailto:outreach@acs.org).

The Program for the meeting and other information is available online at the website of the meeting, [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016).

I am very grateful to the members of the local section, the program chairs of the divisions and committees listed above, the thematic symposia chairs, and the ACS staff for their essential help in making the theme of this meeting cogent and coordinated. I look forward to meeting you in Philadelphia!



Rudy Baum  
Thematic Program Chair



COMMONWEALTH OF PENNSYLVANIA  
OFFICE OF THE GOVERNOR



**GREETINGS:**

**It gives me great pleasure to welcome everyone gathered in Philadelphia for the 252nd American Chemical Society (ACS) National Meeting and Exposition.**

**Since its inception in 1876, the ACS has supported the advancement of chemistry and the sciences as an important tool for the development of our economy and our society. The members of this organization have worked with extraordinary dedication to transform perceptions by raising public awareness and appreciation of the value of chemistry and chemical engineering. The ACS has continually engaged in educational initiatives to enhance the chemical profession and to prepare future generations to be leaders in this rapidly growing field. The lasting positive impact of ACS on the commonwealth and the nation is undeniable, and I look forward to all that the society will accomplish.**

**As Governor of the Commonwealth of Pennsylvania, I commend all members of the American Chemical Society for your invaluable contributions and wish you the best for a productive conference and continued success.**



*Tom Wolf*  
**TOM WOLF**  
Governor

**August 21-25, 2016**





# CITY OF PHILADELPHIA

OFFICE OF THE MAYOR  
215 City Hall  
Philadelphia, PA 19107  
(215) 686-2181  
FAX (215) 686-2180

JAMES F. KENNEY  
Mayor

August 21, 2016

Dear Friends,

As Mayor of the City of Philadelphia, it is with great pleasure that I welcome the convening of the 252<sup>nd</sup> National Meeting of the American Chemical Society- *Chemistry of the People, by the People, for the People*-August 21<sup>st</sup> through August 25<sup>th</sup>.

As the world's largest scientific society counting nearly 157,000 members and as one of the leading sources of scientific information, the American Chemical Society (ACS) has been at the forefront of progress in global chemical enterprise and serves as the professional membership home for chemists, chemical engineers, and related professions worldwide.

While taking part in the ACS National Meeting you will participate in symposia and workshops and attend panels and sessions covering areas of research, chemical engineering, and the related sciences, as well as have the opportunity to monitor advances in scientific fields, present research, and network with your professional colleagues.

We are thrilled that you have chosen Philadelphia as the location for the 252<sup>nd</sup> ACS National Meeting and wish you a productive and successful meeting. Have a great stay in our beautiful and historic city and come back to visit us again soon.

Sincerely,

A handwritten signature in black ink that reads "James F. Kenney".

James F. Kenney  
Mayor



of the people, by the people, for the people

www.acs.org/Philadelphia2016 • #acsPhiladelphia

## PRESIDENTIAL SYMPOSIA AND EVENTS

*Sponsored by the ACS President*

Photo: David McNeese



**Donna J. Nelson, Ph.D.**  
ACS President

### Saturday, August 20, 2016

10:00 AM – 2:00 PM

#### **Presidential Outreach Event: Exploring our World Through Chemistry**

*(Cosponsored by CCA, ACS Member Communities  
& the ACS Philadelphia Local Section)*

The Franklin Institute (corner of 20th  
Street and the Benjamin Franklin  
Parkway)

### Sunday, August 21, 2016

8:00 AM – 12:00 PM

#### **Chemical Sciences & Human Rights**

*(Cosponsored by IAC & PA&PR)*

Pennsylvania Convention Center,  
Room 201B (200 Level)

10:30 AM – 12:05 PM

#### **Citation for Chemical Breakthrough Award**

*(Cosponsored by HIST)*

Pennsylvania Convention Center,  
Room 201C (200 Level)

1:20 PM – 4:30 PM

#### **Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation**

*(Cosponsored by CEPA, COMSCI, IAC, MPPG & PROF)*

Philadelphia Marriott Hotel, Liberty  
Ballroom Salon C (3rd Floor)

4:30 PM – 6:30 PM

#### **Building International Communities (Poster Session)**

*(Cosponsored by IAC)*

Philadelphia Marriott Hotel, Independence  
Ballroom I/II (3rd Floor)

### Monday, August 22, 2016

8:00 AM – 12:00 PM

#### **Fracking: Economics vs Environment**

*(Cosponsored by BMGT)*

Philadelphia Marriott Hotel,  
Liberty Ballroom Salon A (3rd Floor)

8:30 AM – 4:00 PM

#### **Chemistry For the People: Reflections from Perkin Medalists**

*(Cosponsored by MPPG)*

Pennsylvania Convention Center,  
Room 204A (200 Level)

8:30 AM – 12:30 PM

#### **Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation**

*(Cosponsored by CEPA, COMSCI, IAC,  
MPPG & PROF)*

Philadelphia Marriott Hotel, Liberty  
Ballroom Salon C (3rd Floor)

1:00 PM – 5:00 PM

#### **NSF Opportunities**

Philadelphia Marriott Hotel, Liberty  
Ballroom Salon C (3rd Floor)

2:00 PM – 5:00 PM

#### **Broadening Participation in Global Chemistry Experiences: Why Engaging Diverse Chemistry Communities in Global Research is Critical**

*(Cosponsored by CHED, IAC & PROF)*

Philadelphia Marriott Hotel, Liberty  
Ballroom Salon A (3rd Floor)

### Tuesday, August 23, 2016

8:30 AM – 2:40 PM

#### **Chemical Business of the People, by the People, for the People**

*(Cosponsored by SCHB, HIST & MPPG)*

Philadelphia Marriott Hotel, Independence  
Ballroom II/III (3rd Floor)





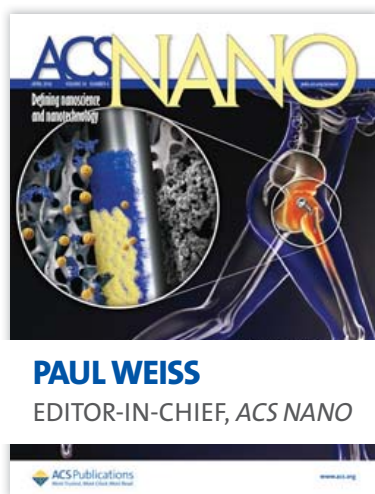
# Nanoscience & Nanotechnology

## for Human Health, Repair & Safety

Symposium at the 2016 ACS Fall National Meeting

**Monday, August 22 | 1:20 PM – 3:30 PM**  
**Pennsylvania Convention Center | Room 201C**

Join the Editors of *ACS Nano* and *Nano Letters* for the next semi-annual joint session in conjunction with the ACS National Meeting. The 2016 fall symposium is specially designed for the National Meeting theme with world-renowned speakers from the nanoscience and nanotechnology community presenting their ground-breaking research.



### GUEST SPEAKERS & PRESENTATIONS

Laura Kiessling, *University of Wisconsin-Madison*

*Surface control of stem cell pluripotency and differentiation*

Daniel Kohane, *Boston Children's Hospital, Harvard Medical School*

*Targeted and triggered drug delivery systems*

Andre Nel, *University of California, Los Angeles*

*Engineered approach to pancreatic cancer using mesoporous silica nanocarriers & immune perturbation*

Ali Khademhosseini, *Harvard Medical School*

*Nano- & microfabricated hydrogels for regenerative engineering*

## ACS Board of Directors Regular Session

You are invited to participate in a lunchtime discussion  
with the Board of Directors on:

### ***“ACS National Meetings of the Future”***

1. What feature(s) would make a future national meeting a “must attend?”
2. How can we attract a more diverse set of attendees (e.g. industrial chemical engineers and technicians, underrepresented groups in the sciences)?
3. How can we increase audience interaction with speakers and each other?
4. Should on-site meetings adopt a hybrid model (a “live” in-person event with a “virtual” online component)?
5. Is your decision to attend a National Meeting influenced by the meeting theme?
6. Are there National Meeting amenities that we don’t need? Are there amenities that we do need but do not currently have?
7. Should programming by entities other than Divisions be limited?
8. Should the number of oral presentations be strictly limited, with other submissions necessarily being posters?
9. Should contributed papers be vetted more rigorously, perhaps leading to more submissions being rejected?

Join the ACS Board of Directors meeting  
Sunday, August 21, Noon – 1:00 p.m.  
at the Pennsylvania Convention Center – Ballroom A (Level 300)

*We welcome your observations and suggestions  
Sandwiches and soft drinks will be available  
We hope to see you there!*





**PETER K. DORHOUT**  
— FOR —  
**ACS PRESIDENT-ELECT**

- Membership needs and benefits
- Career outlook and jobs
- Industry-academic partnerships
- Recognition for chemists

»» VOTE IN OCTOBER ««



**KANSAS STATE**  
UNIVERSITY

SCAN TO VISIT  
MY WEBSITE.



EMAIL [PKDorhout@cox.net](mailto:PKDorhout@cox.net) TWITTER [@PeterDorhoutACS](https://twitter.com/PeterDorhoutACS) WEB [www.peterdorhoutacs.com](http://www.peterdorhoutacs.com)



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# GENERAL MEETING INFORMATION

**YOUR MEETING REGISTRATION** entitles you to a range of programming, including scientific sessions, invited symposia, poster sessions, special lectures and events, award presentations, workshops, and the exposition. Interact with chemical scientists from around the world by participating in social events, networking opportunities, exhibitor sessions, and educational activities, with many events offered at no additional charge. Certain workshops, short courses, and ticketed events require a separate entry fee, as indicated in this program.

## REGISTRATION

**ALL ATTENDEES**, including speakers and poster presenters, must register for the meeting to participate in the technical sessions. Sponsored speakers should contact their symposium organizer or division program chair to clarify the terms of their invitation and to determine who will complete the speaker's registration. Attendees must display their badge at all times for admission to all official ACS sessions and events.

**EARLY REGISTRATION.** U.S. residents who registered by June 29 received their badge credentials by mail before the meeting. International registrants (this includes Canada and Mexico) must pick up their badge credentials at ACS Attendee Registration.

**STANDARD & ON-SITE REGISTRATION.** Attendees who registered after June 29 must pick up their badge credentials on-site.

### MEETING INFO ON THE WEB

Registration, housing, technical programming, special events, participating exhibitors, and other meeting details are available at [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016).

**REGISTRATION CHANGES.** Attendees can modify their existing registration or generate a receipt from the registration website by following the instructions in their confirmation message. Attendees can also contact the ACS National Meeting Registration Center or update their registration on-site at ACS Attendee Registration. Bring your confirmation and/or badge credentials with you to the meeting for faster processing.

**REGISTRATION METHODS.** All registrants received a confirmation via the original method of registration.

**INTERNET.** Register online at [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016) until August 25. A valid credit card is required to register online, and online registrations are real-time transactions.

**TELEPHONE.** Call the ACS National Meeting Registration Center at 800-251-8629 (U.S./Canada only) or 508-743-0192 (international), Monday through Friday, 9:00 AM to 5:00 PM EDT.

**FAX/MAIL.** Submit the registration form via fax by August 25 at 508-743-9604, or mail it to ACS Registration, c/o CDS, 107 Waterhouse Rd., Bourne, MA 02532.

**ON-SITE.** Register during the meeting at ACS Attendee Registration at standard registration rates. ACS Attendee Registration will be open at the Pennsylvania Convention Center (PACC), Grand Hall, on Saturday, 3:00 to 6:00 PM; Sunday, 7:30 AM to 7:30 PM; Monday, 7:30 AM to 9 PM; Tuesday, 7:30 AM to 5:00 PM; Wednesday, 7:30 AM to 4:00 PM; and Thursday, 7:30 AM to 1:00 PM.

**REGISTRATION PAYMENTS.** Registration fees can be paid by check, money order, credit card (American Express, Discover, MasterCard, or VISA), or bank wire transfer. Make checks payable in U.S. dollars to the American Chemical Society, and include a completed registration form with each payment. Registration fees should not be combined with any other payment (such as membership dues). Purchase orders and training requests are not accepted. For wire transfer payments, contact the ACS Finance Department at 202-872-6106 or e-mail [bankwires@acs.org](mailto:bankwires@acs.org). **REGISTRATION FORMS RECEIVED WITHOUT PAYMENT WILL NOT BE PROCESSED.**

## BADGES

All attendees are required to wear their badges for all technical sessions, poster sessions, and other official meeting events. Our badge holders are recyclable and biodegradable. Please discard appropriately.

REGISTRATION CATEGORY	FEE	
	EARLY BY JUN. 29	STANDARD JUN. 30
<b>MEMBERS</b>		
ACS member or society affiliate	\$415	\$500
Postdoctoral member	415	500
Emeritus or retired member	210	255
50-year member	No fee	No fee
Unemployed member (Dues waiver required)	No fee	No fee
Precollege teacher	105	105
Graduate student	210	210
Undergraduate	105	105
One-day registrant	210	255
<b>NONMEMBERS</b>		
Chemical scientist	\$730	\$880
Postdoctoral scientist	730	880
Visitor: Nonchemical scientist or chemical technician	415	500
Precollege teacher	105	105
Graduate student	415	415
Undergraduate	210	210
One-day registrant	415	500
Guest of registrant <sup>a</sup>	45	45
<b>EXPOSITION-ONLY VISITORS</b>		
Adult, exposition only	\$50	\$50
Student, exposition only	25	25

<sup>a</sup> Registration is restricted to a spouse or family member of registered attendee having no affiliation with the field of chemical science and who is not eligible to become an ACS member. Only one guest registration is allowed per registering attendee, and the guest registration must be completed and paid by the registering attendee at time of original registration.

### CS BADGE REPRINT POLICY

**1st badge reprint:** no charge, upon proper identification and confirmation of registration payment, a duplicate badge is issued.

**2nd badge reprint:** attendee completes a duplicate badge request, shows identification (which we copy), a charge of \$25 is paid (cash/credit card), a duplicate badge is issued.

**3rd badge reprint:** attendee completes a duplicate badge request, shows identification (which we copy), a charge of \$50 is paid (cash/credit card), a duplicate badge is issued.

**For any badge beyond the 3rd:** attendee completes a duplicate badge request, shows identification (which we copy), a charge of \$100 is paid (cash/credit card), a duplicate badge is issued.



## GENERAL INFORMATION

**REGISTRATION ASSISTANCE.** The ACS National Meeting Registration Center will be available from 9:00 AM to 5:00 PM EDT by telephone, fax, mail, or e-mail. Service representatives can be reached at 800-251-8629 (U.S./Canada only) or 508-743-0192 (international), by fax at 508-743-9604, by e-mail at [acs@xpress-reg.net](mailto:acs@xpress-reg.net), or by mail at ACS Registration, c/o CDS, 107 Waterhouse Rd., Bourne, MA 02532.

**REGISTRATION CANCELLATIONS/REFUNDS.** The deadline for refund requests was July 20. Refund requests made after July 20 will not be honored. Your registration badge credentials and a copy of your registration confirmation must be attached to your request. All refunds will be issued via the original payment method, and refunds will be processed within 30 days after the meeting. Send your request to ACS Registration Cancellation, c/o CDS, 107 Waterhouse Rd., Bourne, MA 02532, or fax it to 508-743-9604 (save your fax confirmation sheet).

**SOCIAL EVENT TICKET CANCELLATIONS/REFUNDS.** The deadline for Social Event was July 20, and entitled the registrant to a full refund. Refund requests made after July 20 will not be honored. Event tickets and a copy of your registration confirmation must be attached to your request.

**ABSTRACT CANCELLATIONS/REFUNDS.** Abstract USB flash drives (thumb drives) and their shipping costs are nonrefundable.

**MEMBER REGISTRATION.** You must enter a valid ACS membership number during registration to register as a member and receive your ACS member discount on registration fees. Your registration options will automatically appear in accordance with your current membership status in the ACS membership database. Your ACS membership number can be found on your ACS membership card or your *Chemical & Engineering News* address label. Address questions about your membership status to ACS Member Services at 800-333-9511 (U.S./Canada only) or 614-447-3776 (international) or by e-mail at [service@acs.org](mailto:service@acs.org).

**NONMEMBER REGISTRATION.** Save money on discounted registration fees by joining ACS. You can join ACS now through the online ACS membership application at [www.acs.org/join](http://www.acs.org/join) or by contacting ACS Member Services and then registering for the meeting at your member rate. To receive your meeting discount, you must join the society before you register for the meeting. New memberships or questions about membership status should be handled through ACS Member Services at 800-333-9511 (U.S./Canada only) or 614-447-3776 (international) or by e-mail at [service@acs.org](mailto:service@acs.org).

**PRESS/MEDIA REGISTRATION.** Press registration is complimentary for credentialed members of the news media who are approved by the ACS Office of Communications (restricted to reporters and editors working full-time for print or broadcast news). Press badges may be picked up with valid media credentials from the Press Room at the Pennsylvania Convention Center. For more information, visit [www.acs.org/pressroom](http://www.acs.org/pressroom).

**EXPO-ONLY ADMISSION.** All meeting attendees with a valid badge receive complimentary admittance into the exposition as part of their registration. Individuals who want to visit the exposition without registering for the meeting's technical sessions can register for an expo-only adult badge for \$50 or \$25 for students with school identification. Register online or in person at ACS Attendee Registration.

**EXHIBITOR REGISTRATION.** Exhibitor registration is handled exclusively through ACS National Expositions at [www.acs.org/expositions](http://www.acs.org/expositions).

**CAREER FAIR EMPLOYER REGISTRATION.** ACS Career Fair Employer registration is handled exclusively through ACS Careers at [www.acs.org/careers](http://www.acs.org/careers).

## ACCOMMODATIONS

ConferenceDirect is the official housing bureau for the ACS National Meeting in Philadelphia. ACS does not endorse booking hotel reservations through any other sources. All attendees who made their reservation through ConferenceDirect will receive complimentary internet

access in their sleeping rooms and will be automatically entered in the ACS Housing Drawing.

**ON-SITE HOUSING.** An on-site housing desk will be available during the meeting in the registration area of the Pennsylvania Convention Center to assist with last-minute housing changes or needs.

**RESERVATION.** All registrants received confirmation for reservations made directly through ConferenceDirect. Each confirmation contains a unique number that is proof of your reservation through ConferenceDirect.

Published ACS rates apply to hotel stays between August 16 and August 27. To extend your stay beyond these dates, you must reserve additional nights directly through the hotel.

## ACS GREENER MEETINGS

**THE AMERICAN CHEMICAL SOCIETY** Department of Meetings & Expositions Services and the Committee on Meetings & Expositions are committed to greener meetings. For each national meeting, we collaborate with the destination city, the convention center, and our hotel and vendor partners to reduce our environmental footprint and raise the bar for industry sustainability practices.

Interested in learning more about how we're leading the way? Go to [www.acs.org/greenermeetings](http://www.acs.org/greenermeetings) to read about our greener meeting initiatives and access our annual Event Sustainability Report.

For its efforts, ACS has been recognized as a cowinner of the 2016 UFI Sustainable Development Award. Here are a few reasons why:

► ACS seeks sustainable convention center venues to track energy, waste, and water data for each meeting.

► ACS offsets staff event emissions in partnership with American Forests (7,739 trees planted in 2015) and shuttle emissions in partnership with Transportation Management Services (TMS) and Carbonfund.org. In 2015, ACS and its partners indirectly offset 3,375 metric tons of CO<sub>2</sub>.

# Make the greener meetings Pledge

To be a catalyst for positive change!  
Here's how:

Go to [www.acs.org/greenermeetings](http://www.acs.org/greenermeetings)

Click the "Greener Meetings Pledge" button (upper right sidebar)

Review and pledge to support these 5 simple "green" practices:

1



Take advantage of linen reuse initiatives at your hotel, decline delivery of unread newspapers, and turn off the lights when away from your hotel room.

2



Responsibly dispose of recyclable materials (paper, plastic, glass, aluminum) in the convention center and hotels.

3



Use the meeting mobile app and digital program instead of the printed onsite program.

4



Enjoy the city, burn calories, and reduce your carbon footprint by walking to and from your hotel or using the ACS carbon-offset shuttle service.

5



Bring a reusable water bottle to avoid the cost and waste associated with disposable, petroleum-based plastic water bottles.

## #ACSGreenerMeetings



Share photos of your sustainable choices with your social networks.



Prizes will be awarded.

Email ideas and feedback to [GreenerMeetings@acs.org](mailto:GreenerMeetings@acs.org)



# greener meetings lounge

A place to relax and learn more about ACS Greener Meetings & the ACS Philadelphia Mobile App. Daily prizes, contests, photo opps, and refreshments will be available.

In 2016, The American Chemical Society won the 2016 UFI Sustainable Development Award for Best Actions to Engage Participants Around Sustainability. ACS's initiatives include engagement through:

- Social Media Campaign - [#acsgreenermeetings](#)
- The Greener Meetings Pledge
- American Forests Carbon Offsetting Program
- Mobile Meeting App
- Hotel Green Grid

At the 2016 National Meeting and Exposition in San Diego, CA, 7,719 attendees participated in the Greener Meetings Challenge Pledge and a total of 5,247 trees will be planted to offset the meeting's carbon emissions through American Forests.

- ACS National Meeting and Exposition attendees donated a total of
- The American Chemical Society donated a total of 3,078 trees.



Pennsylvania Convention Center, Bridge

Sunday 8AM – 3 PM

Monday 8AM – 3 PM and SciMix from 8PM – 10PM

Tuesday 8AM – 12 PM

#ACSGreenerMeetings • [www.acs.org/greenermeetings](http://www.acs.org/greenermeetings) • E-mail - [greenermeetings@acs.org](mailto:greenermeetings@acs.org)



► ACS engages hotel partners to survey and collect information on sustainability initiatives and perform on-site walk-throughs of hotel room block properties to encourage hotels to increase sustainability efforts and validate said efforts. These sustainability initiatives are provided to meeting attendees through the Hotel Sustainability Green Grid, published on the ACS housing page.

► ACS collaborates with catering partners to bring as many local food items to all food and beverage functions during the meeting.

**TAKE THE ACS GREENER MEETINGS PLEDGE.** In 2015, 3,935 meeting attendees took the Greener Meetings Pledge. And at the 251st National

Meeting & Exposition in San Diego, a record-breaking 7,719 attendees (that's 47% of total attendees) took the pledge, and 2,169 attendees donated \$1.00 toward American Forests tree planting. Take the Greener Meetings Pledge during registration to do your part!

**I PLEDGE TO**

► Take advantage of linen reuse initiatives at my hotel, turn off the lights when away from my room, and participate in any incentive programs for declining housekeeping service during my stay, such as Starwood's Make a Green Choice program.

► Responsibly dispose of recyclable materials (paper, plastic, glass, aluminum) in the Pennsylvania Convention Center and hotels.

► Use the meeting mobile app and digital program instead of the printed on-site program.

► Enjoy the city, burn calories, and reduce my carbon footprint by walking to and from my hotel.

► Use the ACS carbon-offset shuttle service serviced by TMS when walking isn't an option.

► Bring a reusable water bottle to avoid the cost and waste associated with disposable, petroleum-based plastic water bottles.

Suggestions? Send them to the ACS Committee on Meetings & Expositions at [greenermeetings@acs.org](mailto:greenermeetings@acs.org).

**TIPS FOR A SAFE STAY IN PHILADELPHIA**

- Be aware of you surroundings at all times.
- Don't wear your meeting badge outside the convention center or hotels.
- Don't wear fancy jewelry or carry expensive technology in plain sight.
- Carry your briefcase, tote bag, purse, or laptop carrier close to your body.
- Don't leave valuables in your hotel room. Get a hotel safe deposit box.
- Walk in open and well-lit areas at night.
- Travel in groups. Don't be a loner, particularly in the evening.
- Use common sense. If someone or someplace looks suspicious, report it and/or avoid it.
- If an emergency occurs during a meeting event, refer to detailed instructions placed by ACS staff inside each meeting room to follow in case of emergencies. Report emergencies to the nearest security guard or to any ACS Operations Office during the meeting.
- If an emergency occurs outside an ACS event, contact police or emergency assistance by dialing 911 or seeking assistance from the facility where the emergency has occurred.
- Should a catastrophic event occur while the meeting is under way, follow safety and security instructions issued by the facility where you are located at the time of the event.

**THANK YOU**

The society thanks the many volunteers of the ACS Philadelphia Section who are contributing to the 252nd ACS National Meeting & Exposition by participating as division officers or program chairs, symposium organizers, session or award presiders, oral and poster presenters, short course or workshop instructors, career consultants, and society governance members.

**TRAVEL & TRANSPORTATION**

**TRANSPORTATION DISCOUNTS.** ACS has negotiated special travel discounts with the following partners. To get the best rates and avoid service fees, it is recommended to make reservations online (except for Amtrak).

**AIRLINES:**

**Delta**

[delta.com/meeting](http://delta.com/meeting); 800-328-1111  
Discount code: NMMMMK

**United Airlines**

[united.com](http://united.com); 800-426-1122  
Discount code: ZWFB960724

**Southwest Airlines (online only)**

[swabiz.com](http://swabiz.com)  
Discount code: 99331750

**TRAIN:**

**Amtrak**

800-872-7245  
Discount code: X57Z-939  
(phone reservations only)

**CAR RENTAL:**

**Avis**

[avis.com](http://avis.com); 800-331-1600  
Discount code: B923099

**Hertz**

[hertz.com](http://hertz.com); 800-654-2240  
Discount code: CV# 02UZ0015

**AIRPORT GROUND TRANSPORTATION**

Philadelphia International Airport is located just 7.2 miles southwest of downtown Philadelphia and is conveniently accessible by I-95, I-76, and Route 291.

SEPTA (Southeastern Pennsylvania Transportation Authority) is the region's public transit system, and it provides bus and regional rail service from the airport to downtown Philadelphia and points beyond. For more information, call (215) 580-7800 or visit [septa.org](http://septa.org).

**TAXIS.** All taxi rates are calculated per trip, not per person. Most taxis can accommodate up to three passengers. In some cases, certain vehicle types can accommodate four passengers. There is a \$10 minimum fare from the airport to any destination. Metered fares are an initial \$2.70 plus \$2.30 per mile. An additional \$1.00 per passenger (\$3.00 maximum) after the first passenger will

be charged on flat-rate trips between the airport and Center City for passengers over age 12. An additional \$1.50 airport fee will be charged. There is a \$28.50 flat rate from the airport to the central Philadelphia area.

All taxis accept credit cards.

For additional information, contact the ground transportation hotline at 215-937-6958.

### TRAVELING TO MEETING VENUES

The Pennsylvania Convention Center is located at 1101 Arch St., Philadelphia, PA 19104.

**ACS SHUTTLE.** Complimentary shuttle service will be provided between the Pennsylvania Convention Center and many official ACS hotels, with the exception of hotels within walking distance.

**PARKING.** There are many parking options — both garages and lots — conveniently located within blocks of the Pennsylvania Convention Center. Contact the Philadelphia Parking Authority ([philapark.org](http://philapark.org)) for information.

Parking Panda is offering a discount to meeting attendees. Visit [bit.ly/1sER8IW](http://bit.ly/1sER8IW) and enter the discount code CHEM-EXPO16 for discounted parking near the PACC.

### ACS MEMBER SERVICES

**ACS MEMBER SERVICES.** ACS staff can assist you on-site with joining ACS, renewing memberships, completing adjustments to member records, and answering general membership questions. ACS members receive discounted rates when registering for the meeting.

ACS Member Services is located in the Grand Hall near attendee registration in the Pennsylvania Convention Center and is open Saturday, August 20, 3:00 to 6:00 PM; Sunday, August 21, 7:30 AM to 7:30 PM; Monday, August 22, 7:30 AM to 9:00 PM; Tuesday, August 23, 7:30 AM to 5:00 PM; Wednesday, August 24, 7:30 AM to 4:00 PM; and Thursday, August 25, 7:30 AM to 1:00 PM.

### ONLINE SOCIAL NETWORKING TOOLS.

Start discussions and connect with other attendees at the ACS Network and the ACS Facebook page. Follow ACS national meetings on Twitter. Read, comment on, and share *C&EN's* coverage of ACS meetings.

### ATTENDEE NATIONAL MEETING

**E-NEWSLETTER.** Receive official updates on ACS national meetings, including locations, registration and accommodation dates, information and discounts, resources, and event details. You can sign up and manage your subscriptions with your free ACS ID. Subscribe at [www.e-mailpref.acs.org](http://www.e-mailpref.acs.org).

**BUSINESS CENTER.** The FedEx Office Print & Ship Center in the Pennsylvania Convention Center offers you virtually everything you need to meet your convention exhibiting needs, including packing and shipping, signage, copying, and last-minute office supplies. Located on the 200 level between Exhibit Halls B & C, the FedEx Office is open weekdays from 8:00 AM to 5:00 PM and on weekends during show hours.

**MEMBER INSURANCE PROGRAM.** Do you need help in determining the right amount of financial protection for you and your loved ones? Are you confused about how to plan for your family's financial future? Do you have student debt or a mortgage? Visit the ACS Member Insurance kiosk at exposition booth 827 and learn how we can help you protect what matters most in your life with plans ranging from Life & Health Insurance, International Term Life, Auto & Homeowners Plus, Disability Income, Long-Term Care, Medicare Supplement, Professional Liability, and more. Also learn about our newest offering: Chemical Educators' Legal Liability.

If you are a chemistry educator, visit us for a complimentary 15-minute consultation about Chemical Educators' Legal Liability and learn how this policy provides the unique coverage necessary for you. E-mail [hcfuentes@hayscompanies.com](mailto:hcfuentes@hayscompanies.com) to schedule your complimentary consultation.

The ACS Member Insurance Program will also be celebrating its 50th anniversary. We would like to say thank you

### ONSITE PROGRAM BOOK NO LONGER FREE

Copies of the on-site program book will be available for \$20. In response to numerous requests, the author index will be included in the printed program booklet. Satellite registration and on-site program purchase/pickup locations will be located at the Sheraton Philadelphia Downtown and Sonesta Philadelphia Downtown hotels. Credit cards, debit cards, and checks will be accepted at these locations.

In support of ACS's sustainability efforts, we encourage our meeting attendees to download the ACS Philadelphia mobile application or access the ACS Philadelphia digital meeting program with author index in early August. These digital options will provide quick access to the full technical program, along with special features so that you can easily build your schedule.

to ACS members for their participation and support throughout the years. From its inception in 1966 with the Term Life plan, the program has grown to 17 insurance plans. We would like to invite attendees to help us celebrate. Join us at the booth for some sweet treats and giveaways in celebration of this special occasion. Also, we want to celebrate everything that passes your life's litmus test. Tell us how you define true living, and receive a free gift while supplies last.

We look forward to celebrating 50 years of growth and serving our members through plans specially designed for our members' needs. For additional information, visit [www.acs.org/insurance](http://www.acs.org/insurance).

### ON-SITE MEETING ARRANGEMENTS

**ADA-COMPLIANT MEETING.** The Pennsylvania Convention Center (PACC) provides service ramps to entrances and elevated areas, braille instructions and directions throughout the building, and

## GENERAL INFORMATION

pay phones on each level of the facility with (TDD) hearing-impaired functions. More information is available at [paconvention.com](http://paconvention.com).

ACS is dedicated to ensuring that no individual with a disability is excluded, denied services, segregated, or otherwise treated differently because of the absence of auxiliary aids and services identified in the Americans with Disabilities Act. If you require special accommodations to participate in the meeting, communicate your needs to ACS Meeting Services by e-mail at [nationalmeetings@acs.org](mailto:nationalmeetings@acs.org), by fax at 202-872-6128, or by phone at 202-872-6111 by June 29 to allow enough time to fulfill your request. Keep in mind that ACS may not be able to accommodate last-minute requests.

If you have an emergency or need immediate assistance during the meeting, contact any ACS Operations Office.

**ASSISTANCE.** Our greeters will be positioned throughout the meeting and can help you navigate the on-site program, find a particular session or room, and answer questions. Lost-and-found items at the convention center should be directed to the ACS Operations Office located on Bridge West near Hall A. Messages left at the ACS Operations Office will be conveyed to attendees via the Meeting Mail system, but ACS cannot accept responsibility for the delivery of any messages, mail, or packages.

**ATTENDEE BADGES.** Attendees and guests must be registered and display their badges at all times to be admitted to all official ACS sessions and events.

**ATTENDEE MESSAGING/MEETING MAIL.** After registering for the meeting, you will be assigned a temporary electronic mailbox to exchange personal messages with other registered attendees via Meeting Mail. Meeting Mail will be available before, during, and after the meeting at [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016). Use the Meeting Mail terminals located in the PACC. Telephone messages left at the ACS Information Booths will be conveyed to attendees via the electronic message center, but the society

cannot accept responsibility for the delivery of any messages. No one will be paged in meeting rooms.

**AUDIO TAPING, PHOTOGRAPHY & VIDEOTAPING.** The use of any device to capture images (e.g., cameras and camera phones) or sound (e.g., tape and digital rebroadcast) of speakers or presentations is strictly prohibited at all ACS meetings and events without express written consent from ACS.

**CHILD CARE.** Camp ACS will be available to all meeting attendees free of charge from 7:00 AM to 6:00 PM on Sunday, Aug. 21, through Thursday, August 25. At Camp ACS, children two (and potty-trained) to 16 years of age can participate in age-appropriate activities, including arts and crafts and active games, while you enjoy the meeting. For your child's safety, the location of Camp ACS will not be communicated until your registration is confirmed. On-site registration will be accepted on a space-available basis.

**ELECTRONIC DEVICES.** As a courtesy to other meeting attendees, electronic devices must be operated in silent/vibrate mode within technical or educational sessions. Cell phone conversations are not permitted in meeting rooms.

**EMERGENCIES DURING ACS MEETING EVENTS.** ACS will place detailed instructions inside each meeting room to be used if an emergency occurs during an ACS meeting event. These instructions will revolve around following the established emergency guidelines of the facility where the emergency occurs. Report emergencies to the nearest security guard or to any ACS Operations Office during the meeting. Should a catastrophic event occur, attendees should follow safety and security instructions issued by the facility where they are located at the time of the event.

**HOST LOCAL SECTION.** ACS gratefully acknowledges the cooperation and assistance of the ACS Philadelphia Section and its members in handling local arrangements. Volunteers have planned many interesting activities; the Host Local Section booth will be located in the PACC, 12th Street level near Room 107.

**INTERNATIONAL REGISTRANTS.** Many international visitors are required to hold a visa prior to being admitted to the U.S. because of security measures in place at airports and other border crossings. All visa applicants are advised to apply for their visa in their home country as soon as possible. Detailed information for international attendees can be found at [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016).

**INTERNET & COMPUTER SERVICES.** Use our electronic communication services before, during, and after the meeting. Once you get to the meeting, you can access your e-mail and the internet as well as your personal Meeting Mail mailbox from Meeting Mail terminals, which will be located throughout the PACC.

**LITERATURE & PRODUCT DISTRIBUTION.** Promotions, posters, and literature distribution by attendees, exhibitors, or other groups during the meeting must be done within their own contracted meeting space or exhibit booth and not in public meeting space, with the exception of designated marketing opportunities. No one is authorized to place any promotional items in public meeting space except the ACS Operations Office at a given location. Items left in violation of this policy will be removed and discarded. Literature distribution at specific division tables is under the control of that division, and permission must be secured from the division before placing any items on its table.

**LUGGAGE & COAT CHECK.** A luggage and coat check station will be available during registration hours from Sunday through Thursday at the PACC, Grand Hall. Items left beyond published hours of operation will be turned over to building security at the end of each day.

**MEETING OFFICES.** The following ACS offices will be located in the PACC:

**ATTENDEE REGISTRATION:** Grand Hall

**CAREER FAIR:** Hall C

**EXHIBITOR REGISTRATION:** Bridge East near Hall A

**EXPOSITION:** Halls A & B



## GENERAL INFORMATION

**FINANCE OFFICE:** Behind Attendee Registration

**HOST LOCAL SECTION CENTER:** 12th Street level near Room 107

**MEMBER SERVICES:** Grand Hall

**PRESS CENTER:** Room 307

**SHUTTLE DESK:** 12th & Arch Streets

The following offices are located at the identified properties:

**OPERATIONS OFFICES:** Pennsylvania Convention Center, DoubleTree by Hilton Hotel Philadelphia Center City, Hilton Garden Inn Philadelphia Center City, Loews

Philadelphia Hotel, Philadelphia Downtown Courtyard by Marriott, Philadelphia Marriott Downtown, Sheraton Philadelphia Downtown Hotel, Sofitel Philadelphia, Sonesta Philadelphia Downtown, and Westin Philadelphia.

**GOVERNANCE OFFICE:** Philadelphia Marriott Downtown

**SOCIETY PROGRAMS:** Philadelphia Marriott Downtown

**MOTHERS ROOM.** For your convenience and privacy, ACS will provide a room for nursing mothers at the PACC. Please see the Operations Office, Bridge West near Hall A, for access to the room.

**QUIET ROOM.** If you need a place to relax and reflect, visit the Quiet Room at the Pennsylvania Convention Center, room 309. The Quiet Room will be available from Sunday, August 21 through Thursday, August 25 from 7:00 AM to 7:00 PM and equipped with tables and chairs along with a designated privacy area.

**SMOKING.** ACS policy prohibits smoking in all rooms during ACS functions at the convention center and official hotels. Additionally, the convention center and many of the official hotels are designated as smoke-free environments at all times.

# 252nd American Chemical Society National Meeting & Exposition



**of the People, by the People, for the People**

August 21–25, 2016

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

Philadelphia, PA

# Where to Find/ Meeting Information



**Official Meeting Website**

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

**Announcements & Changes**

[www.acs.org/meetingupdates](http://www.acs.org/meetingupdates)

**Digital Meeting Program**

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

follow us@acsnatlmtg  
tweet using #acsPhiladelphia



[www.facebook.com/  
americanchemicalsociety](http://www.facebook.com/americanchemicalsociety)



[http://communities.acs.org/  
community/science/meetings](http://communities.acs.org/community/science/meetings)



Download the free mobile app at [www.acs.org/meetingapp](http://www.acs.org/meetingapp)

Text your question to 754.227.2012

(Standard text rates apply)

# GOVERNANCE & BUSINESS MEETINGS

**MANY MEMBERS PARTICIPATE** in meetings concerning the business of the Society, technical divisions, and governance committees in conjunction with the meeting. On the following pages, you will find a listing of the open meetings scheduled for Philadelphia. ACS encourages its members to get active in governance at all levels in order to contribute their vision to the direction of the Society. You can share ideas and insights into the Society and the chemical profession, network with peers, and catch up with friends through these volunteer connections. With nearly thirty national governance committees and leadership opportunities in technical divisions and local sections to choose from, there are many opportunities for members to

become actively involved in ACS at the national level. If you are an ACS member interested in volunteering for a governance committee, contact the Office of the Secretary by email at [secretary@acs.org](mailto:secretary@acs.org) or by phone 202-872-4461. Someone will put you in contact with the ACS

Committee on Committees to discuss your desire to volunteer for a committee assignment. If you wish to volunteer with a specific technical division or local section, contact the officers listed at [www.acs.org](http://www.acs.org) to explore your specific interests.

## ACS COUNCIL

The ACS Council meeting will begin at 8:00 AM, Wednesday, August 24, at the Philadelphia Marriott Downtown. The meeting will be preceded by a continental breakfast for councilors beginning at 7:00 AM. Councilors are asked to check in beginning at 7:00 AM and proceed to the breakfast area, keeping in mind that the meeting starts promptly at 8:00 AM. Space will be available for ACS members and nonmembers to observe the council in action. We hope that many will take advantage of this opportunity to learn firsthand of the society's operation. Alternate councilors and division and local section officers are particularly urged to attend.



The Rocky Statue in Philadelphia. SHUTTERSTOCK.COM



## GOVERNANCE MEETINGS

For the complete list of committee meetings and agendas, please consult [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016) or the on-site program for the meeting.

### BOARD & COUNCIL MEETINGS

**ACS Board of Directors.** The ACS Board of Directors meeting, open to members who wish to participate, will be held in the Pennsylvania Convention Center from noon to 1:00 PM on Sunday, August 21.

**ACS Council.** The ACS Council meeting will begin at 8:00 AM, Wednesday, August 24, at the Philadelphia Marriott Downtown.

The meeting will be preceded by a continental breakfast for councilors beginning at 7:00 AM. Councilors are asked to check in beginning at 7:00 AM and proceed to the breakfast area, keeping in mind that the meeting starts promptly at 8:00 AM. Space will be available for ACS members and nonmembers to observe the

### COUNCIL POLICY COMMITTEE

The Council Policy Committee will open the floor during its meeting at 11:00 AM on Tuesday, August 23, to councilors who would like to raise issues of concern that affect them and/or their local sections or divisions. For further information, contact Alan M. Ehrlich, vice chair of CPC, at [cpc@acs.org](mailto:cpc@acs.org). For more committee meeting details and agendas, please consult the meeting website at [www.acs.org](http://www.acs.org) or the on-site program for the meeting.

council in action. We hope that many will take advantage of this opportunity to learn firsthand of the society's operation. Alternate councilors and division and local section officers are particularly urged to attend.

### COUNCILOR CAUCUS MEETINGS

#### District I Councilor Caucus

Tuesday, August 23, 5:30 – 7:00 PM  
Philadelphia Marriott Downtown  
Franklin 5

#### District II Councilor Caucus

Sunday, August 21, 6:00 – 7:00 PM  
Philadelphia Marriott Downtown  
Franklin 2

#### District III/Middle Atlantic Councilor Caucus

Sunday, August 21, 6:00 – 7:00 PM  
Philadelphia Marriott Downtown  
Franklin 3

#### District IV Councilor Caucus

Sunday, August 21, 6:00 – 7:00 PM  
Philadelphia Marriott Downtown  
Franklin 4

#### District V Councilor Caucus

Sunday, August 21, 6:00 – 7:00 PM  
Philadelphia Marriott Downtown  
Franklin 5

#### District VI Councilor Caucus

Sunday, August 21, 6:00 – 7:00 PM  
Philadelphia Marriott Downtown  
Franklin 6

#### Division Officers/Councilors Caucus

Tuesday, August 23, 4:00 – 6:30 PM  
Pennsylvania Convention Center  
Room 123

### COMMITTEE AGENDA

**THE COMMITTEE ON COMMITTEES** has clarified three types of committee meetings:

**Open.** May be attended by any ACS member. At these sessions, members are encouraged to voice concerns, issue compliments, offer suggestions, express interest in, or raise questions about matters over which the committee has purview. The assumption is that participation is welcomed and will be orderly and courteous. Only committee members can vote.

**Executive.** Attendance and participation are limited to officially appointed/ elected committee members, associates, advisers, consultants, staff liaisons, and the appointed Committee on Committees liaison. Liaisons from other groups and ex officio and elected councilors may attend; participation by these groups would be at the invitation of the chair. Only committee members can vote.

**Closed.** The committee chair must declare any executive session closed when confidential or sensitive personnel, financial, or legal matters of the society are discussed. At that point, only officially appointed/elected committee members, associates, consultants, staff liaisons, and the appointed Committee on Committees liaison shall remain in the session. Others may stay in the session at the discretion of the chair. Once these discussions have been completed, the committee should return to executive mode. During the open and executive committee meetings, ACS members are given a chance to express their views on issues under consideration before these issues are acted on by the board or the council, or to bring up other subjects that deserve attention.

Members are urged to examine the agenda and make known any opinions or ideas they may have. If you cannot attend the particular sessions involved, write to the officers listed or ask someone attending the session to speak on your behalf. For further information, contact the officers listed.

#### Budget & Finance

*Kristin M. Omberg, chair; [b\\_feedback@acs.org](mailto:b_feedback@acs.org)*

#### Open Meeting

Saturday, August 20, 8:00 to 10:30 AM  
Philadelphia Marriott Downtown, Franklin 1/2

1. Report of the Chair
2. Report of the Treasurer & CFO: 2016 Probable Financial Performance
3. Reports from the B&F Subcommittees:
  - a. Communications
  - b. Program Funding Requests
  - c. Program Review
  - d. Financial Impacts of Constitution & Bylaw Amendments

## Chemical Safety

Elizabeth M. Howson, chair; safety@acs.org

### Open Executive Session

Monday, August 22, 8:30 to 11:30 AM

Philadelphia Marriott Downtown, Franklin 1/2

1. Reports of the chair and staff liaison
2. Reports from the subcommittees and task forces
3. Reports of the committee liaisons
4. Old and new business

## Chemistry & Public Affairs

Susan B. Butts, chair; sbbuttsdc@gmail.com

### Open Meeting

Saturday, August 20, 3:00 to 4:30 PM

Philadelphia Marriott Downtown, Franklin 8/9

1. Reports from the Subcommittees:
  - a. Member Advocacy
  - b. Public Policy
  - c. Fellowships
2. Committee Liaison Reports
3. Public Comment
4. Closing Comments

## Chemists with Disabilities

John J. Johnston, chair; USDA-FSIS, Fort Collins, CO 80526-8116

### Combined Open Meeting and Executive Session

Sunday, August 21, 8:30 AM to 4:30 PM

Philadelphia Marriott Downtown, Grand Ballroom Salon D

1. Welcome
2. Chair Report
  - a. Update of CWD Activities/Events, and Collaborate Opportunities
  - b. Diversity & Inclusion Advisory Group Report
  - c. Minutes form (San Diego 2016)
3. Strategic Planning Group Updates
4. Discussion on Awards and Travel Grants
5. CWD Poster Project
6. ACS Fellows Program
7. CWD Visibility (Social Media)
8. Other Action Items from San Diego Meeting
9. Staff Report
10. Future Event and Programming Planning
11. Subcommittee Progress Reports
12. Reports of Liaisons to/from other committees
13. Ongoing Business
14. New Business

## Committees

Wayne E. Jones Jr., chair; Department of Chemistry, Binghamton University (SUNY), Vestal Pkwy. East, Binghamton, NY 13902-6000

### Open Session

Monday, August 22, 1:30 to 2:15 PM

Philadelphia Marriott Downtown, Grand Ballroom Salon I/J

1. Welcome
2. Minutes of March 14-15, 2016
3. Reports of chair/staff liaison
4. Reports of Subcommittees and Task Forces on: Diversity Leadership Development
5. Review of the Society Committee Bylaws
6. Topics from floor

## Community Activities

Michael B. McGinnis, chair; dean, College of Science & Mathematics, Norwich University, 158 Harmon Dr., Northfield, VT 05663

## Executive Session

Sunday, August 21, 10:00 AM to noon

Philadelphia Marriott Downtown, Liberty Ballroom A/B

1. Welcome
2. Minutes of Spring 2016 Meeting
3. Reports of Chair/Staff Liaison
4. Report of Subcommittees:
  - a. Program Development and Promotion
  - b. Tools and Training
  - c. Volunteer Engagement & Recognition
5. Adjourn

## CCA/LSAC Joint Open Meeting

Tuesday, August 23, 2:00 to 3:30 PM

Philadelphia Marriott Downtown, Franklin 9/10

1. Reports from the LSAC and CCA Executive Sessions
2. Interactive session: questions, answers, and best practices

## Constitution & Bylaws

James C. Carver, chair, the Carver Law Firm, Baton Rouge, LA; bylaws@acs.org

### Open Meeting

Open forum to discuss bylaws, petitions, and other issues that may arise

Sunday, August 21, 1:30 to 1:45 PM

Philadelphia Marriott Downtown, Franklin 9/10

### Executive Session

Sunday, August 21, 9:30 to 11:15 AM and

1:45 to 4:30 PM

Philadelphia Marriott Downtown, Franklin 9/10

1. Petition for Removal of Officers and Councilors
2. Procedure for Removal of a Councilor or Alternate Councilor
3. Petition on the Rights of Affiliates
4. Reports from liaisons
5. Status of unit bylaws
6. Other business

## Corporation Associates

Diane Grob Schmidt, chair; d\_schmidt@acs.org

### Open Meeting

Monday, August 22, 8:00 AM to noon

Philadelphia Marriott Downtown, Franklin 9/10

1. Welcome
2. Approval of Minutes from San Diego, March 14, 2016
3. Chair's Report
4. Reports from Subcommittee Chairs
  - a. Strategic Investment and Awards
  - b. Public Policy
  - c. CA Relations
  - d. CA Member Value
  - e. Other
5. Staff liaison report
6. New Business

## Council Policy

Alan M. Ehrlich, vice chair; cpc@acs.org

### Open Executive Session

Tuesday, August 23, 9:30 AM to noon

Philadelphia Marriott Downtown, Grand Ballroom C/D

1. Committee and Officer Reports
2. Report of CPC vice chair
3. Reports of Subcommittees on:
  - a. Petitions, Constitution & Bylaws
  - b. Long-Range Planning
4. Schedule of business sessions, spring 2017
5. Review of Council agenda
6. Open forum
7. Old and new business

## Divisional Activities

Rodney M. Bennett, chair; rodbennett@acs.org

### Open Session

Sunday, August 21, 8:00 AM to noon

Philadelphia Marriott Downtown, Room 303/304

1. Welcome
2. Review Philadelphia Agenda
3. Minutes from 251st ACS National Meeting in San Diego, CA
4. DAC Chair Report
5. Subcommittee Reports

## Economic & Professional Affairs

Rick Ewing, chair; ewingwre@comcast.net

### Executive Session

Saturday, August 20, 8:00 AM to 3:30 PM

Pennsylvania Convention Center, Room 113A

1. Opening Remarks
2. Subcommittee Meetings
3. Invited Guest Reports
4. Staff Reports

### Open Session

Saturday, August 20, 3:00 to 5:30 PM

Pennsylvania Convention Center, Room 113A

1. Subcommittee Reports
  - a. Public Policy
  - b. Events, Volunteers and Employment Services
  - c. Marketing and Research
  - d. Standards and Ethics
2. Reports from Liaisons to and from CEPA
3. Ongoing Business/New Business

## Education

Diane Krone, chair; kroned@alumni.stevens.edu

### Open Meeting

Monday, August 22, 3:00 to 4:00 PM

Philadelphia Marriott Downtown, Room 502

Review of meeting, as below, plus items from the floor.

### Executive Session

Friday, August 19, 1:00 to 5:30 PM

Pennsylvania Convention Center, Ballroom B

1. K-12 science topics, including ChemCom, ChemMatters, the American Association of Chemistry Teachers, High School Chemistry Clubs, Chemistry Olympiad, Science Coaches, ACS-Hach programs, and teacher professional development
2. College/university topics, including undergraduate programs, graduate and postdoctoral education, Chemistry in Context, faculty development, general chemistry performance expectations, and ChemIDP  
Items 1-2 open to all Councilors with prior approval of the Chair

## Environmental Improvement

Anthony "Tony" Noce, chair; cei@acs.org

### Breakfast/Open Session

Monday, August 22, 7:45 to 9:00 AM

Loews Philadelphia Hotel, Lescaze

1. Review of the Saturday-Sunday CEI Executive Session
2. Preview of CEI activities in Philadelphia
3. Preview of 2016 policy statement development (climate, regulatory decision making)
4. Discussion of proposal to rename the committee
5. Open discussion period

## Ethics

Keith Vitense, chair; Cameron University, Physical Science Department, 2800 West Gore Blvd., Lawton, OK 73505-6320

### Open Executive Session

Sunday, August 21, 9:00 AM to 4:30 PM

Philadelphia Marriott Downtown, Grand Ballroom Salon B

1. Welcome & Introductions
2. Approval of Minutes from San Diego Meeting
3. Review of Committee on Ethics Charge
4. Chair/Staff Liaison Reports
5. Liaison Reports
6. Subcommittee Progress Reports
7. Committee Discussion
8. Subcommittee Working Sessions
9. Programming
10. Old Business /New Business/ Action Items
11. Adjourn

## International Activities

Ellene Tratras Contis, chair; c/o ACS Office of International Activities, 1155 16th St., N.W., Washington, DC 20036

### Open Meeting

Saturday, August 20, 1:00 to 3:00 PM

Philadelphia Marriott Downtown, Franklin 3/4

1. Welcome
2. Minutes of March 12, 2016 IAC Meeting in San Diego
3. Reports of Chair/Staff Liaison
4. Report of Subcommittees:
  - a. Subcommittee on Africa and the Americas
  - b. Subcommittee on Europe and the Middle East
  - c. Subcommittee on Asia / Pacific Rim
5. New Business

## Local Section Activities

Martin Rudd, chair; Department of Chemistry, University of Wisconsin, Fox Valley; martin.rudd@uwc.edu

### LSAC/CCA Joint Open Meeting

Tuesday, August 23, 2:00 to 3:30 PM

Philadelphia Marriott Downtown, Franklin 9/10

1. Reports from the LSAC and CCA Executive Sessions
2. Interactive session: questions, answers, and best practices

### Open Executive Session

Sunday, August 21, 8:00 AM to noon

Philadelphia Marriott Downtown, Franklin 11/12

1. Report of chair, subcommittee chairs, and staff liaison,
2. Review of petitions before Council,
3. Reports of committee liaisons

## Meetings & Expositions

John Pochan, chair; M&E@acs.org

### Open Session

Sunday, August 21, 7:00 to 10:30 AM

Pennsylvania Convention Center, Room 113B

1. Welcome
2. Minutes from San Diego
3. Chair's Report
4. Subcommittee Reports
  - a. Expositions
  - b. Technical Programming
  - c. Regional Meetings
  - d. Operations

## Closed Session

Sunday, August 21, 10:30 AM to noon

Pennsylvania Convention Center

1. Finance/Staff Liaison Report
2. New Business

## Membership Affairs

James M. Landis Jr., chair; 131 Arthur Dr., Troy, MI, 48083-1704

### Executive Session

Sunday, August 21, 8:00 AM to 4:00 PM

Philadelphia Marriott Downtown, Grand Ballroom I/J

1. Welcome
2. Minutes of March 12-17, 2016 San Diego Meeting
3. Reports of Chair, Staff Liaison and Committee Liaisons
4. Reports of Subcommittees:
5. New Business (Insight Lab Data)
6. Old Business (Petitions, Market Tests)

### Open Meeting

Monday, August 22, 1:00 to 2:00 PM

Philadelphia Marriott Downtown, Room 302

1. Update of MAC activities
2. Topics, questions and concerns from the floor

## Minority Affairs

Madeleine Jacobs, chair;

madeleine.s.jacobs@gmail.com

### Closed Executive Session

Sunday, August 21, 8:00 AM to 12:30 PM

Philadelphia Marriott Downtown,

Grand Ballroom Salon E

1. Opening Remarks
2. Staff Report
3. Spring Meeting Minutes
4. Subcommittee Meetings

### Open Session

Sunday, August 21, 12:30 to 2:00 PM

Philadelphia Marriott Downtown,

Grand Ballroom Salon E

1. Subcommittee Reports
2. Old Business
4. New Business
5. Open Discussion
6. Adjourn

## Nomenclature, Terminology & Symbols

Michael D. Mosher, chair; University of Northern Colorado; michael.mosher@unco.edu

### Open Meeting

Monday, August 22, 2:00 to 5:00 PM

Philadelphia Marriott Downtown, Franklin 11/12

1. Review minutes from 2016 Spring National Meeting
2. Chair/Staff Liaison reports
3. Subcommittee Reports
  - a. Communication/Outreach
  - b. Education
  - c. Liaison
  - d. Long Range Planning
4. IUPAC Reports
5. Philadelphia Poster and Symposium Update
6. New Business

## Nominations & Elections

D. Richard Cobb, chair; nomelect@acs.org

### Open Executive Session

Monday, August 22, 11:30 AM to noon

Philadelphia Marriott Downtown, Franklin 8

1. Report of the Executive Session
2. Vote 20/20 Task Force
3. Topics from the floor

## Patents & Related Matters

Sadiq Shah, chair; sadiq@utpa.edu

### Open Meeting

Saturday, August 20, 9:00 AM to 5:00 PM

Pennsylvania Convention Center, Room 204B

1. Legislation & Regulation Subcommittee.
2. Education and Outreach Subcommittee.
3. Awards Subcommittee.
4. Executive Session

## Professional Training

Thomas J. Wenzel, chair; Department of Chemistry, Bates College; cpt@acs.org

### Open Meeting

Sunday, August 21, 4:00 to 5:00 PM

Pennsylvania Convention Center, Terrace Ballroom I

1. Chair's Report
2. New Macromolecular Curriculum Requirement
3. Directory of Research at Primarily Undergraduate Institutions
4. Survey of Online Instruction and Virtual Laboratories
5. Overview of ACS Application Process
6. Topics from floor

## Project SEED

Anna G. Cavinato, chair; Department of Chemistry, Eastern Oregon University, One University Blvd., LaGrande, OR 97850-2807

### Open Session

Sunday, August 21, 8:00 to 9:00 AM

Philadelphia Marriott Downtown, Room 305

1. Report from executive session
2. Topics from the floor

### Closed Executive Session

Saturday, August 20, 1:00 to 5:00 PM

Philadelphia Marriott Downtown, Franklin 7

1. Subcommittee meetings 10:30 AM – 12:00 Noon
2. Minutes of March 12, 2016
3. Reports of Chair/Staff Liaison
4. Report of Subcommittees:
5. Old and new business

## Public Relations & Communications

Jennifer Maclachlan, chair; PID Analyzers, Sandwich, MA; pidgirl@gmail.com

### Open Executive Session

Monday, August 22, 8:00 AM to 1:00 PM

Philadelphia Marriott Downtown, Rooms 303/304

1. Welcome and Chair's Remarks
2. Approval of Minutes of February 27-28 Meeting
3. Subcommittee Break-Out Session and Reports:
  - a. Awards
  - b. Chemistry Ambassadors
  - c. Local Section and Division Communications Support
  - d. Communications Technology



4. *Liaison Reports*—CCPA, LSAC, CCA, IAC, DAC
5. *Old Business*
6. *New Business*
7. *Helen Free Award Address*

## Publications

Nicole S. Sampson, *chair*; Department of Chemistry, Stony Brook University, Stony Brook, NY 11794-3400

### Open Meeting

Friday, August 19, 4:30 to 5:00 PM  
Pennsylvania Convention Center, Room 203A

1. *Updates from ACS Publications Division*
2. *Open Discussion*

### Executive Session

Friday, August 19, 1:00 to 5:00 PM (Closed)

### Executive Session

(until 4:30 PM)

Pennsylvania Convention Center, Room 203A

1. *Report of C&EN Editorial Board*
2. *Reports of the Publications Division and of the Governing Board for Publishing*
3. *Reports from Other Committees*
4. *Discussion of Journal Monitoring Reports and Editor Appointments*

## Science

Mark C. Cesa, *chair*; markcesa@comcast.net

### Open Meeting

Saturday, August 20, 8:30 AM to 4:30 PM  
Pennsylvania Convention Center, Room 204C

1. *Welcome*
2. *Approval of Minutes*
3. *Reports of Chair/Staff Liaison*
4. *Report of Subcommittees:*
  - a. *Science and Technology*,
  - b. *Awards*,
  - c. *Public Policy and Communication*
5. *Subcommittee Breakouts*
6. *Subcommittee Reports from Breakouts*

## Senior Chemists

Thomas R. Beattie, *chair*; silvercircle@acs.org

### Open Executive Session

Monday, August 22, 8 AM to 1:00 PM

Philadelphia Marriott Downtown, Franklin 5

1. *Welcome and Introductions*
2. *Minutes from June and July Meetings, 2016*
3. *Reports of Chair/Staff Liaison*
4. *Report of Subcommittees and Task Forces:*
  - a. *Newsletter of Senior Chemists*
  - b. *Programming for Senior Chemists*
  - c. *Consulting and Mentoring*
  - d. *SCC Group on the ACS Network*
  - e. *ACS Local Section Subcommittee*
  - f. *Community Education Subcommittee*
  - g. *ACS Fellows Nomination Subcommittee*
  - h. *ChemLuminary Awards 2016*
5. *Senior Chemists Breakfast in Philadelphia*
6. *Open Discussion/ General Information*

## Technician Affairs

Kara M. Allen, *chair*; cta@acs.org

### Closed Executive Session

Sunday, August 21, 8:30 AM to 2:00 PM

Philadelphia Marriott Downtown,  
Grand Ballroom K/L

### Open Executive Session

Sunday, August 21, 2:00 to 2:30 PM

Philadelphia Marriott Downtown,  
Grand Ballroom K/L

1. *Welcome and Introductions*
2. *Review of San Diego Minutes, March 13, 2016*
3. *Reports of Chair/Staff Liaison*
4. *Report of Subcommittees and Task Forces:*
  - a. *Professional Development Subcommittee*
  - b. *Highlight Accomplishments Subcommittee*
  - c. *Increase Gov. Representation Subcommittee*
5. *Topics from floor/Meeting Feedback/Wrap-up*
6. *Open Executive Session*

## Women Chemists

Amber Charlebois, *chair*; Fairleigh Dickinson University, Madison, NJ 07940; afcharleb@gmail.com

### Closed Executive Session

Saturday, August 20, 8:00 AM to 5:00 PM

Pennsylvania Convention Center, Room 201A

1. *Welcome*
2. *Review of Spring Action Items & Minutes*
3. *Reports of Chair/Staff Liaison*
4. *Subcommittee Meetings*
5. *Report of Subcommittees and Task Forces:*
  - a. *Awards & Recognition*
  - b. *Communications & Technology*
  - c. *Professional Development*
  - d. *Programs & Events*
6. *New Business*

## Younger Chemists

Natalie A. LaFranzo, *chair*; nlafranzo@gmail.com

### Open Session

Sunday, August 21, 8:00 AM to noon

Philadelphia Marriott Downtown, Franklin 5/6

1. *Welcome*
2. *Staff Report*
3. *Subcommittee Reports*
  - a. *Communications*
  - b. *Governance Interface and Outreach*
  - c. *Membership Engagement*
4. *Liaison Reports*
5. *Petitions (CLOSED)*
6. *New Business*
7. *Visitors*
8. *Adjourn*

### Closed Executive Session

Sunday, August 21, noon to 1:00 PM

Philadelphia Marriott Downtown

# DIVISION MEETINGS & SOCIAL EVENTS

## Division of Agricultural & Food Chemistry — AGFD

AGFD Special Topics	12:00 PM – 1:00 PM	Sunday, August 21	Room 111A, Pennsylvania Convention Center
AGFD Poster Session & Reception	5:00 PM – 7:00 PM	Sunday, August 21	Terrance Ballroom I, Pennsylvania Convention Center
AGFD Future Program Meeting	12:00 PM – 1:00 PM	Monday, August 22	Room 102B, Pennsylvania Convention Center
AGFD Executive Committee Meeting (CLOSED MEETING)	5:00 PM – 8:00 PM	Monday, August 22	Room 120C, Pennsylvania Convention Center
AGFD Business Meeting (CLOSED MEETING)	12:00 PM – 1:00 PM	Tuesday, August 23	Room 111B, Pennsylvania Convention Center

## Division of Agrochemistry — AGRO

Sunday AM Break Room	10:05 AM – 10:45 AM	Sunday, August 21	Commonwealth Hall Prefunction, Loews Philadelphia Hotel
Sunday PM Break Room	2:40 PM – 3:30 PM	Sunday, August 21	Commonwealth Hall Prefunction, Loews Philadelphia Hotel
AGRO Business Meeting	5:00 PM – 9:00 PM	Sunday, August 21	Regency Ballroom A, Loews Philadelphia Hotel
Monday AM Break Room	10:05 AM – 10:45 AM	Monday, August 22	Commonwealth Hall Prefunction, Loews Philadelphia Hotel
AGRO Graduate Student Luncheon	11:45 PM – 1:00 PM	Monday, August 22	Lescaze Room, Loews Philadelphia Hotel
Refreshment Room/Poster Room	1:00 PM – 5:00 PM	Monday, August 22	Regency Ballroom B, Loews Philadelphia Hotel
Tuesday AM Break Room	10:05 AM – 10:45 AM	Tuesday, August 23	Commonwealth Hall Prefunction, Loews Philadelphia Hotel
Refreshment Room/Poster Room	1:00 PM – 5:00 PM	Tuesday, August 23	Regency Ballroom B, Loews Philadelphia Hotel
AGRO Blues-N-Brews	5:15 PM – 7:00 PM	Tuesday, August 23	Regency Ballroom A, Loews Philadelphia Hotel
Wednesday AM Break Room	10:05 AM – 10:45 AM	Wednesday, August 24	Commonwealth Hall Prefunction, Loews Philadelphia Hotel
Wednesday PM Break Room	3:00 PM – 3:00 PM	Wednesday, August 24	Commonwealth Hall Prefunction, Loews Philadelphia Hotel
AGRO Awards Social	6:00 PM – 8:00 PM	Wednesday, August 24	Regency Ballroom B, Loews Philadelphia Hotel

## Division of Analytic Chemistry — ANYL

ANYL Poster Session	7:00 PM – 9:00 PM	Sunday, August 21	Hall E, Pennsylvania Convention Center
ANYL Executive Committee Meeting	4:00 PM – 7:00 PM	Monday, August 22	Room 107A, Pennsylvania Convention Center
ANYL Division Dinner	6:00 PM – 9:00 PM	Tuesday, August 23	Chemical Heritage Foundation

## Division of Biological Chemistry — BIOL

BIOL Welcoming Reception	6:00 PM – 7:00 PM	Sunday, August 21	Room 103B, Philadelphia Convention Center
BIOL Poster Session	7:00 PM – 9:00 PM	Sunday, August 21	Ballroom A, Pennsylvania Convention Center
BIOL Poster Session	7:00 PM – 9:00 PM	Tuesday, August 23	Millennium Hall, Loews Philadelphia Hotel

## Division of Catalysis & Surface Science — CATL

CATL Business Meeting	5:30 PM – 7:30 PM	Monday, August 22	Wyeth Gallery C, Sonesta Philadelphia Downtown
CATL Poster Session	6:00 PM – 8:00 PM	Tuesday, August 23	Hall D, Pennsylvania Convention Center

## GOVERNANCE & BUSINESS MEETINGS

### Division of Chemistry & Law — CHAL

Drug & Power Luncheon (TICKETED EVENT)	12:00 PM – 1:30 PM	Monday, August 22	Room 202A, Pennsylvania Convention Center
CHAL Reception	6:00 PM – 8:00 PM	Monday, August 22	Room 201B, Pennsylvania Convention Center

### Division of Chemical Health & Safety — CHAS

Laboratory Waste Management Workshop	8:00 AM – 5:00 PM	Friday, August 19	Room 123, Pennsylvania Convention Center
The Laboratory Safety Workshop	8:00 AM – 5:00 PM	Friday, August 19	Room 125, Pennsylvania Convention Center
Cannabis Extraction & Analysis Workshop	8:00 AM – 5:00 PM	Friday, August 19	Room 124, Pennsylvania Convention Center
How to be an Effective Chemical Hygiene Officer	8:00 AM – 5:00 PM	Saturday, August 20	Room 123, Pennsylvania Convention Center
Chemical Reactivity Hazards, Laboratory Scale, Recognition & Control	8:00 AM – 5:00 PM	Saturday, August 20	Room 124, Pennsylvania Convention Center
Meeting New Chemical Safety Expectations in Instructional Laboratories	8:00 AM – 5:00 PM	Saturday, August 20	Room 125, Pennsylvania Convention Center
Executive Committee Meeting	7:30 AM – 12:00 PM	Sunday, August 21	Grand Ballroom Salon C, Philadelphia Marriott Downtown
CHAS — Safety & Ethics in our Chemical Community (POSTER SESSION)	10:30 AM – 12:00 PM	Tuesday, August 23	Grand Ballroom Salon K/L, Philadelphia Marriott Downtown

### Division of Chemical Education — CHED

Exams Institute Board of Trustees	7:30 AM – 12:00 PM	Saturday, August 20	Room 120C, Pennsylvania Convention Center
Board of Publication	7:30 AM – 12:00 PM	Saturday, August 20	Room 121A, Philadelphia Convention Center
GC17S — General Chemistry Second Term Exam (CLOSED)	8:00 AM – 5:00 PM	Saturday, August 20	Bordeaux Room, Sofitel Philadelphia
AN17 — Analytical Exam (CLOSED)	8:00 AM – 5:00 PM	Saturday, August 20	Lyon Room, Sofitel Philadelphia
Program Committee Meeting	10:30 AM – 12:30 PM	Saturday, August 20	Room 120B, Pennsylvania Convention Center
Executive Committee Meeting	1:00 PM – 5:30 PM	Saturday, August 20	Room 119B, Pennsylvania Convention Center
Finance Committee Meeting (CLOSED MEETING)	9:30 AM – 11:30 AM	Saturday, August 20	Room 120 A, Pennsylvania Convention Center
AN17 — Analytical Exam (CLOSED)	8:00 AM – 5:00 PM	Sunday, August 21	Lyon Room, Sofitel Philadelphia
OR17F — Organic Chemistry First Term Exam (CLOSED)	8:00 AM – 5:00 PM	Sunday, August 21	Orleans Room, Sofitel Philadelphia
GC17S — General Chemistry Second Term Exam (CLOSED)	8:00 AM – 5:00 PM	Sunday, August 21	Bordeaux Room, Sofitel Philadelphia
High School/College Interface Luncheon (TICKETED EVENT)	12:00 PM – 1:00 PM	Sunday, August 21	Room 201A, Pennsylvania Convention Center
Regional Meeting Committee	12:00 PM – 2:00 PM	Sunday, August 21	Room 107A, Pennsylvania Convention Center
CHED Poster Session	7:00 PM – 9:00 PM	Sunday, August 21	Hall D, Pennsylvania Convention Center
Long Range Planning Committee	2:30 PM – 4:30 PM	Sunday, August 21	Room 107A, Pennsylvania Convention Center
CHED Safety Committee Meeting	4:00 PM – 5:30 PM	Sunday, August 21	Room 102B, Pennsylvania Convention Center
Social Reception	5:30 PM – 7:00 PM	Sunday, August 21	Room 120C, Pennsylvania Convention Center
OR17F — Organic Chemistry First Term Exam (CLOSED)	8:00 AM – 5:00 PM	Monday, August 22	Orleans Room, Sofitel Philadelphia
Perkin Medalist/Green Chemistry Commitment Luncheon (CLOSED)	12:00 PM – 1:15 PM	Monday, August 22	Room 125, Pennsylvania Convention Center



## GOVERNANCE & BUSINESS MEETINGS

### Division of Chemical Information — CINF

Awards Committee Meeting (CLOSED)	1:00 PM – 3:00 PM	Saturday, August 20	Room 104A, Pennsylvania Convention Center
Education Committee Meeting (CLOSED)	1:00 PM – 3:00 PM	Saturday, August 20	Room 104B, Pennsylvania Convention Center
Program Committee Meeting (CLOSED)	1:00 PM – 3:00 PM	Saturday, August 20	Room 102A, Pennsylvania Convention Center
Executive Committee Meeting (CLOSED)	3:00 PM – 6:00 PM	Saturday, August 20	Room 103A, Pennsylvania Convention Center
CSA Trustees	12:00 PM – 2:00 PM	Sunday, August 21	Room 109A, Philadelphia Convention
Welcome Reception and Poster Session	6:30 PM – 8:30 PM	Sunday, August 21	Howe Room, Loews Philadelphia Hotel
Luncheon	12:00 PM – 1:30 PM	Tuesday, August 23	Howe Room, Loews Philadelphia Hotel
Herman Skolnik Award Reception Honoring Dr. Evan Bolton & Steve Bryant	6:30 PM – 8:30 PM	Tuesday, August 23	Howe Room, Loews Philadelphia Hotel

### Division of Colloid & Surface Chemistry — COLL

Program & Executive Committee Meeting (CLOSED)	4:00 PM – 7:00 PM	Saturday, August 20	Room 103B, Pennsylvania Convention Center
Poster Session/Social Hour	5:30 PM – 8:00 PM	Sunday, August 21	Halls A/B, Pennsylvania Convention Center
COLL Open Business Meeting	5:30 PM – 6:30 PM	Sunday, August 21	Room 201A, Pennsylvania Convention Center
Division Luncheon (TICKETED)	12:00 PM – 1:30 PM	Tuesday, August 23	Franklin 13, Philadelphia Marriott Downtown

### Division of Computers in Chemistry — COMP

Executive Committee Meetings	3:00 PM – 6:00 PM	Saturday, August 20	Wyeth Gallery C, Sonesta Philadelphia Downtown
Poster Session	6:00 PM – 8:00 PM	Tuesday, August 23	Hall E, Pennsylvania Convention Center

### Division of Energy & Fuel — ENFL

Energy and Fuels Program Meeting	3:00 PM – 4:00 PM	Sunday, August 21	Room 106A/B, Pennsylvania Convention Center
ENFL Executive Meeting	4:00 PM – 7:00 PM	Sunday, August 21	Room 106A/B, Pennsylvania Convention Center
Energy and Fuel Business Meeting/Social	12:30 PM – 1:00 PM	Monday, August 22	Room 107A, Pennsylvania Convention Center
ENFL Poster Session	2:00 PM – 4:00 PM	Monday August 22	Hall D, Pennsylvania Convention Center
ENFL — Dinner & Awards (TICKETED)	6:00 PM – 9:00 PM	Tuesday, August 23	R2L, 50 South 16th Street

### Division of Environmental Chemistry — ENVR

Program Planning Committee Meeting	2:00 PM – 3:00 PM	Sunday, August 21	Franklin Room, Loews Philadelphia Hotel
Long Range Planning Committee	3:00 PM – 5:00 PM	Sunday, August 21	Franklin Room, Loews Philadelphia Hotel
Business Meeting	7:00 PM – 7:30 PM	Sunday, August 21	Regency Ballroom B, Loews Philadelphia Hotel
Executive Committee Meeting	7:30 PM – 10:00 PM	Sunday, August 21	Regency Ballroom B, Loews Philadelphia Hotel
ENVR Poster Session	6:00 PM – 8:00 PM	Wednesday, August 24	Hall D, Pennsylvania Convention Center

### Division of Geochemistry — GEOC

Executive Committee Meeting	6:00 PM – 8:00 PM	Sunday, August 21	Room 307, Philadelphia Marriott Downtown
GEOC Reception	6:00 PM – 9:00 PM	Tuesday, August 23	McGillin's Olde Ale House, 1310 Drury Street
GEOC Poster Session	6:00 PM – 8:00 PM	Wednesday, August 24	Hall D, Pennsylvania Convention Center

## GOVERNANCE & BUSINESS MEETINGS

### Division of History of Chemistry — HIST

Business Meeting	1:00 PM – 1:30 PM	Sunday, August 21	Franklin 4, Philadelphia Marriott Downtown
Executive Committee Meeting (CLOSED)	5:00 PM – 8:00 PM	Sunday, August 21	Room 308, Philadelphia Marriott Downtown

### Division of Industrial & Engineering Chemistry — I&EC

I&EC Subdivision, Steering & Programming Meeting (CLOSED)	10:00 AM – 3:00 PM	Saturday, August 20	Logan Room, Philadelphia Downtown Courtyard by Marriott
I&EC Division Open Meeting	4:30 PM – 5:30 PM	Sunday, August 21	Grand Ballroom III/IV, Philadelphia Downtown Courtyard by Marriott
I&EC Poster Session	6:00 PM – 8:00 PM	Tuesday, August 23	Hall D, Pennsylvania Convention Center

### Division of Inorganic Chemistry — INOR

INOR Poster Session	5:30 PM – 7:30 PM	Sunday, August 21	Hall D, Pennsylvania Convention Center
INOR Poster Session	5:30 PM – 7:30 PM	Tuesday, August 21	Hall D, Pennsylvania Convention Center
INOR Poster Session	5:30 PM – 7:30 PM	Wednesday, August 24	Hall D, Pennsylvania Convention Center

### Division of Medicinal Chemistry — MEDI

Executive Committee Meeting	8:30 AM – 1:00 PM	Sunday, August 21	Room 111B, Pennsylvania Convention Center
Annual Business Meeting	5:30 PM -6:30 PM	Sunday, August 21	Room 111B, Pennsylvania Convention Center
General Poster Session I	7:00 PM – 9:00 PM	Sunday, August 21	Hall G, Pennsylvania Convention Center
Long Range Planning Committee	5:30 PM – 10:00 PM	Monday, August 22	Room 125, Pennsylvania Convention Center
Hall of Fame Ceremony	5:30 PM – 7:30 PM	Tuesday, August 23	Ballroom A, Pennsylvania Convention Center
MEDI & ORGN General Poster Session	7:00 PM – 11:00 PM	Wednesday, August 24	Hall E, Pennsylvania Convention Center

### Division of Nuclear Chemistry & Technology — NUCL

Executive Committee Meeting	5:00 PM – 7:00 PM	Sunday, August 21	Ritten Room, Philadelphia Downtown Courtyard by Marriott
Business Meeting	5:00 PM – 6:00 PM	Tuesday, August 23	Grand Ballroom II, Philadelphia Downtown Courtyard by Marriott
NUCL Social Hour	6:00 PM – 8:00 PM	Tuesday, August 23	Grand Ballroom Foyer, Philadelphia Downtown Courtyard by Marriott

### Division of Physical Science — PHYS

Physical Chemistry Undergraduate Research Symposium (WORKSHOP)	8:00 AM – 12:00 PM	Sunday, August 21	Maestro A, DoubleTree by Hilton Hotel Philadelphia Center City
Executive Committee Meeting (CLOSED)	4:30 PM – 7:30 PM	Sunday, August 21	Symphony Ballroom, DoubleTree by Hilton Hotel Philadelphia Center City
Physical Chemistry Meets AMO Reception	6:00 PM – 8:00 PM	Sunday, August 21	Assembly A, DoubleTree by Hilton Hotel Philadelphia Center City
Division Poster Session	6:00 PM – 8:00 PM	Wednesday, August 24	Hall D, Pennsylvania Convention Center

## GOVERNANCE & BUSINESS MEETINGS

### Division of Polymeric Materials — PMSE

Membership Desk	8:00 AM – 5:00 PM	Sunday, August 21	Liberty Ballroom Foyer, Sheraton Philadelphia Downtown Hotel
Executive Committee Meeting	4:30 PM – 7:00 PM	Sunday, August 21	Independence Ballroom C/D, Sheraton Philadelphia Downtown Hotel
Membership Desk	8:00 AM – 5:00 PM	Monday, August 22	Liberty Ballroom Foyer, Sheraton Philadelphia Downtown Hotel
Business Meeting and PMSE/POLY Coordination	5:00 PM – 6:00 PM	Monday, August 22	Seminar C, Sheraton Philadelphia Downtown Hotel
Membership Desk	8:00 AM – 5:00 PM	Tuesday, August 23	Liberty Ballroom Foyer, Sheraton Philadelphia Downtown Hotel
PMSE/POLY Poster Session	6:00 PM – 8:00 PM	Sunday, August 21	Hall G, Pennsylvania Convention Center
Membership Desk	8:00 AM – 5:00 PM	Wednesday, August 24	Liberty Ballroom Foyer, Sheraton Philadelphia Downtown Hotel
Membership Desk	8:00 AM – 5:00 PM	Thursday August 25	Liberty Ballroom Foyer, Sheraton Philadelphia Downtown Hotel

### Division of Polymer Chemistry — POLY

Membership Desk	8:00 AM – 5:00 PM	Sunday, August 21	Liberty Ballroom Foyer, Sheraton Philadelphia Downtown Hotel
Workshop Committee (CLOSED)	11:00 AM – 12:00 PM	Sunday, August 21	Logans 1, Sheraton Philadelphia Downtown Hotel
Strategic Planning/Long Range Planning & Business Meeting (CLOSED)	4:00 PM – 5:30 PM	Sunday, August 21	Logans 1, Sheraton Philadelphia Downtown Hotel
Membership Desk	8:00 AM – 5:00 PM	Monday, August 22	Liberty Ballroom Foyer, Sheraton Philadelphia Downtown Hotel
Industrial Advisory Board Meeting (closed)	7:30 AM – 9:30 PM	Tuesday, August 23	Liberty Ballroom C, Sheraton Philadelphia Downtown Hotel
Membership Desk	8:00 AM – 5:00 PM	Tuesday, August 23	Liberty Ballroom Foyer, Sheraton Philadelphia Downtown Hotel
IPEC Meeting (CLOSED)	9:30 AM – 12:00 PM	Tuesday, August 23	Seminar B, Sheraton Philadelphia Downtown Hotel
Programming Committee Meeting	12:00PM – 2:00 PM	Tuesday, August 23	Liberty Ballroom C, Sheraton Philadelphia Downtown Hotel
International Committee Meeting (CLOSED)	2:00 PM – 3:00 PM	Tuesday, August 23	Logans 1, Sheraton Philadelphia Downtown Hotel
Membership Committee Meeting (CLOSED)	2:00 PM – 3:00 PM	Tuesday, August 23	Seminar A, Sheraton Philadelphia Downtown Hotel
Membership Desk	8:00 AM – 5:00 PM	Wednesday, August 24	Liberty Ballroom Foyer, Sheraton Philadelphia Downtown Hotel
POLY/PMSE Award Lecture & Reception	5:30 PM – 8:00 PM	Wednesday, August 24	Liberty Ballroom C/D, Sheraton Philadelphia Downtown Hotel
Membership Desk	8:00 AM – 5:00 PM	Thursday, August 25	Liberty Ballroom Foyer, Sheraton Philadelphia Downtown Hotel

### Division of Professional Relations — PROF

Executive Committee Meeting	3:00 PM – 5:00 PM	Tuesday, August 23	Grand Ballroom Salon B, Philadelphia Marriott Downtown
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## GOVERNANCE & BUSINESS MEETINGS

### Division of Small Chemical Business — SCHB

SCHB Member's Breakfast	7:00 AM – 8:00 AM	Sunday, August 21	Garden Room, Hilton Garden Inn Center City
Executive Committee	8:00 AM – 11:30 AM	Sunday, August 21	Garden Room, Hilton Garden Inn Center City
SCHB & PROF Luncheon	12:00 PM – 1:30 PM	Sunday, August 21	Franklin 2, Hilton Garden Inn Center City
SCHB & PROF Luncheon	12:00 PM – 1:00 PM	Monday, August 22	Franklin 2, Hilton Garden Inn Center City
SCHB & PROF Luncheon	12:00 PM – 1:00 PM	Tuesday, August 23	Independence I, Philadelphia Marriott Downtown

### Division of Chemical Toxicology — TOXI

Executive Committee Meeting/Dinner CLOSED)	6:30 PM – 10:00 PM	Saturday, August 20	Ritten Room, Philadelphia Downtown Courtyard by Marriott
Business Meeting/Poster Session/Awards Banquet	6:30 PM – 10:30 PM	Tuesday, sept. 10	Ballroom B, Pennsylvania Convention Center

# SOCIAL & EDUCATIONAL EVENTS

## PRESIDENTIAL EVENTS

**ACS PRESIDENT DONNA NELSON** welcomes attendees to the 252nd ACS National Meeting. The presidential programming continues her theme of addressing building communities in chemistry, as well as other themes of broad interest to ACS members.

Four presidential symposia will highlight the role of chemistry through international partnerships and collaborations around the world. The first symposium, "Chemical Sciences & Human Rights," will take place on Sunday, August 21, from 8:00 AM to noon. This will be followed by a two-day symposium, "Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation," that begins on Sunday afternoon at 1:20 PM and begins anew on Monday, August 22, from 8:30 AM to 12:30 PM. A poster session titled "Building International Communities" will run from 4:30 to 6:30 PM on Sunday in the late afternoon. Rounding out the international theme, on Monday from 2:00 to 6:00 PM, President Nelson will host a symposium on "Broadening Participation in Global Chemistry Experiences: Why Engaging Diverse Chemistry Communities in Global Research is Critical."

Other presidential symposia are sure to generate interest for their variety of topics and issues they address. On Sunday morning from 10:30 AM to 12:05 PM, there will be the symposium to honor the 2016 Citation for Chemical Breakthrough Awards. These awards were developed in 2006 by the Division of the History of Chemistry to recognize "breakthrough publications, books, and patents worldwide in the fields of science embraced by the ACS."

Programming within the trending topic "Fracking: Economics vs. Environment" will be held on Monday morning from

8:00 AM to noon. Several ACS symposia have tackled the science and environmental implications of hydraulic fracturing, and President Nelson looks to continue the discussion of these important issues at this symposium. On Monday afternoon, she invites meeting participants to attend a symposium on "NSF Opportunities" from 1:00 to 5:00 PM.

Finally, as part of the meeting theme, and to celebrate our host city of Philadelphia, President Nelson will be organizing an all-day symposium on Tuesday titled "Chemical Business of the People, by the People, for the People" that begins at 8:30 AM and concludes at 5:00 PM.

Details of these presidential events and other recommended symposia can be found at [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016).

## SOCIAL AND TICKETED EVENTS

**A VARIETY OF ORGANIZERS** will host special events during the meeting. Event participation is open to all interested registrants. All nonticketed events require a visible registration badge for entry.

Tickets are sold on a first-come, first-served basis. Ticket sales will close at 6:00 PM the evening prior to the event. Some event organizers may offer a limited number of tickets for sale at the door of the events. The deadline for cancellation and refund requests was July 20.

Locations and times are subject to change. To learn more about these events and to buy tickets or register, visit [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016).

### FRIDAY, August 19

#### CHAS Workshop: Laboratory Waste Management

8:00 AM to 5:00 PM, Pennsylvania Convention Center, Room 123

#### CHAS Workshop: Cannabis Extraction & Analysis

8:00 AM to 5:00 PM, Pennsylvania Convention Center, Room 124

#### CHAS Workshop: Laboratory Safety Workshop

8:00 AM to 5:00 PM, Pennsylvania Convention Center, Room 125

### SATURDAY, August 20

#### CHAS Workshop: How To Be a More Effective Chemical Hygiene Officer

8:00 AM to 5:00 PM, Pennsylvania Convention Center, Room 123

#### CHAS Workshop: Chemical Reactivity Hazards: Laboratory-Scale Recognition & Control

8:00 AM to 5:00 PM, Pennsylvania Convention Center, Room 124

#### CHAS Workshop: Meeting New Chemical Safety Expectations in Instructional Laboratories

8:00 AM to 5:00 PM, Pennsylvania Convention Center, Room 125

#### COACH: Basics of Entrepreneurship & Commercialization of Research

8:30 AM to 5:00 PM, Sofitel Philadelphia, Lille Room

#### COACHing Powerful Postdocs: Career Launch & Acceleration

8:30 AM to 5:00 PM, Sofitel Philadelphia, Montpellier Room

#### COACH-the-COACHes Training

8:30 AM to 5:00 PM, Sofitel Philadelphia, Montpellier Room

#### ACS Presidential Outreach Event

10:00 AM to 2:00 PM, Franklin Institute, 222 North 20th St.

#### COACH Reception

5:00 to 7:00 PM, Sofitel Philadelphia, Marseilles Room

### SUNDAY, August 21

#### The Science behind Pixar

6:00 AM to 8:00 PM, Franklin Institute, 222 North 20th St.

#### SCHB Member Breakfast

7:00 to 8:00 AM, Hilton Garden Inn Philadelphia Center City, Garden Room

#### Division of Physical Chemistry Undergraduate Research Symposium

8:00 AM to noon, DoubleTree by Hilton Hotel Philadelphia Center City, Aria A/B

#### Undergraduate Hospitality Center

8:30 AM to 5:00 PM, Sheraton Philadelphia Downtown Hotel, Liberty Ballroom D

**Networking Basics for Students**

9:00 to 10:15 AM, Sheraton Philadelphia Downtown Hotel, Liberty Ballroom B

**ChemIDP Focus Group**

10:00 AM to noon, Pennsylvania Convention Center, Room 106A

**SCHB Poster Session**

10:00 AM to noon, Hilton Garden Inn, Rittenhouse

**Graduate School Reality Check, Part I: Getting In!**

10:30 AM to noon, Sheraton Philadelphia Downtown Hotel, Liberty Ballroom B

**ACS Board Luncheon & Meeting**

11:45 AM to 1:00 PM, Pennsylvania Convention Center, Ballroom A

**CHED High School/College Interface Luncheon/SE-01/\$45**

Noon to 1:00 PM, Pennsylvania Convention Center, Room 201A

**Graduate School Reality Check, Part II: You're In—Now What?**

Noon to 1:30 PM, Sheraton Philadelphia Downtown Hotel, Liberty Ballroom B

**ChemIDP: Planning Your Career Workshop**

2:00 to 4:00 PM, Pennsylvania Convention Center, Room 111A

**Networking Social with Graduate School Recruiters**

2:00 to 5:00 PM, Sheraton Philadelphia Downtown Hotel, Liberty Ballroom C/D

**Flow Chemistry Seminar**

3:30 to 6:00 PM, Pennsylvania Convention Center, Room 303

**IAC Networking Globally: Science & Human Rights/SE-02/no charge**

4:00 to 5:15 PM, Philadelphia Marriott Downtown, Grand Ballroom Salon C

**Faculty & Postdoc Afternoon Networking Coffee Break**

4:00 to 6:00 PM, Pennsylvania Convention Center, Room 113B

**PRES Poster Session**

4:30 to 6:30 PM, Philadelphia Marriott Downtown, Grand Ballroom Salon C

**ACS Diversity Reception**

5:00 to 7:00 PM, Philadelphia Marriott Downtown, Franklin 11/12

**University of Wisconsin, Madison, Alumni & Friends**

5:00 to 7:00 PM, Philadelphia Downtown Courtyard by Marriott, Washington

**University of Illinois Alumni & Friends ACS Reception**

5:00 to 8:00 PM, Pennsylvania Convention Center, Room 201C

**AGFD Poster Session & Reception**

5:00 to 7:00 PM, Pennsylvania Convention Center, Terrace Ballroom I

**Penn State University Alumni Reception**

5:30 to 7:30 PM, Loews Philadelphia Hotel, Concierge

**CHED Social Reception**

5:30 to 7:00 PM, Pennsylvania Convention Center, Room 120C

**COLL Open Business Meeting**

5:30 to 6:30 PM, Pennsylvania Convention Center, Room 201A

**COLL Poster Session/Social Hour**

5:30 to 8:00 PM, Pennsylvania Convention Center, Halls A/B

**IAC International Welcome Reception/SE-03/no charge**

5:30 to 7:30 PM, Philadelphia Marriott Downtown, Grand Ballroom Salons E/F

**University of Texas, Austin, Happy Hour**

5:30 to 7:00 PM, Pennsylvania Convention Center, 111A

**District II Councilor Caucus**

6:00 to 7:00 PM, Philadelphia Marriott Downtown, Franklin 2

**Mid-Atlantic Councilor Caucus/ District III Councilor Caucus**

6:00 to 7:00 PM, Philadelphia Marriott Downtown, Franklin 3

**District IV Councilor Caucus**

6:00 to 7:00 PM, Philadelphia Marriott Downtown, Franklin 4

**District V Councilor Caucus**

6:00 to 7:00 PM, Philadelphia Marriott Downtown, Franklin 5

**District VI Councilor Caucus**

6:00 to 7:00 PM, Philadelphia Marriott Downtown, Franklin 6

**Heroes of Chemistry Awards/ SE-04/\$150**

6:00 to 10:00 PM, Loews Philadelphia Hotel, Millennium Hall

**CAPEES Social Gathering**

6:00 to 9:00 PM, Ocean Harbor, 1023 Race St.

**CINF Sunday Welcoming Reception & Poster Session**

6:30 to 8:30 PM, Loews Philadelphia Hotel, Howe Room

**FLUO/CHED Poster Session**

7:00 to 9:00 PM, Pennsylvania Convention Center, Hall D

**ANYL Poster Session**

7:00 to 9:00 PM, Pennsylvania Convention Center, Hall E

**BIOL Poster Session**

7:00 to 9:00 PM, Pennsylvania Convention Center, Ballroom A

**MEDI Poster Session**

7:00 to 9:00 PM, Pennsylvania Convention Center, Hall G

**ORGN Poster Session**

8:00 to 10:00 PM, Pennsylvania Convention Center, Hall D

**MONDAY, August 22**

**YCC Fun Run/SE-22/\$25 (regular)/ SE-23/\$15 (undergraduates)**

6:45 to 8:30 AM, Pennsylvania Convention Center

**Women in the Chemical Enterprise Breakfast/SE-05/\$40 (regular)/ SE-05A/\$20 (student)**

7:30 to 9:00 AM, Philadelphia Marriott Downtown, Grand Ballroom Salon I/J

**Undergraduate Hospitality Center**

8:30 AM to 5:00 PM, Sheraton Philadelphia Downtown Hotel, Liberty Ballroom D

**Chemists are Everywhere! The Spectrum of Careers in Chemistry**

9:00 to 10:00 AM, Sheraton Philadelphia Downtown Hotel, Liberty Ballroom C

**Safeguard Your Career by Learning the Dos & Don'ts of Data Analysis & Reporting**

9:30 AM to noon, Pennsylvania Convention Center, Exhibit Halls A/B, Room 2

**Green Cards for Scientific Researchers: How To Apply for & Win Your EB-1/NIW Case!**

9:30 AM to noon, Pennsylvania Convention Center, Room 303



**Wiley Spectra Lab**

9:30 AM to noon, Pennsylvania Convention Center, Exhibit Halls A/B, Room 1

**What It Means to Be**

**“We the Chemists” Today**

10:15 to 11:15 AM, Sheraton Philadelphia Downtown Hotel, Liberty Ballroom C

**ACS Women Chemists of Color**

**Networking Event/SE-24/no charge**

10:30 AM to noon, Philadelphia Marriott Downtown, Grand Ballroom Salon C

**ACS on Campus**

10:30 AM to noon, Pennsylvania Convention Center, Ballroom A

**Committee on Minority Affairs**

**Luncheon/SE-06/\$50 (regular)/SE-06A/\$25 (student)**

11:30 AM to 1:30 PM, Philadelphia Marriott Downtown, Independence Ballroom I

**ENFL Business Meeting Social**

Noon to 1 PM, Pennsylvania Convention Center, Room 107A

**CHAL Drug & Power Lunch/**

**SE-08/\$40**

Noon to 1:30 PM, Pennsylvania Convention Center, Room 202A

**Eminent Scientists Lecture & Lunch-**

**eon/SE-07/\$35 (regular)/no charge (undergraduates)**

11:30 AM to 1:30 PM, Sheraton Philadelphia Downtown Hotel, Liberty Ballroom D

**Ailgent Workshops at ACS**

12:30 to 4:00 PM, Pennsylvania Convention Center, Exhibit Halls A/B, Room 1

**Graphing & Analysis Using Origin**

**2016**

12:30 to 3:00 PM, Pennsylvania Convention Center, Exhibit Halls A/B, Room 2

**Structure Verification & Elucidation**

**by NMR: Software Tools for the Chemist**

12:30 to 3:00 PM, Pennsylvania Convention Center, Room 303

**AGRO Break/Poster Room**

1:00 to 5:00 PM, Loews Philadelphia Hotel, Regency Ballroom B

**ACS on Campus**

1:30 to 3:00 PM, Pennsylvania Convention Center, Ballroom A

**ACS Fellows Ceremony & Reception**

2:00 to 4:30 PM, Philadelphia Marriott Downtown, Grand Ballroom Salons G/H

**Undergraduate Research Poster Session**

2:00 to 4:00 PM, Pennsylvania Convention Center, Halls D/E

**ENFL Poster Session**

2:00 to 4:00 PM, Pennsylvania Convention Center, Halls A/B

**ChemIDP Focus Group**

2:00 to 5:00 PM, Pennsylvania Convention Center, Room 109A

**ACS Publications Focus Group**

3:30 to 6:00 PM, Pennsylvania Convention Center, Room 303

**Student Speed Networking with Chemistry Professionals**

4:00 to 5:30 PM, Pennsylvania Convention Center, Hall G

**CHAL Reception**

6:00 to 8:00 PM, Pennsylvania Convention Center Room 201B

**Trenton Local Section Members, the College of New Jersey Alumni & Rider University Alumni Happy Hour**

6:30 to 8:30 PM, Field House, 1150 Filbert St.

**University of Pennsylvania Alumni Reception**

6:30 to 8:30 PM, Chemical Heritage Foundation, 315 Chestnut St.

**ACS Graduate & Postdoctoral Scholars Reception/SE-21/no charge (graduate students)**

7:00 to 8:30 PM, Pennsylvania Convention Center, Ballroom A

**Sci-Mix Poster Session**

(drink ticket included with registration) 8:00 to 10:00 PM, Pennsylvania Convention Center, Halls D/E

**TUESDAY, August 23**

**Regional Meeting Roundtable**

6:00 to 9:00 AM, Pennsylvania Convention Center, Room 202A

**Senior Chemists Breakfast/SE-10/\$20**

7:30 to 9:30 AM, Philadelphia Marriott Downtown, Liberty Ballroom

**University of Minnesota Alumni & Friends Breakfast/SE-11/\$5.00**

7:30 to 9:30 AM, Pennsylvania Convention Center, Ballroom A

**Increasing Successful Awards Nominations from Underrepresented Groups/SE-12/no charge**

9:15 to 10:45 AM, Philadelphia Marriott Downtown, Franklin 8/9

**ACS on Campus**

9:30 to 11:00 AM, Pennsylvania Convention Center, Room 125

**CAS Solutions**

9:30 AM to noon, Pennsylvania Convention Center, Exhibit Halls A/B, Room 1

**Wiley Author Services Presentation**

9:30 AM to noon, Pennsylvania Convention Center, Exhibit Halls A/B, Room 2

**Compact Mass Spectrometry: A User's Perspective**

9:30 AM to noon, Pennsylvania Convention Center, Room 303

**Spectroscopy Foundation to Future**

9:30 AM to noon, Pennsylvania Convention Center, Room 303

**Hidden Gems in Philly**

10:00 AM to noon, Franklin Square, 200 North Sixth St.

**CHAS Poster Session**

10:30 AM to noon, Philadelphia Marriott Downtown, Grand Ballroom K/L

**WCC/Eli Lilly Travel Award Poster Session**

11:00 AM to noon, Marriott Philadelphia Downtown, Liberty Ballroom

**CINF Luncheon/SE-13/\$25**

Noon to 1:30 PM, Loews Philadelphia Hotel, Howe Room

**COLL Luncheon/SE-14/\$45**

Noon to 1:30 PM, Philadelphia Marriott Downtown, Franklin 13

**WCC Luncheon/SE-15/\$50 (regular)/SE-15A/\$25 (student)**

Noon to 1:30 PM, Philadelphia Marriott Downtown, Liberty Ballroom

**Nano Lunch & Learn**

Noon to 1 PM, Pennsylvania Convention Center, Room 125

**German R&D in Chemistry**

12:30 to 3:00 PM, Pennsylvania Convention Center, Exhibit Halls A/B, Room 1

**Reverse Engineering of Materials & Polymers Using Infrared & Raman Spectroscopy**

12:30 to 3:00 PM, Pennsylvania Convention Center, Exhibit Halls A/B, Room 2

**Accelerating Innovation in Analytical Approaches**

12:30 to 3:00 PM, Pennsylvania Convention Center, Room 304

**Meet the Federal Grant Funders & Speed Coaching with Program Officers**

1:00 to 5:00 PM, Pennsylvania Convention Center, Room 122B

**AGRO Break/Poster Room**

1:00 to 5:00 PM, Loews Philadelphia Hotel, Regency Ballroom B

**Division Officer & Councilor Caucus (DOC/DCC)**

4:00 to 5:30 PM, Pennsylvania Convention Center, Room 123

**Just Cocktails: WCC Open Meeting**

4:00 to 5:00 PM, Philadelphia Marriott Downtown, Liberty C

**Purdue Chemistry Social/SE-09/\$10**

4:30 to 7:00 PM, Loews Philadelphia Hotel, Franklin Room

**Temple University Alumni & Friends Reception**

5:00 to 7:00 PM, Ritz-Carlton Hotel, 10 Avenue of the Arts

**MEDI Hall of Fame**

5:30 to 7:30 PM, Pennsylvania Convention Center, Ballroom A

**Chinese-American Chemical Society Dinner Banquet/SE-16/\$35**

5:30 to 9 PM, Joy Tsin Lau Chinese Restaurant, 1026 Race St.

**Presidential LGBTQ+ Reception**

5:30 to 7:30 PM, Philadelphia Marriott Downtown, Liberty

**Division Officer & Councilor Caucus Reception**

5:30 to 6:30 PM, Pennsylvania Convention Center, Room 125

**INOR Poster Session**

5:30 to 7:30 PM, Pennsylvania Convention Center, Hall D

**AGRO Blues-N-Brews**

5:30 to 8:00 PM, Sheraton Philadelphia Downtown, Regency Ballroom A

**ANYL Dinner/SE-17/\$40 (regular)/SE-17A/\$20 (student)**

6:00 to 9:00 PM, Chemical Heritage Foundation, 315 Chestnut St.

**COMP Poster Session**

6:00 to 8:00 PM, Pennsylvania Convention Center, Hall E

**I&EC & CATL Poster Session**

6:00 to 8:00 PM, Pennsylvania Convention Center, Hall D

**ENFL Dinner Awards/SE-18/\$60**

6:00 to 9:00 PM, R2L, 50 South 16th St.

**GEOC Reception**

6:00 to 9:00 PM, McGillin's Olde Ale House, 1310 Drury St., Philadelphia

**NUCL Social Hour**

6:00 to 7:00 PM, Philadelphia Downtown Courtyard by Marriott, Grand Ballroom Foyer

**PMSE/POLY Poster Session**

6:00 to 8:00 PM, Pennsylvania Convention Center, Hall G

**ENVR Fall Reception/SE-19/\$20**

6:00 to 8:00 PM, Ladder 15, 1528 Sansom St.

**TOXI Poster Session**

6:30 to 8:30 PM, Pennsylvania Convention Center, Ballroom B

**Herman Skolnik Award Reception Honoring Dr. Evan Bolton & Dr. Steve Bryant**

6:30 to 8:30 PM, Loews Philadelphia Hotel, Howe

**BIOL Poster Session**

7:00 to 9:00 PM, Loews Philadelphia Hotel, Millennium Hall

**ENVR Dinner/SE-20/\$60**

7:30 to 9:00 PM, Ocean Prime, 124 South 15th St.

**ORGN Poster Session**

8:00 to 10:00 PM, Pennsylvania Convention Center, Hall D

**ChemLuminary Awards Poster Reception**

8:00 to 8:45 PM, Pennsylvania Convention Center, Terrace Ballroom I

**ChemLuminary Awards Ceremony**

9:00 to 10:00 PM, Pennsylvania Convention Center, Terrace Ballroom I

**ChemLuminary Awards Afterglow Party**

10:00 PM to midnight, Pennsylvania Convention Center, Terrace Ballroom I

**WEDNESDAY, August 24**

**Council Meeting**

6:00 AM to 1:00 PM, Philadelphia Marriott Downtown, Grand Ballroom Salon E/H

**Liberty Blue User Meeting**

7:30 AM to 3:00 PM, Philadelphia Marriott Downtown, Independence I/II

**Structure-Based Drug Design & Ligand Modification**

3:30 to 6:00 PM, Pennsylvania Convention Center, Room 304

**INOR Poster Session**

5:30 to 7:30 PM, Pennsylvania Convention Center, Hall D

**POLY/PMSE Award Lecture & Reception**

5:30 to 8:00 PM, Sheraton Philadelphia Hotel, Liberty Ballroom C/D

**AGRO Awards Social**

6:00 to 8:00 PM, Loews Philadelphia Hotel, Regency Ballroom B

**ENVR, PHYS & GEOC Poster Sessions**

6:00 to 8:00 PM, Pennsylvania Convention Center, Hall D

**MEDI & ORGN General Poster Social**

7:00 to 11:00 PM, Pennsylvania Convention Center, Hall E

**SUNDAY, August 21**

**High School Chemistry Teacher Program, 8:30 AM to 4:30 PM**

**High School Polymer Program, 8:30 AM to 5:00 PM**

For more information, contact the Office of High School Chemistry at education@acs.org or call 800-227-5558 ext. 2105

## STUDENT & TEACHER ACTIVITIES

Education-focused programs and specialty activities are being held for undergraduate students, graduate students, high school teachers, and chemical professionals. Explore these opportunities in-depth at [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016).

**Undergraduate Program.** A vibrant program designed especially for undergraduate students has been planned by the Society Committee on Education's Undergraduate Programs Advisory Board. This educational and career-oriented program includes technical symposia and workshops on essential skills for employment in chemistry and success in graduate school. Eminent scientist Tobin J. Marks, Vladimir N. Ipatieff Professor of Catalytic Chemistry at Northwestern University, will present "How to Make Plastic Transistors and Solar Cells."

### SUNDAY, August 21

**Undergraduate Hospitality Center,** 8:30 AM to 5:00 PM

**Undergraduate Research Oral Session,** 8:30 AM to 5:00 PM

**Networking Basics for Students,** (cosponsored by YCC and Professional Affairs) 9:00 to 10:15 AM

**Graduate School Reality Check, Step I: Getting In** (cosponsored by YCC), 10:30 AM to noon

**Graduate School Reality Check, Step II: You're In—Now What?** (cosponsored by YCC), noon to 1:30 PM

**Networking Social with Graduate School Recruiters,** 2:00 to 5:00 PM

**The Science behind Pixar** (cosponsored by YCC), 6:00 to 8:00 PM

### MONDAY, August 22

**Undergraduate Hospitality Center,** 8:30 AM to 5:00 PM

**Undergraduate Research Oral Session,** 8:30 AM to 5:00 PM

**Chemists Are Everywhere! The Spectrum of Careers in Chemistry,** 9:00 to 10:00 AM

**What It Means To Be "We the Chemists" Today,** 10:15 to 11:15 AM

**Eminent Scientist Lecture & Luncheon with Dr. Tobin J. Marks, Northwestern University** (cosponsored by INOR), 11:30 AM to 1:30 PM

**Undergraduate Research Poster Session** (cosponsored by CHED, AGFD, ENVR, INOR, MEDI, PHYS, POLY, GEOC, and BIOT), 2:00 to 4:00 PM

**Student Speed Networking with Chemistry Professionals,** 3:45 to 4:45 PM

**Sci-Mix/Successful Student Chapter Posters,** 8:00 to 10:00 PM

**GRADUATE & POSTDOCTORAL SCHOLARS OFFICE.** The Graduate & Postdoctoral Scholars Office, with support from the Graduate Education Advisory Board, provides and promotes programs and resources for graduate students and postdoctoral scholars.

### SUNDAY, August 21

**ChemIDP: Planning for Your Career,** 2:00 to 4:00 PM

**Faculty & Postdoc Afternoon Networking Coffee Break,** 4:00 to 6:00 PM

### MONDAY, August 22

**Student Speed Networking with Chemistry Professionals,** 3:45 to 4:45 PM

**Graduate & Postdoctoral Scholars Reception,** 7:00 to 8:30 PM

**Academic Employment Initiative (AEI),** 8:00 to 10:00 PM

For more information about these events and other ACS programs offered to graduate students and postdocs, visit [www.acs.org/grad](http://www.acs.org/grad) or contact the ACS Graduate & Postdoctoral Scholars Office at [GradEd@acs.org](mailto:GradEd@acs.org) or at 800-227-5558 ext. 4588.

**HIGH SCHOOL CHEMISTRY TEACHER PROGRAM.** The Division of Chemical Education and the ACS Education Division are sponsoring the High School Chemistry Teacher Program. It will include presentations on current pedagogies, resources, and activities that align with the meeting's theme, "Chemistry of the People, by the People, for the People." The High School-College

Interface Luncheon will bring together educators from all grade levels with the goal of facilitating an exchange of ideas and networking among teachers.

High school teachers can register for the program directly through Attendee Registration; the special registration fee includes course materials, lunch, access to the full ACS meeting (Sunday through Thursday), and entry to the exposition (Sunday through Tuesday). Attendees can track professional development (based on clock hours) for sessions attended at the ACS national meeting. Participants should fill out a form to receive a certificate documenting their participation in the conference.

### SUNDAY, August 21

**High School Chemistry Teacher Program,** 8:30 AM to 4:30 PM

**High School Polymer Program,** 8:30 AM to 5 PM

For more information, contact the Office of High School Chemistry at [education@acs.org](mailto:education@acs.org) or call 800-227-5558 ext. 2105.

## WORKSHOPS

The following workshops require a separate registration process and/or entry fee to participate in the event, as indicated in this listing. Participation is open to all interested registrants.

**Division of Chemical Health & Safety (CHAS)-sponsored workshop fees** (unless otherwise indicated). CHAS member: full registration \$375/early registration \$300; non-CHAS member: full registration \$425/early registration \$350. Early registration ends June 26. K-12 science teachers who are American Association of Chemistry Teacher members: \$99. Need-based scholarships are available for K-12 science teachers; contact [scholarships@lab-safetyinstitute.org](mailto:scholarships@lab-safetyinstitute.org).

Registration is required for all CHAS workshops. Register online at [dchas.org/workshop-registration-page](http://dchas.org/workshop-registration-page).

**Laboratory Safety.** Friday, August 19, 8:00 AM to 5:00 PM. Pennsylvania Convention Center. Sponsored by CHAS. Presenters: James Kaufman



and/or Jack Breazeale. This presentation on laboratory safety by the Laboratory Safety Institute has been attended by thousands of safety professionals. With experience in both industrial and academic laboratories, the presenters take a real-world approach to safety issues in the laboratory. Interactive demonstrations will teach you about issues such as creative wiring in the lab and how to work with administrators to keep a safe working environment. This workshop will provide a forum to speak openly about safety in your workplace.

**Laboratory Waste Management.** Friday, August 19, 8:00 AM to 5:00 PM. Pennsylvania Convention Center. Sponsored by CHAS. Presenter: Russ Phifer. This comprehensive course will identify the various regulatory requirements that apply to laboratories that generate hazardous waste, as well as provide insight to the options for on-site management and off-site disposal. The instructor will include discussion of recycling/reclamation techniques, economical handling of waste, and liability issues.

**Cannabis Extraction & Analysis.** Friday, August 19, 8:00 AM to 5:00 PM. Pennsylvania Convention Center. Sponsored by CHAS.

CHAS and CANN (Cannabis Chemistry Subdivision) present a comprehensive review of current methodologies and best practices in the analysis of cannabis products and extraction/processing of cannabis. Participants will learn the latest developments in extraction technologies, how to comply with testing standards, and how to operate safely.

**Chemical Reactivity Hazards: Laboratory-Scale Recognition & Control.** Saturday, August 20, 8:00 AM to 5:00 PM. Pennsylvania Convention Center. Sponsored by CHAS. Presenter: Neal Langerman. The Process Safety Alliance, in cooperation with the Occupational Safety & Health Administration, is presenting this workshop. The objective is to provide participants with the knowledge and skill to screen processes for potential hazards, to recognize when reactive hazards are present, and to implement appropriate controls to reduce the risk of an incident associated with the hazards. Workshop

attendees will review case studies of actual incidents and do screening examples to understand the screening and recognition process. Group discussions of control methods will allow participants to share their experiences and to evaluate methods for controlling reactivity risks.

**How To Be a More Effective Chemical Hygiene Officer.** Saturday, August 20, 8:00 AM to 5:00 PM. Pennsylvania Convention Center. Sponsored by CHAS. Presenter: Russ Phifer. Take a close look at the Chemical Hygiene Officer (CHO) position, and prepare at the same time for the CHO Certification exam, which will be held on Sunday, August 21, through the National Registry of Certified Chemists. The instructors provide a different slant to safety issues in the laboratory, focusing on what you do and how you can do it better. The course covers all of the content areas of the certification exam, including a sample test in the same format as the real one.

**Meeting New Chemical Safety Expectations in Instructional Laboratories.** Saturday, August 20, 8:00 AM to 5:00 PM. Pennsylvania Convention Center. Sponsored by CHAS. The 21st-century chemistry laboratory curriculum now includes discovery-based, research-style laboratory work in addition to traditional "cookbook" procedures. To ensure a safe working environment in laboratories using this emerging pedagogy, laboratory safety practices must also evolve away from a strict focus on safety rules to teach risk assessment and management practices. Fortunately, guidelines for this transition are outlined in the ACS guidelines for bachelor's degree programs, as well as the new NFPA 45-2015 standard.

To flesh out these ideas, this workshop will discuss the cultural context of lab safety concerns and then review and provide practice with job hazard analysis and control banding tools, as described in ACS's "Identifying and Evaluating Hazards in Research Laboratories" document. Finally, we will address how these tools can be used to address the new NFPA requirements for a documented hazard/risk assessment and a safety briefing to students in instructional laboratories.

This workshop will be valuable for chemical educators who teach chemistry, present chemical demonstrations, participate in community outreach activities, and/or provide oversight for undergraduate classes and research laboratories. There is extensive opportunity for questions both during the workshop and in follow-up.

**Career Launch & Acceleration for Postdoctoral Associates/COACH-the-COACHes Training.** Saturday, August 20, 8:00 AM to 5:00 PM. Sofitel Philadelphia. Sponsored by COACH. Learn how to assimilate fundamentals of responsible negotiation and communication skills. Attendees will examine the Best Alternative to a Negotiated Agreement (BANTA) concept as a tool to prepare and build confidence, as well as communication styles that are effective for women, projecting confidence, and using powerful rather than weak words. Discussions will focus on making the best impression in the job interview process, succeeding in the negotiating stage, and securing an academic appointment that will position you for career success. This workshop will be held concurrently with the "COACH-the-COACHes" workshop. Preregister at [coach.uoregon.edu](http://coach.uoregon.edu). Registration is free; travel assistance is available. For more information, contact Priscilla Lewis at [coach@uoregon.edu](mailto:coach@uoregon.edu) or by phone at 541-346-0116.

**Basics of Entrepreneurship & Commercialization of Research.** Saturday, August 20, 8 AM to 5:00 PM. Sofitel Philadelphia. Sponsored by COACH. Commercialization of research involves taking articles, documentation, know-how, patents, and copyrights created during research activities and getting them to the marketplace for financial and societal gain. This workshop will provide an overview of the basic pathways to commercialization, why an entrepreneur needs a minimum viable product (MVP), and the steps involved in customer and market validation. An overview of intellectual property options, legal issues associated with emerging ventures, team building, and creating and funding companies will be offered. Participants will also have the opportunity to examine their own

entrepreneurial mind-set and create a customized plan for developing their entrepreneurial capabilities.

**ACS PHYS Undergraduate Research Symposium.** Sunday, August 21, 8:00 AM to noon. Doubletree by Hilton Hotel Philadelphia Center City. This workshop will introduce students to the excitement of modern physical chemistry. PHYS symposium organizers or their designees will present 30-minute overview lectures providing technical and background context that will enable students to benefit from their attendance at subsequent physical chemistry symposia. This workshop is free and open to the public; no registration is necessary. Graduate-school-bound students are particularly encouraged to attend.

**Wikipedia Resources and Edit-A-Thon.** Wednesday, August 24. Pennsylvania Convention Center. Workshop on Wiki Education Foundation resources for incorporating Wikipedia assignments into university classrooms, 10:00 AM to noon. Student editors develop writing and research skills while expanding access to knowledge through Wikipedia. Edit-a-thon and training to improve coverage of notable chemists and chemistry topics on Wikipedia, 1:00 to 5:00 PM. Bring a laptop. Sponsored by the ACS Office of Public Affairs, Simons Foundation, Wiki Education Foundation, Division of

### CHAS NRCC CERTIFICATION EXAMS

**WHAT:** Certification exams of the National Registry of Certified Chemists

**WHEN:** Sunday, August 21, 8:00 AM to noon

**WHERE:** Pennsylvania Convention Center, Room 106B

**HOW:** Advance registration and completion (with approval) of application must be done before July 31. Applications may be downloaded from nrcc6.org.

For additional information, contact Russ Phifer by e-mail at rphifer@nrcc6.org.

Chemical Information, and Committee on Public Relations & Communications. Advance registration requested. Contact Keith Lindblom at k\_lindblom@acs.org or call 202-872-6214.



## ACS CAREER NAVIGATOR™

**ACS CAREER NAVIGATOR™** is your home for career services, leadership development, professional education, and market intelligence resources. We offer comprehensive and easily identified tools to help you to achieve your career goals by landing a new job, finding a new career path, comparing your salary, and viewing current trends in the chemistry enterprise to make more informed decisions.

Opportunities abound at the ACS national meeting in Philadelphia for career development. Take advantage of the resources and tools the ACS Career Navigator™ offers to help you succeed in the global scientific enterprise. Are you ready to get started? Refresh your skills and branch into new areas of emerging science and advanced applications with an ACS short course. Take an ACS Leadership Development System course to gain skills that can be immediately applied in school or on the job. If you are an ACS member, stop by the ACS Career Fair in the Pennsylvania Convention Center and speak to a personal career consultant or get a professional head shot taken. In short, whatever your career goals, the ACS Career Navigator™ is here to help you achieve and exceed them. We'll see you in Philadelphia.

### ACS CAREER FAIR

**JOB SEEKERS**, are you looking to jump-start your job search or enhance your professional development?

**EMPLOYERS**, are you looking to hire scientists and engineers? Then you need to attend the ACS Career Fair, open Sunday–Tuesday, Aug. 21–23, 9 AM to 5 PM. The career fair is the place where the best talent and the best employers in chemistry meet.

The ACS Career Fair provides on-site activities for job seekers to help them reach their career goals. ACS will help you prepare for your next career move by providing resources that make it possible to map out your personal job search strategy, strengthen your résumé, and build your interview skills, all with the support of career consultants. During the career fair, participants can take full advantage of the following:

- ▶ Networking opportunities
- ▶ Résumé reviews
- ▶ One-on-one career consulting
- ▶ Interview practice and skills building
- ▶ More than 30 career-related workshops
- ▶ Keynote speakers presented live and via webcast
- ▶ Live on-site interviews upon request

On-site job seekers must be ACS members who have registered for the national meeting and complete their career fair registration at [www.acs.org/careers](http://www.acs.org/careers) (pick up a career fair registration badge in the convention center beginning Sunday, August 21).

**Please note:** We cannot guarantee that you will secure interviews at the ACS Career Fair. Interviewing is strictly contingent on the availability of positions and the credentials and qualifications that employers are seeking.

**One-on-one career consulting.** Individual 30-minute appointments with career consultants are available both on-site and online. These consults can help you strengthen your résumé, improve your interviewing skills, and design a job search or comprehensive professional growth strategy. Please bring a copy of your résumé or CV to all appointments. All one-on-one on-site career consulting

sessions will take place in the Résumé Review/Mock Interview area in the ACS Career Fair. Sign-up begins at 9 AM on Sunday, Aug. 21, on a first-come, first-served basis.

**Career and professional development workshops.** More than 20 career-related workshops will help you with everything from improving your résumé, to optimizing job performance, to acing an interview. Workshop times are subject to change. Please consult the online workshop schedule at [www.acs.org/careerfair](http://www.acs.org/careerfair) for locations.

**SUNDAY, August 21**

**New Technologies to Find Jobs & Manage Your Career, 10:00 to 11:30 AM**

**Careers in Industrial Chemistry: Identifying Your Role in the Industrial Value Chain, 1:00 to 3:00 PM**

**Setting Yourself Up for Success in an Interview, 1:00 to 3:00 PM**

**Finding Yourself: Identifying a Career that Matches Your Strengths & Values, 1:00 to 4:00 PM**

**Foreign National Scientist: Obtaining a Job in the U.S., 1:30 to 3:00 PM**

**Writing Excellent Proposals, 3:30 to 5:00 PM**

**Making the Most of Your Interview: Outshine the Competition, 3:30 to 5:30 PM**

**Résumé Development: Marketing Your Brand for an Industrial Chemistry Position, 3:30 to 5:30 PM**

**Networking: How to Get Started, 4:30 to 5:30 PM**

**MONDAY, August 22**

**Opportunities for Chemists in the Federal Government, 8:00 to 10:00 AM**

**Working for Yourself, 8:00 AM to noon**

**Working in Higher Education, 8:00 AM to noon**

**How to Find & Apply for a Chemistry Position in the Federal Government, 10:30 AM to 12:30 PM**

**Careers in Industrial Chemistry: Identifying Your Role in the Industrial Value Chain, 1:00 to 3:00 PM**

**Setting Yourself Up for Success in an Interview, 1:00 to 3:00 PM**

**Finding Yourself: Identifying a Career that Matches Your Strengths & Values, 1:00 to 4:00 PM**

**Making the Most of Your Interview: Outshine the Competition, 3:30 to 5:30 PM**

**Résumé Development: Marketing Your Brand for an Industrial Chemistry Position, 3:30 to 5:30 PM**

**Networking: How to Get Started, 4:30 to 5:30 PM**

**TUESDAY, August 23**

**Careers in Industrial Chemistry: Identifying Your Role in the Industrial Value Chain, 8:00 to 10:00 AM**

**Setting Yourself Up for Success in an Interview, 8:00 to 10:00 AM**

**Finding Yourself: Identifying a Career that Matches Your Strengths & Values, 8:00 to 11:00 AM**

**Making the Most of Your Interview: Outshine the Competition, 10:30 AM to 12:30 PM**

**Résumé Development: Marketing Your Brand for an Industrial Chemistry Position, 10:30 AM to 12:30 PM**

**Networking: How to Get Started, 11:30 AM to 12:30 PM**

**Opportunities for Chemists in the Federal Government, 1:00 to 3:00 PM**

**Working for Yourself, 1:00 to 5:00 PM**

**Working in Higher Education, 1:00 to 5:00 PM**

**How to Find & Apply for a Chemistry Position in the Federal Government, 3:30 to 5:30 PM**

**WEDNESDAY, August 24**

**Careers in Industrial Chemistry: Identifying Your Role in the Industrial Value Chain, 8:00 to 10:00 AM**

**Setting Yourself Up for Success in an Interview, 8:00 to 10:00 AM**

**Finding Yourself: Identifying a Career that Matches Your Strengths & Values, 8:00 to 11:00 AM**

**Making the Most of Your Interview: Outshine the Competition, 10:30 AM to 12:30 PM**

**Résumé Development: Marketing Your Brand for an Industrial Chemistry Position, 10:30 AM to 12:30 PM**

**Networking: How to Get Started, 11:30 AM to 12:30 PM**

**Employers — Find the talent you need at the ACS Career Fair.** Leading employers around the world trust and depend on ACS to provide them with the talent they need to innovate and excel. At our last event, approximately 1,000 global job seekers — from recent grads to seasoned professionals — met with recruiters seeking to fill positions in all facets of chemistry, pharmaceuticals, and biotechnology.

The ACS Careers Jobs Database can help manage your employer account, post jobs, search for qualified candidates, and schedule career fair interviews. Moreover, participating in the ACS Career Fair enables you to accomplish the following:

- ▶ Connect with top talent via on-site interviews.
- ▶ Screen candidates, and make appointments in advance.
- ▶ Find the personnel your company needs to thrive, from entry- to executive-level positions.
- ▶ Meet qualified candidates informally via networking forums.
- ▶ Extend your presence for 30 days after the career fair via the ACS jobs database.

Looking for a more traditional career fair experience? Employers can purchase booth space inside the exposition hall, enabling your company to maximize its ability to showcase products and services and connect with job seekers. Employers can sign up for the ACS Career Fair Recruiters Row package online at [www.acs.org/careers](http://www.acs.org/careers).

Employers will receive an e-mail confirmation and must visit the ACS Career Fair Information Booth to pick up their blue badge. For more information, please visit [www.acs.org/careerfair](http://www.acs.org/careerfair). You can also contact Heather McNeill at 202-452-8918 or e-mail her at [h\\_mcneill@acs.org](mailto:h_mcneill@acs.org).



## ACS PROFESSIONAL EDUCATIONAL SHORT COURSES

**THE FOLLOWING SHORT COURSES**, specifically designed to improve the skills and marketability of chemical scientists and technicians, are offered in conjunction with the national meeting. ACS member, early registration, and group discount rates are available. A course fee and registration separate from the national meeting are required. For more information on ACS Short Courses, to obtain pricing details, or to view a full course catalog, visit [www.proed.acs.org](http://www.proed.acs.org). If you have questions, call 202-872-4508, fax 202-872-6336, or e-mail [proed@acs.org](mailto:proed@acs.org).

### ANALYTICAL

**1-D & 2-D NMR Spectroscopy: Structure Determination of Small-Molecule Organic Compounds**, August 19–20

**Analysis & Interpretation of Mass Spectral Data**, August 19–20

**Analytical Method Transfer of Pharmaceutical Products**, August 21

### BIOLOGICAL/PHARMACEUTICAL/MEDICINAL CHEMISTRY

**Application of Pharmacokinetics & Safety Pharmacology for Chemists in Drug Development**, August 19–20

**Essentials of Medicinal Chemistry & Pharmacology**, August 19–20

### COMPUTERS/STATISTICS/ENGINEERING

**Chemical Engineering for Chemists**, August 19–20

**Experimental Design for Productivity and Quality in Research & Development**, August 19–21

### ORGANIC/PHYSICAL CHEMISTRY

**1-D & 2-D NMR Spectroscopy: Structure Determination of Small-Molecule Organic Compounds**, August 19–20

**Dispersions in Liquids: Suspensions, Emulsions & Foams**, August 19–20

**Mastering the Art of Writing Reasonable Organic Reaction Mechanisms**, August 19–20

**Organic Synthesis: Methods & Strategies for the 21st-Century Chemist**, August 19–20

### POLYMER CHEMISTRY

**Polymeric Coatings**, August 19–20

**Polymer Science & Technology**, August 20–21

### PROFESSIONAL DEVELOPMENT

**Effective Technical Writing**, August 19–20

**Mastering the Art of Writing Reasonable Organic Reaction Mechanisms**, August 19–20

**Write Your Own Patent Applications**, August 21

### REGULATORY/ENVIRONMENTAL

**Intellectual Property Strategies for Technical Professionals**, August 21

**Methods Development, Validation Procedures & Regulatory Compliance Issues**, August 19–20

**Write Your Own Patent Applications**, August 21

**Highlights of FDA and Other cGMP Regulations**, August 21

**Essential Green Chemistry Tools and Techniques for Pharmaceutical Scientists**, August 24

## 2016 LEADERSHIP DEVELOPMENT SYSTEM COURSE OFFERINGS

**WHETHER YOU ARE** a manager, experienced professional, or new to the workforce, we invite you to attend an ACS Leadership Development System course held at the ACS national meeting. The following four-hour facilitated courses require a fee of \$150 each for ACS members and \$300 each for nonmembers. Register for these courses when you register for the meeting. For more information and full course descriptions, visit [www.acs.org/leadershipdevelopment](http://www.acs.org/leadershipdevelopment).

**Leading Change**. Sunday, August 21, 1:00 to 5:00 PM. If you are involved in shifting team priorities, changing the direction of a project, or reconfiguring teams, understanding how people react to change and how to help yourself and others effectively deal with the changes is a key to increasing your professional success. This four-hour course provides

you with a stepwise process to lead change and guide others more effectively through the change process.

### Collaborating Across Boundaries

Monday, August 22, 8:00 AM to noon. Do you work with people from other departments or from other countries? As the world becomes more complex, the ability to reach across boundaries to work on projects and share information is critical to organizational success. It's not just a matter of communication but of genuine collaboration—working in partnership to achieve common goals, create innovative solutions, and share expertise. Learn strategies and tools to be more effective in leading collaborative efforts, and gain practical skills that you can apply immediately in the lab, at school, in the office, or at ACS.

**Fostering Innovation**. Monday, August 22, 1:00 to 5:00 PM. Keeping pace in an environment of constant change requires innovation. Whether you are part of a nonprofit, business, or academic environment, the ability to contribute to the creation of new ideas, new processes, and new approaches is a key to success. Coming up with new ideas is challenging, and few of us have the tools and skills to do this effectively. This course will teach a proven, systematic process to generate ideas. You will learn your innovation style and how to stimulate innovative thinking among team members and colleagues.

**Strategic Planning**. Tuesday, August 23, 8:00 AM to noon. Gain understanding of the structure and contents of a strategic plan as well as the impact that strategy has on your work and an organization's success. You will learn how to become a "partner in planning" with other leaders as you develop a plan for your unit that aligns with the executive-level strategic goals.

## EXPOSITION

**SEE WHAT'S NEW INSIDE THE EXPOSITION**. Visit the ACS National Exposition at the Pennsylvania Convention Center (PACC), Halls A/B, from Sunday, August 21, through Tuesday, August 23. The show hours will be Sunday, 6:00 to 8:30 PM, and Monday and Tuesday, 9:00 AM to 5:00 PM.

Companies will showcase services, instruments, books, computer hardware, scientific software, and an array of chromatographic, lab, and safety equipment. Technical personnel will give demonstrations, answer questions, and discuss your needs and interests.

You can also visit the ACS Career Fair Recruiters Row inside the exposition, where employers will showcase their products and services. Also, join us at the ACS booth in the middle of the exposition floor, where ACS staff members will present the many benefits, services, products, and merchandise offered by ACS.

**Online Exposition.** The online exposition is a component within the exhibitor directory that enables attendees to view videos, press releases, brochures, and flyers of participating exhibitors. Access the online exposition at [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016) to learn more about exhibiting companies and download product information that meets your needs.

**Free Exhibitor Workshops.** Free workshops will be hosted by exhibitors on the exposition floor and in private rooms inside PACC. These workshops will introduce new products and services, build skills with specific tools and techniques, and highlight innovative applications that may improve your productivity. Visit the exhibiting company at their booth to reserve your seat.

**Presentations & Special events.** Join us on Sunday from 6 to 8:30 PM for the attendee welcome reception. Also, visit the town center inside the exposition to view poster sessions and connect with colleagues. Have an afternoon break while meeting the ACS president-elect candidates inside the exposition on Monday from 1:00 to 3:00 PM. Watch for tweets to visit the exposition for special prizes from Monday through Tuesday, then take another afternoon break on Tuesday from 3:00 to 5:00 PM and visit the exhibitors before the exposition closes.

**Internet & Technology.** Get free internet access and leave messages for one another at the meeting mail terminals inside the town center. Enjoy free Wi-Fi service at designated areas in PACC.

**Admission Requirements & Expo-only Registration.** Exposition admission is complimentary for all national meeting registrants; however, you are required to wear your badge. Individuals who want to visit the exhibits without registering for the technical component of the national meeting can obtain an expo-only badge for \$50. Students with school identification can obtain an expo-only badge for \$25. Registration can be handled online or in person at ACS attendee registration in PACC, Grand Hall, and at our satellite registration areas at the Sheraton Philadelphia Downtown Hotel and Sonesta Philadelphia Downtown.

## EXHIBITOR WORKSHOPS

**EXHIBITING COMPANIES** will host free education sessions for attendees that will introduce new products and services, build skills with specific tools and techniques, and highlight innovative applications for existing instrumentation. Visit the exhibiting company at their booth to register.

### SUNDAY, August 21

**Flow Chemistry Seminar.** *Sponsor:* ThalesNano Nanotechnology, 3:30 to 6:00 PM, PACC, Room 303. Flow Chemistry Seminar featuring industry legends. The meeting is dedicated to the integration of flow chemistry into everyday practice throughout the world by delivering the latest knowledge and making it available for the entire chemistry community.

### MONDAY, August 22

**Identify Unknown Compounds Confidently with Wiley Spectra Lab.** *Sponsor:* Wiley, 9:30 AM to noon, PACC, Exhibit Halls A/B, Exhibitor Workshop Room 1. Join us on Monday, August 22, at 10:00 AM at Exhibitor Workshop Room 1 to learn how Wiley Spectra Lab can help you identify unknown compounds with confidence. With over 2.2 million spectra, Wiley Spectra Lab is the largest and broadest collection commercially available, powered by KnowItAll AnyWare, a fast, advanced analytical platform. Its advanced search features enable rapid and accurate searching of spectral data that far exceeds the performance of most

commercially available software. In this session we will cover Wiley Spectra Lab Cloud Service, Desktop, Server and, QC expert.

**Safeguard Your Career by Learning the Dos & Don'ts of Data Analysis & Reporting.** *Sponsor:* *Journal of Biological Chemistry* (ASBMB), 9:30 AM to noon, PACC, Exhibit Halls A/B, Exhibitor Workshop Room 2. It seems like every other day there's another story in the news about a researcher manipulating data or otherwise misleading the scientific community and the public. Even though the vast majority of researchers are ethical and do their due diligence, institutions and publishers are intensifying their efforts to prevent the fraud and honest or rookie mistakes that can derail researchers' careers. Still, though, many scientists have a hard time distinguishing between, for example, acceptable and unacceptable enhancements to manuscript figures.

*The Journal of Biological Chemistry* presents a discussion about what *JBC* editors look for when it comes to data analysis and reporting.

**Green Cards for Scientific Researchers: How To Apply for & Win Your EB-1/NIW Case!** *Sponsor:* Getson & Schatz, 9:30 AM to noon, PACC, Room 303. Leading U.S. immigration lawyer Brian Getson, 1995 University of Pennsylvania Law School graduate, will explain how foreign researchers can apply for green cards in the U.S. Mr. Getson has represented scientific researchers around the world for 20 years and provides a money-back guarantee to most qualified applicants. At this workshop, Mr. Getson will give a one-hour presentation and then hold a Q&A session. In addition, Mr. Getson and other lawyers from his law firm will be providing free consultations at Booth 820 throughout the conference and a lightning talk for international job seekers at the Career Fair on Tuesday, August 23, at 10:00 AM.

**Good Chromatography Habits Workshop at ACS.** *Sponsor:* Agilent Technologies, 12:30 to 3:00 PM, PACC, Exhibit Halls A/B, Exhibitor Workshop Room 1. Agilent will host an educational workshop on improving your chromatography and mass spectrometry results. This workshop will provide you

with valuable tools for achieving better chromatographic results. Whether or not you have an Agilent LC or GC, this seminar is designed to get you the highest performance from your system. Agilent scientists will present on some of the latest solutions, including sample prep, GC, and HPLC. They will also discuss how to understand your sample chemistry to achieve optimum results. Bring your questions, as there will be time to discuss one-on-one with application scientists after the workshops.

**Graphing & Analysis using Origin 2016.** *Sponsor:* OriginLab Corp., 12:30 to 3:00 PM, PACC, Exhibit Halls A/B, Exhibitor Workshop Room 2. This workshop will focus on graphing and data analysis using Origin 2016. The first half of the workshop will cover creating and customizing 2-D, 3-D, and specialized graph types, exporting and publishing graphs, saving templates and themes for repeat use, and batch plotting. The second half will cover data analysis including curve fitting, peak analysis, statistics, and batch analysis. Installing apps from our file exchange site will also be covered. A free two-month license for the latest version will be provided to all registered attendees.

**Structure Verification & Elucidation by NMR: Software Tools for the Chemist.** *Sponsor:* Bruker, 12:30 to 3:00 PM, PACC, Room 303.

*Part I:* Short Introduction to NMR Methods for Structure Analysis of Small Organic Molecules. We will discuss the structural information that can be obtained from different NMR experiments.

*Part II:* CMC-se Structure Elucidation. The second part of the workshop will introduce the participant to the features and use of our computer-assisted structure elucidation program. The presentation will cover the required experiments and feature both simple and complex examples.

*Part III:* CMC-assist Structure Verification. In the last part of the workshop, we will present the features and use of Bruker's structure verification software. The topics covered will include basic verification based on 1-D  $^1\text{H}$  spectra and advanced verification with the use of  $^1\text{H}$ - $^{13}\text{C}$  HSQC and

HMBC data. We will also include user interaction with the results and configuration of reports.

**ACS Publications Focus Group.**

*Sponsor:* ACS Publications, 3:30 to 6:00 PM, PACC, Room 303. Focus group for ACS Publications outreach.

**TUESDAY, August 23**

**CAS Solutions.** *Sponsor:* CAS, 9:30 AM to noon, PACC, Exhibit Halls A/B, Exhibitor Workshop Room 1. Information on new and current CAS solutions.

**Wiley Author & Editor Exchange.**

*Sponsor:* Wiley, 9:30 AM to noon, PACC, Exhibit Halls A/B, Exhibitor Workshop Room 2. The Wiley Author & Editor Exchange allows authors to have a 15-minute one-on-one meeting with a Wiley journal editor. Sessions are intended to be intimate discussions focused on each author's individual questions & challenges when getting his or her paper ready for submission. Authors are encouraged to bring their manuscript draft, abstract, or proposal to receive expert advice from the editor.

Editors include Dr. Matteo Cavalleri, editor-in-chief, *International Journal of Quantum Chemistry*; professor Charles L. Brooks III, editor, *Journal of Computational Chemistry*; Dr. Natalia Ortúzar, publisher; Dr. Haymo Ross, editor, *European Journal of Organic Chemistry*, deputy editor, *Angewandte Chemie*; Xin Su, associate editor, *Advanced Materials*, *Small*, *Journal of Polymer Science Part A: Chemistry*, and *Journal of Applied Polymer Science*; Samantha Foskett, publisher; and Jenny Mahoney, editor-in-chief, *Journal of Polymer Science Part B: Polymer Physics*.

Contact Rachel Zawada (rzawada@wiley.com) for information about registering.

**Compact Mass Spectrometry: A**

**User's Perspective.** *Sponsor:* Advion, 9:30 AM to noon, PACC, Room 303. Advion's Expression compact mass spectrometer (CMS) is a versatile, single-quadrupole mass spectrometer that connects with a variety of inlet techniques. Its design is meant to be robust, reliable, and easy to use. Dur-

ing this workshop, attendees will hear from a variety of application areas about how the CMS has solved their chemistry workflow challenges.

**Spectroscopy Foundations to**

**Futures.** *Sponsor:* Thermo Scientific, 9:30 AM to noon, PACC, Room 304.

This workshop is designed to improve your spectroscopy knowledge and skills. See the latest instrumentation in action, and get your questions answered live.

**German R&D in Chemistry.** *Sponsor:*

Research in Germany, 12:30 to 3 PM, PACC, Exhibit Halls A/B, Exhibitor Workshop Room 1. Promotion of Germany as an excellent place for research in chemistry in both the academic and private sectors.

**Reverse Engineering of Materials & Polymers Using Infrared & Raman**

**Spectroscopy.** *Sponsor:* Bruker, 12:30

to 3:00 PM, PACC, Exhibit Halls A/B, Exhibitor Workshop Room 2. Vibrational spectroscopy will be presented as an important tool in determining the chemical composition of unknown materials and compounds with the goal of reducing or even eliminating the product development cycle. The following topics will be explored:

- ▶ The product development process
- ▶ Product disassembly and analysis
- ▶ The role of FTIR and Raman micro-analysis
- ▶ Chemical imaging and depth profiling
- ▶ The identification of unknowns

Molecular spectroscopy (infrared and Raman) is among the most powerful tools in the reverse-engineering process. Each molecule has a unique infrared and Raman signature, providing great specificity in the identification process. The distribution of components can also be determined by collecting area infrared and Raman images of the product in question. Examples will be shown demonstrating the reverse-engineering process using infrared and Raman spectroscopy, including a live demonstration. Attendees are encouraged to bring samples of interest for analysis.



**Accelerating Innovation in Analytical Approaches.** *Sponsor:* Thermo Scientific, 12:30 to 3:00 PM, PACC, Room 304.

*Part I:* Ion Chromatography (IC) Overview and Application, 12:30 to 1:30 PM. Discover the advantages of IC and the breadth of samples that can be analyzed. Learn about IC refinements, including column chemistry, electrolytically regenerated suppression, just-add-water reagent generation, high-pressure IC, and consumables device monitoring.

*Part II:* Quality ICP-MS Results with Advanced Simplicity, Unmatched Productivity, 1:30 to 2:30 PM. Experi-

ence the ease with which elemental analysis at ultratrace levels in varying matrices can be performed using comprehensive interference removal, advanced automation, simple method development, and complete data management with the Thermo Scientific iCAP RQ ICP-MS.

*Part III:* IC and ICP-MS: Robust Speciation Analysis, 2:30 to 3:00 PM. Speciation analysis provides information on the chemical form (species) of elements of interest and is fast becoming an essential discipline in health-related applications and global legislations. Is your lab keeping up?

### **WEDNESDAY, August 24**

**Structure-Based Drug Design & Ligand Modification.** *Sponsor:* Chemical Computing Group, 3:30 to 6:00 PM, PACC, Room 304. The course covers applications for interactive structure-based design. Examples include active site visualization, protein-ligand contact analysis, and ligand modification/optimization in the receptor pocket. Conformational searching and analysis of the ligand to assess ligand flexibility will be discussed. A protocol for aligning and superposing protein complexes in the context of protein selectivity will be studied.

# 252nd American Chemical Society National Meeting & Exposition

August 21 – 25, 2016 • Philadelphia, PA



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## Chemistry of the People, for the People, by the People Plenary Session

Sunday, August 21, 2016, 3:00 – 6:00 PM  
Pennsylvania Convention Center, Ballroom B



Chemistry of the People, by the People, for the People Thematic Program organized by Rudy M. Baum, freelance science writer and the retired editor-in-chief of *Chemical & Engineering News*, the weekly news magazine published by the American Chemical Society.



### Kimberly Prather

Distinguished Chair in Atmospheric Chemistry, Director, Center for Aerosol Impacts on Climate and the Environment, University of California, San Diego  
*The Chemical Link Between Our Oceans, Clouds, and Climate*



### Rolf Halden

Professor in the School of Sustainable Engineering and the Built Environment, and Founding Director of the Biodesign Institute's Center for Environmental Security (CES), the Biodesign CES Fee-for Service Mass Spectrometry Facility, and the Human Health Observatory (HHO) and National Sewage Sludge Repository (NSSR) at Arizona State University.

*Urban Metabolism Metrology: A New Discipline Elucidating the Human Condition in Cities Around the World*



### Dr. Willie May

Under Secretary of Commerce for Standards & Technology and Director, National Institute of Standards & Technology

*Metrology: A Catalyst for Change*  
*How Better Measurements Enable a Better Future*



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## Kavli Foundation Lecture Series

The Kavli Foundation Lecture Series promotes groundbreaking discovery and public understanding of the world's mounting challenges and how chemistry can provide solutions.

### The Kavli Foundation Emerging Leader in Chemistry Lecture



Pennsylvania Convention Center, Ballroom B  
Monday, August 22, 2016  
4:00 – 5:10 PM  
Dr. Omar Farha, Northwestern University

#### ***Biinspired Sponges: Metal-Organic Frameworks for Combating Nerve Agents and Toxic Gases***

Metal-organic frameworks (MOFs) are an extraordinary class of solid-state materials. This talk will address the catalytic activity of such MOFs in the catalytic degradation/detoxification of the nerve agent simulants, agents (GD and VX), and gases (mustard simulant).

### The Fred Kavli Innovations in Chemistry Lecture



Pennsylvania Convention Center, Ballroom B  
Monday, August 22, 2016  
5:15 – 6:30 PM  
Dr. Chad A. Mirkin, Northwestern University

#### ***Establishing a Genetic Code for Unnatural Materials***

In Nature, nucleic acids are the codes within cells that direct the formation of proteins that are the building blocks for life. Over the past two decades, rules have been established to use synthetic forms of nucleic acids, when coupled to nanoparticle architectures, to program the formation of highly ordered crystalline materials capable of catalyzing important chemical reactions, manipulating light-matter interactions, investigating energy transfer between nanostructures, and improving our fundamental understanding of crystallization.



The American Chemical Society gratefully acknowledges The Kavli Foundation's generous support for The Fred Kavli Innovations in Chemistry Lecture and The Kavli Foundation Emerging Leader in Chemistry Lecture.





## 252nd American Chemical Society National Meeting & Exposition



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### UNDERGRADUATE PROGRAM

#### Sunday, August 21

##### Hospitality Center

8:30 am – 5:00 pm

*Sheraton Philadelphia Downtown Hotel, Liberty Ballroom D*

##### Undergraduate Research Oral Sessions

8:30 am – 5:00 pm

*Pennsylvania Convention Center, Room 204A*

##### Networking Basics for Students

*Cosponsored by PROF & YCC*

9:00 – 10:15 am

*Sheraton Philadelphia Downtown Hotel, Liberty Ballroom B*

##### Graduate School Reality Check, Pt 1 – Getting In

*Cosponsored by YCC*

10:30 am – 12:00 pm

*Sheraton Philadelphia Downtown Hotel, Liberty Ballroom B*

##### Graduate School Reality Check, Pt 2 – You're In, Now What?

*Cosponsored by YCC*

12:00 – 1:30 pm

*Sheraton Philadelphia Downtown Hotel, Liberty Ballroom B*

##### Networking Social with Graduate School Recruiters

2:00 – 5:00 pm

*Sheraton Philadelphia Downtown Hotel, Liberty Ballroom C/D*

##### The Science Behind Pixar

*Cosponsored by YCC*

6:00 – 8:00 pm

*Franklin Institute Science Museum, 222 N. 20th St. (off-site)*

*All events are sponsored or cosponsored by the Society Committee on Education Undergraduate Programs Advisory Board*

CHAIR: Michael R. Adams, Xavier University of Louisiana  
PROGRAM CHAIR: Michelle Boucher, Utica College, NY

#### Monday, August 22

##### Hospitality Center

8:30 am – 5:00 pm

*Sheraton Philadelphia Downtown Hotel, Liberty Ballroom D*

##### Chemists Are Everywhere! – The Spectrum of Careers in Chemistry

9:00 – 10:00 am

*Sheraton Philadelphia Downtown Hotel, Liberty Ballroom C*

##### What It Means To Be “We the Chemists” Today

10:15 – 11:15 am

*Sheraton Philadelphia Downtown Hotel, Liberty Ballroom C*

##### Eminent Scientist Luncheon and Lecture *featuring* Dr. Tobin J. Marks, Northwestern University, “How to Make Plastic Transistors and Solar Cells”

*Cosponsored by INOR*

11:30 am – 1:30 pm

*Sheraton Philadelphia Downtown Hotel, Liberty Ballroom D*

##### Undergraduate Research Poster Session

2:00 – 4:00 pm

*Philadelphia Convention Center & Exhibition Center - HALL D/E*

##### Student Speed Networking with Chemistry Professionals

3:45 – 5:15 pm

*Pennsylvania Convention Center – Hall G*

##### The Fred Kavli Foundation Innovation in Chemistry Lecture

5:15 – 6:30 p.m.

*Pennsylvania Convention Center, Ballroom B*

##### Sci-Mix/Successful Student Chapter Posters

8:00 – 10:00 pm

*Pennsylvania Convention Center, Hall D/E*

Times and events subject to change. To view the latest updates to the Undergraduate Program, go to [www.acs.org/UndergradMeetingInfo](http://www.acs.org/UndergradMeetingInfo).

## SPEAKER INSTRUCTIONS

**ALL SPEAKERS** and poster presenters must register and pay the appropriate registration fee to attend the meeting. Invited speakers should contact their symposium organizer or division program chair to clarify terms of their invitation.

All presenters should prepare for their presentation by verifying the following details: the status of their abstract at [abstracts.acs.org](http://abstracts.acs.org) (using your ACS ID to log in to the system); mode of presentation (oral or poster); and the time, length, and location of their presentation. Speakers should arrive in their presentation rooms at least 30 minutes before their scheduled speaking time. Poster presenters should set up their poster at least one hour before the start of their poster session. If you need to withdraw your presentation, please send a withdrawal notice to [maps@acs.org](mailto:maps@acs.org) and contact your symposium organizer immediately.

**TECHNICAL SESSION EQUIPMENT.** Each technical session meeting room will be equipped with the following: LCD projector, screen, podium microphone or lapel microphone, and laser pointer. Speakers need to provide their own laptops or arrange for specialty equipment directly with their symposium organizer and/or division program chair. To request other specialty equipment (at the standard fee), contact an ACS Operations Office during the meeting.

**SPEAKER READY ROOMS & AUDIO-VISUAL SERVICE CENTERS.** Presenters may use the speaker ready rooms to preview their presentation, ensure compatibility with our LCD projectors, or fulfill last-minute audiovisual equipment orders. We strongly recommend that all presenters come to the speaker ready room the day before their presentation to check for connectivity and resolution. The hours of operation will be from

3:00 to 5:00 PM Saturday and 7:00 AM to 6:00 PM Sunday through Thursday. Visit the ACS Operations Office at any ACS property for speaker ready room locations. Speaker ready rooms are not equipped with copy machines. There is a business center located on the 200 level between Halls A and B of the Pennsylvania Convention Center that provides a range of services including copying, incoming and outgoing faxes, computer access, laser printing, and shipping.

**POSTER SESSIONS.** All materials must be confined to a 4-foot-high by 8-foot-wide display board in the convention center and a 4-foot-high by 6-foot-wide display board in hotels. Presenters must mount their poster one hour before the scheduled session start time. Poster numbers supplied by ACS will be in the upper corner of each poster board; this number corresponds with the number assigned to each poster in the technical program. Pushpins will be available at the poster session. Presenters must remain with their posters for the duration of their scheduled session as indicated in the technical program. All posters must remain up until the session ends and then must be removed within one hour. ACS cannot assume responsibility for materials beyond these time limits.

**SCI-MIX POSTER SESSION ONLY.** A soft open for presenters to enter SciMix will be at 7:30 PM, and all presenters will be responsible for their posters after mounting. SciMix will officially open to all attendees at 8:00 PM. There will be no access to alcoholic beverages and popcorn until 8:00 PM. Each presenter may be accompanied by one assistant only, and both people are required to arrive together when entering the hall. After exiting, presenters will not be permitted to reenter the hall until the session begins at 8:00 PM.

## ABSTRACTS & PREPRINTS

**ONLINE TECHNICAL PROGRAM.** The technical program for the 252nd ACS National Meeting is now available at [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016). You can search by divisions or committees, symposia, speakers, or keywords from abstracts as well as presidential events and the multidisciplinary theme of "Chemistry of the People, by the People, for the People."

### ABSTRACTS (USB FLASH DRIVE).

Abstracts of all scientific sessions at the meeting can be purchased in USB flash drive (thumb drive) format through ACS Attendee Registration either online before June 29 or on-site in Philadelphia from August 21 to 25. The ACS member fee is \$65 each; the nonmember fee is \$90 each. Attendees can pick up their abstracts on-site at ACS Attendee Registration at the Pennsylvania Convention Center. You can have a USB flash drive shipped to you if you place your order before June 29, pay an \$8.00 postage fee per item, and provide a valid street address within the U.S. If you are not attending the meeting, you can purchase abstracts only from the ACS Office of Society Services, 1155 16th St., N.W., Washington, D.C. 20036; 800-227-5558. Abstract USB flash drives and their shipping costs are nonrefundable.

### PREPRINTS/GRAPHICAL ABSTRACTS.

Preprints and graphical abstracts from the following divisions may be ordered directly from each division. You can purchase them via the information below or inquire about these products at the hospitality table for each division near their meeting rooms.

**ENERGY & FUELS.** Visit [proceedings.com/2256.html](http://proceedings.com/2256.html)

**POLYMER CHEMISTRY.** Kathy Mitchem, e-mail: [kathyi@vt.edu](mailto:kathyi@vt.edu)



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# TECHNICAL PROGRAM SUMMARY

## Presidential Events

PRES

D. Nelson, Program Chair

Philadelphia Marriott Downtown/ Pennsylvania Convention Center	S	M	Tu	W	Th
Chemical Sciences & Human Rights**	A				
Citation for Chemical Breakthrough Award to Rice University: Symposium Honoring Robert Curl**	A				
Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation**	P	A			
Building International Communities**	P				
Fracking: Economics vs. Environment**		A			
Broadening Participation in Global Chemistry Experiences: Why Engaging Diverse Chemistry Communities in Global Research Is Critical**			P		
NSF Opportunities		P			
Chemical Business of the People, by the People, for the People** CPPP			D		
Forensics: The Crossroads of Science, Policy & Justice* (COMSCI)		A			
Using New Media to Communicate Chemistry to the Public* (CINF)		P			
Crafting Chemical Communication* (CHED)			D		
Chemists & the Public: What Research Shows about Engagement & Communication *(MPPG)			P		

## Multidisciplinary Program Planning Group

MPPG

R. Baum, Program Chair

Pennsylvania Convention Center	S	M	Tu	W	Th
Chemistry of the People, by the People, for the People Plenary Session CPPP	P				
2016 C&EN Talented 12		A			
The Kavli Foundation Emerging Leader in Chemistry Lecture		P			
The Fred Kavli Innovations in Chemistry Lecture		P			
Nanoscience & Nanotechnology for Human Health, Repair & Safety		P			

## Multidisciplinary Program Planning Group (continued)

MPPG

R. Baum, Program Chair

Pennsylvania Convention Center	S	M	Tu	W	Th
Addressing the Facts Behind the Fear of Exposure to Chemicals that Threaten Human Reproduction**			A		
Chemists & the Public: What Research Shows about Engagement & Communication			P		
Innovative Chemistry & Materials for Electroenergy Production & Storage* (ENFL)	A	P	D	D	A
Water-Energy Nexus* (ENFL)	A				
Low-Temperature Catalysis* (CATL)	A				
Solar Fuels: Power to the People* (ENFL)	D	A			
Biomass* (ENFL)	D	D			
Unconventional Energy on Heavy Oil & Shale Gas* (ENFL)	D				
Degradation of Materials for Energy & Fuel Production* (ENFL)	D				
Analyzing & Controlling Cell-Material Interactions* (ANYL)	D				
Chemical Microscopy for In Situ & In Vivo Molecular Analysis* (ANYL)	D				
Mobilizing Chemistry Expertise to Solve Humanitarian Problems* (ANYL)	D				
Small Molecules Activated by Homogeneous Metal Catalysts* (CATL)	D				
Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation* (PRES)	P	A			
Novel Materials for Gas Separation, Storage & Utilization* (ENFL)	P	D			
Forced Degradations in the Pharmaceutical Industry* (ANYL)		A			
Mass Spectrometry for the Masses: Recent Developments in Mass Spectrometry-Enabled Pharmaceutical Discovery, Development & Manufacturing* (ANYL)		A			
All the People, All the Paths in the Chemical Sciences* (WCC)		A			
Forensics: The Crossroads of Science, Policy & Justice* (COMSCI)		A			

PROGRAM SUMMARY

**Multidisciplinary Program Planning Group (continued)** **MPPG**

*R. Baum, Program Chair*

Pennsylvania Convention Center	S	M	Tu	W	Th
Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives* (CATL)		D	D	D	
Chemistry of the People, by the People, for the People* (CHED)		D	D		
Chemistry Data for the People: From Policy to Practice* (CINF)		D			
Chemistry for the People: Reflections from Perkin Medalists* (CHED)		D			
Advances in Chemistry of Energy & Fuels* (ENFL)		P	D	D	
Using New Media to Communicate Chemistry to the Public* (CINF)		P			
ACS Award for Encouraging Disadvantaged Students into Careers in the Chemical Sciences: Symposium in Honor of Luis A. Colón* (ANYL)		P			
Computational Chemistry for Energy Application* (ENFL)			D	A	
Impacts of Nanotechnology & Single-Molecule Spectroscopy in Biology & Medicine* (ANYL)			D	D	
Chemical Business of the People, by the People, for the People* (PRES)			D		
Basic Research toward Translational Point-of-Care Devices* (ANYL)			P		
Progress in Coal to Liquids & Gases* (ENFL)				A	
Energy Storage Applications of Ammonia: Synthesis, Storage, Safety & Utilization* (CATL)				A	
CO <sub>2</sub> Reduction: Electrocatalysis* (CATL)				D	
Citizens First! Using Real-World Contexts for Engaging Students in Learning Chemistry* (CHED)				D	

**Academic Employment Initiative** **A E I**

*C. Kuniyoshi, N. Bakowski, Program Chairs*

Pennsylvania Convention Center	S	M	Tu	W	Th
Academic Employment Initiative		E			

**Division of Agricultural and Food Chemistry** **AGFD**

*N. Seeram, Program Chair*

Pennsylvania Convention Center	S	M	Tu	W	Th
Recent Advances in Functional Biopolymers	A				
General Papers	D		D	A	D
Flavor Stability: Chemical Changes in Flavor Molecules, Flavor-Food Matrix Interactions, Flavor Encapsulation	P	D			
General Posters	E				
Challenges in Flavor Chemistry Associated with Developing Healthy Foods & Beverages		D			
Chemistry behind Health Effects of Grains		D			
Sci-Mix		E			
AGFD Division Award			A		
USDA-ARS Sterling B. Hendricks Memorial Lectureship: Symposium in Honor of May Berenbaum**			A		
Chemistry, Safety & Technology of GMO Foods**			D	D	
Kenneth A. Spencer Award for Outstanding Achievement in Agricultural & Food Chemistry**			D		
International Student Symposium			P	D	D
Natural & Biobased Antimicrobials for Food Applications				D	A
High-Resolution Mass Spectroscopy Techniques for Identification & Quantification of Phytochemical Metabolites				P	
Glyphosate: Current Status & Future Prospects* (AGRO)	P	D	P		
Advances in Residues Analysis of Bee-Relevant Matrices: Analytical Methods & Sampling Techniques* (AGRO)	P				
Extraction Efficiency: Bridging between Metabolism Studies & Residue Analytical Methods* (AGRO)	P				
Synthetic Biology & Genetically Modified Organisms* (ENVR)		D			
Pollinators: Agrochemicals, Behavior & Disease* (AGRO)		P			
Undergraduate Research Posters* (CHED)		P			
Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches* (AGRO)			D		

## PROGRAM SUMMARY

### Division of Agricultural and Food Chemistry

AGFD

*N. Seeram, Program Chair*

Pennsylvania Convention Center	S	M	Tu	W	Th
Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges* (AGRO)			D		
Who Should Regulate Pesticides in Our Food?* (AGRO)				D	D

### Division of Agrochemicals

AGRO

*J. Gan, Program Chair*

Loews Philadelphia Hotel	S	M	Tu	W	Th
Emerging Mass Spectrometry Trends in Support of Agricultural Research & Development**	A				
Good Laboratory Practices for the Agrochemical Professional**	A				
Innovative Approaches in Designing Agrochemical Metabolism Studies**	A				
Terrestrial Field Dissipation Studies**	A				
Natural Products as Biorational Pesticides in Agriculture	D	P			
Glyphosate: Current Status & Future Prospects**	P	D	P		
Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations**	P	D	P		
Advances in Residues Analysis of Bee-Relevant Matrices: Analytical Methods & Sampling Techniques**	P				
Extraction Efficiency: Bridging between Metabolism Studies & Residue Analytical Methods**	P				
Ion Channels & G Protein-Coupled Receptors: Dr. Yoshihisa Ozoe, ACS International Award for Research in Agrochemicals		D	A		
Neonicotinoid Insecticides: Use, Fate & Effects**		D			

### Division of Agrochemicals (continued)

AGRO

*J. Gan, Program Chair*

Loews Philadelphia Hotel	S	M	Tu	W	Th
Environmental Fate, Transport & Modeling of Agriculturally Related Chemicals**				D	
Controlling Zika Vector Mosquitoes				D	
Innovations in Agrochemical Mode-of-Action Studies & the Impact of Global Human Health Requirements					A
Innovations in Human Health Exposure & Risk Assessment**					A
Subsurface Fate of Pesticides**					A
Advances in Agrochemical Metabolism & Metabolomics**					P
Nanotechnology for Sustainable Agriculture & Food Systems* (ENVR)	A				E
Advances & Challenges in Food-Energy-Water Nexus* (ENVR)		D			E
Synthetic Biology & Genetically Modified Organisms* (ENVR)		D			
Combined Biological-Chemical Reactions for Contaminant Transformation* (ENVR)				A	E
USDA-ARS Sterling B. Hendricks Memorial Lectureship: Symposium in Honor of May Berenbaum* (AGFD)				A	
Chemistry, Safety & Technology of GMO Foods* (AGFD)				D	D
Kenneth A. Spencer Award for Outstanding Achievement in Agricultural & Food Chemistry* (AGFD)				D	
Microbial & Molecular Tools to Determine the Fate & Biotransformation of Emerging Contaminants* (ENVR)					D
Advances in Understanding Antibiotics, Antibiotic Resistance Genes & Antibiotic-Resistant Bacteria in Engineered & Natural Environments* (ENVR)					E D
Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment* (ENVR)					E D
Bioanalytical Tools for Chemicals of Emerging Concern in the Environment* (ENVR)					A

\*Cosponsored symposium with primary organizer shown in parentheses; located with primary organizer.

\*\*Primary organizer of a cosponsored symposium.

CPPP: Chemistry of the People, by the People, for the People

A = AM AE = AM/EVE P = PM D = AM/PM

E = EVE DE = AM/PM/EVE PE = PM/EVE



PROGRAM SUMMARY

Division of Analytical Chemistry

ANYL

J. Harris, L. Baker, Program Chairs

Pennsylvania Convention Center	S	M	Tu	W	Th
Advances in Mass Spectrometry	D				
Analyzing & Controlling Cell-Material Interactions** CPPP	D				
Chemical Microscopy for In Situ & In Vivo Molecular Analysis** CPPP	D				
Mobilizing Chemistry Expertise to Solve Humanitarian Problems** CPPP	D				
Analytical Division Poster Session	E				
ACS Award in Analytical Chemistry: Symposium in Honor of William R. Heineman		A			
Forced Degradations in the Pharmaceutical Industry** CPPP		A			
Imaging Single Plasmonic Nanoparticles & Their Assemblies**		A			
Mass Spectrometry for the Masses: Recent Developments in Mass Spectrometry-Enabled Pharmaceutical Discovery, Development & Manufacturing** CPPP		A			
Pioneering Single-Molecule Detection under Ambient, Aqueous Conditions: A Tribute to Richard Keller**		D			
Analysis of Noncovalent Interactions CPPP		P	A		
ACS Award for Encouraging Disadvantaged Students into Careers in the Chemical Sciences: Symposium in Honor of Luis A. Colón** CPPP		P			
Analytical Chemistry to Support Industrial Polymer Development** CPPP		P			
Kavli Symposium on Chemical Neurotransmission: What Are We Thinking? ** CPPP		P			
Sci-Mix		E			
ACS Award in Chromatography: Symposium in Honor of Harold M. McNair			A		
New Principles & Applications of Enantiomeric Separations			A		
Analytical Chemistry at the Frontiers of Organic Synthesis: Emerging Tools, Techniques & Strategies** CPPP			A		
Impacts of Nanotechnology & Single-Molecule Spectroscopy in Biology & Medicine** CPPP			D	D	

Division of Analytical Chemistry (continued)

ANYL

J. Harris, L. Baker, Program Chairs

Pennsylvania Convention Center	S	M	Tu	W	Th
Multidimensional Chromatography CPPP			P	A	
Basic Research toward Translational Point-of-Care Devices** CPPP			P		
2016 ACS Analytical Division Awards Symposium			P		
Single-Cell Assays: Honoring ACS Analytical Division Chemical Instrumentation Awardee Nancy Allbritton** CPPP				A	
Spectroscopy in Kinetics & Reaction Progress Monitoring				D	
Advances in Analytical Separations CPPP				P	D
Advances in Electrophoresis & Electrokinetics				P	
Advances in Electrochemistry					D
Vibrational Nanospectroscopy for Chemical & Biochemical Analysis** CPPP					D
New Directions in Chemometrics: Making Sense of Big & Small Chemical Data Sets**					D
Emerging Mass Spectrometry Trends in Support of Agricultural Research & Development* (AGRO)	A				
Good Laboratory Practices for the Agrochemical Professional* (AGRO)	A				
WCC Merck Research Award Symposium* (WCC)	A				
Polymers & the National Nanotechnology Initiative (NNI)* (POLY)	D				
Forensics: The Crossroads of Science, Policy & Justice* (COMSCI)		A			
Chemistry of the People, by the People, for the People* (CHED)		D	D		
Novel Analytical Methods for Analysis of Emerging Contaminants of Concern: Advances & Challenges* (AGRO)		D			
Undergraduate Research Posters* (CHED)		P			
Advances in Agricultural Biotechnology: Interpretation & Correlation of ELISA & LC-MS/MS for Protein Quantitation* (AGRO)			A		
Advances in Metabolism, Metabolomics & Mass Spectrometry* (AGRO)			P		
Advances in Agrochemical Metabolism & Metabolomics* (AGRO)					P

**Division of Biochemical Technology** **BIOT**

*P. Tessier, S. Tobler, Program Chairs*

Located with Primary Sponsor	S	M	Tu	W	Th
Shedding Light on the Dark Genome: Methods, Tools & Case Studies* (CINF)		A			

**Division of Biological Chemistry** **BIOL**

*V. Bandarian, L. Hedstrom, Program Chairs*

Pennsylvania Convention Center	S	M	Tu	W	Th
Eli Lilly Award in Biological Chemistry	A				
Graduate Student & Postdoctoral Symposium <i>CPPP</i>	P	P	P		A
Young Investigators in Biological Chemistry	P			P	
Gordon Hammes Award Lecture	P				
Current Topics in Biochemistry	E		E		
Repligen Award for the Chemistry of Biological Processes		A			
Enzyme Specificity		P			
Sci-Mix		E			
Pfizer Award in Enzyme Chemistry			A		
National Fresenius Award: Symposium in Honor of Douglas A. Mitchell			P		
ACS Infectious Diseases Young Investigators Award Symposium			P		
Ronald Breslow Award for Achievement in Biomimetic Chemistry: Symposium in Honor of Thomas W. Muir				A	
Protein Engineering & Design				P	
WCC Merck Research Award Symposium* (WCC)	A				
Analyzing & Controlling Cell-Material Interactions* (ANYL)	D				
Tetrahedron Prize for Creativity in Organic Chemistry Symposium* (ORGN)		P			
Undergraduate Research Posters* (CHED)		P			
Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?*(ANYL)		P			
Impacts of Nanotechnology & Single-Molecule Spectroscopy in Biology & Medicine* (ANYL)			D	D	
Single-Cell Assays: Honoring ACS Analytical Division Chemical Instrumentation Awardee Nancy Allbritton* (ANYL)				A	

**Division of Business Development & Management** **BMGT**

*D. Daly, Program Chair*

Located with Primary Sponsor	S	M	Tu	W	Th
Fracking: Economics vs. Environment* (PRES)		A			
Industrial Innovations in Polymer Chemistry: The Interface between Inorganic Chemistry & Polymer Science* (POLY)		P			
Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?*(ANYL)		P			
Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel* (ORGN)			A		
Addressing the Facts behind the Fear of Exposure to Chemicals that Threaten Human Reproduction* (MPPG)			A		
Women in Innovation: Science Policy & Government* (PROF)			P		

**Division of Catalysis Science & Technology** **CATL**

*K. Ramasamy, Program Chair*

Sonesta Philadelphia Downtown	S	M	Tu	W	Th
Low-Temperature Catalysis**	A				
Symposium in Honor of Israel E. Wachs: Celebrating Three Decades in Academia	D	D			
Mixed Oxide Catalysis	D				
Small Molecules Activated by Homogeneous Metal Catalysts**	D				
Advanced Nanoscale Chemical Imaging of Catalyst Materials	P				
In Situ & Operando Spectroscopy of Catalysts**		D	A		
Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives**		D	D	D	
Computational Catalysis		D	D		
Sci-Mix		E			
Catalysis in Automotive Emission Control			D		
Life Cycle of Catalysts: Preparation, Activation, Deactivation & Regeneration			P		
General Catalysis			E	D	A

PROGRAM SUMMARY

**Division of Catalysis Science & Technology (continued)**

CATL

*K. Ramasamy, Program Chair*

Sonesta Philadelphia Downtown	S	M	Tu	W	Th
Energy Storage Applications of Ammonia: Synthesis, Storage, Safety & Utilization**				A	
CO <sub>2</sub> Reduction: Electrocatalysis**				D	
Biomass* (ENFL)	D	D			
Novel Nanomaterials* (ENFL)	P	D	D	D	A
Computational Chemistry for Energy Application* (ENFL)			D	A	
Green Chemistry Innovations & Opportunities in Industry for Young Professionals* (I&EC)			P		
Mesoporous Zeolites* (ENFL)				P	A
Heterogeneous Catalysis for Selective Oxidation & Reduction toward a Green Production* (ENFL)				P	A

**Division of Chemical Education**

CHED

*I. Levy, M. Orgill, P. Daubenmire, Program Chairs*

Pennsylvania Convention Center	S	M	Tu	W	Th
Integrating the General & Organic Chemistry Curricula	A				
Green Chemistry Education: By the People & for the People** <i>CPPP</i>	D				
High School Program**	D				
Undergraduate Research Papers**	D				
Context-Based Learning in Chemistry: Research on Structure, Function, Use & Outcomes	P				
General Posters	E				
General Papers		A	P	P	A
Chemistry of the People, by the People, for the People** <i>CPPP</i>		D	D		
Research in Chemistry Education		D			
Chemistry for the People: Reflections from Perkin Medalists** <i>CPPP</i>		D			
Chemistry Explained by Teachers for Teachers: The Chemistry behind Everyday Things**		P			

**Division of Chemical Education (continued)**

CHED

*I. Levy, M. Orgill, P. Daubenmire, Program Chairs*

Pennsylvania Convention Center	S	M	Tu	W	Th
Undergraduate Research Posters**		P			
Successful Student Chapters**		E			
Sci-Mix		E			
Engaging Undergraduates with X-ray Crystallography			A		
Crafting Chemical Communication** <i>CPPP</i>			D		
GSSPC: From Bench-to-Bench & Beyond: Engaging People with High-Impact Chemistry**			D		
Effective Team-Teaching in Undergraduate Chemistry Programs				A	
Advances in Teaching Inorganic Chemistry Lecture & Laboratory					D
Citizens First! Using Real-World Contexts for Engaging Students in Learning Chemistry** <i>CPPP</i>					D
Present & Future Impact of the Internet, Web Apps & High-Speed Networking Technology on Local & Global Chemistry Education					A
Bringing Cheminformatics into the College Chemistry Classroom* (CINF)	A				
Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure* (POLY)	P	D	AE		
Division of Chemical Health & Safety Awards* (CHAS)	P				
Social & Chemical Science of Diversity Equity* (CMA)		P			
Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?* (ANYL)		P			
Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community* (PROF)		P			
Safety & Ethics in Our Chemical Community* (CHAS)				A	
Chemical Safety in the K-12 Classroom* (CHAS)				P	



PROGRAM SUMMARY

**Division of Chemical Health & Safety**

**CHAS**

*D. Decker, J. Pickel, F. Wood-Black, Program Chairs*

Philadelphia Marriott Downtown	S	M	Tu	W	Th
Division of Chemical Health & Safety Awards** <i>CPPP</i>	P				
Americans with Disabilities Act & Accommodations in the Laboratory** <i>CPPP</i>		P			
Sci-Mix		E			
Ask Dr. Safety: Chemical Security in Research Institutions** <i>CPPP</i>			A		
Safety & Ethics in Our Chemical Community** <i>CPPP</i>			A		
Chemical Safety in the K-12 Classroom** <i>CPPP</i>			P		
Chemical Safety in Public Policy** <i>CPPP</i>				A	
Biochemistry of Cannabis**				P	
Green Chemistry Innovations & Opportunities in Industry for Young Professionals* (I&EC)			P		
Using Public Information to Support a Chemical Safety Culture* (CINF)				A	

**Division of Chemical Information (continued)**

**CINF**

*E. Alvaro, Program Chair*

Pennsylvania Convention Center	S	M	Tu	W	Th
Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?*(ANYL)		P			
Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel* (ORGN)			A		
New Directions in Chemometrics: Making Sense of Big & Small Chemical Data Sets* (ANYL)					D

**Division of Chemical Information**

**CINF**

*E. Alvaro, Program Chair*

Pennsylvania Convention Center	S	M	Tu	W	Th
Bringing Cheminformatics into the College Chemistry Classroom**	A				
Effectively Harnessing the World's Literature to Inform Rational Compound Design**	D				
Beyond Citations: Challenges & Opportunities in Altmetrics	P				
CINF Scholarships for Scientific Excellence	E				
Shedding Light on the Dark Genome: Methods, Tools & Case Studies**		A			
Chemistry Data for the People: From Policy to Practice** <i>CPPP</i>		D			
Using New Media to Communicate Chemistry to the Public** <i>CPPP</i>		P			
Sci-Mix		E			
Herman Skolnik Award Symposium			D		
Using Public Information to Support a Chemical Safety Culture**				A	
General Papers				P	A

**Division of Chemical Toxicology**

**TOXI**

*A. Bryant-Friedrich, Program Chair*

Philadelphia Downtown Courtyard by Marriott	S	M	Tu	W	Th
Chemical Research in Toxicology Young Investigator Award	A				
Founders Award Lecture & Symposium	P				
Young Investigators Symposium		A			
Asbestos Fate, Exposure, Remediation & Adverse Health Effects		P			
Chemical Toxicology in the Study of Health Disparities among Ethnic/Racial Groups			A		
Needs & Directions for the Future of Toxicology in Pharmaceutical Development**			P		
General Poster Session			E		
Division of Chemical Toxicology Keynote Address			E		
General Orals				A	
DNA Repair & Its Role in Defining Human Susceptibility to Disease				P	
Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations* (AGRO)	P	D	P		
Pollinators: Agrochemicals, Behavior & Disease* (AGRO)		P			
Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches* (AGRO)			D		
Computational Chemistry & Toxicology in Chemical Discovery & Assessment (QSARs)* (AGRO)				D	
Innovations in Human Health Exposure & Risk Assessment* (AGRO)					A

PROGRAM SUMMARY

**Division of Chemistry & the Law**

CHAL

*K. Bianco, J. Kennedy, Program Chairs*

Pennsylvania Convention Center	S	M	Tu	W	Th
Strengthening Your Patent Rights in Light of Recent Federal Circuit Court Decisions	P				
Beyond the Bench: Careers in Intellectual Property		A			
IP Considerations & Pitfalls in Collaborative Research & Licensing Agreements	P				
Sci-Mix		E			
Strategic Patent Planning for Small & Midsize Chemical & Pharmaceutical Companies			A		
Patent Litigation Primer			P		
Developments in Pharmaceutical Patent Law				A	
The Many Faces of CHAL: Where Chemistry Meets the Law				P	
Safety & Ethics in Our Chemical Community* (CHAS)			A		

**Division of Colloid & Surface Chemistry**

COLL

*R. Nagarajan, Program Chair*

Pennsylvania Convention Center	S	M	Tu	W	Th
Nanoparticles: Synthesis, Characterization & Their Application in Catalysis	D	A			
Basic Research in Colloids, Surfactants & Nanomaterials	D	D	A	D	A
Plasmonic Colloidal Nanostructures: From Creation to Applications	D	D	A	D	
Characterization, Reactivity, Sorption & Thermochemical Properties of Mixed Oxides: Symposium in Honor of Alexandra Navrotsky	D	D	A		
Composite Colloids for SERS Biodetection	D	D			
Polymer Adhesives & Adhesion by Design: Fundamentals to Applications	D	D			
Synergy at the Bio-Nano Interface	D	D			
Control of Amphiphile Self-Assembling at the Molecular Level	D				
Fundamental Research in Colloids, Surfaces & Nanomaterials	E				
Nanostructured Interfaces: From Fundamentals of Sensing & Catalysis to Applications		P	A	D	A
Sci-Mix		E			

**Division of Colloid & Surface Chemistry (continued)**

COLL

*R. Nagarajan, Program Chair*

Pennsylvania Convention Center	S	M	Tu	W	Th
Elucidating the Molecular-Level Interactions between Biological Membranes & Engineered Nanomaterials			A	D	A
Nanoparticles for Measuring/Controlling Cell Signaling			A	D	A
Bioconjugate Chemistry Lecturer Award			A		
Langmuir Lectures, ACS Materials & Interfaces Award Lecture			P		
Colloidal & Interfacial Chemistry for Water Treatment & Recycling				D	A
Surface Modification to Control Cell-Surface Interactions				D	A
Analyzing & Controlling Cell-Material Interactions* (ANYL)	D				
Molecular Modeling of Surface-Mediated Electrochemical & Sorption Reactions at Environmental Interfaces* (GEOC)	P				
Imaging Single Plasmonic Nanoparticles & Their Assemblies* (ANYL)		A			
Impacts of Nanotechnology & Single-Molecule Spectroscopy in Biology & Medicine* (ANYL)			D	D	
Polymer Science at the Interface of Industry, Government & Academics* (POLY)			PE	D	A

**Division of Computers in Chemistry**

COMP

*H. L. Woodcock, M. Feig, J. Shen, Program Chairs*

Sonesta Philadelphia Downtown	S	M	Tu	W	Th
Quantum Mechanics**	A	A	A		
Modeling Water & Solvation in Biochemistry: Developments & Applications**	D	D	A		
Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation**	D	D			
Drug Discovery	D		P	D	A
Designing Chemical Libraries for Screening	D				
Emerging Technologies in Computational Chemistry	P				
QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications**		D	D	D	

**Division of Computers in Chemistry (continued)**

COMP

*H. L. Woodcock, M. Feig, J. Shen, Program Chairs*

Sonesta Philadelphia Downtown	S	M	Tu	W	Th
Sharing Pharmaceutical Industry Data: Outlook & Opportunities		D			
Molecular Mechanics		P	D	D	A
Sci-Mix		E			
Polypharmacology: How Little Can One Afford? How Much Can You Predict?			D		
Material Science			P	D	A
NVIDIA GPU Award			E		
OpenEye Outstanding Junior Faculty Award in Computational Chemistry			E		
Poster Session			E		
The Chemical Computing Group Excellence Award for Graduate Students			E		
Wiley Computers in Chemistry Outstanding Postdoc Award			E		
Computational Study of Water				D	
WCC Merck Research Award Symposium* (WCC)	A				
Advanced Potential Energy Surfaces* (PHYS)	D	D	A	D	
Shedding Light on the Dark Genome: Methods, Tools & Case Studies* (CINF)		A			
Tetrahedron Prize for Creativity in Organic Chemistry Symposium* (ORGN)		P			
Undergraduate Research Posters* (CHED)		P			
Computational Chemistry & Toxicology in Chemical Discovery & Assessment (QSARs)* (AGRO)				D	

**Division of Energy & Fuels (continued)**

ENFL

*X. Wang, D. Heldebrant, Program Chairs*

Pennsylvania Convention Center	S	M	Tu	W	Th
Unconventional Energy on Heavy Oil & Shale Gas** CPPP	D				
Degradation of Materials for Energy & Fuel Production** CPPP	D				
Novel Nanomaterials**	P	D	D	D	A
Novel Materials for Gas Separation, Storage & Utilization** CPPP	P	D			
ENFL Storch Award Symposium		D	D		
2D Materials: Graphene & Beyond & Their Device Applications**		P	D	D	A
Advances in Chemistry of Energy & Fuels** CPPP		P	D	D	
Sci-Mix		E			
Computational Chemistry for Energy Application** CPPP			D	A	
Progress in Coal to Liquids & Gases** CPPP					A
Mesoporous Zeolites**				P	A
Heterogeneous Catalysis for Selective Oxidation & Reduction toward a Green Production**				P	A
Advances in Analytical Methods in Petroleum Upstream Applications					A
Low-Temperature Catalysis* (CATL)	A				
Small Molecules Activated by Homogeneous Metal Catalysts* (CATL)	D				
In Situ & Operando Spectroscopy of Catalysts* (CATL)		D	A		
Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives* (CATL)		D	D	D	
Chemistry of Biomass Wastes Conversion to Energy & Chemicals* (ENVR)			D	AE	
Green Chemistry Innovations & Opportunities in Industry for Young Professionals* (I&EC)			P		
Energy Storage Applications of Ammonia: Synthesis, Storage, Safety & Utilization* (CATL)					A
CO <sub>2</sub> Reduction: Electrocatalysis* (CATL)					D

**Division of Energy & Fuels**

ENFL

*X. Wang, D. Heldebrant, Program Chairs*

Pennsylvania Convention Center	S	M	Tu	W	Th
Innovative Chemistry & Materials for Electroenergy Production & Storage** CPPP		D	D	D	A
Water-Energy Nexus** CPPP	A				
Energy & Fuels Joint Award for Excellence in Publishing	A				
Solar Fuels: Power to the People** CPPP	D	A			
U. S. A.-China Symposium on Energy**	D	D	D	D	
Biomass** CPPP	D	D			

PROGRAM SUMMARY

Division of Environmental Chemistry

ENVR

D. Dionysiou, Program Chair

Loews Philadelphia Hotel	S	M	Tu	W	Th
Advances in Innovative Designs & Process Cost Estimation Techniques for Advanced Water Purification Technologies <i>CPPP</i>	A			E	
Nanotechnology for Sustainable Agriculture & Food Systems** <i>CPPP</i>	A			E	
Formation & Transformation of Atmospheric Aerosols: Air Pollution to Climate Change: Symposium in Honor of Professor Renyi Zhang <i>CPPP</i>	D	D	A	E	
Innovative Materials & Technologies for Environmental Sustainability** <i>CPPP</i>	D	D	A	E	
Aquatic Chemistry: Symposium in Honor of Professor Alan T. Stone <i>CPPP</i>	D	D	D	E	
Poly- & Perfluoroalkyl Substances: Environmental Behavior & Pollution Control <i>CPPP</i>	D	D		E	
Advances in Understanding PPCP Fate in Wastewater Collection & Treatment Systems <i>CPPP</i>	D			E	
Impacts of Energy Systems on Water Treatment <i>CPPP</i>	D			E	
Advancing Teaching & Learning in Environmental Chemistry Courses: Innovative Tools & Techniques <i>CPPP</i>	P			E	
Next-Generation Techniques for Prevention & Precise Growth of Biofilms at the Interface of Nanomaterials & Electrochemistry <i>CPPP</i>	P			E	
Understanding Nanomaterial Behavior: Breakthroughs & Challenges <i>CPPP</i>		A			
Chemistry of Environmental Sorptive & Oxidative Processes: Symposium in Honor of Joseph J. Pignatello <i>CPPP</i>		D	D	DE	
Advances & Challenges in Food-Energy-Water Nexus** <i>CPPP</i>		D		E	
Synthetic Biology & Genetically Modified Organisms**		D			
Developing International Policies for Nanoparticles in the Environment		P		E	
Sci-Mix		E			
Combined Biological-Chemical Reactions for Contaminant Transformation** <i>CPPP</i>			A	E	
Chemistry of Biomass Wastes Conversion to Energy & Chemicals** <i>CPPP</i>			D	AE	
Water Purification Systems** <i>CPPP</i>			D	E	

Division of Environmental Chemistry (continued)

ENVR

D. Dionysiou, Program Chair

Loews Philadelphia Hotel	S	M	Tu	W	Th
Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications** <i>CPPP</i>			D		
Applied Catalysis for Environmental Applications <i>CPPP</i>			P	DE	
Nanotechnology for Environmental Solutions & Remediation <i>CPPP</i>			P	DE	
C. Ellen Gonter Graduate Student Awards			P		
Disinfection By-Products: What Have We Learned about Dissolved Organic Matter Precursors? <i>CPPP</i>				D	
Microbial & Molecular Tools to Determine the Fate & Biotransformation of Emerging Contaminants** <i>CPPP</i>				D	
Nanomaterials in the Environment & Biological Systems <i>CPPP</i>				DE	D
Recent Advances in Remediation Strategies & Technologies for the Cleanup of Hazardous Waste Sites <i>CPPP</i>				DE	
Creating & Exploiting Salinity Gradients <i>CPPP</i>				PE	
Advances in Understanding Antibiotics, Antibiotic Resistance Genes & Antibiotic-Resistant Bacteria in Engineered & Natural Environments** <i>CPPP</i>				E	D
Crystal Defects on Surface Reactivity & Heterogeneous Photocatalysis <i>CPPP</i>				E	D
Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment** <i>CPPP</i>				E	D
General Posters				E	
Bioanalytical Tools for Chemicals of Emerging Concern in the Environment** <i>CPPP</i>					A
Innovative Chemistry & Materials for Electroenergy Production & Storage* (ENFL)	A	P	D	D	A
Water-Energy Nexus* (ENFL)	A				
Good Laboratory Practices for the Agrochemical Professional* (AGRO)	A				
Innovative Approaches in Designing Agrochemical Metabolism Studies* (AGRO)	A				
Terrestrial Field Dissipation Studies* (AGRO)	A				
Solar Fuels: Power to the People* (ENFL)	D	A			



**Division of Environmental Chemistry (continued)**

ENVR

*D. Dionysiou, Program Chair*

Loews Philadelphia Hotel	S	M	Tu	W	Th
U. S. A. - China Symposium on Energy* (ENFL)	D	D	D	D	
Geochemistry of the Subsurface: CO <sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal* (GEOC)	D	D		E	
Biomass* (ENFL)	D	D			
Unconventional Energy on Heavy Oil & Shale Gas* (ENFL)	D				
Degradation of Materials for Energy & Fuel Production* (ENFL)	D				
Novel Nanomaterials* (ENFL)	P	D	D	D	A
Glyphosate: Current Status & Future Prospects* (AGRO)	P	D	P		
Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations* (AGRO)	P	D	P		
Novel Materials for Gas Separation, Storage & Utilization* (ENFL)	P	D			
Advances in Residues Analysis of Bee-Relevant Matrices: Analytical Methods & Sampling Techniques* (AGRO)	P				
Extraction Efficiency: Bridging between Metabolism Studies & Residue Analytical Methods* (AGRO)	P				
Neonicotinoid Insecticides: Use, Fate & Effects* (AGRO)		D			
Novel Analytical Methods for Analysis of Emerging Contaminants of Concern: Advances & Challenges* (AGRO)		D			
2-D Materials: Graphene & Beyond & their Device Applications* (ENFL)		P	D	D	A
Advances in Chemistry of Energy & Fuels* (ENFL)		P	D	D	
Pollinators: Agrochemicals, Behavior & Disease* (AGRO)		P			
Undergraduate Research Posters* (CHED)		P			
Environmental Fate & Modeling of Agriculturally Related Chemicals* (AGRO)		P			
Chemistry, Safety & Technology of GMO Foods* (AGFD)			D	D	
Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches* (AGRO)			D		

**Division of Environmental Chemistry (continued)**

ENVR

*D. Dionysiou, Program Chair*

Loews Philadelphia Hotel	S	M	Tu	W	Th
Experimental Studies of the Molecular-Scale Processes at Environmental Interfaces* (GEOC)			P	DE	A
Environmental Risk Assessment of Down-the-Drain Chemicals* (AGRO)			P		D
Environmental Study Design: Current & Emerging Guidelines* (AGRO)			P		P
Green Chemistry Innovations & Opportunities in Industry for Young Professionals* (I&EC)			P		
Advances in Metabolism, Metabolomics & Mass Spectrometry* (AGRO)			P		
Progress in Coal to Liquids & Gases* (ENFL)				A	
Computational Chemistry & Toxicology in Chemical Discovery & Assessment (QSARs)* (AGRO)				D	
Environmental Fate, Transport & Modeling of Agriculturally Related Chemicals* (AGRO)				D	
Heterogeneous Catalysis for Selective Oxidation & Reduction toward a Green Production* (ENFL)				P	A
Innovations in Human Health Exposure & Risk Assessment* (AGRO)					A
Subsurface Fate of Pesticides* (AGRO)					A
Advances in Agrochemical Metabolism & Metabolomics* (AGRO)					P

**Division of Fluorine Chemistry**

FLUO

*N. Vasdev, Program Chair*

Philadelphia Marriott Downtown	S	M	Tu	W	Th
Radiopharmaceutical Chemistry** <sup>CPPP</sup>	E	D			
Polymeric Materials as Imaging Agents & Theranostics* (POLY)			D		

\*Cosponsored symposium with primary organizer shown in parentheses; located with primary organizer.  
\*\*Primary organizer of a cosponsored symposium.

CPPP: Chemistry of the People, by the People, for the People

A = AM AE = AM/EVE P = PM D = AM/PM  
E = EVE DE = AM/PM/EVE PE = PM/EVE

## PROGRAM SUMMARY

### Division of Geochemistry

GEOC

*A. Ilgen, Program Chair*

Philadelphia Marriott Downtown	S	M	Tu	W	Th
Geochemistry of the Subsurface: CO <sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal**	D	D		E	
Molecular Modeling of Surface-Mediated Electrochemical & Sorption Reactions at Environmental Interfaces**	P				
Sci-Mix		E			
Interfacial Biogeochemical Controls on Inorganic Contaminants			A		
Experimental Studies of the Molecular Scale Processes at Environmental Interfaces**			P	DE	A

### Division of Industrial & Engineering Chemistry

I & EC

*E. Rosenberg, Program Chair*

Philadelphia Downtown Courtyard by Marriott	S	M	Tu	W	Th
Advances in Green Chemistry	P				
General Papers		D			
Sci-Mix		E			
Division of Industrial & Engineering Chemistry Graduate Student Award			A		
Green Chemistry Innovations & Opportunities in Industry for Young Professionals**			P		
General Posters			E		
Ask Dr. Safety: Chemical Security in Research Institutions* (CHAS)			A		

### Division of the History of Chemistry

HIST

*S. Rasmussen, Program Chair*

Philadelphia Marriott Downtown	S	M	Tu	W	Th
HIST Tutorial & General Papers	A			A	
A Salute to Ted Benfey at 90: Science, History, Culture & a Commitment to Humanism	P				
Chemistry in America: 1676–1876 <b>CPPP</b>		D			
Sci-Mix		E			
Charles C. Price, 1965 ACS President: Exploring His Legacy after 50 Years			A		
HIST Award Symposium Honoring Ursula Klein			P		
Citation for Chemical Breakthrough Award to Rice University: Symposium honoring Robert Curl* (PRES)	A				
Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel* (ORGN)			A		
Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications* (ENVR)			D		
Chemical Business of the People, by the People, for the People* (PRES)			D		

### Division of Inorganic Chemistry

INOR

*N. Radu, S. Koch, Program Chairs*

Pennsylvania Convention Center	S	M	Tu	W	Th
Bioinorganic Chemistry	AE		E	A	
Inorganic Catalysts	AE				
Lanthanide & Actinide Chemistry	D		AE		
Chemistry of Materials	D	P	D	P	
Organometallic Chemistry	DE	A	PE	DE	
Inorganic Young Investigator Awards	P				
Organometallics Distinguished Author Award Lectureship	P				
Main-Group Chemistry	PE		P		
Nanomaterials in Biology & Medicine	E	D	D		
Understanding Cluster Cofactors through Biomimetic Models	E	D			
Inorganic Chemistry Lectureship		A			
Secondary Coordination Sphere Influences: Stability, Reactivity & Everything in Between		D	D		
Manipulation of Energy & Electron Transfer in Molecules & Devices		D	DE	A	
DIC Young Investigator Awardees: Where Are They Now?		D			
Coordination Chemistry		P	E	DE	
Sci-Mix		E			
Industrial Inorganic Chemistry			A		

**Division of Inorganic Chemistry  
(continued)**

**INOR**

*N. Radu, S. Koch, Program Chairs*

Pennsylvania Convention Center	S	M	Tu	W	Th
Inorganic Nanoscience Award			A		
Solid-State Inorganic Chemistry			PE		
Electrochemistry				AE	
Environmental & Energy-Related Inorganic Chemistry				AE	
Inorganic Spectroscopy				AE	
Nanoscience				PE	
Radiopharmaceutical Chemistry* (FLUO)	E	D			
Organometallics Distinguished Author Award* (ORGN)		A			
Eminent Scientist Lecture* (SOCED)		A			
Undergraduate Research Posters* (CHED)		P			
Industrial Innovations in Polymer Chemistry: The Interface between Inorganic Chemistry & Polymer Science* (POLY)		P			
Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel* (ORGN)			A		
GSSPC: From Bench-to-Bench & Beyond: Engaging People with High-Impact Chemistry* (CHED)			D		
Polymeric Materials as Imaging Agents & Theranostics* (POLY)			D		
New Trends in Organometallic Chemistry Leading to Organic Synthesis* (ORGN)			P		

**Division of Medicinal Chemistry**

**MEDI**

*W. Young, Program Chair*

Pennsylvania Convention Center	S	M	Tu	W	Th
Renaissance of Estrogen Receptor-Based Therapy	A				
General Orals	D			D	
Role of Water in Ligand Design & Optimization	P				
General Posters	E			E	
Small Change, Big Impact: Strategic Minor Structural Modifications in Drug Design		A			
Small-Molecule Approaches for the Treatment of Lupus		A			

**Division of Medicinal Chemistry  
(continued)**

**MEDI**

*W. Young, Program Chair*

Pennsylvania Convention Center	S	M	Tu	W	Th
Solute Carrier (SLC) Membrane Transporters as Emerging Drug Targets	A				
Medicinal Chemistry of Chemical Biology	P				
Medicinal Chemist's Toolbox: Scaffolds & Privileged Scaffolds in Drug Design	P				
Nucleic Acid Therapeutics	P				
Sci-Mix	E				
Emerging Isosteric Replacement Methods: A Fundamental Strategy in Drug Design			A		
Gut Reaction: Opportunities & Challenges of Gut-Specific Drug Targeting			A		
MEDI Award Symposium			P		
Modulation of the Ubiquitin-Proteasome Pathway			P		
Epigenetics				A	
First-Time Disclosures				P	
WCC Merck Research Award Symposium* (WCC)	A				
New Reactions & Methodology* (ORGN)	D	D	D	DE	
Effectively Harnessing the World's Literature to Inform Rational Compound Design* (CINF)	D				
Regional Small Chemical Businesses: Case Histories & Lessons Learned* (SCHB)	P				
Radiopharmaceutical Chemistry* (FLUO)	E	D			
Shedding Light on the Dark Genome: Methods, Tools & Case Studies* (CINF)		A			
Forced Degradations in the Pharmaceutical Industry* (ANYL)		A			
Mass Spectrometry for the Masses: Recent Developments in Mass Spectrometry Enabled Pharmaceutical Discovery, Development & Manufacturing* (ANYL)		A			
Heterocycles & Aromatics* (ORGN)		D	A	E	
International Drug Discovery & Development Collaborations* (SCHB)		D			
Tetrahedron Prize for Creativity in Organic Chemistry Symposium* (ORGN)		P			
Undergraduate Research Posters* (CHED)		P			
Polymeric Materials as Imaging Agents & Theranostics* (POLY)			D		
Needs & Directions for the Future of Toxicology in Pharmaceutical Development* (TOXI)			P		



## PROGRAM SUMMARY

### Division of Nuclear Chemistry & Technology

NUCL

*J. Terry, A. Hixon, D. Hobart, Program Chairs*

Philadelphia Downtown Courtyard by Marriott	S	M	Tu	W	Th
Nuclear Forensics	D	A			
Physicochemical Characterization of Actinides & Fission Products		P	A		
Nuclear Modeling & Simulation			P	A	
Glenn T. Seaborg Award for Nuclear Chemistry: Symposium in Honor of E. (Earl) Philip Horwitz				D	D
Radiopharmaceutical Chemistry* (FLUO)	E	D			
Polymeric Materials as Imaging Agents & Theranostics* (POLY)			D		

### Division of Organic Chemistry

ORGN

*M. McIntosh, R. Broene, Program Chairs*

Pennsylvania Convention Center	S	M	Tu	W	Th
Nanomaterials	AE				
New Reactions & Methodology	D	D	D	DE	
Synthetic Expansion of Nucleic Acid Function	D				
Asymmetric Reactions & Syntheses	DE	A			
Physical Organic Chemistry: Calculations, Mechanisms, Photochemistry & High-Energy Species	DE	A			
JOC/OL Lectureship Symposium	P				
Small Splashes, Big Waves: Research at Primarily Undergraduate Institutions	P				
Total Synthesis of Complex Molecules	E	P	A		
Chemistry of Fullerenes, Carbon Nanotubes & Graphene	E		A		
Materials, Devices & Switches	E			D	
Flow Chemistry & Continuous Processes	E				
Organometallics Distinguished Author Award**		A			
Heterocycles & Aromatics		D	A	E	

\*Cosponsored symposium with primary organizer shown in parentheses; located with primary organizer.

\*\*Primary organizer of a cosponsored symposium.

CPPP: Chemistry of the People, by the People, for the People

A = AM AE = AM/EVE P = PM D = AM/PM  
E = EVE DE = AM/PM/EVE PE = PM/EVE

### Division of Organic Chemistry (continued)

ORGN

*M. McIntosh, R. Broene, Program Chairs*

Pennsylvania Convention Center	S	M	Tu	W	Th
Role of Organic Chemistry in Early Clinical Drug Development: New Advances in Drug Discovery & Process Chemistry		D			
Young Investigator Symposium		D			
Tetrahedron Prize for Creativity in Organic Chemistry Symposium**		P			
Sci-Mix		E			
Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel**			A		
Cope Award Symposium			D		
Young Academic Investigator Symposium			D		
New Trends in Organometallic Chemistry Leading to Organic Synthesis**			P		
Biologically Related Molecules & Processes			PE	D	
Metal-Mediated Reactions & Syntheses			PE	D	
Molecular Recognition & Self-Assembly			PE	D	
Peptides, Proteins & Amino Acids			E	A	
Technical Achievements in Organic Chemistry				D	
WCC Merck Research Award Symposium* (WCC)	A				
Regional Small Chemical Businesses: Case Histories & Lessons Learned* (SCHB)	P				
International Drug Discovery & Development Collaborations* (SCHB)		D			
Analytical Chemistry at the Frontiers of Organic Synthesis: Emerging Tools, Techniques & Strategies* (ANYL)			A		
Green Chemistry Innovations & Opportunities in Industry for Young Professionals* (I&EC)			P		

### Division of Physical Chemistry

PHYS

*G. Engel, Program Chair*

DoubleTree by Hilton Hotel Philadelphia Center City	S	M	Tu	W	Th
Physical Chemistry of Atmospheric Processes	D	D	A	A	D
<small>CPPP</small>					
Dynamics of Natural & Artificial Systems For Energy Conversion: Insights Gained from Spectroscopic Methods & Theory	D	D	A	D	D

**Division of Physical Chemistry  
(continued)**

**PHYS**

*G. Engel, Program Chair*

DoubleTree by Hilton Hotel Philadelphia Center City	S	M	Tu	W	Th
Intrinsically Disordered Proteins: Structure, Function & Interactions <i>CPPP</i>	D	D	A	D	D
Advanced Potential Energy Surfaces**	D	D	A	D	
Physical Chemistry Meets AMO	D	D	A		
Frontiers of Solar System Chemistry: Planets to Comets & Beyond	D	P	A	D	D
Advances in Biological Imaging <i>CPPP</i>	P	D		D	D
Metal & Semiconductor Nanoclusters with Atomic Precision: Fundamentals & Applications		D	A	D	D
Sci-Mix		E			
PHYS Division Awards Symposium			P		
Accelerating Discovery: Citizen Science, Big Data & Machine Learning for Physical Chemistry <i>CPPP</i>				D	D
PHYS Poster Session				E	
Quantum Mechanics* (COMP)	A	A	A		
Modeling Water & Solvation in Biochemistry: Developments & Applications* (COMP)	D	D	A		
Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation* (COMP)	D	D			
QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications* (COMP)		D	D	D	
Pioneering Single-Molecule Detection under Ambient, Aqueous Conditions: A Tribute to Richard Keller* (ANYL)		D			
Impacts of Nanotechnology & Single-Molecule Spectroscopy in Biology & Medicine* (ANYL)			D	D	
Vibrational Nanospectroscopy for Chemical & Biochemical Analysis* (ANYL)					D

**Division of Polymer Chemistry**

**POLY**

*M. Jeffries-El, T. White, C. Lipscomb, Program Chairs*

Sheraton Philadelphia Downtown Hotel	S	M	Tu	W	Th
Materials Genome Approach to Structure & Function	D	D	D	D	
3rd Symposium on Poly(2-Oxazoline)s & Polypeptoids	D	D	DE	A	

**Division of Polymer Chemistry  
(continued)**

**POLY**

*M. Jeffries-El, T. White, C. Lipscomb, Program Chairs*

Sheraton Philadelphia Downtown Hotel	S	M	Tu	W	Th
Advanced Functional Biopolymers & Biomaterials**	D	D	DE	D	D
Functional Renewable Polymers**	D	D	E		
General Topics: New Synthesis & Characterization of Polymers	D		E	D	A
Polymers & the National Nanotechnology Initiative (NNI)**	D				
Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure**	P	D	AE		
Biomacromolecules/Macromolecules Young Investigator Award		A			
Industrial Polymer Science Award in Honor of Joel Oxman		A			
Sequence-Controlled Polymers		P	DE	D	
Industrial Innovations in Polymer Chemistry: The Interface between Inorganic Chemistry & Polymer Science**		P			
Sci-Mix		E			
Polymeric Materials as Imaging Agents & Theranostics** <i>CPPP</i>			D		
Advances in Functional Polymers with Sophisticated Branched Structures			PE	D	A
Polymer Science at the Interface of Industry, Government & Academics**			PE	D	A
POLY/PMSE Awards Symposium & Reception				E	
WCC Merck Research Award Symposium* (WCC)	A				
Porous Polymers* (PMSE)	D	D	D	D	
Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation* (COMP)	D	D			
Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications* (PMSE)	P	D	D	D	
Radiopharmaceutical Chemistry* (FLUO)	E	D			
International Drug Discovery & Development Collaborations* (SCHB)		D			
Analytical Chemistry to Support Industrial Polymer Development* (ANYL)		P			
Chemistry Explained by Teachers for Teachers: The Chemistry behind Everyday Things* (CHED)		P			
Undergraduate Research Posters* (CHED)		P			

**Division of Polymer Chemistry  
(continued)**

POLY

*M. Jeffries-El, T. White, C. Lipscomb, Program Chairs*

Sheraton Philadelphia Downtown Hotel	S	M	Tu	W	Th
Henkel Award for Outstanding Graduate Research in Polymer Chemistry: Symposium in Honor of Maxwell Robb* (PMSE)			A		
GSSPC: From Bench-to-Bench & Beyond: Engaging People with High-Impact Chemistry* (CHED)			D		
Green Chemistry Innovations & Opportunities in Industry for Young Professionals* (I&EC)			P		
Joint PMSE/POLY Poster Session* (PMSE)			E		

**Division of Polymeric Materials:  
Science & Engineering**

PMSE

*A. Tsou, B. Olsen, X. Jia, C. Stafford, M. Grunlan,  
Program Chairs*

Sheraton Philadelphia Downtown Hotel	S	M	Tu	W	Th
Bioderived & Bioinspired Polymers	D	D	D	D	
Porous Polymers**	D	D	D	D	
General Papers/New Concepts in Polymeric Materials	D				D
Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications**	P	D	D	D	
Journal of Polymer Science Award: Symposium in Honor of Cyrille Boyer	P				
Polymer & Polymer Hybrid Electronics & Biosensors		D	D	D	D
Polymers Designed for 3-D Printing Applications: Evaluation of the Fundamental & Applied Aspects of the Field		D	D	D	
Roy W. Tess Award: Symposium in Honor of Mark Soucek		D			
Fire & Polymers		DE	D	D	
Sci-Mix		E			
Henkel Award for Outstanding Graduate Research in Polymer Chemistry: Symposium in Honor of Maxwell Robb**			A		
Eastman Chemical Student Award in Applied Polymer Science			P		
Joint PMSE/POLY Poster Session**			E		
Recent Advances in Modeling & Simulations of Synthetic Polymers & Biopolymers				D	A

**Division of Polymeric Materials  
Science & Engineering (continued)**

PMSE

*A. Tsou, B. Olsen, X. Jia, C. Stafford, M. Grunlan,  
Program Chairs*

Sheraton Philadelphia Downtown Hotel	S	M	Tu	W	Th
Advanced Functional Biopolymers & Biomaterials* (POLY)	D	D	DE	D	D
Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure* (POLY)	P	D	AE		
Chemistry Explained by Teachers for Teachers: The Chemistry behind Everyday Things* (CHED)		P			
Undergraduate Research Posters* (CHED)		P			
Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?* (ANYL)		P			
Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel* (ORGN)			A		
Polymer Science at the Interface of Industry, Government & Academics* (POLY)			PE	D	A

**Division of Professional Relations**

PROF

*R. D. Libby, Program Chair*

Hilton Garden Inn Philadelphia Center City	S	M	Tu	W	Th
Chemical Angel Network: Chemists Investing in Chemical Companies**	P				
Building Opportunities in the Chemical Profession: Exploiting the Power of Diversity & Inclusion**		A			
Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community** <i>CPPP</i>		P			
Sci-Mix		E			
Women in Innovation: Science Policy & Government**			P		
WCC Merck Research Award Symposium* (WCC)	A				
Regional Small Chemical Businesses: Case Histories & Lessons Learned* (SCHB)	P				
Getting Your First Industrial Job* (YCC)	P				
All the People, All the Paths in the Chemical Sciences* (WCC)		A			
International Drug Discovery & Development Collaborations* (SCHB)		D			



PROGRAM SUMMARY

**Division of Professional Relations  
(continued)**

**PROF**

*R. D. Libby, Program Chair*

Hilton Garden Inn Philadelphia Center City	S	M	Tu	W	Th
Social & Chemical Science of Diversity Equity* (CMA)		P			
Chemistry of the City of Brotherly Love* (YCC)		P			
Green Chemistry Innovations & Opportunities in Industry for Young Professionals* (I&EC)			P		
Global Careers in Chemistry* (YCC)			P		

**Division of Small Chemical  
Businesses (continued)**

**SCHB**

*J. Sabol, Program Chair*

Hilton Garden Inn Philadelphia Center City	S	M	Tu	W	Th
Chemical Business of the People, by the People, for the People* (PRES)			D		
Women in Innovation: Science Policy & Government* (PROF)			P		
Polymer Science at the Interface of Industry, Government & Academics* (POLY)			PE	D	A
Biochemistry of Cannabis* (CHAS)				P	

**Rubber Division**

**RUBB**

*L. Goss, Program Chair*

Located with Primary Sponsor	S	M	Tu	W	Th
Chemistry Explained by Teachers for Teachers: The Chemistry behind Everyday Things* (CHED)		P			

**Committee on Chemical Safety**

**CCS**

*E. Howson, Program Chair*

Located with Primary Sponsor	S	M	Tu	W	Th
Building Opportunities in the Chemical Profession: Exploiting the Power of Diversity & Inclusion *(PROF)	A				
Americans with Disabilities Act & Accommodations in the Laboratory*(CHAS)	P				

**Division of Small Chemical  
Businesses**

**SCHB**

*J. Sabol, Program Chair*

Hilton Garden Inn Philadelphia Center City	S	M	Tu	W	Th
Entrepreneurs' Poster Session	A				
Regional Small Chemical Businesses: Case Histories & Lessons Learned**	P				
International Drug Discovery & Development Collaborations**			D		
Sci-Mix			E		
Polymers & the National Nanotechnology Initiative (NNI)* (POLY)	D				
Chemical Angel Network: Chemists Investing in Chemical Companies* (PROF)	P				
Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?*(ANYL)		P			
Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community* (PROF)		P			
Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel* (ORGN)			A		
Safety & Ethics in Our Chemical Community* (CHAS)			A		

**Committee on Chemists with  
Disabilities**

**CWD**

*L. Hoffman, Program Chair*

Located with Primary Sponsor	S	M	Tu	W	Th
Building Opportunities in the Chemical Profession: Exploiting the Power of Diversity & Inclusion* (PROF)	A				
Americans with Disabilities Act & Accommodations in the Laboratory* (CHAS)	P				

**Committee on Corporation  
Associates**

**CORP**

*D. Grob Schmidt, Program Chair*

Located with Primary Sponsor	S	M	Tu	W	Th
Safety & Ethics in Our Chemical Community* (CHAS)			A		

## PROGRAM SUMMARY

### Committee on Environmental Improvement

C E I

*C. Middlecamp, Program Chair*

Located with Primary Sponsor	S	M	Tu	W	Th
Nanotechnology for Sustainable Agriculture & Food Systems* (ENVR)	A			E	
Innovative Materials & Technologies for Environmental Sustainability* (ENVR)	D	D	A	E	
Functional Renewable Polymers* (POLY)	D	D	E		
Green Chemistry Education: By the People & for the People* (CHED)	D				
Chemistry of the People, by the People, for the People* (CHED)		D	D		
Advances & Challenges in Food-Energy-Water Nexus* (ENVR)		D		E	
Synthetic Biology & Genetically Modified Organisms* (ENVR)		D			
Chemistry, Safety & Technology of GMO Foods* (AGFD)			D	D	
Water Purification Systems* (ENVR)			D	E	
Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications* (ENVR)			D		
Green Chemistry Innovations & Opportunities in Industry for Young Professionals* (I&EC)			P		
Citizens First! Using Real-World Contexts for Engaging Students in Learning Chemistry* (CHED)					D

### Committee on Ethics

E T H C

*K. Vitense, Program Chair*

Located with Primary Sponsor	S	M	Tu	W	Th
Safety & Ethics in Our Chemical Community* (CHAS)			A		
Who Should Regulate Pesticides in Our Food?* (AGRO)				D	D

### International Activities Committee

I A C

*E. Contis, Program Chair*

Located with Primary Sponsor	S	M	Tu	W	Th
Chemical Sciences & Human Rights* (PRES)	A				
Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation* (PRES)	P	A			
Building International Communities* (PRES)	P				
Broadening Participation in Global Chemistry Experiences: Why Engaging Diverse Chemistry Communities in Global Research Is Critical* (PRES)		P			

### Committee on Minority Affairs

C M A

*J. Sarquis, Program Chair*

Philadelphia Marriott Downtown	S	M	Tu	W	Th
Social & Chemical Science of Diversity Equity** <i>CPPP</i>		P			
All the People, All the Paths in the Chemical Sciences* (WCC)		A			
Building Opportunities in the Chemical Profession: Exploiting the Power of Diversity & Inclusion* (PROF)		A			
Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community* (PROF)		P			
New Trends in Organometallic Chemistry Leading to Organic Synthesis* (ORGN)			P		

### Nomenclature, Terminology & Symbols

N O M

*M. Mosher, Program Chair*

Located with Primary Sponsor	S	M	Tu	W	Th
Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications* (ENVR)			D		

## PROGRAM SUMMARY

### Committee on Science

COMSCI

*A. Meyers, Program Chair*

Pennsylvania Convention Center	S	M	Tu	W	Th
Forensics: The Crossroads of Science, Policy & Justice** <i>CPPP</i>		A			
Synthetic Biology & Genetically Modified Organisms* (ENVR)			D		
Chemistry, Safety & Technology of GMO Foods* (AGFD)				D	D

### Diversity & Inclusion Advisory Board

D & I

*K. Booksh, Program Chair*

Located with Primary Sponsor	S	M	Tu	W	Th
Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community* (PROF)		P			

### Society Committee on Education

SOCED

*M. Boucher, Program Chair*

Philadelphia Marriott Downtown/Sheraton Philadelphia Downtown Hotel	S	M	Tu	W	Th
Eminent Scientist Lecture**		A			
High School Program* (CHED)		D			
Undergraduate Research Papers* (CHED)		D			
Undergraduate Research Posters* (CHED)			P		
Successful Student Chapters* (CHED)			E		

### Women Chemists Committee

WCC

*K. Woznick, Program Chair*

Pennsylvania Convention Center	S	M	Tu	W	Th
WCC Merck Research Award Symposium**	A				
All the People, All the Paths in the Chemical Sciences** <i>CPPP</i>		A			
Women in Innovation: Science Policy & Government* (PROF)			P		

### Younger Chemists Committee

YCC

*D. Williams, Program Chair*

Philadelphia Marriott Downtown	S	M	Tu	W	Th
Getting Your First Industrial Job**	P				
Chemistry of the City of Brotherly Love** <i>CPPP</i>		P			
Global Careers in Chemistry**			P		
All the People, All the Paths in the Chemical Sciences* (WCC)		A			
Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community* (PROF)		P			
Green Chemistry Innovations & Opportunities in Industry for Young Professionals* (I&EC)			P		

\*Cosponsored symposium with primary organizer shown in parentheses; located with primary organizer.

\*\*Primary organizer of a cosponsored symposium.

CCPP: Chemistry of the People, by the People, for the People

A = AM AE = AM/EVE P = PM D = AM/PM

E = EVE DE = AM/PM/EVE PE = PM/EVE

## How to Read the Technical Program

**1.**  
**Search for the Division—**  
listed in alphabetical order

**CHAS**

### **Division of Chemical Health and Safety**

*D. Decker, J. Pickel and F. Wood-Black,  
Program Chairs*

**Note:**

*Times represent the start of oral presentations and numbers represent poster numbers.*

**3.**  
**Locate the session name**

### **SUNDAY AFTERNOON**

#### **Section A**

Philadelphia Marriott Downtown  
Independence III

#### **Division of Chemical Health & Safety Awards**

*Cosponsored by CCS and CHED*

*D. M. Decker, Organizer, Presiding*

**1:30** Introductory Remarks.

**1:35** **CHAS 1.** Evolutions of the collaboration between the Safety Office and the Department of Chemistry

**2.**  
**Locate the day**

**4.**  
**Locate the time or poster #**

**5.**  
**Locate the venue and room for each session**



# FULL TECHNICAL PROGRAM

**TWENTY-SEVEN OF THE SOCIETY'S** technical divisions and five committees are hosting original technical programming during the meeting. More than 9,000 papers have been accepted for this meeting.

Each organizing group's programming is detailed on the following pages. Nearly 4,000 chemical professionals and students are expected to attend the ever-popular Sci-Mix Interdivisional Poster Session & Mixer on Monday,

August 22, from 8:00 to 10:00 PM at Pennsylvania Convention Center, Halls D/E. More than 500 noteworthy poster presentations, networking with colleagues, and light refreshments make up this enjoyable event.

Organizing Group	Acronym	Page
<b>PRESIDENTIAL &amp; CROSS-DIVISION PROGRAMMING</b>		
Presidential Events	PRES	TECH-70
Multidisciplinary Program Planning Group	MPPG	TECH-71
Academic Employment Initiative	AEI	TECH-73

Organizing Group	Acronym	Page
<b>DIVISION PROGRAMMING</b>		
Agricultural & Food Chemistry	AGFD	TECH-74
Agrochemicals	AGRO	TECH-80
Analytical Chemistry	ANYL	TECH-89
Biochemical Technology	BIOT	TECH-96
Biological Chemistry	BIOL	TECH-96
Business Development and Management	BMGT	TECH-101
Catalysis Science and Technology	CATL	TECH-101
Chemical Education	CHED	TECH-108
Chemical Health & Safety	CHAS	TECH-116
Chemical Information	CINF	TECH-118
Chemical Toxicology	TOXI	TECH-120
Chemistry and the Law	CHAL	TECH-122
Colloid and Surface Chemistry	COLL	TECH-123
Computers in Chemistry	COMP	TECH-134
Energy and Fuels	ENFL	TECH-142
Environmental Chemistry	ENVR	TECH-152
Fluorine Chemistry	FLUO	TECH-170
Geochemistry	GEOC	TECH-171
History of Chemistry	HIST	TECH-173
Industrial and Engineering Chemistry	I&EC	TECH-174
Inorganic Chemistry	INOR	TECH-175
Medicinal Chemistry	MEDI	TECH-188

Organizing Group	Acronym	Page
Nuclear Chemistry and Technology	NUCL	TECH-196
Organic Chemistry	ORGN	TECH-197
Physical Chemistry	PHYS	TECH-211
Polymer Chemistry	POLY	TECH-222
Polymeric Materials Science and Engineering	PMSE	TECH-234
Professional Relations	PROF	TECH-247
Rubber	RUBB	TECH-248
Small Chemical Businesses	SCHB	TECH-248

## COMMITTEE PROGRAMMING (In order of appearance)

Committee on Chemical Safety	CCS	TECH-249
Chemists with Disabilities	CWD	TECH-249
Committee on Corporation Associates	CORP	TECH-249
Committee on Economic and Professional Affairs	CEPA	TECH-249
Committee on Environmental Improvement	CEI	TECH-249
Committee on Ethics	ETHC	TECH-250
International Activities Committee	IAC	TECH-250
Committee on Local Section Activities	LSAC	TECH-250
Committee on Minority Affairs	CMA	TECH-250
Committee on Nomenclature, Terminology & Symbols	NTS	TECH-251
Committee on Science	COMSCI	TECH-251
Diversity & Inclusion Advisory Board	D&I	TECH-251
Society Committee on Education	SOCED	TECH-251
Women Chemists Committee	WCC	TECH-252
Younger Chemists Committee	YCC	TECH-252

## PRES

## Presidential Events

D. Nelson, *Program Chair*

## SOCIAL EVENTS:

Networking Globally: Science &amp; Human Rights, 4:30 PM: Sun

International Welcome Reception, 5:30 PM: Sun

Chemical Business of the People Coffee Break (Sponsored by Osha Liang LLP), 8:00 AM: Tue

## SUNDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 201C

## Citation for Chemical Breakthrough Award to Rice University: Symposium honoring Robert Curl

*Cosponsored by HIST*J. Seeman, *Organizer, Presiding*

10:30 Introductory Remarks.

10:35 PRES 1. Value of celebrating science and scientists. D.J. Nelson

10:45 PRES 2. Citation for Chemical Breakthrough Award program. J. Seeman

10:55 Panel Discussion: Citation for Chemical Breakthrough Award. J. Seeman.

11:15 Presentation of Award.

11:20 PRES 3. Fullerenes: Discovery and beyond. R.F. Curl

## Section B

Pennsylvania Convention Center  
Room 201B

## Chemical Sciences &amp; Human Rights

*Cosponsored by IAC‡*L. Brown, D. J. Phillips, *Organizers*

8:00 Introductory Remarks.

8:15 PRES 4. Committee of concerned scientists: Scientists acting for scientists. Z.M. Lerman, L. Brown

8:45 PRES 5. Chemists contributing to human rights: Enhancing research, teaching and global impact. J. Toney, L. Brown

9:15 PRES 6. The Global Chemists' Code of Ethics: International collaboration as a path to the ethical practice of chemistry. S.W. Hill, N.B. Jackson

9:45 Intermission.

10:00 PRES 7. How science and scientists can ensure the accessibility of water as a fundamental human right. W.A. Lawal

10:30 PRES 8. Assisting threatened scientists and scholars: The Scholars at Risk Network. R. Anderson, L. Brown

11:00 PRES 9. U.S. National Academies of Sciences, Engineering, and Medicine's Committee on Human Rights. R. Everly, L. Brown

11:30 Concluding Remarks.

## SUNDAY AFTERNOON

## Section A

Philadelphia Marriott Downtown  
Liberty Salon C

## Chemistry in the U.S. &amp; China: Current &amp; Future States of Shared Scientific Interests &amp; Opportunities for Cooperation

*Cosponsored by CEPA, COMSCI, IAC‡, MPPG and PROF*S. W. Hill, E. A. Nalley, D. J. Nelson, *Organizers*  
M. P. Wu, *Organizer, Presiding*

1:20 Introductory Remarks. D. Nelson

1:30 PRES 10. Green chemistry: The way to sustainable development. B. Han

2:00 PRES 11. Mass and energy manipulation using carbon nanotechnology. M. Strano

2:30 PRES 12. Atom-economy transformation of CO<sub>2</sub>: A molecular solution to a global challenge. K. Ding

3:00 PRES 13. Translational chemical biology. C.R. Bertozzi

3:30 PRES 14. Protein design and its applications in CO<sub>2</sub> utilization. J. Wang4:00 PRES 15. CO<sub>2</sub> + H<sub>2</sub>O + sunlight → chemical fuels + O<sub>2</sub>. P. Yang

## Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon C

## Building International Communities

*Cosponsored by IAC‡*D. C. Crans, B. Miller, D. J. Nelson, *Organizers*

4:30 - 6:30

PRES 16. Science diplomacy as a bridge to peace in the Middle East: The Malta Conferences. Z.M. Lerman, M.Z. Hoffman

PRES 17. Kongamano - Computational Chemistry Workshops at Kenyatta University &amp; The University of Nairobi, Nairobi, Kenya. J. Pradon, E.O. Changamu, S. Derese, L. Whitehead

## MONDAY MORNING

## Section A

Philadelphia Marriott Downtown  
Liberty Salon A

## Fracking: Economics vs Environment

*Cosponsored by BMGT‡*D. J. Nelson, *Organizer*D. T. Daly, *Organizer, Presiding*B. Engel, *Presiding*

8:00 Introductory Remarks. D. Nelson

8:05 PRES 18. Economic consequences of shale gas &amp; tight oil development. R. Kleinberg

8:35 PRES 19. Implications of oil field chemicals for produced water beneficial reuse. W. Stringfellow, S.B. Shonkoff, M. Camarillo, C. Varadharajan, P. Jordan, J. Birkholzer

9:05 PRES 20. Reducing the environmental footprint of methane from fracking operations. J.L. Maclachlan, J.N. Driscoll

9:35 Intermission.

9:50 PRES 21. Environmental and energy implications of the shale boom. A. Peltz

10:20 PRES 22. Chemistry in the public interest. A.M. Noce

10:50 PRES 23. Finding a needle in the haystack – analytical methodologies towards the fingerprinting of environmental contamination events related to unconventional gas development. P. Piotrowski, F.L. Dorman

11:20 Intermission.

11:30 Panel Discussion.

## Section B

Philadelphia Marriott Downtown  
Liberty Salon C

## Chemistry in the U.S. &amp; China: Current &amp; Future States of Shared Scientific Interests &amp; Opportunities for Cooperation

*Cosponsored by CEPA, COMSCI, IAC‡, MPPG and PROF*S. W. Hill, E. A. Nalley, D. J. Nelson, *Organizers*  
M. P. Wu, *Organizer, Presiding*

8:30 PRES 24. Artificial photosynthesis for solar energy conversion. L. Wu

9:00 PRES 25. Us vs. Them: Carbohydrates as microbial detectors. L. Kiesling

9:30 PRES 26. Institute of process engineering, Chinese Academy of Sciences. S. Zhang

10:00 PRES 27. Natural product-tome project. M.D. Burke

10:30 PRES 28. Direct conversion of C1 molecules to high value chemicals. X. Bao

11:00 PRES 29. Bridges between theory and experiment across the periodic table. A.K. Wilson

11:30 PRES 30. Creating a new industry focused on 3D manufacturing. J.M. Desimone

## Forensics: The Crossroads of Science, Policy &amp; Justice

*Sponsored by COMSCI, Cosponsored by ANYL, MPPG and PRES*

## MONDAY AFTERNOON

## Section A

Philadelphia Marriott Downtown  
Liberty Salon A

## Broadening Participation in Global Chemistry Experiences: Why Engaging Diverse Chemistry Communities in Global Research is Critical

*Cosponsored by IAC and PROF*C. LaPrade, *Organizer*G. Thomas, *Presiding*

2:00 Introductory Remarks.

2:20 PRES 31. Experiencing research immersion in a foreign laboratory: I-REU program in France. V.D. Kleiman

2:40 PRES 32. Engaging students from diverse backgrounds in global learning experiences. Z.S. Wilson

3:00 PRES 33. Connecting-efforts to provide global experiences in chemistry. L. Winfield

3:20 PRES 34. Broadening participation through an international REU site in France and Belgium. G. Thomas, R. Duran, D. Spivak

3:40 PRES 35. Broadening my career through international experiences. A. Benoit

4:00 Intermission.

4:20 Panel Discussion.

4:50 Concluding Remarks.

## Section B

Philadelphia Marriott Downtown  
Liberty Salon C

## NSF Opportunities

C. A. Bessel, *Organizer*A. Wilson, *Organizer, Presiding*

1:00 Introductory Remarks. D. Nelson

1:05 PRES 36. Preparing the next generation of scientists. C.A. Bessel, S. Albin, A. Wilson

1:30 PRES 37. Proposal strategies for new investigators at the National Science Foundation. T. Patten, S. Rychnovsky, A. Schmoltnier, M. Jenkins

2:20 PRES 38. Funding opportunities at the NSF and proposal strategies for faculty at primarily undergraduate institutions (PUIs). M. Bushey, D.A. Rockcliffe, M. Jenkins

2:45 Intermission.

3:00 PRES 39. Community discussion on mid-scale instrumentation. C.A. Bessel, A.K. Wilson, C.A. Murillo, K. Cook

3:30 PRES 40. Community discussion on the data revolution and scientific discovery. A.K. Wilson, L. He, D.A. Rockcliffe, E.M. Goldfield, C.A. Bessel

## Using New Media to Communicate Chemistry to the Public

*Sponsored by CINF, Cosponsored by MPPG and PRES*

## TUESDAY MORNING

## Section A

Philadelphia Marriott Downtown  
Independence III/III

## Chemical Business of the People, by the People, for the People

*Cosponsored by HIST, MPPG and SCHB‡*J. E. Sabol, *Organizer, Presiding*

8:30 Introductory Remarks. D. Nelson

8:40 PRES 41. Confessions of The Speaking Scientist™: growing a business that helps scientists speak when the stakes are high. N. Milanovich

9:10 PRES 42. IP 101: what every small business should know about intellectual property. C.A. Burton

9:40 PRES 43. Your small chemical business can be both fun and profitable. J.H. Lauterbach

10:10 Intermission.

10:30 PRES 44. Commercializing bio-inspired chemical products. K. Ahn

11:00 PRES 45. Harsh realities about difficulties in the chemical sciences job market: view from the frontline. W.A. Lawal

‡Cooperative Cosponsorship

11:30 **PRES 46.** Musings of a Midwest entrepreneur. T.C. Gast

#### Crafting Chemical Communication

Sponsored by CHED, Cosponsored by PRES

## TUESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 124

#### Chemical Business of the People, by the People, for the People

Cosponsored by HIST, MPPG and SCHB†

J. E. Sabol, *Organizer, Presiding*

1:00 Introductory Remarks.

1:05 **PRES 47.** Commercialization of disruptive chemical technologies by an entrepreneurial venture. J.P. Laurino

1:35 **PRES 48.** Early stage, non-dilutive, funding through Federal SBIR and STTR programs. M.K. Jain

2:05 **PRES 49.** From dream to reality: experiences that led to the creation of a chemical enterprise. L.M. Burke

2:35 Concluding Remarks.

#### Chemists & the Public: What Research Shows about Engagement & Communication

##### James T. Grady-James H. Stack Award for Interpreting Chemistry for the Public

Sponsored by MPPG, Cosponsored by PRES

#### Crafting Chemical Communication

Sponsored by CHED, Cosponsored by PRES

## MPPG

### Multidisciplinary Program Planning Group

R. Baum, *Program Chair*

#### OTHER SYMPOSIA OF INTEREST:

Chemistry of the City of Brotherly Love (see YCC, Mon)

#### BUSINESS MEETINGS:

Business Meeting, 2:30 PM: Sat

## SUNDAY MORNING

#### Mobilizing Chemistry Expertise to Solve Humanitarian Problems

Sponsored by ANYL, Cosponsored by MPPG

#### WCC Merck Research Award Symposium

Sponsored by WCC, Cosponsored by ANYL, BIOL, COMP, MEDI, MPPG, ORGN, POLY and PROF

#### Water-Energy Nexus

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Chemical Microscopy for In Situ & In Vivo Molecular Analysis

Sponsored by ANYL, Cosponsored by MPPG

#### Low Temperature Catalysis

Sponsored by CATL, Cosponsored by ENFL and MPPG

#### Unconventional Energy on Heavy Oil & Shale Gas

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Analyzing & Controlling Cell-Material Interactions

Sponsored by ANYL, Cosponsored by BIOL, COLL and MPPG

#### Degradation of Materials for Energy & Fuel Production

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Small Molecules Activated by Homogeneous Metal Catalysts

Sponsored by CATL, Cosponsored by ENFL and MPPG

#### Solar Fuels: Power to the People

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Biomass

Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG

## SUNDAY AFTERNOON

### Section B

Pennsylvania Convention Center  
Ballroom B

#### Chemistry of the People, by the People, for the People Plenary Session

R. Baum, *Organizer, Presiding*

3:00 **MPPG 1.** Chemical link between our oceans, clouds & climate. K.A. Prather

3:45 **MPPG 2.** Urban metabolism metrology: A new discipline elucidating the human condition in cities around the world. R. Halden

4:30 **MPPG 3.** Metrology, a catalyst for change: How better measurements enable a better future. W. May

5:15 Panel Discussion.

#### Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation

Sponsored by PRES, Cosponsored by CEPA, COMSCI, IAC†, MPPG and PROF

#### Mobilizing Chemistry Expertise to Solve Humanitarian Problems

Sponsored by ANYL, Cosponsored by MPPG

#### Chemical Microscopy for In Situ & In Vivo Molecular Analysis

Sponsored by ANYL, Cosponsored by MPPG

#### Unconventional Energy on Heavy Oil & Shale Gas

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Analyzing & Controlling Cell-Material Interactions

Sponsored by ANYL, Cosponsored by BIOL, COLL and MPPG

#### Degradation of Materials for Energy & Fuel Production

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Small Molecules Activated by Homogeneous Metal Catalysts

Sponsored by CATL, Cosponsored by ENFL and MPPG

#### Solar Fuels: Power to the People

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Novel Materials for Gas Separation, Storage & Utilization

##### Gas Separation

Sponsored by ENFL, Cosponsored by ENVR and MPPG

##### Biomass

Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG

## MONDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 201C

#### 2016 C&EN Talented 12

A. T. Yarnell, *Organizer*

L. Wolf, *Organizer, Presiding*

B. Campos-Seijo, *Presiding*

8:00 **MPPG 4.** 2016 C&EN Talented 12. B. Campos-Seijo, L. Wolf

#### Chemistry of the People, by the People, for the People

Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG

#### Chemistry Data for the People: From Policy to Practice

**Value of Open for Chemists**  
Sponsored by CINF, Cosponsored by MPPG

#### Forensics: The Crossroads of Science, Policy & Justice

Sponsored by COMSCI, Cosponsored by ANYL, MPPG and PRES

#### All the People, All the Paths in the Chemical Sciences

Sponsored by WCC, Cosponsored by CMA, MPPG, PROF† and YCC

#### Chemistry for the People:

**Reflections from Perkin Medalists**  
Sponsored by CHED, Cosponsored by MPPG

#### Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation

Sponsored by PRES, Cosponsored by CEPA, COMSCI, IAC†, MPPG and PROF

#### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

##### Hydrolysis & Chemical Conversion

Sponsored by CATL, Cosponsored by ENFL and MPPG

#### Mass Spectrometry for the Masses: Recent Developments in Mass Spectrometry Enabled Pharmaceutical Discovery, Development & Manufacturing

Sponsored by ANYL, Cosponsored by MEDI and MPPG

#### Innovative Chemistry & Materials for Electroenergy Production & Storage

##### Solid-State Batteries

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Forced Degradations in the Pharmaceutical Industry

Sponsored by ANYL, Cosponsored by MEDI and MPPG

#### Solar Fuels: Power to the People

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Novel Materials for Gas Separation, Storage & Utilization

##### Storage

Sponsored by ENFL, Cosponsored by ENVR and MPPG

##### Biomass

Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG

## MONDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 201C

#### Nanoscience & Nanotechnology for Human Health, Repair & Safety

H. Tierney, *Organizer*

P. Alivisatos, P. S. Weiss, *Organizers, Presiding*

1:20 Introductory Remarks.

1:30 **MPPG 5.** Surface control of stem cell pluripotency and differentiation. L.L. Kiessling

2:00 **MPPG 6.** Targeted and triggered drug delivery systems. D.S. Kohane

2:30 **MPPG 7.** Engineered approach to pancreatic cancer using mesoporous silica nanocarriers & immune perturbation. A. Nel

3:00 **MPPG 8.** Nano- & microfabricated hydrogels for regenerative engineering. A. Khademhosseini

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**Section B**

Pennsylvania Convention Center  
Ballroom B

**The Kavli Foundation Emerging Leader in Chemistry Lecture**

D. J. Nelson, *Organizer, Presiding*

4:00 Introductory Remarks.

4:05 MPPG 9. Bioinspired sponges: Metal-organic frameworks for combating nerve agents & toxic gases. O.K. Farha

4:55 Q&A Session.

**Section B**

Pennsylvania Convention Center  
Ballroom B

**The Fred Kavli Innovations in Chemistry Lecture**

D. J. Nelson, *Organizer, Presiding*

5:15 Introductory Remarks.

5:20 MPPG 10. Establishing a genetic code for unnatural materials. C.A. Mirkin

6:15 Q&A Session.

**Chemistry of the People, by the People, for the People**

Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG

**Chemistry Data for the People: From Policy to Practice****Pain Points: Distilled, Analyzed & Next Steps**

Sponsored by CINP, Cosponsored by MPPG

**Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?**

Sponsored by ANYL, Cosponsored by BIOL, BMGT, CHED, CINP, MEDI, MPPG, PMSE and SCHB

**ACS Award for Encouraging Disadvantaged Students into Careers in the Chemical Sciences: Symposium in honor of Luis A. Colon**

Sponsored by ANYL, Cosponsored by MPPG

**Chemistry For the People: Reflections from Perkin Medalists**

Sponsored by CHED, Cosponsored by MPPG

**Using New Media to Communicate Chemistry to the Public**

Sponsored by CINP, Cosponsored by MPPG and PRES

**Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives****Hydrolysis & Chemical Conversion**

Sponsored by CATL, Cosponsored by ENFL and MPPG

**Innovative Chemistry & Materials for Electroenergy Production & Storage****Supercapacitors**

Sponsored by ENFL, Cosponsored by ENVR and MPPG

**Novel Materials for Gas Separation, Storage & Utilization****Utilization**

Sponsored by ENFL, Cosponsored by ENVR and MPPG

**Biomass**

Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG

**Advances in Chemistry of Energy & Fuels**

Sponsored by ENVR, Cosponsored by ENVR and MPPG

**TUESDAY MORNING****Section A**

Pennsylvania Convention Center  
Room 201C

**Addressing the Facts Behind the Fear of Exposure to Chemicals that Threaten Human Reproduction**

Cosponsored by BMGT

R. Baum, *Organizer*

D. T. Daly, *Organizer, Presiding*

8:00 MPPG 11. Green chemistry: An opportunity for growth & competitive advantage. J.C. Warner

9:00 MPPG 12. 21st chemistry education: Integrating green chemistry & toxicology into the education of a chemist. A.S. Cannon

9:30 MPPG 13. Can chemists think & work towards sustainability if it means eliminating the chemicals industry? J.L. Shamshina, G. Gurau, R.D. Rogers

10:00 MPPG 14. Assuring purity of water and food. S. Ahuja

10:30 Intermission.

10:40 Panel Discussion.

**Chemistry of the People, by the People, for the People**

Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG

**Chemical Business of the People, by the People, for the People**

Sponsored by PRES, Cosponsored by HIST, MPPG and SCHB‡

**Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine**

Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS

**Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives****Thermochemical Conversion & Upgrading**

Sponsored by CATL, Cosponsored by ENFL and MPPG

**Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel**

Sponsored by ORGN, Cosponsored by BMGT, CHED, CINP, HIST, INOR, MEDI, MPPG, PMSE and SCHB

**Innovative Chemistry & Materials for Electroenergy Production & Storage****Flow Batteries & Non-Li Alkali Metal Batteries**

Sponsored by ENFL, Cosponsored by ENVR and MPPG

**Computational Chemistry for Energy Application**

Sponsored by ENFL, Cosponsored by CATL and MPPG

**Advances in Chemistry of Energy & Fuels****Catalysts & Nanoparticles in Energy Conversion**

Sponsored by ENFL, Cosponsored by ENVR and MPPG

**TUESDAY AFTERNOON****Section A**

Pennsylvania Convention Center  
Room 201C

**Chemists & the Public: What Research Shows about Engagement & Communication****James T. Grady-James H. Stack Award for Interpreting Chemistry for the Public**

Cosponsored by PRES

N. E. Blount, S. R. Morrissey, *Organizers*

J. L. Maclachlan, *Presiding*

1:00 Opening Remarks.

1:05 MPPG 15. Public understanding of science: Lessons from Pew Research Center surveys. C. Funk

1:45 MPPG 16. Views from ACS members about public engagement: Results from our 2016 member survey. J.C. Besley, A. Dudo

2:25 MPPG 17. Chemical communication in informal environments. M. Kirchhoff

3:05 MPPG 18. Chemical industry communication efforts. G.S. Ruskin

3:45 MPPG 19. Award Address (James T. Grady-James H. Stack Award for Interpreting Chemistry for the Public sponsored by the American Chemical Society). Declaration of interdependence. P. Atkins

4:20 Presentation of the James T. Grady-James H. Stack Award for Interpreting Chemistry for the Public

**Chemical Business of the People, by the People, for the People**

Sponsored by PRES, Cosponsored by HIST, MPPG and SCHB‡

**Chemistry of the People, by the People, for the People**

Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG

**Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine**

Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS

**Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives****Thermochemical Conversion & Upgrading**

Sponsored by CATL, Cosponsored by ENFL and MPPG

**Basic Research Toward Translational Point-of-Care Devices**

Sponsored by ANYL, Cosponsored by MPPG

**Innovative Chemistry & Materials for Electroenergy Production & Storage****Electrocatalysis**

Sponsored by ENFL, Cosponsored by ENVR and MPPG

**Computational Chemistry for Energy Application**

Sponsored by ENFL, Cosponsored by CATL and MPPG

**Advances in Chemistry of Energy & Fuels****Batteries**

Sponsored by ENFL, Cosponsored by ENVR and MPPG

**WEDNESDAY MORNING****CO<sub>2</sub> Reduction: Electrocatalysis**

Sponsored by CATL, Cosponsored by ENFL and MPPG

**Energy Storage Applications of Ammonia: Synthesis, Storage, Safety & Utilisation**

Sponsored by CATL, Cosponsored by ENFL and MPPG

**Citizens First! Using Real-World Contexts for Engaging Students in Learning Chemistry**

Sponsored by CHED, Cosponsored by CEI and MPPG

**Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine**

Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS

**Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives****Lignin Conversion**

Sponsored by CATL, Cosponsored by ENFL and MPPG

**Progress in Coal to Liquids & Gases**

Sponsored by ENFL, Cosponsored by ENVR and MPPG

**Innovative Chemistry & Materials for Electroenergy Production & Storage****Li-S Batteries**

Sponsored by ENFL, Cosponsored by ENVR and MPPG

**Computational Chemistry for Energy Application**

Sponsored by ENFL, Cosponsored by CATL and MPPG

**Advances in Chemistry of Energy & Fuels****Batteries, CO<sub>2</sub> Capture, Pyrolysis Modeling & Others**

Sponsored by ENFL, Cosponsored by ENVR and MPPG

**WEDNESDAY AFTERNOON****CO<sub>2</sub> Reduction: Electrocatalysis**

Sponsored by CATL, Cosponsored by ENFL and MPPG

‡Cooperative Cosponsorship



## Citizens First! Using Real-World Contexts for Engaging Students in Learning Chemistry

Sponsored by *CHED*, Cosponsored by *CEI* and *MPPG*

## Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

Sponsored by *ANYL*, Cosponsored by *BIOL*, *COLL*, *MPPG* and *PHYS*

## Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

### Conversion to Chemicals & Fuels

Sponsored by *CATL*, Cosponsored by *ENFL* and *MPPG*

## Innovative Chemistry & Materials for Electroenergy Production & Storage

### Li-Ion & Li-O<sub>2</sub> Batteries

Sponsored by *ENFL*, Cosponsored by *ENVR* and *MPPG*

## Advances in Chemistry of Energy & Fuels

### Production, Refinery & Storage of Fuel Compounds

Sponsored by *ENFL*, Cosponsored by *ENVR* and *MPPG*

## THURSDAY MORNING

## Innovative Chemistry & Materials for Electroenergy Production & Storage

### Electrocatalysis for Low-Temperature Fuel Cells & CO<sub>2</sub> Reduction

Sponsored by *ENFL*, Cosponsored by *ENVR* and *MPPG*

## AEI

## Academic Employment Initiative

C. Kuniyoshi and N. Bakowski, *Program Chairs*

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

### Academic Employment Initiative

C. Kuniyoshi, *Organizer*

8:00 - 10:00

- AEI 1. Continuous, real-time molecular measurements directly in vivo. N. Arroyo
- AEI 2. Functional layer-by-layer design of monolayer-protected cluster doped xerogels on platinum black modified electrodes for optimized uric acid biosensor. M.B. Wayu, M.J. Pannell, J.D. Dattelbaum, M. Leopold
- AEI 3. Organic molecular tools for bioinorganic chemistry: Sensitive fluorescent probes and robust affinity standards for copper(I). M. Morgan, P. Bagchi, A.H. Nguyen, A. McCallum, C. Fahrni

- AEI 4. Chemical biology approaches to inhibition of epigenetic protein-protein interactions between histones and bromodomains. L. Hawk, A. Ayoub, R.J. Herzig, A. Wisniewski, C.T. Gee, H. Hu, G.I. Georg, T. Ward, W.C. Pomerantz
- AEI 5. 3'-NP-DNA: An alternative informational polymer for model protocells and beyond. E.C. Izgu, S.S. Oh, J.W. Szostak
- AEI 6. Chemical and biological tools for study and control in synthetic biology and biological energy sciences. J.R. King
- AEI 7. Cadmium inactivates human MutL $\alpha$  during DNA mismatch repair. S.M. Sherrer, P.L. Modrich
- AEI 8. Isolation of novel immunostimulatory bacterial cell wall fragments utilizing peptidoglycan O-acetyltransferase B (PatB). Y. Wang, C.L. Grimes, K. DeMeester, C. Hou, K. Lazor
- AEI 9. Design and synthesis of dynamically assembling DNA nanostructures. J.P. Sadowski
- AEI 10. Design, synthesis, and characterization of nanoalloy catalysts in green energy conversion. H. Cronk
- AEI 11. Inspired engineering using advanced fluorescent spectroscopies. L. Kiskey
- AEI 12. Spectroscopic analysis of silver nanoparticles made with plant extracts. B.D. Smith, Z. Gobert, J. Krug, D. Wolfe
- AEI 13. Utilization of a computational model to predict host-guest binding affinities. M.L. Laury, J.W. Ponder
- AEI 14. Combination of quantum-chemical characterizations and classical molecular simulations on catalytic materials and atmospheric environments. W. Lin
- AEI 15. Screening for activity and selectivity in the oxidative upgrading of ethane to ethanol with small metal-based catalyst. S.L. Pellizzeri, A. Samstag, L.T. Monteith, I. Jones, P. Miro, R. Snurr, R. Getman
- AEI 16. Modeling excited state chemistry: Linear-response and real-time time-dependent density functional theory. M.R. Provorse, J. Milanese, T. Peev, C. Isborn
- AEI 17. Development and application of computational methods in bioinorganic chemistry. E.M. Sproviero
- AEI 18. Mobility of naturally-occurring radioactive materials (NORM) in bit cuttings from unconventional drilling operations. E. Eitheim, A. Nelson, T. Forbes
- AEI 19. Removal of pharmaceutical products from waste water using magnetized fast pyrolysis biochar from timber industry waste wood. A.G. Karunanayake, M. Crowley, O.A. Todd, T. Mlsna
- AEI 20. Effects of activated carbon amendments on the bioavailability and methylation of different forms of inorganic mercury. C.A. Johnson, U. Ndu, E. Hung, N. Rivera, M. Deshusses, H. Hsu-Kim
- AEI 21. Cultivability and infectivity of *Legionella pneumophila* released from simulated-drinking-water-biofilms under disinfectant exposure. Y. Shen
- AEI 22. Microbial fuel cells for pollutants removal and energy recovery from wastewater. L. Zhang, S.F. Li
- AEI 23. Chemistry and engineering of energy, environment, and health. C.D. Jensen
- AEI 24. Sodium silicate treatment to attenuate uranium mobility in the acidic groundwater plumes. V. Anagnostopoulos, A. Hernandez, C. Wipfli, Y. Katsenovich, M. Denham
- AEI 25. Actinides and the environment: Understanding increasingly complex systems. H.P. Emerson
- AEI 26. Structure-activity relationship of lipophilic ruthenium(II) Tatpp complexes: Synthesis, characterization and biological activity. N. Alatrash, F.M. MacDonnell
- AEI 27. Gemini surfactants as sensitizers of lanthanide ion luminescence. P.S. Barber, A.M. McAdams, L.D. Elmendorf, L.D. Jaramillo
- AEI 28. Use of vapor phase polymerized PEDOT as a hole-transport layer in a solid-state dye sensitized solar cell. S.M. Boyer, F.H. Schreffler, W.E. Bernier, W.E. Jones
- AEI 29. Taking the temperature of the interiors of magnetically heated nanoparticles and multiplexed biomolecular sensing using single wall carbon nanotubes. J. Dong, M. Strano, J.I. Zink
- AEI 30. Na[OCp] as a synthon in low-coordinate phosphorus chemistry. R.J. Gilliard, R. Suter, Z. Benkő, J.D. Protasiewicz, H. Grützmacher
- AEI 31. Preventing pyran cyclization in synthetic models of moco: Effects on the electronic environment. D.R. Gisewhite, S.J. Nieter Burgmayer
- AEI 32. Design of molecular heterometallic precursors for the low-temperature preparation of Li-rich spinel oxide. H. Han, Z. Wei, A.S. Filatov, A.M. Abakumov, E. Dikarev
- AEI 33. Functionalization of nona germanium clusters with more than two substituents and application of polyoxovanadate aloxide clusters as novel redox-active ligand. F. Li, S.C. Sevov, E.M. Matson
- AEI 34. Cobalt-catalyzed Suzuki-Miyaura cross coupling: Fundamental insights lead to the discovery of catalytic reactivity. J. Neely, P.J. Chirik
- AEI 35. Applications of ruthenium photochemistry in hydrogel photodegradation. T.L. Rapp
- AEI 36. Biomass upgrading using water splitting electrocatalysts. Y.N. Regmi
- AEI 37. Computational and experimental investigation of the release of nitric oxide from s-nitrosothiols, mediated through metal organic framework catalysis events. K. Taylor, T.M. Wheat, T. Li, A.W. Maverick, R. Kumar
- AEI 38. Bio-inorganic model clusters and high energy materials. S. Vaddypally
- AEI 39. Inferred Pa(V) complex formation via selective extraction by aliphatic alcohols. A. Knight
- AEI 40. Small molecule modulators of protein-protein interactions and targeted protein degradation. D. Buckley
- AEI 41. Withdrawn.
- AEI 42. Gold catalysis for hydroamination; halogenation effects in furan cycloaddition and new porphycene macrocycles. M. Bebbington

- AEI 43. Carbon nanotube functionalization to develop electrically conductive thin films, bioorganic photodimerization of thymine to understand skin cancer, developing stereoselective synthetic methodology using zwitterionic effects and organoaluminum catalysis in tropanes to develop pharmaceuticals for neurobiological diseases such as Alzheimers and Parkinsons and educational research teaching large lectures. J.M. Hahn
- AEI 44. Structure-based design and biological evaluation of triphenyl scaffold-based compounds as modulators of a LuxR-type quorum sensing receptor and applications of organocatalysis towards the synthesis of biologically relevant scaffolds. M.C. O'Reilly
- AEI 45. Porous three-dimensional structures via self-assembly of organic macrocycles from radical cation interactions. M.T. Otley, M. Owczarek, M. Lipke, D. Kim, C. Pezzato, H. Arslan, J.F. Stoddart
- AEI 46. Design, synthesis, and evaluation of amide derivatives as probes for HIV-1 TAR RNA. N.N. Patwardhan, A.E. Hargrove
- AEI 47. Synthesis of oxazoles and oxazolines from an epoxide-derived aminoalcohol intermediate. D.L. Sellers, E. Schoffers
- AEI 48. New reaction development in fundamental organic chemistry and organometallic cross coupling. B. Woods, T.R. Hoye, A.G. Doyle
- AEI 49. From single molecules to surfaces and solids: Long-range dispersion in density functional theory. J.E. Bates, J. Sun, J.P. Perdew, A. Ruzsinszky
- AEI 50. Statistical mechanical analysis of insulin transport in clonal MIN6 sublines. M.K. Daddysman, M.H. Renn, A.L. Hutchison, T. Huynh, L.H. Philipson, A.R. Dinner, N.F. Scherer
- AEI 51. Advances in conformation-specific cold ion spectroscopy by IR-UV double resonance. A.F. Deblase, C.P. Harrilal, E.T. Dziekonski, N.L. Burke, S.A. McLuckey, T.S. Zwier
- AEI 52. Instrument development that connects mass spectrometry to the solution phase: Spectroscopy of nitrogen-containing heterocycles, flow-through electrochemistry, and preparative scale mass spectrometry. A.L. Ferzoco
- AEI 53. Investigating the electromagnetic effects of copper and metal-alloy coils on electrochemical etching of platinum-iridium tips. O. Herrera, S. Abuhadba, D. Wypych, S. Tsonchev

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**AEI 54.** Computer aided catalyst design for energy application: From enzymatic function to functional mimics. N. Kumar, S. Raugel, B. Ginovska-Pangovska, M. Bullock

**AEI 55.** Understanding electron transfer and transport in water-splitting dye cells. J. Swierk, N.S. McCool, C.A. Schmuttenmaer, T.E. Mallouk

**AEI 56.** Use of computational modelling to study protein-ligand interactions and ligand-ligand interactions. V.K. Thilakarathne

**AEI 57.** Spectroscopic studies of exciton dynamics in composited assemblies of organic chromophores and inorganic semiconductor nanoparticles. C. Wang

**AEI 58.** Coupled wavepackets for non-adiabatic molecular dynamic. A. White

**AEI 59.** New approach of spin resolved electron dynamics tested on a variety of metal organic dimers and complexes. S.J. Jensen, V.D. Kleiman, D. Kilin

**AEI 60.** Efficient implementation of molecules-in-molecules fragment-based method for chiroptical vibrational spectra of large molecules. K. Jose, K. Raghavachari

**AEI 61.** Toward microcapsule-embedded self-healing materials: Encapsulation and triggered release of hydrophilic actives. X. Lu, J.S. Moore

**AEI 62.** Characterization of polymer particles using physical chemistry techniques in biological environments for drug delivery applications. K. Mcennis

**AEI 63.** Vapor phase polymerized poly(3,4-ethylenedioxythiophene) (PEDOT) on varied substrates as electrode material for supercapacitor. L. Tong, J. Liu, S.M. Boyer, L.A. Sonnenberg, M.T. Fox, W.E. Bernier, W.E. Jones

**AEI 64.** Well-ordered materials with sub-5nm periodicities via self-assembly of monodisperse oligodimethylsiloxanes. R.H. Zha, B. de Waal, M. Lutz, R. Gosens, J. Berrocal, E.W. Meijer

**AEI 65.** Layer-by-layer assembled multilayer membranes with advanced transport properties. F. Xiang

**AEI 66.** Proximal effects in bimetallic catalysts for olefin polymerization, in cross metathesis of poly(3-R-cyclooctenes), and in multiblock polymers. M.R. Radlauer, T. Agapie, M.A. Hillmyer

**AEI 67.** Structural and thermodynamic changes to DNA resulting from adduction by 3-nitrobenzanthrone. D.A. Politica

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## AGFD

### Division of Agricultural and Food Chemistry

N. Seeram, *Program Chair*

#### OTHER SYMPOSIA OF INTEREST:

**Synthetic Biology & Genetically Modified Organisms** (see ENVR, Mon)

#### SOCIAL EVENTS:

**Poster Reception**, 5:00 PM: Sun

**Awards Banquet**, 5:30 PM: Tue

#### BUSINESS MEETINGS:

**Business Meeting**, 12:15 PM: Tue

**Future Program Meeting**, 12:00 PM: Mon

**Executive Committee Meeting**, 5:00 PM: Mon

## SUNDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 110A

#### Recent Advances in Functional Biopolymers

Y. Ito, L. S. Liu, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 AGFD 1.** Protein engineering using bioorthogonal and combinatorial chemistry. Y. Ito

**8:35 AGFD 2.** Design of biodegradable injectable polymer formulation exhibiting temperature-responsive covalent hydrogel formation. Y. Ohya, Y. Yoshida, K. Kawahara, A. Kuzuya

**9:05 AGFD 3.** Plant cell-inspired hydrogel consisting of a poly(ethylene glycol) hydrogel and polyurethane foam. N. Teramoto, M. Harima, K. Wakayama, T. Shimasaki, M. Shibata

**9:35** Intermission.

**9:50 AGFD 4.** Preparation and analysis of functional oligosaccharides from rice bran arabinoxylan. B.J. Savary, K. Teoh, N. Zhang, J. Xu, F. Medina-Bolivar, S. Yu, S. Lee, Y. Wang

**10:20 AGFD 5.** Sulfation pattern of fucose branches affects the anti-hyperlipidemic activities of sea cucumber fucosylated chondroitin sulfate. S. Chen, X. Ye

**10:50 AGFD 6.** Advances in food packaging films from milk proteins. L. Bonnaille, L. Aburto, M.H. Tunick, J. Mulherin, M. Du, R. Kwozack, S. Akkurt, P.M. Tomasula

**11:20 AGFD 7.** Establishing a working intestinal microbiota community in multi-phase structure from biopolymers. L.S. Liu, J. Firman, P.M. Tomasula

**11:50** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 110B

#### General Papers

N. P. Seeram, *Organizer, Presiding*

W. Liu, H. Ma, *Presiding*

**8:00** Introductory Remarks.

**8:05 AGFD 8.** Triterpenoids from the Chinese hawthorn (*Crataegus cuneata*) fruits: Extraction, structure, quantification, and bioactivity. T. Yuan

**8:30 AGFD 9.** Withdrawn.

**8:55 AGFD 10.** Alkanal suppression of the enzyme tyrosinase. A. Murray, H. Satooka, K. Shimizu, W. Chavasiri, I. Kubo

**9:20 AGFD 11.** Citrus flavonones decreases oxidative stress in the liver and blood serum caused by highfat diet feeding in C57BL/6J mice. P.S. Ferreira, A.M. Nasser, J.A. Manthey, D. Goncalves, T.B. Cesar

**9:45** Intermission.

**10:00 AGFD 12.** Bioactive glucitol-core containing gallotannins from red maple (*Acer rubrum*) inhibit melanogenesis via down-regulation of tyrosinase and melanogenic gene expression in B16F10 melanoma cells. H. Ma, J. Xu, L. Guo, W. Lu, N.P. Seeram

**10:25 AGFD 13.** Binding of polyphenols to transport proteins. W. Butler, S. Harbi, J.A. Vinson

**10:50 AGFD 14.** Internal exposure of hemoglobin adducts of glycidamide enantiomers and acrylamide and the chemoprevention effect by catechins in rats. Q. Wang, J. Cheng, Y. Zhang

**11:15 AGFD 15.** Inhibitory effects of a phenylacetaldehyde-flavonoid adduct, 6-C(E-phenylethenyl)naringenin, on human colon cancer cells. Y. Zhao, M. Wang

**11:40** Concluding Remarks.

## SUNDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 110A

#### Flavor Stability: Chemical Changes in Flavor Molecules, Flavor-Food Matrix Interactions, Flavor Encapsulation

R. J. McGorin, M. C. Qian, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 AGFD 16.** Odor images and the chemistry of their stability. T.E. Acree, G. Prévost, C. Maxe, M. Gros

**1:30 AGFD 17.** Withdrawn.

**1:55 AGFD 18.** Assuring accuracy in the quantitation of the unstable odorant 2-acetyl-1-pyrroline in aromatic rice. K.R. Cadwallader, Y. Yin, B. Hausch, F. Chen

**2:20 AGFD 19.** Odor active compounds and their chiral compositions in Bluecrop and Elliot blueberry. D. Zhang, Y.L. Qian, M.C. Qian

**2:45** Intermission.

**3:00 AGFD 20.** Changes in key orange juice aroma compounds during chilled storage of NFC juice. P.H. Schieberle, V. Mall, I. Sellami

**3:25 AGFD 21.** Shelf-life challenge of savory snacks with colored vegetables. C.T. Shao, V.A. Elder

**3:50 AGFD 22.** Oiling-out effect of aroma compounds. H. Tamura, S. Ueno, A. Naka, A. Fukuzumi, S. Ho, M. Nattawadee, S. Sriwattana, L. Yonekura

**4:15** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 110B

#### General Papers

#### Journal of Agricultural & Food Chemistry Best Paper Award & Young Scientist Award Symposium

N. P. Seeram, *Organizer*

K. Deibler, *Organizer, Presiding*

**1:00** Introductory Remarks.

**1:05 AGFD 23.** Identification of bioactive components in wheat bran: An example of team science. S. Sang

**1:45** Intermission.

**2:00 AGFD 24.** Characterization of oligomeric anthocyanins and proanthocyanidins from red grape pomace by mass spectrometry (MALDI-TOF and ORBITRAP ESI-MS). E. Salas

**2:30 AGFD 25.** Development of specific dietary biomarkers to better capture whole grain wheat exposure and beneficial health effects. Y. Zhu

**3:00 AGFD 26.** Integrating traditional disciplines to develop novel technologies to address agricultural and environmental issues. R. Li

**3:30** Concluding Remarks.

#### Advances in Residues Analysis of Bee Relevant Matrices: Analytical Methods & Sampling Techniques

Sponsored by AGRO, Cosponsored by AGFD and ENVR

#### Extraction Efficiency-Bridging between Metabolism Studies & Residue Analytical Methods

Sponsored by AGRO, Cosponsored by AGFD and ENVR

#### Glyphosate: Current Status & Future Prospects

Sponsored by AGRO, Cosponsored by AGFD and ENVR

## SUNDAY EVENING

### Section A

Pennsylvania Convention Center  
Terrace Ballroom I

#### General Posters

N. P. Seeram, *Organizer*

**5:00 - 7:00**

**AGFD 27.** Structural and functional studies of ice nucleation protein and its applications in food industry. L. Zhang

**AGFD 28.** Understanding the ligand specificity of bitter taste receptors in humans and cats. J. Rucker, A. Thomas, J. Goodman, M. Sandau, C. Sulli, T. Charpentier, E. Davidson, N. Rawson

**AGFD 29.** Single-site catalysts in the production of polyolefins for food contact applications. R. Briñas, L.T. Cureton, A.B. Bailey

**AGFD 30.** Enhanced anti-inflammatory efficacy of Calebin-A encapsulated in modified starch. L. Perera, M. Pan, Y. Ting

**AGFD 31.** Role of novel multi-starter on the generation of volatile compounds in buckwheat (*Fagopyrum sculentum*) soksungjang according to fermentation period. M. Park, H. Choi, Y. Kim, I. Cho

- AGFD 32.** Preparation of carbon adsorbent from apple pomace waste aiming removal of estril from water bodies. S. Rovani, A.G. Rodrigues, L. Medeiros, R. Cataluna, E. Lima, A.N. Fernandes
- AGFD 33.** Comparison of mineral contents in vegetables (white cucumber, red paprika, water parsley and kohlrabi) undergoing different cooking methods. J. Hwang, D. Seo, S. Kim, E. Park, H. Kim, S. Lee, M. Yang
- AGFD 34.** Edible packaging: improved strength and thermal stability of casein films with citric pectin. L. Aburto, L. Bonnaille, P.M. Tomasula
- AGFD 35.** Determination of structural amino acid contents in bamboo shoot, tomato and corn undergoing different cooking methods using automated amino acid analyzer. D. Seo, W. Yoon, H. Lee, J. Hwang, M. Yang
- AGFD 36.** Aroma composition of kale (*Brassica oleracea* L. Var.) tea. I. Cho, J. Oh
- AGFD 37.** Heat-stabilized rice bran metabolome reveals biochemical contents and metabolic pathways with medicinal properties. I. Zarei, E.P. Ryan
- AGFD 38.** Simultaneous analysis of the fenthion and its oxidative metabolites in rice, chili pepper and mandarin using LC-MS/MS. J. Lee, J. Lee, J. Lee, Y. Shin, M. Jung, E. Kim, J. Kim
- AGFD 39.** Bisphenol A in breast milk from nursing Cavalier King Charles Spaniels: A preliminary study. M.B. Cichowicz, L.B. Slusher, C. Martin, J. Poskus
- AGFD 40.** Rapid screening and determining natural and synthetic steroid hormones in baby formulas using gas chromatography – tandem mass spectrometry. J. Tang, T. Baker, K. LeVanseler
- AGFD 41.** Understanding sodium diffusion in turkey breast meat. J.K. Pandya, A. Kinchla
- AGFD 42.** Development of lecithin emulsion gels system: Influence of formulation parameters on physicochemical properties and digestion kinetics. W. Huang, Y. Ting
- AGFD 43.** In vitro release, anti-proliferative and antimicrobial activity of carnosic acid nanoemulsion. H. Zheng, Q. Huang
- AGFD 44.** Stability of beta-carotene and alpha-tocopherol in cooked *Moringa oleifera* leaves, By HPLC-UV. A. Vasilatis
- AGFD 45.** Physical characterization of mushrooms as taco filling extender. K. Wong, A. Kinchla
- AGFD 46.** Total polyphenol antioxidants in the US diet. J.A. Vinson
- AGFD 47.** Effects and molecular mechanisms of soy foods or soy isoflavones in prostate cancer prevention. C. Jang, C. Wu
- AGFD 48.** Isolation and identification by high-performance liquid chromatography of bioactive metabolites of polymethoxylated flavones in rat urine. D. Goncalves, M. Rodrigues, T.B. Cesar, J.A. Manthey
- AGFD 49.** Nondestructive analysis of vitamin C content in dietary supplement tablets by using terahertz time-domain spectroscopy. J. Kang, K. Kwak, H. Chun
- AGFD 50.** Fabrication of oil-in-water nanoemulsions by dual-channel microfluidization using natural emulsifiers: saponins, phospholipids, proteins, and polysaccharides. L. Bai, D. McClements
- AGFD 51.** Bioactive peptides released during digestion of processed milk. M.H. Tunick, D.L. Van Hekken, A. Nunez, P.M. Tomasula
- AGFD 52.** High throughput analysis of caffeine in beverages using 2.3  $\mu\text{m}$  analytical reversed phase chromatography column with dual functionality for use both in HPLC and UHPLC. A. Chakrabarti, C. Benner
- AGFD 53.** Investigation of the antiproliferative constituents of *Linociera ramiflora* collected in Vietnam. P. Benatrehina, L. Pan, C. Naman, H. Chai, T.N. Ninh, D.D. Soejarto, L. Rakotondraibe, A.D. Kinghorn
- AGFD 54.** Investigation of the lymphatic transport of solid-lipid curcumin particles (Longvida®) in comparison to curcumin extract in rats. T. Eidenberger, N. Kheradia, S. Cropper
- AGFD 55.** Chemical composition and anti-hyperglycaemic effects of triterpenoids enriched *Eugenia jambolana* Lam. berry extracts. Y. Li, J. Xu, C. Yuan, H. Ma, T. Liu, F. Liu, N.P. Seeram, L. Han, X. Huang, L. Li
- AGFD 56.** In vitro anti-neuroinflammatory effects of urolithins, ellagitannin-gut microbial metabolites. N. DaSilva, P.P. Nahar, H. Ma, A. Slitt, N.P. Seeram
- AGFD 57.** Inhibitory effects on the formation of advanced glycation endproducts by hydroponically grown *Moringa oleifera*. S. Johnson, W. Liu, H. Ma, S.M. Meschwitz, J. Chace, N.P. Seeram
- AGFD 58.** Natural anthraquinones inhibited protein glycation and amino acids side chain modification by protecting protein structures. W. Liu, H. Ma, J.A. Dain, N.P. Seeram
- AGFD 59.** Isolation and structure elucidation of diterpenes from *Euphorbia laudiarabica*. A.J. Bin Muhsinah, Y. Liu, H. Ma, N. DaSilva, H. Soliman, A. Alsayari, N.P. Seeram
- AGFD 60.** Bioactive glucitol-core containing gallotannins and other phytochemicals from silver maple (*Acer saccharinum*) leaves. A.J. Bin Muhsinah, H. Ma, T. Yuan, N.P. Seeram
- AGFD 61.** Comparison of acidic collagen extraction methods of collagen from channel catfish skin. Y. Tan, S. Chang
- AGFD 62.** Size exclusion enhancement of in-vitro digestion model. K.R. Conca, K.R. Kensil, J.L. Andresen
- AGFD 63.** Tyrosine nano-emulsion stability for supplementation of Army rations. K.R. Conca, K.R. Kensil
- AGFD 64.** HPLC-ESI-MS analysis of polymethoxylated flavone metabolites in human urine. J.A. Manthey, D. Goncalves, T.B. Cesar, E. Baldwin, J. Bai, S. Raihore, J.Q. Silveira
- AGFD 65.** Expression and characterization of a thermostable endo-1,5- $\alpha$ -arabinanase (TS-ABN) in *Pichia pastoris* for biocatalytic solubilization of bioactive feruloylated arabino-oligosaccharides from sugar beet pulp. N. Zhang, J. Xu, B.J. Savary
- AGFD 66.** Biochemical investigation into the functional properties of *Delonix regia*, *Cassia fistula* and *Blighia sapida* extracts. A. Goldson-Barnaby, R. Williams
- AGFD 67.** Developing a thermally-tolerant pectin methyltransferase for improved sugar beet biomass processing. J.C. Tovar, M. Cease, J. Xu, B.J. Savary
- AGFD 68.** Simultaneous determination of unregistered pesticides in Korea for agricultural products using LC-MS/MS. S. Lee, J. Hwang, M. Kang, M. Chang, Y.D. Lee, J. Kim, G. Lee
- AGFD 69.** Identification and quantification of phenolic acids and flavonoids in three phenolic-rich legume varieties as affected by thermal treatments. Y. Zhang, S.K. Chang
- AGFD 70.** Comparative study of phenolic substances in astringent and non-astringent persimmon fruits during development and ripening. S. Kumari, S.K. Chang, Y. Zhang, Y. Zhang
- AGFD 71.** Determination of carbohydrates in kombucha using HPAE-PAD. B. Huang, J. Hu, J. Rohrer
- AGFD 72.** Quantitative analysis of allergens in peanut varieties from USDA Core Collection and other resources and assessment of food processing effects on peanut allergens. S. Meng, S.K. Chang, L. Jiang, J. Li, N. Puppala, S. Chung
- AGFD 73.** Profiling fructosyloligosaccharide (FOS) and galactosyloligosaccharide (GOS)-containing samples by high-performance anion-exchange chromatography with pulsed amperometric detection (HPAE-PAD). M. Aggrawal, J. Rohrer
- AGFD 74.** Withdrawn.
- AGFD 75.** Development of multi-residue analysis methods of pesticides for red ginseng tea. M. Kang, J. Hwang, S. Lee, J. Ryu, H. Jung, S. Kwak, J. Kang, H. Kim, J. Kim
- AGFD 76.** Design, synthesis and herbicidal activity of novel triketone compounds. H. Li, A. Guan, Z. Yao, X. Xia, Z. Wang, H. Ma, C. Liu
- AGFD 77.** Development of an absorbent to reduce pesticide residue in ginseng. S. Byeung Kon, J. Kim
- AGFD 78.** Tyrosol-based liposomal behavior: size, zeta-potential, TEM, QCM-D and fluorescence analysis. K. Evans, D.L. Compton
- AGFD 79.** Cellulose-bodipy nanohybrids for singlet oxygen production. P. Chauhan, N. Yan
- AGFD 80.** Accuracy of volatile quantification using isotopically labeled internal standards for SPME analysis of a grape mapping population. E.A. Burzynski, I. Ryona, B.I. Reisch, G.L. Sacks
- AGFD 81.** Solid phase mesh enhanced sorption from headspace (SPMESH) coupled to DART-MS/MS for high throughput quantification of trace-level odor-active volatiles. J.A. Jastrzembki, G.L. Sacks
- AGFD 82.** Effect of microstructure on the barrier property of water and oxygen in hydroxypropyl starch (HPS)/SiO<sub>2</sub> nanocomposites films. S. Liu, X. Li, L. Chen, L. Li, B. Li
- AGFD 83.** Fully automated sample extraction and analysis of mycotoxins in foods by online SFE-SFC-MS. W. Hedgepeth, K. Tanaka, T. Ogura
- AGFD 84.** Microbiological and physicochemical analysis of pumpkin juice fermentation by the basidiomycetous fungus *Ganoderma lucidum*. J. Zhao
- AGFD 85.** Design, synthesis and biological activity of novel substituted diamides derivatives containing thiophene ring. M. Li, L. Li, B. Chai, J. Yang, Y. Song, C. Liu
- AGFD 86.** Changes of polyphenolic compounds level in artichoke (*Cynara scolymus* L.) grown in Korea during cultivation. K. Hwang, D. Son, C. Kim, K. Seong, J. Moon
- AGFD 87.** Changes of organic acid level in coffee during roasting. K. Hwang, J. Moon
- AGFD 88.** Self-assembling behavior of food globular proteins and applications in stabilizing Pickering emulsions. W. Jin, Y. Jiang, B. Li, Q. Huang
- AGFD 89.** Investigation into the effects of intestinal microbiota on the metabolism and uptake of grape derived products using GC/MS. E. Carry, T. Villani, Q. Wu, H. Patel, J. Simon, G.M. Pasiñetti, L. Ho, J. Faith
- AGFD 90.** 5-hydroxytryptophan, cyanoglycoside, and flavonoid content of 10 *Griffonia simplicifolia* populations. D. Giurleo, R. Juliani, L. Hwang, J. Asante-Dartey, Q. Wu, J. Simon
- AGFD 91.** HPLC-UV analysis of  $\beta$ -tocopherol and  $\beta$ -carotene in amaranth, spider plant, and nightshade accessions grown in New Jersey. D. Giurleo, B. Yuan, A. Vasilatis, B. Somers, D. Byrnes, J. Simon, Q. Wu
- AGFD 92.** Design, synthesis, and biological activities of novel quaternary salts derivatives containing substituted aniline. Q. Wu, J. Yang, H. Ma, C. Liu
- AGFD 93.** Determination of nepetalactones and dihydronepetalactones in catnip by LC/MS. X. Dong, W. Reichert, J. Simon, Q. Wu
- AGFD 94.** Design, synthesis and biological activity of thienopyrimidine derivatives. F. Yang, C. Liu, A. Guan, Z. Yao, Z. Li, Y. Song
- AGFD 95.** Molecular modeling of plant ripening receptors and their interactions with ethylene and ripening inhibitors. J. Gold, E. Rosa, R.S. Kelly
- AGFD 96.** Dual-enzyme nano-biocatalyst for the cascade conversion of cellulose-derived oligomers to fructose via a glucose pathway. H. Chi, D.R. Radu, G. Ozbay, C. Lai
- AGFD 97.** Design, synthesis and fungicidal evaluation of novel substituted aryloxy pyridine compounds containing pyrimidinamine moiety. A. Guan, X. Sun, J. Yang, Y. Xie, J. Zhou, C. Liu

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**AGFD 98.** Design, synthesis, and the structure-activity relationships of novel N-substituted piperazines derivatives. Y. Xie, C. Liu, Y. Xu, A. Guan, L. Ban

**AGFD 99.** Design, synthesis and herbicidal evaluation of novel N-[3-(pyridin-2-yl)-phenyl]sulfonfylcarboxamides. J. Yang, Q. Wu, A. Guan, H. Ma, C. Liu

**AGFD 100.** Dietary exposure and toxicological effects of non-phthalate plasticizers from use in food contact materials. L.T. Cureton, O.J. Bandeje, A.B. Bailey, A. Ogungbesan

**AGFD 101.** Total synthesis of novel flavan-alkaloids isolated from the African tea *Combretum micranthum*. J. Zhen, C. Welch, Q. Wu, J. Simon

**AGFD 102.** Assessment of dietary exposure to emulsifiers of regulatory interest for the United States population. R. Kolanos, R. Shah, M. DiNovi, A. Mattia, K. Kaneko

**AGFD 103.** Peptidolytic activity of three probiotic lactic acid bacteria for possible use as sourdough starters. H. Hernandez-Sanchez, M. Nava-Romero

**AGFD 104.** Explorative study to understand the chemical diversity in Maillard reactions. D. Hemmler, C. Roullier-Gall, J.W. Marshall, M. Rychlik, A.J. Taylor, P. Schmitt-Kopplin

**AGFD 105.** Withdrawn.

**AGFD 106.** Physico-chemical properties and stability of a soy protein isolate and peanut oil-based emulsion as affected by ultra-high pressure homogenization and pH. D. Mukherjee, S.K. Chang

**AGFD 107.** Withdrawn.

**AGFD 108.** Relationship between structural characteristics and digestibility of debranched starch. G. Liu, Y. Hong, Z. Gu, Y. Jiang

**AGFD 109.** Alginate conjugated keratin for wound dressing materials. R. Wang

**AGFD 110.** Triacylglycerol compositions of sunflower, corn and soybean oils examined with supercritical CO<sub>2</sub> ultra-performance convergence chromatography combined with quadrupole time-of-flight mass spectrometry. B. Gao, Y. Luo, W. Lu, L.L. Yu

**AGFD 111.** Evaluation of hydrogen peroxide scavenging activity of phenolic acids by employing optical nanoprobes based on gold nanoshells. W. Qian

**AGFD 112.** Growth inhibition of bladder cancer cells is greater with quercetin-3-glucoside than with quercetin or quercetin-3-rutinoside. M.A. Lea, A. Tandon, C. des Bordes

**AGFD 113.** Soluble keratin from wool. E.M. Brown, K. Pandya, M.M. Taylor, C. Liu

**AGFD 114.** Synthesis and development of a new selective ryanodine receptor activator insecticide. W. Lee

**AGFD 115.** Fluorescence fingerprinting of antioxidants in sorghum and sugarcane. S.M. Uchimiya

**AGFD 116.** Starch modified by wet-milling process to stabilize Pickering emulsions. X. Lu, Q. Huang

**AGFD 117.** Chromatography method for determination of penicillin used for dairy production. A. Miranda, M. de Moura, D. da Silva

**AGFD 118.** ELISA detection of soy proteins in traditionally brewed soy sauce samples obtained during manufacture and commercial soy sauce products. P. Kande, M. Bakke, B. Bedford, J. Hammerstone, L. Jackson

## MONDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 110A

#### Challenges in Flavor Chemistry Associated with Developing Healthy Foods & Beverages

K. Tandon, *Organizer*

V. M. Acquarone, R. Elias, J. A. Grover, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 AGFD 119.** Taste biology and its application to new ingredient discovery. S. Gravina

**8:35 AGFD 120.** How sweet works and what it means for non-caloric sweeteners. R. Margolskee

**9:05 AGFD 121.** Discovery, structure elucidation and efficacy testing of a natural compound used to improve low-calorie beverage sweet flavor quality. W.R. Bonorden, T. An, P. Augustin, S. Erickson, L. Flammer, S. Gravina, K. Griswold, T.D. Lee, S. Lindberg, L. Nattress, J. Soto, G. Zehentbauer, C. Galopin

**9:35** Intermission.

**10:00 AGFD 122.** Stevia innovation: Improved leaf extracts from advanced understanding of taste. J.C. Fry

**10:30 AGFD 123.** Dynamic proteome alteration and functional modulation of human saliva induced by dietary taste stimuli. M. Bader, A. Dunkel, G. Medard, E. del Castillo, A. Gholami, B. Kuster, T. Hofmann

### Section B

Pennsylvania Convention Center  
Room 110B

#### Chemistry Behind Health Effects of Grains

R. Landberg, S. Sang, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 AGFD 124.** Dietary fibers and associated phytochemicals in cereals. K. Bach Knudsen

**8:35 AGFD 125.** Alkylresorcinols as dietary biomarkers of whole grain wheat and rye intake. R. Landberg

**9:00 AGFD 126.** Biomarkers of whole grain wheat intake identified by targeted and non-targeted metabolomic approaches. Y. Zhu, W. Sha, P. Wang, S. Sang

**9:25 AGFD 127.** Non-targeted metabolite profiling for characterization of bioactive compounds in cereals and their metabolic effects in different models. K. Hanhineva

**9:50 AGFD 128.** Avenanthramides and their microbial metabolites as the exposure markers for whole grain oat intake. P. Wang, H. Chen, A. Yerke, S. Sang

**10:15** Intermission.

**10:30 AGFD 129.** Rice-bran phytochemical extracts inhibit invasion and intracellular replication of *Salmonella typhimurium* in mouse and porcine intestinal epithelial cell. E.P. Ryan

**10:55 AGFD 130.** Suppression of high-fat diet induced atherosclerosis by dietary oats avenanthramides. M. Thomas, S. Kim, F. Collins, M. Wise, M. Meydani

**11:20 AGFD 131.** Methyl donors in whole grains – potential mediators of a wide range of whole grain-related health benefits. A. Ross, M.V. Lind

**11:45 AGFD 132.** Benzoxazinoids in cereals: Potential role for human health. I.S. Fomsgaard, S.K. Steffensen, K.B. Adhikari, P.L. Gregersen, M. Borre, S. Hoyer, L.K. Poulsen, B.M. Jensen, C.H. Nielsen

### Section C

Pennsylvania Convention Center  
Room 111A

#### Flavor Stability: Chemical Changes in Flavor Molecules, Flavor-Food Matrix Interactions, Flavor Encapsulation

R. J. McGorin, M. C. Qian, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 AGFD 133.** Chemical stability of citral. Y. Wang, C. Ho

**8:30 AGFD 134.** Stability of the curry leaf aroma impact compound 1-phenylethanol during traditional processing and use in the kitchen. M. Steinhau

**8:55 AGFD 135.** Flavor and off-flavor in canned tuna fish. F. He, Y.L. Qian, M.C. Qian

**9:20 AGFD 136.** Unraveling the off-flavor formation of native cold-pressed rapeseed oil using the molecular sensory science concept. M. Granvogl, K. Matheis

**9:45** Intermission.

**10:00 AGFD 137.** NMR approaches to studying wine oxidation: Pathways of acetaldehyde. A.L. Waterhouse, A. Peterson

**10:25 AGFD 138.** Precursors of H<sub>2</sub>S in wine: role of elemental sulfur degradation products. G.L. Sacks, J.A. Jastrzemski, E. Friedberg, Y. Chen

**10:50 AGFD 139.** Stability of smoke taint during the aging of smoke-affected wine. L. van der Hulst, R. Ristic, K. Wilkinson

**11:15** Concluding Remarks.

#### Glyphosate: Current Status & Future Prospects

*Sponsored by AGRO, Cosponsored by AGFD and ENVR*

## Synthetic Biology & Genetically Modified Organisms

### Evolution or Revolution? Policy Challenges & Opportunities in the Biotechnology Golden Age

*Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI# and COMSCI*

## MONDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 110A

#### Challenges in Flavor Chemistry Associated with Developing Healthy Foods & Beverages

K. Tandon, *Organizer*

V. M. Acquarone, R. Elias, J. A. Grover, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 AGFD 140.** Cellular and molecular mechanisms of salty taste: Implications for developing strategies to combat NaCl overconsumption. B. Lewandowski

**1:35 AGFD 141.** Aroma compounds to rescue the taste of healthy foods and beverages. T. Thomas Danguin, C. Salles, E. Guichard

**2:05 AGFD 142.** Mechanisms of bitterness generation in whole wheat foods. Q. Bin, D.G. Peterson

**2:35** Intermission.

**3:00 AGFD 143.** Effect of pressure and heat treatment on volatile profile in Chinese bayberry juice analysed by GC-MS during storage. S. Lin, Y. Yu, Y. Lin, S. Zhu

**3:30 AGFD 144.** Reducing astringency in persimmons through processing, an approach for increasing marketability. I.J. Sedej, R.D. Woods, A.M. Vilches, C.W. Olsen, J.E. Preece, R.R. Milczarek, A.P. Breksa

**4:00 AGFD 145.** Mitigation strategies for toxicologically relevant styrene during the production of wheat beer. M. Granvogl, D. Langos, P.H. Schieberle

**4:30** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 110B

#### Chemistry Behind Health Effects of Grains

R. Landberg, S. Sang, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 AGFD 146.** Phytochemicals in wheat bran for colon cancer prevention. S. Sang, Y. Zhu, J. Fu

**1:30 AGFD 147.** Whole grain polyphenols in colon health: Positive interaction of complementary sorghum-legume flavonoids. J. Awika, S. Agah, L. Yang, S. Talcott, C. Allred

**1:55 AGFD 148.** Phytochemicals in quinoa grains and their antioxidant and anti-inflammatory effects. R. Tsao, T. Yao, R. Liu

**2:20 AGFD 149.** Buckwheat bioactive compounds, their derived metabolites and health benefits. J. Gimenez Bastida, H. Zielinski, M. Piskula, D. Zielinska

**2:45** Intermission.

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:  
[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



**3:00 AGFD 150.** Health-promoting lipids in corn kernels and corn oils. R. Moreau

**3:25 AGFD 151.** Phytosterols and sterol conjugates in cereal grains. L. Nystroem

**3:50 AGFD 152.** Genetic and environmental impacts bioactive components in cereals. P.R. Shewry

**4:15 AGFD 153.** Polyphenols in break-fast cereals and snacks: important contribution to beneficial health effects of whole grain consumption. J. Goodman, J.A. Vinson, S. Wang

## Section C

Pennsylvania Convention Center  
Room 111A

### Flavor Stability: Chemical Changes in Flavor Molecules, Flavor-Food Matrix Interactions, Flavor Encapsulation

R. J. McGorin, M. C. Qian, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 AGFD 154.** Differences in the non-volatile composition of younger and older Armagnac and Cognac brandies and bourbon and Scotch whiskies using UHPLC/QTOF-MS. T.S. Collins

**1:30 AGFD 155.** Lichenysin, a novel nonvolatile compound in Chinese distilled spirits reduced the headspace concentration of phenolic off-flavors via hydrogen-bond interaction. S. Chen, Y. Xu, R. Zhang, Q. Wu

**1:55 AGFD 156.** Research on the aroma characteristics and impacts of the nonvolatile matrix composition on the aroma release of Vidal icewine based on sensomics. K. Tang, Y. Xu

**2:20 AGFD 157.** Optimization of aroma compounds determination in Capsicum annum cultivars using HS-SPME coupled with GC-MS. G. Jayaprakasha, K. Crosby, B. Patil

**2:45** Concluding Remarks.

### Glyphosate: Current Status & Future Prospects

*Sponsored by AGRO, Cosponsored by AGFD and ENVR*

### Undergraduate Research Posters

#### Agricultural & Food Chemistry

*Sponsored by CHED, Cosponsored by AGFD and SOCED*

#### Pollinators: Agrochemicals, Behavior & Disease

*Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI*

#### Synthetic Biology & Genetically Modified Organisms

#### The Debate: What Role Should We Play in the Biotechnology Era?

*Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI‡ and COMSCI*

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

N. P. Seeram, *Organizer*

**8:00 - 10:00**

6, 39, 46, 51, 57, 64, 66, 71, 73, 80-81, 83-84, 90-91, 101, 113, 116, 121. See previous listings.

162-163, 220-221, 225, 229, 254, 271, 274, 285-286. See subsequent listings.

## TUESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 111B

#### Kenneth A. Spencer Award for Outstanding Achievement in Agricultural & Food Chemistry

**Food Components for Cardiovascular & Brain Health**  
*Cosponsored by AGRO*

E. Hellmuth, A. M. Rimando, *Organizers*

M. Appell, *Presiding*

**8:00** Introductory Remarks.

**8:10 AGFD 158.** Pterostilbene in blueberries and PPAR $\alpha$  activation. A.M. Rimando

**8:40 AGFD 159.** Physiological effects of pterostilbene and blueberries in animal models of obesity. W.H. Yokoyama, D. Shao, H. Kim, A.M. Rimando

**9:10 AGFD 160.** Berry bioactives: the health benefits of color. B. Burton-Freeman

**9:40** Intermission.

**9:55 AGFD 161.** Effects of blueberries on cognition and neuroplasticity. A. Carey, A.M. Rovnak, K.R. Gildawie, D.R. Fisher, B. Shukitt-Hale

**10:25 AGFD 162.** Withdrawn.

**10:55 AGFD 163.** Quest for indirect modulators of the endocannabinoid system from natural products. A. El-Alfy, E.A. Abourashed

### Section B

Pennsylvania Convention Center  
Room 113B

#### Chemistry, Safety & Technology of GMO Foods

*Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡*

J. W. Finley, L. Jackson, J. N. Seiber, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 AGFD 164.** Traditional plant breeding vs molecular plant breeding. W. Parrott

**8:35 AGFD 165.** Biotechnology innovations and solutions for sustainable agriculture. D.J. Williams

**9:05 AGFD 166.** Herbicide-resistant crops: Past, present and future. S.O. Duke

**9:35** Intermission.

**9:50 AGFD 167.** Challenges for the production and acceptance on transgenic wheat. P.R. Shewry

**10:20 AGFD 168.** How basic research can lead to development of improved cereal crops: But where are they? P.G. Lemaux

### Section C

Pennsylvania Convention Center  
Room 110A

#### AGFD Division Award

#### Symposium in honor of Dr. Zhen-Yu Chen

B. Park, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:05 AGFD 169.** Prebiotic-like properties of feruloylated arabinoxylan-oligosaccharides generated from rice bran arabinoxylan. S. Lee, T. Pham, B.J. Savary, M. Chen

**8:30 AGFD 170.** Transition metal-mediated oxidation reactions of sulfidic compounds in wine. G.Y. Kreitman, J.C. Danilewicz, D.W. Jeffrey, R.J. Elias

**8:55** Concluding Remarks.

### Section D

Pennsylvania Convention Center  
Room 110B

#### General Papers

N. P. Seeram, *Organizer, Presiding*

W. Liu, H. Ma, *Presiding*

**8:00** Introductory Remarks.

**8:05 AGFD 171.** Identification of antimicrobial peptide fragments from soy protein. N. Xiang, Y. Lyu, X. Zhu, A.K. Bhunia, G. Narsimhan

**8:30 AGFD 172.** Enhancement of natural antimicrobial efficacy via biomimetic iron chelating active packaging. P. Castrale, M. Roman, E.A. Decker, J.M. Goddard

**8:55 AGFD 173.** Solid/oil/water emulsions as novel approaches of encapsulating probiotic bacteria. Y. Zhang, Q. Zhong

**9:20** Intermission.

**9:35 AGFD 174.** Gut microbiome research and influence on warfighter performance. J.W. Soares, J.P. Karl, L.A. Doherty, S. Arcidiacono, K. Racicot

**10:00 AGFD 175.** Microencapsulation of tributyrin to improve sensory qualities and intestinal delivery. Y. Lee, W. Kuo

**10:25 AGFD 176.** Characterization and biocidal efficacy of cationic and N-Halamine based antimicrobial coatings. Y. Hung, L.J. Bastarrachea, J.M. Goddard

**10:50** Concluding Remarks.

### Section D

Pennsylvania Convention Center  
Room 110A

#### USDA-ARS Sterling B. Hendricks Memorial Lecture: Symposium in honor of May Berenbaum

*Cosponsored by AGRO*

K. Kaplan, M. H. Tunick, *Organizers, Presiding*

**11:00** Introductory Remarks.

**11:05 AGFD 177.** How to eat a plant: phytochemical detoxification in bees vs. butterflies. M.R. Berenbaum

**11:55** Concluding Remarks.

### Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches

*Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI*

### Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges

*Sponsored by AGRO, Cosponsored by AGFD*

## TUESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 111B

#### Kenneth A. Spencer Award for Outstanding Achievement in Agricultural & Food Chemistry

**Anticancer Food Components: Functional Food Polymers, Food Flavor & Odor Chemistry & Processing-Induced Food Toxicants**  
*Cosponsored by AGRO*

E. Hellmuth, A. M. Rimando, *Organizers*

M. Appell, *Presiding*

**1:00** Introductory Remarks.

**1:05 AGFD 178.** Dietary pterostilbene is a novel chemopreventive and therapeutic agent in prostate cancer: Pre-clinical studies. A. Levenson

**1:35 AGFD 179.** Topical pterostilbene prevents UV-B-mediated skin damage. R. Dellinger

**2:05 AGFD 180.** Health benefits of natural tocopherol mixtures. N. Suh

**2:35** Intermission.

**2:50 AGFD 181.** Chemistry, safety and caloric value of partially hydrolyzed guar gum. J.W. Finley

**3:20 AGFD 182.** Fifty years of smelling sulfur: From the chemistry of garlic to the molecular basis for olfaction. E. Block

**3:50 AGFD 183.** Rancidity development in roasted almonds (Prunus dulcis): Relationships between chemical changes and sensory descriptive analysis. L. Franklin, D. Chapman, E. King, G. Huang, A.E. Mitchell

**4:20 AGFD 184.** Chemical mechanisms for 3-MCPD ester formation. L.L. Yu

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**Section B**

Pennsylvania Convention Center  
Room 113B

**Chemistry, Safety & Technology of GMO Foods**

*Cosponsored by AGRO, CEI†, COMSCI and ENVR‡*

J. W. Finley, L. Jackson, J. N. Seiber, *Organizers, Presiding*

- 1:00 AGFD 185.** GMO crops may contribute to decline of monarch butterfly populations. J.N. Seiber
- 1:30 AGFD 186.** Impressive progress, opportunities, and obstacles in the use of genetically engineered trees. S.H. Strauss
- 2:00 AGFD 187.** Progress on transgenic approaches to ducting citrus greening disease. M. Sult, J.W. Grosser
- 2:30** Intermission.
- 2:45 AGFD 188.** American chestnut research and restoration project. W.A. Powell, A. Newhouse, C.K. Maynard, L. McGuigan, A.D. Oaks, K.R. Stewart, T. Desmarais, D. Mathews, Y. Bathula, V. Coffey
- 3:15 AGFD 189.** Transgenic and gene edited animals for use in agriculture: Where are we now? J.D. Murray
- 3:45 AGFD 190.** Microalgae derived ingredients, oils and the future of foods. W.G. Rakitsky
- 4:15** Concluding Remarks.

**Section C**

Pennsylvania Convention Center  
Room 110A

**International Student Symposium****Nanoparticles & Delivery Systems**

P. Schmidberger, R. Tardugno, *Organizers, Presiding*

- 1:00** Introductory Remarks.
- 1:05 AGFD 191.** Supramolecular design of coordination bonding architecture on zein nanoparticles for pH-responsive drug deliver and the cellular uptake mechanism. H. Liang
- 1:30 AGFD 192.** Preparation, characterization, in vitro lipolysis and cell study on antioxidant and anti-inflammatory activities of carnosic acid nanoemulsion. H. Zheng, Q. Huang
- 1:55 AGFD 193.** Evaluation of postharvest washing on Ag NPs removal from spinach leaves. Z. Zhang, L. He
- 2:20** Intermission.
- 2:40 AGFD 194.** Influence of food matrix on the fate of titanium dioxide (TiO<sub>2</sub>) nanoparticles in gastrointestinal tract. X. Cao, H. Xiao, D. McClements
- 3:05 AGFD 195.** Application of new nanomaterials as signal probes in immunoassay. G. Hu, S. Wang, W. Sheng, Y. Zhang

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:  
[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

†Cooperative Cosponsorship

- 3:30 AGFD 196.** Assemblies, properties and food applications of kafirin nanoparticles based Pickering emulsions. J. Xiao, Q. Huang
- 3:55 AGFD 197.** Real-time and in situ monitoring of pesticide penetration in edible leaves by surface-enhanced Raman scattering mapping. T. Yang, L. He
- 4:20** Concluding Remarks.

**Section D**

Pennsylvania Convention Center  
Room 110B

**General Papers**

- N. P. Seeram, *Organizer, Presiding*
- W. Liu, H. Ma, *Presiding*
- 1:00** Introductory Remarks.
- 1:05 AGFD 198.** Development of a neuroprotective potential index for ayurvedic medicinal plants. W. Liu, H. Ma, L. Zhang, C. Wan, J.A. Dain, N.P. Seeram
- 1:30 AGFD 199.** Effects of brewing conditions and re-infusion on the antioxidant activity of twenty-four varietal green teas. E.M. Sharpe, R. Bradley, S. Andreescu, F. Hua, S. Schuckers
- 1:55 AGFD 200.** Comparative study of performance of regular pyrolysis oil and TGRP oil for catalytic cracking with HZSM-5. Y. Choi, Y. Elkasabi, P. Tarves, C.A. Mullen, A. Boateng
- 2:20 AGFD 201.** Novel promising biocomposite derived from calcined eggshells for mitigating soil antibiotic resistance bacteria/gene dissemination and accumulation in bell pepper. Y. Mao, S. Mingming, X. Li, A. Schwab, X. Jiang
- 2:45** Intermission.
- 3:00 AGFD 202.** Stability of anthocyanin pigments in purple wheat bran and powder isolates. E.M. Abdelaal, P. Huel
- 3:25 AGFD 203.** Ascorbic acid-catalyzed degradation of cyanidin- and malvidin-3-O-β-glucoside: Proposed mechanism and identification of novel hydroxylated products. N.B. Stebbins, L. Howard, R.L. Prior, C. Brownmiller, R. Liyanage, J.O. Lay, X. Yang, S. Qian
- 3:50 AGFD 204.** Analysis of changes in anthocyanin and volatile compounds of Fuji apple under different sizes and storage conditions. H. Jang, M. Jeong
- 4:15 AGFD 205.** Measuring color in turbid beer and wort samples. R. Barth
- 4:40 AGFD 206.** Investigation of monoterpene enantiomers in Pinot gris wine and sensory perception of these compounds on matrix interactions. M. Song, E. Tomasino
- 5:05** Concluding Remarks.

**Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches**

*Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI*

**Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges**

*Sponsored by AGRO, Cosponsored by AGFD*

**Glyphosate: Current Status & Future Prospects**

*Sponsored by AGRO, Cosponsored by AGFD and ENVR*

**WEDNESDAY MORNING****Section A**

Pennsylvania Convention Center  
Room 110A

**Natural & Bio-Based Antimicrobials for Food Applications**

- X. Fan, H. L. Ngo, C. Wu, *Organizers, Presiding*
- 8:00** Introductory Remarks.
- 8:05 AGFD 207.** Safer salads and grilled meats: Clean and green approaches. S. Ravishankar
- 8:30 AGFD 208.** Organic acids as food antimicrobials. J. Gurtler
- 8:55 AGFD 209.** Natural and value-added antimicrobials for pathogen control. B. Brehm-Stecher
- 9:20 AGFD 210.** Effectiveness of food grade antimicrobials for controlling *Listeria monocytogenes* in/on ready-to-eat meat and poultry products. A.C. Porto-Fett, J.B. Luchansky
- 9:45** Intermission.
- 10:05 AGFD 211.** Improve microbial food safety of fresh fruits and vegetables with aqueous and vaporized essential oils. X. Fan, C. Wu
- 10:30 AGFD 212.** Berry pomace extracts in enhancing microbial food safety. D. Biswas
- 10:55 AGFD 213.** Olive leaf extract inhibits growth and biofilm formation in *L. monocytogenes*. Y. Liu, L. McKeever, N. Malik

**Section B**

Pennsylvania Convention Center  
Room 111B

**Chemistry, Safety & Technology of GMO Foods**

*Cosponsored by AGRO, CEI†, COMSCI and ENVR‡*

J. W. Finley, L. Jackson, J. N. Seiber, *Organizers, Presiding*

- 8:00** Introductory Remarks.
- 8:05 AGFD 214.** Chemical synthesis of optically pure rhizopines: Steps towards engineering a synthetic symbiosis between bacteria and crops. A.M. Joffrin, B. Geddes, H. Sanganee, V. Flemington, P. Poole, S.J. Conway
- 8:35 AGFD 215.** Engineering a bypass of 1-deoxyxylulose-5-phosphate synthase in *Escherichia coli* for the conversion of pentose sugars to isoprenoid chemicals and biofuels. J.R. King, B.M. Woolston, G. Stephanopoulos
- 9:05 AGFD 216.** Genetically programmed functional bacterial biofilms. E. Kalyoncu, T.T. Olmez, U. Seker
- 9:35** Intermission.
- 9:50 AGFD 217.** Novel combination of megaTAL nuclease-driven genome engineering with a drug selection cassette increases efficiency of HIV gene therapy. B. Paul, H. Kiem
- 10:20 AGFD 218.** Analysis of the everninomicin gene cluster and dichloroisoeverninomic acid biosynthesis in *Micromonospora carbonacea* var. *aurantiaca* in pursuit of novel everninomicin analogs. A. Yniguez-Gutierrez, E.M. Limbrick, B.O. Bachmann
- 10:50 AGFD 219.** It is about safety. V.C. Knauf

**Section C**

Pennsylvania Convention Center  
Room 111A

**International Student Symposium****Bioactive Compounds**

- P. Schmidberger, R. Tardugno, *Organizers, Presiding*
- 8:00** Introductory Remarks.
- 8:05 AGFD 220.** Synergism between sulforaphane and luteolin in anti-inflammation. K. Rakariyatham, X. Wu, H. Xiao
- 8:30 AGFD 221.** 3-MCPD 1-palmitate induced tubular cell apoptosis via JNK/P53 pathways. G. Huang, M. Liu, W. Lu, X. Sun, L.L. Yu
- 8:55 AGFD 222.** Functional analyses on antioxidant and anti-inflammatory effects of polyphenols extracted from a Chinese bitter tea (*Ilex latifolia* thunb). T. Zhang
- 9:20** Intermission.
- 9:40 AGFD 223.** Role of cell walls in controlling the release and bioaccessibility of polyphenols from raw compared to processed apples. D. Liu, M.J. Gidley, P. Lopez-Sanchez
- 10:05 AGFD 224.** Redox active antioxidants increase chemical stability and biological function of curcumin. W. Wang
- 10:30 AGFD 225.** Enhancing bioavailability of lipophilic nutraceuticals in natural food: Excipient emulsion design. R. Zhang, D. McClements
- 10:55** Concluding Remarks.

**Section D**

Pennsylvania Convention Center  
Room 110B

**General Papers**

N. P. Seeram, *Organizer, Presiding*

W. Liu, H. Ma, *Presiding*

- 8:00** Introductory Remarks.
- 8:05 AGFD 226.** Impact of harvest time and switchgrass cultivar on conversion to sugars and pyrolysis oils using biochemical and thermochemical routes. M. Serapiglia, C.A. Mullen, A. Boateng, B.S. Dien, M. Casler
- 8:30 AGFD 227.** Impact of selected phenolics on the quality and health aspect of cookie. J. Ou, M. Wang
- 8:55 AGFD 228.** Effect of cluster sunlight exposure on rotundone concentration in Noirlet grapes and wine. L.J. Homich, R.J. Elias, M. Centinari, J. Vanden Heuvel
- 9:20 AGFD 229.** Antimicrobial and antioxidant activities of lignin from corn stover residue. M. Guo, C. Wu, T. Jin, N. Nghiem, X. Fan, P.X. Qi, C. Jang, L. Shao
- 9:45** Intermission.
- 10:00 AGFD 230.** Restoring herbicide control in multiple herbicide resistant black grass (*Alopecurus myosuroides*). M.C. Schwarz, P.G. Steel, E. Pohl, G. Mitchell
- 10:25 AGFD 231.** Withdrawn.
- 10:50 AGFD 232.** Multi-year ambient air monitoring network to measure multiple pesticides in various California agricultural communities: 2011-2015 sampling results. A. Tuli, E. Vidrio, P. Wofford, R. Segawa

**11:15 AGFD 233.** Hg speciation by differential photochemical vapor generation at UV-B and UV-C wavelengths. G. Chen, B. Lai, N. Mei, J. Liu, X. Mao

**11:40** Concluding Remarks.

### Who Should Regulate Pesticides in Our Food?

*Sponsored by AGRO, Cosponsored by AGFD and ETHC*

## WEDNESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 110A

#### Natural & Bio-Based Antimicrobials for Food Applications

X. Fan, H. L. Ngo, C. Wu, *Organizers, Presiding*

**1:00 AGFD 234.** Anti-listerial activity of hops beta acids on ready-to-eat meat products. C. Shen

**1:25 AGFD 235.** Natural antimicrobials for acid and acidified foods. C. Chung, H. Haley, R. Price, F. Breit

**1:50 AGFD 236.** Use of plant-based antimicrobials for enhanced pressure destruction of pathogens in juices. A. Mendonca

**2:15 AGFD 237.** Use of natural antimicrobials with combined non-thermal treatments to control *Listeria monocytogenes* and *Clostridium sporogenes* in food systems. M. Lacroix

**2:40** Intermission.

**2:55 AGFD 238.** Modeling the impact of the natural antimicrobial citral and high pressure processing on the survival of *Escherichia coli* O157:H7 and uropathogenic *E. coli* in ground beef. S. Chien, S. Sheen, C. Sommers, L. Sheen

**3:20 AGFD 239.** Development of delivery systems for essential oils and applications for foods and biofilm removal. L. McLandsborough

**3:45 AGFD 240.** Novel uses of lauric arginate for food preservation: Physical and antimicrobial properties. Q. Ma, Q. Zhong

**4:10 AGFD 241.** Methods to deliver natural antimicrobials to food. T. Jin

### Section B

Pennsylvania Convention Center  
Room 111B

#### Chemistry, Safety & Technology of GMO Foods

*Cosponsored by AGRO, CEI†, COMSCI and ENVR‡*

J. N. Seiber, *Organizer*

J. W. Finley, L. Jackson, *Organizers, Presiding*

**1:00 AGFD 242.** Unintended effects associated with GM crops are both expected and low risk. R. Herman, W. Parrott

**1:30 AGFD 243.** Assessing the risks of resistance evolution for transgenic crops for insect control: Capitalizing on successes and learning from mistakes. B. Siegfried

**2:00 AGFD 244.** FDA's safety evaluation of foods from genetically engineered plants. R.I. Merker

**2:30** Intermission.

**2:45 AGFD 245.** Intellectual property issues of GMO food crops. A. Coates

**3:15 AGFD 246.** Communication of GMO issues to non-technical audiences. J. Finley

**3:45** Concluding Remarks.

### Section C

Pennsylvania Convention Center  
Room 111A

#### International Student Symposium

##### Analytical Approaches

P. Schmidberger, R. Tardugno, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 AGFD 247.** Filter based approach to rapid and sensitive SERS detection of ferbam in environmental water. S. Gao, L. He

**1:30 AGFD 248.** Development of immunoassays for detecting oxyfluorfen residue in agricultural products. E. Sheng, X. Hua, M. Wang

**1:55 AGFD 249.** Rapid electrochemical detection of *Salmonella* in agricultural water based on redox cycling. D. Wang, Z. Wang, J. Chen, S.R. Nugen

**2:20** Intermission.

**2:40 AGFD 250.** Detection of *Escherichia coli* (*E. coli*) and sensing of antibiotic drugs using engineered enzymatic bacteriophage. J. Chen, S.D. Alcaine, V.M. Rotello, S.R. Nugen

**3:05 AGFD 251.** Optimization of a new HPLC method with UV/DAD and ESI-MS<sup>n</sup> detection for the analysis of non-psychoactive cannabinoids in *Cannabis sativa* L. V. Brighenti, R. Tardugno, S. Benvenuti, F. Pellati

**3:30 AGFD 252.** Extraction and isolation of stypoldione from *Stylopodium zonale*. M.R. Denny

**3:55** Concluding Remarks.

### Section D

Pennsylvania Convention Center  
Room 110B

#### High-Resolution Mass Spectroscopy Techniques for Identification & Quantification of Phytochemical Metabolites

Y. Kim, M. Sukan, S. Talcott, *Organizers*

L. Howard, *Organizer, Presiding*

**1:00** Introductory Remarks.

**1:05 AGFD 253.** Scope and limitations of HPLC-HRESI/MS for the analysis of anthocyanins from tropical fruits. C. Osorio Roa

**1:30 AGFD 254.** Target oriented synthesis and mass spectral characterization of curcumin-phenformin adduct: Potential insights into the role of this conjugate as anti-diabetic and anti-cancer agent. B. Dayal, D.N. Shah, S. Patel, A. Mehta, M.A. Lea

**1:55 AGFD 255.** Analysis of urinary and fecal metabolites of tea polyphenol EGCG in mice by LC-MS/MS. S. Zhang, S. Sang

**2:20 AGFD 256.** Qualitative and quantitative analysis of antioxidant and quinone reductase-inducing phytochemicals present in a Maqui berry (*Aristotelia chilensis*) botanical dietary supplement. C. Naman, J. Li, Y. Deng, W. Keller, A. Kinghorn

**2:45** Intermission.

**3:00 AGFD 257.** Identification and quantification of novel cranberry (poly)phenol metabolites in human plasma and urine by UPLC-QTOF MS. A. Rodriguez-Mateos, R.P. Feliciano, A. Boeres, L. Massaccesi, G. Istas, C. Nunes dos Santos, R. Ventura, C. Heiss

**3:25 AGFD 258.** Accuracy of HPLC-MS methods used to assess the absorption, metabolism and excretion of bioactive (poly)phenols: Implications for nutritional and biomedical research. J. Ottaviani

**3:50 AGFD 259.** Absorption, distribution, metabolism and excretion of orange juice flavanones in humans. A. Crozier, G. Pereira-Caro

**4:15 AGFD 260.** Elucidating metabolic signatures of phytochemical consumption. C. Kay

**4:40** Concluding Remarks.

### Who Should Regulate Pesticides in Our Food?

*Sponsored by AGRO, Cosponsored by AGFD and ETHC*

## THURSDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 110A

#### International Student Symposium

##### Application of Natural Ingredients

P. Schmidberger, R. Tardugno, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 AGFD 261.** Development of food-grade filled hydrogels for oral delivery of lipophilic active ingredients: pH-triggered release. Z. Zhang

**8:30 AGFD 262.** Legume proteins as alternative emulsifiers to encapsulate omega-3 oils. C.E. Gumus, D.J. McClements

**8:55 AGFD 263.** Structures and interfacial properties of self-assembled protein-polyphenol-polysaccharide ternary complexes. W. Jin, B. Li, Q. Huang

**9:20** Intermission.

**9:40 AGFD 264.** Stabilization of pickering emulsions by polysaccharide-polypeptide nanocomplexes. Y. Jiang, Q. Huang

**10:05 AGFD 265.** Ultrasonic treatment of regenerated  $\alpha$ -chitin with tunable capacity for stabilization of oil in water emulsion. Y. Wang

**10:30 AGFD 266.** Phytochemical composition of essential oils and in vitro screening of the antimicrobial activity on oral pathogenic bacteria. R. Tardugno, R. Iseppi, E. Franceschini, F. Pellati, G. Bruzzesi, M. Bondi, S. Benvenuti

**10:55** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 111A

#### Natural & Bio-Based Antimicrobials for Food Applications

X. Fan, H. L. Ngo, C. Wu, *Organizers, Presiding*

**8:00 AGFD 267.** Antimicrobial character of lactonic sophorolipids against select bacterial strains commonly associated with foodborne illness. R. Ashby, D. Solaiman, X. Fan, X. Zhang, M. Olanya, D. Ukuku

**8:25 AGFD 268.** Synthesis of antimicrobial phenolic branch-chained fatty acids. H.L. Ngo, K. Wagner, Z. Yan, A. Nunez, R. Moreau, X. Fan

**8:50 AGFD 269.** Thiamine dilauryl sulfate (TDS) and organic acid combined treatment to secure microbial safety of selected products. H. Park, H. Feng

**9:10** Intermission.

**9:30 AGFD 270.** Characterization of LAB bacteriocins with the potential for food safety and functional food applications. J. Renye, G.A. Somkuti

**9:55 AGFD 271.** Plant-produced colicins for control of foodborne *Escherichia coli*. C.H. Stahl, A. Giritch, Y. Gleba

**10:20 AGFD 272.** Bacteriocins producing lactic acid bacteria: Isolation, optimization of growth condition for bacteriocins production and application in foods. L. Fan

**10:45 AGFD 273.** Evaluation of toxicity and endocrine disruption potential of the natural antimicrobials or biobased antimicrobials. C. Wu, C. Jang, M. Guo

### Section C

Pennsylvania Convention Center  
Room 110B

#### General Papers

N. P. Seeram, *Organizer, Presiding*

W. Liu, H. Ma, *Presiding*

**8:00** Introductory Remarks.

**8:05 AGFD 274.** Applications of the polysaccharide-polypeptides nanocomplexes in multi-platforms for nutraceuticals encapsulation. Y. Jiang, Q. Huang

**8:30 AGFD 275.** Interaction and structure formation between  $\alpha$ -lactalbumin and chitosan grafted with poly(ethylene glycol) chains. J. Du, O.G. Jones

**8:55 AGFD 276.** De-polymerization of lignin via co-pyrolysis with 1,4-butanediol in a microwave reactor. P. Tarves, C.A. Mullen, A. Boateng

**9:20** Intermission.

**9:35 AGFD 277.** Photoelectrocatalytic oxidation of nitrite using highly ordered anatase form of TiO<sub>2</sub> nanotube array photoelectrodes. C. Lu, X. Guo, S. Zhu

**10:00 AGFD 278.** Halloysite nanotube/polyethylene nanocomposites as multifunctional active food packaging materials. C.E. Tas, B. Alkan, M. Baysal, F. Altay, F.C. Cebeci, S. Unal, Y.Z. Menciloglu, H. Unal, E. Sehit

**10:25 AGFD 279.** Nanodelivery system: zein nanoparticles for entrapped hydrophobic/hydrophilic bioactives. T. Chuacharoen

**10:50 AGFD 280.** Withdrawn.

**11:15 AGFD 281.** Analysis and reduction of possible carcinogenic 4(5)-methylimidazole in a caramel colorant model system. K.G. Lee

**11:40** Concluding Remarks.

### Who Should Regulate Pesticides in Our Food?

*Sponsored by AGRO, Cosponsored by AGFD and ETHC*



## THURSDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 110A

## International Student Symposium

**Molecular Definition of Food Quality**  
P. Schmidberger, R. Tardugno, *Organizers, Presiding*

1:00 Introductory Remarks.

1:05 **AGFD 282.** Decoding the taste of foods: What makes that cheese taste so good? M. Salger, T. Hofmann

1:30 **AGFD 283.** Changes in the key aroma compounds of dried shiitake mushroom induced by rehydration. P. Schmidberger, P.H. Schieberle

1:55 **AGFD 284.** Evaluation of chiral heterocyclic key aroma compounds in cooked Allium-varieties - A case study regarding organoleptic and quantitative characteristics. M. Flaig, M. Granvogl

2:20 Intermission.

2:40 **AGFD 285.** Differentiating organic and conventional tomatoes using ultra-performance liquid chromatographic fingerprints. H. Guo, W. Lu, H. Chen, L.L. Yu

3:05 **AGFD 286.** Differentiating cultivation locations and flowering stages of chrysanthemum by UPLC fingerprints combined with chemometric data analysis techniques. L. Yanfang, W. Lu, L.L. Yu

3:30 Concluding Remarks.

## Section C

Pennsylvania Convention Center  
Room 110B

## General Papers

N. P. Seeram, *Organizer, Presiding*

W. Liu, H. Ma, *Presiding*

1:00 Introductory Remarks.

1:05 **AGFD 287.** Lateral flow assay exploiting aptamers for the extremely rapid detection of the anaphylactic allergen  $\beta$ -conglutinin. C. O'Sullivan, M. Jauset, M. Svobodova

1:30 **AGFD 288.** Withdrawn.

1:55 **AGFD 289.** Ultrasensitive detection of the anaphylactic allergen  $\beta$ -conglutinin exploiting lateral flow, tailed primers and isothermal amplification. C. O'Sullivan, M. Jauset, M. Svobodova

2:20 **AGFD 290.** Fast method for sugar analysis of instant coffee samples. S. Patil, J. Rohrer

2:45 Intermission.

3:00 **AGFD 291.** Variations in the enantiomeric composition of thujone-containing essential oils. J.D. Williams, K.A. Anderson, J.A. Yazarians, G.R. Boyce

3:25 **AGFD 292.** Improved method for determination of biofuel sugars by HPAE-PAD. S. Patil, J. Rohrer

3:50 **AGFD 293.** Metabolomics characterization of bottled wine: impact of environmental parameters. C. Roullier-Gall, D. Hemmler, M. Witting, F. Moritz, S. Heinzmann, P. Jeandet, M. Gonsior, R. Gougeon, P. Schmitt-Kopplin

4:15 **AGFD 294.** Estimation of total phenolic compounds in leaf tissues of American chestnut (*Castanea dentata*), Chinese chestnut (*Castanea mollissima*), and their back-cross breeding generations. J. She

4:40 **AGFD 295.** Microwave-induced chemical synthesis of oxidized lanosterol and cholesterol derivatives using  $\text{KMnO}_4$ - $\text{CuSO}_4$  catalyst: Potential target molecules for clearing up protein aggregation in diabetes patients suffering from cataract formation. B. Dayal, J. Chou

5:05 Concluding Remarks.

## Who Should Regulate Pesticides in Our Food?

Sponsored by AGRO, Cosponsored by AGFD and ETHC

## AGRO

## Division of Agrochemicals

J. Gan, *Program Chair*

## OTHER SYMPOSIA OF INTEREST:

**High-Resolution Mass Spectroscopy Techniques for Identification & Quantification of Phytochemical Metabolites** (see AGFD, Wed)

**Biochemistry of Cannabis** (see CHAS, Wed)

**Chemistry of the People, by the People, for the People** (see CHED, Mon, Tue)

**Advances in Understanding PPCP Fate in Wastewater Collection & Treatment Systems** (see ENVR, Sun, Wed)

**Chemistry of Biomass Wastes Conversion to Energy & Chemicals** (see ENVR, Tue, Wed)

**Chemistry of Environmental Sorptive & Oxidative Processes: Symposium in honor of Joseph J. Pignatello** (see ENVR, Mon, Tue, Wed)

## SOCIAL EVENTS:

**Graduate Student Luncheon,** 11:45 AM: Mon

**Blues-N-Brews Social Hour,** 5:15 PM: Tue

**AGRO Awards Reception,** 6:00 PM: Wed

## BUSINESS MEETINGS:

**Business Meeting,** 5:00 PM: Sun

## SUNDAY MORNING

## Section A

Loews Philadelphia Hotel  
Commonwealth Hall A1

## Good Laboratory Practices for the Agrochemical Professional

Cosponsored by ANYL and ENVR

C. Lee, P. M. Maldonado, K. Watson, *Organizers, Presiding*

8:25 Introductory Remarks.

8:30 **AGRO 1.** Fundamentals of EPA good laboratory practices. P.M. Maldonado, C. Lee

8:55 **AGRO 2.** Fundamentals of EPA good laboratory practices. C. Lee, P.M. Maldonado

9:20 **AGRO 3.** EPA GLP inspection program: Interpretation, enforcement, and case studies. M. Lehr

9:45 **AGRO 4.** Quality systems approach to implementing good laboratory practice in the analytical lab. R. Wedlich

10:10 Intermission.

10:30 **AGRO 5.** Principals of data recording and best practices in documentation of good laboratory practices (GLPs) studies for the agrochemical professional. K.B. Watson

10:55 **AGRO 6.** Managing multi-site studies: An overview using a field residue trial example. T.W. Barkalow

11:20 **AGRO 7.** Regulatory submissions of pesticide data in the US and worldwide. E. Haszcz

11:45 **AGRO 8.** Application of GLP principles to computerised systems (OECD Consensus Document 10). C. Wubbolt

12:10 Concluding Remarks.

## Section B

Loews Philadelphia Hotel  
Commonwealth Hall A2

## Terrestrial Field Dissipation Studies

## Current Regulatory Guidance, Study Design &amp; Utility of Data in Exposure &amp; Risk Characterization

Cosponsored by ENVR

R. Allen, *Organizer*

A. Newcombe, R. L. Warren, *Organizers, Presiding*

8:25 Introductory Remarks.

8:30 **AGRO 9.** OECD guidance for conducting pesticide terrestrial field dissipation studies and Ecoregion Crosswalk. R. Gangaraju, M. Shamim, M. Egsmose, C. Lythgo, T. Kuchnicki, M. Ruhman, F. Khan, A. Massey, O. Eklo, D. Kroetsch, L. Montanarella

8:55 **AGRO 10.** Terrestrial field dissipation studies under the new OECD guidance: An industry view from Europe. D. Schaefer

9:20 **AGRO 11.** Terrestrial field dissipation studies: Best practices and lessons learned from the field. T. Case, J. White

9:45 **AGRO 12.** Our experience with cropped plot field dissipation studies. A.K. Sharma

10:10 Intermission.

10:30 **AGRO 13.** Assessment of data generated from terrestrial field dissipation studies. A. Newcombe, R.L. Warren, T. Xu

10:55 **AGRO 14.** Analytical method and soil storage stability considerations for support of terrestrial field dissipation studies. R.L. Warren

11:20 **AGRO 15.** Maximizing use of data from terrestrial field dissipation studies conducted in North America and Europe via the ENASGIPS Ecoregion Crosswalk tool. V. Houck, B. Chu, R. Gangaraju, M. Shamim

11:45 **AGRO 16.** ENASGIPS - Implications of user's choices. C. Hoogeweg, N. Guth, M.E. Sebaskey

12:10 Concluding Remarks.

## Section C

Loews Philadelphia Hotel  
Regency Ballroom C1

## Innovative Approaches in Designing Agrochemical Metabolism Studies

Cosponsored by ENVR

J. Afzal, M. A. Jalal, *Organizers, Presiding*

8:50 Introductory Remarks.

8:55 **AGRO 17.** Innovative approaches in designing agrochemical metabolism studies. J. Afzal

9:20 **AGRO 18.** Study design for successful metabolite identification: Considerations for isotope labeling. J. LaMar, T. Fleischmann, G. Quistad

9:45 **AGRO 19.** Challenges encountered at critical stages of agrochemical metabolism studies and how to address them. M.A. Jalal, T.T. Nguyen, J. Whitby, K. Gohre, R. Allen

10:10 Intermission.

10:30 **AGRO 20.** Challenges encountered at critical stages of agrochemical environmental fate studies and how to address them. K. Gohre, J.C. Aston, J.J. Maurer, M. Jalal, S. Kang, R. Allen

10:55 **AGRO 21.** Application of capillary electrophoresis for the separation and analysis of C-14 labeled highly polar photolytic degradation products. D. Safarpour

11:20 Discussion.

## Section D

Loews Philadelphia Hotel  
Regency Ballroom C2

## Natural Products as Biorational Pesticides in Agriculture

C. Stuhl, R. Vannette, *Organizers*

J. J. Beck, *Organizer, Presiding*

8:25 Introductory Remarks.

8:30 **AGRO 22.** Volatile organic compounds defend plants against insect herbivory. J.H. Tumlinson

8:55 **AGRO 23.** Identification of an aggregation pheromone from the small hive beetle, *Aethina tumida* (Coleoptera: Nitidulidae). C. Stuhl

9:20 **AGRO 24.** Development of a kairomone-based monitoring tool for the invasive redbay ambrosia beetle. J. Niogret, P. Kendra, W. Montgomery, N. Epsy

9:45 **AGRO 25.** Exposure to a putative insect pheromone enhances the anti-herbivore defenses of its host plant. A. Helms, C. De Moraes, M. Mescher, J. Tooker

10:10 Intermission.

10:30 **AGRO 26.** Below-ground chemical ecology. H.T. Alborn

10:55 **AGRO 27.** Re-investigation into the use of sesquiterpene lactones to limit damage caused by sunflower insect pests. J. Prasifka, O. Spring, B. Hulke, M. Foley

11:20 **AGRO 28.** Phytotoxic and antifungal activity of a fungus isolated from *Brachiaria eruciformis* (signal-grass). B. Clausen, K.M. Meepagala, D.E. Wedge, S.O. Duke

11:45 Concluding Remarks.



## Section E

Loews Philadelphia Hotel  
Commonwealth Hall D

### Emerging Mass Spectrometry Trends in Support of Agricultural Research & Development

*Cosponsored by ANYL*

J. Balcer, P. Reibach, *Organizers, Presiding*

8:50 Introductory Remarks.

8:55 **AGRO 29.** Accurate mass applications in agricultural research and development. J. Gilbert, J. Balcer, Y. Adelfinskaya, J.A. Godbey, T. Oman, M. Hastings, M. Ma

9:20 **AGRO 30.** Ambient mass spectrometry imaging with laser ablation electrospray ionization for agrochemical R&D. S.C. Nanita, L. Wu, L.J. Watson, G. Boyce, C. Walsh, B. Reschke

9:45 **AGRO 31.** Making the most of the information in accurate mass spectrometric data. J.A. Ferguson, P. Reibach

10:10 Intermission.

10:30 **AGRO 32.** Revealing the chemical basis of organoleptic properties of a Cabernet Sauvignon wine using global LC and GC/QTOF workflows. S.A. Baumann, S.E. Ebeler, K. Tandon

10:55 **AGRO 33.** Isolation and analysis of botryodiplodin in soybean plants by liquid chromatography coupled to mass spectroscopy. A.N. Meredith, T. Wilkerson, T. Allen, M. Green, A. Brown

11:20 **AGRO 34.** Acceptance criteria for confirmation of identity of chemical residues using exact mass data. H. Jayasuriya, P.J. Kijak, S. Turnipseed, T.R. Croley, J.W. Wong, H. Li, B. Gamble

### Nanotechnology for Sustainable Agriculture & Food Systems

*Sponsored by ENVR, Cosponsored by AGRO and CEI*

## SUNDAY AFTERNOON

## Section A

Loews Philadelphia Hotel  
Regency Ballroom C1

### Advances in Residues Analysis of Bee Relevant Matrices: Analytical Methods & Sampling Techniques

*Cosponsored by AGFD and ENVR*

Y. Ding, T. Gould, *Organizers*

M. Saha, *Organizer, Presiding*

1:00 Introductory Remarks.

1:05 **AGRO 35.** Improvements in pollen/nectar sampling and analysis techniques to support regulatory submissions. J.T. Gesell, J.A. Barnekow

1:30 **AGRO 36.** 2013/2014 Washington State assessment for neonicotinoid insecticide residues in/on bee bread and wax. V.R. Hebert, E. Culbert, T. Lawrence, A. Felsot, W.S. Sheppard

1:55 **AGRO 37.** Measurement process of pesticides in beeswax matrix: evaluation of the different contributors to global error. M. Nocentini, C. Focardi, G. Biancalani, G. Marmo

2:20 **AGRO 38.** Analysis of pesticide residues in pollens and nectars from plants at ornamental nurseries and bee-collected pollen at those nurseries. B.D. Eitzer, R.S. Cowles, K.A. Stoner

2:45 Intermission.

3:05 **AGRO 39.** Poor versus good in nectar and pollen sampling techniques. S.V. Bondarenko, S. Hinarejos, R. Allen

3:30 **AGRO 40.** Residue method for the determination of neonicotinoid insecticides and their metabolites in nectar, pollen, flower and leaves by LC-ESI-MS/MS. S. Perez, Y. Park, R. Perez, E. O'Melia, B. Rathman

3:55 **AGRO 41.** Determination of neo-nicotinoid insecticide residues in bee-feeding matrices of soybean, a low-pollen producing crop. T.F. Moate, B. Lange, F. Rice

4:20 **AGRO 42.** High-throughput determination of neonicotinoid insecticides in pollen and nectar using liquid chromatography with tandem mass spectrometry detection. J. Warnick

4:45 Concluding Remarks.

## Section B

Loews Philadelphia Hotel  
Commonwealth A2

### Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations

*Cosponsored by ENVR and TOXI*

R. F. Bohaty, L. H. Nowell, *Organizers*

A. C. Barefoot, *Organizer, Presiding*

1:25 Introductory Remarks.

1:30 **AGRO 43.** Consideration of pesticide monitoring data in environmental exposure assessments. R.F. Bohaty, J. Hetrick, C. Peck, M. Corbin

1:55 **AGRO 44.** Long-term trends in agricultural pesticides from tributaries to Lake Erie and the Ohio River. S. Biswas, L. Johnson, A.R. Roerdink, K. Krieger, J. Kramer, E. Ewing

2:20 **AGRO 45.** Development of a liquid chromatography-tandem mass spectrometry method for determination of 229 pesticide compounds in water samples for National water monitoring studies. M.W. Sandstrom, L.K. Kanagy, C.A. Anderson, C.J. Kanagy

2:45 Intermission.

3:05 **AGRO 46.** Use of complementary sampling methods to assess pesticides in Midwestern streams: water, bed sediment, and passive samplers. L.H. Nowell, P.C. Van Metre, D.A. Alvarez, P. Moran, J. Norman, W.W. Stone, M. Shoda, I. Waitte, B. Mahler, M.W. Sandstrom, M.L. Hladik

3:30 **AGRO 47.** Bifenthrin causes trophic cascades in aquatic food webs and alters subsidies to terrestrial food webs. T. Schmidt, H.A. Rogers, M.L. Hladik, B. Mahler, P.C. Van Metre

3:55 **AGRO 48.** Development of passive samplers for measuring pyrethroids in surface water. J. Xue, Z.M. Cryder, C. Liao, J. Gan

4:20 **AGRO 49.** Temporal analysis of high resolution spatial datasets in the refinement of pesticide exposure risk assessments. K. Budreski, L. Padilla, M. Winchell, R. Breton, P. Whatling

4:45 Discussion.

## Section C

Loews Philadelphia Hotel  
Commonwealth Hall A1

### Extraction Efficiency-Bridging between Metabolism Studies & Residue Analytical Methods

*Cosponsored by AGFD and ENVR*

X. Zhou, *Organizer*

M. Saha, *Organizer, Presiding*

1:00 Introductory Remarks.

1:05 **AGRO 50.** Radiovalidation of Oryzalin and Bensulfuron-methyl analytical methods using QuEChERS in various matrices. A.D. Budgeon Jr, S. LaMonaca

1:30 **AGRO 51.** Withdrawn.

1:55 **AGRO 52.** Development of a multiplexed crop residue method and its radio-validation with samples from metabolism studies. J. Whitby, M. Jaial, T. Nguyen, K. Gohre, J.C. Aston, R. Allen, J. Bitter, J.E. Foster

2:20 **AGRO 53.** Confirmation of pesticide exposure in wild birds. D.A. Goldade, S.F. Volker

2:45 Intermission.

3:05 **AGRO 54.** Development of robust analytical methods for determination of glyphosate residues. P.K. Jensen, L. Riter, C.E. Wujcik

3:30 **AGRO 55.** Removal of foliar-applied pesticide residues on wheat leaf surfaces. K. Myung, C. Wong, M. Madary, C. Yao

3:55 **AGRO 56.** Regulatory perspectives on multi-residue methods used for enforcement. R. Hill, J.T. Gesell

4:20 **AGRO 57.** Extraction efficiency for residue analytical method: Trends, requirements and challenges. M. Saha

4:45 Concluding Remarks.

## Section D

Loews Philadelphia Hotel  
Regency Ballroom C2

### Natural Products as Biorational Pesticides in Agriculture

J. J. Beck, R. Vannette, *Organizers*

C. Stuhl, *Organizer, Presiding*

1:25 Introductory Remarks.

1:30 **AGRO 58.** Exploitation of fungal volatile organic compounds (VOCs) in agriculture. S. Lee, J.W. Bennett

1:55 **AGRO 59.** Drosophila suzukii-yeast interactions: Applications for pest management. K.A. Hamby, K.L. Boundy-Mills, J.C. Chiu, Z. Syed

2:20 **AGRO 60.** Effects of exogenous application of methyl jasmonate on foliar volatile emission in citrus and its effect on aggregation behavior of Asian citrus psyllid (*Diaphorina citri*), vector of Huanglongbing pathogens. J. Patt

2:45 Intermission.

3:05 **AGRO 61.** Detailing the diverse response profiles and biological activity of acidic terpenoid phytoalexins in maize-microbe interactions. S.A. Christensen, J.W. Sims, C. Hunter, A. Block, J.J. Beck, A. Huffaker, E.A. Schmelz

3:30 **AGRO 62.** Environmentally safe alternative biopesticides for controlling sea lice. K.S. Kim, G.C. Walker

3:55 **AGRO 63.** Preparation and characterization of degradable nanocapsules that release pesticides for an extended period of time. S. Kim

4:20 **AGRO 64.** Plant-microbe relationship that influences an insect pest of California tree nuts. J.J. Beck, W. Gee, B.S. Higbee

4:45 Concluding Remarks.

## Section E

Loews Philadelphia Hotel  
Commonwealth Hall D

### Glyphosate: Current Status & Future Prospects

*Cosponsored by AGFD and ENVR*

S. O. Duke, K. Solomon, *Organizers, Presiding*

1:25 Introductory Remarks.

1:30 **AGRO 65.** History and current status of glyphosate. S.O. Duke

1:55 **AGRO 66.** Rise and future of glyphosate and glyphosate-resistant crops. J. Green

2:20 **AGRO 67.** Economics of HT crops and glyphosate resistance. S.J. Wechsler

2:45 Intermission.

3:05 **AGRO 68.** Impact of glyphosate-resistant sugar beet. D.W. Morishita

3:30 **AGRO 69.** Interactions of glyphosate use with farm characteristics and cropping patterns in central Europe. H. Steinmann

3:55 **AGRO 70.** Glyphosate herbicide. E.D. Velini, C.A. Carbonari, G.L. Gomes, S.O. Duke

## MONDAY MORNING

## Section A

Loews Philadelphia Hotel  
Commonwealth Hall D

### Ion Channels & G-Protein Coupled Receptors: Dr. Yoshihisa Ozoe, ACS International Award for Research in Agrochemicals

J. R. Coats, A. D. Gross, *Organizers, Presiding*

8:25 Introductory Remarks.

8:30 Award Presentation.

8:40 **AGRO 71.** Ligand-gated chloride channels and phenolamine GPCRs as important targets of pest control chemicals. Y. Ozoe

9:20 **AGRO 72.** Pharmacology, signaling and physiology of insect biogenic amine receptors. J. Huang

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**9:45 AGRO 73.** New mode-of-action chemistries for vector control: Small molecule inhibitors of arthropod GPCRs. C.A. Hill

**10:10** Intermission.

**10:30 AGRO 74.** Aminothiazolines: Novel foliar insecticides for the control of piercing-sucking pests. B.J. Wedel, W. von Deyn, S. Soergel, M. Pohlman, L. Jose, D. Anspaugh, N. Rankl, J. Dorsch, B. London, R. Le Vezeuet, C. Koradin, M. Kordes

**10:55 AGRO 75.** G protein-coupled receptors involved in vitellogenin uptake into the oocytes. S.R. Palli, H. Bai

**11:20 AGRO 76.** Octopamine and tyramine receptors as targets for naturally occurring terpenoids. A.D. Gross, K. Temeyer, J.R. Bloomquist, A.A. Perez De Leon, M. Kimber, J.R. Coats

**11:45** Concluding Remarks.

## Section B

Loews Philadelphia Hotel  
Commonwealth Hall A1

### Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations

*Cosponsored by ENVR and TOXI*

A. C. Barefoot, L. H. Nowell, *Organizers*

R. F. Bohaty, *Organizer, Presiding*

**9:15** Introductory Remarks.

**9:20 AGRO 77.** Leveraging ambient and focused monitoring data to refine regulatory modeling exposure estimates. N.J. Snyder, A.C. Barefoot, K. Jones

**9:45 AGRO 78.** Interpretation of residue data from a groundwater monitoring study in Europe to define environmental safe use. D. Wallace, J. van de Veen, A. Newcombe, P. Kott, P. Sweeney, P. Hendley

**10:10** Intermission.

**10:30 AGRO 79.** Use of pesticide monitoring data in spatial aquatic model (SAM) development. N. Thurman, M. Fry, S. Thawley, J. Hook, J. Carleton, C. Koper, P. Mastradone, K. Pluntke, G. Rothman, R. Shamblen, D. Young

**10:55 AGRO 80.** Estimating pesticide concentrations in U.S. streams from watershed characteristics and pesticide properties. W.W. Stone, C. Crawford, M. Shoda

**11:20 AGRO 81.** SWAT model predictions of annual maximum pesticide concentrations in flowing water bodies. M. Winchell, N. Peranganin, R. Srinivasan, W. Chen

**11:45 AGRO 82.** Evaluating the effectiveness of streamside vegetation as a mitigation technique to reduce aerially applied pesticide loading to streams. M.M. Bischof, J. Hancock, M. Drennan, K. McLain, T. Coffey, J. Demory, G. Tuttle, G. Bahr, A. Nickelson

## Section C

Loews Philadelphia Hotel  
Commonwealth Hall A2

### Novel Analytical Methods for Analysis of Emerging Contaminants of Concern: Advances & Challenges

*Cosponsored by ANYL and ENVR*

L. Dodgen, Y. Sapozhnikova, *Organizers, Presiding*

**9:15** Introductory Remarks.

**9:20 AGRO 83.** Novel aquatic passive sampler technology for time-weighted-average continuous measurement of neonicotinoid and other current-use insecticides in environmental waters. C.S. Wong

**9:45 AGRO 84.** GCxGC-TOFMS comparison of PDMS stir bar sorptive extraction and liquid-liquid extraction for the determination of emerging contaminants in wastewater. K.A. Murrell, E. Pfannkoch, F.L. Dorman

**10:10** Intermission.

**10:30 AGRO 85.** Analysis of ionophore antimicrobials and their transformation products in poultry litter and dairy manure. D.S. Aga, M.J. Mayville, M. Gross, J.S. Munaretto

**10:55 AGRO 86.** Comparison of sample preparation techniques and screening for >120 veterinary drugs in animal meat. T. Anumol, S.J. Lohotay, J.M. Stevens, J. Zweigenbaum

**11:20 AGRO 87.** Recent advances in sample preparation and GC&LC-MS/MS analysis of organic emerging contaminants and pesticides in food of animal origin. Y. Sapozhnikova, L. Han, S.J. Lohotay

**11:45 AGRO 88.** Automated instrument-top sample preparation for high-throughput analysis of chemical residues in foods. L. Han, S.J. Lohotay, Y. Sapozhnikova

## Section D

Loews Philadelphia Hotel  
Commonwealth Hall B

### Neonicotinoid Insecticides: Use, Fate & Effects

*Cosponsored by ENVR*

M. L. Hladik, X. Lu, *Organizers, Presiding*

**9:15** Introductory Remarks.

**9:20 AGRO 89.** Sources of imidacloprid in urban aquatic environments. K.D. Moran

**9:45 AGRO 90.** Neonicotinoid insecticides in agricultural and urban impacted U.S. streams. M.L. Hladik

**10:10** Intermission.

**10:30 AGRO 91.** Assessing groundwater vulnerability following a neonicotinoid use on turf: Optimized GIS site selection, results from a prospective groundwater study, and comparison to model predictions. A. Newcombe, T.L. Negley, V. Houck, R. Allen, K. Gohre, Z. Tang, D.G. Dyer

**10:55 AGRO 92.** Adsorption of thiamethoxam on natural soil and its influencing factors. X. Lu, Q. Zhang, Y. Tan, D. Wang, Y. Zhou

**11:20 AGRO 93.** Reduction of neonicotinoid insecticide residues in Prairie wetlands by common wetland plants. A.R. Main, J. Fehr, K. Liber, J.V. Headley, K. Peru, C.A. Morrissey

**11:45 AGRO 94.** Fate and transformation of neonicotinoid insecticides during water and wastewater treatment. K.L. Klarich, N.C. Pflug, G.H. LeFevre, J.B. Gloer, D.M. Cwierny

## Section E

Loews Philadelphia Hotel  
Regency Ballroom A

### Glyphosate: Current Status & Future Prospects

*Cosponsored by AGFD and ENVR*

S. O. Duke, K. Solomon, *Organizers, Presiding*

**9:15** Introductory Remarks.

**9:20 AGRO 95.** Overview of glyphosate resistance worldwide. I. Heap

**9:45 AGRO 96.** Mechanisms of glyphosate resistance. D. Sammons, D. Giacomini, E. Ostrander, J. Silva, B. Xiang, D. Wang

**10:10** Intermission.

**10:30 AGRO 97.** BioDirect™ and herbicide resistance. D. Sammons, D. Wang, Z. Perrine

**10:55 AGRO 98.** Effects of glyphosate on plant disease. R. Hammerschmidt

**11:20 AGRO 99.** Glyphosate and effects on soil biology and function. I.R. Kennedy

**11:45 AGRO 100.** Effects of glyphosate on mineral nutrition of glyphosate-resistant soybean and maize. K.N. Reddy, S.O. Duke, J.V. Cizdziel

### Advances & Challenges in Food-Energy-Water Nexus

*Sponsored by ENVR, Cosponsored by AGRO and CEI*

### Synthetic Biology & Genetically Modified Organisms

### Evolution or Revolution? Policy Challenges & Opportunities in the Biotechnology Golden Age

*Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI and COMSCI*

## MONDAY AFTERNOON

### Section A

Loews Philadelphia Hotel  
Commonwealth Hall D

### Ion Channels & G-Protein Coupled Receptors: Dr. Yoshihisa Ozoe, ACS International Award for Research in Agrochemicals

J. R. Coats, A. D. Gross, *Organizers, Presiding*

**1:25** Introductory Remarks.

**1:30 AGRO 101.** Hormonal convergence in regulation of *Drosophila* courtship memories. M.E. Adams, A.S. Lee

**1:55 AGRO 102.** Diamide insecticides: Understanding the basis for insect selectivity and target-site resistance. D. Cordova, E.A. Benner, Y. Tao, S. Gutteridge, G.P. Lahm, T.P. Selby, T.M. Stevenson, J.H. Freudenberger, A.J. Williams

**2:20 AGRO 103.** Investigation into the use of neurolemma-injected oocytes in determining age-related difference in the action of insecticides on native ion channels. J.M. Clark

**2:45 AGRO 104.** Voltage-gated chloride channel blockers for varroa mites. T.D. Anderson, P. Vu, L.J. Jensen, J.R. Bloomquist

**3:10** Intermission.

**3:30 AGRO 105.** Glutamate receptor-cation channel complex as an unexploited target for insecticide design. J.R. Bloomquist, R. Islam, A.D. Gross

**3:55 AGRO 106.** Inhibitory chloride channels as targets for  $\gamma$ -BHC and its analogs. K. Tanaka

**4:20 AGRO 107.** Identification and physiological characterization of inward rectifying potassium channels in the arthropod salivary gland. D. Swale

**4:45** Concluding Remarks.

## Section B

Loews Philadelphia Hotel  
Commonwealth Hall A1

### Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations

*Cosponsored by ENVR and TOXI*

A. C. Barefoot, R. F. Bohaty, *Organizers*

L. H. Nowell, *Organizer, Presiding*

**1:25** Introductory Remarks.

**1:30 AGRO 108.** Malathion residues in flowing waterbodies resulting from aerial drift in a high use intensity watershed: monitoring. B. Brayden, C. Stone, A. Gulka, N. Pai, J.P. Hanzas, M. Winchell, P. Whitting

**1:55 AGRO 109.** Malathion residues in flowing waterbodies resulting from aerial drift in a high use intensity watershed: modeling. N. Pai, M. Winchell, B. Brayden, C. Stone, J.P. Hanzas, P. Whitting

**2:20 AGRO 110.** Trends observed from a long term collaborative surface water monitoring program for thio-bencarb to manage water quality in the Sacramento River. C.A. Green, R.R. Charlton, R. Firoved, E. Callman

**2:45 AGRO 111.** Modeling and monitoring to characterize pesticide fate in the Zollner Creek Watershed, Willamette Basin, Oregon. P.K. Janney, J.J. Jenkins

**3:10** Intermission.

**3:30 AGRO 112.** Integration of SEAWAVEQ model predictions into bias factor development. J. Hetrick, M. Bischof, R.F. Bohaty, J. Hook, C. Peck

**3:55 AGRO 113.** Kriging prediction of pesticide concentrations in surface water draining agricultural watersheds. P. Mosquin, J. Aldworth, W. Chen

**4:20 AGRO 114.** Simple approach for assessing the potential implications of high fractions of samples with non-detectable residues from surface water monitoring programs. S.H. Jackson, P. Hendley, P. Mosquin, J. Aldworth, B. Carper

**4:45** Discussion.

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## Section C

Loews Philadelphia Hotel  
Commonwealth Hall A2

### Novel Analytical Methods for Analysis of Emerging Contaminants of Concern: Advances & Challenges

Cosponsored by ANYL and ENVR

L. Dodgen, Y. Sapozhnikova, *Organizers, Presiding*

1:25 Introductory Remarks.

1:30 **AGRO 115.** Comprehensive two-dimensional gas chromatography (GCxGC) – time-of-flight mass spectrometry: A powerful tool for finding and quantifying historical and emerging environmental contaminants in water. J.A. Kowalski, M.N. Misselwitz, J. Cochran, M.F. Merrick

1:55 **AGRO 116.** Implementation of gas chromatography with atmospheric pressure gas ionization mass spectrometry (APGC) for the determination of known and unknown fatty acid esters and pesticides in avocado. L. Mullin, M.S. Young

2:20 **AGRO 117.** Reusing wastewater in agriculture: Groundwater quality, plant uptake, and antibiotic resistance? A. Franklin, C. Williams, J. McLain, D. Andrews, E. Woodward, J. Watson

2:45 **AGRO 118.** Characterizing pharmaceutical sources and vulnerable aquifers in karst areas using scraped websites and measured water quality data. L. Dodgen, W. Kelly, S. Taylor, W. Zheng, S. Panno, Y. Zhang

3:10 Intermission.

3:30 **AGRO 119.** Application of urban metabolism metrology to monitor chemical consumption, exposures, and population health in U.S. communities. A. Venkatesan, J. Chen, J. Steele, R.U. Halden

3:55 **AGRO 120.** Non-extractable residues (NER) from xenobiotic in soil and sediments: a new classification and relevance in the risk assessment. K.M. Nowak, S. Wang, A. Miltner, A. Schaeffer, M. Kaestner

4:20 **AGRO 121.** New models to study nanoparticle interaction with biological membranes. J.A. Pedersen

4:45 Concluding Remarks.

## Section D

Loews Philadelphia Hotel  
Commonwealth Hall B

### Neonicotinoid Insecticides: Use, Fate & Effects

Cosponsored by ENVR

M. L. Hladik, X. Lu, *Organizers, Presiding*

1:25 Introductory Remarks.

1:30 **AGRO 122.** Neonicotinoids viewed from a computational chemistry perspective: Conformations, interaction sites and binding to a 3D model of insect nAChR. J. Le Questel, Z. Alamiddine, J. Graton

1:55 **AGRO 123.** Review of crop pests targeted by neonicotinoid seed treatment. S.K. Papiernik, T. Sappington, L. Hesler, C. Allen, R. Luttrell

2:20 **AGRO 124.** Honeybee health monitoring study in Ontario and Quebec. J.R. Purdy

2:45 **AGRO 125.** Biological response of earthworm, *Eisenia fetida*, to five neonicotinoid insecticides. K. Wang

3:10 Intermission.

3:30 **AGRO 126.** Ecological risk assessment for aquatic invertebrates exposed to imidacloprid due to labeled agricultural and non-agricultural uses in the United States. M. Whitfield Aslund, M. Winchell, L. Bowers, S. McGee, Z. Tang, L. Padilla, C. Greer, L. Knopper, D. Moore

3:55 **AGRO 127.** Toxicokinetics of imidacloprid in rainbow trout. J.A. Frew, J.T. Brown, P. Fitzsimmons, C.E. Grue, A.D. Hoffman, J.N. Nichols

## Section E

Loews Philadelphia Hotel  
Regency Ballroom A

### Glyphosate: Current Status & Future Prospects

Cosponsored by AGFD and ENVR

S. O. Duke, K. Solomon, *Organizers, Presiding*

1:50 Introductory Remarks.

1:55 **AGRO 128.** Methods of glyphosate and AMPA analysis. W. Koskinen, K. Hall, L. Marek

2:20 **AGRO 129.** Exposures to glyphosate in bystanders and applicators: A critical assessment. K.R. Solomon

2:45 **AGRO 130.** Glyphosate residues in food and feed: Dietary exposure and risk assessment. M.S. Bleeker

3:10 Intermission.

3:30 **AGRO 131.** Glyphosate and AMPA long-term monitoring data trends for surface water and groundwater in the USA. T.L. Negley, V. Houck, A. Schaffer, M.A. Thomas, M.S. Bleeker

3:55 **AGRO 132.** Glyphosate in the public eye: Science communication, risk perception, transparency and trust. D. Jamison-McClung

4:20 Discussion.

## Section F

Loews Philadelphia Hotel  
Regency Ballroom B

### Environmental Fate & Modeling of Agriculturally-Related Chemicals

Cosponsored by ENVR

J. Gan, J. Richards, *Organizers*

1:00 - 5:00

**AGRO 133.** Analysis of the nitrogen stabilizer compound, Nitrapyrin, and its degradate in agriculturally-impacted surface water. E. Woodward, M.L. Hladik, D.W. Kolpin

**AGRO 134.** Improving continuous monitoring of VOC's emissions from alternative fertilizers. A. Romero, L.L. McConnell, C.J. Hapeman, M. Ramirez, A. Torrents

**AGRO 135.** Assessing the effectiveness of vegetative environmental buffers in mitigating air pollutant emissions from poultry houses. Q. Yao, C.J. Hapeman, H. Li, M.D. Buser, J. Alfieri, J. Wanjura, L.L. McConnell, G. Holt, P. Downey, Z. Yang, A. Torrents

**AGRO 136.** Pesticide volatilization from plant surfaces. S. Ghos, A.Z. Szarka, S. Flack, K. Crist

**AGRO 137.** Influence of EPA's newer groundwater model (PRZM-GW) on drinking water exposure assessment. Q. Ma, R. Reiss, M. Schocken

**AGRO 138.** Development of conceptual models for estimating aquatic exposure from the use of pesticides on rice using the pesticide flooded application model. K.E. White, M. Biscoe, M. Fry, J. Hetrick, G. Orrick, C. Peck, M. Ruhman, A. Shelby, N. Thurman, D. Young, P. Villanueva

**AGRO 139.** Photodegradation of 2,6-dichloro-4-nitroaniline (DCNA) in freshwater and saltwater. E. Vebrosky, K.L. Armbrust

**AGRO 140.** Monitoring approaches to provide temporal and spatial context to residential pesticide occurrence in the American river. G.E. Goodwin, S.L. Clark, G. Mitchell, S.H. Jackson, C. Harbourt, P. Hendley

**AGRO 141.** Theoretical prediction for plant uptake of pesticide from soil. J. Hwang, S. Lee, M. Kang, S. Lee, J. Kim

**AGRO 142.** Mitigating the off-site transport of plant protection products with runoff from golf course turf: Evaluation of management practices and turfgrass variety. P.J. Rice, B.P. Horgan, J. Hamlin

**AGRO 143.** Effects of pesticide application methods on urban runoff of fipronil and its degradation products. L. Greenberg, Z.M. Cryder, J. Gan

**AGRO 144.** Environmental fate of <sup>14</sup>C-niclosamide in laboratory sediment-water systems under aerobic and anaerobic conditions. B. Clark, L. Hall, P.M. Sarff, T. Hubert, R. Lambe

**AGRO 145.** Comparison of detection techniques for distribution of [<sup>14</sup>C] residues by HPLC. K. Ahn, J. LaMar, T. Fleischmann, D. Dohn

**AGRO 146.** Evaluation of counting efficiency and matrix effects from crop and animal tissues on C<sub>14</sub> using ultra performance liquid chromatography and microplate solid scintillation counting. X. Zhou, E.N. Mirgon, K. Lynn, M. Ma, M. Hastings, S. Linder

**AGRO 147.** Investigating the mechanism of picolinic acids sorption to soils. Y. Ding, M. Ma, K. Lynn, S. Linder

## Section F

Loews Philadelphia Hotel  
Regency Ballroom B

### Pollinators: Agrochemicals, Behavior & Disease

Cosponsored by AGFD, ENVR and TOXI

J. Gan, J. Richards, *Organizers*

1:00 - 5:00

**AGRO 148.** Transcriptome profiles of *Tropilaelaps mercedesae* parasitizing honey bees. S. Lee

**AGRO 149.** Behavioral actions of heterocyclic amines on honey bees. N.R. Larson, U.R. Bernier, J.R. Bloomquist, T.D. Anderson

**AGRO 150.** In-hive herbicide exposure elicits oxidative stress response in honey bees. J. Williams, T.D. Anderson, C.C. Brewster

**AGRO 151.** Comparative study of the detoxification of the pesticide inert n-methyl-2-pyrrolidone in *Apis mellifera* adults and larvae. J. Fine, C.A. Mullin

**AGRO 152.** Toxicological risks of agrochemical spray adjuvants and other inactive ingredients to bees. C.A. Mullin, J. Fine, R. Reynolds, M.T. Frazier

**AGRO 153.** Establishment of pre-harvest residue limit (PHRL) of fungicide pyraclostrobin and insecticide thiacloprid on mandarin during cultivation. K. Hwang, J. Moon

## Section F

Loews Philadelphia Hotel  
Regency Ballroom B

### Protection of Agricultural Productivity, Public Health & the Environment

J. Gan, J. Richards, *Organizers*

1:00 - 5:00

**AGRO 154.** Agrochemical formulation development: design for sustainability, a paradigm shift in toxicology testing. R. Acosta Amado, R. Settivari, S.C. Gehen, M. Corvaro, L. Leah, D. Wilson

**AGRO 155.** Use of colorants in pesticide formulations. V. Shing

**AGRO 156.** Discovery and optimization of 1,3-diaryl-substituted heterocycles as novel insecticides. T. Pahutski, O.K. Ahmad, G.P. Lahm, J.D. Barry, D. Cordova

**AGRO 157.** Cloning and functional characterization of inward rectifying potassium (Kir) channels from arthropod salivary glands. Z. Li, D. Swale

**AGRO 158.** Cardiac regulation of viral infection in a model social insect. S. O'Neal, D. Swale, J.R. Bloomquist, T.D. Anderson

**AGRO 159.** Monoterpenoid derivatives as biorational mosquito repellents. J.S. Klimavicz, J.R. Coats, E.J. Norris, A.E. Blackman

**AGRO 160.** Exploring the relationship between PaOA<sub>1</sub> receptor modulation and the insecticidal character of monoterpenoids. E. Norris, A.D. Gross, M. Kimber, L. Bartholomay, J.R. Coats

### Advances & Challenges in Food-Energy-Water Nexus

Sponsored by ENVR, Cosponsored by AGRO and CEI

### Synthetic Biology & Genetically Modified Organisms

#### The Debate: What Role Should We Play in the Biotechnology Era?

Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI and COMSCI

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## MONDAY EVENING

## Section A

Pennsylvania Convention Center  
Halls D/E

## Sci-Mix

J. Gan, P. J. Rice, *Organizers*

8:00 - 10:00

133-139, 141, 143-146, 150-151, 155,  
157-160. See previous listings.

225-227, 229, 233, 236, 238-244, 250, 252,  
254, 361. See subsequent listings.

## TUESDAY MORNING

## Section A

Loews Philadelphia Hotel  
Commonwealth Hall D

### Ion Channels & G-Protein Coupled Receptors: Dr. Yoshihisa Ozoe, ACS International Award for Research in Agrochemicals

J. R. Coats, A. D. Gross, *Organizers, Presiding*

8:10 Introductory Remarks.

8:15 **AGRO 162.** Molecular mechanisms of action of DDT and pyrethroid insecticides. K. Dong

8:40 **AGRO 163.** Novel *Musca domestica* Vssc mutations and their role in insecticide resistance. S. Kasai, H. Sun, J.G. Scott

9:05 **AGRO 164.** Targeting voltage-gated sodium channels for insect control: Past, present and future. D.M. Soderlund

9:30 **AGRO 165.** Modulators of insect nicotinic acetylcholine receptors with special reference to flupyradifurone. R. Nauen, P. Jeschke

9:55 Intermission.

10:15 **AGRO 166.** RNA A-to-I editing: A mechanism that broadens the pharmacological properties of the mosquito GABA receptor. J. Taylor-Wells, I. Bermudez, A.K. Jones

10:40 **AGRO 167.** Insect ligand-gated ion channels as targets for insecticides. K. Matsuda

11:05 **AGRO 168.** Mechanisms of resistance to insecticides targeting RDL GABA receptors. T. Nakao

11:30 Concluding Remarks.

## Section B

Loews Philadelphia Hotel  
Regency Ballroom C1

### Fate & Metabolism of Agrochemicals: Early Career Scientist Symposium

F. Jia, M. Ma, *Organizers*

Y. Ding, S. Grant, *Organizers, Presiding*

8:35 Introductory Remarks.

8:40 **AGRO 169.** Mechanisms of pyrethroid degradation on urban surfaces. J. Richards, J. Gan

9:05 **AGRO 170.** Assessing the effects of urbanization on the environment with soil legacy and current-use insecticides: A case study in the Pearl River Delta, China. L. Bao, Y. Wei, E. Zeng

9:30 **AGRO 171.** Environmental degradation of imazosulfuron. C. Rering, R.S. Tjeerdema

9:55 Intermission.

10:15 **AGRO 172.** Transformation of atrazine, 2,4-D, and 2,4,5-T on simulated leaf surfaces. L. Su, N. Dai

10:40 **AGRO 173.** Assessing exposure to semi-volatile pesticides from treated agricultural fields. R.F. Bohaty, J. Hetrick, C. Peck, D. Spatz

11:05 **AGRO 174.** Community multi-scale air quality (CMAQ) modeling effort for pesticide emissions. T. Lane, A. Sumner, J. Arnold, S. Grant

## Section C

Loews Philadelphia Hotel  
Commonwealth Hall A1

### Advances in Agricultural Biotechnology: Interpretation & Correlation of ELISA & LC-MS/MS for Protein Quantitation

*Cosponsored by ANYL*

L. Buchholz, R. Hill, N. Houston, *Organizers*

J. E. Eble, *Organizer, Presiding*

8:10 Introductory Remarks.

8:15 **AGRO 175.** Regulatory perspectives on protein detection for agricultural biotechnology. G. Shan

8:40 **AGRO 176.** Multiplex approach for the analysis of peanut allergens using liquid chromatography-tandem mass spectrometry. C.R. Powley, B. Malayappan, B.L. Steele, J.E. Eble

9:05 **AGRO 177.** Quantification of membrane proteins in genetically engineered crops by liquid chromatography coupled with tandem mass spectrometry. L. Schacherer

9:30 **AGRO 178.** ELISA validation and correlation to mass spectrometry. K. Kouba

9:55 Intermission.

10:15 **AGRO 179.** Targeted protein quantification by LC-MS/MS: Applications in the agricultural biotechnology. T.X. Hu

10:40 **AGRO 180.** Development of multiplex LC-MS/MS strategies for the quantitation of plant-expressed proteins. T.J. Oman, R. Hill, J.R. Gilbert

11:05 Panel Discussion.

## Section D

Loews Philadelphia Hotel  
Commonwealth Hall C

### Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches

*Cosponsored by AGFD, ENVR and TOXI*

G. Hancock, M. A. Maks, J. R. Purdy, *Organizers*

J. Purdy, *Presiding*

8:35 Introductory Remarks.

8:40 **AGRO 181.** Assessing risks of pesticides to bees: Challenges and opportunities. T. Steeger, M. Ryan, K. Garber, D. Lehmann

9:05 **AGRO 182.** Current advancements for evaluating the risk of agrochemicals to developing bees. D.R. Schmehl

9:30 **AGRO 183.** Consideration of increased tolerance of eusocial bees to toxins for risk assessment. J.R. Purdy

9:55 Intermission.

10:15 **AGRO 184.** Regulatory framework for assessing pesticide risks to bees: A case study with the neonicotinoid insecticide imidacloprid. M.T. Shamim, J. Housenger, K. Sappington

10:40 **AGRO 185.** Industry involvement in the pollinator risk assessment process in North America. R.H. Collier

11:05 Concluding Remarks.

## Section E

Loews Philadelphia Hotel  
Commonwealth Hall B

### Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges

*Cosponsored by AGFD*

J. A. Kowalski, G. C. Miller, L. A. Royer, *Organizers*

K. L. Armbrust, *Organizer, Presiding*

8:10 Introductory Remarks.

8:15 **AGRO 186.** EPA perspectives on pesticides and cannabis. N. Zinn

8:40 **AGRO 187.** Responsible cultivation policy: Preserving personal cultivation rights while regulating commercial cultivation as agriculture. K. Nevedal, J. Marcu, S. Sherer

9:05 **AGRO 188.** Regulation of agrochemicals use on medical marijuana in Nevada. G.C. Miller

9:30 **AGRO 189.** Regulation of agrochemical use on medical/recreational marijuana in Oregon. R. Cuchetto

9:55 Intermission.

10:15 **AGRO 190.** Navigating the pesticide related regulatory landscape with respect to individual state legal cannabis cultivation in the US. P. Reibach

10:40 **AGRO 191.** Current and potential future environmental liabilities considerations for the cannabis industry. L.A. Royer, L. Cook

11:05 **AGRO 192.** Agricultural considerations in cannabis husbandry: Food, fiber & farmacy. E. Russo

11:30 Concluding Remarks.

### Kenneth A. Spencer Award for Outstanding Achievement in Agricultural & Food Chemistry

#### Food Components for Cardiovascular & Brain Health

*Sponsored by AGFD, Cosponsored by AGRO*

#### Chemistry, Safety & Technology of GMO Foods

*Sponsored by AGFD, Cosponsored by AGRO, CEI, COMSCI and ENVR†*

### USDA-ARS Sterling B. Hendricks Memorial Lectureship: Symposium in honor of May Berenbaum

*Sponsored by AGFD, Cosponsored by AGRO*

### Combined Biological-Chemical Reactions for Contaminant Transformation

*Sponsored by ENVR, Cosponsored by AGRO*

## TUESDAY AFTERNOON

## Section A

Loews Philadelphia Hotel  
Commonwealth Hall D

### Synthesis & Chemistry of Agrochemicals: Symposium in Memory of Dr. Thomas Bretschneider

#### Innovation in Chemistry of Agriculture Award

*Financially supported by BASF*

T. M. Stevenson, *Organizer*

J. F. Berezna, A. Davulcu, *Presiding*

1:50 Introductory Remarks.

1:55 **AGRO 193.** Pharmacophore modifications for the discovery and optimization of biologically active molecules. T.M. Stevenson

2:45 **AGRO 194.** Aminopyrazole fungicides. J.K. Long, A. Taggi, J.F. Berezna, M.J. Mahaffey, C.E. Liberato, L.L. Geist, W. Hong

3:10 Intermission.

3:30 **AGRO 195.** Bicyclic diaryl-pyrazoles as MAP / HOG1 kinase inhibiting fungicides. A. Taggi, T.M. Stevenson, P.L. Sharpe, A.D. Crews, M.H. Howard, J.L. Andreassi, J.J. Willey, J.F. Berezna, J.J. Bisaha, T. Cenizal, R.A. Coats, L.L. Geist, M.C. Hendrixson, P.R. Kovacs, C.E. Liberato, S.F. McCann, J. Sopa, C. Stavis, Y. Tao

3:55 **AGRO 196.** Cyclopropyl carboxamides: A breakthrough in SDHI fungicides. C. Dubost

4:20 **AGRO 197.** Structure-activity relationship studies on the natural product UK-2A. K.G. Meyer, W.J. Owen, N. Niyaz, C. Yao, R.B. Rogers, G.M. Fitzpatrick, F. Li, J. Nugent, M.J. Ricks, T. Slanec

## Section B

Loews Philadelphia Hotel  
Regency Ballroom C1

### Fate & Metabolism of Agrochemicals: Early Career Scientist Symposium

Y. Ding, S. Grant, M. Ma, *Organizers*

F. Jia, *Organizer, Presiding*

M. Ma, *Presiding*

1:25 Introductory Remarks.

1:30 **AGRO 198.** Aqueous and soil fate of benzobicyclon and benzobicyclon hydrolysate under simulated California rice field conditions. K. Williams, R.S. Tjeerdema

1:55 **AGRO 199.** Withdrawn.

2:20 **AGRO 200.** Analysis of plant uptake and effects of pharmaceuticals using liquid chromatography tandem mass spectrometry. R. Mullen, D.S. Aga

2:45 **AGRO 201.** Application of QuEChERS method for evaluating accumulation and metabolism of pharmaceuticals in vegetable. Y. Chuang, C. Liu, R. Hammerschmidt, W. Zhang, S.A. Boyd, H. Li

3:10 Intermission.

3:30 **AGRO 202.** Non-extractable residues: Formation, extraction, and bioavailability. M.A. Schick

3:55 **AGRO 203.** Glyphosate extraction by different solvents and techniques from two agricultural soils. J.M. Gonzalez

†Cooperative Cosponsorship



- 4:20 AGRO 204. Nature of the residue study with Rinskor™ applied to rice. J.A. Taylor, S.L. Rotondaro, Y. Adelfinskaya
- 4:45 Concluding Remarks.

## Section C

Loews Philadelphia Hotel  
Commonwealth Hall A1

### Advances & Challenges of Controlling Arthropod Pests: Early Career Scientist Symposium

A. D. Gross, A. Nuss, *Organizers, Presiding*

#### 1:25 Introductory Remarks.

- 1:30 AGRO 205. Are muscarinic acetylcholine receptors the target of a new pyrazole oxime insecticide? A.D. Gross, P.R. Carlier, S. Jiang, B. Sun, F. Tong, M.M. Totrov, J.R. Bloomquist

- 1:55 AGRO 206. RNAi for western corn rootworm management. A. Velez, E. Fishilevich, K.E. Narva, B. Siegfried

- 2:20 AGRO 207. Through the looking glass: an opinion of pest management in an academic, government and industry setting. M. Tarver

- 2:45 AGRO 208. Peptide neurohormone receptors as insecticide targets. A. Nuss

#### 3:10 Intermission.

- 3:30 AGRO 209. Toxicological comparison of pyrethroids and sabadilla alkaloids on susceptible and resistant mosquitoes. L.J. Jenson, T.D. Anderson

- 3:55 AGRO 210. Gap junctions as potential new insecticide targets in the Yellow Fever Mosquito, *Aedes aegypti*. T.L. Calkins, P. Piermarini

- 4:20 AGRO 211. Mosquitocidal activity and mode of action of the isoxazoline fluralaner. S. Jiang, M. Tsikolia, U.R. Bernier, J.R. Bloomquist

- 4:45 AGRO 212. Targeted genome editing in *Aedes aegypti* using TALEN and CRISPR/Cas9. A. Aryan, S. Basu, M. Anderson, J. Overcash, K. Myles, Z. Adelman

#### 5:10 Concluding Remarks.

## Section D

Loews Philadelphia Hotel  
Commonwealth Hall C

### Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches

*Cosponsored by AGFD, ENVR and TOXI*

G. Hancock, J. R. Purdy, *Organizers*

M. A. Maks, *Organizer, Presiding*

#### 1:50 Introductory Remarks.

- 1:55 AGRO 213. Analysis of multiple neonicotinoids in small samples of honeybees combined with Quantigene® virology. M.E. Wyrebek, J.R. Purdy

- 2:20 AGRO 214. Collaborative epidemiological approach to investigate risk factors for diminished honey bee health in Ontario, Canada. J. Wilson, A. Guthrie, D.L. Pearl, G. Hawkins, G. Chan, T. Roberts, A. Jones-Bitton

- 2:45 AGRO 215. Managing risks of pesticides to bees. T. Moriarty

#### 3:10 Intermission.

- 3:30 AGRO 216. Pollinator tier I risk assessment: A link between laboratory and field studies. K. Malekani, J. Hoberg, L. Brewer, E. Nfon

- 3:55 AGRO 217. Pollinator risk assessment and risk management: impacts on product registration. D. Fischer, I.D. Kelly

#### 4:20 Panel Discussion.

#### 4:55 Concluding Remarks.

## Section E

Loews Philadelphia Hotel  
Commonwealth Hall B

### Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges

*Cosponsored by AGFD*

K. L. Armbrust, G. C. Miller, L. A. Royer, *Organizers*

J. A. Kowalski, *Organizer, Presiding*

#### 1:25 Introductory Remarks.

- 1:30 AGRO 218. Challenges of pesticide testing for privately owned cannabis testing facilities in Colorado. J. Brzezicki

- 1:55 AGRO 219. What's the catch? A comprehensive approach to testing cannabis for health and safety. A.M. Anterola

- 2:20 AGRO 220. Development of triazole fungicide resistance in powdery mildew disease of cannabis. F. Conrad

- 2:45 AGRO 221. Challenges for multi-residue pesticide analysis in cannabis; extraction and cleanup strategies for LC-MS and GC-MS analysis. C.J. Hudalla, L. Almeida, M.S. Young, K. Tran

#### 3:10 Intermission.

- 3:30 AGRO 222. Quantitation of pesticide residues in cannabis by LC-MS-MS with modified QuEChERS extraction. J. Dahl, J.A. Kowalski, D. Laine, G. Fagras

- 3:55 AGRO 223. Endemic pesticide use in Cannabis: Getting growers, labs, and regulators aligned through scalable and novel flash chromatographic remediation methodology. A.C. Martinez, R.B. Murphy, M. Rubinsky, A. Conn

- 4:20 AGRO 224. Possible sources of discrepancy in interlaboratory reporting of THCA concentration in cannabis plant. S. Sguera

#### 4:45 Discussion.

## Section F

Loews Philadelphia Hotel  
Regency Ballroom B

### Advances in Metabolism, Metabolomics & Mass Spectrometry

*Cosponsored by ANYL and ENVR*

J. Gan, J. Richards, *Organizers*

#### 1:00 - 5:00

- AGRO 225. Chiral and isotope analyses for assessing the degradation and metabolism of fipronil in the sediment. Q. Zhang, J. Gan

- AGRO 226. Characterization of value-added biochemicals using mass spectrometry-based metabolomics in a non-model microalgae. E. Matich, D.M. Butryn, M. Ghafari, V. del Solar, E. Camgoz, B.A. Pfeifer, D.S. Aga, B.Z. Haznedaroglu, G. Atilla-Gokcumen

- AGRO 227. Mass Spectral identification of biomarkers of exposure to silver nanoparticles in corn roots. N.G. Chavez Soria, D.S. Aga, G. Atilla-Gokcumen

- AGRO 228. In Vitro Metabolism of [<sup>14</sup>C]-Benalaxyl in Hepatocytes of Rats, Dogs and Humans. G.C. Nallani

- AGRO 229. Probing the metabolomic impacts of chloroacetanilide herbicides on earthworm coelomic fluid. C.M. Griffith, C.K. Larive

- AGRO 230. Radiovalidation of QuEChERS based on LC-MS/MS and LSC analysis. S. LaMonaca

- AGRO 231. Investigating the role of Trp86 residue of human acetylcholinesterase in interaction with organophosphate by docking, site directed mutagenic and molecular modeling approach. T. Jindal, A. Ranjan, K.-. Gulati

- AGRO 232. Accurate mass in agrochemical analysis. Understanding when to use ppm and when to use Da to express mass accuracy. J.A. Ferguson, P. Reibach

- AGRO 233. Mass spectrometry based method for measuring vitellogenin in fish as biomarker of exposure to endocrine disrupting chemicals. P. He, E. Matich, A.E. Friedman, G. Atilla-Gokcumen, L.T. Yonkos, D.S. Aga

- AGRO 234. Advantage and limitation of combining met ID with quantitative analysis in the QTrap 6500 mass spectrometer. M. Zhang, H. Peterson, D.L. Nabb

- AGRO 235. Detection of ractopamine in sheep urine after exposure to trace levels of dietary ractopamine. W.L. Shelver, A.A. Marx, A.M. McGarvey, D.J. Smith

- AGRO 236. Adapting new techniques and instrumentation to improve the monitoring of > 150 veterinary drugs including aminoglycosides in food animal tissues. S.J. Lehotay, A. Lightfield

- AGRO 237. Residue of Fluquinconazole during Cultivation of Tomato. J. Jung, E. Kim, B. Bae, J. Shim, S. Chai, J. Park, M. Chang, T. Kim

## Section F

Loews Philadelphia Hotel  
Regency Ballroom B

### Cannabis & Agrochemicals: Analytical, Environmental & Regulatory Challenges

*Cosponsored by AGFD*

J. Gan, J. Richards, *Organizers*

#### 1:00 - 5:00

- AGRO 238. Detecting pesticides in the cannabis plant: Complications and interferences. S. Sguera

- AGRO 239. Herbicide binding in plant acetyl-CoA carboxylase by homology modeling, MD simulation, and docking. V. Sammeta, D.W. Boerth

## Section F

Loews Philadelphia Hotel  
Regency Ballroom B

### Environmental Risk Assessment of Down-the-Drain Chemicals

*Cosponsored by ENVR*

J. Gan, J. Richards, *Organizers*

#### 1:00 - 5:00

- AGRO 240. Meta-analysis on parabens in sewage sludge. J. Chen, R.U. Halden

- AGRO 241. Comparative analysis of organic contaminants in sewage sludge from the United States and China. J. Steele, X. Meng, A. Venkatesan, R.U. Halden

- AGRO 242. Detection of imidacloprid, fipronil and its degradates in wastewater and biosolids of eight wastewater treatment plants in Northern California. A.M. Sadaria, R.A. Sutton, K.D. Moran, R. Halden

- AGRO 243. Molar distribution and correlation between fipronil and its degradates in wastewater and biosolids of eight California wastewater treatment plants. A.M. Sadaria, R.A. Sutton, K.D. Moran, R. Halden

## Section F

Loews Philadelphia Hotel  
Regency Ballroom B

### Environmental Study Design: Current & Emerging Guidelines

*Cosponsored by ENVR*

J. Gan, J. Richards, *Organizers*

#### 1:00 - 5:00

- AGRO 244. Novel study design for the performance of an aerobic flooded soil study utilizing natural sunlight and controlled temperature. J. Allan, P.M. Sarff, M. Tunink

- AGRO 245. Outdoor water sediment study – Adding effects of sunlight to aquatic system exposure assessment. C.M. Hirata, C.J. Anderson, A. Abernethy

- AGRO 246. Experimental design of high tier aged sorption studies for pesticides. H. Wang, B. Blakeslee, K. Lynn, S. Linder

- AGRO 247. Determination of the plant uptake factor for Oxathiapiprolin (DuPont™ Zorvec™) soil metabolites in tomato, potato and lettuce. C.J. Hatzenbeler, P. Ravi, G. Suresh, S. Ayyappan, S. Siva Shankar Prasad

- AGRO 248. Accurate determination of adsorption values for low adsorbing compounds. F. Donaldson, R.L. Warren

- AGRO 249. Comparison of photodegradation of selected agrichemicals on moist and dry soils. C. Fang

## Section F

Loews Philadelphia Hotel  
Regency Ballroom B

### Glyphosate: Current Status & Future Prospects

*Cosponsored by AGFD and ENVR*

J. Gan, J. Richards, *Organizers*

#### 1:00 - 5:00

- AGRO 250. Survey of glyphosate in domestic and imported beer and wine. F.M. Rubio, Z. Hutchinson, T. Glaze, J. Lance

- AGRO 251. Practical implementation techniques for reliable and selective determination of glyphosate and AMPA in milk and urine using LC-MS/MS. P.K. Jensen, L. Riter, C.E. Wujcik, M.K. McGuire, M.A. McGuire

- AGRO 252. Phosphate fertilizer impacts on glyphosate sorption by soil under different pH conditions. S. Munira, A. Farenhorst, D. Flaten, C. Grant

## Section F

Loews Philadelphia Hotel  
Regency Ballroom B

### Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations

*Cosponsored by ENVR and TOXI*

J. Gan, J. Richards, *Organizers*

1:00 - 5:00

**AGRO 253.** Analysis of monitoring data for synthetic pyrethroids in U.S. surface water and sediment. J.A. Frew, J. Wirtz, J. Giddings, D. Campana

**AGRO 254.** Kriging models for predicting atrazine peak concentrations for non-daily surface water monitoring. J. Aldworth, P. Mosquin, W. Chen

### Kenneth A. Spencer Award for Outstanding Achievement in Agricultural & Food Chemistry

### Anticancer Food Components: Functional Food Polymers, Food Flavor & Odor Chemistry & Processing-Induced Food Toxicants

*Sponsored by AGFD, Cosponsored by AGRO*

### Chemistry, Safety & Technology of GMO Foods

*Sponsored by AGFD, Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡*

## WEDNESDAY MORNING

## Section A

Loews Philadelphia Hotel  
Regency Ballroom A2

### Synthesis & Chemistry of Agrochemicals: Symposium in Memory of Dr. Thomas Bretschneider

*Financially supported by BASF*

T. M. Stevenson, *Organizer, Presiding*

J. K. Long, *Presiding*

8:50 Introductory Remarks.

**8:55 AGRO 255.** Cyclic ketone insecticides: Retrospective consideration and prospects. P. Jeschke, R. Fischer, R. Nauen

**9:20 AGRO 256.** Organism dependent binding of pesticides to Acetyl-CoA carboxylase. G. Lange, R. Fischer, J. Freigang, B. Laber, S. Lehr

**9:45 AGRO 257.** Structure-based design of a novel class of herbicidal HPPD inhibitors. R.C. Viner, Y. Bhonoah, M. Langford, D. Kloer

10:10 Intermission.

**10:30 AGRO 258.** Pyrimidinones and related carbonyl containing heterocycles as 4-hydroxyphenylpyruvate dioxygenase (HPPD) herbicides. A.D. Satterfield

### Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

‡Cooperative Cosponsorship

**10:55 AGRO 259.** Deuterated 6-aryl picolinate herbicides: Effect on potency and weed spectrum. J.J. Roth, J. Epp, P. Johnson, N.M. Satchivi, P. Schmitzer

**11:20 AGRO 260.** Synthesis and Herbicidal Activity of 3-Pyrazole Carboxamides. T.M. Stevenson, P.L. Sharpe, T. Cenizal, C.B. Stabler

## Section B

Loews Philadelphia Hotel  
Regency Ballroom C1

### Environmental Fate, Transport & Modeling of Agriculturally-Related Chemicals

*Cosponsored by ENVR*

Z. Tang, *Organizer*

S. H. Jackson, *Organizer, Presiding*

8:25 Introductory Remarks.

**8:30 AGRO 261.** High frequency monitoring of pesticides and water quality in PEI, Canada. J.R. Purdy

**8:55 AGRO 262.** Placing EPA Tier II scenarios into national context in terms of runoff-erosion vulnerability after pyrethroid applications to agriculture. C.M. Holmes, D.A. Desmarteau, P. Hendley, J. Amos, M.J. Cheplick, A.M. Ritter

**9:20 AGRO 263.** Implementation of a portable small plot simulated rainfall and runoff collection system: GIS site selection, study methodology, and hydrologic results. J. White, T.L. Negley, C. Hassinger, R.L. Warren

**9:45 AGRO 264.** Multiresidue analysis for leaching of pesticides in groundwater of cotton cropping area. S. Thakur, K. Gulati, R. Lal, P. Jain, T. Jindal

10:10 Intermission.

**10:30 AGRO 265.** Flow-through experiments and algae population modelling as supporting tools within the pesticide risk assessment - results of case studies. D. Weber, G. Weyman, D. Schaefer, A. Wais

**10:55 AGRO 266.** Water solubility and n-octanol/water partition coefficient measurements of pesticides, in freshwater and seawater. P. Saranjampour, E. Vebrosky, E. Wall, K.L. Armbrust

**11:20 AGRO 267.** Environmental behavior and metabolism of two chiral cis-nitromethylene neonicotinoid pesticides in aerobic soils by <sup>14</sup>C-labelings and Q-TOF MS. H. Wang, M. Chen, Q. Fu, Q. Ye

**11:45 AGRO 268.** Addressing analytical challenges associated with pyrethroid hydrophobicity. T. Xu, P. Hendley, K. Clark, J. Owen, C. Chickering

## Section C

Loews Philadelphia Hotel  
Commonwealth Hall D

### Who Should Regulate Pesticides in Our Food?

*Cosponsored by AGFD and ETHC*

H. B. Irrig, C. Tiu, *Organizers*

P. A. Brindle, *Organizer, Presiding*

8:25 Introductory Remarks.

**8:30 AGRO 269.** Harmonized approaches to crop protection for minor uses: Past, present, and future. D. Kunkel

**9:20 AGRO 270.** Evidence-based Initiatives for MRL alignment. P. Chan

**9:45 AGRO 271.** Pesticides registration in Ghana. J.A. Pwamang

10:10 Intermission.

**10:30 AGRO 272.** Establishing toxicological end-points for human risk assessment: challenges and opportunities. A. Moretto

**10:55 AGRO 273.** Regulation of pesticides in Mexico. A.L. Tovar Diaz, S.E. Rojas Villegas

**11:20 AGRO 274.** Farm to table: Pesticide residues in food and risk assessment. J. Cowins

**11:45 AGRO 275.** Consumers' expectations of pesticide residues in our food. P.A. Brindle

12:10 Concluding Remarks.

## Section D

Loews Philadelphia Hotel  
Commonwealth Hall A1

### Computational Chemistry & Toxicology in Chemical Discovery & Assessment (QSARs)

*Cosponsored by COMP, ENVR and TOXI*

M. Barrett, S. Z. Cohen, *Organizers, Presiding*

8:50 Introductory Remarks.

**8:55 AGRO 276.** QSARs and computational chemistry in environmental risk assessment: Overview and historical perspective. S.Z. Cohen, J.d. Walker

**9:20 AGRO 277.** Predicting interactions of compounds and metabolites with toxicity-associated targets. P. Hunt, F. Atkinson, I. Smit, M. Segall

**9:45 AGRO 278.** New insights on the structural and molecular recognition properties of insecticides through computational chemistry: The challenging case of sulfoxaflor. J. Le Questel, Z. Alamiddine, J. Graton

10:10 Intermission.

**10:30 AGRO 279.** Use of computational chemistry & toxicology tools and models for assessing chemicals under the Toxics Substances Control Act. T.R. Henry, K. Mayo, W. Lee, Y. Selby-Mohamadu

**10:55 AGRO 280.** Use of computational chemistry & toxicology tools and models for estimating exposures under the Toxics Substances Control Act. M. Titcombe Lee

## Section E

Loews Philadelphia Hotel  
Commonwealth Hall B

### Controlling Zika Vector Mosquitoes

K. R. Chauhan, *Organizer, Presiding*

8:50 Introductory Remarks.

**8:55 AGRO 281.** Development of screening assays and novel methods of mosquito control. S.R. Palli, G. Venu, M. Sheetz, D. Sumitha

**9:20 AGRO 282.** Pyrethrum and pyrethroids activate specific olfactory receptors and elicit spatial repellency in *Drosophila melanogaster* and mosquitoes. P. Xu, E. Bandason, X. Tian, Y. Du, K.R. Chauhan, K. Dong

**9:45 AGRO 283.** Breaking pyrethroid resistance in *Aedes* mosquitoes. J. Williams

10:10 Intermission.

**10:30 AGRO 284.** *Aedes aegypti* adult control using aerially applied Dibrom Concentrate (naled). C.A. Silcox, P. Connelly

**10:55 AGRO 285.** Chemosterilization for SIT mosquito control: the case for thiopepa against *Aedes aegypti*. G. White

11:20 Discussion.

### Chemistry, Safety & Technology of GMO Foods

*Sponsored by AGFD, Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡*

### Microbial & Molecular Tools to Determine the Fate & Biotransformation of Emerging Contaminants

*Sponsored by ENVR, Cosponsored by AGRO*

## WEDNESDAY AFTERNOON

## Section A

Loews Philadelphia Hotel  
Regency Ballroom C2

### Synthesis & Chemistry of Agrochemicals: Symposium in Memory of Dr. Thomas Bretschneider

*Financially supported by BASF*

T. M. Stevenson, *Organizer, Presiding*

A. Satterfield, *Presiding*

1:25 Introductory Remarks.

**1:30 AGRO 286.** Synthesis and oomycete fungicidal activity of a new family of inhibitors targeting an oxysterol binding protein. M. Pouliot

**1:55 AGRO 287.** SAR investigation of insecticidal thiourea amidines. D. Kneueppel, S. Castetter, D. Demeter, J.D. Eckelbarger, M. Sullenberger, S. Thornburgh, F. Wessels, J. Wilmot

**2:20 AGRO 288.** SAR investigations into N-aziny-N'-thiophenyl ureas as insecticides. T.K. Trullinger, T. Johnson, R. Hunter

**2:45 AGRO 289.** Synthesis and evaluation of insecticidal spinosyn mimics. A. Brown, K. Bryan, G. Crouse, D.P. Cudworth, D. Demeter, W.H. Dent, R. Hunter, W.T. Lambert, C. McLeod, J.G. Samaritoni, T.C. Sparks

3:10 Intermission.

**3:30 AGRO 290.** Discovery and initial optimization of mesoionic pyrido[1,2a]pyrimidinones as a novel class of insecticides. W. Zhang, C.W. Holyoke, K.A. Hughes, Y. Bethel

**3:55 AGRO 291.** Triflumezopyrim: A new class of nicotinic acetylcholine receptor inhibiting insecticides. T. Pahutski, G.P. Lahm, C.W. Holyoke, W. Zhang, M. Tong, K.A. Hughes, D. Cordova, E.A. Benner, D.R. Vincent, R.M. Leighty

**4:20 AGRO 292.** Process chemistry aspects of indazole anthranilic diamide insecticides. R. Mondiere, A. Jeanguenat, O. Loiseleur, R.G. Hall, A. Stoller, A. Edmunds

## Section B

Loews Philadelphia Hotel  
Regency Ballroom C1

### Environmental Fate, Transport & Modeling of Agriculturally-Related Chemicals

*Cosponsored by ENVR*

S. H. Jackson, *Organizer*

Z. Tang, *Organizer, Presiding*

1:25 Introductory Remarks.

**1:30 AGRO 293.** Three estuarine mixing scenarios for pesticide risk assessment. S.Z. Cohen, L.J. Thibodeaux, C. Jones, M. Williams, S.M. Haefner

**1:55 AGRO 294.** Screening level and refined flowing water pesticide exposure modeling for use in endangered species assessments. M. Winchell, L. Padilla, N. Pai, P. Whating, P.L. Havens, N. Poletika

**2:20 AGRO 295.** Comparison of TOXSWA and AGRO-2016 as receiving water models for European pesticide exposure assessment. L. Padilla, S.H. Jackson, M. Winchell

**2:45 AGRO 296.** Examination of PRZM5.0 storm rainfall depth and distribution algorithms compared to current U.S. storm trends. T.L. Estes, K.L. Armbrust

**3:10** Intermission.

**3:30 AGRO 297.** Direct and indirect air modeling based on dicamba field studies. S.H. Jackson

**3:55 AGRO 298.** AERMOD modeling for treatment period of sulfurly fluoride residential structural fumigation. J. Tao

**4:20 AGRO 299.** Modeling agricultural spray drift using a coupled CALPUFF-AGDISP model. C. DesAutels, Q. Ma, J. Popovic

**4:45 AGRO 300.** Pesticide residue and degradation formulations in vegetative filter strips for environmental exposure assessments. R. Muñoz-Carpena, A.M. Ritter, G. Fox, O. Perez-Ovilla

**5:10** Discussion.

## Section C

Loews Philadelphia Hotel  
Commonwealth Hall D

### Who Should Regulate Pesticides in Our Food?

*Cosponsored by AGFD and ETHC*

P. A. Brindle, C. Tiu, *Organizers*

H. B. Irrig, *Organizer, Presiding*

**1:25** Introductory Remarks.

**1:30 AGRO 301.** Regulatory harmonization: Is it possible? L. Rossi

**1:55 AGRO 302.** Need for pesticides for pulse growers. G. Kurbis

**2:20 AGRO 303.** Challenges and opportunities for California citrus exports. J. Cranney

**2:45 AGRO 304.** Market place considerations: The importance of harmonized MRLs. D.A. Botts

**3:10** Intermission.

**3:30 AGRO 305.** Plant protection products regulations in the EU - an overview. M. Richter

**3:55 AGRO 306.** Purpose and aim of the new maximum residue limit (MRL) regulation in Mexico. J. Ramirez

**4:20 AGRO 307.** Opportunities to mitigate trade uncertainties related to MRLs. W.A. Kerr, M. Yeung

**4:45 AGRO 308.** Weighing benefits versus risk of pesticides in addressing food needs. H.B. Irrig

**5:10** Concluding Remarks.

## Section D

Loews Philadelphia Hotel  
Commonwealth Hall A1

### Computational Chemistry & Toxicology in Chemical Discovery & Assessment (QSARs)

*Cosponsored by COMP, ENVR and TOXI*

M. Barrett, S. Z. Cohen, *Organizers, Presiding*

**1:50** Introductory Remarks.

**1:55 AGRO 309.** Use of computational chemistry & toxicology tools and models for assessing human health hazards under the Toxics Substances Control Act. S. Oxendine, K. Mayo, Y. Woo

**2:20 AGRO 310.** QSAR in the evaluation of toxicity and environmental fate of novel explosives, propellants, and pyrotechnics. W.S. Eck

**2:45 AGRO 311.** Use of computational chemistry & toxicology tools and models for assessing PChem properties, fate and aquatic toxicity under the Toxics Substances Control Act. J. Ford, D. Lynch, A. Kim

**3:10** Intermission.

**3:30 AGRO 312.** Coupling metabolite predictions to pesticide toxicity in silico. R.D. Clark, M.S. Lawless

**3:55 AGRO 313.** Case studies on identification of residues of concern in ecological risk assessment for conventional pesticides. W.P. Eckel, J. Hetrick, B. Kiernan, G. Orrick, M.T. Shamim, K.E. White

**4:20 AGRO 314.** Concluding discussion: quantifying uncertainty and identifying research needs. S.Z. Cohen

## Section E

Loews Philadelphia Hotel  
Commonwealth Hall B

### Controlling Zika Vector Mosquitoes

K. R. Chauhan, *Organizer, Presiding*

**1:25** Introductory Remarks.

**1:30 AGRO 315.** Toxicity of the natural insecticide matrine to *Aedes aegypti*, *Drosophila melanogaster* and *Periplaneta americana*. Y. Li, J.R. Bloomquist

**1:55 AGRO 316.** Mosquito repellents and larvicidal constituents based on natural products and their synthetic analogs. K.M. Meepagala, U.R. Bernier, A. Estep, J.J. Becnel

**2:20 AGRO 317.** Chemical control of mosquitoes by re-purposed and modified agricultural insecticides. J.R. Bloomquist, J. Taylor-Wells, A.D. Gross, P.R. Carlier

**2:45** Panel Discussion.

**3:10** Intermission.

**3:30 AGRO 318.** Ultra-low rate application of deltamethrin for mosquito control. M.E. Krolski, K. Vandock, J. Brill, E.C. Beedle

**3:55 AGRO 319.** Proven vector control methods to reduce the risk of dengue: Lessons for Zika. S. Krause

**4:20** Panel Discussion.

### Chemistry, Safety & Technology of GMO Foods

*Sponsored by AGFD, Cosponsored by AGRO, CEI, COMSCI and ENVR†*

### Microbial & Molecular Tools to Determine the Fate & Biotransformation of Emerging Contaminants

*Sponsored by ENVR, Cosponsored by AGRO*

## WEDNESDAY EVENING

### Advances & Challenges in Food-Energy-Water Nexus

*Sponsored by ENVR, Cosponsored by AGRO and CEI*

### Advances in Understanding Antibiotics, Antibiotic Resistance Genes & Antibiotic-Resistant Bacteria in Engineered & Natural Environments

*Sponsored by ENVR, Cosponsored by AGRO*

### Combined Biological-Chemical Reactions for Contaminant Transformation

*Sponsored by ENVR, Cosponsored by AGRO*

### Nanotechnology for Sustainable Agriculture & Food Systems

*Sponsored by ENVR, Cosponsored by AGRO and CEI*

### Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment

*Sponsored by ENVR, Cosponsored by AGRO*

## THURSDAY MORNING

### Section A

Loews Philadelphia Hotel  
Commonwealth Hall A1

### Environmental Risk Assessment of Down-the-Drain Chemicals

*Cosponsored by ENVR*

K. Malekani, M. T. Shamim, *Organizers*

C. M. Holmes, J. Weeks, *Organizers, Presiding*

**8:50** Introductory Remarks.

**8:55 AGRO 320.** USEPA regulatory framework for the ecological risk assessment of down-the-drain uses of pesticides. M.T. Shamim, J. Melendez, K. Sappington

**9:20 AGRO 321.** Environmental risk assessment of down-the-drain chemicals in the European Union: Current approaches, strengths and weaknesses. P. Mason

**9:45 AGRO 322.** Pesticides and POTWs: Opportunities and challenges. P. Ghuman

**10:10** Intermission.

**10:30 AGRO 323.** Wastewater discharge risk assessments: Importance and improvement opportunities. K.D. Moran, M. LaBella, K. North

**10:55 AGRO 324.** Recurring U.S. national wastewater treatment plant survey and the Human Health Observatory at Arizona State University. A. Venkatesan, J. Steele, R.U. Halden

**11:20 AGRO 325.** Occurrence and mass balances of neonicotinoid and phenylpyrazole insecticides during conventional wastewater treatment. A.M. Sadaria, S.D. Supowitz, R. Halden

### Section B

Loews Philadelphia Hotel  
Commonwealth Hall A2

### Subsurface Fate of Pesticides

*Cosponsored by ENVR*

M. Barrett, Y. Ding, X. Huang, A. M. Ritter, *Organizers, Presiding*

**8:25** Introductory Remarks.

**8:30 AGRO 326.** Consideration of subsurface pesticide degradation in groundwater assessments. M. Barrett, J. Carleton, R.D. Jones, G. Rothman, M.T. Shamim, E.J. Weber, K.E. White, J. Washington, C.T. Stevens

**8:55 AGRO 327.** Variations on a theme: Groundwater sensitivity. A.M. Ritter, M.J. Cheplick, I. Khanijo

**9:20 AGRO 328.** Impact of biphasic degradation on pesticide subsurface transport and groundwater exposure estimates. W. Chen, D. Mao, M.J. Cheplick

**9:45 AGRO 329.** Predicting pesticide biphasic soil concentration decline under field conditions: Model-data comparison. D. Mao, W. Chen, M.J. Cheplick

**10:10** Intermission.

**10:30 AGRO 330.** Subsurface modeling of a pesticide using the leaching estimation and chemistry model for pesticides: A comparison of field results and modeled estimates. T.L. Negley, P.L. Havens, I. van Wesenbeeck

**10:55 AGRO 331.** Comparison of modeling approaches in estimating total toxic residues (TTR) of pesticide in ground water. X. Huang, A.C. Barefoot

**11:20 AGRO 332.** HYDRUS 2/3D applied to modeling transport of agrochemicals in drip irrigation scenarios. P. Sharma

**11:45** Concluding Remarks.

### Section C

Loews Philadelphia Hotel  
Commonwealth Hall B

### Who Should Regulate Pesticides in Our Food?

*Cosponsored by AGFD and ETHC*

P. A. Brindle, H. B. Irrig, *Organizers*

C. Tiu, *Organizer, Presiding*

**8:25** Introductory Remarks.

**8:30 AGRO 333.** Why investing in international regulations and standards matters. J.F. Sandahl, C. Peterson

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- 8:55 AGRO 334.** Business of MRLs: A food and beverage industry perspective. R.W. Williams
- 9:20 AGRO 335.** Addressing food waste in the world with pesticides. H.B. Irrig
- 9:45 AGRO 336.** Retailers' secondary standards: What they are and why they exist. J. Maloney
- 10:10** Intermission.
- 10:30 AGRO 337.** Strategies to meet export maximum residue limits for Michigan apples and cherries. J. Wise, A. VanWoerkom
- 10:55 AGRO 338.** Contemporary MRL issues for California specialty crops: things that make you go hmm? S.S. Walse
- 11:20 AGRO 339.** Monitoring pesticide residues at the federal level. S. Abubeker
- 11:45** Concluding Remarks.

### Section D

Loews Philadelphia Hotel  
Commonwealth Hall D

#### Innovations in Human Health Exposure & Risk Assessment

*Cosponsored by ENVR and TOXI*

M. Dellarco, *Organizer*

C. Terry, *Organizer, Presiding*

**8:25** Introductory Remarks.

**8:30 AGRO 340.** Use of PBPK models in risk assessment of agrochemicals. A. Lowit, Y. Tan, E. Holman

**8:55 AGRO 341.** Utilising in vitro to in vivo extrapolation and PBPK modeling demonstrates how a better understanding of human systemic exposure can establish margins of systemic exposure and be used to refine agrochemical risk assessments. A.J. Stevens, S.J. Whalley, H. Burt, A. Hofstra

**9:20 AGRO 342.** Integration of toxicokinetic parameters for molecular design and safety assessment. R. Settivari, F. Zhang, S. Papineni, C. Rowlands, M. Bartels, R. Rasoulpour, P. Spencer

**9:45 AGRO 343.** Features and application of the ILSI/HESI RISK21 exposure framework. M. Dellarco

**10:10** Intermission.

**10:30 AGRO 344.** Determining the adequacy of drinking water monitoring data for exposure modeling in risk assessments using the Risk21 framework. P. Hinderliter, W. Chen, C. Truman, K. Yi

**10:55 AGRO 345.** Dosimetry modeling approach to refining inhalation risk assessment. S. Flack, T. Bui, T.S. Ramanarayanan, A. Szarka, P. Hinderliter

**11:20 AGRO 346.** Open-source workflow for predicting in vivo outcomes. S. Bell, X. Chang, J. Phillips, J. Pirone, N.Y. Choksi, R. Shah, N. Kleinstreuer, D. Allen, W. Casey

**11:45 AGRO 347.** EPA's Exposure Forecasting (ExpoCast) Project. J. Wambaugh

### Section E

Loews Philadelphia Hotel  
Commonwealth Hall C

#### Innovations in Agrochemical Mode of Action Studies & the Impact of Global Human Health Requirements

J. LaRocca, *Organizer, Presiding*

**8:25** Introductory Remarks.

**8:30 AGRO 348.** Application of the carcinogenic mode of action/ human relevance framework to agrochemical compounds. J.E. Klaunig, Z. Wang

**8:55 AGRO 349.** Mouse liver tumor mode of action via CAR activation in mice, and ability to achieve a weight of evidence assessment with in vitro methods: A case study with the triazole fungicide cyproconazole. R. Peffer, D. Cowie, C.J. Omiecinski, J.I. Goodman

**9:20 AGRO 350.** Application of toxicokinetics in regulatory-mandated toxicity testing of plant protection products (PPPs): From concept to application. S. Saghir, M.A. Dorato

**9:45 AGRO 351.** Cheminformatics approaches to inhalation toxicity. D.M. Wilson

**10:10** Intermission.

**10:30 AGRO 352.** Use of toxicokinetics to improve the current extended one-generation reproductive toxicity (EOGRT) study design. S. Saghir, M.A. Dorato

**10:55 AGRO 353.** Sedaxane: Use of nuclear receptor transactivation assays, high content imaging and toxicokinetics as part of a mode of action framework for rodent liver tumors. R. Peffer, D. Cowie, R. Currie, D. Minnema

**11:20 AGRO 354.** Mode of action framework: Bridging the gap between animal and human data. M.K. Manibusan

#### Advances in Understanding Antibiotics, Antibiotic Resistance Genes & Antibiotic-Resistant Bacteria in Engineered & Natural Environments

*Sponsored by ENVR, Cosponsored by AGRO*

#### Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment

*Sponsored by ENVR, Cosponsored by AGRO*

#### Bioanalytical Tools for Chemicals of Emerging Concern in the Environment

*Sponsored by ENVR, Cosponsored by AGRO*

### THURSDAY AFTERNOON

#### Section A

Loews Philadelphia Hotel  
Commonwealth Hall A1

#### Environmental Risk Assessment of Down-the-Drain Chemicals

*Cosponsored by ENVR*

C. M. Holmes, K. Malekani, J. Weeks, *Organizers*

M. T. Shamim, *Organizer, Presiding*

K. Malekani, *Presiding*

**1:15** Introductory Remarks.

**1:20 AGRO 355.** Pesticides in California's wastewater - Science needs. J. Teerlink, R. Budd, N. Singhasemanon, Y. Xie

**1:45 AGRO 356.** Modeling the fate of down-the-drain chemicals at large geographic scales. U. Khan, G. Grill, R. Shakya, B. Lehner, J. Nicell

**2:10 AGRO 357.** Modeling the sustainability of using treated water containing active pharmaceutical ingredients for reuse in irrigation applications. T.L. Negley, C. Hassinger, J.J. Ryan, D.S. Finan

**2:35 AGRO 358.** Ecological exposure assessment approaches for indoor use pyrethroids in POTW effluent. C.M. Holmes, S. Herbstritt, A.M. Ritter, S.H. Jackson, R. Jones, P. Hendley, R. Allen, G. Mitchell

**3:00** Discussion.

#### Section B

Loews Philadelphia Hotel  
Commonwealth Hall A2

#### Environmental Study Design: Current & Emerging Guidelines

*Cosponsored by ENVR*

H. Adusumilli, H. Wang, *Organizers, Presiding*

**1:15** Introductory Remarks.

**1:20 AGRO 359.** Degradation of pyriithiobac sodium in soil and sediments. A.K. Sharma, L. Wen, L. Hall, J. Allan, B. Clark

**1:45 AGRO 360.** Integrating advances in environmental fate and exposure into regulatory frameworks: Learning from RISK21. L. Hand, R.G. Oliver, N. Peranginangin, A. Seville, R. Underwood

**2:10 AGRO 361.** Are additional solvent extractions in soil/sediment laboratory studies really necessary? M.J. Schocken, K. Campbell, S. McLaughlin, P. Miner, M.F. Lenz, Q. Ma, K. Malekani, P. Cassidy

**2:35 AGRO 362.** Aerobic mineralization in surface water: Study design, challenges and regulatory issues. J.K. Nag

**3:00 AGRO 363.** Determination of substance specific Plant Uptake Factor (PUF) for use in regulatory fate modeling. H. Adusumilli, W.S. McCall, R. Sur, W.J. Doucette, K. Malekani, M. Lamshoef, H. Ressler, C. Schriever, S. Webb, B. Zillgens

**3:25 AGRO 364.** Transformation of organic chemicals in environmental fate metabolism studies: A comparison between aquatic sediment (OECD 308) and surface water test systems (OECD 309: simulation biodegradation test). C. Wijnntjes

**3:50** Concluding Remarks.

#### Section C

Loews Philadelphia Hotel  
Commonwealth Hall B

#### Who Should Regulate Pesticides in Our Food?

*Cosponsored by AGFD and ETHC*

P. A. Brindle, H. B. Irrig, *Organizers*

C. Tiu, *Organizer, Presiding*

**1:15** Introductory Remarks.

**1:20 AGRO 365.** FDA pesticide monitoring program. C. Liang

**1:45 AGRO 366.** Digest of dietary exposure methodologies in support of global MRLs. C.B. Cleveland

**2:10 AGRO 367.** Acute risk assessment trends in EU: a case of compounded conservatism. J.M. Stewart

**2:35 AGRO 368.** Comparing Pesticide Data Program (PDP) and registrant-generated residue data. A.Z. Szarka

**3:00 AGRO 369.** Harmonizing pesticide assessments to allow for free and open trade. C. Tiu

**3:25** Concluding Remarks.

#### Section E

Loews Philadelphia Hotel  
Commonwealth Hall C

#### Advances in Agrochemical Metabolism & Metabolomics

*Cosponsored by ANYL and ENVR*

J. R. Gilbert, Q. X. Li, J. N. Seiber, *Organizers*

C. M. Griffith, K. Ralston-Hooper, *Organizers, Presiding*

**1:15** Introductory Remarks.

**1:20 AGRO 370.** Investigating the impact of exposure to pesticide mixtures on the metabolomic profile of amphibians. R.J. Van Meter, D. Glinski, S.H. Martin, S. Purucker, W. Henderson

**1:45 AGRO 371.** Integration of metabolomics and other OMICS approaches to elucidate cytotoxicity of agrochemicals: 2,4-D case study. J. Adamec, C. Boone, R. Grove

**2:10 AGRO 372.** Metabolism of the xenobiotic compound ben-zotriazole in Arabidopsis plants. G.H. LeFevre, A. Lipsky, C.E. Mueller, E.S. Sattely, R.G. Luthy

**2:35 AGRO 373.** GC-TOF-MS based root exudates metabolomics revealed defense mechanism of cucumber plant to nano-Cu. L. Zhao

**3:00 AGRO 374.** Dual- and single-retention behaviors of solutes in linear programmed temperature gas chromatography. L. Wu, X. Duan, C. Liu, G. Zhang, Q.X. Li

**3:25** Concluding Remarks.

#### Advances in Understanding Antibiotics, Antibiotic Resistance Genes & Antibiotic-Resistant Bacteria in Engineered & Natural Environments

*Sponsored by ENVR, Cosponsored by AGRO*

#### Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment

*Sponsored by ENVR, Cosponsored by AGRO*

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



ANYL

Division of Analytical Chemistry

J. Harris and L. Baker, Program Chairs

OTHER SYMPOSIA OF INTEREST:

Young Investigators in Biological Chemistry (see BIOL, Sun, Wed)

Composite Colloids for SERS Biodection (see COLL, Sun, Mon)

Nanostructured Interfaces: From Fundamentals of Sensing & Catalysis to Applications (see COLL, Mon, Tue, Wed, Thu)

Bioanalytical Tools for Chemicals of Emerging Concern in the Environment (see ENVR, Thu)

Advances in Biological Imaging (see PHYS, Sun, Mon, Wed, Thu)

Polymer & Polymer Hybrid Electronics & Biosensors (see POLY, Sun)

SOCIAL EVENTS:

Dinner, 6:00 PM: Tue

BUSINESS MEETINGS:

Business Meeting, 4:00 PM: Mon

SUNDAY MORNING

Section A

Pennsylvania Convention Center Room 105B

Mobilizing Chemistry Expertise to Solve Humanitarian Problems

Cosponsored by MPPG

R. L. Grosse, Organizer, Presiding

8:30 ANYL 1. Chemists without borders: Providing humanitarian solutions by mobilizing the chemistry community and its networks. B. Gerber

9:00 ANYL 2. Distributed pharmaceutical analysis lab: Citizen scientists tackle a global problem. M. Lieberman

9:30 ANYL 3. Solving problems of humanity with separation chemistry. S. Ahuja

10:00 Intermission.

10:15 ANYL 4. Arsenic in food and water: Promoting awareness through formal and informal learning on and off the campus. J.F. Tyson, R. Kronquist, S. Begum

10:45 ANYL 5. Penny per test – Low cost arsenic test kits. C.L. Lizardi

11:15 ANYL 6. Chemistry education in Sierra Leone. A. Kanu

Section B

Pennsylvania Convention Center Room 104A

Chemical Microscopy for In Situ & In Vivo Molecular Analysis

Cosponsored by MPPG

J. Cheng, Organizer

G. J. Simpson, Organizer, Presiding

8:10 ANYL 7. Tip-enhanced Raman spectroscopy for surface characterization and control of surface reactions. B. Ren, J. Zhong, S. Huang

8:40 ANYL 8. Developing infrared spectroscopic imaging technology for clinical translation in digital molecular pathology. R. Bhargava, S. Tiwari, K. Yeh, T. Wrobel, S. Mittal

9:10 ANYL 9. Spectroscopic CARS imaging of diagnostically important species in tissue. M.T. Cicerone, C.H. Camp

9:30 Intermission.

9:40 ANYL 10. Nano-focused multimodal imaging, control, and interaction dynamics: Ultrafast spectroscopy reaching the single molecule limit. M.B. Raschke

10:10 ANYL 11. Scanning angle Raman spectroscopy measurements of thin films, buried polymer interfaces and hybrid organic-inorganic films. E. Smith, J.M. Bobbitt, D. Mendivelso, B. Boote, D. Freppon

10:40 ANYL 12. Depth-resolved mid-infrared photothermal imaging of living cells and organisms with sub-micron spatial resolution. D. Zhang, C. Li, J. Cheng

11:00 Intermission.

11:10 ANYL 13. Chemical imaging and spectroscopy at the nanoscale. E. Potma

11:40 ANYL 14. Rapid discrimination of polymorphic crystal forms by nonlinear optical Stokes ellipsometric microscopy. G.J. Simpson, P. Schmitt, E. Kerian, X.Y. Dow

Section C

Pennsylvania Convention Center Room 105A

Advances in Mass Spectrometry

M. F. Bush, Organizer, Presiding

8:30 ANYL 15. Utilizing tandem mass spectrometry for the identification of functionalities in protonated analytes via ion/molecule reactions. H.I. Kenttamaa

9:05 ANYL 16. Ion mobility mass spectrometers for structural biology and biophysics. M.F. Bush

9:30 ANYL 17. Evaluation of a commercial ion mobility mass spectrometer for native state biomolecule analysis. K. Kuppannan, M. Covington, J. O'Brien, Y. Tan, C. Fhaner, D.G. McCaskill, J.R. Gilbert, J. Balcer, Y. Adelfinskaya, M.D. Evenson

9:55 ANYL 18. Juggling multi-parameter optimizations of the miniature cylindrical ion trap. J.D. Debord, D. Rafferty

10:20 Intermission.

10:35 ANYL 19. Reevaluation of synthetic polymers as mass spectrometry calibrants. S.M. Grayson, J.A. Giesen, B.K. Casey

11:00 ANYL 20. Online mass spectrometry of airborne nanoparticles. A. Horan, J. Krasnomowitz, M.V. Johnston

11:25 ANYL 21. Quantitative proteomics for understanding the histone code. B.A. Garcia

Section D

Pennsylvania Convention Center Room 104B

Analyzing & Controlling Cell-Material Interactions

Cosponsored by BIOL, COLL and MPPG

Y. Yu, Organizer, Presiding

8:15 Introductory Remarks.

8:20 ANYL 22. Rotary micro/nanomotors for biomedical applications. D. Fan, K. Kim, X. Xu, J. Guo

8:55 ANYL 23. Trojan exosome hypothesis and new opportunities for controlling nanoparticle-cell interaction through gangliosides. B.M. Reinhard

9:30 ANYL 24. Lipopolysaccharide density and structure governs the interaction between the bacterial outer membrane and engineered nanoparticles. C.L. Haynes

10:05 Intermission.

10:15 ANYL 25. Designing Janus interfaces for manipulating immune cell responses. Y. Yu

10:50 ANYL 26. Interfacing cells using protein and nanoparticle-based films. V.M. Rotello

11:25 ANYL 27. Engineered nanostructures for regulation and investigation of cellular signaling processes. G. Liu, Y. Liu, L. Swartz, E. Ogorodnik

Good Laboratory Practices for the Agrochemical Professional

Sponsored by AGRO, Cosponsored by ANYL and ENVR

WCC Merck Research Award Symposium

Sponsored by WCC, Cosponsored by ANYL, BIOL, COMP, MEDI, MPPG, ORGN, POLY and PROF

Emerging Mass Spectrometry Trends in Support of Agricultural Research & Development

Sponsored by AGRO, Cosponsored by ANYL

Polymers & the National Nanotechnology Initiative (NNI)

Sponsored by POLY, Cosponsored by ANYL and SCHB

SUNDAY AFTERNOON

Section A

Pennsylvania Convention Center Room 105B

Mobilizing Chemistry Expertise to Solve Humanitarian Problems

Cosponsored by MPPG

R. L. Grosse, Organizer, Presiding

1:00 ANYL 28. Electrically controlled drug delivery. R.N. Zare, D. Samanta, N. Hosseini-Nassab

1:30 ANYL 29. Major impediment to the effectiveness of chemists' role in improving lives in developing countries. E. Govere

2:00 Intermission.

2:15 ANYL 30. Extensively low-cost 3D printed biochemical instrumentation with a novel zero-dollar interface and distributed firmware. C. Trippel, M. Champion, D. Dilworth, B. McCarthy-Riley

2:45 ANYL 31. Physicochemical changes of Prussian blue. A. Mohammad, B. Lowry, P.J. Faustino

3:15 Discussion.

Section B

Pennsylvania Convention Center Room 104A

Chemical Microscopy for In Situ & In Vivo Molecular Analysis

Cosponsored by MPPG

G. J. Simpson, Organizer

J. Cheng, Organizer, Presiding

1:10 ANYL 32. Advantages of gas cluster ion beams for biological imaging of human and animal tissue samples using secondary ion mass spectrometry. J. Fletcher

1:40 ANYL 33. Illuminating small bio-molecules: Stimulated Raman scattering imaging of vibrational tags. L. Wei, W. Min

2:10 ANYL 34. Infra-red photothermal heterodyne imaging. G.V. Hartland, Z. Li

2:30 Intermission.

2:40 ANYL 35. Combined mass spectrometry imaging and vibrational imaging of the brain for enhanced chemical information content. J.V. Sweedler, R. Bhargava, M.U. Gillette, S.S. Rubakhin

3:10 ANYL 36. Tip-enhanced Raman spectroscopy for nanoscale chemical imaging of molecular monolayers. R. Zenobi

3:40 ANYL 37. Ion channel probes for local chemical measurements and imaging. L.A. Baker

4:10 Intermission.

4:20 ANYL 38. Visualizing the trace metal redistribution during early zebrafish embryogenesis by microXRF tomography. D. Bourassa, C.H. Shin, C.J. Fahrni

4:40 ANYL 39. Membrane specific antimicrobial response monitored in vivo with nonlinear optical scattering. M.J. Wilhelm, B. Mensa, M. Sharifian, W.F. DeGrado, H. Dai

Section C

Pennsylvania Convention Center Room 105A

Advances in Mass Spectrometry

M. F. Bush, Organizer, Presiding

1:10 ANYL 40. Structure identification using high resolution mass spectrometry data and the EPA's chemistry dashboard. A.J. Williams, J. Sobus, M. Strynar, E.M. Ulrich, C. Grulke, J. Edwards, J. Smith, J. Foster, D. Lyons

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**1:35 ANYL 41.** Quantitative determination of menthol, nicotine and its metabolites, minor tobacco alkaloids, and cessation pharmaceuticals in human urine with LC-MS/MS. S.C. Piyankarage, J. Feng, L. Wang

**2:00 ANYL 42.** Rapid MALDI-MS method for the characterization of cardiovascular drugs and related impurities. W. Ning, J. Dong, J.D. Dunn

**2:25** Intermission.

**2:40 ANYL 43.** Analysis of the protein content of yeast strains using matrix-assisted laser desorption ionization (MALDI) time-of-flight mass spectrometry (TOFMS). E. Gorre, C. Kazmi, K. Owens

**3:05 ANYL 44.** Characterization of Populus stems using time-of-flight secondary ion mass spectrometry. A.K. Tolbert, C. Yoo, A.J. Ragauskas

**3:30 ANYL 45.** Ambient molecular imaging of biological tissues using femtosecond laser vaporization and electrospray post-ionization mass spectrometry. F. Shi, J.J. Archer, R.J. Levis

**3:55** Intermission.

**4:10 ANYL 46.** Application of silver nanoparticles to enhance mass spectrometry imaging of neutral lipids. S. Jackson, L. Muller, A. Roux, D.C. Barbacci, J. Schultz, A.S. Woods

**4:35 ANYL 47.** Using micropatterned analyte surfaces to understand the effect of varying electrospray deposition matrix application parameters in MALDI imaging mass spectrometry. B. Malys, K. Owens

## Section D

Pennsylvania Convention Center  
Room 104B

### Analyzing & Controlling Cell-Material Interactions

*Cosponsored by BIOL, COLL and MPPG*

Y. Yu, *Organizer, Presiding*

**1:30 ANYL 48.** Photon nudging: A new way of moving particles in liquids. U. Khadka, M. Selmke, B. Qian, F. Cichos, H. Yang

**2:05 ANYL 49.** Imaging mechanics at the cell-substrate interface. K. Salaita

**2:40 ANYL 50.** Electrogenerated chemiluminescence and photoluminescence from Au nanoclusters for cell dynamics studies. G. Wang, T. Wang, C. Conroy, J. Jiang

**3:15** Intermission.

**3:25 ANYL 51.** Incorporating phosphatidylethanolamine into supported lipid bilayers. A.M. Sendecki, M.F. Poyton, P.S. Cremer

**3:45 ANYL 52.** Ligand-guided selection (LIGS): A screening technology to identify specific aptamers against cell-surface markers. P. Mallikaratchy

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

**4:05** Concluding Remarks.

### Polymers & the National Nanotechnology Initiative (NNI)

*Sponsored by POLY, Cosponsored by ANYL and SCHB†*

## SUNDAY EVENING

### Section A

Pennsylvania Convention Center  
Hall E

### Analytical Division Poster Session

J. M. Harris, *Organizer*

**7:00 - 9:00**

**ANYL 53.** Determining sugars in enzyme-treated wood supernatants: Effect of buffer on the 3,5-dinitrosalicylic acid (DNS) assay. C.S. Swagler, E.R. Welton, K. Lucas, S. Gehl, M. Gogna, R.E. Goacher

**ANYL 54.** DHS chemical forensics program - REACTS. K. Brady, E. Durnal, P.J. Deardorff

**ANYL 55.** Simultaneous estimation of the time since deposition and age of the originator of a blood spot at a crime scene. J. Agudelo, L. Halámková, E.K. Brunelle, C. Huynh, J. Halamek

**ANYL 56.** Rodenticide attribution signatures. E. Durnal, K. Brady, E. Naveo, A. Twombly, C. Carroll

**ANYL 57.** Paper based technology for detection of adulterated milk (MilkPAD) in developing countries. J.L. Luther, M.V. Joyce, M. Lieberman

**ANYL 58.** General paper-based device for conducting sensitive, selective, and quantitative point-of-need assays without using electronic readers and without requiring user input. G. Pilon dos Santos, A.D. Brooks, D.W. Ritter, G.G. Lewis, L.T. Kubota, S.T. Phillips

**ANYL 59.** Seeding labs instrumental access 2016. N. Dudnik, A. Imperato, C. Viola Srivastava, L.G. Lindsay, D. Qualter, M.P. Wu, R. Lillianfeld, R. Watters, L. Whitehead

**ANYL 60.** Imaging the oxidative chemistry of historic iron gall inks; assessment of at-risk documents and treatment strategies. R.S. Selinsky, A.F. Lagalante, R.C. Wolbers

**ANYL 61.** Determination of arsenic in individual rice grains by hydride generation atomic fluorescence spectrometry. C. Martin, J. Sibbick, J.F. Tyson

**ANYL 62.** Study of selected metal concentrations in sediments by inductively coupled plasma-optical emission spectrometry from a metropolitan and more pristine bayou in Southwest Louisiana and Texas, United States. G.S. Benipal, C. Hardaway, A.S. Tate, A.K. Harris, V. Topalidis, Z. Eswani, M. Qureshi, C. Srirajavatsavai, C. Douvris

**ANYL 63.** Analysis of counterfeit currency, ammunition components, and gunshot residue: Forensic applications of a handheld laser-induced breakdown spectroscopy (LIBS) instrument. A.H. Downey, R.R. Hark, A.L. Miller, J. Plumer

**ANYL 64.** Quantifying carbon-14 with cavity ring-down spectroscopy for biology. A.D. McCart, T. Ognibene, G. Bench, K. Turlettaut

**ANYL 65.** Comparing your results with the values given on the reference material certificate: A case study based on NIST SRM 1568a/b (rice flour). J.F. Tyson, M. Bresnahan

**ANYL 66.** Photovoltaic module characterization using laser ablation ICP-MS. R.A. Leach, R. Celikay, K.M. Stika, R.G. Raty, C.S. Westphal, W. Brubaker

**ANYL 67.** Confocal Raman microscopy for *in-situ* measurement of hybrid-bilayers within individual C<sub>18</sub>-functionalized chromatographic particles: Structure, small-molecule partitioning, and protein association. D. Bryce, J.P. Kitt, J.M. Harris

**ANYL 68.** Raman microspectroscopic mapping with multivariate curve resolution-alternating least squares applied to the high-pressure,  $\alpha$ -PbO<sub>2</sub>-structured polymorph of titanium dioxide, TiO<sub>2</sub>-II. J.P. Smith, F.C. Smith, B.P. Glass, K.S. Booksh

**ANYL 69.** Highly selective phosphopeptides enrichment methods using synthetic artificial receptors for phosphates. S. Bae, S. Shin, B. Kim

**ANYL 70.** Flexible and miniaturized msm biomolecular photodetector for hydrogen peroxide sensing via chemiluminescence. C. Lin, L. Liu, W. Sun, S. Liu, C. Cheng, F. Ko, S. Hu

**ANYL 71.** FRET-based multichannel biosensor array through protein-polymer co-engineering. M. Yazdani, A. Bigdell, R.F. Landis, R. Mout, Y. Lee, Y. Jiang, V.M. Rotello

**ANYL 72.** Preliminary carcinoembryonic antigen aptamer sequences identified through GO-SELEX. M. Lund, G. Liu, K. Baryeh, S. Takalkar

**ANYL 73.** Ultrasensitive detection of DNA sequence using fluorescent carbon nanoparticle-based lateral flow biosensor. S. Takalkar, G. Liu

**ANYL 74.** Forensic analytical applications of designer cyclodextrin-modified magnetic nanoparticles for extraction of fentanyl and its analogues. B.P. Mayer, C.A. Valdez, D.J. Kennedy

**ANYL 75.** Label-free detection of oncogenic microRNA at zeptomolar concentrations. T. Liyanage, M. Korc, R. Sardar

**ANYL 76.** Development of a new photocontrollable HNO donor and cellular application. T. Tani, M. Kawaguchi, N. Ieda, H. Nakagawa

**ANYL 77.** Detection of lipid accumulation in algae resulting from nitrogen deprivation. J. Gerardi, B.C. Eigenbrodt

**ANYL 78.** Purification of heparin from the intestinal mucosa of baby pigs. Y. Yu, F. Zhang, R.J. Linhardt

**ANYL 79.** Rapid biosensor for the early diagnosis of Alzheimer's disease. E. Park, J. Lee

**ANYL 80.** Cost-effective chemiluminescent biosensor capable of early diagnosing cancer using a combination of magnetic beads and platinum nanoparticles. E. Kim, G. Choi, E. Park, J. Lee

**ANYL 81.** Quantification of norovirus using a highly sensitive all-In-one biosensor with luminol chemiluminescence detection. K. Chung, J. Lee

**ANYL 82.** Rapid determination of glycated hemoglobin (HbA1c) level in blood using a cost-effective and easy-to-use aptasensor with 1,1'-oxalylidimidazole chemiluminescence detection. Y. Kim, J. Lee

**ANYL 83.** Biosensor capable of rapidly monitoring blood coagulation factor for the prevention of arrhythmias. S. Choi, H. Khang, K. Cho, J. Lee

**ANYL 84.** Development of one-step sirtuin activity fluorescence probe and living cell imaging. M. Kawaguchi, S. Ikegawa, N. Ieda, H. Nakagawa

**ANYL 85.** Photocontrollable hydrogen sulfide releaser with an acridone moiety. K. Shimoya, M. Kawaguchi, N. Ieda, H. Nakagawa

**ANYL 86.** Aptamer/graphene quantum dots capped fluorescent mesoporous silica for real-time monitoring of controlled drug release. F. Zheng, J. Zhu

**ANYL 87.** Enzyme-based fingerprint analysis for gender determination. C. Huynh, E.K. Brunelle, L. Halámková, J. Agudelo, J. Halamek

**ANYL 88.** Chemical assay for gender recognition from fingerprints. E.K. Brunelle, C. Huynh, A.M. Le, L. Halámková, J. Agudelo, J. Halamek

**ANYL 89.** *In vitro* selection of a Li<sup>+</sup>-specific DNzyme for applications in cellular studies and point-of-care drug monitoring for bipolar patients. C. McGhee, Y. Lu

**ANYL 90.** Electro-kinetic surface plasmon resonance (EK-SPR) sensor application toward biomarkers detection for point-of-care testing. O. Sathoud, K.S. Booksh

**ANYL 91.** Rapid, on-site detection of single pathogens using liposome-induced nanoparticle aggregation (LINA) immunoassays. J. Brockgreitens, S. Ahmed, A. Abbas

**ANYL 92.** Aptatope mapping of the P4G13 progesterone aptamer by MST. C. O'Sullivan, V. Skouridou

**ANYL 93.** Multiplexed plasmonic DNA chips for the screening of an HuR protein-RNA binding inhibitor. J. He, G. Yoshida, M. Boegli, C. Bulach, A. Gabanic, M. Tranter, L. Sagle

**ANYL 94.** Reusable electrochemical DNA biosensor using molecular beacons labeled with osmium tetroxide bipyridine. H.A. Joda, A. Sedova, J. Peter, G. Flechsig

**ANYL 95.** Rapid determination of enzyme activities for lignocellulose deconstruction using nanostructure-initiator mass spectrometry. K. Deng, J. Zeng, J. Guenther, T. Taksuka, L. Bergeman, K. Sale, B. Simmons, P. Adams, A.K. Singh, B.G. Fox, T. Northen

**ANYL 96.** Conjugated polythiophene for rapid, simple and high-throughput screening of antimicrobial photosensitizers. R. Li, R. Niu, C. Xing, H. Yuan, R. Chai

**ANYL 97.** Aptamer selection assisted by graphene oxide. B. Mandella, A.G. Cavinato

**ANYL 98.** Gp41-peptide nucleic acid based electrochemical sensors for point of care diagnosis of HIV. E. Yasun, S. Greenwood, K. Plaxco

**ANYL 99.** Development of an electrophoretic capture micro-device for protein sensing. W.E. Gilbraith, K.S. Booksh, O. Sathoud, J.P. Smith

**ANYL 100.** Using multi-marker panels in urinary metabolomics for early cancer detection. Y. Ma, C. Burton, H. Shi

- ANYL **101.** Nanocomposite film derived from crosslinking bio-synthesized poly- $\gamma$ -glutamic acid/chitosan and gold nanoparticles for detection of biomolecules. S. Yan, N. He, C. Zhong
- ANYL **102.** Nano-graphene oxide and oligonucleotide nanoassemblies for biomacromolecule classification. M.S. Hizir, M.V. Yigit
- ANYL **103.** Magnetic core@shell nanoparticles: synthesis, characterization and bio-application. J. Li, Z. Skeete, S. Yan, S. Shan, P. Holubovska, J. Luo, M.R. Hefel, C. Zhong
- ANYL **104.** Study of protein-nanoparticle conjugate using circular dichroism spectroscopy: From protein concentration to conjugate composition. Z. Peng, S. Li, X. Han, R.M. Leblanc
- ANYL **105.** Sensitive detection of ketones using a handheld optoelectronic nose. Z. Li, K.S. Suslick
- ANYL **106.** Employing a method for quality control for dairy drinks commercialized in Brazil. A. Miranda, M. de Moura
- ANYL **107.** Applying polarimetry for quantification of benzylpenicillin in veterinary pharmaceuticals. A. Cabral, M. de Moura, D. da Silva
- ANYL **108.** In situ recalibration of biofouled polymer-coated amperometric oxygen microelectrode array. M. Patrick, Z. Derden, D. Paul
- ANYL **109.** Electro-photodynamic visualization of singlet oxygen induced by zinc porphyrin modified microchip in aqueous media. S. Deng, Y. Wan
- ANYL **110.** Oxygen generation for oxidase-enzyme microelectrode arrays. N. Halder, D. Paul
- ANYL **111.** Fluorescence nano-scanning electrochemical microscope. V. Sundaresan, K. Marchuk, K.A. Willets
- ANYL **112.** Scanning electro-spray microscopy (SESM) with nanopipettes. E. Yuill, W. Shi, J. Poehlman, L.A. Baker
- ANYL **113.** Nafion/MWCNT/SPCE-based sensor for the voltammetric detection of the anti-tuberculosis drug ethambutol. R. Couto, B. Quinaz
- ANYL **114.** Determination of l-DOPA at an optimized caffeic acid modified glassy carbon electrode. A. Rohani far, A.M. Devasurendra, J.A. Young, J.R. Kirchhoff
- ANYL **115.** Scanning electrochemical microscopy using AC heated microelectrodes. Z. Zhao, A. Boika
- ANYL **116.** Chronopotentiometric detection of individual particles on a microelectrode. J. Bonezzi, J.E. Dick, A. Boika
- ANYL **117.** Counterion interactions in supramolecular self-assembly. S.J. Belh, A. Manandhar, G. Huffman, K. Ng, A. Chowdhury, M. Patel, N. Yehya, A. des Georges, S. Loverde, D.M. Eisele
- ANYL **118.** Xerogel layering with monolayer protected cluster networks on platinum black modified electrodes for optimized uric acid biosensing. M.J. Pannell, M.B. Wayu, M. Leopold
- ANYL **119.** Conjugation reaction of N-acetyl tyrosine with adenosine triphosphate (ATP) catalyzed by Fe(II)/H<sub>2</sub>O<sub>2</sub> system. J. Zhang
- ANYL **120.** GC-MS differentiation of the six regioisomeric dimethoxybenzoyl-1-pentylindoles: Isomeric cannabinoid substances. K. Abdelhay, J. DeRuiter, F. Smith, A. Alesgiani, A.N. Thaxton, C.R. Clark
- ANYL **121.** Analysis of parent heparin and their low molecular weight daughter heparin. K. St.Ange, X. Liu, L. Lin, L. Chi, R.J. Linhardt
- ANYL **122.** Computational filter for elimination of matrix effects in electrospray ionization/mass spectrometry. L.G. Kaldon, S.C. Nanita
- ANYL **123.** Q-TOF mass spectrometry for the structural characterization of the product ions selected for the detection of regulated veterinary drugs. A. Nunez, S.J. Lehotay, A. Lightfield
- ANYL **124.** Analysis of volatile compounds by electrochemically coated in-needle microextraction with multiwalled carbon nanotube/polyaniline. S. Lee, S. Bae
- ANYL **125.** Controlling protein charge state distribution using supercharging reagent and charge reducing buffer in laser electrospray mass spectrometry. S. Karki, H. Sistani, J.J. Archer, F. Shi, R.J. Levis
- ANYL **126.** Matrix-enhanced nanostructure initiator mass spectrometry (ME-NIMS) for mass spectrometry imaging (MSI). T.N. Moening, L. He
- ANYL **127.** Removal of surface contaminants from wood polymer composites (WPCs) for analysis using time-of-flight secondary ion mass spectrometry (ToF-SIMS). L.D. Brunelle, Z.A. Gernold, C.S. Swagler, E.R. Welton, M.R. Michienzi, R.E. Goacher
- ANYL **128.** Capillary electrophoresis-mass spectrometry for the analysis of heparin oligosaccharides and low molecular weight heparin. L. Lin, X. Sun, X. Liu, Q. Xia, L. Chi, R.J. Linhardt
- ANYL **129.** HPLC-ESI-MS sugar detection: Improving sensitivity and checking for matrix effects. C. Pitman, J. Marton, H. Lehman, D. Potoczak, R.E. Goacher
- ANYL **130.** Forensic applications of chlorine isotopes probed by accelerator mass spectrometry. B.P. Mayer, M.H. Corzett, S.R. Zimmerman, A.J. Hidy, A.L. Deinhart, R.C. Finkel, G. Bench, A.M. Williams
- ANYL **131.** Withdrawn.
- ANYL **132.** Withdrawn.
- ANYL **133.** DESI-MS to quantify surface phthalates on polymers following atmospheric plasma barrier coating deposition. B.J. Eck, A.F. Lagalante, R.C. Wolbers
- ANYL **134.** Fenceline monitoring using a miniature mass spectrometer. P. Rearden, C.N. Stedwell, P. Kaur, J.D. DeBord
- ANYL **135.** Improving the sensitivity of the <sup>19</sup>F-<sup>13</sup>C HSQC experiment by use of BURBOP and BIP pulses in <sup>19</sup>F. A.A. Marchione, B. Conklin
- ANYL **136.** Ultrasensitive detection of biological analytes using hyperpolarized Xe-129 NMR. Y. Wang
- ANYL **137.** Segmented flow sampling with theta push-pull pipettes. A. Saha-Shah, C.M. Green, D.H. Abraham, L.A. Baker
- ANYL **138.** Development of a stochastic approach for an unbiased estimation of the probability of a successful separation in conventional HPLC and sequential elution liquid chromatography. E. Ennis, J. Foley
- ANYL **139.** Development of a fully automated HPLC system (ASAPrep™) designed for multiple compound purifications. K. Miwa, C. Kushibe, H. Terada, Y. Katsuyama
- ANYL **140.** Determining quality of antibiotics using paper analytical devices, high performance liquid chromatography, and portable X-ray fluorescence. S. Bliese, C. Bendelsmith, J. Hoehn, D. O'Donnell, M. Lieberman
- ANYL **141.** Sequential elution liquid chromatography using a wide-range, mass spectrometry compatible pH gradient. C. Kita, J.P. Foley
- ANYL **142.** Second dimension in two-dimensional liquid chromatography is a strange place. J. Halvorson, E. Larson, J. Eikens, D.C. Harnes, M. Dittmann, A.M. Lenhoff, D. Stoll
- ANYL **143.** Development and validation of stability-indicating ultra-performance liquid chromatography (UPLC) method for doxycycline hyclate drug products: An optimization of the USP compendial methodology. C.H. Yen, A. Mohammad, M. Schneider, B. Lowry, F. Yerlikaya, P.J. Faustino, S. Khan
- ANYL **144.** Preparative achiral supercritical fluid chromatography to support pharmaceutical discovery chemistry. H. Yip, D. Wu, P. Li, D.Z. Sun, A. Mathur
- ANYL **145.** Optimizations to a Waters X-5 analytical SFC to support chiral analytical SFC screening. R. Romero, J. Horstick, B.M. Aquila
- ANYL **146.** Separation and quantitation of oppositely charged active ingredients in an over-the-counter (OTC) medication utilizing dual-opposite injection capillary zone electrophoresis. D.M. Blackney, J. Foley
- ANYL **147.** Systematic approach to avoid the co-detection of oppositely charged analytes in dual-opposite injection capillary electrophoresis. D.M. Blackney, J. Foley
- ANYL **148.** Improving the detection of trace explosives with advanced collection materials. M. Brann, W. Chouyok, R.S. Addeleman, X.S. Li, R. Ewing, D. Atkinson
- ANYL **149.** Enhanced ELSD sensitivity of volatile compounds via nebulization gas substitution. J.E. Silver, S. Azlein, R. Ivy, R. Sorgo
- ANYL **150.** Off-gassing of rubber particles used for athletic fields using the GERSTEL dynamic headspace sampler. J.R. Stuff
- ANYL **151.** Gas chromatography-vacuum ultraviolet absorbance spectroscopy for quantitation of trace and bulk water in organic solvents: An emerging alternative to Karl Fischer titration. L. Shear, D. Harrison
- ANYL **152.** Spectroscopic studies of pigment-binder interactions applied to paint degradation. M.B. Wiggins, K. deGhetaldi, J.P. Smith, J. Ottaway, B. Baade, T.T. Beebe, K.S. Booksh
- ANYL **153.** Highly fluorescent 1-pyrene sulfonic acid for efficient detection of Fe<sup>3+</sup> in aqueous solution. B. Lu, Y. Zhao, K. Lin, J. Xu
- ANYL **154.** Development of new fluorescent NO probes utilizing the reactivity of nitronyl nitroxide. Y. Inukai, N. Ieda, M. Kawaguchi, H. Nakagawa
- ANYL **155.** Ratiometric fluorescent quantum dot sensor for the in vitro detection of H<sub>2</sub>S. A. Shamirian, P.T. Snee, L.W. Miller, H. Samareh Afsari
- ANYL **156.** Surfaced modified fluorescent gold nanoparticles for the detection of lead ions. J. Bradley, J. Hu
- ANYL **157.** Application of UV-Vis derivative spectra and fluorescence in the forensic analyses of cocaine samples. M.E. Staretz Greenfield, J. Smith, T. Pritchett
- ANYL **158.** Powders analysis by second harmonic generation microscopy. A.U. Chowdhury
- ANYL **159.** Analysis of active pharmaceutical ingredients and biological tissues using NOESY microscopy. X.Y. Dow, E. Kerian, P. Schmitt, G.J. Simpson
- ANYL **160.** Chemical reactions at the surface of silver nanoparticles probed by nonlinear light scattering. B. Xu, W. Gan, G. Gonella, B.G. DeLacy, H. Dai
- ANYL **161.** In situ spectroscopic monitoring the degradation of glucose conjugated sweet aspirin. H.J. Hass, M. Chai
- ANYL **162.** UV-vis & NMR studies on degradation of mannose conjugated sweet aspirin. S.L. Lempke, M. Chai
- ANYL **163.** Investigation on the degradation of galactose conjugated salicylic acid. K.L. Henry, M. Chai

## MONDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 105B

#### ACS Award in Analytical Chemistry: Symposium in honor of William R. Heineman

P. A. Limbach, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 ANYL **164.** Chemical modifications in RNA - Using selectivity in mass spectrometry to increase information over data. P.A. Limbach

9:10 ANYL **165.** Controlled iontophoresis as a drug delivery tool. R.M. Wightman

9:45 ANYL **166.** Probing redox reactions at the nanoscale with electrochemical tip-enhanced Raman spectroscopy. R.P. Van Duyne

10:20 Intermission.

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- 10:30 ANYL 167.** Electrochemically modulated delivery of nitric oxide (NO) for biomedical applications: From improved intravascular catheters and chemical sensors to inhaled NO therapy. M.E. Meyerhoff, H. Ren, E.J. Brisbois, A.P. Hunt, N. Lehnert
- 11:05 ANYL 168. Award Address (ACS Award in Analytical Chemistry sponsored by Battelle Memorial Institute).** 52 years of electroanalytical chemistry: From the dropping mercury electrode to spectro-electrochemical sensors. W.R. Heineman

### Section B

Pennsylvania Convention Center  
Room 104A

#### Imaging Single Plasmonic Nanoparticles & their Assemblies

*Cosponsored by COLL*

N. Fang, *Organizer, Presiding*

- 8:00** Introductory Remarks.
- 8:05 ANYL 169.** Single particle orientation and rotational tracking: Leaping from instrumentation to biophysical discovery. N. Fang, K. Chen, F. Zhao
- 8:25 ANYL 170.** Plasmon coupling microscopy for monitoring assembly and clustering of nanoparticles in cellular systems. B.M. Reinhard
- 8:50 ANYL 171.** Measuring trafficking in living cells with Janus particles. Y. Yu
- 9:15 ANYL 172.** Unveiling microsecond dynamics at nanoscale by scattering-based optical interferometric imaging. C. Hsieh
- 9:40 ANYL 173.** Measuring nanoscale light-matter interactions in situ with single-molecule fluorescence microscopy. J.S. Biteen
- 10:05** Intermission.
- 10:20 ANYL 174.** Some plasmonic properties of coupled nanocubes. M.A. El-Sayed
- 10:45 ANYL 175.** Single particle spectroscopic studies on two-photon photoluminescence of plasmonic nanoparticles and assemblies. Q. Xu
- 11:10 ANYL 176.** Optical and Raman imaging of plasmonic nanocrystals. A.R. Tao, T. Dill, A. Rodarte
- 11:35 ANYL 177.** Single-molecule super-resolution microscopy study of the distance-dependent interaction between a fluorescent molecule and a nano antenna. B. Fu, J.D. Flynn, B. Isaacoff, H. Tuson, J.S. Biteen

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

### Section C

Pennsylvania Convention Center  
Room 105A

#### Pioneering Single Molecule Detection under Ambient, Aqueous Conditions: A Tribute to Richard Keller

*Cosponsored by PHYS*

C. W. Wilkerson, *Organizer*

P. M. Goodwin, *Presiding*

- 8:30** Introductory Remarks.
- 8:40 ANYL 178.** Measuring single-molecule fluorescence burst size distributions with rapid single-molecule imaging in nano-fluidic channels. H. Cheng, J. Enderlein
- 9:20 ANYL 215.** Energy transfer in random assemblies of chromophores. V. Subramanian, N. Zurek, D. Evans, A. Shreve

**9:40** Intermission.

- 10:00 ANYL 180.** Resonance ionization mass spectrometry (RIMS) at Los Alamos National Laboratory: Spectroscopy and analytical chemistry: A retrospective tribute to Dick Keller. B.L. Fearey
- 10:20 ANYL 181.** Few-atom silver cluster-based activatable probes for biosensing. T. Yeh
- 10:40 ANYL 182.** Story of single molecules and the surprises leading to super-resolution microscopy and beyond. W.E. Moerner
- 11:20** Concluding Remarks.

### Section D

Pennsylvania Convention Center  
Room 104B

#### Mass Spectrometry for the Masses: Recent Developments in Mass Spectrometry Enabled Pharmaceutical Discovery, Development & Manufacturing

*Cosponsored by MEDI and MPPG*

Y. Liu, *Organizer, Presiding*

- 8:30 ANYL 183.** High resolution-MS/MS in the pharmaceutical industry: Yesterday, today and tomorrow. K. Bateman
- 9:00 ANYL 184.** Segmented flow mass spectrometry for high throughput, nanoliter scale mass spectrometry analysis. R. Kennedy
- 9:30 ANYL 185.** Trace quantitation of PGIs at ICH M7 limits and beyond: Using LC-MS to support next generation oncology modalities. P.M. Yehl
- 10:00** Intermission.
- 10:15 ANYL 186.** Elucidation of organometallic reaction mechanisms using liquid sample desorption electrospray ionization mass spectrometry (DESI-MS). H. Chen
- 10:45 ANYL 187.** Mass spec for the masses: Recent developments in mass spectrometry enabled pharmaceutical discovery, development and manufacturing. C.J. Welch
- 11:15 ANYL 188.** Developing IMS-MS technologies for analysis of peptide conformations and thermochemistry of binding in solution. D.R. Fuller, D.E. Clemmer

### Section E

Pennsylvania Convention Center  
Room 106 A/B

#### Forced Degradations in the Pharmaceutical Industry

*Cosponsored by MEDI and MPPG*

H. Yarabe, *Organizer, Presiding*

- 8:15 ANYL 189.** Reduction of false positives in the peroxy radical based stress test. P. Harmon
- 8:40 ANYL 190.** Forced degradation studies of esomeprazole magnesium trihydrate. J. Saunders, A. Lambarqui
- 9:05 ANYL 191.** Iron(III)-mediated oxidative drug degradation in the absence of initiating peroxides. K.K. Nanda, W. Blincoe, P. Harmon
- 9:30 ANYL 192.** Predicting autoxidation. P. Norrby, T. Andersson, E. Evertsson, A. Broo
- 9:55 ANYL 193.** Separation and identification of forced degradation products of pharmaceuticals using simple analytical techniques. G. Patonay, W. Abdelwahab, M. Salim
- 10:20 ANYL 194.** Forced degradation studies for well characterized biologics products. N. Subbarao
- 10:45 ANYL 195.** Applying investigative forced degradation strategies to better understand drug product formulation stability. T. Zelesky
- 11:10 ANYL 196.** Case study: Forced degradation test for analytical method validation under cGMP. N. Belikova
- 11:35 ANYL 197.** Mass balance in peptide degradation: Considerations regarding HPLC with UV absorbance, mass spectrometric, and chemiluminescent nitrogen-specific detection. M.A. Nussbaum

#### Chemistry of the People, by the People, for the People

*Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG*

#### Forensics: The Crossroads of Science, Policy & Justice

*Sponsored by COMSCI, Cosponsored by ANYL, MPPG and PRES*

#### Novel Analytical Methods for Analysis of Emerging Contaminants of Concern: Advances & Challenges

*Sponsored by AGRO, Cosponsored by ANYL and ENVR*

## MONDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 105B

#### Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?

*Cosponsored by BIOL, BMGT, CHED, CINF, MEDI, PMSE and SCHB*

*Financially supported by ACS Nano, The Kavli Foundation and The White House BRAIN Initiative*

D. G. Schmidt, *Organizer*

A. M. Andrews, P. S. Weiss, *Organizers, Presiding*

**1:30** Introductory Remarks.

- 1:45 ANYL 198.** 21st century neuroscience: A chemist's perspective. L.D. Lavis
- 2:15 ANYL 199.** Watching neural activity in the dish and in the brain. A.E. Cohen
- 2:45 ANYL 200.** Realization of cell-based optical tools for measuring changes in volume transmission of neuro-modulators in vivo. P. Slesinger
- 3:15** Intermission.
- 3:30 ANYL 201.** In vivo electronic neurotransmitter sensing. A.M. Andrews
- 4:00 ANYL 202.** Novel neuro-technologies. R. Yuste
- 4:30 ANYL 203.** Brain chemistry for the people. W. Koroshetz

### Section B

Pennsylvania Convention Center  
Room 104A

#### ACS Award for Encouraging Disadvantaged Students into Careers in the Chemical Sciences: Symposium in honor of Luis A. Colon

*Cosponsored by MPPG*

D. S. Aga, *Organizer, Presiding*

- 1:30 ANYL 204.** Underrepresented faculty and students in STEM departments: Successes and thoughts on next steps. S.J. Olesik
- 1:55 ANYL 205.** Multidimensional gas chromatography research at Spelman College: Advances and perspectives. J. Dimandja
- 2:20 ANYL 206.** Kinetic model of column re-equilibration after gradient elution for one- and two-dimensional liquid chromatography. M. Fletcher, J.P. Foley
- 2:45 ANYL 207.** Lessons learned from more than two decades of analytical chemistry-driven research on emerging contaminants. D.S. Aga, K.M. Noguera-Oviedo
- 3:10** Intermission.

- 3:25 ANYL 208.** Separation of carbon-based nanoparticles & benchmarking of heterogeneous electrocatalysts. I.M. Ferrer

- 3:50 ANYL 209.** Pushing boundaries within the separation sciences. J.M. Cintron
- 4:15 ANYL 210.** Award Address (ACS Award for Encouraging Disadvantaged Students into Careers in the Chemical Sciences sponsored by The Camille and Henry Dreyfus Foundation, Inc.). Bringing new material to separation science. L.A. Colon

### Section C

Pennsylvania Convention Center  
Room 105A

#### Pioneering Single Molecule Detection under Ambient, Aqueous Conditions: A Tribute to Richard Keller

*Cosponsored by PHYS*

C. W. Wilkerson, *Organizer*

J. Werner, *Presiding*

- 1:30 ANYL 211.** Straight line from intracavity absorption to single molecule DNA sequencing: The long reach of Dick Keller. T.D. Harris
- 1:50 ANYL 212.** Nanosensors using flight-time identification of mononucleotides for single-molecule DNA sequencing. S.A. Soper



**2:10 ANYL 213.** Acoustic and inertial flow cytometry: Pathways to point-of-care and high-speed parallel cellular diagnostic. S.W. Graves

**2:30** Intermission.

**2:50 ANYL 214.** Single molecule detection and spectroscopy to investigate energy transport in semiconductor nanocrystal higher order structures. A.K. Van Orden, D. Ryan, M.P. Gelfand, P.M. Goodwin, K.J. Whitcomb

**3:10 ANYL 179.** Photostability of luminescent ruthenium complexes sensors and probes. J.N. Demas

**3:30 ANYL 216.** Technology development in sequencing the human genome. N.J. Dovichi

**4:10** Concluding Remarks.

## Section D

Pennsylvania Convention Center  
Room 104B

### Analysis of Noncovalent Interactions

M. F. Bush, *Organizer, Presiding*

**1:30 ANYL 217.** Assessing coupled folding and binding of intrinsically disordered proteins through temperature-dependent calorimetry. S.A. Showalter

**2:05 ANYL 218.** Dynamic conformational heterogeneity in Src-homology 3 domain molecular recognition. M.C. Thielges, R. Horness, E.J. Basom

**2:40 ANYL 219.** Conformational landscape and site-specific heterogeneity of cytochrome P450s observed by infrared spectroscopy. E.J. Basom, M.C. Thielges

**3:05** Intermission.

**3:20 ANYL 220.** Multiplexed analysis of biomolecular binding interactions at model cell membrane interfaces using Nanodiscs and silicon photonic sensor arrays. E. Muehl, J. Gajsiewicz, I. Lenov, Y. Wang, Y. Wang, S.G. Sligar, J.H. Morrissey, R.C. Bailey

**3:55 ANYL 221.** Native mass spectrometry and ion mobility analysis of membrane proteins and assemblies. J.S. Prell, S.P. Cleary, M.T. Donor, J.W. Wilson, B.A. Krantz, S.A. Ewing

## Section E

Pennsylvania Convention Center  
Room 106 A/B

### Analytical Chemistry to Support Industrial Polymer Development

*Cosponsored by POLY*

M. C. Crowe, S. Ferris, *Organizers, Presiding*

**1:20** Introductory Remarks.

**1:25 ANYL 222.** Advanced characterization of complex macromolecules via multidimensional separations and detection techniques. D.M. Meunier, T.H. Kalantar, D. Lee

**1:50 ANYL 223.** Use of MALDI-TOF MS and IMS-MS to elucidate polymer architecture and architectural dispersity. S.M. Grayson, B. Zhang, C. Foley, S. Trimpin

**2:15 ANYL 224.** Multidimensional mass spectrometry of polyglycerol. N. Alexander, T. Arntz, C. Wesdemiotis

**2:40 ANYL 225.** Morphological characterization of tri-continuous conductive PP/PMMA/EAA carbon black composites. J.R. Reffner, C. Wolf, P. Brigandi, J.M. Cogen

**3:05** Intermission.

**3:20 ANYL 226.** Taste and odor characterization of polyolefins: Analytical challenges. L. Green, M. Terrasa III

**3:45 ANYL 227.** Analytical methods to evaluate TAED encapsulation efficiency and reaction kinetics. X. Chen, S. Fosdick, P. Boopalachandran, L. Chen, X. Jin

**4:10 ANYL 228.** Polymers and packaging: The role of integrated testing in advanced structure design. S.D. Hanton, G. Johnson, J. Zielinski, P. McDaniel

**4:35 ANYL 229.** From benchtop to marketplace: Using analytical chemistry to support regulatory compliance. P.N. Coneski

### Chemistry of the People, by the People, for the People

*Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG*

### Novel Analytical Methods for Analysis of Emerging Contaminants of Concern: Advances & Challenges

*Sponsored by AGRO, Cosponsored by ANYL and ENVR*

### Undergraduate Research Posters

#### Analytical Chemistry

*Sponsored by CHED, Cosponsored by ANYL and SOCED*

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

J. M. Harris, *Organizer*

**8:00 - 10:00**

12, 14, 34, 41, 45, 51, 64, 73, 75, 84, 90-91, 93-94, 98, 102, 105, 112, 116, 133, 158-160, 177, 219. See previous listings.

242, 305, 320-321, 330, 337, 360, 367, 370, 374, 378, 387-389. See subsequent listings.

## TUESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 105B

### ACS Award in Chromatography: Symposium in honor of Harold M. McNair

N. H. Snow, *Organizer, Presiding*

**8:30 ANYL 230.** Advances and applications using gas chromatography: Vacuum ultraviolet spectroscopy. K. Schug, C. Qiu, L. Bai, J. Smuts, P. Walsh, H.M. Mc Nair, J. Cochran

**9:00 ANYL 231.** Microscale chemical analysis for all comers: Engaging students in contemporary research. V.T. Remcho

**9:30 ANYL 232.** From HPLC to NIR to HPLC. H. Rasmussen, E. Borsje, A. Dai, A. Beyaz

**10:00** Intermission.

**10:20 ANYL 233.** Teaching science to scientists and non-scientists: How do you teach old dogs new tricks? L.N. Polite

**10:50 ANYL 234.** Award Address (ACS Award in Chromatography sponsored by Supelco/Sigma-Aldrich). Conclusions after 45 years of teaching and 55 years of research. H.M. Mc Nair

**11:20** Panel Discussion.

## Section B

Pennsylvania Convention Center  
Room 104A

### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

*Cosponsored by BIOL, COLL, MPPG and PHYS*

X. N. Xu, *Organizer, Presiding*

**8:00 ANYL 235.** Life at the single molecule level: From single molecule enzymology to MALBAC babies. X. Xie

**8:30 ANYL 236.** Understanding sub-cellular function based on real-time single-molecule dynamics inside living bacteria. J.S. Biteen

**9:00 ANYL 237.** 3D real-time visualization of nano-bio interactions. K. Welsher, S. Yin, S.A. McManus, H. Yang

**9:30 ANYL 238.** Photostable optical nanoscopy (PHOTON) for dynamic and single molecule imaging of single live cells: From diagnosis to therapy. X.N. Xu, P. Cherukuri, P. Songkiatsak, T. Huang

**10:00** Intermission.

**10:10 ANYL 239.** Single-molecule assessment of the tryptophan gate dynamics in the M2 proton channel. F. Gai

**10:40 ANYL 240.** Exploring enzymatic reactivity and protein conformation dynamics by single molecule force-fluorescence nanoscopy. H. Lu

**11:10 ANYL 241.** Copolymerized fluorescent silica nanoparticles for labels and molecular recognition. G. Patonay, G. Chapman, M. Henary, W. Abdelwahab

## Section C

Pennsylvania Convention Center  
Room 105A

### New Principles & Applications of Enantiomeric Separations

K. Phinney, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 ANYL 242.** Novel liquid chromatography-mass spectrometry method for the chiral separation and quantification of d- and l-threo methylphenidate in brain tissue. S.A. Allen, C.C. Reynolds, E. Hankins, S.D. Brown, B.B. Pond

**9:05 ANYL 243.** Analysis of enantioselective drug-protein binding in pharmaceutical and clinical samples by high-performance affinity chromatography. D.S. Hage

**9:35 ANYL 244.** Applications of supercritical fluid chromatography (SFC) for chiral metabolite separations in DMPK environment. H. Licea Perez

**10:05** Intermission.

**10:20 ANYL 245.** Advancing chiral separation capabilities: Adaptation using modern particle designs. D.S. Bell, D.W. Armstrong, F. Gasparrini

**10:50 ANYL 246.** Overview of preparative supercritical fluid chromatography in support of pharmaceutical drug discovery and development at Merck. M. Biba, J. Liu

**11:20 ANYL 247.** Chiral chromatography to access noncovalent interactions. J. Carey, C. Chen, C. Yang, S. Snyder

## Section D

Pennsylvania Convention Center  
Room 104B

### Analysis of Noncovalent Interactions

M. F. Bush, *Organizer, Presiding*

**8:30 ANYL 248.** Mass spectrometry, ion mobility, and ion chemistry: Tools for characterizing noncovalent interactions. M.F. Bush

**9:05 ANYL 249.** Characterizing trapped ion mobility spectrometry (TIMS) for transmission and preservation of native analyte structures and their complexes. C. Bleiholder

**9:40 ANYL 250.** High-confidence models of multiprotein complexes from ion mobility-mass spectrometry datasets: Frontiers in model generation and assessment. J.D. Eschweiler, A.T. Frank, B.T. Ruotolo

**10:05** Intermission.

**10:20 ANYL 251.** Determination of bound metals in metal-containing proteins by SEC-ICP-MS. C. Strulson, Q. Tu, K. Zawatzky, X. Bu, C. Welch

**10:45 ANYL 252.** Evaluation of affinity and specificity of aptamers selected against 17- $\beta$ -estradiol. C. O'Sullivan, M. Svobodova

**11:10 ANYL 253.** Stabilizing an organic radical in a de novo designed metalloprotein: Importance of non-covalent interactions. G. Ulas, T. Lemmin, Y. Wu, G.T. Gassner, W.F. DeGrado

## Section E

Pennsylvania Convention Center  
Room 106 A/B

### Analytical Chemistry at the Frontiers of Organic Synthesis: Emerging Tools, Techniques & Strategies

*Cosponsored by ORGIN*

I. K. Mangion, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:05 ANYL 254.** Leveraging automation and remote computing for rapid reaction kinetic profiling. J. Hein

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**8:50 ANYL 255.** From process understanding to novel reaction design and optimization: A lesson taught by kinetic and mechanistic studies. Y. Ji Chen

9:35 Intermission.

**9:45 ANYL 256.** Development and application of an auto-sampling probe for HPLC. J. Hawkins

**10:30 ANYL 257.** Mechanistic studies on the synthesis of sulfilimines with chloramine T. G. Beutner, J. Nye, A. Ortiz, B. Remy, C. Sfougataki

**11:15 ANYL 258.** Using EPR spectroscopy as a structural tool. J.L. McCracken

### Chemistry of the People, by the People, for the People

Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG

### Advances in Agricultural Biotechnology: Interpretation & Correlation of ELISA & LC-MS/MS for Protein Quantitation

Sponsored by AGRO, Cosponsored by ANYL

## TUESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 105B

#### 2016 ACS Analytical Division Awards Symposium

J. M. Harris, *Organizer*

D. C. Duckworth, *Presiding*

1:00 Introductory Remarks.

**1:05 ANYL 259.** Bioanalytical microdevices for the next generation of cell-based assay. N.L. Allbritton

**1:40 ANYL 260.** Transforming mass spectrometry to single embryonic cells. P. Nemes, C. Lombard-Banek, R. Onjiko, E. Portero, S.A. Moody

**2:15 ANYL 261.** Advanced array detectors for optical and mass spectrometry. M. Denton

2:50 Intermission.

**3:05 ANYL 262.** Laser ablation: Interest, passion, career, company. R.E. Russo

**3:40 ANYL 263.** Electrodeposited nanophotonics. R.M. Penner

**4:15 ANYL 264.** Red Queen and Romer's Rule: Thoughts on the past, present, and future of textbooks. D.T. Harvey

### Section B

Pennsylvania Convention Center  
Room 104A

#### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

Cosponsored by BIOL, COLL, MPPG and PHYS

X. N. Xu, *Organizer, Presiding*

**1:00 ANYL 265.** Multicolor three-dimensional tracking of receptor tyrosine kinases. Y. Liu, E.p. Perillo, C. Liu, A.K. Dunn, T. Yeh

**1:30 ANYL 266.** Single molecule spectroscopy to reveal spontaneous dynamics of DNA and protein at a sub-ms and sub-nanometer resolution. T. Lee, S. Wei, J. Kim, J. Lee

**2:00 ANYL 267.** Nanomechanical measurements of conformational switching in guanine riboswitch. M. Mandal

**2:30 ANYL 268.** High speed DNA motors for biosensing. K. Salaita

3:00 Intermission.

**3:10 ANYL 269.** Super-resolution imaging of reversible hybridization at individual DNA molecule probe sites. E.M. Peterson, J.M. Harris

**3:30 ANYL 270.** Standing evanescent-wave fluorescence correlation spectroscopy for analyzing the translational diffusion in bio-membranes. T. Otsu, S. Yamaguchi

**4:00 ANYL 271.** Observation of polymer conformational swelling at an oil-water interface. D. Wang, D.K. Schwartz

**4:20 ANYL 272.** Design, assembly, and applications of aptamer-based functional nanomaterials. Q. Yuan

### Section C

Pennsylvania Convention Center  
Room 105A

#### Multidimensional Chromatography

Financially supported by Waters Corporation

S. Pan, *Organizer*

I. Maksimovic, *Organizer, Presiding*

**1:30 ANYL 273.** Platform multidimensional HPLC method strategy in drug research. K. Zhang

**2:00 ANYL 274.** Determination of peak purity for therapeutic peptides with two-dimensional liquid chromatography (2D-LC). L. Ma

**2:30 ANYL 275.** Characterization of therapeutic protein by two dimensional-LC (2D-LC) system. S. Yu

3:00 Intermission.

**3:10 ANYL 276.** Application of two-dimensional LC in conjunction with high resolution MS/MS in the rapid structure elucidation of pharmaceutical impurities. M. Li

**3:40 ANYL 277.** Optimized workflow for API process impurities using 2D LC/MS/MS. C. Mallet

### Section D

Pennsylvania Convention Center  
Room 104B

#### Basic Research Toward Translational Point-of-Care Devices

Cosponsored by MPPG

Y. Zeng, *Organizer, Presiding*

1:30 Introductory Remarks.

**1:35 ANYL 278.** Electrochemical paper-based analytical devices for clinical and environmental diagnostic. C. Henry

**2:05 ANYL 279.** Development of multimodality intracoronary near-infrared autofluorescence imaging: From benchtop to first-in-human studies. J.A. Gardecki, H. Wang, G.J. Ughi, K. Watanabe, M. Rosenberg, F.A. Jaffer, G.J. Tearney

**2:35 ANYL 280.** Paper/polymer hybrid microfluidic platforms for rapid instrument-free disease diagnosis. X. Li, M. Dou, S. Sanjay

3:05 Intermission.

**3:20 ANYL 281.** Electrochemical sensors for point-of-care assessment of metal exposure. I. Papautsky

**3:50 ANYL 282.** Quantitative point-of-need diagnostics that require only measurements of time as the readout. S.T. Phillips

**4:20 ANYL 283.** Microfluidic analysis of circulating exosomes toward clinical diagnosis of cancer. Y. Zeng

### Chemistry of the People, by the People, for the People

Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG

### Advances in Metabolism, Metabolomics & Mass Spectrometry

Sponsored by AGRO, Cosponsored by ANYL and ENVR

## WEDNESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 105B

#### Single-Cell Assays: Honoring ACS Analytical Division Chemical Instrumentation Awardee Nancy Allbritton

Cosponsored by BIOL

M. L. Kovarik, *Organizer, Presiding*

8:30 Introductory Remarks.

**8:35 ANYL 284.** Leveraging analytical methods to explore platelet biology. C.L. Haynes

**9:10 ANYL 285.** Interfacing live cells with nanosensors. B. Cui

**9:45 ANYL 286.** Dynamic profiling of anti-tumor immune response at the single-cell resolution by droplet microfluidic pairing. T. Konry, S. Sarkar, P. Sabhachandani

10:20 Intermission.

**10:35 ANYL 287.** Single-cell deep phenotyping enabled by microfluidics and high-throughput quantitative microscopy. H. Lu

**11:10 ANYL 288.** Microfluidic chemical cytometry and peptide substrate reporters: Expanding applications and access. M.L. Kovarik

### Section B

Pennsylvania Convention Center  
Room 104A

#### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

Cosponsored by BIOL, COLL, MPPG and PHYS

X. N. Xu, *Organizer, Presiding*

**8:00 ANYL 289.** Nanostructures for tracking RNA within living cell. C.A. Mirkin

**8:30 ANYL 290.** Single nanoparticle SPR imaging measurements of biomolecules and enzymatic reactions. A. Maley, H.M. Fung, R.M. Corn

**9:00 ANYL 291.** Genetically encoded nanostructures for non-invasive imaging of biological systems. M. Shapiro

**9:30 ANYL 292.** Second harmonic light scattering and microscopy of nanoparticles and living biological cells. H. Dai

10:00 Intermission.

**10:10 ANYL 293.** Quantitative analytical applications of surface-enhanced Raman. M. Moskovits

**10:40 ANYL 294.** Ultrasensitive SERS Nanoparticles for Image-Guided Precision Surgery. X. Qian, L. Lane, S. Nie

**11:10 ANYL 295.** Nanomaterial-assisted surface plasmon-coupled emission for biodetection. S. Cao, K. Xie, Y. Zhai, Y. Weng, Y. Li

**11:40 ANYL 296.** Protein activity regulation: Inhibition by closed-loop aptamer-based structures and restoration by near-IR stimulation. J. Wang, Q. Yuan

### Section C

Pennsylvania Convention Center  
Room 105A

#### Multidimensional Chromatography

Financially supported by Waters Corporation

I. Maksimovic, *Organizer*

S. Pan, *Organizer, Presiding*

**8:30 ANYL 297.** Sequential elution: A novel approach to increasing the peak capacity and the probability of success in liquid chromatography. E. Ennis, C. Kita, A. Socia, J.P. Foley

**9:10 ANYL 298.** Recent advances in two-dimensional liquid chromatography. D. Stoll, J. Halvorson, E. Larson, D.C. Harms, S.C. Rutan

9:50 Intermission.

**10:00 ANYL 299.** Determination of haloacetic acids in drinking water using matrix elimination ion chromatography. C. Fisher, R. Lin, K. Bahten

**10:30 ANYL 300.** GCxGC Stationary phase polarity characterization. R. Jaramillo, M.S. Klee, F.L. Dorman

### Section D

Pennsylvania Convention Center  
Room 104B

#### Spectroscopy in Kinetics & Reaction Progress Monitoring

R. D. Jiji, *Organizer*

S. L. Neal, *Organizer, Presiding*

8:30 Introductory Remarks.

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

- 8:35 ANYL 301.** Monitoring dye-sensitized oxide electron injection dynamics with time resolved terahertz spectroscopy. J. Swierk, C.A. Schmuttenmaer
- 8:55 ANYL 302.** Reaction interrogation by automated representative reaction sampling, quantitative HPLC, and Dynamic DOE. J. Hawkins
- 9:25 ANYL 303.** Combining chemometrics and spectroscopy to study protein folding and aggregation. R.D. Jiji, B.L. Hagenhoff
- 9:55 ANYL 304.** Natural materials based reagent and platform for down scaling chemical analysis with mobile phone detection. W. Wongvilai, K. Kiwfo, N. Enakaya, C.H. Bergo, N. Teshima, T. Sakai, K. Grudpan
- 10:15** Intermission.
- 10:25 ANYL 305.** Investigating the transmetallation mechanism of the Suzuki-Miyaura reaction in polar solvents using real-time mass spectrometry. L. Yunker, J.S. McIndoe
- 10:55 ANYL 306.** In situ reaction monitoring by IR and Raman and chemometrics. X. Chen
- 11:25 ANYL 307.** Withdrawn.

## WEDNESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 105B

#### Advances in Electrophoresis & Electrokinetics

M. Hayes, *Organizer*

M. Hayes, T. G. Strein, *Presiding*

- 1:00 ANYL 308.** Liquid phase micro-extraction techniques for capillary electrophoresis/mass spectrometry. D. Chung, J. Kwon, J. Kim
- 1:20 ANYL 309.** Electrokinetic sample manipulation in paper-based microfluidic devices. C. Baker
- 1:45 ANYL 310.** Electroosmotic push-pull perfusion in brain tissue cultures: Experiments and modeling. S.G. Weber, Y. Ou, R.E. Wilson
- 2:10 ANYL 311.** Probing the thermodynamics of bile salt enantioselectivity in MECK. T.G. Strein, D.S. Rovnyak, S. Anderson, C. Ouimet, R.T. Pirnie, C. Sussman
- 2:35** Intermission.
- 2:55 ANYL 312.** Peak capacity and probability of success in capillary and microchip electrophoresis. E. Ennis, J.P. Foley
- 3:20 ANYL 313.** Size-based particle sorting using dielectrophoresis with nonuniform temperature fields. B. Shaparenko, H. Chuang, H. Hu, H. Bau
- 3:45 ANYL 314.** Electrically driven analyte preconcentration on monoliths in microfluidic devices. A. Woolley, M. Sonker, V. Sahore, R. Knob, E.K. Parker
- 4:10 ANYL 315.** Applications of micro free flow electrophoresis. M. Bowser, B. Fonslow, M. Jing, M. Geiger, R. Turgeon, A.C. Johnson, N. Frost
- 4:35 ANYL 316.** Exploring the promise of microgradient electrophoretic separations. M. Hayes, F. Zhu

### Section B

Pennsylvania Convention Center  
Room 104A

#### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

*Cosponsored by BIOL, COLL, MPPG and PHYS*

X. N. Xu, *Organizer, Presiding*

- 1:00 ANYL 317.** Capture, detection and analysis of circulating tumor cells with hybrid nanoparticles. X. Huang
- 1:30 ANYL 318.** Radioluminescent chemical imaging. J.N. Anker, D. Benza, G. Schober, H. Chen, F. Alexis
- 2:00 ANYL 319.** Plastic antibodies and plasmonics for biomolecule detection. A.J. Haes, W. Xi, A.A. Volkert
- 2:30 ANYL 320.** Pharmacokinetic model of a tissue implantable cortisol sensor. M. Lee, N. Bakh, G. Bisker, M. Strano
- 2:50 ANYL 321.** Generally applicable, label-free method for quantifying molecular transport across cellular membranes in vitro. M. Sharifian, M.J. Wilhelm, H. Dai
- 3:10** Intermission.
- 3:20 ANYL 322.** NanoGUMBOS: Tunable nanomaterials for biomedical applications. I.M. Warner, N. Bhattarai, J. Mathis, N. Siraj
- 3:50 ANYL 323.** Deformable silicon for biointerfaces. B. Tian
- 4:20 ANYL 324.** Chemiresistor sensor arrays: Towards a universal molecular fingerprinting tool. L.J. Hubble, B. Raguse, L. Wiecezorek, E. Chow, J.S. Cooper, A. Sosa-Pintos, S. Spencer
- 4:50 ANYL 325.** Dynamic, mathematical model for quantitative glycoprofiling using label-free lectin microarrays. D. Salem, J. Nelson, S. Kim, M. Strano

### Section C

Pennsylvania Convention Center  
Room 105A

#### Advances in Analytical Separations

J. L. Maclachlan, *Organizer, Presiding*

- 1:30 ANYL 326.** Chiral and achiral preparative SFC used as a workflow tool for the isolation of unknown trace impurities in consumer products for the purpose of the characterization and full structural elucidation of these impurities. J.P. McCauley
- 1:55 ANYL 327.** Stability of selected cationones in methanol and acetonitrile. H.L. Ciallella, K. Scott
- 2:20 ANYL 328.** Lead in drinking water: A new simplified method of analysis using HG/PID. J.N. Driscoll, J.L. Maclachlan
- 2:45 ANYL 329.** Asymmetric flow field-flow fractionation and size-exclusion chromatography for characterization of biopolymers and thermal aggregation. Y. Li, K. Kuppappan, M. Covington, D. Dodge, D.M. Meunier
- 3:10** Intermission.
- 3:20 ANYL 330.** Applications of capillary electrophoresis for nanomaterials characterization. K.R. Riley, W.A. MacCrehan
- 3:45 ANYL 331.** Monitoring volatile organic compound removal by common indoor plants using solid phase microextraction and gas chromatography-mass spectrometry. V. Niri, G. Peterson, T. Jones, D. Rispoli, S. Haddadi

- 4:10 ANYL 332.** New developments in fast chromatography for supporting pharmaceutical process research. E. Regalado, K. Zawatzky, C.J. Welch

- 4:35 ANYL 333.** Studies of the kinetics and energy of conversion of the syn- and anti-conformers of nitrosoglyphosate. R.K. Gilpin, W. Zhou

### Section D

Pennsylvania Convention Center  
Room 104B

#### Spectroscopy in Kinetics & Reaction Progress Monitoring

S. L. Neal, *Organizer*

R. D. Jiji, *Organizer, Presiding*

- 1:30 ANYL 334.** PAT application in expedited development of multi-step chemical syntheses of active compounds. D. Hebrault, N. Haddad
- 2:00 ANYL 335.** Automated reaction progress analysis on challenging reaction systems. J. Hein
- 2:30 ANYL 336.** Reaction progress monitoring of photodegradation of substituted PAHs in octanol. J. Hartman, J. Huynh, M. Rifkin, M. Wang, J. Ray, O. Dmitrenko, S.L. Neal
- 2:50** Intermission.
- 3:00 ANYL 337.** Determination of domain size and light harvesting complex connectivity in Rhodobacter sphaeroides. S.C. Massey, P.D. Dahlberg, P. Ting, S. Soltau, C. Hunter, G.S. Engel
- 3:20 ANYL 338.** Understanding flow processes using in situ monitoring. A. O'Brien
- 3:50 ANYL 339.** Sensitizer photodegradation and ROS production in octanol and aqueous solvent monitored using multichannel optical spectroscopy. J. Huynh, J. Hartman, M. Rifkin, J. Ray, O. Dmitrenko, S.L. Neal
- 4:20** Concluding Remarks.

## THURSDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 105B

#### Vibrational Nanospectroscopy for Chemical & Biochemical Analysis

*Cosponsored by PHYS*

Z. D. Schultz, *Organizer*

R. A. Dluhy, *Organizer, Presiding*

- 8:30 ANYL 340.** AFM-IR spectroscopy and imaging of polymer fibers and thin films at the nanoscale. J.F. Rabolt, L. Gong, B. Chase, I. Noda, C.A. Marcott
- 9:05 ANYL 341.** Strain sensing 2D materials with tip-enhanced Raman spectroscopy: Comparing indentation of epitaxial- and CVD-grown graphene. A.R. Hight Walker
- 9:40 ANYL 342.** Optimizing gold nanohole arrays for detection of trace mercury in saliva. P. Zheng, N. Wu
- 10:00** Intermission.
- 10:10 ANYL 343.** Recent progress in ultrahigh vacuum tip-enhanced Raman spectroscopy for the study of surface chemistry at the nanometer length scale. R.P. Van Duyne

- 10:45 ANYL 344.** Raman mode-selective imaging analysis of structural changes of amyloid  $\beta$  peptide and enzyme redox states. H. Lu

- 11:05 ANYL 345.** Polarized Raman spectroscopy of G-quadruplexes. A.C. Terentis, S.J. Friedman

### Section B

Pennsylvania Convention Center  
Room 104A

#### New Directions in Chemometrics: Making Sense of Big & Small Chemical Data Sets

*Cosponsored by CINF*

R. J. Bienstock, K. S. Booksh, *Organizers*

S. D. Brown, *Organizer, Presiding*

- 8:30 ANYL 346.** Investigation of the urinary steroidal profile by non-targeted metabolomics. A. Palermo, F. Botre, X. de la Torre, N. Zamboni
- 8:50 ANYL 347.** Elastic variable selection approach for calibration. C. Giglio, S. Brown
- 9:10 ANYL 348.** Adaptive regression by subspace elimination. Towards a modeling strategy that is robust to spectral interferents. K.S. Booksh, J. Ottaway
- 9:30** Intermission.
- 9:50 ANYL 349.** Chemometric model development for high precision real-time PAT applications. A. Tang, I. Jarto, J.C. Johnson
- 10:10 ANYL 350.** Materials assurance through orthogonal materials measurements. C.D. Mowry, M.H. Van Benthem, D.F. Susan, M. Rodriguez, J. Griego, P. Yang, D. Enos, K. Simonson
- 10:30 ANYL 351.** Modeling spectrophotometric titration data: A detailed look at optimal methodology and transparent reporting. D.A. Vander Griend, N. Kazmierczak

### Section C

Pennsylvania Convention Center  
Room 105A

#### Advances in Analytical Separations

J. L. Maclachlan, *Organizer, Presiding*

- 8:30 ANYL 352.** Total organic iodine: advances in quantification and detection. R. El Sayess

- 8:55 ANYL 353.** Analysis of sorghum wax by reverse phase liquid chromatography mass spectrometry. A. Harron, M. Powell, R. Moreau

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**9:20 ANYL 354.** Fast and reliable method for arsenic speciation in urine samples containing low levels of As by LC-ICP-MS: focus on epidemiological studies. V. Carioni, J.D. Brockman, J.M. Guthrie, J. McElroy

**9:45** Intermission.

**9:55 ANYL 355.** Analysis of water sensitive pinacol boronate esters by hydrophilic interaction liquid chromatography. L. Dai, K. Zhang

**10:20 ANYL 356.** Comparison of HILIC with surfactant mediated UHPLC for the separation of hydroxyaromatic acid positional isomers. N.D. Danielson, J. Fasciano, A. Richardson

**10:45 ANYL 357.** Estimation of Ixazomib drug by reverse-phased high performance liquid chromatography. U. Utloor

## Section D

Pennsylvania Convention Center  
Room 104B

### Advances in Electrochemistry

C. A. Morris, *Organizer, Presiding*  
W. Shi, *Presiding*

**8:30** Introductory Remarks.

**8:35 ANYL 358.** Electrochemical surface-enhanced Raman microscopy (EC-SERM). B. Ren, C. Zong, K. Deng

**8:55 ANYL 359.** Hot-Tip scanning electrochemical microscopy: First steps. A. Boika, Z. Zhao

**9:15 ANYL 360.** Imaging heterogeneity and transport of degraded Nafion membranes. W. Shi, L.A. Baker

**9:35** Intermission.

**9:50 ANYL 361.** Integrated microsystem for multiplexed genosensor detection of biowarfare agents. C. O'Sullivan, S. Dulya

**10:10 ANYL 362.** In vivo pharmacokinetic measurements using electrochemical aptamer-based sensors. J. Somerson, K. Plaxco

**10:30 ANYL 363.** Electrochemical detection of solid-phase bridge recombinase polymerase amplification with ferrocene-labelled dNTPs. C. O'Sullivan, J. Sabaté del Rio

**10:50 ANYL 364.** Electrochemical evaluation of thyroxine for thyroid storm diagnosis. C.A. Morris, B. Cata, T. Ruwe

**11:10** Concluding Remarks.

## THURSDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 105B

### Vibrational Nanospectroscopy for Chemical & Biochemical Analysis

*Cosponsored by PHYS*

Z. D. Schultz, *Organizer*

R. A. Dluhy, *Organizer, Presiding*

**1:15 ANYL 365.** Biochemical nanostructural measurements for modeling of infrared and Raman spectroscopic responses. R. Bhargava, M. Kole, S. Kenkel, P. Mukherjee

**1:50 ANYL 366.** Developing serum spectroscopic diagnostics. M.J. Baker

**2:25 ANYL 367.** Spectral mapping of polysaccharides and lignin in Arabidopsis thaliana cotyledons using infrared microspectroscopy. G. Arbuckle-Keil, G. Kumi, S. Kotchoni

**2:45** Intermission.

**2:55 ANYL 368.** SERS spectroelectrochemistry on nanoscale electrodes. K.A. Willets

**3:30 ANYL 369.** Chemical effects observed in enhanced Raman spectroscopy. Z.D. Schultz, A. Lewis

**3:50 ANYL 370.** Biocompatible, liposome-based surface enhanced Raman spectroscopy (SERS) substrates. W. Lum, I. Bruzas, S. Unser, L. Sagle

### Section B

Pennsylvania Convention Center  
Room 104A

### New Directions in Chemometrics: Making Sense of Big & Small Chemical Data Sets

*Cosponsored by CINF*

K. S. Booksh, S. D. Brown, *Organizers*

R. J. Bienstock, *Organizer, Presiding*

**1:00 ANYL 371.** Methodological limits for the determination of binding constants via equilibrium-restricted factor analysis of spectrophotometric data. D.A. Vander Griend, A. Michmerhuizen, A. Rylaarsdam, S. Kim, L. Van Laar, Z. Drees, T.T. Thong

**1:20 ANYL 372.** Multivariate exploratory methods applied to Raman microscopic mapping for the classification and geospatial estimation of titanium dioxide polymorphs. J.P. Smith, F.C. Smith, B.P. Glass, K.S. Booksh

**1:40 ANYL 373.** Variable selection to improve biomarker identification and infrared spectral library matching. B.K. Lavine, C. White, T. Ding

**2:00** Intermission.

**2:20 ANYL 374.** USP up-to-date quality standards for excipients: Using infrared spectroscopy as a critical tool to determine identity of microcrystalline cellulose. L. Botros, T. Liu, C. Sheehan, K. Moore

**2:40 ANYL 375.** New methodology for finding optimal spectral matches in reference databases. G.M. Banik, T. Abshear, K. Nedwed

**3:00 ANYL 376.** EPA ICSS Chemistry dashboard to support compound identification using high resolution mass spectrometry data. A.J. Williams, J. Sobus, K. Mansouri, M. Strynar, E.M. Ulrich, C. Grulke

**3:20 ANYL 377.** Demystify substance identity with clues from the CAS Registry. A. Dick, P. Son

### Section C

Pennsylvania Convention Center  
Room 105A

### Advances in Analytical Separations

J. L. MacLachlan, *Organizer, Presiding*

**1:15 ANYL 378.** Electropolymerizable conductive ionic liquids for electroanalysis and solid-phase microextraction. A.M. Devasurendra, C. Zhang, J.A. Young, L. Tillekeratne, J.L. Anderson, J.R. Kirchoff

**1:40 ANYL 379.** Extraction and analysis of ommochromes in cephalopod chromatophores. C.W. DiBona, T.L. Williams, S.R. Dinneen, S.F. Jones Labadie, F. Chu, L.F. Deravi

**2:05 ANYL 380.** Antigen release from immobilized antibodies induced by mechanical vibration. R. Rosario, R. Mutharasan

**2:30** Intermission.

**2:40 ANYL 381.** Boronic acid - modified poly(amidoamine) dendrimers as sugar sensors in water. X. Liang, M. Bonizzoni

**3:05 ANYL 382.** Adsorption of polyelectrolyte multilayers imparts high monovalent/divalent cation selectivity to Nafion and Fujifilm cation-exchange membranes. Y. Zhu, M. Bruening

**3:30 ANYL 383.** Rapid detection of DNA using a combination of tailed primers, isothermal amplification and lateral flow assay. C. O'Sullivan, M. Jauset, M. Svobodova

### Section D

Pennsylvania Convention Center  
Room 104B

### Advances in Electrochemistry

C. A. Morris, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:35 ANYL 384.** Electrochemical detection of single bacteria by diffusion blocking at ultramicroelectrodes. S.N. Thorgaard

**1:55 ANYL 385.** Treatments on carbon nanotube yarn microelectrodes for rapid and sensitive detection of neurotransmitters in vivo. C. Yang, M. Nguyen, M. Mahjouri-Samani, I. Ivanov, B.J. Venton

**2:15 ANYL 386.** Electrochemical behavior of graphene modified carbon-paste electrodes and promazine detection. K. Alaqad, T.A. Saleh

**2:35 ANYL 387.** Continuous, real-time electrochemical monitoring of arbitrary molecules directly in vivo. N. Arroyo, J. Somerson, K. Ploense, P. Vieira, T. Kippin, K. Plaxco

**2:55** Intermission.

**3:10 ANYL 388.** Graphene based electrochemical sensors for medical applications. A. Chen, B. Adhikari, Z. Liu, M. Govindhan

**3:30 ANYL 389.** Charge compensation in Nafion. N. Rathuwadu, J. Leddy

**3:50 ANYL 390.** Coupling of PEG-based polyetheramine block co-polymer to oxidized cellulose nanocrystals and its adsorption evaluation against contaminants of emerging concern: A water remediation approach. J. Herrera, K. Morales, E. Ortiz, E. Nicolau

**4:10 ANYL 391.** Fine tailoring of Au NPs using the RoDSE technique for EtOH electrooxidation. L.E. Betancourt, C.R. Cabrera

**4:30** Concluding Remarks.

### Advances in Agrochemical Metabolism & Metabolomics

*Sponsored by AGRO, Cosponsored by ANYL and ENVR*

## BIOT

### Division of Biochemical Technology

S. Tobler and P. Tessier, *Program Chairs*

## MONDAY MORNING

### Shedding Light on the Dark Genome: Methods, Tools & Case Studies

*Sponsored by CINF, Cosponsored by BIOT, COMP and MEDI*

## BIOL

### Division of Biological Chemistry

V. Bandarian and L. Hedstrom, *Program Chairs*

**OTHER SYMPOSIA OF INTEREST:**  
Analyzing and Controlling Cell-Material Interactions (see ANYL, Sun)

## SUNDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 103A

### Eli Lilly Award in Biological Chemistry

E. M. Nolan, *Organizer, Presiding*

**9:00** Introductory Remarks.

**9:05 BIOL 1.** Structural mechanisms of transition metal homeostasis in bacteria. D.P. Giedroc, D. Capdevila, J.J. Braymer, H. Wu, K.A. Edmonds

**9:40 BIOL 2.** Microcins mediate interspecies and intraspecies competition among Enterobacteriaceae in the inflamed gut. M. Raffatellu

**10:15 BIOL 3.** Tracking mobile zinc in the brain - New probes, new biology. S.J. Lippard

**10:50 BIOL 4.** Metals, microbes, and immunity. E.M. Nolan

### WCC Merck Research Award Symposium

*Sponsored by WCC, Cosponsored by ANYL, BIOL, COMP, MEDI, MPPG, ORGN, POLY and PROF*

### Analyzing & Controlling Cell-Material Interactions

*Sponsored by ANYL, Cosponsored by BIOL, COLL and MPPG*

## SUNDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 103A

## Young Investigators in Biological Chemistry

V. Bandarian, *Organizer*

T. A. Wenczewicz, *Presiding*

**1:30** BIOL 5. Radical SAM enzymes in secondary metabolite biosynthesis. N.A. Bruender, V. Bandarian

**1:50** BIOL 6. Bioorganic investigation of a species-specific natural product via diverted total synthesis. W.M. Wuest

**2:10** BIOL 7. Metalloenzyme design by unnatural amino acids incorporation and electron transfer pathway implementation. Y. Yu, C. Cui, Y. Lu, J. Wang

**2:30** BIOL 8. Overexpression of soluble recombinant human lysyl oxidase by using solubility tags: Effects on activity and solubility. K.M. Lopez

**2:50** Intermission.

**3:00** BIOL 9. Study and application of protein glycosylation. Z. Tan

**3:20** BIOL 10. Redefining the potential prenylome: Prenylation of non-canonical C-terminal sequences in peptides and proteins. M.J. Blanden, W. Schmidt, J. Hougland

**3:40** BIOL 11. Withdrawn.

**4:00** BIOL 12. Dynamic compaction is revealed from active site structure of soybean lipoxygenase enzyme-substrate complex. A.R. Offenbacher, M. Horitani, C.M. Carr, T. Yu, S. Hammes-Schiffer, J. Klinman, B.M. Hoffman

**4:20** BIOL 13. First account of half site reactivity and negative cooperativity within  $F_{420}H_2$ :NADP<sup>+</sup> oxidoreductase. K.L. Johnson-Winters

## Section A

Pennsylvania Convention Center  
Room 103A

## Gordon Hammes Award Lecture

Financially supported by  
*Biochemistry (ACS Journal)*

V. Bandarian, *Organizer*

D. G. McCafferty, *Presiding*

**5:00** Introductory Remarks.

**5:05** BIOL 14. Ribozymes to proteins: enzymology of precursor tRNA processing enzymes. C.A. Fierke, Y. Chen, X. Liu, B. Klemm, N. Wu, M. Howard

## Section B

Pennsylvania Convention Center  
Room 103B

## Graduate Student &amp; Postdoctoral Symposium

V. Bandarian, *Organizer*

J. Schneekloth, *Presiding*

**1:30** BIOL 15. Investigating the kinetically stable proteins from three species of *Vibrio*. J. Church, K. Xia, W. Colon

**1:45** BIOL 16. Importance of protein kinetic stability in extremophiles: A study of thermoacidophilic archaea *Sulfolobus acidocaldarius*. J. Sen, K. Xia, W. Colon

**2:00** BIOL 17. Defining the molecular basis of substrate selection by diverse Hsp104 homologues. Z. March, L. Castellano, L. Miles, S. Bond, J. Shorter

**2:15** BIOL 18. Investigating the role of O-GlcNAcylation of Nod2, an innate immune receptor involved in Crohn's disease. C. Hou, V. Mohanan, N. Zachara, C.L. Grimes

**2:30** BIOL 19. Detection of HDAC activity in real time with a peptide-based spectrophotometric probe. D. Rooker, D. Buccella

**2:45** Intermission.

**2:55** BIOL 20. Designed metalloprotein stabilizes an organic radical. G. Ulas, T. Lemmin, Y. Wu, G.T. Gassner, W.F. Degrado

**3:10** BIOL 21. Hydration in the cavities and at the surface of Interleukin-1 $\beta$ . B. Fuglestad, N.V. Nucci, C. Jorge, C. Lao, H. Cai, P. Jennings, A.J. Wand

**3:25** BIOL 22. Structural basis for collagen triple helix stabilization by aza-glycine. A.J. Kasznel, Y. Zhang, Y. Hai, D.M. Chenoweth

**3:40** BIOL 23. Potentiated Hsp104 variants to counter protein misfolding. M. Jackrel, J. Shorter

**3:55** BIOL 24. Toxic dopamine metabolite DOPAL forms an unexpected dicatechol pyrrole adduct with  $\alpha$ -synuclein's lysines. J. Werner-Allen, J. DuMond, R. Levine, A. Bax

**4:10** BIOL 25. Metabolomics-assisted proteomics identifies protein lysine succinylation and SIRT5 as important regulators of cardiac metabolism and function. S. Sadhukhan, H. Lin

**4:25** BIOL 26. How SmgGDS proteins regulate small GTPase prenylation. B.C. Jennings, A.J. Lawton, D. Garcia-Torres, C.A. Fierke

## Analyzing &amp; Controlling Cell-Material Interactions

Sponsored by ANYL, Cosponsored by BIOL, COLL and MPPP

## SUNDAY EVENING

## Section A

Pennsylvania Convention Center  
Ballroom A

## Current Topics in Biochemistry

V. Bandarian, *Organizer*

**7:00 - 9:00**

BIOL 27. Withdrawn.

BIOL 28. Combinatorial efficacy of antimicrobial peptides and silver ions. C. Chrom, S. Goderecci, G.A. Caputo

BIOL 29. Selective and rapid capturing of pathogenic bacteria by magnetic nanoparticles cluster conjugated with target antigens. E. Kang, S. Shin, Y. Kim

BIOL 30. Detergent mediated unfolding of proteins in the presence of ionic liquids. L.E. Abiuso, E.M. Kohn, T.D. Vaden, G.A. Caputo

BIOL 31. Beacon-like scaffolding aptamers towards small drug molecules for biosensing. G. Wiedman, D.S. Perlin

BIOL 32. Engineering the reversal of *Pseudomonas putida*  $\beta$ -hydroxybutyrate dehydrogenase cofactor specificity. J. Sojati, C. Ott, N. Galchak, J.L. Palenchar

BIOL 33. Characterization of MalA, an iterative halogenase for late-stage C-H functionalization of indole alkaloids. A.E. Fraley, H.T. Tran, Q. Dan, E.V. Mercado, S. Li, J.L. Smith, R. Sarpong, R.M. Williams, D.H. Sherman

BIOL 34. Synthesis and biological investigation of the narrow-spectrum antibacterial (-)-promysalin and analogs. A.D. Steele, C. Keohane, K.W. Knouse, S. Rossiter, S. Williams, W.M. Wuest

BIOL 35. Engineering potentiated Hsp104 variants with enhanced substrate-specificity to counter neurodegeneration. K.L. Mack, M. Jackrel, J. DeNizio, J. Shorter

BIOL 36. Inhibition of *Thermus aquaticus* DNA polymerase by bridged nucleosides using real-time qPCR. A. Dinkel, S. Kim

BIOL 37. Substrate reduction therapy for Canavan disease. Q. Wang, M. Zhao, G.G. Parungao, B. Thangavelu, V. Muthamsetty, R.E. Viola

BIOL 38. Kinetic characterization of *Trypanosoma cruzi* His<sub>10</sub>- $\beta$ -hydroxybutyrate dehydrogenase ( $\beta$ HBDH) and functional exploration of *Trypanosoma brucei*  $\beta$ HBDH via RNA interference. G. Antuono, W. Escobar-Arillaga, L. Nguyen, J.L. Palenchar

BIOL 39. Structural and inhibitor development studies of fungal forms of aspartate semialdehyde dehydrogenase. G.P. Dahal, R.E. Viola

BIOL 40. Investigating the mechanism of cancer chemoprevention by aspirin using hyperpolarized MR and activity-based protein profiling. A. Ornelas, N. Zacharias Millward, J. Davis, D. Menter, D. Hawke, P.K. Bhattacharya, E. Vilar Sanchez, S.W. Millward

BIOL 41. Molecular mechanism of BRAF activation by phosphorylation, dimerization and ATP-competitive inhibitors. C. Candelora, N. Cope, K. Wong, Y. Li, P.A. Cole, Z. Wang

BIOL 42. Iron Homeostasis is disrupted by nickel stress in *Escherichia coli*. C. Washington, G. Ford, F.W. Outten

BIOL 43. Incorporating metal-binding functionalities into antifungal drugs. E.J. White, K.J. Franz

BIOL 44. Defining a protein disaggregase for ALS disease proteins. L. Guo, H. Wang, N. Singh, J. Shorter

BIOL 45. Magnetically responsive anticoagulant heparin-cellulose composite nanofibers. L. Hou, R.N. Udangawa, X. Zhang, A. Onishi, T.J. Simmons, R.J. Linhardt, W. Dong, Y. Zheng, L. Lin

BIOL 46. Characterizing the folding and stability of the interdigitated T-loop (ITL) RNA structural motif. A. Ageeli

BIOL 47. Rational optimization of a riboswitch-based gene regulation system in mycobacteria. E. Van Vlack, J.I. Seeliger, D. Iwata-Reuyl, S. Topp

BIOL 48. Purification and characterization of the human asialoglycoprotein receptor. W.A. Blessing, M.W. Grinstaff

BIOL 49. Positive charged aggregation-induced emission fluorogen for detection of heparin, chondroitin sulfate and hyaluronic acid. Y. Wang, X. Zhang, S. Victor, L. Lin, J. Sun, B. Tang, R.J. Linhardt

BIOL 50. Sulfonamide inhibition: Progress in determining pathway of inhibition in Leishmania. J. Katinas, J.A. Friesen, M.A. Jones

BIOL 51. Investigation of secreted inulinase activity by *Kluyveromyces marxianus* NRRL Y-50798. J. Theobald, J. Jarodsky, S. Hughes, M.A. Jones

BIOL 52. Microscale screening adaptations for the detection of effective antimicrobials in natural product extract libraries. A.N. Lowell, L. Gómez Rodríguez, A. Tripathi, N. Santoro, S. Swaney, T. McQuade, P. Schultz, M. Larsen, D.H. Sherman

BIOL 53. Development of novel contrast agent for enhanced dual-energy computerized tomography (eDECT). J. Hernandez, J. Supplee, M.W. Grinstaff

BIOL 54. Progress on the characterization of bacterial prostaglandin H synthases identified in peroxibase. M. Butchy, S. Neumann, C. Nichols, R. Skaf, B.S. Selinsky

BIOL 55. Preventing dimerization of NS1A as a potential target for influenza treatment. D. Rushmore, J.W. Tomsho, M. Neavear, D. Olea, Z. Moorefield, S. Shiek

BIOL 56. Biosynthesis of the anti-tuberculosis peptide lariatin A. A. Adeniji-Adele, J.W. Tomsho

BIOL 57. Short peptides that self-assemble in the presence of copper are capable of oxygen activation. P. Gosavi, O. Makhlynets, I. Korendovych

BIOL 58. Evaluation of antibody responses toward post-translationally modified and unmodified peptide epitopes of apolipoprotein A-I in cardiovascular disease. D. Henson, V. Venditto

BIOL 59. Electro-thermal mixing for decreasing the kinetics of a fret based biological reaction. E. Yasun, I. Mezic

BIOL 60. Inhibition of 1-Deoxy-D-xylulose 5-phosphate (DXP) synthase towards the development of new antimicrobial agents targeting bacterial central metabolism. D. Barteo, C.L. Freel Meyers

BIOL 61. Characterizing the mechanics of Hsp104(A503V) potentiation. E. Chuang, M. Torrente, M. Noll, M. Jackrel, J. Shorter

BIOL 62. Systematic approach to probing epigenetic complex interfaces. M.F. Lawler, J.M. Burg, J. Link, D.G. McCafferty

BIOL 63. Novel protein that optimizes protein biosynthesis of *Helicobacter pylori*. U. Rathnayake, G. Silva, T.L. Hendrickson

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- BIOL 64.** Targeting bacterial virulence through alternative substrates of S-adenosylmethionine synthetase. G.G. Parungao, M. Zhao, R.M. Blumenthal, R.E. Viola
- BIOL 65.** Analysis of glycosaminoglycans in chicken stomach tissue. Y. Chen
- BIOL 66.** Using evolutionary data to understand relationships in the metabolic network. P.M. Palenchar
- BIOL 67.** Identification of protein readers of MeC, hmC, fC and caC nucleobases in human bronchial epithelial cells using quantitative proteomics. C. Seiler, M.P. Anderson, P. Trisko, N.Y. Tretyakova
- BIOL 68.** Discovery of new allosteric reversible inhibitors of HSC-70 using a combination of pharmacophore searching with ZINCPharmer of the ZINC database and AutoDock Vina molecular docking. C.C. Clement, J. Gonzalez, S. Zakia, E.L. Ebenezer, M. Philipp
- BIOL 69.** Developing a ubiquitin probe-based whole cell lysate assay for the identification of small molecule deubiquitinase inhibitors. C. Ott, B. Baljinnayam, A. Tencer, A. Simeonov, A. Jadhav, Z. Zhuang
- BIOL 70.** Hydration dynamics of hen egg-white lysozyme using NMR spectroscopy. B.S. Marques, N.V. Nucci, M. Stetz, A.J. Wand
- BIOL 71.** Human serine racemase (hSR): Expression, active site mutagenesis and mechanistic studies. G.A. Applegate, D.L. Nelson, M.L. Beio, D.L. Graham, D.B. Berkowitz
- BIOL 72.** Cross chiral RNA aptamers. A.M. Kabza
- BIOL 73.** Peptide tessellation yields human-scale collagen triple helices. I.C. Tanrikulu, A. Forticaux, S. Jin, R.T. Raines
- BIOL 74.** Construction and analysis of model chromatin systems containing specific DNA lesions. D. Banerjee
- BIOL 75.** Domoic acid production in diatoms under different culture conditions. S. Lai, T. Du, S.P. Wang, M. Wang
- BIOL 76.** Visible light mediated, strain induced couplings; facile conjugation of macromolecules and tools. K. Singh, J.D. Weaver
- BIOL 77.** Bioorganic investigation of quaternary ammonium compound (QAC) resistance in *Staphylococcus aureus*. M. Jennings, M. Forman, K.P. Minbiole, W.M. Wuest
- BIOL 78.** Tissue transglutaminase plays a multifunctional role in vascular mechanics. L. Santhanam, J. Steppan, H. Wang, D. Berkowitz
- BIOL 79.** It takes two: Chemical cues in giant panda urine. A. Wilson, D. Sparks, A. Brown-Johnson, K. Knott
- BIOL 80.** Withdrawn.
- BIOL 81.** Regulation of lipids at the molecular level during apoptosis. G. Atilla-Gokcumen, V. del Solar, N. Li, D. Lizardo
- BIOL 82.** Rapid metabolism of plasma dinitrosyl iron complexes attenuates their vasodilatory properties in sheep. G. Mukosera, T. Liu, A. Blood
- BIOL 83.** Exploring the molecular basis of multiple herbicide resistance in black grass (*Alopecurus myosuroides*). M.C. Schwarz, P.G. Steel, E. Pohl, G. Mitchell
- BIOL 84.** Sulfonamide based metal carriers for biological applications. A. Altaf, M. Danish
- BIOL 85.** Rules of engagement: Binding and activation requirements for the critical Crohn's disease-associated innate immune receptor Nod2. A.K. Schaefer, J.E. Melnyk, C.L. Grimes
- BIOL 86.** Tryptic stability of synthetic bacitracin derivatives is determined by the side chain length of cationic residues and the peptide conformation. M. Bagheri, S. Arasteh, E. Haney, R. Hancock
- BIOL 87.** Proteomic level identification of degradation-resistant proteins, complexes, and aggregates in human plasma. H.S. Trasatti, K. Xia, W. Colon
- BIOL 88.** Cytotoxicity of a novel ROS-activated agent, RAC2 shows correlation to mitochondrial ROS generation. S. Abdul Salam, E.J. Merino
- BIOL 89.** Discovery of dual-functional AKR1C3 inhibitors and AR antagonists as a novel treatment for castration resistant prostate cancer. P. Wangtrakuldee, A. Adeniji, D.H. Tamae, T. Zang, B.M. Twenter, M. Estrada, J.D. Winkler, T.M. Penning
- BIOL 90.** Structural details of RNA-binding protein phase separation in ALS and cancers. N. Fawzi, K.A. Burke, A. Conicella, V.H. Ryan, A.M. Janke
- BIOL 91.** Response of the DNA glycosylase hNEI1 to oxidatively damaged G-quadruplexes. B. Anderson, J. Ashby, A.M. Fleming, C.J. Burrows, S.S. David
- BIOL 92.** Diadenosine polyphosphatases of the nudix hydrolase superfamily in *M. tuberculosis*. A. DiCola, A. Knowles, P. Zhu, B. Miller, T.N. DiDonato, J. Thomson, J. Ramos, D. Sheibley, S. Glick, S.F. O'Handley
- BIOL 93.** Effect of oxidative environments on the aggregation of A $\beta$  in the presence or absence of lipids. A.W. Pilkington, J.A. Legleiter
- BIOL 94.** Interaction of a flavonol-based photoCORM with serum albumin proteins. M. Popova, L.M. Berreau
- BIOL 95.** Fragile X mental retardation protein recognizes a G quadruplex structure within the survival motor neuron domain containing protein 1 mRNA 5'-UTR: a potential link between fragile X syndrome and splicing. A. Heinaman, D. McAninch, C. Lang, K. Williams, G. Bassell, M. Mihalescu, T. Evans
- BIOL 96.** Crystal structure of protein-directed self-assembling buckminsterfullerene (C<sub>60</sub>). K. Kim, N. Kim, Y. Kim, Y. Kim
- BIOL 97.** Enhanced transformation of 17 $\alpha$ -hydroxyl progesterone to 11 $\alpha$ ,17 $\alpha$ -bihydroxyl progesterone in submerged fermentation by a novel glucose feed-batch strategy. Q. Liu, H. Jia, Y. Li, W. Li, X. Liang, H. Liu
- BIOL 98.** Lysyl oxidase (LOX) inhibitors as anti-scarring agents. P. Toshiwal, S. Iyer, F. Wood, M. Fear
- BIOL 99.** Easing the way through the lipid membrane: Exploring the solvation of the phosphatidylcholine head group in aqueous propylene glycol. N.H. Rhys, S.K. Callear, M.J. Lawrence, S.E. McLain
- BIOL 100.** Nod2 directly binds muramyl dipeptide through its leucine rich repeat domains in vitro. M. Lauro, B.J. Bahnsen, C.L. Grimes
- BIOL 101.** New insight into catalysis and inhibition of histone deacetylase 8 by macrocyclic tetrapeptide inhibitors. N.J. Porter, N.H. Christianson, D.W. Christianson
- BIOL 102.** Origin of Xenon-129 Hyper-CEST Signal in TEM-1  $\beta$ -Lactamase. B. Roose, Y. Wang, V. Carnevale, I.J. Dmochowski
- BIOL 103.** Structural and biochemical investigation of ghrelin processing. E.R. Cleverdon, C.L. Cabrinha, C.A. Castaneda, J. Houglund
- BIOL 104.** New tricks for old proteins. Y. Moroz, T. Dunston, O. Makhlynets, O. Moroz, Y. Wu, J. Yoon, A. Olsen, J. McLaughlin, K.L. Mack, P. Gosavi, N. van Nuland, I. Korendovych
- BIOL 105.** Nutrient limitation enhances antimicrobial activity of alkylacetylphosphonates targeting DXP synthase. S. Sanders, D. Bartee, J.L. Aklinski, A.T. Koppisch, C.L. Freel Meyers
- BIOL 106.** Probing the molecular recognition of bacterial cell wall fragments by the *C. albicans* adenyl cyclase, CYR1p. J. Burch, A.K. Schaefer, J.E. Melnyk, M. Lauro, J. Glowala, D. Wykoff, C.L. Grimes
- BIOL 107.** Understanding catalytic bias in the [FeFe] hydrogenases of *Clostridium Pasteurianum*. A. LeVan, J. Arts, J. Peters
- BIOL 108.** Ribosomal protein L7/L12 is required for ribosome-dependent GTPase binding and activity for GTPase translation factors harboring a G' domain. A. Weis, B. Haddad, C. Blackwood, C. Shelton, M. Carlson, P. Spiegel
- BIOL 109.** X-ray crystallographic studies of the factor VIII C2 domain in complex with o-phospho-L-serine indicate that Arg 2320 contributes to the phospholipid membrane binding site. S. Wo, A. Neuman, R. Blazovic, C. Brison, P. Spiegel
- BIOL 110.** Ghrelin acylation by ghrelin O-acyltransferase: Enzyme mutagenesis studies and inhibitor screening. K.R. McGovern, N.S. Mahajani, A.J. Schramm, A. Garagozzo, J.D. Chisholm, J. Houglund
- 9:05 BIOL 111.** Structural studies on indolocarbazole biosynthetic enzymes. P.J. Goldman, K.S. Ryan, M.J. Hamill, S.J. Elliott, C.T. Walsh, C.L. Drennan
- 9:40 BIOL 112.** Mechanistic studies of UDP-D-galactopyranose mutase and IPP isomerase. H. Liu
- 10:15 BIOL 113.** New flavoenzyme catalysis in secondary metabolism. B.S. Moore
- 10:50 BIOL 114.** Unravelling the chemistry underpinning reversible decarboxylation in the UbiX-UbiD system. D. Leys
- 11:25 BIOL 115.** Prospecting for new flavoenzymes. T.P. Begley

## MONDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 103A

### Graduate Student & Postdoctoral Symposium

V. Bandarian, *Organizer*

W. M. Wuest, *Presiding*

**1:30 BIOL 116.** Macrocyclic inhibitors of the Sonic Hedgehog/patched 1 protein-protein interaction. A. Owens, R. Fasan

**1:45 BIOL 117.** Development of potent and selective baccharin analogs for the inhibition of type 5 17 $\beta$ -hydroxysteroid dehydrogenase (AKR1C3). T. Zang, K. Verma, P.C. Trippier, T.M. Penning

**2:00 BIOL 118.** Development of antimicrobial peptide-based surface coating against surface mediated bacterial infections. K. Lim

**2:15 BIOL 119.** Near-IR light-mediated cleavage of antibody-drug conjugates using cyanine photocages. A.P. Gorka, R.R. Nani, T. Nagaya, H. Kobayashi, M.J. Schnermann

**2:30 BIOL 120.** One protein, many misfolds: Fluorescence studies of fibrillar strains of  $\alpha$ -synuclein. C. Haney, C. Cleveland, E.J. Pettersson

**2:45 BIOL 121.** Development of small-molecule modulators of E3 ubiquitin ligases using the ubiquitin thioester probe UbFluor. P. Foote, S. Park, D.T. Krist, S.E. Rice, A. Statsyuk  
3:00 Intermission.

**3:10 BIOL 122.**  $\alpha$ -helical mimetic inhibitors of abeta peptide. S. Kumar, A. Hamilton

**3:25 BIOL 123.** Spatial and temporal control of long-wavelength vitamin B12 phototherapeutics loaded into red cell carriers. C. Marvin, R.M. Hughes, Z. Rodgers, W. Smith, N. Oien, D.S. Lawrence

**3:40 BIOL 124.** Peptidoglycan remodeling and its application to study the features of bacterial cell wall. H. Liang, K. DeMeester, C. Hou, J. Caplan, M. Parent, C.L. Grimes

**3:55 BIOL 125.** To enhance live-attenuated HIV-1 vaccine by controlling multi-cycle virus replication using an unnatural amino acid. N. Wang, Z. Yuan, W. Niu, Q. Li, J. Guo

**4:10 BIOL 126.** Chemical biology approaches for inhibiting protein recognition of acetylated histones. L.M. Hawk, A. Ayoub, R.J. Herzog, A. Wisniewski, C.T. Gee, A.K. Urick, H. Hu, G.I. Georg, T. Ward, W.C. Pomerantz

## MONDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 103A

### Repligen Award for the Chemistry of Biological Processes

T. P. Begley, *Organizer, Presiding*

9:00 Introductory Remarks.

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



**4:25 BIOL 127.**  $\beta_2$ -Adrenergic receptor mutant results in functional bias towards G-protein mediated signaling pathways and reveals the underappreciated role of GRKs in biased agonism. M. Choi, D. Staus, L. Wingle, R. Lefkowitz

## Section B

Pennsylvania Convention Center  
Room 103B

### Enzyme Specificity

L. Hedstrom, *Organizer, Presiding*

**2:00** Introductory Remarks.

**2:05 BIOL 128.** Dynamics of reaction specificity in the IMPDH/GMP super-family. M. Rosenberg, L. Hedstrom

**2:35 BIOL 129.** How do serine/threonine protein phosphatases become specific? W. Peti, R. Page

**3:05 BIOL 130.** Reaction chemistry and substrate specificity of reclus spider phospholipase D toxins. D.M. Lajoie, S.A. Roberts, P.A. Zobel-Thropp, J.L. Delahaye, V. Bandarian, G.J. Binford, M.H. Cordes

**3:35 BIOL 131.** Universal entropy-driven mechanism for thioredoxin-target recognition. P.B. Palde, K.S. Carroll

**4:05 BIOL 132.** Amino acids outside the active site set opposite enantioselectivity in hydroxynitrile lyases. B.J. Jones, Z. Bata, R.J. Kazlauskas

### Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?

*Sponsored by ANYL, Cosponsored by BIOL, BMGT, CHED, CINF, MEDI, PMSE and SCHB*

### Tetrahedron Prize for Creativity in Organic Chemistry Symposium

*Sponsored by ORGN, Cosponsored by BIOL, COMP and MEDI*

### Undergraduate Research Posters

#### Biochemistry

*Sponsored by CHED, Cosponsored by BIOL and SOCED*

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

V. Bandarian, *Organizer*

**8:00 - 10:00**

33, 47, 56, 61, 63-64, 69, 73, 91, 107. See previous listings.

153-154, 163-164, 174, 187, 194, 199, 212. See subsequent listings.

## TUESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 103A

#### Pfizer Award in Enzyme Chemistry

M. Chang, *Organizer, Presiding*

**9:00** Introductory Remarks.

**9:05 BIOL 133.** Unnatural fluorinated tyrosines allow mapping of the thermodynamic and kinetic landscape of the E. coli class Ia ribonucleotide reductases. K. Ravichandran, A. Taguchi, D.G. Nocera, C. Tommos, J. Stubbe

**9:40 BIOL 134.** RiPP biosynthesis: D-amino acids in ribosomally produced peptides. W.A. Van Der Donk

**10:15 BIOL 135.** Nitric oxide function in biology: a molecular perspective. M.A. Marletta

**10:50 BIOL 136.** Elucidating the mechanism of fluorine selectivity in native enzymes from *Streptomyces cattleya*. M. Chang

### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

*Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS*

## TUESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 103A

#### Graduate Student & Postdoctoral Symposium

V. Bandarian, *Organizer*

T. J. Magliery, *Presiding*

**1:45 BIOL 137.** Protein geranylgeranylation by GGTase-I: Reengineering GGTase-I substrate selectivity and development of a calibrated sensor for cellular GGTase-I activity. S.A. Gangopadhyay, E. Losito, J. Hougland

**2:00 BIOL 138.** Genetic incorporation of non-canonical amino acids into nisin and lactacin 481: An efficient method to enhance structural diversity and bioactivity of Lantibiotics. N. Kakkar, W.A. Van Der Donk

**2:15 BIOL 139.** Hapalindole-type alkaloids from cyanobacteria: Characterization of biosynthetic pathway for drug discovery. S. Li, A.N. Lowell, F. Yu, A. Raveh, S. Newmister, N. Bair, J. Schaub, R. Williams, D.H. Sherman

**2:30 BIOL 140.** Investigation of a functionally essential domain within human ghrelin O-acyltransferase. M. Campana, J. Hougland

**2:45 BIOL 141.** Probing human Tet 2 activity with alternative substrates. U. Ghanty, M.Y. Liu, J. DeNizio, R.M. Kohli

**3:00** Intermission.

**3:10 BIOL 142.** Is a flexible active site the secret to C-H activation in non-heme  $\alpha$ KG dependent hydroxylases? C. John, G. Swain, R.P. Hausinger, J.L. McCracken, D.A. Proshlyakov

**3:25 BIOL 143.** New function of flavin dependent enzyme: the mechanism of 2-haloacrylate hydratase. Y. Dai, K. Kizjakina, J. Tanner, P. Sobrado

**3:40 BIOL 144.** Structural biochemistry of a fungal LOV domain photoreceptor reveals an evolutionarily conserved pathway integrating light and oxidative stress. J. Lokhandwala

**3:55 BIOL 145.** Regulatory role of the Zn<sub>2</sub><sup>+</sup> linchpin motif found in the DNA repair glycosylase MUTYH. N. Nunez, A. Rajavel, J. Spear, S. Bertolani, S. Babu, J.B. Siegel, C. Lim, S.S. David

**4:10 BIOL 146.** Applications of thioamide in protease studies - Minimal perturbing activity probe and peptide hormone stabilization. X. Chen, E.K. Keenan, J.M. Goldberg, E.J. Petersson

## Section A

Pennsylvania Convention Center  
Room 103A

#### National Fresenius Award: Symposium in honor of Douglas A. Mitchell

V. Bandarian, *Organizer*

D. G. McCafferty, *Presiding*

**5:00** Introductory Remarks.

**5:05 BIOL 147.** Award Address (*National Fresenius Award, sponsored by Phi Lambda Upsilon, the National Chemistry Honor Society*). Chemical and genomic tools to accelerate natural product discovery. D. Mitchell, J. Tietz, C. Schwalen, C. Cox, T. Maxson, X. Gao

## Section B

Pennsylvania Convention Center  
Room 103B

#### ACS Infectious Diseases Young Investigators Award Symposium

*Financially supported by ACS Infectious Diseases (ACS Journal)*

V. Bandarian, *Organizer*

C. C. Aldrich, *Presiding*

**2:00** Introductory Remarks.

**2:05 BIOL 148.** Transition state structure in the design of antibiotic candidates. P.C. Tyler, G.B. Evans, V.L. Schramm

**2:40 BIOL 149.** Siderophore swapping in pathogenic bacteria. T.A. Wenciewicz, J.A. Shapiro, T. Bohac

**3:15 BIOL 150.** Remodeling of bacterial cell surfaces to induce antibody recruitment. J. Fura, S. Pidgion, M.M. Pires

**3:50 BIOL 151.** Targeting metabolism in malaria parasites. A. Odum

### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

*Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS*

## TUESDAY EVENING

### Section A

Loews Philadelphia Hotel  
Millennium Hall

#### Current Topics in Biochemistry

V. Bandarian, *Organizer*

**7:00 - 9:00**

**BIOL 152.** Towards the rational design of potent peptide antibiotics to combat drug-resistant bacteria. P. Naidu

**BIOL 153.** Thermodynamics of HHR23A ubiquitin-associated (UBA) domains. M. Leavens, B.E. Bowler

**BIOL 154.** Alterations of tryptophan residues to allow understanding of protein dynamics of heptosyltransferase I from *Escherichia coli*. J.M. Cote, C.A. Ramirez-Mondragon, Y.Y. Sham, E.A. Taylor

**BIOL 155.** Systematic study of G-quadruplex DNA complexes with cationic porphyrin TMPyP4 and its metal derivatives. J. Buenaventura, S. Davis, E. Boschi, L.A. Yatsunyk, M. Azam

**BIOL 156.** Glycosylflavone as glycogen synthase kinase-3 $\beta$  inhibitor alleviates tau hyperphosphorylation and amyloid neurotoxicity. Z. Liang, Q.X. Li

**BIOL 157.** Utility of new HPLC method for each modification process on biosynthetic-heparin using 2, 4-dinitrophenylhydrazine as a pre-label modifier. K. Mori, T. Toida, Y. Tokura

**BIOL 158.** Computational analysis of structure and biological function of translesion DNA polymerase zeta from dictyostelium discoideum. S. Mauldin, D. He

**BIOL 159.** Microscale osmotic and mechanical properties of cartilage. F. Horkay, E.K. Dimitriadis, I. Horkayne-Szakaly, P.J. Bassar

**BIOL 160.** Phenformin and rotenone can increase glucose metabolism while inhibiting growth in colon and bladder cancer cells. M.A. Lea, P.N. Daskalov, C. DesBordes

**BIOL 161.** Logic-gated multienzyme pathways circuit. S. Oh, J. Fu

**BIOL 162.** Withdrawn.

**BIOL 163.** Interrogating isoform-specific redox-sensing in kinase signaling. S. Parvez, M.J. Long, Y. Zhao, S. Surya, Y. Aye

**BIOL 164.** Structural impact of backbone thioamide substitutions in diverse protein systems. C.R. Walters, D. Szantai-Kis, T.M. Barrett, E.J. Petersson

**BIOL 165.** Co-engineering of gold nanoparticles and Cas9 protein for efficient genome editing. M. Ray, R. Mout, A. Klimova, G. Yesilbag Tonga, V.M. Rotello

**BIOL 166.** Effect of methylene blue on the lipidomic fatty acid profile of mouse model Alzheimer's Disease: A possible predictive biomarker. D.V. Liskin, N.A. L'Italien, M. Tardif, R.E. Coltharp, B. Smith, L.S. Webb, D. Mitrano

**BIOL 167.** Variable backbone configurations generate the geometrical diversity in phage peptide libraries. F. Uchiyama, M. Ogata

**BIOL 168.** Investigation of the light disinfection of multidrug-resistant microorganisms. Q. Chang, B. Zhong, N. Zhan, N. Wong, K. Yeung

**BIOL 169.** Study of the virucidal activity and mechanism of a multilevel antimicrobial coating. Q. Chang, B. Zhong, H. Leung, J. Kwan, K. Yeung

The use of any device to capture images (e.g., cameras and camera phones) or sound (e.g., tape and digital recorders) or to stream, upload or rebroadcast speakers or presentations is strictly prohibited at all official ACS meetings and events without express written consent from ACS.

- BIOL 170.** Investigating the role of a conserved glutamic acid in yeast cytochrome c heme lyase (CCHL) for the biogenesis of cytochrome c. A. Rimal, M. Junker, C. Sanders
- BIOL 171.** Novel small-molecule modulators of the vacuolar ATPase. Y. Chen, C. Zhang
- BIOL 172.** DNA nanostructures for mediated drug release of minocycline. G. Stankeviciute, A. Pereira, Z. Wang, Y. Zhong, J. Fu
- BIOL 173.** Thermal stabilities of red fluorescent protein and calmodulin in the presence of aqueous ionic liquids. K.L. Borrell, M.D. Holmes, M. Costello, G.A. Caputo, T.D. Vaden
- BIOL 174.** Chromatin structure and dynamics alter lysine acetyltransferase specificity. Y. Kuo, R. Henry, A. Andrews
- BIOL 175.** Site-specific conjugation of an albumin-binding ligand to a protein for the prolonged serum half-life in vivo. J. Cho, S. Lim, I. Kwon
- BIOL 176.** Solution phase study of alternate aromatic groups in TrpZip peptides: effects on folding stability. A. Rylaarsdam, D.A. Vander Griend
- BIOL 177.** Involvement of lipids in cellular proliferation in MCF-7 breast cancer cells. I.T. Sakallioğlu, J. Danes, J. Fraso, G. Atilla-Gokumen
- BIOL 178.** Synthesis of backbone branched RNA and the biochemical investigation of lariat debranching enzyme. S. Mack, S.K. Dey, S.R. Das
- BIOL 179.** Phosphorothioate and phosphorodithioate substitutions suggest inner sphere coordination of non-bridging oxygen atoms plays an important role in Ca<sup>2+</sup> catalyzed RNA phosphodiester cleavage. S. Yasin, K. Messina, A.G. Cassano
- BIOL 180.** Mechanism of action of RNR inhibition by halogenated nucleotide anticancer agents. S. Wisitpitthaya, Y. Zhao, M. Li, E. Fletcher, W. Blessing, R. Weiss, Y. Aye
- BIOL 181.** DNA crowding effects on the activity and stability of enzymes. J. Collins, G. Disalvo, S. Oh, J. Fu
- BIOL 182.** Investigation of the binding affinity and translation inhibition capacity of hetero-multinuclear complexes. S.S. Jain, C.M. Anderson, H. Hoang, M. Breshears
- BIOL 183.** Antiproliferative effect of nanoparticles (-)-epicatechin - chitosan in breast cancer cells. A. Perez Ruiz, Y. Osorio Cruz, J. Martinez Santiago, I.M. Olivares Corichi, F.A. Ganem Rondero, J.R. Garcia Sánchez
- BIOL 184.** Dynamic solvation of protein cavities underlies TRPV1 gating. M. Kasimova, V. Carnevale, M.L. Klein
- BIOL 185.** Investigating the trimethylamine N-oxide (TMAO) induced structure of  $\alpha$ -synuclein. J.J. Ferrie, B. Pan, J. Yoon, R.F. Wissner, E.J. Petersson
- BIOL 186.** Electro-thermal mixing for increasing the efficiency of ELISA based diagnostic platforms. E. Yasun, R. Abolhosn, N. Clarke, I. Mezic
- BIOL 187.** Investigating the mechanism of DXP synthase. A. DeColli, K.L. Heflin, C.L. Freil Meyers
- BIOL 188.** Withdrawn.
- BIOL 189.** Inhibition testing of the metallo-beta-lactamase (Blaz2) found in antibiotic resistant *Bacillus anthracis*. M. Demuth, S. Kim
- BIOL 190.** Ultrasensitive impedimetric aptasensor-based detection of soluble Interleukin-5 receptor alpha. H. Youn, J. Her, H. Jo, J. Park, J. Jeong, K. Lee, J. Park, C. Kim, C. Ban
- BIOL 191.** Development of highly sensitive detection system for troponin I using aptamers. J. Park, H. Jo, J. Her, H. Youn, K. Lee, J. Jeong, J. Park, C. Kim, C. Ban
- BIOL 192.** Ubiquitination of proliferating cell nuclear antigen and its role in DNA damage response. P. Gong, K. Yang, Z. Zhuang
- BIOL 193.** Structural characterization of K6/K63-linked non-canonical ubiquitin chains using NMR. M. Miller, D. Fushman
- BIOL 194.** Deviations from canonical polyketide synthesis: Bryostatins biosynthesis. S. Slocum, J.L. Smith, D.H. Sherman
- BIOL 195.** Novel methods for detecting deamination and analyzing human PAD substrate preferences in vitro. A. Remillard, T. Dao, C.A. Castaneda
- BIOL 196.** Formation of dinitrogen trioxide from nitric oxide promoted by rare earth salicylates. C. Zhou, Y. Liu, Y. Li
- BIOL 197.** Structural basis for the strict substrate selectivity of the mycobacterial hydrolase LipW. R. Johnson, M. McKary
- BIOL 198.** Manipulating catalytic activity of HIF hydroxylases to control the hypoxic response. V.D. Chaplin, M. Knapp
- BIOL 199.** Insights into the allosteric inhibition of Ubc9, the SUMO E2 enzyme. W.M. Hewitt, G. Lountos, K. Zlotkowski, S. Dahlhauser, L.B. Saunders, D. Needle, J.E. Tropea, C. Zhan, G. Wei, B. Ma, R. Nussinov, D.S. Waugh, J. Schneekloth
- BIOL 200.** Nicotinic acid adenine dinucleotide (NAADP) analogs substituted on the nicotinic acid and adenine. Clickable photoaffinity probes for NAADP binding proteins. J. Slama, T.Y. Asfaha, C.J. Trabbic, T.F. Walseth
- BIOL 201.** Characterization of the putative bilin lyase MpeY from *Synechococcus* RS9916. A. Nguyen, J. Sanfilippo, D. Kehoe, J. Karty, W. Schluchter
- BIOL 202.** Methods development: Growth media comparison to show the influence of media on the metabolic profile of pancreatic cancer cells. T. Chihanga
- BIOL 203.** Site specific paramagnetic NMR probe to study in vivo RNA-protein binding. M. Royzen, L. Seebald
- BIOL 204.** Arm wrestling between soil denitrifying genes and antibiotic resistant genes under enforced anaerobic denitrification condition. S. Mingming, Y. Mao, A. Schwab, L. Kuan, T. Da
- BIOL 205.** New insight into the protein denaturing mechanism of methylated urea. B. Ding, M. Hilaire, J. Chen, B. Markiewicz, F. Gai
- BIOL 206.** Detecting renal cell carcinoma utilizing Vitamin B<sub>12</sub>. J.L. Workinger, A.N. Kuda-Wedagedara, N.T. Viola-Villegas, R. Doyle
- BIOL 207.** Novel approaches to study the interfacial enzymatic activity of cellulase: From the topographical standpoint. W. Du, J. Xi
- BIOL 208.** Concentration of membrane proteins without concentrating detergents. H.M. Feroz, C. Vandervelden, B. Ikwuagwu, B. Ferlez, C. Baker, D. Lugar, M. Grzelakowski, A.L. Zydney, M. Kumar
- BIOL 209.** Synthesis, physical characterization and biological activity of cobalt(II) Schiff base complexes. R.O. Shaibu
- BIOL 210.** Variant-specific and reciprocal Hsp40 functions in Hsp104-mediated prion elimination: A potential role for 'anti-prion DnaJ'(Apj1). J.K. Hines, Z. Sporn, M. Astor, E. Kamiya
- BIOL 211.** Characterizing the primary structure and conformational features of a cholesterol recognition amino acid consensus (CRAC) motif required for cholesterol binding. E. Koufos, A.C. Brown
- BIOL 212.** Cross-metathesis-based synthesis provides a CBS (Cystathionine  $\beta$ -Synthase) inhibitor that attenuates cellular H<sub>2</sub>S levels and reduces neuronal infarction in a rat ischemic stroke model. C.D. McCune, S. Chan, M.L. Beio, W. Shen, W. Chung, L.M. Szczesniak, C. Chai, S. Koh, P.T. Wong, D.B. Berkowitz
- BIOL 213.** Modulation of PEA-15 binding specificity by phosphorylation and possible roles of charge-triad residues in mediating conformational changes. V. Leon, C. Wright, Y. Wei
- BIOL 214.** Characterization of polycationic resurfaced, cell-penetrating nanobodies as a potentially general scaffold for intracellularly targeted protein discovery. V.J. Bruce, B. McNaughton, M. Lopez-Islas
- BIOL 215.** Development of vibrioferrin-based probe for detection of vibrio species. P.C. Chen, T.A. Wang
- BIOL 216.** Facile and versatile chemo-enzymatic synthesis of enterobactin analogues and their applications in bacterial detection. A.A. Lee, T.A. Wang
- BIOL 217.** Utility of differential scanning calorimetry (DSC) analysis of human serum albumin (HSA) as a diagnostic tool. F. Manyanga
- BIOL 218.** Colorimetric assay method for rapid selection of  $\omega$ -transaminase mutants displaying improved activities for ketones. S. Han, J. Shin
- BIOL 219.** Development of new aptamers for specific diagnosis of HER2 positive breast cancer. J. Her, H. Jo, H. Youn, J. Jeong, J. Park, K. Lee, J. Park, C. Kim, C. Ban
- BIOL 220.** Radical-mediated inactivation of glycerol dehydratase. E. Park, J. Shin
- BIOL 221.** Study of nucleoside degrading enzyme activities in bean, organic bean, okra, organic okra, squash and organic squash. S. Ai
- BIOL 222.** Harnessing the reactivity of selenocysteine for expressed protein ligation. J. Liu, Q. Chen, S. Rozovsky
- BIOL 223.** Computational design of two-dimensional biomolecular assembly on a pristine graphene. Y. No, N. Kim, K. Eom, Y. Kim
- BIOL 224.** Markov state models capture DNA dynamical substates in p53 binding site recognition. K. Thayer
- BIOL 225.** Modular construction and biological evaluation of homogeneous immunofluorescent conjugates. C. Martin, N. Joubert, G. Brachet, C. Esnault, E. Allard-Vannier, L. Lajoie, V. Guilleux-Gruart, M. Viaud-Massuard
- BIOL 226.** Isolation of novel immunostimulatory bacterial cell wall fragments utilizing peptidoglycan O-acetyltransferase B (PatB). Y. Wang, K. Lazor, K. DeMeester, C. Hou, C.L. Grimes
- BIOL 227.** QM/MM modeling and activity profiles and mutagenesis studies of the human musk olfactory receptor OR5AN1. L. Ahmed, Y. Zhang, S. Sekharan, M. Ozbil, Y. Pan, S. Gundala, E. Block, H. Matsunami, H. Zhuang, V.S. Batista
- BIOL 228.** Cloning, expression and characterization of an  $\alpha$ -L-rhamnosidase from *Aspergillus tubingensis*. H. Ni, F. Chen
- BIOL 229.** Development of efficient carbonic anhydrase activators for memory impairments. M.A. Ilies, R.K. Sanku, B. Draghici, U.K. Mondal, E.A. Walker, C.T. Supuran
- BIOL 230.** Intracellular changes in nicotinic acetylcholine receptors in response to ligand exposure: A single molecule approach. A.M. Lee, H. Everson, F. Moonschi, C.I. Richards
- BIOL 231.** Distinguishing profile of phytohormone expression associated with abscission of HLB-affected sweet orange fruit revealed by RNA-sequencing analysis. W. Zhao, E. Baldwin, J. Bai, A. Plotto, M. Irey
- BIOL 232.** 2E-alkanal suppression of the enzyme tyrosinase. A. Murray, H. Satooka, K. Shimizu, W. Chavasi, I. Kubo
- BIOL 233.** Substrate specificity of FUT8 and chemoenzymatic synthesis of core-fucosylated asymmetric N-glycans. A.D. Calderon Molina

## WEDNESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 103A

### Ronald Breslow Award for Achievement in Biomimetic Chemistry: Symposium in honor of Thomas W. Muir

T. W. Muir, *Organizer, Presiding*

#### 9:00 Introductory Remarks.

**9:05 BIOL 234.** Chemistry and biology of lyteptides, a new family of macrocyclic peptides containing a lysine-tryptophan cross. M.R. Seyedsayamdost

**9:40 BIOL 235.** Cross-talk between chromatin reader and eraser domains in histone demethylases. D.G. Fujimori

**10:15 BIOL 236.** Semi-synthetic proteins for studying the misfolding of alpha-synuclein in Parkinson's Disease. E.J. Petersson

**10:50 BIOL 237.** Award Address (Ronald Breslow Award for Achievement in Biomimetic Chemistry sponsored by the Ronald Breslow Award Endowment). Houdini proteins: Discovery and applications of ultrafast inteins. T.W. Muir

### Single-Cell Assays: Honoring ACS Analytical Division Chemical Instrumentation Awardee Nancy Allbritton

Sponsored by ANYL, Cosponsored by BIOL

### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS

## WEDNESDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 103A

## Young Investigators in Biological Chemistry

V. Bandarian, *Organizer*

K. L. Johnson-Winters, *Presiding*

**1:30 BIOL 238.** DNA base modification 8-oxo-7,8-dihydroguanine in a gene promoter regulates transcription. A.M. Fleming, Y. Ding, C.J. Burrows

**1:50 BIOL 239.** Targeting structured RNA and DNA with druglike small molecules. J. Schneckloth

**2:10 BIOL 240.** New metal-dependent RNA-cleaving DNAszymes. J. Liu

**2:30 BIOL 241.** Short peptide nucleic acid-IGF1 tetrapeptides enable specific microRNA blockade in triple negative breast cancer cells without passenger strand side effects. Y. Jin, C. Chen, E. Wickstrom

**2:50** Intermission.

**3:00 BIOL 242.** DNA nanostructure-scaffolded assembly of multi-enzyme complexes. J. Fu

**3:20 BIOL 243.** Structural insight into IF1-initiated translation initiation in *Pseudomonas aeruginosa*. Y. Zhang

**3:40 BIOL 244.** Rapid 4D FRET analysis of Riboswitch-ligand interactions: A new approach towards RNA-targeted drug discovery. N.J. Baird, J. Inglesse, A.R. Ferré-D'Amaré

**4:00 BIOL 245.** Combined computational and experimental study to understand bax H9 dimer for apoptosis. J. Li

## Section B

Pennsylvania Convention Center  
Room 103B

## Protein Engineering &amp; Design

I. Ghosh, *Organizer, Presiding*

**2:00** Introductory Remarks.

**2:05 BIOL 246.** Protein engineering approaches to dissect protein phosphorylation. I. Ghosh

**2:40 BIOL 247.** Exploring protein stability at the periphery: defects, surfaces and loops. T.J. Magliery

**3:15 BIOL 248.** Cysteine arylation enables production of abiotic peptides and proteins. B.L. Pentelute

**3:50 BIOL 249.** Directed evolution of non-native host-guest systems. B. Xu, X. Zhou, C.I. Stains

**4:25 BIOL 250.** PROTACS: Induced protein degradation as a therapeutic strategy. C.M. Crews

## Impacts of Nanotechnology &amp; Single Molecule Spectroscopy in Biology &amp; Medicine

*Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS*

## THURSDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 103A

## Graduate Student &amp; Postdoctoral Symposium

V. Bandarian, *Organizer*

A. Andrews, *Presiding*

**9:00 BIOL 251.** Ordered DNA fragmentation using soft lithography and amplification for next generation sequencing. N. Cho, S. Goodwin

**9:15 BIOL 252.** Self-assembling enzyme immobilization onto *E. Coli curli* nanofibers for catalytic biofilms. M.G. Nussbaumer, Z. Botyanski, P.K. Tay, P.Q. Nguyen, N.S. Joshi

**9:30 BIOL 253.** Electrochemical mechanisms and application for advanced biomedical sensing based on nanowell array structure. J. Lee, S. Shin, A. Busnaina, A. Khademhosseini, H. Lee

**9:45 BIOL 254.** Second-generation mRNA isolation from single cells for transcriptome in vivo analysis (TIVA). S. Yeldell, T.L. Rapp, I.J. Dmochowski

**10:00 BIOL 255.** Single cell analysis of the intracytoplasmic membranes of methanotrophs via fluorescence microscopy. K. Whiddon, M. Haddad, T. Hammer, D. West, X. Ortiz, M. Konopka

**10:15 BIOL 256.** Site-specific peptide-based assembly of nanoparticle superstructures with electrocatalytic activity. Y. Ko, Y. Kim, Y. Kim

**10:30 BIOL 257.** Development of 'clickable' fluorescent sensors for targeted Mg<sup>2+</sup> detection in cellular organelles. J.J. Gruskos, G. Zhang, D. Buccella

**10:45** Intermission.

**10:55 BIOL 258.** Detection of DT-diaphorase enzyme with cataly-CEST MRI. I. Daryaei, M. Pagel

**11:10 BIOL 259.** Enzymatic lactate sensor fabricated by directed assembly of carbon nanotube. H. Jeong, J. Lee

**11:25 BIOL 260.** Targeting RRE IIB RNA with functionalizing branched peptides: Unnatural amino acid series. Y. Dai, A. Peralta, J. Wynn, C. Sherpa, S. Le Grice, W. Santos

**11:40 BIOL 261.** Synthesis of 9-substituted triptycene scaffold for rapid solid-phase diversification and three-way junction targeting. I. Yoon, S. Suh, S. Barros, D.M. Chenoweth

**11:55 BIOL 262.** Application of SPR in GAG-protein interaction analysis. F. Zhang

**12:10 BIOL 263.** Supramolecular regulation of bioorthogonal catalysis in cells using nanoparticle-embedded transition metal catalysts. G. Yesilbag Tonga, Y. Jeong, B. Duncan, T. Mizuhara, R. Mout, R. Das, S. Kim, Y. Yeh, B. Yan, S. Hou, V.M. Rotello

## BMGT

## Division of Business Development and Management

D. Daly, *Program Chair*

## OTHER SYMPOSIA OF INTEREST:

**Fracking: Economics vs Environment** (see *PRES*, Mon)

**Addressing the Facts Behind the Fear of Exposure to Chemicals that Threaten Human Reproduction** (see *MPPG*, Tue)

## SOCIAL EVENTS:

**Whalen Award Reception**, 5:00 PM: Mon

## MONDAY MORNING

## Fracking: Economics vs Environment

*Sponsored by PRES, Cosponsored by BMGT†*

## MONDAY AFTERNOON

## Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?

*Sponsored by ANYL, Cosponsored by BIOL, BMGT, CHED, CINF, MEDI, PMSE and SCHB*

## Industrial Innovations in Polymer Chemistry: The Interface between Inorganic Chemistry &amp; Polymer Science

*Sponsored by POLY, Cosponsored by BMGT and INOR*

## TUESDAY MORNING

## Addressing the Facts Behind the Fear of Exposure to Chemicals that Threaten Human Reproduction

*Sponsored by MPPG, Cosponsored by BMGT*

## Connectivity &amp; the Global Reach of Chemistry: Honoring the Life &amp; Scientific Contributions of Ernest L. Eliel

*Sponsored by ORGN, Cosponsored by BMGT, CHED, CINF, HIST, INOR, PMSE and SCHB*

## TUESDAY AFTERNOON

## Women in Innovation: Science Policy &amp; Government

*Sponsored by PROF, Cosponsored by BMGT, SCHB‡ and WCC*

## CATL

## Division of Catalysis Science and Technology

K. Ramasamy, *Program Chair*

## OTHER SYMPOSIA OF INTEREST:

**Mesoporous Zeolites** (see *ENFL*, Wed, Thu)

**Heterogeneous Catalysis for Selective Oxidation & Reduction toward a Green Production** (see *ENFL*, Wed, Thu)

**Novel Nanomaterials** (see *ENFL*, Sun, Mon, Tue, Wed, Thu)

**Green Chemistry Innovations & Opportunities in Industry for Young Professionals** (see *I&EC*, Tue)

**Inorganic Catalysts** (see *INOR*, Sun)

**Organometallic Chemistry: Catalysis** (see *INOR*, Sun)

## BUSINESS MEETINGS:

**Business Meeting**, 5:30 PM: Mon

## SUNDAY MORNING

## Section A

Sonesta Philadelphia Downtown  
Wyeth Gallery A

## Symposium in honor of Israel E. Wachs: Celebrating Three Decades in Academia

J. Baltrusaitis, *Organizer*

M. A. Banares, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:40 CATL 1.** Operando study of the Cs and Re promoted supported Ag catalysts under ethylene oxidation to ethylene oxide reaction. J. Jehng, P. Dzisah, C. Verrier, I.E. Wachs

**9:05 CATL 2.** Operando molecular spectroscopy during catalytic biomass pyrolysis. C. Keturakis, O.B. Lapina, V.V. Terskikh, I.E. Wachs

**9:30 CATL 3.** Fundamental studies of bulk metal oxides for furfuryl alcohol dehydration: Surface area and loading effect. T. Kim, X. Chan

**9:55** Intermission.

**10:10 CATL 4.** Ceria supported FeOx and CoOx catalysts for NOx reduction: Monolayers matter. C.A. Roberts, T.C. Peck, K. Gunugunuri, C. Ling, H. Jia

**10:35 CATL 5.** In situ characterization of porous VPO catalysts with fibrous structure: Identifying the redox behavior and the stability of active sites. M. Guerrero-Perez, R. Berenguer, J. Fornells, J. Rodriguez-Mirasol, T. Cordero, M.E. Ford, I.E. Wachs

**11:00 CATL 6.** Anatomy of a visible light activated photocatalyst for splitting of water. S.P. Phivilay, C.A. Roberts, A. Gamalski, E. Stach, S. Zhang, L. Nguyen, A. Xiong, A. Puzetzy, F. Tao, K. Domen, I.E. Wachs

**11:25 CATL 7.** Transient IR spectroscopy from the second to millisecond timescale. G. Mul, M. Kreutzer



**Section B**

Sonesta Philadelphia Downtown  
Homer

**Low Temperature Catalysis**

*Cosponsored by ENFL and MPPG*

A. J. Karkamkar, A. B. Padmaperuma,  
*Organizers, Presiding*

**8:30 CATL 8.** Computational modeling of electrochemical bio-oil upgrading. D.C. Cantu, Y. Yoon, M.T. Nguyen, Y. Wang, A.B. Padmaperuma, M.A. Lilga, V. Glezakou, R. Rousseau

**9:00 CATL 9.** Electrochemical reduction of pyrolysis oils. A.B. Padmaperuma, M.A. Lilga

**9:20 CATL 10.** Conversion of lignocellulosic biomass to hydrocarbon fuels. M.A. Lilga

**9:40 CATL 11.** Batch vs fixed bed reaction kinetics for the selective hydrogenation of 1,4-butanediol to 1,4-butanediol. S.K. Tanielyan, S. More, R.L. Augustine, S. Schmidt

**10:00 CATL 12.** Design of silica-based hybrid catalysts and their application in alkane oxidation. M. Yadav, A.J. Karkamkar

**10:20** Intermission.

**10:30 CATL 13.** Insight toward the photocatalytic activity of S doped 1-D TiO<sub>2</sub> nanorods prepared via novel route: As promising platform for environmental leap. S. Abu Bakar

**10:50 CATL 14.** Mesoporous titanium dioxide nanofibers with significantly enhanced photocatalytic activity. M. Ghosh, S.C. Jana, M. Lohrasbi, S. Chuang

**11:10 CATL 15.** Preparation of metal nanoparticles loaded on activated carbon: Interaction and methodology characterization. S. Al-Hammadi, T.A. Saleh

**11:30 CATL 16.** Highly efficient visible light photocatalysis for hydrogen production. Y.H. Hu

**12:00 CATL 17.** High performance gold based catalysts and its application as a low cost fuel cell catalyst. C.I. Oseghale, P. Hall

**Section C**

Sonesta Philadelphia Downtown  
Whistler B

**Mixed Oxide Catalysis**

V. Lebarbier, K. K. Ramasamy, *Organizers*

J. Sun, Z. Wu, *Organizers, Presiding*

**8:30 CATL 18.** Adsorption and catalytic decomposition of dimethyl methylphosphonate on metal oxide surfaces. K. Huynh, J. Hu, W. Gibbons, S.M. Holdren, M.R. Zachariah, B.W. Eichhorn, A. Head, L. Trotochaud, H. Bluhm

## Technical program information known at press time.

The official technical program

for the 252nd ACS National

Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

†Cooperative Cosponsorship

**8:50 CATL 19.** Synthesis and characterization of doped mesoporous W-FDU-12 with large pores: An enhanced catalyst for metathesis of ethene and 1-butene to propene. H. Yin, W. Xu, S. Zhou, H. Yu

**9:10 CATL 20.** Manganese-containing redox catalysts for oxidative dehydrogenation of ethane under a cyclic redox scheme. S.M. Yusuf, L. Neal, J.A. Sofranko, F. Li

**9:30 CATL 21.** Enhanced water oxidation by nickel intercalated birnessite. A.C. Thenuwara, E. Cerkez, S. Shumlas, N.H. Attanayake, I. McKendry, L. Frazier, Q. Kang, E. Borguet, R. Remsing, M.L. Klein, M. Zdilla, D.R. Strongin

**9:50** Intermission.

**10:10 CATL 22.** Activation of the carbon-hydrogen bond by oxides and halides. H. Metiu

**10:50 CATL 23.** Thermally-stable, supported metal catalysts via cation exsolution from mixed perovskite oxides. T. Oh, R.J. Gorte, J.M. Vohs

**11:30 CATL 24.** Hybrid oxide catalyst of manganese and cobalt for low-pressure methanol synthesis: A mechanistic study using time-resolved product analysis of the initial steps of the reaction. G. Melaeat, W. Ralston, W. Liu, G.A. Somorjai

**11:50 CATL 25.** Novel pretreatment for supported rhenium oxide catalyst in olefin metathesis for propylene production. B. Khemthong, M. Namkajorn, W. Phongsawat, K. Suriye, N. Srirat

**Section D**

Sonesta Philadelphia Downtown  
Wyeth Gallery B

**Small Molecules Activated by Homogeneous Metal Catalysts**

*Cosponsored by ENFL and MPPG*

B. Arndtsen, *Organizer, Presiding*

**8:30 CATL 26.** Withdrawn.

**8:50 CATL 27.** Tuning the catalytic active site of Re(I) polypyridyl catalysts for CO<sub>2</sub> reduction. M.E. McKinnon, K. Ngo, J.J. Rochford

**9:10 CATL 28.** Catalytic asymmetric hydrogenation enabled by iron-ligand cooperation. R.H. Morris

**9:45 CATL 29.** Pincer supported iron complexes for the reversible hydrogenation of CO<sub>2</sub> to formic acid and methanol. N. Hazari, W.H. Bernskoetter

**10:20** Intermission.

**10:30 CATL 30.** New catalytic transformations initiated by heterolytic cleavage of dihydrogen. K. Nozaki

**11:05 CATL 31.** Hydrogenation of CO<sub>2</sub> using Cp\*Ir complexes with azole- and azoline-type ligands. Y. Himeda, N. Onishi, Y. Suna, Y. Manaka, M. Ertem, J.T. Muckerman, E. Fujita

**11:25 CATL 32.** Heterolytic activation of molecular hydrogen in solution and solid state: Implications for catalytic reduction of polar structures for energy storage. T. Autrey

**11:45 CATL 33.** Earth abundant transition metal catalysts for the upgrading of hydrocarbons. P.J. Chirik

**Biomass**

*Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG*

**SUNDAY AFTERNOON****Section A**

Sonesta Philadelphia Downtown  
Wyeth Gallery A

**Symposium in honor of Israel E. Wachs: Celebrating Three Decades in Academia**

*Financially supported by ExxonMobil*

M. A. Banares, *Organizer*

J. Baltrusaitis, *Organizer, Presiding*

**1:30 CATL 34.** Withdrawn.

**1:55 CATL 35.** Tackling active sites in supported vanadium oxide catalysts, which one is "operando" (working)? M.A. Banares, M. Daturi, P. Avila, M. Calatayud, M. Martinez-Huerta, A. Lewandowska, M. Guerrero-Perez, I.E. Wachs

**2:20 CATL 36.** Influence of catalyst synthesis method on selective catalytic reduction (SCR) of NO by NH<sub>3</sub> with V<sub>2</sub>O<sub>5</sub>-WO<sub>3</sub>/TiO<sub>2</sub> catalysts. Y. He, M.E. Ford, M. Zhu, U. Tumulari, Z. Wu, I.E. Wachs

**2:45 CATL 37.** Using V=O as label for spectroscopy during vanadium oxide based SCR catalyst development. S. Rasmussen

**3:10** Intermission.

**3:25 CATL 38.** Characterization of amorphous silica supported transition metal oxide catalysts and materials using DFT computational methods. F. Tielens

**3:50 CATL 39.** CH<sub>3</sub>OH oxidation over well-defined supported V<sub>2</sub>O<sub>5</sub> catalysts: The oxide support as a ligand. T. Kim, B.M. Moskowitz, I.E. Wachs

**4:10 CATL 40.** Binary and ternary supported metal oxide catalysts for propane activation: Synergistic effects, alkali promoters and highly thermal conductive materials to boost productivity toward propylene. C.A. Carrero

**4:35 CATL 41.** Promotion mechanisms of iron oxide-based high temperature-water gas shift (HT-WGS) catalysts by chromium and copper. M. Zhu, T. Rocha, A. Knop-Gericke, R. Schlögl, I.E. Wachs

**4:55 CATL 42.** Theoretical and experimental investigation of water gas shift (WGS) reaction over iron oxide catalysts. O. Yalcin, I. Onal, I.E. Wachs

**Section B**

Sonesta Philadelphia Downtown  
Homer

**Advanced Nanoscale Chemical Imaging of Catalyst Materials**

P. Bagot, R. Colby, A. Devaraj, *Organizers, Presiding*

**1:00 CATL 43.** Contributions to understanding catalysis by using atom probe tomography. J. Cairney, K. Eder, P. Felfel, A. Masters

**1:30 CATL 44.** In Situ/Operando soft X-ray spectroscopy of catalytic and electrochemical reactions. C. Wu, Y. Liu, P. Gians-Suzuki, J. Guo

**2:00 CATL 45.** Development of in situ atmospheric pressure STEM-EDS and its application to understanding the formation of PdCu bimetallic catalysts. M.A. Kulzick, E. Prestat, P.J. Dietrich, E. Doskocil, S.J. Haigh, A. Janssen, M.G. Burke, N. Zaluzec

**2:25 CATL 46.** Advanced atom probe tomography techniques for the characterization of catalyst nanomaterials. M.P. Moody, Q. Yang, T.L. Martin, A. Lamich-Humbolt, A. Mamede, E. Marceau, P. Bagot

**2:50** Intermission.

**3:05 CATL 47.** Towards atomic level understanding of transition aluminas structures and surfaces. L. Kovarik, M.E. Bowden, A. Andersen, N.M. Washton, D. Shi, J. Hu, J. Szanyi, C.H. Peden, J. Kwak

**3:30 CATL 48.** Atom probe tomography and correlative techniques to study nanostructured materials for sustainable catalysis. C. Barroo, A.J. Akey, A.P. Magyar, B. Zugic, J. Shan, N. Janvelyan, M. Flytzani-Stephanopoulos, J. Biener, C.M. Friend, D.C. Bell

**3:55 CATL 49.** Studying structural evolution of working catalysts with correlated X-ray and electron probes. Y. Li, S. Zhao, R.G. Nuzzo, E. Stach, A. Frenkel

**4:20 CATL 50.** General approach to M/Au (M = Fe, Cu) core/shell and Ni/Au core/satellite nanoparticles. X. Liu, G. Lu, S. Dai, H. Zhu

**4:40 CATL 51.** Nanoscale compositional mapping of carbonaceous molecules in spent HZSM-5 after ethanol conversion treatment. A. Devaraj, M. Guo, M. Derewinski, V. Murugesan, G. Michel, K.K. Ramasamy

**Section C**

Sonesta Philadelphia Downtown  
Whistler B

**Mixed Oxide Catalysis**

J. Sun, Z. Wu, *Organizers*

V. Lebarbier, K. K. Ramasamy, *Organizers, Presiding*

**1:30 CATL 52.** Conversion of oxygenates on early transition metal oxides. Y. Wang

**2:10 CATL 53.** Catalysis by bulk mixed oxides. I.E. Wachs

**2:50 CATL 54.** Integrated process for the catalytic conversion of biomass-derived syngas into transportation fuels. V. Lebarbier Dagle, C. Smith, M. Flake, K.O. Albrecht, G. Michel, K.K. Ramasamy, R. Dagle

**3:10** Intermission.

**3:30 CATL 55.** Identification of active sites responsible the conversion of phenolics over TiO<sub>2</sub> supported catalysts. S. Crossley

**4:10 CATL 56.** Mixed oxide catalyst in the conversion of ethanol to 1-butanol. K.K. Ramasamy, C. Alvarez-Vasco, H. Job, G. Michel

**4:30 CATL 57.** Formation of Ceria nanostructure on TiO<sub>2</sub> nanoparticles: In situ study of synthesis, reduction of ceria supported on TiO<sub>2</sub> and WGS reaction activity. S. Luo, S.D. Senanayake, N. Thuyduong, D. Vovchok, L. Barrio, A. Johnston-Peck, W. Xu, E. Stach, J. Rodriguez

**4:50 CATL 58.** Effect of oxygenated compound on activity of Re-based heterogeneous catalyst in olefin metathesis for propylene production. M. Namkajorn, W. Phongsawat, K. Suriye, B. Khemthong, N. Srirat

## Section D

Sonesta Philadelphia Downtown  
Wyeth Gallery B

## Small Molecules Activated by Homogeneous Metal Catalysts

Cosponsored by ENFL and MPPG

B. Arndtsen, Organizer, Presiding

**1:30 CATL 59.** N-N and C-H bond cleavage by low-coordinate iron complexes. P.L. Holland, K.C. MacLeod, S.F. McWilliams, B.Q. Mercado

**2:05 CATL 60.** Synthesis of copper based metal organic frameworks at nanoscale as an efficient aerobic benzylic oxidation catalyst. Y. Qi

**2:25 CATL 61.** Radical C-H activation/oxidative coupling. A. Lei

**3:00 CATL 62.** Development of a catalytic system for the hydroarylation of acetylene: From stoichiometric steps to an efficient catalytic reaction using dicationic palladium and platinum complexes. C. Hahn

**3:20 CATL 63.** Development of new carbonylation procedures. X. Wu

**3:55** Intermission.

**4:05 CATL 64.** Recent advances in palladium-catalyzed carbonylations. T. Skrydstrup

**4:40 CATL 65.** CO adsorption onto gold nanoparticles supported on thin film substrates. W. McKee, M. Patterson, D. Huang, L. Liu, R. Kurtz, P. Sprunger, Y. Xu

**5:00 CATL 66.** Metal catalyzed carbonylation routes to electrophilic reagents and tandem catalytic reactions. B. Arndtsen

## Novel Nanomaterials

## Advanced Electrocatalysts

Sponsored by ENFL, Cosponsored by CATL and ENVR

## Biomass

Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG

## MONDAY MORNING

## Section A

Sonesta Philadelphia Downtown  
Wyeth Gallery A

## Symposium in honor of Israel E. Wachs: Celebrating Three Decades in Academia

J. Baltusaitis, M. A. Banares, Organizers

G. Deo, Presiding

**8:30 CATL 67.** Steps towards understanding the improved activity of some Ni-based bimetallic catalysts. K. Ray, A. Sandupatta, S.R. Biswal, G. Deo

**8:55 CATL 68.** Ethylene polymerization by supported  $\text{CrO}_x/\text{SiO}_2$  catalysts: Active sites, surface intermediates and structure-activity relationship. A. Chakrabarti, I.E. Wachs

**9:15 CATL 69.** Synthesis, in situ, and operando characterization of transition metal ion-incorporated mesoporous silica catalysts and their super catalytic performances for the selective oxidation of low alkanes to oxygenates and alkenes. Z. Zhao, Q. Liu, L. Kong, J. Li, J. Liu, Y. Wei

**9:40 CATL 70.** Developing XRD extrapolation method to quantify the lattice capacity for solid solutions. X. Xu, L. Li, Q. Sun, W. Liu, X. Wang

**10:05** Intermission.

**10:20 CATL 71.** Oxygen carrier development for chemical looping combustion: From atomic understanding to pilot-scale demonstration. H. Tian

**10:45 CATL 72.** Identification of two types of CO species on cobalt catalysts under Fischer-Tropsch reaction conditions. S.G. Podkolzin, T. Chen, J. Gao, Z. Chen, J. Robbins, Z. Tang, B.E. Koel

**11:10 CATL 73.** Understanding FCC gasoline sulfur reduction by low sulfur additives. X. Gao

## Section B

Sonesta Philadelphia Downtown  
Homer

## Computational Catalysis

R. Surendran Assary, Organizer

R. Assary, R. Parthasarathi, Presiding

**8:30** Introductory Remarks.

**8:35 CATL 74.** Generating active sites for olefin metathesis by grafting methyl-trioxo-rhenium on alumina: A view from DFT calculations. P. Sautet

**9:15 CATL 75.** Adsorption on metal nanoparticles: Effects from size, shape and chemical environment. G. Mpourmpakis

**9:45 CATL 76.** Finding new reaction mechanisms in the catalytic synthesis of molecules and materials. P.M. Zimmerman

**10:15** Intermission.

**10:25 CATL 77.** Catalytic properties of supported subnanometer clusters: A computational perspective. L.A. Curtiss

**11:05 CATL 78.** Sub-nano surface-deposited Pt cluster catalysts: Realistic modeling and tuning through the electronic structure insight. A. Alexandrova

**11:25 CATL 79.** Nanoparticle catalysts supported on substitutionally doped graphene: Effects on activity and stability for hydrogen oxidation. S.A. Giles, S. Caratzoulas, D.G. Vlachos, Y. Yan

**11:45 CATL 80.** Optimization of transition metal catalysts for the oxygen reduction reaction. M. Nunez, D.G. Vlachos

## Section C

Sonesta Philadelphia Downtown  
Hopper

## Catalysts &amp; Catalytic Technologies for Conversion of Biomass &amp; Its Derivatives

## Hydrolysis &amp; Chemical Conversion

Cosponsored by ENFL and MPPG

J. J. Bravo-Suarez, M. V. Olarte, F. Tao, H. Wang, Organizers, Presiding

**8:30** Introductory Remarks.

**8:35 CATL 81.** Thermochemical conversion of biomass to fuels/chemicals. Y. Wang

**9:15 CATL 82.** Acylation of furans in Bronsted and Lewis acidic zeolites: A DFT study. Z. Zhang, M. Koehle, R.F. Lobo, D.G. Vlachos, S. Caratzoulas

**9:35 CATL 83.** Effect of carbon support surface properties on the performance of Au catalysts in the oxidation of 5-hydroxymethylfurfural. B. Donoeva, P. de Jongh

**10:05 CATL 84.** One pot reductive etherification of 5-hydroxymethyl furfural to fuels using homogeneous metal salts. H. Nguyen, D.G. Vlachos

**10:25** Intermission.

**10:35 CATL 85.** Cascade engineered synthesis of  $\gamma$ -valerolactone, 1,4-pentanediol and 2-methyltetrahydrofuran from levulinic acid using novel Pd-Cu/ZrO<sub>2</sub> catalyst in water as solvent. S.C. Patankar, G. Yadav

**11:05 CATL 86.** Few-layer graphene-supported ruthenium catalysts for the conversion of levulinic acid to  $\gamma$ -valerolactone. C. Xiao, T. Goh, W. Huang

**11:25 CATL 87.** Aerobic oxidation of levulinic acid over supported vanadates for the production of maleic anhydride. J. Bond, A. Chatzidimitriou

**11:55** Concluding Remarks.

## Section D

Sonesta Philadelphia Downtown  
Wyeth Gallery B

## In Situ &amp; Operando Spectroscopy of Catalysts

Cosponsored by ENFL

J. J. Bravo-Suarez, F. Tao, Organizers, Presiding

**8:30** Introductory Remarks.

**8:35 CATL 88.** Operando studies of olefin hydrogenation reactions. J. Simonovis, Y. Dong, F. Zaera

**9:15 CATL 89.** In operando Raman studies of alcohol utilization on Sr<sub>2</sub>Fe<sub>1-x</sub>Mo<sub>0.5</sub>O<sub>6-x</sub> solid oxide fuel cell anodes. G. Bode, M. McIntyre, R.A. Walker, B. Eigenbrodt

**9:35 CATL 90.** From in situ spectroscopy to hyphenated operando methodologies and engineering, getting a grip on catalysis and catalytic processes. M.A. Banares

**10:05 CATL 91.** In situ infrared spectroscopy of propene adsorption and oxidation on nanoparticulate Au/TiO<sub>2</sub>. D. Driscoll, D. Panayotov, M.L. McEntee, S.P. Burrows, W. Tang, M. Neurock, J.R. Morris

**10:25** Intermission.

**10:35 CATL 92.** Structural dynamics and stability of supported metal nano-clusters. J. Yang

**11:15 CATL 93.** Operando characterization of catalytic cracking of n-dodecane over Pt-Sn bimetallic catalysts under supercritical condition; effect of Sn. S. Lee, S. Lee, D. Gerceker, M. Kumbhalkar, J.A. Dumesic, R.E. Winans

**11:35 CATL 94.** In situ studies of Ni-Ce-O catalysts for the reforming of ethanol and methane: Insights from TR-XRD, XANES and NAP-XPS. J. Rodriguez, Z. Liu, S.D. Senanayake, D. Grinter

## Novel Nanomaterials

## Advanced Nanomaterials &amp; Theoretical Calculation

Sponsored by ENFL, Cosponsored by CATL and ENVR

## Biomass

Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG

## MONDAY AFTERNOON

## Section A

Sonesta Philadelphia Downtown  
Wyeth Gallery A

## Symposium in honor of Israel E. Wachs: Celebrating Three Decades in Academia

J. Baltusaitis, M. A. Banares, Organizers

J. Jehng, Presiding

**1:30 CATL 95.** Ab initio modelling of mixed metal oxides interfaces: using hydrogen to probe catalytic sites. M. Calatayud

**1:55 CATL 96.** Evolving gold catalysts for water decontamination. M.S. Wong

**2:20 CATL 97.** Molecular recognition of an acyl-enzyme intermediate on the lipase B of *Candida antarctica*. M.V. Toledo, S. Collins, C.R. Llerena Suster, L.E. Briand

**2:45 CATL 98.** Bond valence-length relationships for carbon bonded to carbon, oxygen, and nitrogen. F.D. Hardcastle

**3:10** Intermission.

**3:25 CATL 99.** Development of Raman and IR spectroscopy as essential tools in monitoring catalytic processes under operando conditions. F. Adar

**3:50 CATL 100.** Simultaneous operando Raman and infrared monitoring of catalysts. M. Daturi, G. Clet, R. Portela, P. Bazin, M. Guerrero-Perez, M.A. Banares

**4:15 CATL 101.** Wachs group: Three decades of catalysis research in academia. I.E. Wachs

**5:00** Concluding Remarks.

## Section B

Sonesta Philadelphia Downtown  
Homer

## Computational Catalysis

R. Surendran Assary, Organizer

R. Assary, R. Parthasarathi, Presiding

**1:30** Introductory Remarks.

**1:35 CATL 102.** Modeling electrocatalysis of the CO<sub>2</sub> reduction reaction for artificial light harvesting using electronic structure calculations. M.P. Head-Gordon, J. Goodpaster, M. Cheng, A.T. Bell

**2:15 CATL 103.** Carbon dioxide capture and conversion: Designing new materials from atomistic modeling. K. Johnson, J. Ye

**2:35 CATL 104.** CO<sub>2</sub> reactivity on the Ni(110) surface in the presence of subsurface hydrogen. W. Lin, K.M. Stocker, G.C. Schatz

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**2:55 CATL 105.** Computational design of Zr-decorated, Cu-based nanoparticles for CO<sub>2</sub> activation. N. Austin, G. Mpourmpakis  
**3:15** Intermission.

**3:25 CATL 106.** Improving the accuracy of the computational electrode: modeling the metal-electrolyte interface. K. Schwarz

**3:55 CATL 107.** Deoptimizing the oxygen reduction reaction on doped amorphous TiO<sub>2</sub> surfaces. M. Groenenboom, J.A. Keith

**4:15 CATL 108.** Structures of Au-Pd binary nanoalloy under reduced and oxidized conditions: An AIMD study. C. Xu, M. Lee, Y. Wang, V. Glezakou, J. Li, R. Rousseau

**4:35 CATL 109.** First principles quantum chemistry calculations to model CO<sub>2</sub> electroreduction on SnO<sub>2</sub> particles. Y. Basdogan, K. Saravanan, J.A. Keith

**4:55** Concluding Remarks.

## Section C

Sonesta Philadelphia Downtown  
Hopper

### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

#### Hydrolysis & Chemical Conversion

*Cosponsored by ENFL and MPPG*

J. J. Bravo-Suarez, M. V. Olarte, F. Tao, H. Wang, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 CATL 110.** Adsorption and catalytic depolymerization of long-chain glucan over post-synthetically modified zeolite-templated carbons. M. Yabushita, K. Techikawara, H. Kobayashi, A. Fukuoka, A.S. Katz

**1:35 CATL 111.** Investigation of sugar isomerization mechanisms on molecular zeolite catalysts. T. Josephson, S.K. Brand, M.E. Davis, D.G. Vlachos, S. Caratzoulas

**1:55 CATL 112.** Insights into the kinetics and mechanism of the base-catalyzed isomerization of glucose to fructose using homogeneous organocatalysts. J. Carraher, J. Tessonnier

**2:15 CATL 113.** Mechanistic study of the catalytic dehydration of methyl lactate leading to rational catalyst design. B.M. Murphy, M. Letterio, B. Xu

**2:35** Intermission.

**2:45 CATL 114.** Chemical hydrolysis of cellulose into fermentable sugars through ionic liquids and antisolvent pretreatments using heterogeneous catalysts. S. Morales-delaRosa, J. Campos-Martin, J. Fierro

**3:15 CATL 115.** Catalyst and process developments for upgrading biomass-derived C1 intermediates to high-octane gasoline and synthetic kerosene fuels. D.A. Ruddy, C.P. Nash, J. Hensley, J. Schaidle

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:  
[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

†Cooperative Cosponsorship

**3:35 CATL 116.** Computational insights into DMF conversion to p-xylene: Ethylene or ethanol? P. Kostetsky, I. Teixeira, M. Stamatakis, E. Tsang, G. Mpourmpakis

**3:55 CATL 117.** Withdrawn.

**4:15** Concluding Remarks.

## Section D

Sonesta Philadelphia Downtown  
Wyeth Gallery B

### In Situ & Operando Spectroscopy of Catalysts

*Cosponsored by ENFL*

J. J. Bravo-Suarez, F. Tao, *Organizers*

M. A. Banares, J. Yang, *Presiding*

**1:30** Introductory Remarks.

**1:35 CATL 118.** Shining synchrotron light on active species in the nanoscale. Q. Wang, A. Plonka, W.O. Gordon, D. Troya, J.R. Morris, C.L. Hill, S.D. Senanayake, A. Frenkel

**2:10 CATL 119.** Mechanistic insights on the electro-oxidation of alcohols on platinum catalyst using in situ sum-frequency generation spectroscopy. S. Dewan, D. Raciti, D.H. Gracias, C. Wang

**2:30 CATL 120.** Polarization-modulation infrared spectroscopy (PM-IRRAS): A surface science approach to interrogating catalytically relevant materials at elevated pressures. J. Kestell, D.J. Stacchiola, J. Sadowski, J.A. Boscoboinik

**2:50 CATL 121.** Cu-based catalysts in (reverse) water gas shift: Reaction dynamics studied by simultaneous in-situ UV-vis and mass spectrometry. Y. Bu, H. Niemantsverdriet, H. Fredriksson

**3:10** Intermission.

**3:20 CATL 122.** Probing the activity of oxide-supported Pt-Re bimetallic clusters. D.A. Chen, A. Duke, K. Xie, A. Brandt, T. Maddumapatabandi

**3:55 CATL 123.** Effect of water on acid sites of NaY: An in situ liquid phase spectroscopic study. N. Gould, B. Xu

**4:15 CATL 124.** In situ UV-visible diffuse reflectance spectroscopy for characterization of gold-metal oxide interactions. P.D. Srinivasan, S.S. Ho, J.J. Bravo-Suarez

**4:35 CATL 125.** Tuning catalytic performance through single or sequential post-synthesis reaction in gas phase. F. Tao, A. Frenkel

**4:55 CATL 126.** Understanding metal support interactions with dual in situ techniques: Sum frequency generation vibration spectroscopy and ambient pressure X-Ray photoelectron spectroscopy for catalytic processes. G. Kennedy

**5:15** Concluding Remarks.

## Novel Nanomaterials

### CO<sub>2</sub> Conversion & Other Applications

*Sponsored by ENFL, Cosponsored by CATL and ENVR*

#### Biomass

*Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG*

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

K. K. Ramasamy, *Organizer*

**8:00 - 10:00**

186-187, 191, 193, 196-197, 199, 202-204, 206, 209, 213, 217-219, 222, 225-226, 228, 230, 236-239, 242, 269, 273, 287, 293, 313, 317, 329, 332. See subsequent listings.

## TUESDAY MORNING

### Section A

Sonesta Philadelphia Downtown  
Wyeth Gallery A

### Catalysis in Automotive Emission Control

F. Gao, *Organizer, Presiding*

T. Toops, *Presiding*

**8:30** Introductory Remarks.

**8:35 CATL 127.** Progress in understanding and modeling of various catalyst deactivation mechanisms in exhaust emission control systems. A. Yezerets, N.W. Currier, K. Kamasamudram, J. Luo, S. Joshi, Y. Tang, A. Srinivasan, H. An, A. Kumar

**9:15 CATL 128.** Characterizing Cu-centers in the zeolite SSZ-13 under. F. Goeltl, A.M. Love, P. Sautet, I. Hermans

**9:40 CATL 129.** Iron loading effects in Fe/SSZ-13 NH<sub>3</sub>-SCR catalysts: Nature of the Fe-ions and structure-function relationships. Y. Wang, Y. Zheng, R.K. Kukkadapu, N.M. Washton, J. Szanyi, F. Gao, C.H. Peden

**10:05** Intermission.

**10:15 CATL 130.** Fundamental ageing studies of metal-exchanged zeolites for selective catalytic reduction of nitrogen oxides in oxygen excess. M. Skoglundh

**10:55 CATL 131.** Selective catalytic reduction of NO by NH<sub>3</sub> over Mn-Ce-ZSM-11 zeolite. P. Xie, C. Wang

**11:20 CATL 132.** Approaching rational design of Cu/CHA SCR catalysts. F. Gao, Y. Wang, J. Szanyi, C.H. Peden

### Section B

Sonesta Philadelphia Downtown  
Homer

### Computational Catalysis

R. Surendran Assary, *Organizer*

R. Assary, R. Parthasarathi, *Presiding*

**8:30** Introductory Remarks.

**8:35 CATL 133.** Interpreting exchange-correlation functional sensitivity in transition metal catalysis. H.J. Kulik, E. Ioannidis, Q. Zhao

**9:05 CATL 134.** Extending scaling relationships from surfaces to atoms. S.L. Pellizzeri, L.T. Monteith, P. Miro, R. Snurr, R. Getman

**9:35 CATL 135.** Optimizing catalytic surfaces of Earth-abundant metals for biomass conversion using the inverse molecular design approach. D. Xiao

**9:55** Intermission.

**10:05 CATL 136.** Dehydrogenation of isobutane over Cu/BEA catalysts. S. Kim, C.A. Farberow, D. Ruddy, S. Cheah, J. Hensley, J. Schaidle

**10:35 CATL 137.** On the stability and nature of adsorbed pentene in Brønsted acid zeolite H-ZSM-5. J. Hajek, J. Van der Mynsbrugge, K. De Wispelaele, P. Cnudde, M.E. Waroquier, V. Van Speybroeck

**10:55 CATL 138.** Diffusion of pyrolysis oxygenates in H-ZSM5. L. Bu, M.R. Nimlos, D. Robichaud, S. Kim

**11:15 CATL 139.** Exploring the nature of active sites for catalysis in UIO-66. J. Hajek, K. De Wispelaele, M.E. Waroquier, V. Van Speybroeck

### Section C

Sonesta Philadelphia Downtown  
Hopper

### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

#### Thermochemical Conversion & Upgrading

*Cosponsored by ENFL and MPPG*

J. J. Bravo-Suarez, M. V. Olarte, F. Tao, H. Wang, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 CATL 140.** Hydrogenation/hydrogenolysis of furfural utilizing non-precious mixed metal oxide catalysts. T.P. Sulmonetti, P.K. Agrawal, C.W. Jones

**9:15 CATL 141.** Primary pyrolysis products from cellulose, hemicellulose, and lignin: Precursors to catalytic conversion. B. Pecha, J. Montoya, F. Chejne, M. Garcia Perez

**9:35 CATL 142.** Tailoring ZSM-5 zeolites for the fast pyrolysis of biomass to aromatic hydrocarbons. T.C. Hoff, D.W. Gardner, R. Thilakarathne, K. Wang, T.W. Hansen, R.C. Brown, J. Tessonnier

**9:55 CATL 143.** Interfaced pyrolysis and honeycomb structured upgrading reactor for the production of high quality biofuels from corncobs. L. Mao, Y. Li, Z. Zhang

**10:15** Intermission.

**10:25 CATL 144.** Can a reliable bio-oil hydro-treatment catalyst be developed without clear understanding of bio-oil chemical nature? F. Stankovikj, M. Garcia Perez

**10:55 CATL 145.** Bio-oil hydrogenation for stabilization on reduced metal catalysts at low temperatures. H. Wang, S. Lee, M.V. Olarte, A. Zacher

**11:15 CATL 146.** Nickel phosphide and molybdenum carbide composite materials for biomass upgrading. Y.N. Regmi, S.C. Chmely, N. Labbé

**11:35 CATL 147.** Continuous production of hydrocarbon fuels from biomass pyrolysis oils with the less formation of cokes. A.A. Dwiatmoko, G. Kim, J. Ha, J. Choi, D. Suh, J. Jae, I. Kim

**11:55** Concluding Remarks.



## Section D

Sonesta Philadelphia Downtown  
Wyeth Gallery B

### <i>In Situ</i> & Operando Spectroscopy of Catalysts

Cosponsored by ENFL

J. J. Bravo-Suarez, F. Tao, *Organizers, Presiding*

D. A. Chen, *Presiding*

8:30 Introductory Remarks.

8:35 **CATL 148.** Understanding heterogeneous Lewis acid catalysis using ATR-IR modulation excitation spectroscopy. P. Mueller, P. Wolf, I. Hermans

9:05 **CATL 149.** Active site determination for CO oxidation on Al<sub>2</sub>O<sub>3</sub> supported Pt nanoparticle catalysts by in situ quantitative FTIR measurements. M. Kale, P. Christopher

9:25 **CATL 150.** Exploring reaction mechanisms of OCM and CO oxidation with in situ spectroscopies. W. Huang

9:55 **CATL 151.** In operando, heterogeneous electrocatalytic studies of lanthanum strontium manganite electrodes at high temperature. A. Geller, Y. Yu, E. Crumlin, H. Bluhm, B.W. Eichhorn

10:15 Intermission.

10:25 **CATL 152.** Zeolites and surface science: From UHV to elevated pressures. J.A. Boscoboinik

10:55 **CATL 153.** Dynamic nuclear polarization surface enhanced NMR spectroscopy (DNP-SENS) for highly sensitive surface organometallic chemistry (SOMC). E. Pump, A. Bendjeriu-Sedjerari, M. Samantaray, E. Abou-Hamad, J.M. Basset

11:15 **CATL 154.** Adsorbate-mediated strong metal-support interactions in oxide supported Rh catalysts. P. Christopher

11:35 **CATL 155.** Correlating single plasmonic nanospectroscopy and mass spectrometry. S. Liu, S. Alekseeva, C. Langhammer

11:55 **CATL 156.** ZnO (11-20) hydroxylation probed by ambient pressure X-ray photoelectron spectroscopy. S. Rani, A. Broderick, J.T. Newberg

12:15 Concluding Remarks.

## Novel Nanomaterials

## Biorelated

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### Computational Chemistry for Energy Application

Sponsored by ENFL, Cosponsored by CATL and MPPG

## TUESDAY AFTERNOON

## Section A

Sonesta Philadelphia Downtown  
Wyeth Gallery A

### Catalysis in Automotive Emission Control

F. Gao, *Organizer, Presiding*

T. Toops, *Presiding*

1:00 **CATL 157.** Pathways leading to N<sub>2</sub>O formation over Pt- and Rh-based lean NOx trap catalysts. L. Lietti

1:40 **CATL 158.** Metal oxide nano-ray based monolithic catalysts for low temperature emission control. S. Hoang, S. Wang, Z. Ren, W. Tang, S. Du, Y. Guo, P. Gao

2:05 **CATL 159.** Pd-based cold start catalyst for low temperature NO adsorption. Y. Ryou, J. Lee, H. Lee, C. Kim, D.H. Kim

2:30 Intermission.

2:40 **CATL 160.** Minimizing low temperature emissions through advances in metal oxide catalysts, supports and traps. T. Toops

3:05 **CATL 161.** Promotion of Ce-Zr mixed oxide with Pt and Pd for low-temperature NOx adsorption. Y. Ji, M. Crocker, J. Choi, D. Brookshear, J. Darab, D. Scapens, D. Harris

3:30 **CATL 162.** Preparation of Pd-based thin film LaFeO<sub>3</sub> by atomic layer deposition onto Al<sub>2</sub>O<sub>3</sub> support. T. Onn, R.J. Gorte

3:55 Concluding Remarks.

## Section B

Sonesta Philadelphia Downtown  
Homer

## Computational Catalysis

R. Surendran Assary, *Organizer*

R. Assary, R. Parthasarathi, *Presiding*

1:30 Introductory Remarks.

1:35 **CATL 163.** Toward efficient electrocatalysts for H<sub>2</sub> oxidation: Mechanistic insight from [FeFe] hydrogenase. N. Kumar, B. Ginovska-Pangovska, M. Bullock, S. Rauei

2:05 **CATL 164.** Efficient transition state finding for surface reactions with the growing string method. M. Jafari, P.M. Zimmerman

2:25 **CATL 165.** Study of depolymerization of lignin in IL. T. Dutta, R. Parthasarathi, N.G. Isern, J.R. Cort, B. Simmons, S. Singh

2:45 **CATL 166.** Synthesis and mechanistic study of a highly efficient catalyst for methanol oxidation to methyl formate. S. Li, Z. Liu, S. Wang, N. Li, R. Zhang, G. Zeng, Y. Sun

3:05 Intermission.

3:15 **CATL 167.** Impact of early-transition 3d metals incorporated into the palladium catalysts for the selective hydrogen production from formic acid. S. Lee, H. Ham

3:35 **CATL 168.** Effective coordination number as a reactivity descriptor for metal nanocatalysts. H. Xin, X. Ma, S. Wang

3:55 **CATL 169.** Isotope transient tracing of dimethyl ether on an alumina supported palladium catalyst. R.M. Supkowski, M. Otarod

4:15 **CATL 170.** Insights into the effect of  $\kappa$ -Ce<sub>2</sub>Zr<sub>2</sub>O<sub>8</sub>(111) in the ethylbenzene oxy-dehydrogenation with CO<sub>2</sub> to produce styrene. H. Fan, J. Feng, W. Li, T.S. Wiltowski, Q. Ge

## Section C

Sonesta Philadelphia Downtown  
Hopper

### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

#### Thermochemical Conversion & Upgrading

Cosponsored by ENFL and MPPG

J. J. Bravo-Suarez, M. V. Olarte, F. Tao, H. Wang, *Organizers, Presiding*

1:30 Introductory Remarks.

1:35 **CATL 171.** Influence of biomass derived co-adsorbates on furfural conversion over Ru/TiO<sub>2</sub>. S. Crossley

2:05 **CATL 172.** Mechanisms for high selectivity in hydrodeoxygenation of 5-hydroxymethylfurfural over PtCo nanocrystals. J. Luo, H. Yun, A. Mironenko, K. Goulas, J. Lee, M. Monai, C. Wang, V. Vorotnikov, C.B. Murray, D.G. Vlachos, P. Fornasiero, R.J. Gorte

2:25 **CATL 173.** Tuning kinetic regimes in hydrogenation and hydrogenolysis of furanics over Ru-based catalysts by oxidation state control. K. Goulas, T. Mazal, W. Zheng, A. Mironenko, D.G. Vlachos

2:45 **CATL 174.** On the reaction pathways and intermediates of selective ring opening of furanics by iridium. G.R. Jenness, W. Wan, K. Xiong, J.G. Chen, D.G. Vlachos

3:05 Intermission.

3:15 **CATL 175.** Upgrading of aqueous phase biomass catalytic pyrolysis oils using nickel catalyst. F.A. Agblevor, H. Jahrome, S.H. Beis, M. Balakrishna, E. Panisko, D. Howe, K.O. Albrecht

3:45 **CATL 176.** Mechanistic investigation of the ketonization of biomass-derived carboxylic acids under hydrothermal conditions over stable ZrO<sub>2</sub>-based catalysts. J.A. Lopez-Ruiz, A.R. Cooper, Q. Cai, D. Mei, K.O. Albrecht

4:05 **CATL 177.** Imaging photodecomposition of trimethyl acetic acid on cross-linked (1 × 2) rutile TiO<sub>2</sub>(110). Y. Xia, K. Zhu, K. Park, Z. Zhang

4:25 **CATL 178.** Novel aldol condensation reaction system in one pot conversion of biomass to multi-carbon compounds. H. Li, Z. Xu, Z. Zhang

4:45 Concluding Remarks.

## Section D

Sonesta Philadelphia Downtown  
Wyeth Gallery B

### Life Cycle of Catalysts: Preparation, Activation, Deactivation & Regeneration

D. Prieto, H. Shou, *Organizers, Presiding*

1:30 Introductory Remarks.

1:35 **CATL 179.** Preparation of heterogeneous frustrated Lewis pairs for metal-free catalytic ketone hydrogenation. C. Tian, X. Zhu, C.W. Abney, S. Dai

1:55 **CATL 180.** Enhancing the stability/performance of catalysts via atomic layer deposition. C.L. Marshall, H. Zhang, J. Camacho-Bunquin, J. Elam, R.M. Kennedy, R.C. Stair, K.R. Poeppelmeier

2:25 **CATL 181.** Gold-based catalysts for propylene epoxidation. Z. Lu, M. Piernawieja-Hermida, Z. Wu, Y. Lei

2:55 Intermission.

3:10 **CATL 182.** Circle of life for iron Fischer-Tropsch catalysts: Activation, catalysis, deactivation and regeneration. D. Yancey, M. Ruitenbeek

3:30 **CATL 183.** Spatial distribution and catalytic performance of metal-alc sites in Mo/MFI catalysts with tunable meso-/microporous lamellar zeolite structures. D. Liu

3:50 **CATL 184.** ALD modification of catalyst for improved stability and regenerability. T.M. Onn, M. Monai, J. Chen, P. Fornasiero, R.J. Gorte

4:20 **CATL 185.** Deactivation of a microzeolite-based Mo/HZSM-5 catalyst by external coke formation in the non-oxidative methane dehydroaromatization at 1073 K. Q. Zhang, Y. Song, Y. Zhang, K. Matsuoka, Z. Zhang

4:50 Concluding Remarks.

### Green Chemistry Innovations & Opportunities in Industry for Young Professionals

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## Novel Nanomaterials

### Porous Materials & Other Nanoparticles

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### Computational Chemistry for Energy Application

Sponsored by ENFL, Cosponsored by CATL and MPPG

## TUESDAY EVENING

## Section A

Pennsylvania Convention Center  
Hall D

## General Catalysis

C. Alvarez-Vasco, S. Subramaniam, *Organizers*

6:00 - 8:00

**CATL 186.** Iron catalyst reactivity with cellulose monomers in the production of levoglucosan and levoglucosone. Y. Gao, L. Chen, M.S. Wong

**CATL 187.** Synthesis and catalytic properties of different morphologies of ferrierite zeolite. H. Hu, M. Ke, Q. Liu

**CATL 188.** Electrochemical catalysis of CO<sub>2</sub> reduction on copper nanocrystal catalysts. Y. He, N. Wu

**CATL 189.** Isomerization and its combined  $\alpha$ -bromination of allylic alcohols. E. Erbing, B. Martin-Matute

**CATL 190.** Electro-oxidized stainless steel as an efficient water splitting catalyst in a neutral HCO<sub>3</sub><sup>-</sup>/CO<sub>2</sub> electrolyte system. M. Lee, H. Jeon, B. Min

**CATL 191.** Lattice interrupted graphene oxide catalyzed selective and solventless hydroxyalkylation/alkylation of sylvan to valorize to fuel-reservoir. S. Dutta, A. Bohre, B. Saha, D.G. Vlachos

**CATL 192.** CO<sub>2</sub> hydrogenation to methanol by intensified sorption enhanced process. M. Iliuta, F. Bougie, I. Iliuta, S. Pallier, P. Fongarland

- CATL 193.** Highly enantioselective formation of  $\alpha$ -allyl- $\alpha$ -aryl cyclopentanones via Pd-catalyzed decarboxylative asymmetric allylic alkylation. R. Akula, R. Doran, P.J. Guiry
- CATL 194.** Structure analysis of amide- $\text{AlCl}_3$  based ionic liquid analogues. P. Hu, Y. Wang, X. Meng, R. Zhang, H. Liu, Z. Liu
- CATL 195.** Dendritic Bi electrocatalyst for selective  $\text{CO}_2$  reduction to  $\text{HCOO}^-$ . J. Koh, H. Jeon, Y. Hwang, B. Min
- CATL 196.** Methane conversion over a novel Mo-based heterogeneous catalyst. Y. Gao, C. Zhang
- CATL 197.** 1,1,3,3-Tetramethylguanidine immobilized on graphene oxide: A highly active and selective heterogeneous catalyst for aldol reaction. S. Ding, W. Xiao, M. Li, Y. Pan, N. Zhang, S. Dai
- CATL 198.** Inelastic neutron scattering (INS) studies of hydrogen spillover on pure and Pd decorated metal oxides. N.A. Strange, S. Adak, C. Sumner, J.Z. Larese
- CATL 199.** New approach to synthesis of  $\text{CuO/CeO}_2$  catalysts by metal organic frameworks (MOFs) precursor for preferential CO oxidation. C. Chen, N. Zhang
- CATL 200.** Core-shell metal oxide-phosphonate-metal nanocomposites for surface plasmon-assisted catalysis. S. Talebzadeh Farooji, C. Queffelec, F. Forato, B. Bujoli, S. Trammell, D. Knight
- CATL 201.** Design of a bifunctional catalyst for selective oxidation of ammonia. H. Chen, L. Luk, W. Han, K. Yeung
- CATL 202.** Directly-bound molecular electrocatalysts for water oxidation and C-H activation. S.W. Sheehan
- CATL 203.**  $\text{CO}_2$  electroreduction to hydrocarbons on nickel phosphides. K.U. Calvino, A.B. Laursen, M.K. Greenblatt, G.C. Dismukes
- CATL 204.** Proficient synthesis of metallic catalysts with improved efficiency for oxidation reactions. T. Hussain, K. Shehzad, A. Mujahid, H. Raza, F. Tufail, M. Ashraf
- CATL 205.** Green synthesis of a nanostructured Pd/Al composite through oxide film removal and redox transmetalation in supercritical carbon dioxide. K. Chiu, P. Wu
- CATL 206.** Photocatalytic properties of ion-implanted titania nanotubes. M. Hasan, W. Chen, S. Ferdousi, K. Yeung
- CATL 207.** Oxygen reduction reaction activity and stability of nanoporous nanoparticle electrocatalysts. Y. Li, J.D. Snyder
- CATL 208.** Descriptor-based design of metal-organic frameworks for selective CH functionalization. X. Ma, H. Xin
- CATL 209.** Catalytic oxidation of carbon monoxide over Pd-based nanoalloy catalysts. H. Kareem, S. Shan, Y. Zhao, Z. Skeete, J. Luo, V. Petkov, C. Zhong
- CATL 210.** Low-temperature catalytic oxidation reactions on alloy nanoparticle catalysts. S. Shan, H. Kareem, H. Cronk, J. Li, A. Hull, V. Petkov, J. Luo, C. Zhong
- CATL 211.** Composition- and structure-tunable bimetallic and trimetallic nanoalloy as high-performance electrocatalytic catalysts. A. Lu, D. Peng, Z. Skeete, S. Shan, J. Luo, C. Zhong
- CATL 212.**  $\text{CO}_2$  conversion on a novel Pd-based heterogeneous catalyst. S. Mirabelli, C. Zhang
- CATL 213.** Hydrogenation of  $\text{CO}_2$  to hydrocarbons over iron nanoparticles confined in ordered mesoporous carbons. A. Zhang
- CATL 214.** Detailed surface reaction mechanism and kinetics of the dehydrogenation of isobutane to isobutene over Pt-based catalysts. Y. Choi, H. Choi, C. Choi, R. Bunama
- CATL 215.**  $\text{CO}_2$  conversion over a novel Fe-based heterogeneous catalyst. S. Bamonte, C. Zhang
- CATL 216.** Preparation and characterization of ultrathin Pt-based alloy nanowires with controlled surface composition and structures for electrocatalytic oxygen reduction reaction. F. Chang, S. Shan, Z. Skeete, J. Ravid, J. Luo, G. Yu, V. Petkov, C. Zhong
- CATL 217.** Mn-alkali amide composite catalysts for ammonia decomposition. F. Chang, J. Guo, P. Wang, P. Chen
- CATL 218.** Carbon dioxide conversion over a novel Cu-Zn based heterogeneous catalyst. Y. Gao, C. Zhang
- CATL 219.** DFT study of oxygen evolution reaction on  $\gamma\text{-FeOOH}$  (010) and (001). M. Tang, Q. Ge
- CATL 220.**  $\text{CO}_2$  conversion over a novel Co-based heterogeneous catalyst. L. Jiao, C. Zhang
- CATL 221.** Room temperature selective oxidation catalysts for  $\text{H}_2\text{S}$ . G. Cheung, L. Luk, W. Han, K. Yeung
- CATL 222.** Electrochemical synthesis of ammonia on nanoscale transition metal nitride surfaces. G. Laufersky, T. Nann
- CATL 223.** Cyclohexane oxidative dehydrogenation over nanostructured copper oxide catalysts. S. Nauert, F. Schach, C. Limberg, J.M. Notestein
- CATL 224.** Development of machine-learning chemisorption models for oxide electrocatalysis. Z. Li, H. Xin
- CATL 225.** Towards commodity chemicals via catalytic formaldehyde-olefin condensation reaction. E. Vasileiadou, T. Salavati-Fard, D.J. Doren, D.G. Vlachos, R.F. Lobo
- CATL 226.** Flow-through heterogeneous transfer alkane dehydrogenation effected by pincer-ligated iridium catalysts. B. Sheludko, B. Li, L. Chao, A. Alape Seetharam, A.S. Goldman, F.E. Celik
- CATL 227.** Withdrawn.
- CATL 228.** Room temperature ionic liquids as solvents for electrocatalytic  $\text{CO}_2$  reduction with  $\text{Re}(\text{I})$  polypyridyl catalysts. M.E. McKinnon, K. Ngo, J.J. Rochford
- CATL 229.** Study of catalytic activity for CO oxidation of supported sub-nm metal particles using both model and practical catalysts. Q. Wu, J. Cen, S. Zhao, X. Tong, Y. Li, A. Frenkel, A. Orlov
- CATL 230.** Early-transition metal organic framework as catalyst for epoxidation reaction. L. Wang, S. Cohen
- CATL 231.** Thioalkyl substituted metal-porphyrins nanoparticles as an efficient, greener oxidation catalyst. D. Lema, A. Aggarwal
- CATL 232.** Cu nanowires for electrochemical reduction of  $\text{CO}_2$  and CO. D. Raciti, C. Wang
- CATL 233.** Electroless deposition of platinum using different reducing agents. E. Norkus, I. Stankeviciene, A. Jagminiene, L. Tamasauskaite-Tamasunaite, A. Naujokaitis, L. Tumonis, V. Buzas, L. Maciulis
- CATL 234.** Hydrogenation of dimethyl 1,4-cyclohexane dicarboxylate using a high-throughput flow reactor. C. Lee, J. Hwang, M. Lai, Y. Wu, C. Lee, C. Hwang
- CATL 235.** Graphene supported PtCoRu catalysts for hydrogen generation via sodium borohydride hydrolysis. L. Tamasauskaite-Tamasunaite, I. Stalnioniene, J. Vaiciuniene, B. Simkunaite-Stanyniene, E. Norkus
- CATL 236.** BIAN-iron complexes for the catalytic hydrosilylation of aldehydes, ketones and amides. F.S. Wekesa
- CATL 237.** Interconnected Meso-Micro pore Al-Zoned ZSM-5 prepared by sequential fluorination-desilication owning suitable acidity for methanol-to-propylene reaction. M. Liu, J. Li, X. Guo, C. Song
- CATL 238.** Chemistry and engineering of energy, environment, and health. C.D. Jensen
- CATL 239.** Influence of CuO modification on the defect structure of  $\text{TiO}_2$  nanotubes used for CO oxidation. A.F. Zedan, N. Allam, S.Y. Al Qaradawi
- CATL 240.** Methane conversion to value-added chemicals over an innovative silver-based heterogeneous catalyst. A. Gordon, C. Zhang
- CATL 241.** Metal-stabilized CaO-Ni hybrid sorbent-catalysts for high-purity hydrogen production by intensified sorption enhanced steam glycerol reforming. M. Shokrollahi Yancheshmeh, H. Radfarina, M. Iluta
- CATL 242.** Magnetic nanoparticle supported palladium-based nanocatalysts. V. K. S. Patil, S. Patil

## Section B

Sonesta Philadelphia Downtown Homer

### Energy Storage Applications of Ammonia: Synthesis, Storage, Safety & Utilisation

Cosponsored by ENFL and MPPG

M. Jones, Organizer, Presiding

**8:30 CATL 253.** In-situ neutron and X-ray powder diffraction studies of imide-based ammonia decomposition catalysts. B. David, H. Hunter, T. Wood, M. Jones, J. Makepeace

**8:50 CATL 254.** Reversible ammonia storage in transition metal halides. D.H. Gregory, J. Breternitz, J.S. Alnawmasi, H. Reardon

**9:10 CATL 255.** Further characterization of solid-state ammonia storage materials. M. Jones, B. David, A. Porch, M. Barter, J. Hartley

**9:30 CATL 256.** Simultaneous microwave dielectric and neutron diffraction studies of metal-organic framework mesoporous systems. M. Barter, J. Hartley, M. Jones, A. Porch

**9:50 CATL 257.** Large amplitude motion of the ammonia molecule in the crystal. A. Ramirez-Cuesta, Y. Cheng, L. Daemen, S. Yang

**10:10 CATL 258.** Catalytic ammonia combustion over supported copper oxides. S. Hinokuma, S. Matsuki, Y. Kawabata, M. Machida

**10:30 CATL 259.** Synergy of alkali amide/imide with transition metals in catalytic ammonia decomposition. J. Guo, F. Chang, P. Wang, P. Yu, G. Wu, P. Chen

**10:50** Concluding Remarks.

## WEDNESDAY MORNING

## Section A

Sonesta Philadelphia Downtown Wyeth Gallery A

### $\text{CO}_2$ Reduction: Electrocatalysis

Cosponsored by ENFL and MPPG

B. Liu, D. Mei, Organizers, Presiding

**8:30 CATL 243.** Active sites on Cu nanocatalysts for  $\text{CO}_2$  and CO reduction. D. Raciti, C. Wang

**8:50 CATL 244.** Density functional theory approach to electrocatalytic reaction barriers and application to  $\text{CO}_2$  reduction. M.J. Janik

**9:10 CATL 245.** Mechanistic insights into the electrochemical reduction of  $\text{CO}_2$  using in situ infrared spectroscopy. M. Dunwell, Q. Lu, Y. Yan, B. Xu

**9:30 CATL 246.** Towards an efficient and robust electrocatalyst for  $\text{CO}_2$  electroreduction: Promoting effects of polyvinylpyridines on copper. I. Chernyshova, S. Ponnuram, C. Yun, S. Wang, P. Somasundaran

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## Section C

Sonesta Philadelphia Downtown  
Hopper

### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

#### Lignin Conversion

*Cosponsored by ENFL and MPPG*

J. J. Bravo-Suarez, M. V. Olarte, F. Tao, H. Wang, *Organizers, Presiding*

#### 8:30 Introductory Remarks.

**8:35 CATL 260.** Lignocellulosics valorization towards fuels, materials and chemicals. R. Luque

**9:15 CATL 261.** Adsorption and decomposition of anisole on Pt (111). P. Sautet, R. Réocreux, C. Michel, A. Ould Hamou, J. Giorgi

**9:35 CATL 262.** Increasing aromatic yields from catalytic reductive lignin depolymerization. M.B. Foston, P.C. Ford, Y. Gao, J. Barrett

**9:55 CATL 263.** Depolymerization and valorization of technical lignin using Ni and Fe boride catalysts. S.C. Chmely, Y.N. Regmi, P. Ciesielski

#### 10:15 Intermission.

**10:25 CATL 264.** HBeta zeolite-catalyzed acylation of phenolics in the liquid phase. N. Duong, B. Wang, S. Crossley, D.E. Resasco

**10:55 CATL 265.** Use of bimetallics to control the selectivity for the hydrodeoxygenation of lignin-derived oxygenates: Reaction of anisole on Pt and PtZn catalysts. D. Shi, L. Arroyo-Ramirez, J.M. Vohs

**11:15 CATL 266.** Non-heme iron catalyzed highly selective aromatic-ring oxidative cleavage of lignin monomeric and oligomeric model compounds. R. Ma, X. Zhang

**11:35 CATL 267.** Chemo-enzymatic synthesis and functionalization of syringaresinol: a promising biobased antiradical additive and platform for bisphenolic monomers. A. Jaufurally, L. Holland, A. Teixeira, P. Ducrot, F. Allais

#### 11:55 Concluding Remarks.

## Section D

Sonesta Philadelphia Downtown  
Wyeth Gallery B

### General Catalysis

A. Raju, *Organizer*

J. Lopez Ruiz, *Organizer, Presiding*

A. B. Padmaperuma, *Presiding*

**8:30 CATL 268.** Dimerization of 1-butene in Ni- and Alkylamine-modified zeolites. D. Grohol, D.G. Barton, H. Clements, T. Munro, L. Brehm

**8:50 CATL 269.** Rationalizing the unique MTO performance of novel small-pore zeolites. T. Davis, D. Xie, H. Lacheen, C. Chen, S.J. Zones, R. Saxton

**9:15 CATL 270.** Single site tetra coordinated aluminium hydride supported on mesoporous silica. From dream to reality! B. Werghe, J.M. Basset

**9:35 CATL 271.** Density functional and kinetic monte carlo simulations of the methanol temperature programmed desorption on CeO<sub>2</sub>(111). J.E. Sutton, T. Danielson, A. Savara, S.H. Overbury, A. Beste

#### 9:55 Intermission.

**10:25 CATL 272.** Zn-promoted H-ZSM-5 for endothermic reforming of n-hexane at high pressures. Y. Yeh, S. Zhu, P. Staiber, R.F. Lobo, R.J. Gorte

**10:45 CATL 273.** Thiols make for better catalysts: Au nanoparticles supported on modified SBA-15 for catalysis of Ullmann homocouplings. T. Chen, V.O. Rodionov

**11:05 CATL 274.** Solvent-free synthesis of c-axis orientated sheet-like ZSM-5 zeolite. D. Wu, X. Chen, M. Qiu, Z. Liu, Y. Sun

**11:25 CATL 275.** Optimal synthesis of the composite material USY/ASA and influence of USY content on the activity of USY/ASA catalysts for hydrocracking of n-decane. Q. Han, B. Liu, Y. Yin, Y. Zhai

### Novel Nanomaterials

#### Advanced Catalysts for Fuel Production

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#### Computational Chemistry for Energy Application

*Sponsored by ENFL, Cosponsored by CATL and MPPG*

## WEDNESDAY AFTERNOON

## Section A

Sonesta Philadelphia Downtown  
Wyeth Gallery A

### CO<sub>2</sub> Reduction: Electrocatalysis

*Cosponsored by ENFL and MPPG*

B. Liu, D. Mei, *Organizers, Presiding*

**1:30 CATL 276.** Catalytic application of gold and bimetal nanoclusters in CO<sub>2</sub> reduction. R. Jin

**1:50 CATL 277.** Controlling CO<sub>2</sub> reduction pathways in Cu and bismuth based electrocatalyst. K. Nam

**2:10 CATL 278.** Selective electrochemical reduction of carbon dioxide to n-propanol using agglomerated Cu nanocrystals. B. Ye

**2:30 CATL 279.** Using in situ high resolution X-ray reflectivity to investigate the electrocatalytic reduction of CO<sub>2</sub> at the bismuth/ionic liquid interface (Bi/IL). J. Medina Ramos, S. Lee, A. Hubaud, P. Fenter

**2:50 CATL 280.** Turning on the protonation first pathway for electrocatalytic CO<sub>2</sub> conversion at reduced overpotential by manganese bipyridyl tricarbonyl complexes with a pendant base. K. Ngo, R. Narayanan, B. Mahanti, B.R. Reed, S. Groysman, J.J. Rochford

#### 3:10 Intermission.

**3:20 CATL 281.** Toward efficient catalysts for energy storage and energy production: From enzymatic function to functional mimics. S. Raugel

**3:40 CATL 282.** Hybrid catalysts for conversion of CO<sub>2</sub>. M. Yadav, A.J. Karkamkar

**4:00 CATL 283.** Improving Mn(II) and Re(II)-NHC molecular catalysts for CO<sub>2</sub> reduction. C.J. Stanton, G. Majetich, H.F. Schaefer, J. Agarwal

**4:20 CATL 284.** Effect of explicit solvent water molecules on electrochemical reduction of CO<sub>2</sub> on Sn(112). C. Cui, X. Zhu, H. Wang, J. Han, D. Mei, Q. Ge

**4:40 CATL 285.** Nanocarbon based materials for carbon dioxide reduction catalysis. Y. Liang, X. Zhang

## Section B

Sonesta Philadelphia Downtown  
Homer

### General Catalysis

A. Raju, *Organizer*

J. Lopez Ruiz, *Organizer, Presiding*

A. B. Padmaperuma, *Presiding*

**1:00 CATL 286.** Effects of support surface structure and composition on the selectivity of Pd/C for the hydrogenation of multifunctional chemicals. R. Rao, T.W. Hansen, R. Blume, J. Tessonnier

**1:20 CATL 287.** High-performance ligand-free catalysts for the reduction of 4-nitrophenol. E. Menumerov, K. Gilroy, M. Hajfathalian, C. Murphy, E.R. McKenzie, R.A. Hughes, S. Neretina

**1:40 CATL 288.** Design of core-Pd/shell-Ag nanocomposite catalyst for selective semihydrogenation of alkynes to alkenes. T. Urayama, T. Mitsudome, Z. Maeno, T. Mizugaki, K. Jitsukawa, K. Kaneda

**2:00 CATL 289.** Hierarchical catalysts for the CO<sub>2</sub> hydrogenation to methanol and olefin. H. Wang, P. Gao, W. Wei, Y. Sun

#### 2:20 Intermission.

**2:40 CATL 290.** Utilizing doped perovskites for CO<sub>2</sub> reduction. Q. Wu, J. Cen, K.R. Goodman, M.G. White, M. Liu, A. Orlov

**3:00 CATL 291.** Impact of the oxygen defects on copper electronic state and activity of Cu-based catalysts in the hydrogenation of methyl acetate to ethanol. Y. Wang, D. Yao, Z. Yujun, S. Wang, X. Ma

**3:20 CATL 292.** High graphite N content in nitrogen-doped graphene as an efficient metal-free catalyst for reduction of nitroarenes in water. F. Yang, Y. Li

**3:40 CATL 293.** Highly efficient non-precious-metal oxygen reduction electrocatalyst derived from graphene-supported metal-organic frameworks. Y. Hou, Z. Wen, S. Cui, J. Chen

## Section C

Sonesta Philadelphia Downtown  
Hopper

### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives Conversion to Chemicals & Fuels

*Cosponsored by ENFL and MPPG*

J. J. Bravo-Suarez, M. V. Olarte, F. Tao, *Organizers, Presiding*

#### 1:30 Introductory Remarks.

**1:35 CATL 294.** Metal phosphide catalysts for the hydrotreatment of non-edible vegetable oils. M. Alvarez-Galvan, G. Blanco-Breiva, M. Capel-Sanchez, S. Morales-delaRosa, J. Campos-Martin, J. Fierro

**2:05 CATL 295.** Catalytic deoxygenation of model and realistic feeds to fuel-like hydrocarbons over supported nickel-copper catalysts. R.A. Loe, E. Santillan-Jimenez, M. Crocker

**2:25 CATL 296.** Application of novel polymeric Grubbs catalyst. M.J. Abedin

#### 2:45 CATL 297. Withdrawn.

#### 3:05 Intermission.

**3:15 CATL 298.** Selective hydroprocessing of fatty acid rich feedstocks using multifunctional non-sulfided earth-abundant metal catalysts. K. Kandel, N. Nelson, U. Chaudhary, I.I. Slowing

**3:45 CATL 299.** Highly active tungsten-based homogeneous venturolo catalyst for the epoxidation of soybean oil. S.K. Maiti, J.J. Bravo-Suarez, P. Venkatasubramanian

**4:05 CATL 300.** Computational and experimental insights into the shape and faceting of Rh<sub>2</sub>P nanoparticles for biomass upgrading. V. Vorotnikov, F.G. Baddour, M. Griffin, S. Habas, D.A. Ruddy, G. Beckham, J. Schaidle

**4:25 CATL 301.** Effect of H<sub>2</sub>S deactivation and regeneration of Ni/SiO<sub>2</sub> catalyst in dry reforming of biogas. X. Chen, J. Jiang, K. Li, S. Tian, F. Yan

**4:45 CATL 302.** Naphthalene hydrocracking over bimetallic thio-tolerant nanocomposites. T. Shuaib, T.A. Saleh

#### 5:05 Concluding Remarks.

## Section D

Sonesta Philadelphia Downtown  
Wyeth Gallery B

### General Catalysis

J. Lopez Ruiz, A. Raju, *Organizers*

K. K. Ramasamy, S. Subramaniam, *Presiding*

**1:30 CATL 303.** Stimulus responsive recyclable catalysts. H. Chung, B. Ondrusek

**1:50 CATL 304.** Neodymium-based catalysts for polymerization of dienes. Y. Ren, R.N. Kularatne, M.C. Biewer, M.C. Stefan

**2:10 CATL 305.** Oxovanadium (IV) complexes with tridentate N-heterocycle ligands: Synthesis, structure, and efficient catalyst for cyclohexane oxidation to cyclohexanone. N. Xing

**2:30 CATL 306.** Aza macrocyclic (metalloporphyrins and salens) that are sterically protected and electronically activated to provide optimal catalysis. M. Chorghade

#### 2:50 Intermission.

**3:10 CATL 307.** Ferrocenyl aminodiphosphine Rh/Ru complexes as olefin hydroformylation pre-catalysts. L. Matsinha, B.C. Makhubela

**3:30 CATL 308.** Dry-reforming of methane over Rh-based pyrochlore catalysts. N. Kumar, M. Haridas, J.J. Spivey

**3:50 CATL 309.** Heterogeneous catalysis on silica polyamine amine composite surfaces by Ru-PNN and Ru-PONOP pincer complexes. M.A. Goni, E. Rosenberg

**4:10 CATL 310.** Recyclable polyisobutylene (PIB)-bound Ir catalyst in the C-H activation of arenes. H. Mamlouk, D.E. Bergbreiter, S. Madrahimov

**4:30 CATL 311.** Small molecule activation for producing diureas, urethanes, isocyanates, and oxidized aromatic furan compounds. Y. Jin Kim

### Novel Nanomaterials

#### Rational Design

*Sponsored by ENFL, Cosponsored by CATL and ENVR*



### Heterogeneous Catalysis for Selective Oxidation & Reduction toward a Green Production

#### Selective Oxidation

Sponsored by ENFL, Cosponsored by CATL and ENVR

#### Mesoporous Zeolites

Sponsored by ENFL, Cosponsored by CATL

## THURSDAY MORNING

### Section A

Sonesta Philadelphia Downtown  
Wyeth Gallery A

#### General Catalysis

J. Lopez Ruiz, A. Raju, *Organizers*

K. K. Ramasamy, S. Subramaniam, *Presiding*

**8:30 CATL 312.** Pulp mill process integration and repurposing for biocatalytic alcohol to jet fuel production. S. Subramaniam

**8:50 CATL 313.** Oxygen concentration hysteresis in methane oxidation over Pt, Pd, and Ag-Pd/Al<sub>2</sub>O<sub>3</sub>: Kinetic and X-ray absorption spectroscopy study. G. Lee, K. Goulas, W. Zheng, I. Lee, D.G. Vlachos

**9:10 CATL 314.** Transient kinetic studies of size controlled Co nanoparticles for Fischer-Tropsch synthesis. W. Ralston, G. Melaet, G.A. Somorjai

**9:30 CATL 315.** High pressure high temperature annealing of anatase TiO<sub>2</sub> for increased photocatalytic activity. A.M. Pennington, K.A. Dagnall, R.A. Yang, F.E. Celik

**9:50** Intermission.

**10:10 CATL 316.** SnWO<sub>3</sub> photoanode with visible-light photoresponse at low voltage for solar water-splitting. Z. Zhu, P. Sarker, R. Grimm, M. Huda, P.M. Rao

**10:30 CATL 317.** Solar-driven water splitting by manganese- and nickel-based catalysts synthesized by cyclic voltammetry. H. Yuan, G. Blanchard, R. Lunt, R.Y. Ofoli

**10:50 CATL 318.** Remarkably stable CoGa catalyst with uniformly dispersed and trapped structure for ethanol and higher alcohol synthesis from syngas. J. He, Z. An, X. Ning

**11:10 CATL 319.** Fused Fe/Al<sub>2</sub>O<sub>3</sub> catalysts for catalytic methane decomposition over a fluidized bed reactor: H<sub>2</sub> production and carbon by products application. L. Zhou, R. Linga, J.M. Basset

### Section B

Sonesta Philadelphia Downtown  
Homer

#### General Catalysis

J. Lopez Ruiz, *Organizer*

R. Ma, *Organizer, Presiding*

H. Wang, *Presiding*

**8:30 CATL 320.** Direct synthesis of hydrogen peroxide from hydrogen and oxygen over a palladium-based bimetallic heterogeneous catalyst. C. Zhang, B. Zhou

**8:50 CATL 321.** Isolation and characterization of intermediates in iron-mediated catalytic C-C cross-coupling with alkyl grignards. S.B. Munoz, S. Daifuku, W.W. Brennessel, M.L. Neidig

**9:10 CATL 322.** Chiral amine-functionalized mesoporous materials for asymmetric catalysis. J. He, Z. An

**9:30 CATL 323.** Heterogeneous tandem catalysis: Hydroformylation and carbonylation with CO surrogates. J. Su

**9:50** Intermission.

**10:10 CATL 324.** Lanthanide-catalyzed hydroboration of carbonyls. V.L. Weidner, C. Barger, T. Lohr, M. Delferro, T.J. Marks

**10:30 CATL 325.** Synthesis of a Au@MIL-53(NH<sub>2</sub>) catalyst for one-pot cascade catalytic reaction of benzaldehyde dimethylacetal and malononitrile. Y. Qi

**10:50 CATL 326.** Synthesis of a novel metal-organic framework Brønsted acid catalyst and its application in [4+2] cycloadditions involving quinone methide intermediate. Y. Luan

**11:10 CATL 327.** Selective cyclooctane metathesis by surface organometallic chemistry. E. Pump, A. Bendjeriou-Sedjerari, M. Samantaray, E. Abou-Hamad, J.M. Basset

**11:30 CATL 328.** Synthesis of Salen-Bu-Cu@MIL-101(Cr) catalyst by method ship in a bottle for the transformation of carbon dioxide. S. Yu, J. Ma, X. Liu, P. Cheng

### Section C

Sonesta Philadelphia Downtown  
Hopper

#### General Catalysis

J. Lopez Ruiz, *Organizer*

R. Ma, *Organizer, Presiding*

H. Wang, *Presiding*

**8:30 CATL 329.** Properties and catalytic performance of Pd nanoparticles supported SrTiO<sub>3</sub> nanopolyhedra. B. Chen, C. George, L.A. Crosby, R.M. Kennedy, P.C. Stair, L. Marks, K.R. Poeppelmeier, N.M. Schweitzer, R.P. Van Duyne, M.J. Bedzyk

**8:50 CATL 330.** Rigid tetra(biphenyl)element linker scaffolds for immobilizing catalysts on oxide supports. J.H. Baker, J. Bluemel

**9:10 CATL 331.** Facile route to synthesize nano-sized hierarchical silicalite-1. Y. Feng, J. Feng, J. Jiang, M. Zhang, X. Liu

**9:30 CATL 332.** Synthesis of core/shell Fe<sub>3</sub>O<sub>4</sub>@P4VP@MIL-100(Fe) microsphere and its application in catalytic aerobic oxidations. J. Yu, Y. Luan

**9:50** Intermission.

**10:10 CATL 333.** DNA-crowded enzymes with improved activity and stability. J. Fu

**10:30 CATL 334.** Development of a Pd(0)-CalB biocomposite catalyst. T. Gorbe, K. Gustafson, G. Kervefors, E.V. Johnston, H. Zheng, O.O. Verho, Z. Xiaodong, J.E. Backvall

**10:50 CATL 335.** Sustainable nanomaterials: Synthesis and applications in catalysis. M. Gawande, R.S. Varma, R. Zboril

**11:10 CATL 336.** In situ real time monitoring of sintering resistant platinum catalysts achieved by atomic layer deposition. S. Lee, S. Lee, Y. Dai, T.J. Gorey, S.L. Anderson, R.E. Winans

### Novel Nanomaterials

#### Variou

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### Heterogeneous Catalysis for Selective Oxidation & Reduction toward a Green Production

#### Selective Oxidation & Reduction

Sponsored by ENFL, Cosponsored by CATL and ENVR

### Mesoporous Zeolites

Sponsored by ENFL, Cosponsored by CATL

## CHED

### Division of Chemical Education

I. Levy, M. Orgill and P. Daubenmire, *Program Chairs*

#### OTHER SYMPOSIA OF INTEREST:

**Bringing Cheminformatics into the College Chemistry Classroom** (see CINF, Sun)

**Social and Chemical Science of Diversity Equity** (see CMA, Mon)

**Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community** (see PROF, Mon)

#### SOCIAL EVENTS:

**High School-College Interface Luncheon (Tickets Required)**, 12:00 PM, Sun

**Division Reception**, 5:30 PM, Sun

## SUNDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 201A

#### High School Program

Cosponsored by SOCED

Financially supported by ACS Education Division

A. S. Smeltzer Schwab, *Organizer*

S. B. Mitchell, *Organizer, Presiding*

**8:00** Registration.

**8:30** Introductory Remarks.

**8:35 CHED 1.** Green chemistry: Connections to our world. K. Anderson, M. Enright

**9:15 CHED 2.** Developing a high school organic chemistry course. E. Hines

**9:35 CHED 3.** Atoms, molecules, and ions – Oh my! Teacher-designed inquiry activities with particulate models. E.J. Yezierski, D.G. Herrington

**10:10** Intermission.

**10:20 CHED 4.** Advancing scientific literacy with inquiry based lessons designed around ChemMatters articles. K. Chesmel

**11:00 CHED 5.** Student centered activities from JCE & ChemEd X. D. Cullen

**11:20 CHED 6.** Ötzi the iceman meets the new IUPAC periodic table of the elements and isotopes. P.G. Mahaffy, B. Martin, M. Oliver, T. DeBoon

### Section B

Pennsylvania Convention Center  
Room 204A

#### Undergraduate Research Papers

Cosponsored by SOCED

C. V. Gauthier, J. V. Ruppel, *Organizers*

N. L. Snyder, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 CHED 7.** Total Synthesis of Pyrophen and Campyrones A-C. H. Burdge

**8:45 CHED 8.** ORGN: Developing a synthetic route to caramboxin, a rare bioactive non-peptidic amino acid. C. Fritschi, A. Pascucci, L. Sanchez

**8:55 CHED 9.** ORGN: Tuning chemoselectivity toward an affordable synthesis of aurantioclavine. Z. Mariani, L. Sanchez

**9:05 CHED 10.** Ligand-driven pursuit of structure of d(CAGAGG)<sub>n</sub> repeats. B. Powell, J. Chen, E. Brown, L.A. Yatsunyk

**9:15 CHED 11.** Towards validation of novel Hepatitis C virus drug target via computer-aided molecular design. A.A. Alharbi, E.A. Felemban, O.I. Qadi, A.K. Bajammal, A.M. Omar, M.T. Khayat, M.E. El-Araby

**9:25** Concluding Remarks.

### Section C

Pennsylvania Convention Center  
Room 204B

#### Green Chemistry Education: By the People & for the People

Cosponsored by CEI

Financially supported by ACS GCI

J. E. Wissinger, *Organizer*

E. J. Brush, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 CHED 12.** Introducing green chemistry into the undergraduate curriculum. D.J. Swartling

**8:55 CHED 13.** Effective approaches to integrating green chemistry in undergraduate organic chemistry courses. S.B. Abhyankar

**9:15 CHED 14.** Development of green problem-based learning experiments for the organic chemistry laboratory. C.E. Wright, M.G. Kowalske, J.J. Kiddle

**9:35** Intermission.

**9:50 CHED 15.** Development of a green chemistry resource guide for the organic chemistry laboratory course in partnership with Sigma-Aldrich. A.S. Cannon, I.J. Levy

**10:10 CHED 16.** Learning green analytical chemistry using mobile phone local available materials in connection to culture. W. Wongwilai, K. Kiwfo, N. Enakaya, K. Thajee, C.H. Bergo, N. Teshima, T. Sakai, K. Grudpan

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

**10:30 CHED 17.** Green Contagion: How teaching green chemistry has inspired students to share green chemistry. J.E. Wissinger

**10:50 CHED 18.** Teaching research: Designing molecular systems for greener advanced undergraduate laboratories. P. Julien, J. Christopherson, T. Friscic

**11:10** Concluding Remarks.

## Section D

Pennsylvania Convention Center  
Room 204C

### Integrating the General & Organic Chemistry Curricula

J. B. Foley, *Organizer*

J. P. Bullock, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 CHED 19.** Integrating basic concepts of organic chemistry into the second semester introductory honors laboratory. S.B. Sigmam

**8:55 CHED 20.** Starting with structure, bonding and spectroscopy: Introductory chemistry at Haverford College. R.C. Scarrow, L.K. Charkoudian, K.S. Akerfeldt

**9:15 CHED 21.** Integrating everything: Structure, reactivity and quantitation curriculum at CSB/SJU. E.J. McIntee, A.F. Raigoza, C.P. Schaller, K.J. Graham

**9:35** Intermission.

**9:45 CHED 22.** Chemistry without adjectives: Teaching chemistry as a single, coherent science. J.P. Bullock, J.B. Foley

**10:05 CHED 23.** Organic chemistry-general chemistry-biochemistry: A pedagogic bridge circuit. M. Ilies

**10:25 CHED 24.** To get students to think like scientists – get them to read scientists. J.B. Foley, J.P. Bullock

**10:45** Concluding Remarks.

### Bringing Cheminformatics into the College Chemistry Classroom

*Sponsored by CINF, Cosponsored by CHED*

## SUNDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 201A

#### High School Program

*Cosponsored by SOCED*

*Financially supported by ACS Education Division*

A. S. Smeltzer Schwab, *Organizer*

S. B. Mitchell, *Organizer, Presiding*

**1:00 CHED 25.** Innovative technologies for chemistry instruction. T. Laughlin

**1:40 CHED 26.** Climate science in context; providing teachers with tools to elevate climate science literacy. G.P. Foy, L. Foy

**2:00 CHED 27.** ChemClubs — fun, food and outreach. K.M. Kaleuati

**2:40** Intermission.

**2:50 CHED 28.** Why data collection? T.M. Loschiavo

**3:20 CHED 29.** Creating a culture of safety in the science classroom. R. Goode, J. Bishoff

**4:00 CHED 30.** Edible material science/chemistry with kitchen chemistry. S.C. Rukes

**4:30** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 204A

#### Undergraduate Research Papers

*Cosponsored by SOCED*

C. V. Gauthier, J. V. Ruppel, *Organizers*

N. L. Snyder, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:35 CHED 31.** INOR: Synthesis and characterization of SNS pincer ligand precursors and zinc(II) complexes. J.R. Miecznikowski, T. Ostrowski, M. Siu, K. Bayne, N.A. Bernier

**1:45 CHED 32.** INOR: Synthesis and characterization of cobalt(II) model complexes for liver alcohol dehydrogenase. J.R. Miecznikowski, S. Bonitatibus

**1:55 CHED 33.** Understanding lanthanide-ligand interactions and the trans influence: A study using the CSD. G. Borges, S. Vyas, J. Brennan

**2:05 CHED 34.** Reactivity of Monosubstituted Palladium-Calixarene Complexes. M. De Hoyos, B.A. Martinez-Ortega

**2:15 CHED 35.** Synthesis and characterization of dioxo-molybdenum(VI) calix[5]arene complexes. C. Murphy, B.A. Martinez-Ortega

**2:25** Intermission.

**2:40 CHED 36.** ANLY: GC-MS analysis of unprecedented whiskey flavors created by a novel aging process. C. Wright, R. Silvestri

**2:50 CHED 37.** ANLY: Novel nucleophilic substitution-based turn-on fluorescent probes for hydrogen sulfide detection and biological application. Y. Hu, L. Zhang

**3:00 CHED 38.** Assessing general chemistry students' ability to translate between multiple representations. X. Lin, J. Son, J.A. Rudd

**3:10 CHED 39.** Bonding with Bithlo: Enhancing the Quality of K-12 Science Education in an Underprivileged Community. L. Gandy, Y. Li Sip, B.L. Mourant, S.M. Kuebler

**3:20** Concluding Remarks.

### Section C

Pennsylvania Convention Center  
Room 204B

#### Green Chemistry Education: By the People & for the People

*Cosponsored by CEI*

*Financially supported by ACS GCI*

E. J. Brush, *Organizer*

J. E. Wissinger, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:35 CHED 40.** In silico experimentation across green chemistry. S. Chatterjee

**1:55 CHED 41.** Investigation of putative bacterial laccases in a biochemistry laboratory course. R.E. Collins

**2:15 CHED 42.** Instructional laboratory chemical waste minimization through miniscale experiments: Development of a planning and implementation model for University of San Agustin Chemistry Department using lessons learned from New Jersey City University. A. Badilla Wargniez, R.G. Aslanian, A.V. Vergara, A.P. Tolones

**2:35** Intermission.

**2:50 CHED 43.** Teaching green chemistry and 3Rs: Resources, responsibility, and recycling. A.E. Shinnar

**3:10 CHED 44.** Development and implementation of greener chemistry laboratory modules with a focus on current academic and industrial research. J. de la Parra, T.R. Gilbert, V. Lykourinou

**3:30 CHED 45.** Green chemistry and sustainability at the high school level. Z.T. Lachance, H.S. Christie, J.E. Pemberton

**3:50 CHED 46.** Sustainable design science café. R.A. Weintraub, B. Ameer

**4:10** Concluding Remarks.

### Section D

Pennsylvania Convention Center  
Room 204C

#### Context-Based Learning in Chemistry: Research on Structure, Function, Use & Outcomes

I. Parchmann, *Organizer*

Y. Dori, H. Sevian, *Organizers, Presiding*

**1:30** Introductory Remarks.

**1:35 CHED 47.** Linking concepts to actions in the context of the general chemistry laboratory. G.R. Long, M. Hewitt

**1:55 CHED 48.** Exploring the relevance of chemical identity in biochemistry contexts. C. Ngai, H. Sevian

**2:15 CHED 49.** Chemistry teachers' learning in context of scientific texts via conceptual modelling. R. Lavi, D. Dori, Y. Dori

**2:35 CHED 50.** Good practical science. J. Holman

**2:55** Panel Discussion.

**3:15** Intermission.

**3:25 CHED 51.** Inquiry-based learning in authentic outdoor contexts. T. Tal

**3:45 CHED 52.** Museum Smell Bar experiences connect chemistry to the familiar and to the relevant in visitors' lives. M. Morse

**4:05 CHED 53.** Developing higher-order thinking skills through reading web-based texts in the context of green chemistry. Y. Shwartz, E. Marom, Y. Dori

**4:25 CHED 54.** Semester-long authentic research experience in snow chemistry in the general chemistry laboratory. N. May, S. McNamara, S. Wang, J. Vernon, J.P. Wolfe, D. Goldberg, K.A. Pratt

**4:45** Panel Discussion.

#### Division of Chemical Health & Safety Awards

*Sponsored by CHAS, Cosponsored by CCS and CHED*

#### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

*Sponsored by POLY, Cosponsored by CHED and PMSE*

## SUNDAY EVENING

### Section A

Pennsylvania Convention Center  
Hall D

#### General Posters

I. J. Levy, *Organizer*

**7:00 - 9:00**

**CHED 55.** NSF programs in the Division of Undergraduate Education. T.B. Higgins, D. Rickey

**CHED 56.** Naming new elements. P.J. Karol, G.F. Peaslee, R.A. Yokley

**CHED 57.** Working together to enhance diversity in the chemical sciences: The alliance for diversity in science and engineering cultivates the UC Graduate Consortium for Cultural Diversity in Chemistry to maximize inclusion and outreach in Cincinnati. D.M. Gatlin, C. Valdez, S.A. Lopez

**CHED 58.** Ethics in chemical research: An interactive discussion about questions, conflicts, and training. P.A. Mabrouk, S.L. Tait

**CHED 59.** Undergraduate research: a case study of one lab at Meredith College. A.B. Ormond

**CHED 60.** Using edible experiments to teach chemical principals. P.D. Christie, M. Krikorian

**CHED 61.** Introducing planetary boundaries to chemistry curriculum. A. Leontyev, R.P. Beeton, N.P. Tarasova

**CHED 62.** Burg Teaching Fellowship at USC: An opportunity for graduate students to co-teach a class under the mentorship of the course instructor. P. Deokar

**CHED 63.** 3D printing activities in the chemistry curriculum made possible through collaboration with a centralized campus-supported innovation (maker) lab. S.M. Ryan, W.T. Grubbs

**CHED 64.** Lipgloss, jewelry and chemistry: Keeping middle school girls excited about science. S.M. Taylor

**CHED 65.** Relation between placement test scores and student outcomes in the introductory chemistry sequence. J. Gavenonis

**CHED 66.** Implementation of general chemistry curriculum for police officers. P.K. Yuen, C. Lau

**CHED 67.** CADD Academy - Corporate insight into ad-hoc training opportunities within a chemistry organization. L. Whitehead

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CHED 68. Implementation of an undergraduate chemistry education certification program. E.L. Atieh, D.M. York

CHED 69. Exploring learning strategies in a large lecture general chemistry course. T.S. Carpenter

CHED 70. Establishing a foundation of acid-base concepts in general chemistry using an interactive online module. K. Gilmore, T.D. Todd

CHED 71. Development of an inorganic chemistry lab at a pui. A.G. Eklund

CHED 72. Lab sequence and lab-based projects in a course on fundamentals of organic chemistry and biochemistry for undergraduate biomedical engineering major. S. Alibeik

CHED 73. Physical organic at a primarily undergraduate institution. J.F. Fuller, M.E. Railing

CHED 74. Phone a Friend: Relieving stress while maintaining desirable difficulties in an organic chemistry classroom. K.A. Pickin, C.M. Paumi

CHED 75. Lab demonstration of the kinetics for the hydrogenation of 1-octene. D.C. Haagenston

CHED 76. Microwave assisted synthesis and characterization of isatin-derivatives to yield substituted quinolone-4-carboxylic acids. F. Manyanga, M. Yatin

CHED 77. There is homotopy in addition to enantio- and diastereotopy. D.D. Clarke

CHED 78. Illustrating medicinal chemistry through an interactive demo: The Drug Discovery Game. B.F. McGuinness, J.R. Merritt

CHED 79. Greener extraction and analysis of medicinal plant compounds: A teaching module for undergraduates. J. de la Parra, C. Webb, S. Foster, J. Stanley, B. Dale, C.W. Lee-Parsons, V. Lykourinou

CHED 80. Development of extraction methods for active compounds in botanical species. L. Schue, R. Miller, E.O. Wade

CHED 81. Organic farming and analytical chemistry: A research partnership for chemistry students. S.K. St Angelo, J. Halpin, R.E. Connor, A.E. Witter

CHED 82. Withdrawn.

CHED 83. Effectiveness of active learning in an undergraduate analytical chemistry course. J.A. Heppert, M.E. Erickson, D.D. Weis

CHED 84. Mass spectrometry of E-Cigarette liquids by headspace analysis: Introduction to mass spectrometry techniques. E. Knappenberger, C.N. Stedwell, J.D. DeBord

CHED 85. Integrating infrared and UV/VIS spectroscopy to model enzyme inhibition in the instrumental analysis laboratory. A.M. Fedor, T. Scott

CHED 86. Peptide mass fingerprinting of egg white proteins. L.T. Alty, F.J. Lariviere

CHED 87. Fluorimetry and biolayer interferometry to evaluate protein expression in an undergraduate biochemistry laboratory. R.E. Connor

CHED 88. High throughput discovery: A multidisciplinary approach to translational research & education. S. Berritt, D. Schultz, J. Field

## MONDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 201A

#### Chemistry of the People, by the People, for the People

Cosponsored by ANYL, CEI and MPPG

I. J. Levy, C. H. Middlecamp, *Organizers*

R. Baum, *Organizer, Presiding*

8:30 Introductory Remarks. R. Baum

8:35 CHED 89. History of chemistry of the people, by the people, and for the people. C.J. Giunta

8:55 CHED 90. ACS Division of Small Chemical Businesses SCHB is an essential resource for the entrepreneur. J.E. Sabol

9:15 CHED 91. Chemistry of rubber, it's more than what meets the road. L.C. Goss

9:35 Intermission.

9:45 CHED 92. Fluorine chemistry of, by, and for the people of the world. S.H. Strauss

10:05 CHED 93. Electronic materials of the people, by the people, and for the people. Q. Lin

10:25 CHED 94. Chemical reactions and human actions: Teaching and learning as if they are inextricably linked. P.G. Mahaffy

10:45 Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 204A

#### Chemistry For the People: Reflections from Perkin Medalists

Cosponsored by MPPG

I. J. Levy, *Organizer*

J. C. Warner, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 CHED 95. From drugs to dyes and back: Understanding innovation in the chemical sciences through the history of the Perkin Medal. J.A. Roberts

9:15 Intermission.

9:25 CHED 96. CPP-115: A novel GABA aminotransferase inactivator and potential new treatment for epilepsy, addiction, and hepatocellular carcinoma. R.B. Silverman

10:05 Intermission.

10:15 CHED 97. Towards sustainable optoelectronic materials for advanced technologies. E. Reichmanis

10:55 Intermission.

11:05 CHED 98. What would Sir William Perkin think today? C.A. Maryanoff

11:45 Concluding Remarks.

### Section C

Pennsylvania Convention Center  
Room 204B

#### General Papers

##### Tools for Teaching

S. A. Fleming, *Organizer*

A. G. Karatjas, J. A. Webb, *Presiding*

8:30 Introductory Remarks.

8:35 CHED 99. Use of exam reflections to assess student examination performance in organic chemistry courses. A.G. Karatjas

8:55 CHED 100. Grade perceptions in a chemistry program (from non-majors courses through graduate students) - Examination postdictions and the Kruger-Dunning effect. J.A. Webb, A.G. Karatjas

9:15 CHED 101. Role of student major in grade perception in chemistry courses. A.G. Karatjas, J.A. Webb

9:35 CHED 102. Pikme: Promoting student participation with an app. S. Bakrania

9:55 Intermission.

10:10 CHED 103. Designing LEGO activities to help students learn general chemistry topics. J. Xian

10:30 CHED 104. Using 'clickers' to encode and decode knowledge of bonding, conformation, configuration, (i.e., structure) in organic chemistry. Using 'clickers' to encode and decode knowledge of bonding, conformation, configuration, (i.e., structure) in organic chemistry. S.M. Graham

10:50 CHED 105. Using digital technology to create student centered collaborative spaces for explaining real-world contexts using organic chemistry. M. Chatterjee, S. Feuerwerker

11:10 CHED 106. Incorporation of mobile technology into first-year chemistry courses at Merrimack College. J.D. Blanchard, A.L. Fernandez, B. Provencher, S.M. Theberge, B. Zwickau

11:30 Concluding Remarks.

### Section D

Pennsylvania Convention Center  
Room 204C

#### Research in Chemistry Education

M. A. Teichert, D. J. Wink, *Organizers, Presiding*

8:30 Introductory Remarks.

8:35 CHED 107. Application of pupillometry in chemistry education research. J. Garcia, M. Weinrich, H. Sevia

8:55 CHED 108. Gaze transition entropy: Assigning a measure of randomness to distinguish participants' levels of understanding of chemistry word problems. P. Nahlik, P.L. Daubenmire

9:15 CHED 109. Investigating preservice chemistry teachers' references for macroscopic, symbolic and sub-microscopic levels representing for chemical equilibrium via eye tracking. S. Korkmaz Yavuz, S. Akaygun

9:35 CHED 110. Authorship and publication ethics in undergraduate research partnerships. A.C. Pattani, P.A. Mabrouk

9:55 Intermission.

10:10 CHED 111. Transforming the organic lab experience: development and implementation of an organic lab module curriculum at a two-year institution. J.P. Anderson, B.L. Edelbach

10:30 CHED 112. Professional skills: The latent learning outcome of a project based lab. N.L. Burrows, S.R. Mooring

10:50 CHED 113. Stepwise approach to writing in the organic chemistry course sequence and beyond. J.W. Wackerly

11:10 CHED 114. Integrating innovative polymer chemistry research into the introductory general chemistry two course sequence-fostering STEM interest and retention. O. Wadsworth

11:30 Discussion.

#### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

##### K-12 Workshop

Sponsored by POLY, Cosponsored by CHED and PMSE

## MONDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 201A

#### Chemistry of the People, by the People, for the People

Cosponsored by ANYL, CEI and MPPG

I. J. Levy, C. H. Middlecamp, *Organizers*

R. Baum, *Organizer, Presiding*

1:30 Introductory Remarks. N. Jackson.

1:35 CHED 115. Fuels chemistry for the people - Energy & Fuels Division (ENFL). A.L. Boehman

1:55 CHED 116. Energy for the people. P.R. Robinson

2:15 CHED 117. Nuclear chemistry's role in the 21st century. G.F. Peaslee

2:35 Intermission.

2:45 CHED 118. Chemistry of the people, by the people, for the people: AGRO perspective. K.L. Armbrust

3:05 CHED 119. Improving the environment by committee. C.W. Avery

3:25 CHED 120. Keeping it safe for everyone - the Division of Chemical Health and Safety. F.K. Wood-Black

3:45 Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 204A

#### Chemistry For the People: Reflections from Perkin Medalists

Cosponsored by MPPG

I. J. Levy, *Organizer*

J. C. Warner, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 CHED 121. Discovery and development of LIPITOR® - Would anyone make this molecule today? B.D. Roth

2:15 Intermission.

2:25 CHED 122. Inventing compounds that have novel modes of action against cancer. R.C. Breslow

3:05 Intermission.

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



- 3:15 CHED 123.** Green chemistry innovations through the lens of thermodynamics. J.C. Warner
- 3:55** Concluding Remarks.

## Section C

Pennsylvania Convention Center  
Room 204B

### Chemistry Explained by Teachers for Teachers: The Chemistry behind Everyday Things

*Cosponsored by PMSE, POLY and RUBB*

*Financially supported by IPEC*

S. C. Rukes, *Organizer, Presiding*

- 1:30** Introductory Remarks.

- 1:35 CHED 124.** Teach engineering principles on the cheap with concrete. D. Goodwin, S.C. Rukes, A. Nydam

- 2:15 CHED 125.** Composites and their uses. S.C. Rukes, C. Jackson, A. Nydam

- 2:45 CHED 126.** Cars: A fun and relevant way to teach chemistry. S.C. Rukes, A. Nydam, D. Goodwin

- 3:25** Intermission.

- 3:30 CHED 127.** BioPlastic: Going from synthetic to natural polymers. S.C. Rukes

- 3:50 CHED 128.** Polymer food chemistry: Have fun with polymer chemistry by making mountain dew'vlar. S.C. Rukes

- 4:10** Intermission.

- 4:15 CHED 129.** Chemistry of toys. S.C. Rukes, E.J. Escudero

- 4:50** Concluding Remarks.

## Section D

Pennsylvania Convention Center  
Room 204C

### Research in Chemistry Education

M. A. Teichert, D. J. Wink, *Organizers, Presiding*

- 1:30** Introductory Remarks.

- 1:35 CHED 130.** E-learning in chemistry education: Self-regulated learning in a virtual classroom. R. Eidelman, Y. Shwartz

- 1:55 CHED 131.** Exploring the interplay of learning environment, group/individual characteristics, and conceptual learning across multiple contexts in a general chemistry classroom. J. Emberger, R.S. Cole

- 2:15 CHED 132.** Does POGIL promote teamwork and problem-solving skills? P.W. Stratford, S. Lemmon, D. Zarco, M.A. Horn, H.W. Ashworth

- 2:35 CHED 133.** Investigating chemistry and STEM academic peer leaders' professional development related to content knowledge, pedagogical knowledge, and communication and leadership skills. M. Emenike, S. Katzen, N. Patel, Y. Sun, S. Blackwell

- 2:55** Intermission.

- 3:10 CHED 134.** Evaluating the role of visualization tool such as simulation towards students' conceptual understanding of chemical equilibrium. B. Kumar

- 3:30 CHED 135.** Understanding college students' exam process in a general chemistry course. A.M. Willson, M.G. Kowalske

- 3:50 CHED 136.** Educating the new work force demographic in chemistry. I. Black

- 4:10** Discussion.

## Section E

Pennsylvania Convention Center  
Halls D/E

### Undergraduate Research Posters

#### Agricultural & Food Chemistry

*Cosponsored by AGFD and SOCED*

N. Di Fabio, *Organizer*

**2:00 - 4:00**

- CHED 137.** Validation of a triplex PCR high resolution melt assay for detecting three common food-borne pathogens and comparison to a commercial water test kit. T.H. Boise, K.M. Elkins

- CHED 138.** Using ion mobility spectrometry for detection of trace pesticides. L.E. Moskowitz, G. Martin, L. Yu, P. Sharma, L. Demoranville

## Section E

Pennsylvania Convention Center  
Halls D/E

### Undergraduate Research Posters

#### Analytical Chemistry

*Cosponsored by ANYL and SOCED*

N. Di Fabio, *Organizer*

**2:00 - 4:00**

- CHED 139.** Determination of gallic acid present in juice and tea beverages using high performance liquid chromatography. M. de los Santos, J. Leong, S. Svoronos, P.D. Svoronos

- CHED 140.** Determination of the total amount of antioxidants in beverages via the Folin-Ciocalteu method. J. Leong, M. de los Santos, S. Svoronos, P.D. Svoronos

- CHED 141.** Effect of pH on the spectroscopic properties of several hydroxycinnamic acid derivatives. M. Franke, P. Hanson, E.E. Mojica

- CHED 142.** Comparative analyses of phenol content and antioxidant properties of Philippine tea samples. J. Zapata, M. Franke, E.E. Mojica

- CHED 143.** Use of molecularly imprinted polymer to improve the analysis of naproxen in environmental water samples. E. Jones, R. Wise, E.E. Mojica

- CHED 144.** Binding interaction of nanoceramics (metal oxides) with human serum albumin. T. Nolan, E.E. Mojica

- CHED 145.** Analysis of marijuana contamination on currency. M.E. Malvoisin, K.S. Wendling

- CHED 146.** Analysis of hyperforin in St. John's wort capsules. M.C. Guagenti, K.S. Wendling

- CHED 147.** Self-powered enzymatic biosensor for simultaneous detection of two biomarkers of Parkinson's disease. J. Rutherford, G. VandeZande, M. Rasmussen

- CHED 148.** Micro-Raman for direct visualization of water transport in an individual aqueous droplet. K. Sullivan, S. Braziel, S. Lee

- CHED 149.** First electrochemical, aptamer-based sensor on a carbon surface. J. Lottermoser, R.J. White

- CHED 150.** Multiple uses of analytical chemistry for art and archeological research. N. Coluzzi, R.K. Larsen

- CHED 151.** Influence of monovalent electrolyte, glucose, and protein concentrations on sulfate conductivity measurements in urine. J. Garcia, M.S. McAfee, L.D. Schultz

- CHED 152.** Optimizing solvent and extraction techniques for quantifying ambient aerosols. S. Dougher, L.E. Meade, K.E. Kautzman

- CHED 153.** Detection of specific single soft particles binding to E-AB sensors in real time. N. Vaccaro, R.J. White

- CHED 154.** Preparation and stability of cis-dicarbonylbis(diorganodithiocarbamato)iron(II) complexes. B. Szeligo, J. Fuller, N. Duffy, J. Coffield

- CHED 155.** Synthesis and interactions between fmoc protected monomer and DNA via spectroscopy. A. Farrier, P.E. Sheridan, L.A. Levine

- CHED 156.** Detection of single Rh nanoparticles using an ultramicroelectrode. C. Peruzzi, S.N. Thorgaard

- CHED 157.** Super-resolution imaging of fluorophores bound to silica-coated gold nanorods. A. McLeod, K.A. Willets

- CHED 158.** Interspecies comparison of degradation of a peptide substrate reporter. A.J. Tierney, K. Yang, B.K. Emerick, M.L. Kovarik

- CHED 159.** Tracking PKB activity during Dictyostelium development using a peptide reporter. K. Yang, A.J. Tierney, M.L. Kovarik

- CHED 160.** Determining the total amount of oxygen consumption in effluent via carbonaceous biochemical oxygen demand (CBOD) and biochemical oxygen demand (BOD). J. Leong, F. Jacques, P. Meleties, P.D. Svoronos

- CHED 161.** Refractive index of malonic acid measured by Zoom-In method. B. Um, J.H. Shin

- CHED 162.** Determination of the refractive index of benzoic acid measured by Extension method. H. Kim, J.H. Shin

- CHED 163.** Thermodynamic study of esterification using a microwave reactor. H. Yun, E. Shin, J.H. Shin

- CHED 164.** Determination of the ionization constant of weak carboxylic acids using microscale freezing point depression measurements. D. Kwun, P. Irigoyen, P.D. Svoronos

- CHED 165.** Study of Donnan equilibrium and specific ion effect on osmometry measurements in urine. C. Furrh, R. Vick, M.S. McAfee

- CHED 166.** Determination of positive results in colorimetric presumptive drug tests by ultraviolet spectrometry. R. Kern, G.P. Foy

## Section E

Pennsylvania Convention Center  
Halls D/E

### Undergraduate Research Posters

#### Biochemistry

*Cosponsored by BIOL and SOCED*

N. Di Fabio, *Organizer*

**2:00 - 4:00**

- CHED 167.** Manipulating signal hydrophobicity to alter quorum sensing in *Streptococcus pneumoniae*. E. Tiwold, M.A. Bertucci

- CHED 168.** Purification and characterization of two probable lipases implicated in the virulence of *Mycobacterium tuberculosis*. D. Schemenauer, R. Johnson

- CHED 169.** Identification of M. tuberculosis enzymes expressed under dormant growth conditions. B.S. Waibel, R. Johnson

- CHED 170.** Determining the thickness of droplet interface bilayers from capacitance measurements using a modified electrophysiological amplification technique. M.E. McGlone, S. Lee

- CHED 171.** Influence of intercalation on the lipid bilayer membrane: Water permeability studies. G. Di Domizio, M. Lopez, J. Villanova, P. Milianta, J. Denver, S. Lee

- CHED 172.** Effects of cis and trans double bonds on lipid membrane properties. J. Denver, A.M. Armetta, S. Lee

- CHED 173.** Biomimetic membrane and ion effects: Water permeability and thermal property. S. Evangelista, J.C. Martinez, M.E. Morales, S. Lee

- CHED 174.** Mitigating condensation of cholesterol with unsaturated lipids: Effect on permeability. M. Lopez, G. Di Domizio, S. Evangelista, M.E. Morales, S. Lee

- CHED 175.** Immobilization of light-driven P450 biocatalysts as cross-linked enzyme aggregates. E. Henry, M. Kato, L.E. Cheruzel

- CHED 176.** Establishing preliminary relationships between peptide structure and quorum sensing activity in *Bacillus cereus*. J.K. Lynch, M.A. Bertucci

- CHED 177.** Inhibition of cancer cell viability using lysyl oxidase inhibitors. K.A. Johnston, K.M. Lopez

- CHED 178.** Enzymatic regulation of the extracellular matrix. I. Gojkovic, L. Grove

- CHED 179.** Characterizing the pH responsiveness of dithiolane-modified peptide self-assembly structures. R. Neves, J.E. Smith-Carpenter

- CHED 180.** Dissociation constant measurements of fluoride binding in heme proteins and the effects of the distal amino acid. K. Williams, K. Frankenfield, D. Rivera, J. Lopez Garriga, J. Cerda

- CHED 181.** Conserved heme domain residues play an important role in the oxygen sensing mechanism of the heme-PAS and histidine kinase FixL protein from *S. meliloti*. M. Reynolds, J. Collins, P. Gronski, J. Hagerty, J. Schadt

- CHED 182.** Evaluation of recombinant Hsp70 $\alpha$  mutants for heat shock protein binding and chaperone activity. A. Lieber, C.V. Nguyen, R.E. Connor

- CHED 183.** Assessing the fluoro-stabilization effect using in vivo unnatural amino acid incorporation. D. Parfianowicz, A. Miner, C. Henkels

- CHED 184.** Investigating the determinants of structure, stability, and folding in a model protein system: GB1. B. Ruedlinger, J. Bedford, L.H. Greene

- CHED 185.** Bacterial growth studies of gut microbes including *Lactobacillus Rhamnosus* GG and *Escherichia Coli* HS using UV-VIS spectrophotometry and quantitative PCR (QPCR). D. Parikh, S. Kim, P. Aggarwal, K. Djambazova

- CHED 186.** Effect of metals on catalytic activity of mutated Rv0045c esterase from *M. tuberculosis*. I. Bowles, B. Lancaster, R. Johnson, G.C. Hoops

CHED **187.** Characterization of a triacylglycerol lipase from *Mycobacterium tuberculosis*. J. Jozwiakowski, R. Johnson

CHED **188.** Using directed evolution to increase lipid formation in *Chlorella vulgaris* for use in biofuels. A. Smythers, P.E. Adkins, A. Holland, D. Kolling

CHED **189.** Building a library of fluorogenic ester substrates to analyze serine hydrolases. A. Koelper, R. Johnson, G.C. Hoops

CHED **190.** Biophysical characterization and catalytic reactivity of rubrerythrin and symerythrin model proteins. J. Pellegrino, K.A. Bell, R. Polinski, S. Cimerol, A. Jacobs, E.I. Solomon, A.J. Reig

CHED **191.** Synthesis and characterization of self-assembling nucleopeptides. K. DelBianco, S.R. Schrecke, S. Brown, J.E. Smith-Carpenter

CHED **192.** Antiphospholipid antibody and MiR106b mediated expression of tissue factor in breast cancer cell lines. I. Sun, E. Lin, R. Sullivan, A. Nguyen

CHED **193.** Interaction of mitochondrial DNA with RHPS4. I. Xiang, B. Kaufman, L.A. Yatsunyk

CHED **194.** Atomic force microscopy measurements of breast cancer cells treated with single walled carbon nanotubes. M. Perez, L. Ulloa, S. Dehipawala, T. Hemraj Benny, R. Sullivan

CHED **195.** Geis Digital Archive: An Open-Access Educational Resource for Structural Biology. C. Markosian, B. Lin, S. Burley, C. Zardecki, A. Alvarado, N. Werpachowski

## Section E

Pennsylvania Convention Center  
Halls D/E

### Undergraduate Research Posters

#### Chemical Education

*Cosponsored by SOCED*

N. Di Fabio, *Organizer*

2:00 - 4:00

CHED **196.** Transformation of the organic chemistry laboratory: Assessment of instructor practice and meaningful learning in a modular organic laboratory sequence. W. Marmor, R. Kipsang, K. Miller, T.D. Kim

CHED **197.** Multistep synthesis for second year organic students: Wittig olefination, transfer hydrogenation, and ester hydrolysis. P.A. Ross, S. Ragheb, M.J. Castaldi, J.K. Murray

CHED **198.** Perception of Harm of Prescription Drugs Among College Students Based on a Student's Home State and Education Level. J.A. Burch, M.E. Railing

CHED **199.** Use of selective TOCSY NMR experiments for quantifying menthone/menthol ratio in the organic synthesis lab. L. Zhang, J. Fang, A. Hogan, E. Fasella, M.C. Tettamanzi

CHED **200.** Eugenol isolation and derivatization for incorporation into a synthesis laboratory. K. Mummert, S.M. Kennedy

CHED **201.** Baeyer-Villiger investigative experiment for the undergraduate organic chemistry laboratory. B. Withrow, J. Killen, D.L. Dillon

CHED **202.** Chemical upcycling of guaifenesin: An experiment for organic chemistry labs. K. Maziarz, H.S. Barcena

CHED **203.** Chemical upcycling of paracetamol: An experiment for organic chemistry labs. M. Barrie, H.S. Barcena

CHED **204.** College students' perceptions about commonly abused prescription drugs. B. Becca, E.L. Dalton, M.E. Railing

CHED **205.** Impact of professional development programs on middle and high school teachers' instruction in chemistry: Findings from a five-year longitudinal study. A.A. Williams, A.J. Contreras, R. Lewis, E.E. Gonzalez, B. McCormick, A.R. Chaudhuri

CHED **206.** Measuring students' understanding of periodic trends when using multiple representation of the trends and atomic structure. V. Kaloudis, K. Balnius, P.L. Daubenmire, P. Nahlik, L.C. Brazdil

CHED **207.** Using classroom engagement to impact campus recycling systems. M. Nigam, A. Buxbaum

CHED **208.** Modern techniques in biochemistry education: Analysis of bovine pancreatic trypsin inhibitor using HPLC. M. Steinsaltz, R. Carpenter

CHED **209.** Effectiveness of peer led supplements in an undergraduate general chemistry course based on test scores. A.S. Logsdon, M.E. Erickson, L. Villafuerte, J.A. Heppert

CHED **210.** Integrating energy in the laboratory for engineers and scientists. K. Notarangelo, E. Bernal, J. Jaramillo, J. Torres, R. Pei, E. Mule, J. Tang, R. Gomes, D. Muñoz, W. Livernois, F. Girma, E. Valentine, Z. Choo, P. Tooteja, C. Crownhart, T. Manganello, J. De Oliveira, A. Wamakima, K. Oluwole, A. Kendrick, J.P. Hamel

CHED **211.** Investigating the antimicrobial properties of brominated parabens: An organic laboratory experience. H. Kintz, S. Furman, J. Bietsch, A.A. Yeagley

## Section E

Pennsylvania Convention Center  
Halls D/E

### Undergraduate Research Posters

#### Computational Chemistry

*Cosponsored by COMP and SOCED*

N. Di Fabio, *Organizer*

2:00 - 4:00

CHED **212.** Characterization of ice nucleation at mineral surfaces. Z. Graziano, D. Slough, Y. Lin

CHED **213.** IR spectrum prediction and analysis by PED determination using unified group theory of two sulfur-containing molecules: Digermysulfide and divinyl sulfoxide. J.M. Mukerjee, Y. Al Fahham, H. Kim

CHED **214.** Molecular dynamics simulations of a series of experimentally active ligands bound to fatty acid binding protein 5. B. Brown, C.D. Bruce

CHED **215.** Molecular dynamics studies of the binding of retinoic acid to the transport protein CRABP-II. N. Hunter, C.D. Bruce

CHED **216.** Computational investigation of solvent effects on the reactivity of C-amino-1,2,4-triazoles. J.K. Niblo, R.J. Olsen

CHED **217.** Proton affinities of proline dipeptides. P. Arcoria, J. Poutsma

## Section E

Pennsylvania Convention Center  
Halls D/E

### Undergraduate Research Posters

#### Environmental Chemistry

*Cosponsored by ENVR and SOCED*

N. Di Fabio, *Organizer*

2:00 - 4:00

CHED **218.** Arsenic removal using biosand filters amended with iron nails: Effect of pH. A. Patel, D.J. Temme, J.M. Smolen

CHED **219.** Developing a reactive ink for marker-based identification of treated and untreated waste lumber. M. Bagley, J.L. Ferry

CHED **220.** Analysis of metal ions in rivers at Texas state parks using inductively coupled plasma-mass spectroscopy. A.J. Contreras, A.A. Williams, P.P. Gonzalez, A.R. Chaudhuri, E.E. Gonzalez

CHED **221.** Use of native plants in removing nitrates from waste water. M.F. Austin, S. Lopez, M.E. Railing

CHED **222.** Detection of pesticides in locally produced honey. V. Kompanijec, C. Kubow, J. Charlebois

CHED **223.** Absorptive properties of atmospheric aerosols collected in Towson, MD. A. Morales, L.E. Meade, K.E. Kautzman

CHED **224.** Cleaning and protecting the water we use via NYC's wastewater treatment system & DEP Shoreline Survey Unit. I. Sun, J. Villacis, F. Jacques, P. Meleties, P.D. Svoronos

CHED **225.** Determination of pesticides in fruits, vegetables and grains via the Luke method. I. Sun, K. Williams, M. Iorsh, P.D. Svoronos

CHED **226.** Detection of Salmonella in foods via microbiological methods. I. Sun, A. Lara, P.D. Svoronos

CHED **227.** Treatment of wastewater samples at the New York City-Department of Environmental Protection (NYC-DEP). J. Hwang, F. Jacques, P. Meleties, P.D. Svoronos

## Section E

Pennsylvania Convention Center  
Halls D/E

### Undergraduate Research Posters

#### Green Chemistry & Sustainability

*Cosponsored by SOCED*

*Financially supported by ACS GCI*

N. Di Fabio, *Organizer*

2:00 - 4:00

CHED **228.** Conversion of biomass to value added chemicals. A.W. Bassett, J.D. Smith, J. Seay, T.W. Gaus, H. Patel, J.F. Stanzione, A.M. Mugweru, K.V. Ramanujachary, S.C. Jonnalagadda

CHED **229.** Epoxidized soybean oil polymers. Y. Vvedenskiy, H.S. Barcena

CHED **230.** Empirical model of polymer electrolyte membrane fuel cells (PEMFC) using Vulcan/Pt/Ce(III) catalysts in ethanol. L.M. Lotti Diaz, Y. Garcia Herrera, K. Ocasio Norat, R. Guzmán Blas

CHED **231.** Development of a greener synthesis of diaryliisoxazoles. G. Faux, K. McCord, B. Leon, A.E. Moretti, Y. Lin, A. Char, J. Proulx, G. Shaffer, S. Tatum, C. Kugelmann-Lester, T. Rank, J. Loftus, S. Murray, L. Bastin

## Section E

Pennsylvania Convention Center  
Halls D/E

### Undergraduate Research Posters

#### Inorganic Chemistry

*Cosponsored by INOR and SOCED*

N. Di Fabio, *Organizer*

2:00 - 4:00

CHED **232.** Understanding DNA interaction and biological properties of Ru(II)Pt(II) bimetallic complexes. D.H. Davis, T.A. Sampson, A. Jain

CHED **233.** Intercalation chemistry of iron-based superconductors. H. Vivanco, X. Zhou, E.E. Rodriguez

CHED **234.** Syntheses, characterization, and oxygen reactivity of three coordinate SNS copper(I) pincer complexes. J.R. Miecznikowski, M. Smith, M. Siu, N.A. Bernier

CHED **235.** Use of a bis(indenyl)zirconium(II) complex as a coactivator organometallic to access reactive, low valent transition metals. C.A. Bradley, Z. Call

CHED **236.** Reactions of first-row metal(II) triflates with 3,6-bis(2-pyridyl)-1,2,4,5-tetrazine. J. Manikoff, M. Cranswick

CHED **237.** Synthesis, characterization, and catalytic behavior of mono- and bimetallic ruthenium(II) complexes supported by pyridine-functionalized N-Heterocyclic carbene ligands. J. Zgrabik, G.J. Domski

CHED **238.** Naphthyridine-based dicarboxamide ligand for the synthesis of dicopper complexes that model metalloenzyme intermediates. J. Sachs, N.L. Gagnon, W.B. Tolman

CHED **239.** Substituent effects on the photochemistry and DNA interaction properties of Ru(II)Pt(II) based polypyridyl complexes. A.E. Hagelgans, T.A. Sampson, A. Jain

CHED **240.** Isomers and interconversions at eight-coordinate rhenium(V) polyhydride centers. A. Scorzelli, B. Macalush, G. Torres, G.A. Moehring

CHED **241.** Systematic synthesis of a linked trisium cluster system via 1,5-pentanediol bridging ligands. R. Sommerhalter, M. Pearsall

CHED **242.** Reactions of amides with dibridged trisium carbonyl clusters. K.E. Marak, M. Pearsall

CHED **243.** Synthesis and characterization of vanadium(IV) complexes from a novel Schiff base, (E)-N'-(5-(Z)-(4-fluorophenyl) diazenyl)-2-hydroxybenzylidene) benzohydrazide. J. Chhabra, D.T. Brown, R.K. Gurung, M.J. Celestine, A. Holder

CHED **244.** Synthesis and characterization of vanadium(IV) complexes from a novel Schiff base, (E)-N'-(5-(Z)-(4-fluorophenyl) diazenyl)-2-hydroxybenzylidene) benzohydrazide. D.T. Brown, J. Chhabra, R.K. Gurung, M.J. Celestine, A. Holder

**CHED 245.** Synthesis, characterization, and catalytic behavior of mono- and bimetallic iridium(III) complexes supported by pyridine-functionalized N-heterocyclic carbene ligands. I. Smith, G.J. Domski

**CHED 246.** Synthesis and characterization of  $[Rh^{II}(NNN)(NN)L]^{2+}$ . P. Nunez, D. Amarante

**CHED 247.** Synthesis of a chloride chemosensor by ligand structure manipulation. N. Brocius, J.M. Fautch

**CHED 248.** Effects of alkyl group and NHC ligand variation with ruthenium-based olefin metathesis catalysts bearing chelating ortho-alkoxy benzylidenes. S. Luo, K. Engle, P. Liu, X. Dong, B.L. Taylor, M.K. Takase, K.N. Houk, R.H. Grubbs

**CHED 249.** Synthesis of substituted silicone nanospheres and characterization by X-ray fluorescence (XRF) spectroscopy. M. Suchewski, A. Kayser, C.A. Bradley

**CHED 250.** Mechanism of the oxidation of a cobaloxime by sodium bromate in aqueous solution. B.S. Nunez, M.J. Celestine, A. Holder

**CHED 251.** Synthesis, characterizations, and DNA-binding and cytotoxicity studies of tricarbonylrhenium(II)-diimine complexes of ibuprofen. S. Parnell, S. Pramanik, S.K. Mandal

**CHED 252.** Synthesis, characterizations, and DNA-binding and cytotoxicity studies of tricarbonylrhenium(II)-diimine complexes with mefenamic acid. T. Hinton, S. Pramanik, S.K. Mandal

**CHED 253.** Mixed sulphadoxine-aspirin metal complexes: Synthesis and antimicrobial studies. J.A. Obalaye, S.T. Adekunle, A.O. Rajee, M.O. Abbass, F.V. Adewumi

**CHED 254.** Synthesis and characterization of an iron(III) amine triphenolate coordination complex. K.C. Casey, L.A. Steigen, U.J. Williams

**CHED 255.** Photophysical and chiroptical properties of europium(III) complexes with tetracycline derivatives. M. Johnson, A. Riives, G. Muller

**CHED 256.** Synthesis and characterization of new rhodium alkene complexes containing hemilabile P-O ligands. C.J. Adams, J.T. Medina, G.A. Ramirez, A.A. Urbina, C. Hahn

**CHED 257.** Reduction of carbon disulfide at rhodium polyhydride centers. D.J. Streisel, A.L. Petrou, G.A. Moehring

**CHED 258.** Effect of bridging ligand conjugation on bimetallic asymmetric ruthenium(II) complexes and their DNA interactions. J. Montalvo, M. LaCorte, M.T. Mongelli, A. Abdulkarim, K. Thomas

## Section E

Pennsylvania Convention Center  
Halls D/E

### Undergraduate Research Posters

#### Medicinal Chemistry

Cosponsored by *MEDI* and *SOCED*

N. Di Fabio, *Organizer*

2:00 - 4:00

**CHED 259.** Design and synthesis of a macrocyclic non-covalent proteasome inhibitor. M.A. Rocha, R.S. Dorn, M.G. Gotz

**CHED 260.** Scaffold-hopping approach to the development of antiseptic cationic amphiphiles. M. Mitchell, R. Allen, M. Jennings, W.M. Wuest, K.P. Minbiole

**CHED 261.** Design, synthesis, and biological evaluation of  $\alpha$ -(imidazolylmethyl) cinnamates,  $\alpha$ -(imidazolylmethyl) cinnamamides, and p-imidazolyl- $\alpha$ -(imidazolylmethyl)cinnamates. S. Pathi, D. Morgan, A. Vendola, M. Ur Rahman, A. Colfer, K. Truong, S.C. Jonnalagadda

**CHED 262.** Screening of peptide linked metal chelators: A potential disruptor for amyloid-beta aggregation. M. Hart, C.H. Vollbrecht, K.A. Pickin

**CHED 263.** Interaction of noncanonical DNA structures with small molecule ligands. S. Malawi, D. Jordan, D. Buyco, L.A. Yatsunyk

**CHED 264.** Comparison of extraction methods for capsaicin. J. Will, M. Frazee, E.O. Wade

**CHED 265.** Cytotoxicity and minimal inhibitory concentration evaluation of synthesized benzohydrazide derivatives. A. Mason, S. Thompson, J.J. Steel, D.L. Dillon

**CHED 266.** Design and synthesis of some novel 2,4-disubstituted quinazoline derivatives as anticancer agents. R.F. Almutairy, M. Alsolmi, A. Al-Johani, A. Mohammed Noor, R. Towairqi

**CHED 267.** Structure-Resistance Relationships: Interrogating Antiseptic Resistance in Bacteria Using Multicationic Quaternary Ammonium Dyes (multiQACs). S. Duggan, M. Forman, M. Fletcher, M. Jennings, K.P. Minbiole, W.M. Wuest

**CHED 268.** Sugar modified pseudouridines as potential anti-viral agents. J. Nunnari, I. Sappy, A.C. Bryant-Friedrich

## Section E

Pennsylvania Convention Center  
Halls D/E

### Undergraduate Research Posters

#### Nanochemistry

Cosponsored by *SOCED*

N. Di Fabio, *Organizer*

2:00 - 4:00

**CHED 269.** Chemiresistive gas sensors on shrinkable polymer films. P. Pivak, M. Smith, K. Jensen, D. Martin, K. Mirica

**CHED 270.** Mechanism of fingerprint development using gold polyaniline nanocomposites: Physical adsorption versus chemical reaction. J. Borski, M. Johnson, V. Angus, J. Tiamco, J. Saripada, J. Ford, Y. Pajouhafsar, A. Alnuaimi, N. Abou Alloul, F. Nahas, H. Abdou, A. Mohamed

**CHED 271.** Organic field-effect transistor fabrication using hexatriaccontane as a dielectric layer. S. Grace, M. Castillo, B. Kim

**CHED 272.** Complementing electrochemical studies of self-organized gold nanoparticle-cytochrome c superstructures with UV-visible spectroscopy. N. Kosciuszek, E.R. Pacer, B.H. Abunar, J. Spiridigliozzi, A.S. Harper-Leatherman

**CHED 273.** Partial sulfonation of polyaniline nanofibers. D. Perry, D.M. Sarno

**CHED 274.** Motion of amino acids through single-walled carbon nanotubes. J. Stoeber, C. Hergenrother, M.D. Ellison

**CHED 275.** Schmidt reaction for carboxylic acids on single-walled carbon nanotubes. E. Purdie, M.D. Ellison

**CHED 276.** Electroosmotic flow of methanol through single-walled carbon nanotubes. S. Menges, L.M. Nebel, M.D. Ellison

**CHED 277.** Effect of the presence of single-walled carbon nanotubes on the action of an antifungal agent on *Saccharomyces cerevisiae*. C. Renninger, M.D. Ellison

**CHED 278.** Antibiotic delivery to *Escherichia coli* using PEG-modified nano-graphene oxide. K. Fiocca, N. Normil, M.D. Ellison

**CHED 279.** Functionalization of single-walled carbon nanotubes for use in overcoming antibiotic resistance in *Escherichia coli*. M. Force, R. Rathi, M.D. Ellison

## Section E

Pennsylvania Convention Center  
Halls D/E

### Undergraduate Research Posters

#### Organic Chemistry

Cosponsored by *SOCED*

N. Di Fabio, *Organizer*

2:00 - 4:00

**CHED 280.** Studies toward the synthesis of novel cross-membrane fluorometric probes. A. Cartaya, N. Hill, T. Faniyan, T. Zimmermann, D. Raymond, T. Liwosz, T.G. Goudreau Collison, A. Gupta

**CHED 281.** Noncovalent CH-aromatic interaction as a function of solvation. S. Bey, S. Ashour, B.U. Emenike

**CHED 282.** Studies toward the total synthesis of trocheliophorolide A: Making the unsaturated side chain moiety as a convergent Suzuki coupling partner. J. Caponigro, H.M. Simpson, W. Spencer, T.G. Goudreau Collison

**CHED 283.** Model study toward the total synthesis of aplydactone: Advances toward the dilithiate side chain. M. Cattalani, A. Streit, A. Kelly, K.A. Valentine, T.G. Goudreau Collison

**CHED 284.** Using BAPN derivatives to synthesize small molecule LOX inhibitors. M.L. Williams, D.M. Solano

**CHED 285.** Synthesis of asymmetrically substituted cycloheptatrienyliene fluorophores. N. David, I.D. Hyatt

**CHED 286.** Modifying the structure of ciprofloxacin to synthesize novel bacterial resistant antibiotics. V.K. Cupil-Garcia, A.B. Ormond

**CHED 287.** Microwave-assisted Friedel-Crafts synthesis of methylacetophenone by using eco-friendly clay catalyst. C. Sandland, M. Douglass, M. Yatin

**CHED 288.** Isomerization of vicinal dibromides in conformationally rigid cyclohexane systems. R.P. Acocella, A.R. Szklarski

**CHED 289.** Effect of aryl and N-heterocyclic systems on the solvatochromatic properties of 3H-imidazo[4,5-b]pyridines. M.N. Bauman, P.A. Ross, S. Ragheb, M.J. Castaldi, J.K. Murray

**CHED 290.** Hydrophosphorin dyads as singlet oxygen photosensitizers and fluorophores with solvent polarity-dependent photochemical properties. L. Wiratan, N.N. Esemoto, Z. Yu, M. Ptaszek

**CHED 291.** Synthesis of sterco-bilin: A potential biomarker for autism. J. Coffey, A. Vadas, K. Lewis, G. Pirrone, T. Wood, A. Charlebois

**CHED 292.** Microbial chemical ecology: Molecular interactions between *Batrachochytrium dendrobatidis* and *Janthinobacter lividum*. B. Ho, T.P. Umile

**CHED 293.** Cationic methyl-aryl interactions as a function of solvation. J.T. Jones, R. Spinelle, B.U. Emenike

**CHED 294.** Purification and analysis of distinct porphyrin molecules. S.N. Khayyo, A. Novaj, S. Maio, D. Ismailgeci, V. Khayyo, P.K. Kerrigan, D. Amarante

**CHED 295.** Trimethylenemethane reactions from hypervalent iodonium alkenyl triflate: Generation of substituted diquinanes. T. Li, I.D. Hyatt

**CHED 296.** Formation of conglomerates for optical resolution. A. Lim, A. Gorbenko, H.S. Barcena

**CHED 297.** Synthesis of fulgides for optoelectronics. H.S. Barcena, J. Powell

**CHED 298.** Electron-rich asymmetric viologens via reductive eliminations of diaryl- $I^3$ -iodanes. A.S. Koch, L.M. Dignan

**CHED 299.** Investigating the relationship between the antimicrobial and estrogen receptor binding properties for 3,5-substituted parabens. B. Bergquist, K. Jefferson, A.A. Yeagley

**CHED 300.** Studies toward an affordable preparation of D-vinylglycine. R. Ford, S. Isa, E. Decicco, L. Sanchez

**CHED 301.** Synthesis of dihydropyrans and tetrahydropyrans using Lewis acid promoted tandem reactions. R.J. Edwards, R.M. Crane, J.F. Halonski, T. Nungesser, J.M. Carney

**CHED 302.** Cyclization of tethered aminoalkenes with in situ generated catalytic hypervalent iodine. D. Davidson, D.V. Liskin, M. Sak, S. Harris, J.M. Carney

**CHED 303.** Organic synthesis of fluorescent cyanine dyes and their precursors. J. Drigo, A.J. Winstead

**CHED 304.** Synthesis of substituted cinnamyl bromides and aryl  $\beta$ -keto esters toward a convergent total synthesis of naturally-occurring phosphodiesterase-9A inhibitors. A.G. Beck, M. McEwan, K.L. Perry, A. Moyer, K.A. Ring, J.M. Carney

**CHED 305.** Synthesis of chiral oxetanes via the enantioselective reduction of prochiral 2-halogenated ketones. J.M. Garcia Rodriguez, J.E. López Hernández, B. Quiñones Díaz, K.M. Santiago, S. Espinosa-Díaz, M. Ortiz-Marciales

**CHED 306.** Novel synthetic method for the regiospecific preparation of [2H]-indazoles. E.J. Salaski, J. Etersque, M. Orlando

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**CHED 307.** Norbornadiene to quadricyclane interconversion: Effect of substitution at the methylene bridge. D. Smees, B. Unger, M. Sexton, F. Goodson

**CHED 308.** Oxaquinonacyclophanes: Synthesis and host-guest binding. T. Sanders, J.W. Wackerly

### Section E

Pennsylvania Convention Center  
Halls D/E

#### Undergraduate Research Posters

##### Physical Chemistry

*Cosponsored by SOCED*

N. Di Fabio, *Organizer*

**2:00 - 4:00**

**CHED 309.** Solvent mediation of intermolecular helical exchange dynamics in the synthetic helical peptide Z-Aib<sub>6</sub>-β-Ala-OMe. C. Foster-Spence, J.D. Dickovick, M.C. Rotondaro, M.A. Kubasik

**CHED 310.** FT-IR spectroscopy, computational quantum chemistry, and Hessian reconstruction analyses of helical peptide isotopologues of Aib. M.C. Rotondaro, J.D. Dickovick, C. Foster-Spence, M.A. Kubasik

**CHED 311.** DFT calculations and FT-IR observations of the amide I band of isotopologues of the short helical peptide Z-Aib<sub>6</sub>-β-Ala-OMe. J.D. Dickovick, C. Foster-Spence, M.C. Rotondaro, M.A. Kubasik

**CHED 312.** Supramolecular self-assembly at the solution/solid interface. S.R. Schrecke, H. Castillo, S.L. Tait

**CHED 313.** Synthesis and surface characterization of ionic liquid 1-methyl piperazinium lactate. J. Harland, Y. Khalifa, A. Broderick, J.T. Newberg

**CHED 314.** Thermodynamics of fluoride binding in heme proteins. K. Wodzanowski, T. Nagle, J. Leonard, C. Moll, J. Cerda

**CHED 315.** Validating reported experimental temperature by examination of displacement parameters in small-molecule crystal structures. C. Sotelo, L. Wang, A. Sarjeant

**CHED 316.** Utilizing the Cambridge Structural Database to analyze water and metal geometric propensities. M. Faulkner, L. Wang, P. Sanschagrin

### Section E

Pennsylvania Convention Center  
Halls D/E

#### Undergraduate Research Posters

##### Polymer Chemistry

*Cosponsored by PMSE, POLY and SOCED*

N. Di Fabio, *Organizer*

**2:00 - 4:00**

**CHED 317.** Understanding the formation and size distribution of porous poly(o-toluidine) microspheres. J. Hwang, D.M. Sarno

**CHED 318.** Poly(thioether-co-carbonate) composites from a quinic acid derivative and cellulose for the development of tunable materials from natural products. B. Versaw, S. Felder, L. Link, K.L. Wooley

**CHED 319.** Ln<sup>3+</sup>-mediated self-assembly of a collagen peptide into luminescent banded helical nanoropes. M. He, L. Wang, J. Xiao

**CHED 320.** PDMS-co-PVMS copolymer synthesis for microfluidic devices. A.N. Baiamonte, B.S. Lwoya, J.N. Albert

**CHED 321.** Novel block-poly(L-lactide)-block-poly(ε-caprolactone)-block-poly(L-lactide) systems designed to remove small organic pollutants from aqueous environments. K. Bernhardt, A. Balija

**CHED 322.** Photopolymerized 3D hydrogels for PC12 and human neural stem cell engineering. P. Gehret, M. Palizkar, W. Ma, W.H. Suh

### Social & Chemical Science of Diversity Equity

*Sponsored by CMA, Cosponsored by CHED and PROF*

#### Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community

*Sponsored by PROF, Cosponsored by CHED, CMA, D&I, LSAC, SCHB and YCC*

#### Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?

*Sponsored by ANYL, Cosponsored by BIOL, BMGT, CHED, CINF, MEDI, PMSE and SCHB*

#### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

*Sponsored by POLY, Cosponsored by CHED and PMSE*

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

P. L. Daubenmire, I. J. Levy, M. Orgill, *Organizers*

**8:00 - 10:00**

2, 14, 18, 23, 44, 55-56, 58, 60-61, 64-65, 70, 79, 81, 83, 88, 112, 130, 133. See previous listings.

337, 367, 369, 385, 390, 419, 423, 429. See subsequent listings.

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Successful Student Chapters

*Cosponsored by SOCED*

N. Di Fabio, *Organizer*

**8:00 - 10:00**

**CHED 323.** Science at the Mount! Activities of the College of Mount Saint Vincent science club. G. Mendoza, P. Nunez, E. Ferrara, B. Hoyland, E. Garcia, K. Nkyeh, P.K. Kerrigan

**CHED 324.** Chemistry Club activities at Monmouth University. K. Muratore, K. Flynn, B. Macalush, O. Adetunji, G.A. Moehring

**CHED 325.** Chemistry community at the University of Maryland, Baltimore County. G. Balaa, N. Steenrod, T.S. Carpenter, S. Mang

**CHED 326.** On the path to a national recognition. A. Goranov, S.L. Carberry, L.T. Tan, T. Udumulla, K. Djambazova

**CHED 327.** What's cooking at ECS? N. Heron, N.H. Marashi

## TUESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 201A

#### Chemistry of the People, by the People, for the People

*Cosponsored by ANYL, CEI and MPPG*

I. J. Levy, C. H. Middlecamp, *Organizers*

R. Baum, *Organizer, Presiding*

**8:30** Introductory Remarks. W. Carroll.

**8:35** **CHED 328.** Organic chemistry: Of the people, by the people and for the people. D.M. Huryn

**8:55** **CHED 329.** Geochemistry and grand challenges: Arsenic contamination, and geological carbon storage. A. Ilgen, W.D. Burgos, Y. Furukawa, Y. Jun, S.N. Kerisit, J.D. Kubicki, S. Lee, F.N. Smith, A.G. Stack, L.L. Stillings

**9:15** **CHED 330.** Waste water treatment and microbeads: teaching students to distinguish media myth from scientific reality. R.Y. Lochhead, A.G. Marks, K.C. Deniakos, S.E. Morgan

**9:35** Intermission.

**9:45** **CHED 331.** Chemistry of the people, by the people, for the people how chemistry and the law affects people of Earth. J.L. Kennedy

**10:05** **CHED 332.** Industrial and engineering chemistry - Chemistry that works. F.K. Wood-Black

**10:25** **CHED 333.** Human health research in the Division of Chemical Toxicology. S.S. Hecht, A.C. Bryant-Friedrich

**10:45** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 204A

#### Crafting Chemical Communication

*Cosponsored by PRES*

*Financially supported by Elsevier and Nature Chemistry*

J. D. Batteas, *Organizer*

R. M. Burks, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35** **CHED 334.** Graduate course in professional science communication. R.C. Fortenberry

**9:05** **CHED 335.** Kitchen conversations. M.R. Hartings

**9:35** **CHED 336.** Beyond the page: Journal article as the starting point in chemical communication. M.A. Paley, C.R. Bertozzi

**10:05** Intermission.

**10:20** **CHED 337.** Effective chemistry communication in informal environments. D.A. Ucko

**10:50** **CHED 338.** Practical guide to crafting communication strategies to effectively engage the general public. J.S. Francisco

**11:20** Panel Discussion.

### Section C

Pennsylvania Convention Center  
Room 204B

#### GSSPC: From Bench-to-Bench & Beyond: Engaging People with High Impact Chemistry

*Cosponsored by INOR and POLY*

*Financially supported by Merck; Johnson & Johnson; TCI America; BASF; U. Pennsylvania Department of Chemistry; U. Pennsylvania Department of Materials Science & Engineering; Temple U. Department of Chemistry; University of the Sciences*

B. Cole, N. Krook, S. Najmr, B. E. Partridge, *Organizers*

N. Bellonzi, M. Nicastrì, C. R. Walters, *Organizers, Presiding*

**9:00** Introductory Remarks.

**9:05** **CHED 339.** Development of a manufacturing route for MK-8931. W. Morris

**9:30** **CHED 340.** Synthesis design through the lens of flow chemistry - How, when, and why. T.F. Jamison

**10:05** **CHED 341.** Intercepting and delineating bacterial communication pathways using synthetic ligands. M.A. Welsh, J.D. Moore, M.E. Boursier, T. Yang, M.C. O'Reilly, K.E. Nyffeler, J.K. Vasquez, H.E. Blackwell

**10:40** Intermission.

**11:00** **CHED 342.** From quantum chemistry to drug discovery: the evolution of Schrodinger, Inc. in the world of computational chemistry. R.A. Friesner

**11:35** **CHED 343.** Expanding chemical biology with genetic code expansion. R.A. Mehl

**12:10** Concluding Remarks.

### Section D

Pennsylvania Convention Center  
Room 204C

#### Engaging Undergraduates with X-Ray Crystallography

*Financially supported by Bruker AXS; American Crystallographic Association*

A. Sarjeant, J. Tanski, K. A. Wheeler, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35** **CHED 344.** Crystallography in the undergraduate setting: From diffractometer acquisition to publishing structures in collaboration with undergraduates. J. Tanski

**9:00** **CHED 345.** Teaching chemical crystallography without a diffractometer. A.T. Royappa

**9:25** **CHED 346.** Protein crystallography as a research and teaching tool: X-ray crystallography makes a comeback at Bryn Mawr College. Y. Kung

**9:50** **CHED 347.** X-ray crystallography in a directed-inquiry organic chemistry laboratory experiment: Endo versus exo revealed. J.E. Wissinger, G.T. Hoang, V.G. Young, T. Kubo

**10:15** Intermission.

**10:30** **CHED 348.** Promoting student success via crystallographic data in the sophomore organic course setting. K.A. Wheeler

**10:55 CHED 349.** Combining X-ray crystallography and computational chemistry with nuclear magnetic resonance spectroscopy for small molecule structural characterization. J.D. Zehr, C. Hamann

**11:20 CHED 350.** Chemical crystallography: how much of it is suitable for an undergraduate class? A.Y. Nazarenko

**11:45 CHED 351.** Education from 824,520 crystal structures. A. Sarjeant, P.A. Wood, S. Ward, C. Groom

**12:10** Concluding Remarks.

### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

Sponsored by POLY, Cosponsored by CHED and PMSE

#### Safety & Ethics in our Chemical Community

Sponsored by CHAS, Cosponsored by CCS, CHAL, CHED, CORP, ETHC and SCHB

#### Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eiel

Sponsored by ORGN, Cosponsored by BMGT, CHED, CINF, HIST, INOR, PMSE and SCHB

## TUESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 201A

#### Chemistry of the People, by the People, for the People

Cosponsored by ANYL, CEI and MPPG

I. J. Levy, C. H. Middlecamp, *Organizers*  
R. Baum, *Organizer, Presiding*

**1:30** Introductory Remarks. M. Jacobs

**1:35 CHED 352.** People of the division of agricultural and food chemistry. K.D. Deibler, M. Appell, M.H. Tunick, N.P. Seeram, B. Park, M.J. Morello, C.J. Brine

**1:55 CHED 353.** Making chemistry data infrastructure awesome: The CINF multiplier. E. Davis, E. Alvaro

**2:15 CHED 354.** Polymers all around us - The POLY road show. F.D. Blum

**2:35** Intermission.

**2:45 CHED 355.** Biological chemistry for the people. Y. Tang

**3:05 CHED 356.** New generation chemistry for newborn screening of inborn errors of metabolism. F. Turecek, M.H. Gelb, C. Scott

**3:25 CHED 357.** Green gasoline: A better biofuel. J.R. Regalbuto

**3:45** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 204A

#### Crafting Chemical Communication

Cosponsored by PRES

Financially supported by Elsevier and Nature Chemistry

R. M. Burks, *Organizer*

J. D. Battaes, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:35 CHED 358.** Making the bones of chemistry visible. M.M. Francl

**2:05 CHED 359.** Teaching students how to communicate chemistry. H.C. Gaede

**2:35 CHED 360.** On the nature of chemistry publishing. S. Cantrill

**3:05** Intermission.

**3:20 CHED 361.** How to talk to a reporter about your science. L. Wolf

**3:50 CHED 362.** Tell it slant. D. Blum

**4:20** Concluding Remarks.

### Section C

Pennsylvania Convention Center  
Room 204B

#### GSSPC: From Bench-to-Bench & Beyond: Engaging People with High Impact Chemistry

Cosponsored by INOR and POLY

Financially supported by Merck; Johnson & Johnson; TCI America; BASF; U. Pennsylvania Department of Chemistry; U. Pennsylvania Department of Materials Science & Engineering; Temple University; University of the Sciences

N. Bellonzi, M. Nicastrì, C. R. Walters, *Organizers*

B. Cole, N. Krook, S. Najmr, B. E. Partridge, *Organizers, Presiding*

**1:30** Introductory Remarks.

**1:35 CHED 363.** 3D Printing molecular prosthetics. M.D. Burke

**2:10 CHED 364.** Supramolecular soft materials for energy and medicine. S.I. Stupp

**2:45** Intermission.

**3:05 CHED 365.** Design of materials for organic light-emitting diode displays. N.S. Radu, G. Rossi, F. Gentry, N. Herron, T.N. Hoerter

**3:40 CHED 366.** 3D Printing of flexible electronics and sensors. J.A. Lewis

**4:15** Panel Discussion.

### Section D

Pennsylvania Convention Center  
Room 204C

#### General Papers

##### Lab Improvements

S. A. Fleming, *Organizer*

T. G. Goudreau Collison, *Presiding*

**1:30** Introductory Remarks.

**1:35 CHED 367.** Authentic research in introductory chemistry laboratory course. J. Vernon, J.P. Wolfe, D. Goldberg

**1:55 CHED 368.** Updating the organic laboratory curriculum: Modification of classical lab experiments through the incorporation of technology and techniques used in the contemporary research environment. R.G. Aslanian

**2:15 CHED 369.** Transforming the organic lab experience: Implementation and evaluation of an organic lab module curriculum at a four-year institution. T.G. Goudreau Collison, J.A. Cody, T.D. Kim, B.L. Edlbach, J.P. Anderson, W. Marmor, R. Kipsang

**2:35 CHED 370.** Why onions make you cry? A GS-MS experiment for undergraduate chemistry laboratory. Y. Sun, O.A. Sadik, A.S. Silva

**2:55** Intermission.

**3:10 CHED 371.** Introducing mini-laboratory projects based on name reactions in organic chemistry for the sophomore organic chemistry laboratory. R.N. Manchanayakage

**3:30 CHED 372.** Kinetics and photochemistry of ruthenium bisbipyridine diacetonitrile complexes – An interdisciplinary inorganic and physical chemistry laboratory exercise. T.L. Rapp, S.R. Phillips, I.J. Dmochowski

**3:50 CHED 373.** Teaching instrumental analysis with homebuilt as well as commercial instruments. N.D. Danielson

**4:10 CHED 374.** Medical research volunteer program (MRVP): Innovative program promoting undergraduate research in the medical field. B.R. Kaafarani, M.M. Dagher, J.A. Atieh, K.C. Mansour, M.K. Soubra, M.M. Akkawi, S.J. Khoury, H. Tamim

**4:30 CHED 375.** Analyzing Cu and Pb in pore water in Tokyo Bay, Japan by anodic stripping voltammetry (ASV). H. Katsura

**4:50** Concluding Remarks.

#### Chemical Safety in the K-12 Classroom

Sponsored by CHAS, Cosponsored by CCS and CHED

## TUESDAY EVENING

#### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

Sponsored by POLY, Cosponsored by CHED and PMSE

## WEDNESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 201A

#### Advances in Teaching Inorganic Chemistry Lecture & Laboratory

J. R. Miecznikowski, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 CHED 376.** Leveraging resources on VIPER to teach inorganic chemistry. E.R. Jamieson, C. Nataro

**8:55 CHED 377.** Evolving state of inorganic chemistry at Merrimack College. A.L. Fernandez

**9:15 CHED 378.** From breadth to depth: An integrated approach to providing depth for students in inorganic chemistry. A.S. Silva, W.E. Jones, D. Ji, Y. Sun, Z. Skeete, W. Wu, A. Chen

**9:35 CHED 379.** Metallome chemistry and evolution: A different approach to teaching inorganic chemistry. A.L. Crumbliss

**9:55** Intermission.

**10:05 CHED 380.** Inorganic curriculum for undergraduate students at Yale. J. Parr

**10:25 CHED 381.** Inorganic chemistry at Trinity College. M. Parr, R.O. Moyer

**10:45 CHED 382.** Advanced inorganic chemistry lecture and laboratory at Fairfield University. J.R. Miecznikowski

**11:05 CHED 383.** Adapting advanced inorganic chemistry lecture and laboratory instruction for a legally blind student. M.J. Guberman-Pfeffer, J.R. Miecznikowski

**11:25 CHED 384.** Introduction of sustainability topics into the inorganic chemistry laboratory. M. Guron, J.J. Paul

**11:45** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 204A

#### Citizens First! Using Real-World Contexts for Engaging Students in Learning Chemistry

Cosponsored by CEI and MPPG

M. A. Fisher, *Organizer*

K. Anderson, B. A. Davis, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 CHED 385.** Linking directed essays about current social and political issues to a college-wide citizenship core competency. M.J. Robertson

**8:55 CHED 386.** Using the real world in the chemistry classroom. C. Maguire, N. MirsalehKohan

**9:15 CHED 387.** Letters-to-the-editor in an on-line chemistry course. A.J. Banks

**9:35 CHED 388.** Make your own orange juice and other experiments and activities for consumer chemistry. D.A. Katz

**9:55** Intermission.

**10:05 CHED 389.** How much arsenic do we eat? A general chemistry course for non-science majors. J.F. Tyson

**10:25 CHED 390.** Whodunit mystery: Using a forensics context in general chemistry. B.D. Fahiman

**10:45 CHED 391.** Involving students in chemistry through real-life connections. C. Gabel

**11:05** Concluding Remarks.

### Section C

Pennsylvania Convention Center  
Room 204B

#### Effective Team-Teaching in Undergraduate Chemistry Programs

K. J. Castle, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 CHED 392.** Team-teaching in first year seminar courses geared toward STEM majors. K.J. Castle

**8:55 CHED 393.** Professor swap: A strategy to promote interdisciplinary learning. S.L. Carberry

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**9:15 CHED 394.** Team teaching across the disciplines: An interdisciplinary study of chemistry, religion and philosophy for the development of human meaning and purpose. K.S. Wendling, P. McCauley

**9:35 CHED 395.** How to efficiently steer the ship while steering clear of dictatorship. M. Ilies, D.B. King

**9:55** Intermission.

**10:10 CHED 396.** Six sections, and one syllabus: Team teaching general chemistry. S.M. Taylor

**10:30 CHED 397.** Team-teaching general chemistry laboratory. J.C. Ulichny, S.J. Hansen, D. Sun

**10:50 CHED 398.** Forensic chemistry: a team-taught course with emphasis on student centered learning. D.E. Mencer, T. Wignot

**11:10 CHED 399.** Strategies for effective use of thermal laboratory in the courses of thermodynamics, material balance, heat transfer and cleaner production. G. Camargo, G. Martinez, R. Catacoli, S. Vargas, R. Cardona, A. Ochoa, C. Villanueva

**11:30** Concluding Remarks.

## WEDNESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 201A

#### Advances in Teaching Inorganic Chemistry Lecture & Laboratory

J. R. Miecznikowski, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:40 CHED 400.** Successfully predicting the product(s) of an inorganic reaction: What are the cues that make this possible? G.M. Bodner

**2:00 CHED 401.** Physical inorganic: Current practices and course impact. A.H. Shelton

**2:20 CHED 402.** Humanizing chemistry: Incorporation of cultural themes into the foundational inorganic chemistry sequence. C.A. Bayse, M.M. Melzer

**2:40 CHED 403.** Cafeteria-style advanced inorganic chemistry curriculum at Luther College. C.L. Mertzzenich, B.M. Chamberlain

**3:00** Intermission.

**3:05 CHED 404.** What about the rest of the elements? How inorganic chemistry fits into a liberal arts education. J.K. Vohs

**3:25 CHED 405.** In or out? Inorganic chemistry curriculum at Barry University. T.D. Hamilton

**3:45 CHED 406.** Teaching molecular orbital theory in the context of computational chemistry. R. See

**4:05 CHED 407.** Incorporation of benchtop NMR spectroscopy into undergraduate inorganic laboratories: An active-learning approach. S. Riegel, J. Aranedo

**4:25** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 204A

#### Citizens First! Using Real-World Contexts for Engaging Students in Learning Chemistry

*Cosponsored by CEI and MPPG*

K. Anderson, *Organizer*

B. A. Davis, M. A. Fisher, *Organizers, Presiding*

**1:30** Introductory Remarks.

**1:35 CHED 408.** Developing chemical safety information quality assessment tools. R. Stuart, R.E. Belford

**1:55 CHED 409.** Assessing the effectiveness of using climate change activities to teach general chemistry content. D.B. King, J.E. Lewis, K. Anderson, D.E. Latch, S. Suthier, G.H. Webster, C.H. Middlecamp, R.S. Moog

**2:15 CHED 410.** Helping students place chemistry in its social context through laboratory exercises. L. Demoranville, K. Young, O. Kane

**2:35** Intermission.

**2:45 CHED 411.** Exploring the triple bottom line through the drug portfolio project. K. Anderson

**3:05 CHED 412.** Distributed drug discovery (D3) update: First global student collaboration in neglected disease discovery. W.L. Scott, J.G. Samaritoni, L. Popiolek, A.B. Dounay, D.M. Schirch, D. Garcia Rivera, A. Biernasiuk, A. Malm, M.J. O'Donnell

**3:25 CHED 413.** Civic engagement and undergraduate research: of the student, by the student and for the student. R.D. Sheardy

**3:45 CHED 414.** What's in your water? A class tackles PFOA pollution in Bennington, Vermont. J.B. Foley

**4:05** Concluding Remarks.

### Section C

Pennsylvania Convention Center  
Room 204B

#### General Papers

##### Learning & Assessment

S. A. Fleming, *Organizer*

G. A. Sztainberg, *Presiding*

**1:30** Introductory Remarks.

**1:35 CHED 415.** Rubric development for judging scientific thought and creativity in the ACS competition, Chemagination. B. Ameer, R.A. Weintraub

**1:55 CHED 416.** Theoretical basis for a new set of solubility rules. R.H. Langley, C.A. Davis, M. Cervantes

**2:15 CHED 417.** New chemistry: Embracing the human element. T. Hawley

**2:35 CHED 418.** Best practices in peer learning sessions: Advice from peer leaders and peer mentors. G.A. Sztainberg, M. Repice, R. Frey

**2:55** Intermission.

**3:10 CHED 419.** Implementation of the semi-flipped classroom model: case studies. A. Keimowitz, Z. Donhauser

**3:30 CHED 420.** Thinking about problem solving: writing a recipe. J.F. Kirby

**3:50 CHED 421.** Elucidating the formula for enhanced student achievement: Assessment of student performance in general chemistry at a University in Jamaica. K.S. Hylton, N. Guthrie-Dixon

**4:10 CHED 422.** General chemistry performance as a predictor of performance in organic chemistry. A.G. Karatjas, J.A. Webb

**4:30** Concluding Remarks.

## THURSDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 201A

#### Present & Future Impact of the Internet, Web Apps & High-Speed Networking Technology on Local & Global Chemistry Education

*Financially supported by USU Online*

J. M. Weber, *Organizer*

M. A. Christiansen, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:05 CHED 423.** Flipped learning in the broadcast chemistry class. M.A. Christiansen

**8:25 CHED 424.** Conducting productive online office hours and review sessions from home through desktop streaming programs. M.K. Mann

**8:45 CHED 425.** Using Facebook as a platform for role-playing case studies in the general chemistry course. A. Geyer

**9:05 CHED 426.** Mobile app and web-based audio-visual technology tools to enhance students learning in a general chemistry course. G. Naik

**9:25** Intermission.

**9:40 CHED 427.** Development of pocket size personal servers for use in the classroom: Hardware and software aspects of them. J. Solch, C.S. Gilpin, R.K. Gilpin

**10:00 CHED 428.** Development of pocket size personal servers for use in the classroom: Application of these devices to teach quantitative analysis. R.K. Gilpin, C.S. Gilpin, J. Solch

**10:20 CHED 429.** Teaching large groups of students with online and offline tools: GENI for local authentic research and translation tools for global bilingual lectures. B.J. McFarland

**10:40 CHED 430.** Using technology to flip general chemistry courses in a large public university setting. M.A. Deri, D. McGregor, P. Mills

**11:00** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 204A

#### General Papers

##### Curriculum Improvement

S. A. Fleming, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:05 CHED 431.** Chemistry teaching fellowship program at the University of Toronto: Thirteen years of student-driven curriculum renewal. K.S. Kim, D. Rackus, S.A. Mabury, B. Morra, A. Dicks

**8:25 CHED 432.** STEM Academy: A bridge program for scholars. R. Montgomery

**8:45 CHED 433.** Developing a peer-educator training curriculum for the SAGE-Chemistry academic support program. C.J. Siburt, I. Stewart, D.M. Hall

**9:05 CHED 434.** Training tomorrow's chemists in Florida International University, the largest public Hispanic serving institution. V. Anagnostopoulos, L. Lagos, I. Triay

**9:25** Intermission.

**9:40 CHED 435.** Increasing biological content in the typical organic chemistry course. S.A. Fleming

**10:00 CHED 436.** POGIL in organic chemistry lecture: implementation and evolution. S.S. Preston

**10:20 CHED 437.** Transitioning to a mechanism-based approach in undergraduate organic chemistry lecture. A.R. Szklarski

**10:40 CHED 438.** Increasing STEM retention through multiple programs within chemistry program. F. Damkaci

**11:00** Concluding Remarks.

## CHAS

### Division of Chemical Health and Safety

D. Decker, J. Pickel and F. Wood-Black, *Program Chairs*

## SUNDAY AFTERNOON

### Section A

Philadelphia Marriott Downtown  
Independence III

#### Division of Chemical Health & Safety Awards

*Cosponsored by CCS and CHED*

D. M. Decker, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:35 CHAS 1.** Evolutions of the collaboration between the Safety Office and the Department of Chemistry at Duke University. W. Thomann

**2:05 CHAS 2.** Establishing a safety culture in a new research lab: Communication, repetition, and accountability. B. Morgan, A.E. Hargrove

**2:35 CHAS 3.** Safety in undergraduate chemistry: It takes the whole department. T.E. Woerner, S.W. Baldwin, P. McMillan

**3:05 CHAS 4.** Reflections of a career: Where you end up when you don't know where you are going. S.B. Sigmann

**3:35 CHAS 5.** Past, present and yet to be achieved: A personal chemical safety journey by a synthetic chemist. L.H. Latimer

**4:05** Concluding Remarks.

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



## MONDAY AFTERNOON

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon K

#### Americans with Disabilities Act & Accommodations in the Laboratory

*Cosponsored by CCS and CWD*

C. Sweet, E. Sweet, *Organizers, Presiding*

1:30 Introductory Remarks.

1:35 CHAS 6. Overview of the Federal regulations that require physical accessibility in labs & the Building Blocks of Accessibility that apply in lab settings. J. Perry

1:55 CHAS 7. Special health and safety considerations for persons with disabilities who work in scientific research, testing, or teaching laboratories. J. Baum

2:15 CHAS 8. Accommodations and modifications in postsecondary education for students with disabilities. J. Zesski

2:35 CHAS 9. Americans with Disabilities Act, Technical Assistance Centers: Who we are and what we do. C. Sweet

2:55 Intermission.

3:10 CHAS 10. Adapting undergraduate chemistry laboratories for students with disabilities: Institutional responsibilities and practices. S.M. Kennedy, J. Boval

3:30 CHAS 11. Accommodations for laboratory students with low vision. S.M. Kennedy, J. Boval

3:50 CHAS 12. Brief overview of service animals under the Americans with Disabilities Act. C. Sweet

4:10 Concluding Remarks.

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

D. M. Decker, J. M. Pickel, *Organizers*

8:00 - 10:00

17-22, 24-27, 29-34. See subsequent listings.

## TUESDAY MORNING

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon K/L

#### Ask Dr. Safety: Chemical Security in Research Institutions

*Cosponsored by CCS and I&EC*

H. J. Elston, N. R. Langerman, *Organizers, Presiding*

8:30 Introductory Remarks.

8:35 CHAS 13. Laboratory coats for the 21st century. J.M. Spruell

8:55 CHAS 14. Navigating CFATS in academia. R.M. Izzo

9:15 CHAS 15. Addressing chemical security concerns for an research institution. M.B. Koza

9:35 CHAS 16. Ask Dr. Safety: Chemical security in research institutions. N.R. Langerman, H.J. Elston

10:05 Concluding Remarks.

### Section B

Philadelphia Marriott Downtown  
Grand Ballroom Salon K/L

#### Safety & Ethics in our Chemical Community

*Cosponsored by CCS, CHAL, CHED, CORP, ETHC and SCHB*

D. M. Decker, N. R. Langerman, *Organizers*

10:30 - 12:00

CHAS 17. Division of Chemical Health and Safety information poster. J.M. Pickel

CHAS 18. Building the Cannabis Chemistry (CANN) Subdivision at the ACS: Sowing the seeds of change. E.M. Pryor, J. Marcu, M.J. Wilcox, E.L. Oltermann

CHAS 19. Vacuum system (VS) and Schlenk line (SL) safety. T. Chandra

CHAS 20. 3D Printing hazards enjoy operating 3D in a safe and environmentally friendly way! P.J. Mulrooney

CHAS 21. Prioritizing system for chemicals used in the public health sector state of Sonora, Mexico. M. Arce Corrales, C.R. Alvarez Chavez, A. Gómez Álvarez

CHAS 22. Compliance versus commitment: An undergraduate's perspective on safe practice in the research lab. N.K. Fredstrom, S.R. Hitchcock, G.M. Ferrence

CHAS 23. Empowering graduate students to lead a culture of safety: Developing a peer-education chemical safety training workshop. C.J. Siburt, D. Besse, M.G. Glesner, B. Krzyzanowska, P. McMillan, B. Morgan, T.E. Woerner, Y. Xu

CHAS 24. Laboratory incidents in the University of Sonora: students' perspective. C.R. Alvarez Chavez, R. Ruiz-Talavera, L. Marin-Ramirez, F. Muñoz-Osuna, R. Perez-Rios, A. Zavala-Reyna, M. Arce-Corrales

CHAS 25. Risk perception in laboratory students of the University of Sonora. C.R. Alvarez Chavez, K. Pérez-Gómez, F. Muñoz-Osuna, L. Marin-Ramirez, L. Velazquez-Contreras, J. Esquer-Peralta

CHAS 26. Re-organizing the CPT undergraduate guidelines to elevate the status of safety and ethics in the chemistry curriculum. D.C. Finster

CHAS 27. Incorporating chemical safety and security into the undergraduate curriculum. U.J. Williams

CHAS 28. Withdrawn.

CHAS 29. You have 5 minutes with your elected representative. What would you ask him or her to do related to safety? F.K. Wood-Black

CHAS 30. Good neighbors – What does it take to be a good neighbor? F.K. Wood-Black

CHAS 31. What's in a code of conduct? F.K. Wood-Black

CHAS 32. Establishing a safe workplace culture: Teaching and modeling behavior. M.A. Thomson

CHAS 33. Safety and ethics in ACS and major engineering societies: A gap analysis. D.R. Kuespert

CHAS 34. Your thoughts on incorporating safety and ethics into ACS core value operations. N.R. Langerman

## TUESDAY AFTERNOON

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon K/L

#### Chemical Safety in the K-12 Classroom

*Cosponsored by CCS and CHED*

J. M. Pickel, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 CHAS 35. Challenges and opportunities affecting safety in the k-12 classroom. L.M. Stroud

2:00 CHAS 36. Incorporating basic chemical hygiene concepts into the secondary education methods course for pre-service science teachers. S.B. Sigmann

2:25 CHAS 37. Revising CHED's minimum safety guidelines for chemical demonstrations. I.G. Cesa, D.C. Finster, S.B. Sigmann, M.R. Wilhelm

2:50 CHAS 38. Practical approach to NFPA 45. R. Stuart

3:15 Intermission.

3:30 CHAS 39. Enhancing safety in a chemistry high school classroom: ACS Science Coach approach. Y.I. Gonzalez

3:55 CHAS 40. Challenges and opportunities affecting safety in the K-12 classroom. D. Krone

4:20 CHAS 41. Challenges and opportunities affecting safety in the K-12 classroom. S. Hawkins

4:45 Panel Discussion.

#### Green Chemistry Innovations & Opportunities in Industry for Young Professionals

*Sponsored by I&EC, Cosponsored by CATL, CEI, CHAS, ENFL, ENVIR, ORGN, POLY, PROF and YCC*

## WEDNESDAY MORNING

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon K

#### Chemical Safety in Public Policy

*Cosponsored by CCS*

R. Stuart, E. Sweet, *Organizers, Presiding*

8:30 Introductory Remarks.

8:40 CHAS 42. Sustainable chemistry and public policy. R.J. Garant

9:00 CHAS 43. Evaluating risks - Understanding multiple perspectives. F.K. Wood-Black

9:20 CHAS 44. What you need to know about TSCA reform. A.M. Noce

9:40 CHAS 45. California's Safer Consumer Products Program: Asking the questions. A. Doherty

10:00 Intermission.

10:10 CHAS 46. Some government relation lessons from the development of subpart K. R. Stuart

10:30 CHAS 47. Influence of litigation on corporate behavior. N.R. Langerman

10:50 CHAS 48. Safety policies of peer-reviewed journals. L. Grabowski, S.R. Goode

11:10 CHAS 49. Public policy statements: Advising policymakers and regulators. K.P. Fivizzani

11:30 Panel Discussion.

#### Using Public Information to Support a Chemical Safety Culture

*Sponsored by CINP, Cosponsored by CHAS‡*

## WEDNESDAY AFTERNOON

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon K

#### Biochemistry of Cannabis

*Cosponsored by CCS and SCHB*

J. Marcu, *Organizer, Presiding*

1:30 Introductory Remarks.

1:40 CHAS 50. Pennsylvania's hemp and cannabis history. L. Stark

2:00 CHAS 51. Cannabis and public health. J.T. Bennett, M. Latshaw

2:20 CHAS 52. SB3: Medical cannabis legislation in Pennsylvania and addressing the public health concerns. M. Folmer

2:40 CHAS 53. Patient focused certification (PFC)- quality standards of cannabis products for medical use. J. Marcu, S. Sherer, P. Kubu, K. Nevedal

3:00 CHAS 54. Chemotypic and quality control analysis of the California medical cannabis market. J. Wurzer

3:20 Intermission.

3:40 CHAS 55. Biochemical considerations in cannabis therapeutics. E. Russo

4:00 CHAS 56. Cannabinoid receptors: nomenclature and pharmacological principles. L. Console-Bram, J. Marcu, M. Abood

4:20 CHAS 57. Can you pass the acid test? Critical review And novel therapeutic perspectives of tetrahydrocannabinolic acid A (THCA-A). G. Moreno-Sanz

4:40 CHAS 58. Hydrogenated cannabis oil. M. Scialdone

5:00 CHAS 59. Cannabis Chemistry Subdivision (CANN): Connecting cannabis chemists/scientists and creating opportunities. E.M. Pryor, M.J. Wilcox, E. Marie, H. Despres

5:20 Concluding Remarks.

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## CINF

## Division of Chemical Information

E. Alvaro, Program Chair

## OTHER SYMPOSIA OF INTEREST:

**Crafting Chemical Communication**  
(see CHED, Tue)**Drug Discovery** (see COMP,  
Sun, Tue, Wed, Thu)**New Directions in Chemometrics:  
Making Sense of Big & Small  
Chemical Data Sets** (see ANYL, Thu)Designing Chemical Libraries for  
Screening (see COMP, Sun)

## SOCIAL EVENTS:

**Reception**, 6:30 PM: Sun**Luncheon**, 12:00 PM: Tue**Skolnik Award Symposium  
Reception**, 6:30 PM: Tue

## BUSINESS MEETINGS:

**Business Meeting**, 1:00 PM: Sat

## SUNDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 112AEffectively Harnessing the  
World's Literature to Inform  
Rational Compound Design

Cosponsored by MEDI

Financially supported by Genentech

D. F. Ortwine, Organizer, Presiding

8:25 Introductory Remarks.

8:30 CINF 1. PubChem's literature  
and patent information for drug  
discovery. S. Kim, P. Thiessen,  
T. Cheng, B. Yu, B.A. Shoemaker,  
J. Wang, E. Bolton, Y. Wang, S. Bryant9:05 CINF 2. Harnessing the world's  
literature to provide a crystallographic  
perspective on compound design:  
federated pharmacophore searching as  
example. E. Davis, I. Bruno, P. Sanschagrin9:40 CINF 3. GOSTAR and ChEMBL  
comparison – commercial vs. open chemoge-  
nomics databases. J.H. Voigt, U. Schmitz

10:15 Intermission.

10:30 CINF 4. Exploring available compound  
data with the open PHACTS discovery  
platform and KNIME. D. Digles, G.F. Ecker11:05 CINF 5. NDEX, the Network Data  
Exchange: a resource for biological  
networks with application in informed  
compound design. D. Pratt

11:40 Concluding Remarks.

Technical program information  
known at press time.The official technical program  
for the 252nd ACS National  
Meeting is available at:[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## Section B

Pennsylvania Convention Center  
Room 112BBringing Cheminformatics into the  
College Chemistry Classroom

Cosponsored by CHED

R. E. Belford, S. Kim, Organizers, Presiding

8:15 Introductory Remarks.

8:20 CINF 6. Learning to find the right  
information: A survey of chemistry  
information literacy in the under-  
graduate classroom. T. Geoui8:40 CINF 7. Co-developing chemical  
information management and laboratory  
safety skills. R. Stuart, L. McEwen9:00 CINF 8. Introducing SIVVU, a web-  
based program for modeling spectropho-  
tometric titration data. D.A. Vander Griend

9:20 Intermission.

9:30 CINF 9. Integration of cheminformatics  
material into the STEMWiki hyperlibrary.  
R.E. Belford, D.S. Larsen, A.P. Cornell9:50 CINF 10. Holistic approach  
to cheminformatics in a liberal  
arts environment. P. Adler10:10 CINF 11. Cheminformatics education  
and research at home: the best way  
to teach graduate chemistry in the  
professional community. H. Zhu

10:30 Intermission.

10:40 CINF 12. Fall 2015 cheminform-  
atics OLCC project based learning:  
Validation of Wikipedia Chembox hazard  
information. R.E. Belford, B. Murphy11:00 CINF 13. Cheminformatics in the  
chemistry classroom. D. Fourches11:20 CINF 14. From textbook to com-  
puter: How computer-aided synthesis  
design (CASD) can support chemistry  
teachers and students in the future. V.  
Eigner Pitto, K. Borchardt, J. Eiblmaier, M.  
Hutchings, F. Irlinger, H. Saller, P. Loew11:40 CINF 15. Modern cheminforma-  
tics tools in the teaching laboratory: A  
practical exercise simulating a drug  
discovery project. C. Smith, T. Mansley

12:00 Concluding Remarks.

## SUNDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 112AEffectively Harnessing the  
World's Literature to Inform  
Rational Compound Design

Cosponsored by MEDI

Financially supported by Genentech

D. F. Ortwine, Organizer, Presiding

1:25 Introductory Remarks.

1:30 CINF 16. Extracting and exploiting  
medicinal chemistry ADMET knowl-  
edge automatically from public and  
large pharma data. A. Dossetter,  
E.J. Griffen, A. Leach, S.T. Montague2:05 CINF 17. Extracting knowledge  
from large in-vitro metabolic stability  
data sets using matched molecular  
pair analysis (MMPA). H. Zheng2:40 CINF 18. Gravitational waves  
shaking the chemical universe:  
virtual chemistry 2.0. C. Detering

3:15 Intermission.

3:30 CINF 19. Network analytics of  
structured and unstructured data: an  
evolutionary solution. O. Lichtarge4:05 CINF 20. Integrative data science,  
semantics, knowledge graphs, and evi-  
dence paths in the service of molecular  
discovery. J.J. Yang, T.I. Oprea, D.J. Wild

4:40 Concluding Remarks.

## Section B

Pennsylvania Convention Center  
Room 112BBeyond Citations: Challenges &  
Opportunities in Altmetrics

E. Alvaro, R. Borchardt, Organizers, Presiding

M. R. Hartings, Presiding

1:30 Introductory Remarks.

1:35 CINF 21. Altmetrics in  
the library. A. Rauh1:55 CINF 22. Trusting altmetrics:  
updates from NISO's recom-  
mended practices. T. Carpenter2:15 CINF 23. Tell the full story of your  
research with altmetrics. W. Gunn2:35 CINF 24. Is that a wart or a beauty  
mark? An altmetrics analysis of  
an assistant professor's scholarly  
activity. M.R. Hartings, R. Borchardt2:55 CINF 25. Imperfect  
impact. S.J. Cantrill

3:15 Intermission.

3:30 CINF 26. Advanced Research  
Projects Agency – Energy (ARPA-E):  
The mechanism and metrics of funding  
transformational technology for energy  
innovation. D.W. Cunningham3:50 CINF 27. Responsible usage of  
diverse research metrics. L. Colledge4:10 CINF 28. Investigating impact  
metrics for performance for the  
US-EPA National Center for  
Computational Toxicology. A.J. Williams,  
M. Linnenbrink, K. Crofton, R. Thomas4:30 CINF 29. Altmetrics: What has been  
the impact on ACS Publications? J. Lang

4:50 Concluding Remarks.

## SUNDAY EVENING

## Section A

Loews Philadelphia Downtown  
HoweCINF Scholarships for  
Scientific Excellence

S. J. Chalk, Organizer

6:30 - 8:30

CINF 30. Virtual nanoparticles. W. Wang,  
A. Sedykh, L. Zhao, B. Yan, H. ZhuCINF 31. Experimental errors in QSAR  
modeling sets: What we can do  
and what we cannot do. L. Zhao,  
W. Wang, A. Sedykh, H. ZhuCINF 32. Combining proprietary and  
published data in synthesis planning and  
reaction mining using Wiley ChemPlanner.  
O. Ravitz, D. Flanagan, J. TheisenCINF 33. Modeling spectrophotometric  
titration data: tracking error from the  
measurement, through the model, and  
to the targeted output parameters.  
N. Kazmierczak, D.A. Vander GriendCINF 34. Dark reactions project:  
A cheminformatics approach to  
hydrothermal syntheses. P. Adler,  
J. Schrier, A.J. Norquist, S. FriedlerCINF 35. Adverse drug reactions trig-  
gered by the common HLA-B\*57:01  
variant: A molecular docking study.  
G. Van Den Driessche, D. FourchesCINF 36. ChemML: A machine learning  
and informatics program suite for  
the chemical and materials sciences.  
M. Haghghatari, J. Hachmann

## MONDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 112AChemistry Data for the People:  
From Policy to Practice

Value of Open for Chemists

Cosponsored by MPPG

E. Bolton, I. Bruno, Organizers

D. P. Henderson, L. McEwen, Organizers,  
Presiding

8:05 Introductory Remarks.

8:15 CINF 37. Viewpoint on open  
access by an editor, author, reviewer,  
and reader. J.V. Sweedler8:25 CINF 38. Data generation, pub-  
lication and sharing. R. Kidd8:35 CINF 39. Implementing a data  
sharing policy: A publisher perspec-  
tive. R.J. Boucher, K. Sharples8:45 CINF 40. Ten habits of happy  
data: An exploration of Elsevier's  
research data management  
program. A. De Waard, W. Gunn8:55 CINF 41. Changing workflows  
and mindsets. M.G. Hicks

9:05 Panel Discussion.

9:35 Discussion.

9:45 Intermission.

10:00 CINF 42. NSF MPS Open Data  
workshop series: Taking the pulse  
of the research community on open  
data issues. M. Hildreth, L. McEwen10:10 CINF 43. Open Data: What the reader  
wants to know rather than what the  
author wants to present. R.D. Rogers10:20 CINF 44. Role of disciplinary  
data repositories in data publish-  
ing. I. Bruno, A. Sarjeant, E. Davis10:30 CINF 45. Figshare data  
repository. D. Valen10:40 CINF 46. Importance of open  
raw data in chemistry research.  
S. Dominguez Vivero, C. Cobas,  
A. Barba, F. Seoane, S. Fraga10:50 CINF 47. Practical issues in  
chemistry data sharing in PubChem.  
S. Kim, E. Bolton, S. Bryant, Y. Wang

11:00 Panel Discussion.

11:30 Discussion.

11:40 CINF 48. Value of open data for chemists: Summary and perspectives. J.N. Curran

## Section B

Pennsylvania Convention Center  
Room 112B

### Shedding Light on the Dark Genome: Methods, Tools & Case Studies

Cosponsored by BIOT, COMP and MEDI

R. Guha, T. I. Oprea, *Organizers, Presiding*

8:15 CINF 49. Illuminating the drug-gable genome: Linking diseases, targets and drugs. T.I. Oprea

8:40 CINF 50. Tracking biological targets in drug discovery using the ChEMBL and SureChEMBL databases. P. Mutowo

9:05 CINF 51. Formal ontologies and software tools to facilitate integration, classification and modeling of drug discovery data. S. Schürer, A. Lin, H. McGinty, Q. Cheng, A. Koletli, N. Zadeh, D. Vidovic

9:30 Intermission.

9:40 CINF 52. KEA2: Multiple views of the human kinome. N.F. Fernandez, A.D. Rouillard, K. Rikova, P. Hornbeck, A. Ma'ayan

10:05 CINF 53. Pharos - shining light on the druggable genome. D. Nguyen, T. Sheils, G. Mandava, A. Jadhav, N. Southall, R. Guha

10:30 CINF 54. From dark chemical matter to shedding light on the dark genome: How can chemistry and informatics enable biology? M. Glick

10:55 Intermission.

11:05 CINF 55. KinomeNet: accurate prediction of protein kinase inhibitors with deep convolutional neural networks. O. Isayev, A. Tropsha

11:30 CINF 56. Analogous phylogenetic analysis using protein length and protein disorder. H. Guo, G. Tuskan, X. Yang, H. Guo

11:55 Concluding Remarks.

## MONDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 112A

#### Chemistry Data for the People: From Policy to Practice

Pain Points: Distilled, Analyzed & Next Steps

Cosponsored by MPPG

I. Bruno, D. P. Henderson, L. McEwen, *Organizers*

E. Bolton, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 CINF 57. Community forum for chemistry data and information. I. Bruno, L. McEwen, S.J. Chalk

1:55 CINF 58. Chemistry data pain points: distilled, analyzed, and next steps. E. Bolton, L. McEwen, I. Bruno

4:10 Concluding Remarks.

## Section B

Pennsylvania Convention Center  
Room 112B

### Using New Media to Communicate Chemistry to the Public

Cosponsored by MPPG and PRES

S. R. Morrissey, *Organizer*

L. Wolf, *Organizer, Presiding*

M. Davenport, *Presiding*

1:30 Introductory Remarks.

1:40 CINF 59. Communicating chemistry on YouTube. A. Dylewski

2:00 CINF 60. Sound of science (and history and culture). M. Carr

2:20 CINF 61. Got something to say? Engaging with social media in the time you have. D.G. Oppenheimer, P. Grey

2:40 Intermission.

2:55 CINF 62. Compound interest: Communicating chemistry using infographics. A. Brunning

3:15 CINF 63. Pop culture chemistry. R. Burks

3:35 Panel Discussion.

### Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?

Sponsored by ANYL, Cosponsored by BIOL, BMGT, CHED, CINF, MEDI, PMSE and SCHB

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

E. Alvaro, *Organizer*

8:00 - 10:00

3-4, 8-10, 15-16, 30-31, 35-36, 51-52, 55. See previous listings.

86, 92-95. See subsequent listings.

## TUESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 112A/B

#### Herman Skolnik Award Symposium

E. Alvaro, L. McEwen, *Organizers*

E. Bolton, *Organizer, Presiding*

8:45 Introductory Remarks.

8:50 CINF 64. Developing databases and standards in chemistry. S.R. Heller

9:15 CINF 65. Two decades of open chemical data at DTP/NCI. D. Zaharevitz

9:40 CINF 66. Using InChI to manage data. P. Linstrom

10:05 CINF 67. Open chemistry resources provided by the NCI CADD group. M.C. Nicklaus

10:30 Intermission.

10:45 CINF 68. Evolution of open chemical information. V. Tkachenko

11:10 CINF 69. Open chemical information at the European Bioinformatics Institute. C. Steinbeck

11:35 CINF 70. History and the future of tools and software components for working with public chemistry data. W. Ihlenfeldt

### Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel

Sponsored by ORGN, Cosponsored by BMGT, CHED, CINF, HIST, INOR, MEDI, MPPG, PMSE and SCHB

## TUESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 112A/B

#### Herman Skolnik Award Symposium

E. Alvaro, L. McEwen, *Organizers*

E. Bolton, *Organizer, Presiding*

2:00 Introductory Remarks.

2:05 CINF 71. PubChem a resource for cognitive computing. S. Boyer

2:30 CINF 72. SPL and openFDA resources of open substance data. Y. Borodina

2:55 CINF 73. Building a network of interoperable and independently produced linked and open biomedical data. M. Dumontier

3:20 Intermission.

3:35 CINF 74. Chemical structure representation in PubChem. R.A. Sayle

4:00 CINF 75. iRAMP & PubChem: Of the people, for the people. L. McEwen

4:25 CINF 76. Open chemical information: Where now and how? E. Bolton

4:50 Concluding Remarks.

4:55 Award Presentation.

## WEDNESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 112A

#### Using Public Information to Support a Chemical Safety Culture

Cosponsored by CHAS†

E. Bolton, L. McEwen, R. Stuart, *Organizers, Presiding*

8:25 Introductory Remarks.

8:30 CINF 77. Users roundtable: Laboratory use cases for chemical safety information. R. Stuart, L. McEwen, E. Bolton

8:45 CINF 78. Risk assessment and crisis management in the research laboratory using online resources: A EH&S perspective. S. Singh, N. Bharti

9:10 CINF 79. Institutional use of chemical safety data streams. C.A. Jakober

9:35 CINF 80. Chemical safety and hazard information in PubChem. J. Zhang, P. Thiessen, A. Gindulyte, L. McEwen, R. Stuart, E. Bolton, S. Bryant

10:00 Intermission.

10:15 CINF 81. Semantic annotation of the laboratory chemical safety summary in PubChem. G. Fu, J. Zhang, E. Bolton, J.G. Frey, S.J. Chalk, M.I. Borkum, L. McEwen

10:40 CINF 82. GHS and NFPA diamonds: Where they come from and how they can be useful. R.A. Sayle

11:05 CINF 83. Critical cases for information identifiers in chemical asset management. L. McEwen

11:30 CINF 84. Surveying the academic laboratory population: Project updates from the iRAMP collaboration. L. McEwen, R. Stuart

11:45 Concluding Remarks.

## WEDNESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 112A

#### General Papers

#### Informatics for Medicinal Chemistry

E. Alvaro, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 CINF 85. Active machine learning perspective on hit identification and optimization. D. Reker, G. Schneider

2:00 CINF 86. Binding affinity prediction using frequency of protein-ligand interactions: method validation and application to bromodomain inhibitors. J. Meslamani, A. Vincek, E. Rassinova, A. Plotnikov, R. Sanchez, M. Zhou

2:25 CINF 87. MOARF, an integrated workflow for multiobjective optimization: Implementation, synthesis, and biological evaluation. N. Brown

2:50 CINF 88. Systematic generation of analog relationships of bioactive compounds and promiscuity analysis. D. Stumpfe, D. Dimova, J. Bajorath

3:15 Intermission.

3:30 CINF 89. SAR characteristics of matching molecular series and exploration of structural relationships. D. Dimova, J. Bajorath

3:55 CINF 90. How frequent are your clusters in hierarchical cluster analysis? Quantifying their frequencies considering ties in proximity. G. Restrepo, W. Leal, E. Llanos, C. Suarez, M. Patarroyo

4:20 CINF 91. Line notations for nucleic acids (both natural and therapeutic). R.A. Sayle

4:45 Concluding Remarks.

## THURSDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 112A

#### General Papers

E. Alvaro, *Organizer, Presiding*

8:45 Introductory Remarks.

8:50 CINF 92. VViewer3D: An open source tool for interactive data mining of 3D virtual screening data. D.J. Diller, K. Diller

9:15 CINF 93. Strategies to improve PubChem data quality and search effectiveness through data analysis. L. Zaslavsky, G. Fu, A. Gindulyte, P. Thiessen, S. Kim, E. Bolton



**9:40 CINF 94.** Sketchy sketches: Hiding chemistry in plain sight. D.M. Lowe, J.W. May, R.A. Sayle

**10:05** Intermission.

**10:20 CINF 95.** Hybrid search engine for chemical information in PubChem. J. Chen, S. He, A. Gindulyte, E. Bolton, S. Bryant

**10:45 CINF 96.** Amoeba-inspired heuristic search dynamics for semi-quantitative estimation of unknown chemical kinetics. M. Aono

**11:10 CINF 97.** Database searching and rediscovering the wheel in scientific research. C.S. Gilpin, R.K. Gilpin

**11:35** Concluding Remarks.

### New Directions in Chemometrics: Making Sense of Big & Small Chemical Data Sets

Sponsored by ANYL, Cosponsored by CINF

## THURSDAY AFTERNOON

### New Directions in Chemometrics: Making Sense of Big & Small Chemical Data Sets

Sponsored by ANYL, Cosponsored by CINF

## TOXI

## Division of Chemical Toxicology

A. Bryant-Friedrich, Program Chair

### OTHER SYMPOSIA OF INTEREST:

**Bioanalytical Tools for Chemicals of Emerging Concern in the Environment** (see ENVR, Thu)

**Medicinal Chemistry of Chemical Biology** (see MEDI, Mon)

**Nucleic Acid Therapeutics** (see MEDI, Mon)

**Epigenetics** (see MEDI, Wed)

**Chemistry of the People, by the People, for the People Plenary Session** (see MPPG, Sun)

**Biologically-Related Molecules & Processes** (see ORGN, Tue, Wed)

### SOCIAL EVENTS:

Dinner, 6:30 PM: Sat

### BUSINESS MEETINGS:

Business Meeting, 6:30 PM: Tue

## SUNDAY MORNING

### Section A

Philadelphia Downtown Courtyard by Marriott Juniper's Ballroom

### Chemical Research in Toxicology Young Investigator Award

Y. Aye, Organizer, Presiding

**8:30** Introductory Remarks.

**8:45 TOXI 1.** Protein modification by lipid electrophiles and its consequences. L.J. Marnett, J. Camarillo, W.N. Beavers, J. Galligan

**9:15 TOXI 2.** Reactivity of damaged DNA in nucleosomes. M.M. Greenberg

**9:45 TOXI 3.** Succinylation and SIRT5 as important regulators of heart function. H. Lin

**10:15** Intermission.

**10:30 TOXI 4.** T-REX™ on-demand redox targeting: A toolset for functional discoveries and validations. S. Parvez, M.J. Long, H. Lin, Y. Zhao, J. Haegele, V. Pham, D. Lee, Y. Aye

**11:00 TOXI 5.** Master and commander of the cellular antioxidant response. J.R. Poganik, Y. Aye

**11:30 TOXI 6.** Switching gears: ribonucleotide reductase antagonizes cell proliferation. Y. Aye

## SUNDAY AFTERNOON

### Section A

Philadelphia Downtown Courtyard by Marriott Juniper's Ballroom

### Founders Award Lecture & Symposium

S. Brody, N. E. Geacintov, Organizers, Presiding

**1:30** Introductory Remarks.

**1:40 TOXI 7.** Regulation of dual incision and repair synthesis in human nucleotide excision repair. O.D. Schärer, F. Adebanke, J. Rageul

**2:15 TOXI 8.** Impact of structural features of DNA lesions on their recognition and repair by the human nucleotide excision repair system. N.E. Geacintov

**2:50 TOXI 9.** Elucidating structure-function relationships in lesion containing DNA: Insights from molecular modeling. S. Brody

**3:25** Intermission.

**3:45 TOXI 10.** Insights into the DNA damage recognition by the Rad4/XPC nucleotide excision repair complex. J. Min, A. Ansari, X. Chen, Y. Velmurugu

**4:20 TOXI 11.** DNA damage and repair in chromatin: Finding the keys to get in. P. Mao, M. Duan, J. Wyrick, M. Smerdon

### Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations

Sponsored by AGRO, Cosponsored by ENVR and TOXI

## MONDAY MORNING

### Section A

Philadelphia Downtown Courtyard by Marriott Juniper's Ballroom

### Young Investigators Symposium

U. Sarkar, Organizer, Presiding

**8:00 TOXI 12.** Parsing the conformational and configurational equilibria of a 2'-deoxyriboseylurea DNA adduct. A.H. Kellum, V. Jasti, A.K. Basu, M.P. Stone

**8:20 TOXI 13.** Mutagenic and cytotoxic properties of the O<sup>2</sup>-alkylthymidine lesions in human cells. J. Wu, P. Wang, L. Li, Y. Wang

**8:40 TOXI 14.** Investigation of RNA oxidation via selective generation of a C5'-uridiny radical. M. Ellis, A.C. Bryant-Friedrich

**9:00 TOXI 15.** Quantitative assessment of the biological consequences and repair of carboxymethylated and ethylated DNA adducts. C. You, P. Wang, S. Nay, J. Wang, X. Dai, T. O'Connor, Y. Wang

**9:20 TOXI 16.** Sequencing of 8-oxo-7,8-dihydro-2'-deoxyguanosine in the genome by next-generation sequencing methods. Y. Ding, A.M. Fleming, C.J. Burrows

**9:40** Intermission.

**9:50 TOXI 17.** Transcriptional bypass of O<sup>2</sup>-alkylthymidine lesions by T7 RNA polymerase and human RNA polymerase II. N. Williams, P. Wang, Y. Wang

**10:10 TOXI 18.** Tracing androgen metabolism with inhibition of aromatase in breast cancer: in vitro studies, clinical correlates and implications for acquired resistance. L. Bottalico, L. Gil de Gomez, Q. Wang, A. Frey, N. Snyder, I.A. Blair

**10:30 TOXI 19.** Metatranscriptomics reveals functional effects of diazepam exposure on gut microbiome. B. Gao, X. Bian, L. Chi, P. Tu, K. Lu

**10:50 TOXI 20.** Toxicological study of quinone-protein adducts by molecular modeling and spectroscopic analysis. M.S. Elgawish

**11:10 TOXI 21.** Cadmium inactivates a zinc-dependent endonuclease of the human mismatch repair pathway. S.M. Sherrer, P.L. Modrich

**11:30 TOXI 22.** Replication studies of C3'-epimeric lesions of 2'-deoxyribonucleosides in E. coli cells. P. Wang, N.J. Amato, Y. Wang

**11:50 TOXI 23.** Mass spectrometry based studies of DNA-protein cross-linking. A. Groehler, C. Campbell, P.W. Villalta, P. Jacobson, M. Garry, N.Y. Tretyakova

### Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations

Sponsored by AGRO, Cosponsored by ENVR and TOXI

## MONDAY AFTERNOON

### Section A

Philadelphia Downtown Courtyard by Marriott Juniper's Ballroom

### Asbestos Fate, Exposure, Remediation & Adverse Health Effects

I. A. Blair, Organizer, Presiding

**1:30 TOXI 24.** Overview: Penn Superfund Research and Training Program Center: Asbestos, fate, transport, remediation and adverse health effects. T.M. Penning

**2:10 TOXI 25.** Fate of asbestos in soil: remediation prospects and paradigm. J. Willenbring, S. Mohanty, A. Salamatipour, C. Gonneau, D. Jerolmack, B. Casper

**2:40 TOXI 26.** Aggregate dynamics and their control on the mobility of asbestos in the environment. D. Jerolmack, L. Wu, C. Ortiz, J. Willenbring

**3:10 TOXI 27.** Historic cohort study to identify effects of chrysotile asbestos exposure on past residents of Ambler, PA. E. Emmett, A. Agawu, S. Elahi, F. Barg, D. Wiebe

**3:40** Intermission.

**3:55 TOXI 28.** Mouse models of malignant mesothelioma. J. Testa, C. Menges, M. Cheung, Y. Kadariya, J. Talarchek, R.A. Pietrofesa, R. Simmons, M. Christofidou-Solomidou, S. Albelda

**4:25 TOXI 29.** Chemopreventive properties of LGM2605. M. Christofidou-Solomidou, R.A. Pietrofesa, A. Velalopoulou, S. Albelda

**4:55 TOXI 30.** Biomarkers of asbestos exposure. I.A. Blair, L. Weng, C. Mesaros, N. Snyder, W. Hwang, A. Vachani

### Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations

Sponsored by AGRO, Cosponsored by ENVR and TOXI

### Pollinators: Agrochemicals, Behavior & Disease

Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI

## TUESDAY MORNING

### Section A

Philadelphia Downtown Courtyard by Marriott Juniper's Ballroom

### Chemical Toxicology in the Study of Health Disparities among Ethnic/Racial Groups

S. Balbo, S. S. Hecht, Organizers, Presiding

**8:30** Introductory Remarks.

**8:35 TOXI 31.** Differing frequencies of clinically relevant genomic alterations (CRGA) in colorectal cancers of patients to define disparities in outcomes. E.P. Mitchell

**9:15 TOXI 32.** Relationships between body burden of contaminants, biomarkers of effects and health outcomes among Inuit in the Canadian Arctic. L.H. Chan

**9:55 TOXI 33.** Unconventional gas and oil drilling operations (UGOD) in the Marcellus Shale and health disparities. T.M. Penning

**10:35** Intermission.

**10:50 TOXI 34.** Individual variation in human arsenic biotransformation: Intuitive and puzzling determinants drive variability. W. Klimecki

**11:30 TOXI 35.** Analysis of nicotine and tobacco smoke toxicant and carcinogen metabolites in relation to ethnic differences in lung cancer susceptibility in cigarette smokers. S.S. Hecht, S. Park, S. Carmella, D.O. Stram, C.A. Haiman, L. Le Marchand, S.E. Murphy

**12:10** Concluding Remarks.

### Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches

Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI

## TUESDAY AFTERNOON

## Section A

Philadelphia Downtown Courtyard by Marriott  
Juniper's Ballroom

### Needs & Directions for the Future of Toxicology in Pharmaceutical Development

*Cosponsored by MED1*

Y. Will, *Organizer*

F. Guengerich, W. G. Humphreys, *Organizers*,  
Presiding

1:30 Introductory Remarks.

1:35 TOXI 36. Update on recent approaches to improve drug design practices. N.A. Meanwell

2:15 TOXI 37. Risk assessing bio-activation: a pharmaceutical challenge. R.A. Thompson

2:55 TOXI 38. Small molecule safety lead optimization and candidate identification: Integrating technologies into decision-making. D. Dambach

3:35 TOXI 39. Learnings from early-safety assessment in the pharmaceutical industry. Y. Will

### Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches

*Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI*

### Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations

*Sponsored by AGRO, Cosponsored by ENVR and TOXI*

## TUESDAY EVENING

## Section A

Philadelphia Downtown Courtyard by Marriott  
Juniper's Ballroom

### Division of Chemical Toxicology Keynote Address

P. F. Hollenberg, *Organizer, Presiding*

5:00 Introductory Remarks.

5:10 TOXI 40. From repair replication to R-loops in half-a-century. P.C. Hanawalt

## Section A

Pennsylvania Convention Center  
Ballroom B

## General Poster Session

A. C. Bryant-Friedrich, *Organizer*

6:30 - 8:30

TOXI 41. Automation of an empirically-based decision tree for developmental and reproductive toxicity (DART). C. Coolbaugh Lester, J. Fisher, M. Laufersweiler, J. Naciff, G. Daston, K. Blackburn, S. Wu

TOXI 42. Impact of gold nanoparticles coated with a new class of polyelectrolyte on Zebrafish (*Danio rerio*) a model aquatic organism. K. Noland, Z. Zheng, I. Gunsolus, C.L. Haynes, N. Niemuth, R. Klaper, Z. Rosenzweig

TOXI 43. Next generation sequencing based cytotoxicity and mutagenicity studies on arylamine adducts in cell. K. Bian, F. Chen, Q. Tang, A. Cai, B. Cho, D. Li

TOXI 44. Chemical biology and toxicology of human carboxylesterase 1 in macrophages. M.K. Ross, L. Mangum, J. Lee, A. Borazjani, J. Crow

TOXI 45. Effects of asbestos exposure on mitochondrial metabolites in lung cells. L. Weng, C. Mesaros, N. Snyder, I.A. Blair

TOXI 46. Avoidance of the AMES test liability for aryl-amines via computation, 5 years on. L. Whitehead, P.R. McCarren, S. Glowienke, A. Werner

TOXI 47. Tetra-ethylene glycol coated gold nanoparticles are stable and have an extended half-life in vivo. J. Willett, M. Lawrence, J. Wilder, O. Smithies

TOXI 48. Do grinding conditions affect the toxicity of asbestos fibers? A. Salamatiour, S.K. Mohanty, R.A. Pietrofesa, D. Vann, M. Christofidou-Solomidou, J. Willenbring

TOXI 49. Mineral calomel (mercury(II) chloride): A poison in the Byzantine Empire? M.R. Chávez, M. Golas, A. Mousavi

TOXI 50. Read-across at the crossroad of chemoinformatics and regulatory science. A. Mostrag-Szlichtyng, I.J. Boyer, B. Bienfait, B. Heldreth, T. Kleinoder, J. Maruszczy, A. Tarkhov, O. Sacher, C.H. Schwab, V. Vitcheva, J. Rathman, C. Yang

TOXI 51. Nucleosome histone tail conformation and dynamics: Impacts of lysine acetylation and a nearby minor groove benzo[a]pyrene-derived lesion. I. Fu, Y. Cai, Y. Zhang, N.E. Geacintov, S. Brodye

TOXI 52. Impact of lesion stereochemistry on histone tail structure in a nucleosome core particle: a molecular dynamics study. Y. Cai, Y. Fu, N.E. Geacintov, S. Brodye

TOXI 53. Effect of DNA-protein cross-links on transcription. S. Ji, N.Y. Tretyakova

TOXI 54. Conformation-driven translesion synthesis of a bulky DNA lesion: thermodynamic, binding, and computational investigation. A. Cai, K.A. Wilson, S.D. Wetmore, B. Cho

TOXI 55. XPC lesion recognition mechanism in nucleotide excision repair. H. Mu, N.E. Geacintov, Y. Zhang, S. Brodye

TOXI 56. Oncometabolites inhibit AlkB family DNA repair enzymes. Q. Tang

TOXI 57. Mutagenicity and toxicity assay studying effect of oncometabolites 2-hydroxyglutarate on AlkB family DNA repair enzymes. F. Chen, K. Bian, Q. Tang, D. Li

TOXI 58. DNA polymerase  $\nu$  pre-steady-state kinetic studies of the fidelity and bypass of adducts derived from tobacco specific nitrosamines. P. Aladahalli Sanne Gowda

TOXI 59. Effects of copper on replication block and mutagenicity in-cell on AlkB family DNA repair enzymes. Z. Humulock, K. Bian, F. Chen, Q. Tang, D. Li

TOXI 60. Dynamics of the E. coli beta-clamp dimer interface on DNA loading. B. Koleva, J. Conway, J. Compton, J. Donlan, J. Han, A. Wu, P.J. Beuning

TOXI 61. Gut microbiome and metabolic response to artificial sweeteners. X. Bian, B. Gao, K. Lu, L. Chi, P. Tu

TOXI 62. Sex-specific effects of arsenic exposure on the trajectory and function of the gut microbiome. L. Chi

TOXI 63. Effects of nicotine on the gut microbiome and its metabolic functions. P. Tu, R. Mahbut, X. Bian, B. Gao, L. Chi, K. Lu

TOXI 64. Inhaled aldehydes increase lung tumor formation in the NNK induced A/J mouse tumor model. M.K. Oram, D. Seabloom, M.G. O'Sullivan, Y. Ho, L. Zhang, S.S. Hecht, S. Balbo, L.A. Peterson

TOXI 65. Identification of pyridyloxobutyl deoxycytidine adducts formed in the reaction of DNA with 4-(acetoxymethyl-nitrosamino)-1-(3-pyridyl)-1-butanone. A.K. Michel, P. Upadhyaya, S.S. Hecht

TOXI 66. Identification of adducts formed by pyridyloxobutylation of deoxyadenosine and DNA by 4-(acetoxymethyl-nitrosamino)-1-(3-pyridyl)-1-butanone, a chemically activated form of tobacco specific carcinogens. P. Upadhyaya, E. Carlson, A.K. Michel, S.S. Hecht

TOXI 67. Synthesis, stability, and in vitro analysis of nitrosamides resulting from cytochrome P450-mediated oxidation of N'-nitrosanornicotine and 4-(methyl-nitrosamino)-1-(3-pyridyl)-1-butanone. E.S. Carlson, P. Upadhyaya, S.S. Hecht

TOXI 68. Enantiomeric composition of N'-nitrosanornicotine in the urine of smokers and smokeless tobacco users. J. Yang, S.S. Hecht

TOXI 69. Effect of variable power levels on the yield of total aerosol mass and formation of aldehydes in e-cigarette aerosols. I.G. Gillman, K.A. Kistler, E. Stewart, A. Paolantonio

TOXI 70. Improved method for the analysis of 4-hydroxy-1-(3-pyridyl)-1-butanone-releasing DNA adducts by liquid chromatography nano-electrospray-high resolution tandem mass spectrometry. B. Ma, C. Ruzczak, V. Jain, S.S. Khariwala, R. Dove, I. Stepanov

TOXI 71. Investigation of DNA lesions from C5'-oxidation. S.H. Cho, S.A. Audat, A.C. Bryant-Friedrich

TOXI 72. Rapid throughput DNA extraction from formalin-fixed paraffin-embedded tissues for quantification of multi-class carcinogenic DNA adducts. B. Yun, J. Guo, S. Xiao, T.A. Rosenquist, A.P. Grollman, R. Turesky

TOXI 73. Replication of double-stranded plasmid vectors containing interstrand DNA-DNA cross-links generated by the reaction of a deoxyguanosine residue with an opposing abasic site. N.E. Price, Y. Wang

TOXI 74. Chemical syntheses and characterizations of oligodeoxyribonucleotides containing site-specifically incorporated alkylphosphotriester lesions. J. Wu, Y. Wang

TOXI 75. Synthesis of oligonucleotides containing Fapy-dG and N<sup>2</sup>-(2-oxoethyl) Fapy dG adducts. C.K. Malik, C.J. Rizzo

TOXI 76. Probing arylamine-DNA adducts using Ru(II) polypyridyl complexes. N. Thangavel, V. Vaidyanathan

TOXI 77. Mass spectrometric analysis of post-translational modifications in hemoglobin from type 2 diabetes mellitus patients. H.C. Chen, Y. Yang, P. Chen

TOXI 78. Abasic site cross-link discovery and quantification via stepped MRM in rat tissue. A novel approach to identify DNA modifications in organisms. R. Hillebrand, M.J. Catalano, S. Mohapatra, S. Senvo, R. Lee, K.S. Gates, P.C. Dedon

TOXI 79. LC-MS determination and pharmacokinetic study of lonidamine in a mouse model of melanoma. L. Guo, K. Nath, D.S. Nelson, J.C. Roman, C. Mesaros, J.D. Glickson, I.A. Blair

TOXI 80. Inhibition of cytochrome P450 by buckminsterfullerene. P.M. Gannett, C. Bostick, T.S. Tracy, E.L. Dolan, A.R. Biundo, W.D. Tish

TOXI 81. Epigenetic regulation of cytosine methylation, hydroxymethylation, formylation and carboxylation in a mouse model of smoking-induced lung cancer. C. Seiler, J. Song, A. Anandharaj, F. Kassie, N.Y. Tretyakova

TOXI 82. Biomonitoring the cooked meat carcinogen 2-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine in hair and prostate by ultra performance liquid chromatography-mass spectrometry. S. Xiao, S. Krishnamachari, C. Weight, R. Turesky

TOXI 83. Quantification of azaserine-induced carboxymethylated and methylated DNA lesions in cells by nanoflow liquid chromatography-nano-electrospray ionization tandem mass spectrometry coupled with the stable isotope-dilution method. Y. Yu, J. Wang, P. Wang, Y. Wang

TOXI 84. Withdrawn.

TOXI 85. High throughput analysis of Orlistat® drug standard and corresponding non-prescription over-the-counter drug alli® using TSKgel ODS-140HTP, 2.3 $\mu$ m Columns using HPLC and UHPLC. C. Benner, A. Chakrabarti

TOXI 86. Dibutyltin alters interleukin 1 beta and interleukin 6 secretion from human immune cells. S. Brown, S. Tehrani, W. Wilburn, M. Whalen

TOXI 87. Estrogen receptor-mediated PAH o-quinone toxicity. I.G. Lee, T. Zang, D.H. Tamae, M. Huang, T.M. Penning

TOXI 88. Dissipation monitoring of the QCM-D to study ligand-induced cell signaling. J.Y. Chen, M. Garcia, L.S. Penn, J. Xi

TOXI 89. Pilot study of malathion, atrazine, carbaryl and chlorpyrifos in the breast milk of women in suburban and agricultural communities of Central Florida. M. Bourgeois, J.C. Tovar, E. Pulster, R. Harbison

TOXI 90. Quantification of alkaloids in areca nut-containing products by liquid chromatography-tandem mass spectrometry. V. Jain, A. Garg, P. Chaturvedi, M. Parascandola, I. Stepanov

## WEDNESDAY MORNING

## Section A

Philadelphia Downtown Courtyard by Marriott  
Juniper's Ballroom

## General Orals

A. C. Bryant-Friedrich, *Organizer*  
Z. Suo, *Presiding*

**8:00 TOXI 91.** Gut microbes and probiotics anaerobically transform carcinogenic dietary heterocyclic amines to metabolites with altered toxicity. J. Zhang, C. Engels, M. Schneider, M. Fekry, C. Lacroix, S.J. Sturla

**8:20 TOXI 92.** Mitigating CYP TDI ensuing from bioactivation of fluoropyrimidine moiety. M. Mandal

**8:40 TOXI 93.** Rapid detection of endocrine disrupting chemicals by a nanosensor at ultra-sensitive level. N. Le, X. Wang, Y. Geng, R. Tang, G. Yesilbag Tonga, Z. Jiang

**9:00 TOXI 94.** New techniques for determination of e-cigarette aerosol pH and nicotine absorption by saliva. J.H. Lauterbach, S. Lauterbach

**9:20 TOXI 95.** N<sup>2</sup>-Benzyl-2'-deoxyguanosine 5'-triphosphate is a specific substrate for human DNA polymerase  $\kappa$ . T. Spratt, A. Prakasha Gowda

**9:40 TOXI 96.** Delivering the benefits of chemical-biological integration in computational toxicology at the EPA. A.J. Williams, K. Mansouri, C. Grulke, K. Houck, D. Lyons, J. Edwards, M. Martin, J. Wambaugh, G. Tier, I. Shah, R. Judson, K. Crofton, R. Thomas

**10:00** Intermission.

**10:10 TOXI 97.** Pyridylhydroxybutyl DNA phosphate adduct formation in rats treated chronically with the tobacco-specific lung carcinogen 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. B. Ma, A.T. Zarth, P.W. Villalta, P. Upadhyaya, I. Stepanov, S.S. Hecht

**10:30 TOXI 98.** Metalloporphyrins and salens as mimics of the cytochrome p-450 mixed oxidase systems to evaluate toxicity of drug metabolites. M. Chorghade

**10:50 TOXI 99.** Biomarkers of heterocyclic aromatic amines for molecular epidemiology studies. R.J. Turesky, Y. Wang, K. Pathak, S. Xiao, C. Weight, M. Malfatti, K. Turteltaub, K. White, L. Wilkens, L. Le Marchand

**11:10 TOXI 100.** Chemistry and biology of N<sup>2</sup>-alkyl-Fapy-dG lesions. M.P. Stone, M. Egli, R.S. Lloyd, A. Mc Cullough, C.J. Rizzo, R.J. Turesky

**11:30 TOXI 101.** Murder of John Bell: Reviewing a 200 year old paranormal murder mystery through the eyes of a chemical toxicologist. M. Mann

**11:50 TOXI 102.** Withdrawn.

### Computational Chemistry & Toxicology in Chemical Discovery & Assessment (QSARs)

*Sponsored by AGRO, Cosponsored by COMP, ENVR and TOXI*

## WEDNESDAY AFTERNOON

## Section A

Philadelphia Downtown Courtyard by Marriott  
Juniper's Ballroom

### DNA Repair & Its Role in Defining Human Susceptibility to Disease

*Financially supported by NIEHS*

N. Y. Tretyakova, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:35 TOXI 103.** Repair of OG:A mismatches: From chemistry to MUTYH-associated polyposis and back again. S.S. David

**2:15 TOXI 104.** Single molecule studies of DNA base excision repair. Z. Suo

**2:55 TOXI 105.** DNA sculpting and moving metals in DNA repair nuclease specificity. S. Tsutakawa, J. Tainer

**3:35** Intermission.

**3:50 TOXI 106.** Replicative and translesion synthesis DNA polymerases in the repair of DNA interstrand crosslinks. U. Roy, S. Mukherjee, A. Sharma, O.D. Scharer

**4:30 TOXI 107.** Cellular repair of DNA-protein conjugates. N.Y. Tretyakova, A. Groehler, S. Ji, C. Campbell

### Computational Chemistry & Toxicology in Chemical Discovery & Assessment (QSARs)

*Sponsored by AGRO, Cosponsored by COMP, ENVR and TOXI*

## THURSDAY MORNING

### Innovations in Human Health Exposure & Risk Assessment

*Sponsored by AGRO, Cosponsored by ENVR and TOXI*

## CHAL

## Division of Chemistry and the Law

K. Bianco and J. Kennedy, *Program Chairs*

## SOCIAL EVENTS:

Reception, 6:00 PM: Mon

Luncheon, 12:00 PM: Mon

## BUSINESS MEETINGS:

Business Meeting, 6:00 PM: Sun

## SUNDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 201B

### Strengthening Your Patent Rights in Light of Recent Federal Circuit Court Decisions

R. G. Bone, X. Pillai, *Organizers, Presiding*

**2:00 CHAL 1.** Review of recent Federal Circuit decisions relevant to what scientists need to know about patent filing and prosecution. X. Pillai, R.G. Bone

## MONDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 201B

### Beyond the Bench: Careers in Intellectual Property

K. E. Bianco, *Organizer, Presiding*

**10:00 CHAL 2.** Careers in university technology transfer. J. Cho

**10:30 CHAL 3.** Careers in patent law. K.E. Bianco, M. Armstrong

**11:20 CHAL 4.** Navigating the path from graduate school to a career in patent law. E.M. Sommers

**11:50** Panel Discussion.

## MONDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 201B

### IP Considerations & Pitfalls in Collaborative Research & Licensing Agreements

M. Armstrong, *Organizer, Presiding*

**1:30 CHAL 5.** Overview of considerations and pitfalls in entering into collaborative agreements and licensing agreements. M. Armstrong

**2:00 CHAL 6.** Partnering with academic institutions: A roadmap to (i) address the differences between academia and industry to ensure a successful partnership and (ii) leverage academia strength. V. Martin

**2:30 CHAL 7.** Creating a well crafted co-development and other alliance agreements (avoiding the pain and legal fees). F.J. Liotta

**3:00 CHAL 8.** Life science entrepreneur perspective: IP considerations and issues. J. Harris

## MONDAY EVENING

## Section A

Pennsylvania Convention Center  
Halls D/E

## Sci-Mix

K. Bianco, *Organizer*

**8:00 - 10:00**

**CHAL 9.** Chocolate: Food of the gods. H.M. Peters, S.B. Peters

**CHAL 10.** National Inventors Hall of Fame 2016. H.M. Peters, S.B. Peters

## TUESDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 201B

### Strategic Patent Planning for Small & Mid-Size Chemical & Pharmaceutical Companies

K. E. Bianco, *Organizer, Presiding*

**9:30 CHAL 11.** Options for protecting your intellectual property. K. McIntyre

**10:00 CHAL 12.** Identifying inventions — your own and others. K.E. Bianco

**10:30 CHAL 13.** Practical considerations for patent portfolio management. J. MacAlpine

**11:00 CHAL 14.** Know thy enemy: The different ways to attack a U.S. patent and tips to avoid becoming a victim. E.M. Sommers

### Safety & Ethics in our Chemical Community

*Sponsored by CHAS, Cosponsored by CCS, CHAL, CHED, CORP, ETHC and SCHB*

## TUESDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 201B

## Patent Litigation Primer

K. E. Bianco, *Organizer, Presiding*

**1:30 CHAL 15.** Patent litigation primer: What every chemist needs to know. K.E. Bianco, K. McIntyre

## WEDNESDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 201B

### Developments in Pharmaceutical Patent Law

D. F. Cauble, B. C. Trinqué, *Organizers, Presiding*

**9:30 CHAL 16.** Pharmaceutical patent prosecution primer. B.C. Trinqué

**10:00 CHAL 17.** Small molecule federal circuit case law. D.F. Cauble

**10:30 CHAL 18.** Obviousness, the CAFC, and second generation filing strategies. B.C. Trinqué

**11:00 CHAL 19.** Written description of chemical and pharmaceutical inventions. D.F. Cauble

## WEDNESDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 201B

### The Many Faces of CHAL: Where Chemistry Meets the Law

J. L. Kennedy, *Organizer*

K. E. Bianco, *Organizer, Presiding*

**1:30 CHAL 20.** Precision structure searching for chemical entities. E.N. Cheeseman

**2:00 CHAL 21.** Maximizing interactions with your patent practitioner. T. Palovich

**2:30 CHAL 22.** Increase of clean energy technology patents: The clean energy race. K.M. Caldwell

**3:00 CHAL 23.** Novel enzyme-based and chemical-based methods for fingerprint analysis. C. Huynh, E.K. Brunelle



## Division of Colloid and Surface Chemistry

R. Nagarajan, *Program Chair*

### OTHER SYMPOSIA OF INTEREST:

**Nanotechnology for Sustainable Agriculture & Food Systems**  
(see *ENVR*, Sun, Wed)

**Nanomaterials in Biology & Medicine**  
(see *INOR*, Sun, Mon, Tue)

**Advanced Nanoscale Chemical Imaging of Catalyst Materials** (see *CATL*, Sun)

**2D Materials: Graphene & Beyond & their Device Applications**  
(see *ENFL*, Mon, Tue, Wed, Thu)

**Molecular Modeling of Surface-Mediated Electrochemical & Sorption Reactions at Environmental Interfaces** (see *GEOC*, Sun)

**Nanoscience & Nanotechnology for Human Health, Repair & Safety** (see *MPPG*, Mon)

### SOCIAL EVENTS:

**Social Hour with Poster Session**, 6:00 PM: Sun

**Luncheon**, 12:00 PM: Tue

### BUSINESS MEETINGS:

**COLL Program & Executive Committee Meeting**, 4:00 PM: Sat

**Business Meeting**, 5:30 PM: Sun

## SUNDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 121A

#### Synergy at the Bio-Nano Interface

D. McDaniel, B. L. Smith, J. van Hest, G. Zheng, *Organizers*

E. B. Lavik, V. M. Rotello, *Organizers, Presiding*

**8:30 COLL 1.** Cytosolic internalization of luminescent quantum dots.  
H.M. Mattoussi, A. Kapur, G. Palui, W. Wang, S. Medina, J. Schneider

**9:00 COLL 2.** Influence of PEGylation on the interaction of colloids with cells. W. Parak

**9:30 COLL 3.** Engineered nanomaterials for protein and nucleic acid delivery. V.M. Rotello

**10:00** Intermission.

**10:15 COLL 4.** Supramolecular bioactive nanostructures for cell signaling. S.I. Stupp

**10:45 COLL 5.** Optimizing passivation of interfaces with zwitterions. J.B. Schlenoff

**11:05 COLL 6.** Nanoparticles interactions with viruses. F. Stellacci

**11:35 COLL 7.** Smart and bright: Functional luminescent nanoparticles for bioimaging and therapy. G. Han

### Section B

Pennsylvania Convention Center  
Room 121B

#### Nanoparticles: Synthesis, Characterization & Their Application in Catalysis

B. P. Chauhan, *Organizer, Presiding*

Y. Lu, *Presiding*

**8:30** Introductory Remarks.

**8:40 COLL 8.** Ionic functionalization of hydrophobic colloidal nanoparticles to form ionic nanoparticles with enzyme-like properties. Y. Liu, W. Tan

**9:00 COLL 9.** Understanding the overall surface charge of single-walled carbon nanotubes through point of zero charge measurements. S. Kana'an

**9:20 COLL 10.** Insights into the kinetics and thermodynamics of shape- and composition: Control of bimetallic metal nanocrystals on surfaces. K.D. Gilroy, R.A. Hughes, S. Neretina, Y. Xia

**9:40** Intermission.

**9:55 COLL 11.** Thermosensitive microgels as "active" nanoreactors for tuning the catalytic activity of metal/metal oxide nanoparticles. Y. Lu, H. Jia, R. Roa, J. Dzubiella, M.M. Ballauff

**10:25 COLL 12.** Dual catalyst with diagnostic power for probing stepwise reduction and oxidation reactions. Y. Wu, J. Li, D. Qin

**10:45 COLL 13.** Ordered mesoporous carbon/metal oxide for adsorption and decomposition of dimethyl methylphosphonate. J. Hu, K. Huynh, W. Gibbons, S. Holdren, M.R. Zachariah, B.W. Eichhorn

**11:05 COLL 14.** Size dependent catalytic activity of iron (0) nanoparticles as hydrogenation catalysts. G. Bleier, J. Watt, C.K. Simocko, D. Huber

**11:25 COLL 15.** Hybrid catalytic nanoparticles based on zirconium oxocluster. C. Benedetti, A. Cazzolaro, M. Carraro, R. Graf, K. Landfester, S. Gross, R. Muñoz-Espí

### Section C

Pennsylvania Convention Center  
Room 121C

#### Characterization, Reactivity, Sorption & Thermochemical Properties of Mixed Oxides: Symposium in honor of Alexandra Navrotsky

Experimental & Theoretical Thermodynamics & Surface Energetics

N. R. Birkner, K. Johnson, C. M. McCann, *Organizers*

K. Lilova, D. Wu, *Organizers, Presiding*

N. Birkner, *Presiding*

**8:30** Introductory Remarks.

**8:35 COLL 16.** Energetics of sorption of water, carbon dioxide, and ethanol on oxide surfaces. A. Navrotsky, D. Wu, J. Yi

**9:15 COLL 17.** Thermal analysis and calorimetry applied to the studies of nanomaterials. K. Lilova

**9:45 COLL 18.** Thermodynamics of nanophasse manganese oxides: Sodium, potassium, and calcium birnessite and cryptomelane. N.R. Birkner, A. Navrotsky

**10:15** Intermission.

**10:30 COLL 19.** What one can do with flow microcalorimetry: Applications to studies of the surface reactivity of oxides. N. Kabengi

**11:00 COLL 20.** *Ab initio* thermodynamics of metal oxide surfaces. A.M. Chaka, E. Ilton, J. Stubbs, P.J. Eng, T. Droubay, J.R. Bargar

**11:40 COLL 21.** Surface structure and reactivity of ferrihydrite scaling from nucleus to nanoparticle: Oxyanion adsorption and surface energetics. T. Hiemstra

**12:20** Concluding Remarks.

### Section D

Pennsylvania Convention Center  
Room 122A

#### Composite Colloids for SERS Biodection

H. M. Mattoussi, W. Parak, *Organizers*

L. Liz Marzan, *Organizer, Presiding*

**8:30 COLL 22.** Glucose sensing with SERS. R.P. Van Duyne

**9:00 COLL 23.** Surface enhanced hyper Raman scattering for bio-applications. J. Kneipp, Z. Heiner, M. Gühlke, F. Madzharova

**9:30 COLL 24.** Adsorption behavior of mixed thiols on SERS active single crystal gold nanoplatelets. S. Zhang, V.V. Tsukruk

**9:55** Intermission.

**10:25 COLL 25.** Surface-enhanced Raman spectroscopy for biodetection: From mechanism to application. B. Ren

**10:55 COLL 26.** Designer nanoparticle rattles for SERS detection. A.J. Haes

**11:25 COLL 27.** Ultrastrong, transparent and conductive freestanding reduced graphene oxide nanomembranes with SERS functionality. R. Xiong, K. Hu, V.V. Tsukruk

**11:50 COLL 28.** Beyond biomarkers: Array-based profiling for diagnostics and high-throughput screening. V.M. Rotello

### Section E

Pennsylvania Convention Center  
Room 122B

#### Polymer Adhesives & Adhesion by Design: Fundamentals to Applications Adhesion & Surface Modification: Fundamentals for Processing & Performance

Financially supported by Dow Chemical Company

M. Bishop, G. Jialanella, T. H. Kalantar, T. E. Long, Q. Wan, *Organizers*

P. McGuiggan, G. Meyers, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 COLL 29.** Scaling principles for understanding and exploiting adhesion. A. Crosby

**9:05 COLL 30.** Design of brush-like polymer surfaces through spontaneous segregation of bottlebrush polymer additives. G. Stein, R. Verduzco

**9:25 COLL 31.** Importance of surface chemistry to enhance wet adhesion during peeling of soft materials. J. Frechette

**9:45 COLL 32.** Energy dissipation and adhesive failure of acrylic emulsion-based pressure sensitive adhesives. Q. Wang, W.B. Griffith, M. Einsla, P. Nedwick, M.L. Pacholski, S. Zhang, K.R. Shull

**10:05** Intermission.

**10:20 COLL 33.** Investigating effect of print orientation on integrity of multi-material interfaces in polyjet additive manufactured materials. D.A. Dillard, I.Q. Vu, A. DiBerardino, L. Sturm, N.A. Meisel, E. Orler, C.B. Williams

**10:50 COLL 34.** Fundamental characterization of polymer extrusion additive manufacturing processes. J.E. Seppala, S. Han, K.E. Hillgartner, C.S. Davis, K.B. Migler

**11:10 COLL 35.** Understanding the adhesion of latex paints over alkyd surfaces. P.S. Majumdar, J. Sweeney, C. Kozak, S. Carpenter, S. Eberly, W. Howell, L. Fioravanti

**11:30** Concluding Remarks.

### Section F

Pennsylvania Convention Center  
Room 123

#### Basic Research in Colloids, Surfactants & Nanomaterials

#### Metal Oxides & Semiconductor Nanomaterials

R. Nagarajan, *Organizer*

R. Sardar, *Presiding*

**8:30 COLL 36.** Colloidal In<sub>2</sub>Se<sub>3</sub> nanosheets and their enhanced photoresponse. S. Ghosh

**8:50 COLL 37.** First electronic transition of interfacial water on alpha-alumina studied by far-ultraviolet spectroscopy. T. Goto, Y. Ozaki

**9:10 COLL 38.** Synthesis and efficient Z-scheme electron transfer of ZnO/CdSSe tree-like nanostructure. Z. Li, J. Nieto-Pescador, A. Carson, J. Blake, L. Gundlach

**9:30 COLL 39.** Tailoring of oxide nanoparticle superstructures through deposition method, temperature and ligand behavior. M. Luthueviene Cordeiro, E.R. Leite, E. Stach

**9:50 COLL 40.** Biphasic synthesis of metal sulfide nanoparticles at room temperature. P. Goulet, L. Bian

**10:10 COLL 41.** Methanol adsorption on monocrystalline ceria surfaces. C. Yang, A. Nefedov, C. Woell

**10:30 COLL 42.** Distance dependent triplet energy transfer between CdSe nanocrystals and surface bound anthracene. M.L. Tang

**10:50 COLL 43.** Anisotropically shaped perovskite nanostructures synthesis and photovoltaic applications. M. Teunis, R. Sardar

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- 11:10 COLL 44.** Accelerating Förster resonance energy transfer (FRET) between PbS quantum dots (QDs) with organic chromophore bridge. C. Wang  
**11:30 COLL 45.** Withdrawn.

### Section G

Pennsylvania Convention Center  
Room 124

#### Plasmonic Colloidal Nanostructures: From Creation to Applications

##### Controlled Synthesis in Solution & on Substrate

D. Qin, Y. Yin, *Organizers*

Y. Han, Y. Sun, *Organizers, Presiding*

- 8:30 COLL 46.** Colloidal plasmonic nanocrystals. J. Wang  
**9:00 COLL 47.** Kinetic control of the nucleation and growth of colloidal metal nanocrystals. Y. Xia  
**9:35 COLL 48.** Colloidal metallic nanocrystals with unusual morphologies. Y. Han  
**9:55** Intermission.  
**10:20 COLL 49.** Stress induced fabrication of new plasmonic nanostructures. H. Fan  
**10:50 COLL 50.** When colloidal chemistry meets substrate-immobilized seeds: New synthetic schemes, new architectures, and new capabilities. S. Neretina, M. Hajfathalian, K.D. Gilroy, E. Menumerov, S. Golze, R.A. Hughes

- 11:20 COLL 51.** Noble metal nanocube, nanoshell, nanocage, and nanoframe syntheses reliant on citrate as a (100) capping agent. M. Hajfathalian, K. Gilroy, R.A. Hughes, S. Neretina

### Section H

Pennsylvania Convention Center  
Room 125

#### Control of Amphiphile Self-Assembling at the Molecular Level

##### Supra-Molecular Assemblies with Tuned Physicochemical Properties for Delivery Applications

M. A. Ilies, *Organizer, Presiding*

- 8:30 COLL 52.** Short cell penetrating peptides for stem cell engineering and targeting. G. Jin, W.H. Suh  
**9:00 COLL 53.** Assembly of nanoparticles containing biologics and other soluble therapeutics by flash nanoprecipitation. R.F. Pagels, R.K. Prudhomme  
**9:30 COLL 54.** Modeling self-assembly of nucleic acid containing bionanoparticles. R. Nagarajan

- 10:00 COLL 55.** Controlling the physicochemical and self-assembling properties of pyridinium amphiphiles at molecular level for efficient nucleic acid delivery. U. Satyal, B. Draghici, T.V. Sommers, Q. Zhang, M.A. Ilies

- 10:30 COLL 56.** Evaluation of nanopoprotein particles (NLPs) as an *in vivo* delivery platform for biomedical applications. S.F. Gilmore, N. Be, D. Weillhammer, A. Rasley, S. Peters, M.H. Corzett, J. Osburn, P. Henderson, C. Blanchette, N. Fischer

- 11:00 COLL 57.** pH responsive supra-molecular hydrogels of  $\beta$ -amino acid derivatives. R. Das Mahapatra

- 11:30 COLL 58.** Biocompatible nanoparticles for a selective drug release at cancer cells. M. Klapper, F. Karagöz, S. Parekh, R. Dorrestijn

#### Analyzing & Controlling Cell-Material Interactions

Sponsored by ANYL, Cosponsored by BIOL, COLL and MPPG

## SUNDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 121A

#### Synergy at the Bio-Nano Interface

- E. B. Lavik, D. McDaniel, V. M. Rotello, G. Zheng, *Organizers*  
 B. L. Smith, J. van Hest, *Organizers, Presiding*

- 2:00 COLL 59.** Directed evolution of peptide nanomaterials. R. Uljin

- 2:30 COLL 60.** Bioactive glycopoly-peptide self-assembled biohybrid nanomaterials. S. Lecommandoux

- 3:00 COLL 61.** Strain-promoted oxidation-controlled cyclooctyne-1,2-quinone cycloaddition (SPOCQ) for fast and activatable protein conjugation. J. van Hest, A. Bormann, A. Jonker, D. Lowik

**3:30** Intermission.

- 3:45 COLL 62.** Polyplexes formed from cationic block polymers: investigating the role of block length, chemistry, and nucleic acid size on biological delivery. T.M. Reineke, D. Sprouse, Y. Dhande, S. Jung

- 4:15 COLL 63.** Silica-phthalocyanine-antibody conjugate-based near infrared photoimmunotherapy: A newly established physico-chemical cancer therapy. H. Kobayashi

- 4:45 COLL 64.** Programmable pre-assembly of near-infrared fluorescent multivalent molecular probes for biological imaging. B.D. Smith

- 5:15 COLL 65.** Tuning mechanics via structural interplay in polymer-peptide hybrids. L. Korley, L. Matolyak, K. Jones, N. Wanasekara, J. Johnson

### Section B

Pennsylvania Convention Center  
Room 121B

#### Nanoparticles: Synthesis, Characterization & Their Application in Catalysis

B. P. Chauhan, *Organizer, Presiding*  
 E. D. Glowacki, *Presiding*

**2:00** Introductory Remarks.

- 2:10 COLL 66.** Size-controlled synthesis of thermal stable Ru@H-SiO<sub>2</sub> core-shell nanoparticles and their catalytic applications. H. Yin, X. Yu

- 2:40 COLL 67.** Controlled anisotropic growth of Co-Fe-P nanostructures as an efficient catalyst for the oxygen evolution reaction. A. Mendoza-Garcia, D. Su, S. Sun

- 3:00 COLL 68.** Comparative analysis of new metal-impregnated nanomaterials and their recyclable catalytic properties. B.P. Chauhan, K. Moran, A. Patel, S. Matthews, Q.R. Johnson

- 3:20 COLL 69.** Hydrogen-bonded organic pigment nanoarchitectures for photocatalysis: From photosynthesis of hydrogen peroxide to metal reduction. E.D. Glowacki, M. Jakesova, D. Apaydin, M. Szytyk, W. Heiss, S. Sariciftci

**3:40** Intermission.

- 3:55 COLL 70.** Explorations in metal particle catalysis using silicon stabilized nanosized metals. B.P. Chauhan

- 4:25 COLL 71.** Self-propelling cellulose nanocrystal based nanobots with high catalytic activity. V. Katiyar, P. Dhar, A. Kumar

- 4:45 COLL 72.** Synthesis and characterization of halloysite-TiO<sub>2</sub> hybrid nanocomposites for the photocatalytic degradation of organic dye pollutants in industrial wastewater. O. Karahan, A. Yurum, G.I. Akmeahmet, C. Ow-Yang, I. Koyuncu, Y.Z. Menciloglu, S. Unal

- 5:05 COLL 73.** Morphology control in polyolefin synthesis via self-assembled hybrid supports. M. Klapper, S. Nietzel, D. Vidakovic, K. Muellen, A.A. Alsaygh

### Section C

Pennsylvania Convention Center  
Room 121C

#### Characterization, Reactivity, Sorption & Thermochemical Properties of Mixed Oxides: Symposium in honor of Alexandra Navrotsky

##### Mineral Surfaces & Reactions

N. R. Birkner, K. Johnson, C. M. McCann, *Organizers*

K. Lilova, D. Wu, *Organizers, Presiding*

N. Birkner, *Presiding*

**2:00** Introductory Remarks.

- 2:05 COLL 74.** Adsorption of CO<sub>2</sub>, CH<sub>4</sub> and H<sub>2</sub>O on clay surfaces: Density functional theory calculations of structure and dynamics. L. Tribe, M.D. Kilmer

- 2:45 COLL 75.** Characterisation of silica and silicate nanoparticulate films using surface science methodologies. D. Baird, S. Taj, A. Rosu-Finsen, V. Frankland, M. Collings, M.R. McCoustra

**3:25** Intermission.

- 3:35 COLL 76.** Energetics of smectite clay swelling. I.C. Bourg

- 4:15 COLL 77.** First-principles discovery of shape-reactivity relationships in adsorption onto Keggin-type aluminum hydroxides. S.E. Mason

- 4:45 COLL 78.** Adsorption energy, binding mode and geometry of toxic chemicals on TiO<sub>2</sub>(110) using density functional theory. Y. Quintero, R. Nagarajan

**5:05** Intermission.

- 5:15 COLL 79.** Acidity of a TiO<sub>2</sub>-ZrO<sub>2</sub> adsorbent modified with phosphate or tungstate species. S. Chang, P. Shan

- 5:35 COLL 80.** Implications of shape-reactivity relationships on the crystallization of aluminum polycations. J.L. Bjorklund, K.W. Corum, T. Forbes, S.E. Mason

**5:55** Concluding Remarks.

### Section D

Pennsylvania Convention Center  
Room 122A

#### Composite Colloids for SERS Biodection

L. Liz Marzan, H. M. Mattoussi, *Organizers*  
 W. Parak, *Organizer, Presiding*

- 2:00 COLL 81.** SERS tags for multiplex immunophenotyping cellular receptors. I. Pastoriza-Santos, J. Perez-Juste

- 2:30 COLL 82.** Protein detection at cell surfaces and characterization of amyloid oligomers within phospholipid bilayers using SERS nanoparticles. C.M. MacLaughlin, G.C. Walker

- 3:00 COLL 83.** Stability and targeting properties of glycan-decorated plasmonic Au nanoparticles: Toward a selective SERS-based nanosensor. I. Garcia, A. Sanchez-Iglesias, M. Henriksen, M. Grzelczak, S. Penades, L. Liz Marzan

- 3:25 COLL 84.** Controlling the synthesis and assembly of silver nanocrystals for SERS application. Y. Xia

**3:55** Intermission.

- 4:15 COLL 85.** Nanophotonics-based theranostics of cancer and heart disease: From *in vivo* diagnostic chemical imaging to phototherapy of heart disease. R. Kopelman

- 4:45 COLL 86.** Biomedical imaging using SERS tags: The future beyond fluorescent dyes. M. Bhamidipati, T.V. Tsoulos, S. Atta, S. Indrasekara, L. Fabris

- 5:15 COLL 87.** Orientation and binding of near infrared absorbing dyes at a gold surface. S. Sengupta, M.A. Bedics, K. Plakas, L. Bromley, H. Kearns, S. Mabbott, F. Ali, K. Faulds, N. Shand, D. Graham, M.R. Detty, L.A. Velarde

- 5:40 COLL 88.** Lysosomal sensing. W. Parak

### Section E

Pennsylvania Convention Center  
Room 122B

#### Polymer Adhesives & Adhesion by Design: Fundamentals to Applications

##### Adhesion & Surface Modification: New Chemistry for Adhesive Design

Financially supported by Dow Chemical Company

M. Bishop, G. Jialanella, T. H. Kalantar, P. McGuiggan, G. Meyers, *Organizers*

T. E. Long, Q. Wan, *Organizers, Presiding*

**2:00** Introductory Remarks.

- 2:05 COLL 89.** Supramolecular polymers for self-assembly in adhesive design. K. Drummey, K. Zhang, W. Chiang, G. Fahs, R.B. Moore, T.E. Long

- 2:35 COLL 90.** Significant adhesion and toughness enhancement by bio-inspired nano-priming. K. Ahn

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

**2:55 COLL 91.** Designing high performance adhesives using principles learned from marine biology. C. Jenkins, M. Johnston, T.A. Jones, H. Meredith, M. North, A. Putnam, H. Siebert, J.J. Wilker

**3:15 COLL 92.** Novel adhesives based on biomimetic approach. A. Takahara, Y. Higaki

**3:35** Intermission.

**3:50 COLL 93.** Tough adhesion of hydrogels to diverse nonporous surfaces. X. Zhao

**4:20 COLL 94.** Elucidating  $T_g$  and polarity effects in bioinspired catechol synthetic adhesives towards improved interfacial adhesion. M. Bartucci, J.A. Orlicki, J.L. Lenhart

**4:40 COLL 95.** Hybrid aminopropyl-triethoxysilane-polydopamine coatings and adhesive properties. N.T. Tran, K. Gaskell, J.A. Orlicki, J. Woicik, C. Jaye, D. Fischer, J.L. Lenhart, D.B. Knorr

**5:00** Concluding Remarks.

## Section F

Pennsylvania Convention Center  
Room 123

### Basic Research in Colloids, Surfactants & Nanomaterials

#### Amphiphilic Systems

R. Nagarajan, *Organizer*

A. Striolo, *Presiding*

**2:00 COLL 96.** Reverse micelles from hydrogen bonding surfactants. M.A. Waiters, Y. Chang, A.L. Rheingold

**2:20 COLL 97.** Multiscale modeling of hairy vesicles. X. Yu, M. Dutt

**2:40 COLL 98.** Structure-function relationships of bio-inspired rhamnolipid surfactants. R. Palos Pacheco, L.L. Kegel, C. Coss, R. Polt, J.E. Pemberton

**3:00 COLL 99.** Some effects of surface heterogeneity on the morphology of surfactant self-assembled aggregates. A. Striolo

**3:20 COLL 100.** NMR investigations of the sphere to rod phase transition for cationic gemini surfactants. M.D. Lingwood, S.J. Bachofer

**3:40 COLL 101.** Molecular insights into the structure of nanoemulsions. A. Carpenter, J. Hensel, R. Ciszewski, B. Schabes, G.L. Richmond

**4:00 COLL 102.** Effects of constituent block size on the interfacial dynamics of  $C_6(EO)_m(PO)_n$  block copolymer surfactants. Z.R. Hinton, N. Alvarez

**4:20 COLL 103.** Alkyl thioglycoside green surfactant properties: Effects of various disaccharide and monosaccharide headgroup and alkyl tail length. L.L. Kegel, L. Szabo, R. Polt, J.E. Pemberton

**4:40 COLL 104.** Molecular simulations of SPAN80 desorption from the squalene-water interface. M. Chaudhari, L.R. Pratt, L. Tan

**5:00 COLL 105.** Specific ion effects on the reduction of interfacial tension by ionic surfactants. V. Raman, M. Haque, J. Cox, M. Szulcowski, H. Ow

**5:20 COLL 106.** Microenvironment of monorhamnolipid aggregates and their synthetically produced diastereomers as a function of solution conditions. R. Eismun, R. Palos Pacheco, E. Munusamy, D. Hogan, R.M. Maier, R. Polt, S.D. Schwartz, J.E. Pemberton

## Section G

Pennsylvania Convention Center  
Room 124

### Plasmonic Colloidal Nanostructures: From Creation to Applications

#### Controlled Assembly & Applications

Y. Han, D. Qin, *Organizers*

Y. Sun, Y. Yin, *Organizers, Presiding*

**2:00 COLL 107.** Hierarchical assembly of gold nanoparticles for SERS biosensing. L. Liz Marzan

**2:30 COLL 108.** Colorimetric stress sensor based on plasmonic nanostructures. Y. Yin

**2:50 COLL 109.** Optical analysis of the orientational order parameter in gold nanorod composites. C. Li, E. Glor, R. Ferrier, R.J. Composto, Z. Fakhraai

**3:10 COLL 110.** Magnetic field induced symmetry breaking in anisotropic plasmonic nanostructures. Z. Tang

**3:40** Intermission.

**4:00 COLL 111.** High-strength magnetically-switchable plasmonic nanorods assembled from a binary nanocrystal mixture. M. Zhang, C.R. Kagan, C.B. Murray

**4:20 COLL 112.** Surface modification of silver nanomaterials for extraction-surface enhanced Raman spectroscopy. Y. Shi, J. Zhan

**4:40 COLL 113.** Ag@Au concave cuboctahedra for monitoring Au-catalyzed reduction and oxidation reactions by surface-enhanced Raman spectroscopy. Y. Wu, J. Zhang, S.A. Winget, D. Qin

**5:00 COLL 114.** DNA-based plasmonic and photonic metamaterials. G. Schatz

## Section H

Pennsylvania Convention Center  
Room 125

### Control of Amphiphile Self-Assembling at the Molecular Level

#### Supra-Molecular Assemblies with Tuned Physicochemical Properties for Delivery Applications

M. A. Ilies, *Organizer, Presiding*

**2:00 COLL 115.** Filomicelles self-assembled from degradable di-block copolymers circulate longer in vivo, and deliver retinoids & chemotherapeutics to irreversibly control carcinoma cell fate. P. Nair, M. Vakili, A. Lavasanifar, D.E. Discher

**2:30 COLL 116.** Rational controlled morphology transitions in the self-assembled polystyrene-hydrophilic polyhedral oligomeric silsesquioxane (POSS) giant surfactants in solution. Y. Chu, W. Zhang, X. Lu, G. Mu, B. Zhang, Y. Li, S.Z. Cheng, T. Liu

**3:00 COLL 117.** Functionalized microparticles through PEG hydrogel encapsulation of nanoparticles: A suitable vehicle for passively targeted lung delivery. B. Wilson, R.K. Prudhomme

**3:30** Intermission.

**3:45 COLL 118.** Characterization of amphiphilic copolymer micelles for drug delivery. S. Kaur, B. Gupta, X. Xu, J. Nguyen, A. Watterson, M. Ruths

**4:15 COLL 119.** Factors influencing the release kinetics of hydrophilic compounds encapsulated in polymeric nanoparticles using inverted flash nanoprecipitation. C.E. Markwaite, R.F. Pagels, R.K. Prudhomme

**4:45 COLL 120.** Interface-engineered PEG-PCL delivery system for docetaxel controlled delivery. M.A. Ilies

### Molecular Modeling of Surface-Mediated Electrochemical & Sorption Reactions at Environmental Interfaces

*Sponsored by GEOC, Cosponsored by COLL*

#### Analyzing & Controlling Cell-Material Interactions

*Sponsored by ANYL, Cosponsored by BIOL, COLL and MPPG*

## SUNDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls A/B

### Fundamental Research in Colloids, Surfaces & Nanomaterials

R. Nagarajan, *Organizer*

**6:00 - 8:00**

**COLL 121.** Monodisperse plasmonic metal nanocrystals with plasmon wavelengths tunable from ~700 nm to ~15 microns. X. Zhuo, X. Zhu, H. Yip, J. Wang

**COLL 122.** Self-assembled cationic amphiphiles as antimicrobial peptides mimics with potent antimicrobial activity and high selectivity. Y. Zhang, A. Algburi, N. Wang, V. Kholodovych, D. Oh, M. Chikindas, K.E. Uhrich

**COLL 123.** Porous metal aerogels as high efficiency alcohol oxidation electrocatalysts. L. Nahar, A. Farghaly, I.U. Arachchige

**COLL 124.** Withdrawn.

**COLL 125.** Withdrawn.

**COLL 126.** Graphene decorated with silver as a substrate for surface-enhanced Raman scattering detection of 2-thiouracil. M. Al-Shalifeh, T.A. Saleh, A.A. Al-Saadi

**COLL 127.** Withdrawn.

**COLL 128.** Potassium promotion of a model Au/TiO<sub>2</sub> catalyst. D. Grinter, S. Luo, M. Soldemo, L. Piazza, J. Weissenrieder, S.D. Senanayake, D.J. Stacchiola, J. Rodriguez

**COLL 129.** Multipod nickel nanostructures: Synthesis, characterization and applications. P. Vakili, B. Ashley, G.F. Strouse

**COLL 130.** Structure-function relationships for chemical warfare agent uptake into polyurethane films. T.G. Grissom, J.M. Serrine, T.E. Long, A. Esker, J.R. Morris

**COLL 131.** Covalent attachment of C<sub>60</sub> Buckminster fullerenes on carbon-free Si(111) by wet chemistry. F. Gao, A.V. Teplyakov

**COLL 132.** Synthesis of CdSe QDs with different thiol-ligands, silica coating, and viability assessment on of COLO-205 and TK6 cells. M.R. Rodríguez-Torres, O. Rivera, J. Medina, G.J. Ortiz-Torres, B. Zayas, C. Velez, O. Primera-Pedrozo

**COLL 133.** Surface properties of carboxylic acid terminated layer developed by electrochemical and wet chemical approaches. P. Gao

**COLL 134.** Investigation of the local environment of functional end-groups on polyethylene glycol (PEG) brushes. C.V. Chen, B.P. Triana, R.K. Prudhomme

**COLL 135.** Thermodynamics of analyte tails in DNA and morpholino surface hybridization. U. Koniges, R. Levicky

**COLL 136.** Nano-imprinted SERS-based sensors for the detection of pathogenic bacteria. G.M. Strack, M. Fitzgerald, J. Su, M.G. Pelletier, P. Gaines, H. Sun, H. Gill, S. Thota, L. Li, J. Kumar, P. Kurup, R. Mosurkal

**COLL 137.** Impact of amphiphilic macromolecules' degree of unsaturation and hydrophobe conformation on large unilamellar liposome characteristics. A.E. Moretti, K.E. Uhrich

**COLL 138.** Effect of hydrophobic alkyl silane self-assembled monolayers on barnacle adhesion. J.D. Schablik, M. Figueroa

**COLL 139.** Nonlinear multimodal optical live cells imaging using DNA-mediated plasmon-coupled gold nanoprisms assembly. S.S. Sinha, S.J. Jones, A. Pramanik, P.C. Ray

**COLL 140.** Durability of hydrophobic nanocomposite coatings on cement substrates. J. Feng, C. Xiao, L. Liao, Y. Wang

**COLL 141.** Nanostructured microparticles for human neural stem cell engineering. G. Jin, W.H. Suh

**COLL 142.** Effect of inorganic nanostructured materials on neurogenesis. Y. Chen, W.H. Suh

**COLL 143.** Gold nanoparticle functionalization for the generation of drug and gene delivery systems. A.M. Shabana, M.R. Alam, C.A. Ross, A. Kizewski, M.A. Ilies

**COLL 144.** Photogeneration of silver nanoparticles in stereolithography resin via 3D printing technique. N. Palaganas, J. Ge, J.D. Mangadiao, J. Palaganas, R.C. Advincula

**COLL 145.** Microwave assisted synthesis of tungsten oxide nanoparticles using an ionic liquid. D. Accetta, R. Nagarajan

**COLL 146.** Interaction of hydrogen with Au under optical plasmonic excitation. S. Sylla, D. Sil, C. Lane, E. Glor, K. Gilroy, B. Barbiellini, R. Markiewicz, S. Neretina, A. Bansil, Z. Fakhraai, E. Borguet

**COLL 147.** Synthesis and photophysical characterization of ultra-small Ge<sub>1-x</sub>Sn<sub>x</sub> quantum dots. R.J. Esteves, S.A. Hafiz, D.O. Demchenko, U. Ozgur, I.U. Arachchige

**COLL 148.** Rhodanine based polymers as structure directing agent: A study of chemical and morphological evolution. B.P. Chauhan, T. Hong, M. Chauhan, A. Patel

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- COLL 149.** Using nano perovskites to detect organohalides. **K.J. Cruz,** T.L. Doane, L. Pathade, M.M. Maye
- COLL 150.** Single trigger, dual responsive nanoparticles for sequential drug release. **N. Robertson,** M. Royzen, M.V. Yigit
- COLL 151.** Characterization of functional nanocomposites of dendrons and gold nanoparticles. **S. Yan,** W. Zhao, X. Liu, Z. Skeete, J. Luo, I.G. Ivanov, C. Zhong
- COLL 152.** First-principle study of the initial steps of methane dissociation on  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> (0001) and Fe<sub>3</sub>O<sub>4</sub> (111) surfaces in chemical looping process. **X. Huang,** M. Welford, S.E. Mason
- COLL 153.** *Ab initio* approach for the study of incongruent NMC metal dissolution in aqueous environment. **C. Yang, X. Huang,** M.N. Hang, R.J. Hamers, S.E. Mason
- COLL 154.** Graphene oxide: Metal nanoparticle system for dual sensing applications. **S. Weatherbee,** M. Devadas
- COLL 155.** Graphene quantum dots conjugated magnetic nanoplatform for efficient capture and two photon imaging of rare tumor cells. **A. Pramanik,** Y. Shi, S. Jones, S.S. Sinha, P.C. Ray
- COLL 156.** Single molecule electronics: Fabricating an on/off electromechanical single molecule conductance switch. **P. Yasini,** S. Afsari, L. Vernisse, P. Pikma, E. Borguet
- COLL 157.** Probing hydrogen evolution using electrochemical optical readout measurements. **P.B. Joshi,** A.J. Wilson, K.A. Willets
- COLL 158.** Preferential Cu diffusion to the ends of AuCu alloy nanorod during galvanic replacement reaction. **S. Thota,** S. Chen, J. Zhao
- COLL 159.** Tunable size and shape control synthesis of crystalline and amorphous tin phosphide nanoparticles. **V. Tallapally,** R.J. Esteves, I.U. Arachchige
- COLL 160.** Smart metallic coating based on nanocontainers for improving the corrosion resistance of magnesium alloys. **Z. Xie,** D. Li, F. Chen, C. Zhong
- COLL 161.** Insights into the molecular and electronic structure of supported catalyst and catalytic supports by sum frequency spectroscopy. **D.W. Eisenbeck,** S.K. Das, L.A. Velarde
- COLL 162.** Structural evolution of hollow Pt-Ag nanocrystals for the methanol oxidation reaction with enhanced activity and durability. **S. Chen,** S. Thota, X. Wang, J. Zhao
- COLL 163.** Sol-gel assembly of Au/Ag alloy nanoparticles into aerogels for application in surface enhanced Raman scattering. **L. Nahar,** X. Gao, R.J. Esteves, I.U. Arachchige
- COLL 164.** Synthesis and characterization of size, composition and shape controlled ternary nanoparticles and electrocatalytic properties. **H. Cronk,** S. Kim, S. Negi, Z. Skeete, F. Chang, J. Luo, V. Petkov, C. Zhong
- COLL 165.** Photonic encryption of inverse opals with combinatorial codes for security applications. **Y. Heo,** H. Kang, J. Lee, S. Kim
- COLL 166.** Reductive grafting of gold-aryl layer from sterically demanding diazonium gold(III) salts. **B. Workie,** B. Foster, B. McCandless, A. Mohamed
- COLL 167.** Plasmon-assisted photocatalytic reactions on nanocrystalline surfaces. **N.N. Kholmicheva,** M. Zamkov
- COLL 168.** Exfoliated montmorillonite nanocomposites by catechol conjugated polymer for antifouling and photothermal antibacterial effect. **S. Kim,** E. Kang, S. Park
- COLL 169.** Anion mediated end-shape control in seed-mediated growth of gold nanorods. **J. Kim,** G. Yi
- COLL 170.** Localization of electrochemical events on the surface of plasmonic nanoelectrodes. **N. Molina,** A. Wilson, K.A. Willets
- COLL 171.** Triplet-state mediated super-resolution imaging of fluorescently-labeled gold nanorods. **T. Anthony,** K.A. Willets
- COLL 172.** Sequestration of methylene blue into polyelectrolyte coacervates. **M. Zhao,** N. Zacharia
- COLL 173.** Effects of cations on the structure and vibrational dynamics of mineral/water interfaces. **S. Piontek,** A. Tuladhar, E. Borguet, S. Dewan
- COLL 174.** Design and analysis of parallel-oriented multilayer organic thin films. **C. Tempas,** S. Kim, D. Skomski, J. Jo, N. Raghunathan, D. Lee, S.L. Tait
- COLL 175.** Catalytic degradation of organophosphate esters using gold nanoparticles, supported copper(II) pyridine complexes and plasmonics. **R. Nita,** S. Trammell, G. Ellis, M. Moore, C.M. Soto, D.H. Leary, J. Fontana, S.F. Talebzadeh, D. Knight, B. Martin, D. Zabetakis, E. Chang, A.R. Funk, E. Goldberg
- COLL 176.** Oxidation behavior of stainless core/alloy nanoparticles. **L. Pathade,** T.L. Doane, M.M. Maye
- COLL 177.** Magnetite containing zeolites: Enhanced catalyst stability via modification. **J. Mann,** T. Oracko, Y. Losovji, S. Bukalov, Z. Shifrina, V.Y. Doluda, E. Sulman, N. Cherkasov, E. Rebrov, L. Bronstein
- COLL 178.** Growing patterned 2D monolayers into 3D: STM and MALDI studies of monolayer reactions. **C. Fang,** J. He, R. Shelp, M. Zimmt
- COLL 179.** Green synthesis of iron(0) nanochains-polymer composites and their colloidal self-assembly. **T. Abeywickrama,** H.P. Rathnayake
- COLL 180.** Increased purity of surfactant-templated silica nanotubes through understanding of nanotube fragmentation into hollow nanospheres under stirring. **G. Farid,** M. Kruk
- COLL 181.** Control of exciton and trion dynamics in a molybdenum disulfide monolayer with interfacial dielectrics. **Y.V. Aulin,** D. Trainer, L. Frazer, J.H. Odhner, R.J. Levis, R. Schaller, M. Iavarone, E. Borguet
- COLL 182.** Spontaneous aggregate formation by poly(ethylene glycol)-containing zwitterionic amphiphiles at room temperature: A fluorescence, microscopy, and calorimetric investigation. **R. Ghosh,** J. Dey
- COLL 183.** Graphene oxide resin design for stereolithography. **J. Manapat,** J.D. Mangadlao, R.C. Advincula
- COLL 184.** Patterned crystallization on unpatterned substrates. **S. Seshadri,** M.A. Solomos, J.A. Swift
- COLL 185.** Hybrid organic/inorganic TiO<sub>2</sub> composites for enhanced UV shielding and antioxidant properties. **H. Leong,** S. Oh
- COLL 186.** Synthesis of dibranched semifluorinated polymers for fluororous nanoemulsion-based drug delivery. **C. Gallii,** A. Barres, S. Mecozzi
- COLL 187.** Polymorph selection by vapor phase deposition on functionalized substrates. **M.A. Solomos,** J.A. Swift
- COLL 188.** Understanding wax microprinting on new substrates. **A.Z. Qamar**
- COLL 189.** Transferrin modified vitamin E: Conjugated lipidic mixed micellar system as nanocarrier for the delivery of curcumin in cancer. **O. Muddineti,** P. Kumari, B. Ghosh, S. Biswas
- COLL 190.** Preparation of antimicrobial polymers from poly(ethylene-co-acrylic acid) (PEAA) grafted with aliphatic quaternary ammonium salts. **J. Ryu,** S. Oh
- COLL 191.** Photoinduced spiropyran/merocyanine isomerization at the air/water interface probed by second harmonic generation. **L. Lin,** Z. Zhang, Z. Lu, M. Liu, Y. Guo
- COLL 192.** Dynamic two-dimensional host-guest architectures at the liquid-graphite interface. **H.D. Castillo,** S. Kim, D. Lee, S.L. Tait
- COLL 193.** Supercritical fluid CO<sub>2</sub> deposition of compositional tailored SiO<sub>2</sub>-TiO<sub>2</sub> thin films. **J. Wang,** G. Brown, C.M. Wai
- COLL 194.** Investigating the contribution of steric effects for the preferential organization of methacrylate monomers at air-liquid interface using sum frequency generation spectroscopy. **U.I. Premadasa,** S.C. Chan, A. Marinelli, K.A. Gimatu
- COLL 195.** Supramolecular nanotubes by anticancer drug assembly. **H. Su,** Y. Wang, J. Koo, H. Cui
- COLL 196.** Ferromagnetism in undoped ZnO nanostructures synthesized by solution plasma process. **Y.H. Lee,** A.N. Saqib, M. Jung
- COLL 197.** Synthesis and characterization of epirubicin-loaded magnetically responsive nanoassembly to probe its in vitro antitumor potential under AC-magnetic field. **M.W. Mushtaq,** F. Kanwal, Q. Huang, N. Ameen, M. Abdullah, F. Ahmad, K. Ahmad
- COLL 198.** Withdrawn.
- COLL 199.** Size-selective synthesis of CdS nanoparticles in room-temperature ionic liquids with water. **J. Hayashi**
- COLL 200.** Monodisperse-gold-nanopyramid-supported bimetallic nanostructures for sensing and photocatalysis. **X. Zhu,** X. Zhuo, Z. Yang, J. Wang
- COLL 201.** Coacervation-based model for intracellular organization in a crowded environment. **A.M. Marianelli,** B.M. Miller, C.D. Keating
- COLL 202.** Synthetic adhesives with catechol functionality: An integrated approach to mechanism elucidation. **J.A. Orlicki,** M.A. Bartucci, N.T. Tran, I. Yeh, D.B. Knorr, C.B. Rinderspacher, J.L. Lenhart
- COLL 203.** Performance of organic photovoltaic cells with nanocrystal ZnO thin film via low-temperature annealing process. **D. Lee,** S. Oh
- COLL 204.** Flow-induced shape changes in bioinspired vesicles. **X. Yu,** X. Chu, J. Greenstein, F. Aydin, G. Uppaladadiam, M. Dutt
- COLL 205.** Host-guest complexes for functionalization of metal-oxide nanostructured substrates. **X. Ma,** P. Malcampo, H. Tang, E. Galoppini
- COLL 206.** Multifunctional Ag@SiO<sub>2</sub>@Au hybrid nanostructures. **Y. Wu,** D. Qin
- COLL 207.** Synthesis, characterization, and application of a UCNPs/AuGNRs for simultaneous heating and measuring of temperature. **A. Rafiei Miandashati,** H.H. Richardson
- COLL 208.** Structure of Zn-containing magnetic oxide nanoparticles: Fluorescence spectroscopy as a viable tool. **J. Dittmar,** N. Baird, N. Kuchkina, A. Torozova, Z. Shifrina, M. Grigoriev, A. Sidorov, E. Sulman, L. Bronstein
- COLL 209.** Functionalization of MgZnO nanorods toward highly selective and sensitive biosensors. **Y. Chen,** F. Carol, Q. Zhang, R. Pavel Ivanoff, E. Galoppini, R. Mendelsohn, L. Yicheng
- COLL 210.** Polymer thin film characterization: Sum frequency generation spectroscopy, atomic-force microscopy and contact angle measurements. **A. Kruse,** K.A. Gimatu, S.C. Chan
- COLL 211.** Blue down-shifting phosphors for LED lighting using a Tm<sup>3+</sup>-doped nanospinel. **D.A. Hardy,** M.E. Foley, G.F. Strouse
- COLL 212.** Copper detection mediated by coupling molecular resonances and localized surface plasmon resonances. **S. Unser,** L. Sagile
- COLL 213.** Application of different anisotropic particles prepared by seeded polymerization. **H. Liu,** F. Wang, R. Wang
- COLL 214.** Self-assembly of Janus dendritic ligands on nanocrystal surface. **K. Elbert,** D. Jishkariani, B. Donnio, C.B. Murray
- COLL 215.** Solubilization of hydrophobic catalysts using nanoparticle hosts. **G. Yesilbag Tonga,** Y. Jeong, B. Duncan, B. Yan, R. Das, V.M. Rotello
- COLL 216.** Analytical method to fabricate reproducible SERS substrates. **C. Wood,** M. Figueroa
- COLL 217.** Ca<sup>2+</sup> effects on the hydration and ordering of the sphingomyelin at air/water and air/aqueous interfaces studied by high-resolution broadband sum frequency vibrational spectroscopy. **Z. Zhang,** R. Feng, Y. Li, Z. Lu, Y. Guo
- COLL 218.** Design of a nanostructured lipid carrier intended to improve the treatment of tuberculosis. **M. Pinheiro,** S. Pinheiro, S. Pinto, J. Magalhães, A. Couto, S. Reis
- COLL 219.** Preparation of temperature/pH sensitive bifunctional spherical polyelectrolyte brushes by photo-emulsion polymerization. **Z. Shen,** R. Zhang, Y. Cang, J. Deng, X. Guo
- COLL 220.** Water absorptivity of polymeric materials obtained by LbL film approaches. **C.G. Cho,** A. Heo, H. Ryu

### Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

- COLL 221.** Metastable colloid formation in mixtures of dimethylsulfide, water and hydrophobic naphthalenic compounds. **J.M. Belanger,** T. Reidy
- COLL 222.** Antimicrobial coating fabricated by protein films. **L. Wang,** A. Gupta, B. Duncan, R. Ramanathan, J.M. Goddard, V.M. Rotello
- COLL 223.** Increasing information content in array-based cancer sensing using host-guest chemistry. **N. Le,** G. Yesilbag Tonga, R. Mout, K. Dunphy, D. Jerry, V.M. Rotello
- COLL 224.** Kinetic modulation of nanoparticle embedded transition metal catalyst by tuning nanoparticle surface functionality. **R. Das,** P. Puangpoy, R. Landis, G. Yesilbag Tonga, M. Knapp, V.M. Rotello
- COLL 225.** Array-based sensing using gold nanoparticle and fluorescent proteins for cancer diagnostics. **Y. Geng,** T. Yoshii, N. Le, H. Goel, F. Zheng, A.M. Mercurio, V.M. Rotello
- COLL 226.** Interaction studies of amphiphilic fluorophores with model cell membranes. **A. Gupta,** T.G. Goudreau Collison
- COLL 227.** Protein-based fibers containing gold nanoparticles as a platform for protease detection. **N. Abuladel,** M. Bible, N. Bonan, M. Colorado Escobar, R. Diaz-Jimenez, B. Friedel, M. Jaffe, A. Long, L. Lympferopoulos, S. Marshall, J. Nunziata, R. Rodriguez, M. Skorski, A. Tucker, D. Fox, **M.R. Hartings**
- COLL 228.** Leaching kinetics of ion adsorption rare earths using low concentration of ammonium sulfate solution. **Y. Sun,** Q. Xu, Y. Li
- COLL 229.** Approaches in multivalent drug design for the diagnosis and therapy of autoimmune diseases. **A. Vesper,** R. Hennig, A. Goepferich
- COLL 230.** Dispersion of carbon nanotubes by dissolved humic acid: Chemical structures dependence. **H. Zhang,** **D. Zhang,** D. Zhou, F. Chen
- COLL 231.** Immunomodulatory effects of gold nanoparticles in inflamed immune systems. **Y. Liu,** D. Moyano, **F. Ayaz,** B. Osborne, **V.M. Rotello**
- COLL 232.** Surface morphology of the grafted perfluorinated gold-organic film. **S.N. Neal,** B. Workie, B. McCandless, A. Mohamed
- COLL 233.** Understanding interparticle interactions of nanoprobe based on bioconjugated gold-based nanoparticles. **Z. Skeete,** Q. Minh Ngo, C. Salazar, W. Sun, J. Luo, C. Zhong
- COLL 234.** Tunable electron doping of transition metal dichalcogenides with superatom. **J. Yu,** C. Lee, D. Bouilly, M. Han, P. Kim, M.L. Steigerwald, X. Roy, C.P. Nuckolls
- COLL 235.** NIH 3T3 cell spreading and viability on zein films may be facilitated by transglutaminase. **H. Cui,** G. Liu, G. Padua
- COLL 236.** Synthesis of shaped palladium nanoparticles with bimetallic surfaces via selective surface passivation. **M.E. King,** M.L. Personick
- COLL 237.** Synthesis and surface active properties of novel hybrid type anionic surfactants having a short fluorocarbon and hydrocarbon chain. **E. Kang,** B.M. Lee, G. Jung
- COLL 238.** Supracolloidal chains of linear assemblies of diblock copolymer micelles containing inorganic nanoparticles. **S. Jang,** K. Kim, S. Lee, S. Chae, B. Sohn
- COLL 239.** Formation of single crystalline colloidal structure in double-emulsion drops. **T. Choi,** S. Kim
- COLL 240.** Gold nanorods as plasmonic sensors for particle-diffusion. **V. Wulf,** F. Knoch, M. Schmitt, T. Speck, C. Soennichsen
- COLL 241.** Study of tertiary diamine dative bonding and dissociation on semiconductor surface: Adsorption of triethylenediamine on Si(100)-2x1. **J. Zhao,** M.R. Madachik, A.V. Teplyakov
- COLL 242.** Reactivity of polyoxometalates challenged with organophosphates and thioethers. **S.L. Giles,** J. Lundin, J.H. Wynne, W.O. Gordon, G.W. Peterson, P.E. Pehrsson, R.B. Balow
- COLL 243.** Surface modifications of poly(ethylenedioxythiophene) and polypyrrole nanoparticles and nanofibers. **P. Whitehead,** T.W. Hanks
- COLL 244.** Surface modification of conducting polymer films using ATRP. **L. Pendleton,** T.W. Hanks
- COLL 245.** DNA functionalized quantum rods and their assembly into organized patterns on origami. **Y. Chen,** T.L. Doane, M.M. Maye
- COLL 246.** Toward orthogonal plug and play protein immobilization on DNA based nanostructures. **M. Rahman,** M. Kumar, A. Hensley, T. Bakhshi, I. Waddell, D. Neff, **M.L. Norton**
- COLL 247.** Catalytic behavior of polymeric alkene incorporated hybrid metal catalysts. **B.P. Chauhan,** **D. Ariga,** E. Castelar, A. Patel, A. Kolenski, S. Matthews
- COLL 248.** Understanding low-temperature sintering and adhesion properties of metal nanoparticles printed sensor devices. **J. Luo,** W. Zhao, S. Shan, J.P. Lombardi, D. Weerawarne, T. Rovere, N. Kang, Z. Skeete, Y. Xu, A.R. Vargas, B. Shim, B.S. Hsiao, M.D. Polks, C. Zhong
- COLL 249.** Substrates grafting: The effect of nanostructure morphology on catalytic activity. **B.P. Chauhan,** **G. Nkak,** A. Patel, S. Chaudhry
- COLL 250.** Single-molecule investigations via DNA nanostructures: A cell adhesion study. **D. Huang,** K.O. Keseroglu, S.P. Garrido, A. Sapelkin, . Marshall, M. Palma
- COLL 251.**  $\beta$ -Galactosidase langmuir monolayer at air/subphase interface. **S.K. Sharma,** R.M. Leblanc
- COLL 252.** Synthesis and characterization of conductive reduced graphene oxide bi-layer films. **M. Savchak,** R. Burtovyy, N. Borodinov, K. Hu, R. Ma, V.V. Tsukruk, I.A. Luzinov
- COLL 253.** Phase-resolved internal heterodyne high resolution sum frequency generation vibrational spectroscopy reveals chiral structures of biomolecules at interfaces. **L. Fu,** H. Wang
- COLL 254.** Effects of acidulated albumin on Cu<sup>2+</sup>-mediated amyloid  $\beta$ -protein aggregation and cytotoxicity. **B. Xie,** X. Dong, **Y. Sun**
- COLL 255.** Mechanistic studies of ZnS and CdS quantum wire growth via facile one-step approach. **Y. Chen,** Z. Dai, **Y. Liu**
- COLL 256.** Development of thermometric titration to characterize catalyst supports: Advantages in process control and fundamental understandings of support. **R.M. Supkowski,** L.K. Sposato
- COLL 257.** Transferrin modified PEGylated chitosan-cholesterol as self-assembled nanoaggregate for the delivery of curcumin in cancer. **O. Muddineti,** E. Rey, P. Kumari, B. Ghosh, S. Biswas
- COLL 258.** Comparison of sugar-based decyl glycoside surfactants from rhamnose, glucose, xylose and arabinose. **S.M. Fathi,** J.D. Levine, J.E. Pemberton
- COLL 259.** AuNBP@TiO<sub>2</sub> core-shell nanostructures for efficient NIR induced PDT. **J. Choi,** K. Chung, Y. Lee, S. Kim, D. Kim
- COLL 260.** Synthesis of water soluble MWCNTs by using amino acid. **L. Hongwei,** L. Zou
- COLL 261.** Construction of colloidosomes using food originated materials. **J. Zhu,** Q. Huang
- COLL 262.** Micro-Raman study of 0D, 1D and 2D silver nanoparticles confined within interlayer spaces of titania nanotubes. **S. Ferdousi,** **W. Chen,** M.A. Banares, K. Yeung
- COLL 263.** Hydrophilically patterned superhydrophobic cotton fabrics and their use in ink printing. **Y. Wang,** X. Li, H. Hu, G. Liu, M. Rabnawaz
- COLL 264.** Synthesis and environmental studies of ZnSe/ZnS quantum dots. **D.N. Williams,** S. Pramanik, C.L. Haynes, N. Niemuth, J. Bozich, R. Klaper, Z. Rosenzweig
- COLL 265.** Binary co-patterned surfaces of a conducting polymer and gold particles via colloidal lithography. **B.B. Tiu,** R. Pernites, E.L. Foster, R.C. Advincula
- COLL 266.** Aptamer functionalized ligand layers on SERS active colloidal nanocrystals. **S. Zhang,** J.L. Chávez, N. Kelley-Loughnane, V.V. Tsukruk
- COLL 267.** Detailed study on hydrothermal stability of mesoporous organosilicas prepared with block copolymer template and weak acidic conditions. **E. Cho,** E. Choi, S. Sim
- COLL 268.** Zinc bromide deliquescence and surface chemistry investigated by lab-based ambient pressure XPS. **C. Arble,** S. Rani, J.T. Newberg
- COLL 269.** Development of epoxy based multilayer nano-thin films using layer-by-layer technique. **S. Shabbir,** S. Batool, R. Gill, A. Mahmood
- 10:30 COLL 274.** Gold nanomaterials at the bio-nano interface. **Y. Xia**
- 11:00 COLL 275.** Engineered nanoparticles for synergistic antimicrobial therapy. **A. Gupta,** N.M. Saleh, X. Li, A. Bigdeli, K. Saha, R. Landis, M. Mahmoudi, V.M. Rotello
- 11:15 COLL 276.** Low-toxic Mn-doped ZnSe@ZnS quantum dots conjugated with nano-hydroxyapatite for cell imaging. **Z. Ronghui,** X. Hou, L. Wu, P. Wu
- 11:30 COLL 277.** From nano to micro and back: Explore porphyrin supramolecular chemistry for cancer imaging and therapy. **G. Zheng**

## Section B

Pennsylvania Convention Center  
Room 121B

### Nanoparticles: Synthesis, Characterization & Their Application in Catalysis

B. P. Chauhan, *Organizer, Presiding*

M. Zamkov, *Presiding*

8:30 Introductory Remarks.

8:40 **COLL 278.** Controlling activity and selectivity of alkanethiolate-capped palladium nanoparticle catalysts: Effects of noncovalent ligand interactions and near-surface steric controls. **Y. Shon,** M.S. Maung, P. Tieu

9:00 **COLL 279.** Semiconductor nanocrystals through the saturated ionic layer adsorption. **N. Razgoniaeva,** M. Zamkov

9:20 **COLL 280.** Structural and catalytic properties of silica-supported ruthenium nanocatalysts synthesized by a facile phase-transfer protocol. **X. Ma,** R. Lin, J. Luzenski, J.E. Jackson, **R.Y. Ofoli**

9:40 Intermission.

9:55 **COLL 281.** Enhanced emission of nanocrystal solids featuring spatially extended excitons. **M. Zamkov**

10:25 Concluding Remarks.

## Section C

Pennsylvania Convention Center  
Room 121C

### Characterization, Reactivity, Sorption & Thermochemical Properties of Mixed Oxides: Symposium in honor of Alexandra Navrotsky

#### Mn & Fe Oxides: Impacts & Applications

N. R. Birkner, K. Johnson, C. M. McCann, *Organizers*

K. Liloa, D. Wu, *Organizers, Presiding*

N. Birkner, *Presiding*

8:30 Introductory Remarks.

8:35 **COLL 282.** Chemical reactivity of hydrous manganese oxide nanoparticles generated during permanganate use. **A.T. Stone,** X. Xia

9:05 **COLL 283.** Structures and behaviors of natural and synthetic phyllosilicates. **J. Post,** F. Ling, P.J. Heaney

9:45 **COLL 284.** Reactivity of oxide surfaces and trapping processes of uranium around mining sites. **G. Calas,** T. Allard, M. Gerard, L. Goloisy, G. Morin, M. Descostes

10:15 Intermission.

## MONDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 121A

#### Synergy at the Bio-Nano Interface

E. B. Lavik, D. McDaniel, V. M. Rotello, J. van Hest, *Organizers*

B. L. Smith, G. Zheng, *Organizers, Presiding*

8:30 **COLL 270.** Lipoprotein and peroxidase-mimetic nanoparticles for imaging and therapeutic applications. **D. Cormode**

9:00 **COLL 271.** DNA controlled. **W. Chan**

9:30 **COLL 272.** Biomimetic vaterite formation at surfaces structurally templated by oligo(glutamic acid) peptides. **H. Lu,** M. Hood, S. Mauri, J. Baio, M. Bonn, R. Muñoz-Espí, T. Weidner

9:45 **COLL 273.** Nanoparticle biointerfacing by cell membrane cloaking. **L. Zhang**

10:15 Intermission.

**10:25 COLL 285.** Polycrystalline redox-active Fe(II)/Fe(III) layered double hydroxides: A comparison between natural minerals and synthetic analogs. **C.A. Johnson**, M. Murayama, K. Kuesel, M.F. Hochella

**10:45 COLL 286.** Coupled cycling of manganese and micronutrients in marine sediments. **C.L. Peacock**, A. Atkins, S. Shaw

**11:15** Intermission.

**11:25 COLL 287.** Mechanisms and kinetics of contaminant transformation by transition metal (hydro)oxides. **M.A. Ginder-Vogel**, S.J. Balgooyen, J. Mejia, E. Tomaszewski

**11:55 COLL 288.** Geochemical processes controlling Mn(III) and vacancy concentrations in layered manganese oxides. **M. Zhu**, P. Yang, Q. Wang, K. Liv

**12:25** Concluding Remarks.

## Section D

Pennsylvania Convention Center  
Room 122A

### Composite Colloids for SERS Biodection

L. Liz Marzan, W. Parak, *Organizers*

H. M. Mattoussi, *Organizer, Presiding*

**8:30 COLL 289.** Plasmonic nanoparticles with hot spots: Bio-chirality and heat generation. **A. Govorov**

**9:00 COLL 290.** Dynamics and heterogeneity of carbon dioxide adsorption and photoreduction uncovered from single-nanoparticle studies. **P.K. Jain**

**9:30 COLL 291.** Boronic acid functionalized Ag nanorod arrays for glucose detection through surface enhanced Raman spectroscopy. **X. Sun**, Y. Lei

**9:55** Intermission.

**10:25 COLL 292.** Large-scale full-wave simulation of SERS substrates through surface integral equation formulations and MLFMA. **J.M. Taboada**, D.M. Solis, F. Obelleiro, L. Liz Marzan, F.J. Garcia de Abajo

**10:55 COLL 293.** Metallic nanoshells with narrow size distribution as a new probe for cell imaging. **A. Brolo**, R. Sobral-Filho, A.M. Brito-Silva, M. Isabelle, A. Jirasek, J. Lum

**11:25 COLL 294.** Determination of nanoparticle concentrations. **W. Parak**, N. Feliu

## Section E

Pennsylvania Convention Center  
Room 122B

### Polymer Adhesives & Adhesion by Design: Fundamentals to Applications

#### Adhesion & Surface Modification: Interfacial Characterization & Design

*Financially supported by Dow Chemical Company*

G. Jialanella, T. E. Long, P. McGuiggan, G. Meyers, Q. Wan, *Organizers*

M. Bishop, T. H. Kalantar, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 COLL 295.** Composite surfaces with enhanced and tunable adhesion. **K. Turner**, H. Minsky

**9:05 COLL 296.** Adhesives for paper conservation: Physico-chemical properties and lifetime predictions. **S. Zaccaron**, M. McGath, A. Hall, R. Leheny, P. McGuiggan

**9:25 COLL 297.** NMR-based characterization of nanoparticle-polymer interactions. **R.J. Hamers**, Y. Zhang, C.G. Fry, T. Kuech, J.A. Pedersen

**9:45 COLL 298.** Nanotribology of a catechol-functionalized alkane with terminal chain branching. **M. Ruths**, K. Persson

**10:05** Intermission.

**10:20 COLL 299.** Optimization of fiber-matrix adhesion and composite mechanical properties through formation of an engineered interphase. **L.T. Drzal**

**10:50 COLL 300.** Molecular structures of polymers at buried polymer/metal and polymer/polymer interfaces and their relations to adhesion. **Z. Chen**

**11:10 COLL 301.** New approach for the evaluation of the effects of contaminants on surface sensitive processes. **G.G. Dillingham**

**11:30 COLL 302.** Correlating surface chemistry to pressure sensitive adhesive performance. **M.L. Pacholski**, W.B. Griffith, T. Powell, D.R. Keely

**11:50** Concluding Remarks.

## Section F

Pennsylvania Convention Center  
Room 123

### Basic Research in Colloids, Surfactants & Nanomaterials

#### Nanomaterials

R. Nagarajan, *Organizer*

T. Hiemstra, *Presiding*

**8:30 COLL 303.** Synthesis of complexes PEG-PLL with Se nano-core and Au nano-shell for fluorescence imaging and treatment of cancer. **L. Lai**, X. Wang

**8:50 COLL 304.** Tailoring the surface of gallium liquid metal alloys with phosphonic acids to enable their application in reconfigurable electronics. **N. Ilyas**, A. Cook, C.E. Tabor

**9:10 COLL 305.** Withdrawn.

**9:30 COLL 306.** Gold nanoparticle assembly via polymer single crystal. **S. Mei**, H. Qi, T. Zhou, C. Li

**9:50 COLL 307.** On the edge of silver nanoparticles: Interface structure, equilibrium, and dynamic silver ion release. **B. Molleman**, T. Hiemstra

**10:10 COLL 308.** Role of trace amounts of iron in the photoinitiated growth of silver nanoparticles. **D.P. Pullman**, R. Leslie, M. Keogh, Y. Wu, S. Quichocho-Rosario, M. LaCroix

**10:30 COLL 309.** Tuning and enhancing the properties of quantum dots through the use of innovative organic ligand surface chemistries. **R.P. Brown**

**10:50 COLL 310.** Deposition of metal nanoparticles on silica spheres using amphiphilic block copolymers in solutions. **T. Sakai**, T. Watanabe, P. Alexandridis

**11:10 COLL 311.** Strongly coupled binary nanocrystal superlattice films by liquid-air interface ligand exchange. **Y. Wu**, S. Li, N. Gogotsi, J.B. Baxter, C.B. Murray

**11:30 COLL 312.** Fabrication of polymer functionalized silica micro-particles by continuous method. **P. Ye**, P. Cao, R.C. Advincula

**11:50 COLL 313.** Generic synthesis of anisotropically-shaped metal chalcogenide nanostructures in gram scale. **M. Teunis**, R. Sardar

**12:10 COLL 314.** Development of models and methodologies for characterizing nanomaterials in consumer products. **J.M. Gorham**, W.A. Osborn, J.W. Woodcock, K.C. Scott, J.M. Heddlston, A.R. Hight Walker, J.W. Gilman

## Section G

Pennsylvania Convention Center  
Room 124

### Plasmonic Colloidal Nanostructures: From Creation to Applications

#### Hot Carriers & Applications

Y. Han, Y. Yin, *Organizers*

D. Qin, Y. Sun, *Organizers, Presiding*

**8:30 COLL 315.** Quantum plasmonics and hot-carrier induced processes. **P.J. Nordlander**

**9:05 COLL 316.** Visible light absorption by platinum nanocrystals mediated by nearfield dielectric scattering. **S.K. Gray**, J.J. Foley, Y. Sun, Y. Xu, N. Zhang, C. Han, J. Codrington

**9:40 COLL 317.** Fundamental limitations to plasmonic hot-carrier solar cells. **Y. Zhang**, G.C. Schatz

**10:00** Intermission.

**10:30 COLL 318.** Ultrafast charge separation in hybrid plasmonic and semiconductor colloidal nanoparticles. **G. Wiederrecht**

**11:05 COLL 319.** Generation of hot plasmonic electrons and heat in metal nanocrystals with hot spots. **A. Govorov**

**11:40 COLL 320.** Plasmonic enhancement of the photovoltaic effect in semiconductor nanocrystals. **P. Moroz**, M. Zamkov

### Imaging Single Plasmonic Nanoparticles & their Assemblies

*Sponsored by ANYL, Cosponsored by COLL*

## MONDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 121A

#### Synergy at the Bio-Nano Interface

D. McDaniel, V. M. Rotello, B. L. Smith, G. Zheng, *Organizers*

E. B. Lavik, J. van Hest, *Organizers, Presiding*

**2:00 COLL 321.** Teaching old antibiotics new tricks: Novel multifunctional conjugates to fight bacterial resistance. **S. Deshayes**, N. Schmidt, W. Xian, G. Wong, **A.M. Kasko**

**2:30 COLL 322.** Amphiphilic ligand-coated gold nanoparticles as drug carriers, membrane fusogenic agents, and cell-penetrating particles. **D.J. Irvine**, A. Alexander-Katz, F. Stellacci

**3:00 COLL 323.** De novo designed peptide for solution assembly into predetermined 2-D nanomaterials. **Y. Tian**, H. Zhang, F. Polzer, M. Haider, K.L. Kiick, D.J. Pochan, J.G. Saven

**3:15 COLL 324.** New materials for medical applications. **R.H. Grubbs**

**3:45** Intermission.

**4:00 COLL 325.** Engineering nanoparticles to stop internal bleeding. **E.B. Lavik**

**4:30 COLL 326.** Metalloporphyrin lipid nanoparticles as multimodality imaging contrast agents and photothermal sensitizers in a patient-derived orthotopic pancreas xenograft cancer model. **C.M. MacLaughlin**, L. Ding, P. Cao, J. Chen, B. Wilson, D. Hedley, G. Zheng

**4:45 COLL 327.** Thermo-sensitive diblock elastin-like polypeptides (ELPs) grafted onto iron oxide nanoparticles reveal transient thermal gradients. **G. Hemery**, **E.B. Garanger**, S. Macewan, A. Chilkoti, S. Lecommandoux, O. Sandre

**5:00 COLL 328.** Creation of biomimetic environments to study aortic valve pathobiology. **K.S. Masters**, A.M. Porras, H.N. Hutson

## Section B

Pennsylvania Convention Center  
Room 121B

### Nanostructured Interfaces: From Fundamentals of Sensing & Catalysis to Applications

J. R. Regalado, *Organizer*

C. Zhong, *Organizer, Presiding*

M. V. Yigit, *Presiding*

**2:00** Introductory Remarks.

**2:05 COLL 329.** Single electron device as an electrochemical sensor and biosensor. **R. Saraf**, S.W. Lee, E.H. Lee, J. Ong, G. Thiel, J. Van Etten

**2:35 COLL 330.** Ultrasensitive programmable multiplexed detection using hybridization chain reaction coupled to nanoparticles. **M.V. Yigit**

**3:05 COLL 331.** Regenerative biomimetic nanostructures for portable biosensing devices. **S. Andreescu**

**3:35** Intermission.

**3:50 COLL 332.** Protein-targeted corona phase molecular recognition. **G. Bisker**, J. Dong, H.D. Park, N.M. Iverson, J. Ahn, J. Nelson, M. Landry, S. Kruss, M. Strano

**4:10 COLL 333.** GCIS electronic and physical changes to soft material surfaces. **C.M. Goodwin**, Z. Voras, T.T. Beebe

**4:30 COLL 334.** Multifunctional nanohybrids for single-molecule investigations. **M. Palma**

**4:50 COLL 335.** Microwave-assisted ultrafast and facile synthesis of fluorescent carbon nanoparticles from single precursor and the application for selective detection of picric acid. **X. Sun**, Y. Lei

## Section C

Pennsylvania Convention Center  
Room 121C

### Characterization, Reactivity, Sorption & Thermochemical Properties of Mixed Oxides: Symposium in honor of Alexandra Navrotsky

#### Surface Modeling, Reactions

N. R. Birkner, K. Johnson, C. M. McCann, *Organizers*

K. Lilova, D. Wu, *Organizers, Presiding*

N. Birkner, *Presiding*

**2:00 COLL 336.** Density functional theory modeling of ferrihydrite nanoparticle adsorption behavior. **J.D. Kubicki**, N. Kabengi, M. Chnysochoo, E. Cerkez, D.R. Strongin, M. Zhu, M. Sassi, K.M. Rosso

**2:40 COLL 337.** Withdrawn.



**3:10 COLL 338.** Competition between adsorption and solid formation mechanisms: As(V) adsorption on goethite in the presence of Pb(II). **M. Villalobos**, K. Vaca-Escobar, T. Pi-Puig, R. Zanella

**3:40** Intermission.

**3:50 COLL 339.** Adsorption properties of *n*-alkanes on MgO, h-boron nitride, and graphite for selective separation: Neutron scattering, thermodynamics, and modeling studies. **N.A. Strange**, D. Fernandez-Canoto, J.Z. Larese

**4:10 COLL 340.** Density-functional studies of hydrogen and organic peroxide adsorption and dissociation on MoO<sub>3</sub>(100) and H<sub>0.33</sub>MoO<sub>3</sub>(100) surfaces. **A. Razzaghi Soufiani**, E. Kadossov, A.W. Apblett, **N.F. Materer**

**4:30 COLL 341.** Sorption of metals by nanocrystalline zinc oxide. **A.W. Apblett**, T. Reed, N.F. Materer

**4:50** Intermission.

**5:00 COLL 342.** Synthesis and characterization of mixed metal oxide clusters as precursors for solid state materials. **T. Forbes**, E. Eitheim, T. Fetrow

**5:20 COLL 343.** Fatty acids decompose during high temperature synthesis of oxide nanocrystals. **A. Mendoza-Garcia**, V.L. Colvin

**5:40 COLL 344.** Vertically grown nanowire crystals of dibenzotetrathienocoronene (DBTTC) on large-area graphene. **B. Kim**

## Section D

Pennsylvania Convention Center  
Room 122A

### Composite Colloids for SERS Biodetection

L. Liz Marzan, H. M. Mattoussi, *Organizers*

W. Parak, *Organizer, Presiding*

**2:00 COLL 345.** Optical properties of hedgehog particles. **N. Kotov**

**2:30 COLL 346.** Optical diagnosis in complex media. **R.A. Alvarez-Puebla**

**3:00 COLL 347.** Withdrawn.

## Section E

Pennsylvania Convention Center  
Room 122B

### Polymer Adhesives & Adhesion by Design: Fundamentals to Applications

#### Adhesion & Surface Modification: New Chemistry & Applications

*Financially supported by Dow Chemical Company*

M. Bishop, T. E. Long, P. McGuigan, G. Meyers, Q. Wan, *Organizers*

G. Jialanella, T. H. Kalantar, *Organizers, Presiding*

**2:00** Introductory Remarks.

**2:05 COLL 348.** De-bondable adhesives based on selective depolymerization. **S.T. Phillips**

**2:35 COLL 349.** Modulating wet adhesion of polyelectrolyte multilayers and coacervates with metal ions. **C. Li**, **N. Zacharia**

**2:55 COLL 350.** Surface treatment to enhance adhesion of polyolefin to woven fabric. **K. Anderson**, Q. Wan, S. Anderson, J. Harris, Y. Li, V. Thakur, S. Ultsch, C. Li Pi Shan

**3:15 COLL 351.** Bio-inspired nanoparticle medical glues for minimally invasive tissue repair. **Y. Lee**, C. Xu, M. Sebastin, A. Lee, N. Holwell, C. Xu, D. Miranda Nieves, L. Mu, R. Langer, C.P. Lin, J.M. Karp

**3:35** Intermission.

**3:50 COLL 352.** Stimuli-responsive reversible two-level adhesion from a structurally dynamic shape memory polymer. **S.J. Rowan**, B. Michal

**4:20 COLL 353.** Barrier adhesive for flexible packaging. **M. Chen**, D. Vinci, A. Marine, K. Sehanobish

**4:40 COLL 354.** Rheological optimization in adhesive design. **T. Kauffman**

**5:00 COLL 355.** Novel borane complexes and borate salts for use as initiators in acrylic adhesives. **G. Jialanella**, S. Feng, P. Nickias, M.F. Sonnenschein, E. Cole

**5:20** Concluding Remarks.

## Section F

Pennsylvania Convention Center  
Room 123

### Basic Research in Colloids, Surfactants & Nanomaterials Colloidal Interactions

R. Nagarajan, *Organizer*

R. Radhakrishnan, *Presiding*

**2:00 COLL 356.** Ultrafast dynamics at colloidal interfaces. **J. Nieto-Pescador**, B. Abraham, **L. Gundlach**

**2:20 COLL 357.** Studying particle dynamics in the reentrant glass transition using colloidal suspensions. **Z. Brown**, G. Hogan, P. Habdas, A.G. Yodh, M. Grattale

**2:40 COLL 358.** Computational models for nanoscale biofluid dynamics and colloid transport inspired by non-equilibrium thermodynamics. **R. Radhakrishnan**, H. Yu, D. Eckmann, P. Ayyaswamy

**3:00 COLL 359.** Vibrational properties of disordered colloidal suspensions with varying interparticle attraction strength. **P. Habdas**, M. Grattale, X. Ma, Z. Davidson, T. Still, A.G. Yodh

**3:20 COLL 360.** Mass transfer in nanofluids. **R. Dhuriya**, P. Sunthar

**3:40 COLL 361.** Rheology and microstructure of colloidal silica particle dispersions in ionic liquids. **J. Gao**, N.J. Wagner

**4:00 COLL 362.** Self-recognition of two rod-shaped macroions with different functional groups controlled by cation- $\pi$  interaction. **J. Luo**, K. Chen, Y. Wei, T. Liu

**4:20 COLL 363.** Measuring weak interactions of individual colloids using near field light scattering. **C. Ashcroft**, T. Castner, X. Li, B. DiPaolo, C. Earhart, **R. Hart**, **B. Cordovez**

**4:40 COLL 364.** Adsorption of asphaltene from non-equilibrium dispersions in heptane-toluene. **S. Campen**, J. Wong

**5:00 COLL 365.** Spontaneous fingering in colloidal suspensions. **C. Has**, P. Sunthar

**5:20 COLL 366.** Colloidal stabilization of surfactant-free paraffin-in-water emulsions containing L-menthol by polar oil. **T. Sakai**, S. Urabe, A. Yamamoto, T. Inoue, S. Takumi, A. Uno

## Section G

Pennsylvania Convention Center  
Room 124

### Plasmonic Colloidal Nanostructures: From Creation to Applications

#### Biomedical Applications

Y. Han, Y. Yin, *Organizers*

D. Qin, Y. Sun, *Organizers, Presiding*

**2:00 COLL 367.** Nanotechnology and photothermal treatment of cancer. **M.A. El-Sayed**

**2:40 COLL 368.** Localized surface plasmon resonance (LSPR)-based magnetic rotational biosensing. **I. Jung**, S. Park

**3:00 COLL 369.** Achieving high refractive index sensitivity with bimetallic nanocrystals. **S.E. Skrabalak**

**3:25** Intermission.

**3:55 COLL 370.** Controlled synthesis and growth mechanism of hollow gold nanospheres (HGNS) and their application in photothermal therapy (PTT) of cancer. **J.Z. Zhang**

**4:30 COLL 371.** Development of fluorescent core-shell nanoparticles for cell labelling. **M. Lambert**, P. Legros, J. Asselin, D. Boudreau

**4:50 COLL 372.** Fluorescent core@shell hybrid particles for multi-elementary ionic detection. **J. Asselin**, N. Fontaine, P. Legros, M. Lambert, D. Boudreau

**5:10 COLL 373.** Synthesis routes for the fabrication of plasmonic nanoparticle structures. **U.S. Schubert**, S. Hoeppe

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

R. Nagarajan, *Organizer*

**8:00 - 10:00**

123, 135-137, 141, 143-144, 150, 152, 154-156, 159-161, 167-169, 172-174, 178-180, 182-183, 185-187, 190, 192-195, 197, 200-201, 204, 206-207, 211-212, 214, 217, 221-222, 224, 231, 233-234, 236, 240, 241, 245-246, 251-253, 255-256, 258, 261-262, 264-265. See previous listings.

533. See subsequent listings.

## TUESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 121A

#### Bioconjugate Chemistry Lecturer Award

V. M. Rotello, *Organizer, Presiding*

**8:30 COLL 374.** Bioengineered TRAIL-based therapies from cancer to fibrosis. **S. Lee**

**9:00 COLL 375.** Molecular imaging, image-guided drug delivery, and theranostics. **W. Cai**

**9:30 COLL 376.** Surface modified ferritin nanocages for imaging and drug delivery. **J. Xie**

**10:00 COLL 377.** Application of click-chemistry bioconjugation methods in the imaging of cancer. **J. Lewis**

**10:30 COLL 378.** Albumin based bioconjugates for diagnosis and precision therapy. **X. Chen**

## Section B

Pennsylvania Convention Center  
Room 121B

### Nanostructured Interfaces: From Fundamentals of Sensing & Catalysis to Applications

J. R. Regalbutto, *Organizer*

C. Zhong, *Organizer, Presiding*

D. Mott, *Presiding*

**8:30** Introductory Remarks.

**8:35 COLL 379.** Gold nanoparticle-enabled dynamic light scattering for chemical and biological target detection and analysis. **Q. Huo**

**9:05 COLL 380.** Electron transfer as a tool to create heterostructured nanoscale probes with robust, active, and enhanced sensing properties and functionality. **D.M. Mott**, A. Thi Ngoc Dao, M. Takahashi, S. Maenosono

**9:35 COLL 381.** Using perovskite nanoparticles as spectrochemical probes for monitoring chemical reactions. **T.L. Doane**, K.J. Cruz, L. Pathade, M.M. Maye

**9:55 COLL 382.** Environmental egg tempera binding medium degradation analyzed by XPS and TOF-SIMS utilizing GCIS. **Z. Voras**, C.M. Goodwin, K. deGhetaldi, B. Baade, J. Mass, T.T. Beebe

**10:15** Intermission.

**10:30 COLL 383.** Effective electrocatalysts for oxygen reduction of by interfacial engineering. **S. Chen**

**11:00 COLL 384.** Interface chemistry on metal nanocatalysts. **P. Liu**, G. Chen, Y. Wang, G. Fu, **N. Zheng**

**11:30 COLL 385.** Hierarchical SAPO-34 zeolites by solid post-treatment for MTO reaction. **X. Chen**, S. Ren, C. Yang, Z. Liu, Y. Sun

**11:50 COLL 386.** Importance of the Ti-Au interface for CO oxidation: A combined ambient pressure study over TiO<sub>2</sub>/Au(111) inverse model catalysts. **R.M. Palomino**, S.A. Tenney, Z. Liu, E. Crumlin, S. Axnanda, D. Grinter, I. Waluyo, D.J. Stacchiola, J. Rodriguez, S.D. Senanayake

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## Section C

Pennsylvania Convention Center  
Room 121C

### Characterization, Reactivity, Sorption & Thermochemical Properties of Mixed Oxides: Symposium in honor of Alexandra Navrotsky

#### Metal Oxide Catalysts

N. R. Birkner, K. Johnson, C. M. McCann, *Organizers*

K. Lilova, D. Wu, *Organizers, Presiding*

N. Birkner, *Presiding*

8:30 Introductory Remarks.

8:35 COLL 387. Electrochemical redox of late transition metal perovskite oxides. W. Chueh

9:15 COLL 388. Tailoring the properties of surfaces using thin films. J.H. Terry, D. Velazquez, R. Seibert

9:45 Intermission.

10:00 COLL 389. Withdrawn.

10:40 COLL 390. Physical and chemical design of catalysts for OER and CO<sub>2</sub>RR. E. Sargent

11:20 Intermission.

11:35 COLL 391. Catalytically active phase of methanol oxidation over Cu-based catalysts. J. Li, C. Li, Q. Liu, J.A. Boscoboinik, J. Sadowski, G. Zhou

12:05 COLL 392. Preparation and chemical reaction kinetics of tungsten bronze thin films and nanomaterials with and without a catalyst. N.F. Materer, A.W. Applbett

12:25 Concluding Remarks.

## Section D

Pennsylvania Convention Center  
Room 122A

### Elucidating the Molecular-Level Interactions between Biological Membranes & Engineered Nanomaterials

F. Perreault, S. Romero-Vargas Castrillon, *Organizers*

F. Perreault, *Presiding*

8:30 COLL 393. Solid-state nuclear magnetic resonance to probe the interaction of nanomaterials with model and natural cell membranes. I. Marcotte

8:50 COLL 394. Role of local charge density in polycation-wrapped nanoparticle interactions with model cell membranes. J. Troiano, L.L. Olenick, A. McGeachy, T. Kuech, A. Vartanian, C.J. Murphy, Q. Cui, J.A. Pedersen, F. Geiger

9:10 COLL 395. Peptoid-bicelles as surrogate cell membranes. H. Najafi, S.L. Servoss

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

9:30 COLL 396. Interplay at inorganic nanoparticle and zwitterionic lipid bilayer interfaces. J. Liu

9:50 COLL 397. Influence of divalent cations on deformation and rupture of adsorbed lipid vesicles. M. Dacic, J. Jackman, S. Yorulmaz, V. Zhdanov, B. Kasemo, N. Cho

10:10 Intermission.

10:25 COLL 398. Nanoparticle-biomembrane interactions investigated by *in situ* surface nonlinear spectroscopy. Z. Lu

10:45 COLL 399. Using total lipid extracts to construct a more realistic model membrane for better characterization of nanomaterial-cell interactions. Z. Xia, A. Quirk, I. Burgess, B. Lau

11:05 COLL 400. Development of a non-living model system for cell membranes to investigate cell injury by nanoparticle. T. Shoab, Y. Hen, Y. Chen, P. Nalam, R.M. Espinosa-Marzal

11:25 COLL 401. Curvature-undulation coupling as a basis for curvature sensing and generation in bilayer membranes at molecular and colloidal scales. R. Bradley, R. Natesan, R. Radhakrishnan

11:45 Concluding Remarks.

## Section E

Pennsylvania Convention Center  
Room 122B

### Nanoparticles for Measuring/Controlling Cell Signaling

Y. Jun, K. Salaita, *Organizers, Presiding*

8:30 Introductory Remarks.

8:40 COLL 402. Defining single molecule forces required to activate cellular signaling using tension gauge tethers and nano yoyo. T. Ha

9:15 COLL 403. Spatio-temporal control of cell adhesion by nanoscale interactions of cell surface receptors. E. Cavalcanti-Adam

9:50 Intermission.

10:20 COLL 404. Observing single membrane proteins under mechanical tension. T. Yoou

10:55 COLL 405. Interrogation of spatial, temporal, and mechanical responses of cell signaling with single-cell perturbation nanomodules. D. Seo, K. Southard, J. Kim, H. Lee, J. Farlow, J. Lee, D.B. Litt, T. Haas, J. Cheon, P. Alivisatos, Z. Gartner, Y. Jun

## Section F

Pennsylvania Convention Center  
Room 123

### Basic Research in Colloids, Surfactants & Nanomaterials

#### Polymer Colloids & Interfaces

R. Nagarajan, *Organizer*

P. V. Coveney, *Presiding*

8:30 COLL 406. Withdrawn.

8:50 COLL 407. Poly(styrene methyl methacrylate) microparticles: A mechanistic study of particle formation. S. Applin, P. Tiemsin, R. Schmitz, J. Genzer, C. Wohl, J.W. Connell

9:10 COLL 408. Hollow, core-shell and ultra-low cross-linked microgels at fluid and solid interfaces. W. Richtering, K. Geisel, O. Virtanen, I. Potemkin, A. Rudov, M. Ahmed

9:30 COLL 409. Modelling clay-polymer nanocomposites using a multiscale approach. P.V. Coveney, J. Suter, D. Groen

9:50 COLL 410. Bio-compatible gel formation and its application in drug delivery studies. P. Dhar, S.S. Gaur, A. Kumar, V. Katiyar

10:10 COLL 411. Morphology and response of mosaic polymer brushes. A. Sidorenko, O. Davydovich, P.B. Moore

10:30 COLL 412. Self-assembly of functionalized hexaphenylbenzenes. K. Wunderlich, M. Klapper, D. Vlassopoulos, G. Fytas, K. Muellen

10:50 COLL 413. Fluorescence lifetime spectroscopy studies to monitor the stability of luminescent semiconductor quantum dots-containing polymer films used in consumer electronics. T. Curry, R.P. Brown, D.N. Williams, Z. Rosenzweig

11:10 COLL 414. pH responses of dumbbell-shaped multilayer hydrogel capsules. S. Habib, V.A. Kozlovskaya, B. Xue, J. Chen, E.P. Khariampieva

11:30 COLL 415. Methacrylate-based amphiphilic copolymers for the compatibilization of inorganic nanoparticles in polymer matrices. L. Ackermann, S. Stelzig, M. Klapper, K. Muellen

11:50 COLL 416. Contact-initiated polymerization between complimentary-functionalized colloids and surfaces. K.M. Hutchins, N. Sekerak, J. Moore

## Section G

Pennsylvania Convention Center  
Room 124

### Plasmonic Colloidal Nanostructures: From Creation to Applications

Single-Particle & Single-Molecule Spectroscopy

Y. Han, D. Qin, Y. Yin, *Organizers*

Y. Sun, *Organizer, Presiding*

J. Zhao, *Presiding*

8:30 COLL 417. Transient absorption studies of single plasmonic nanostructures. G.V. Hartland, P. Johns

9:00 COLL 418. Plasmonic nanoparticles: From fundamental optical properties to applications. S. Link

9:30 COLL 419. Darkfield/hyperspectral structure of isolated and aggregated silver nanowires. J.J. Santos, E. Ivanov, D. Santos, P. Corio, H.E. Toma

9:50 COLL 420. DNA nanotechnology for ultrasensitive visual detection of *Ebolavirus* subtypes. M. Balcioglu, M. Rana, M.V. Yigit

10:10 Intermission.

10:40 COLL 421. Structure and plasmonic properties of single Au-Cu alloy nanorod during galvanic replacement reaction. S. Thota, S. Chen, J. Zhao, S. Zou

11:10 COLL 422. Withdrawn.

11:40 COLL 423. Probing nanoelectrochemistry with optical microscopy. A.J. Wilson, K.A. Willets

### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS

## TUESDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 121A

### Langmuir Lectures, ACS Materials & Interfaces Award Lecture

R. Nagarajan, *Organizer*

D. K. Schwartz, *Presiding*

2:00 COLL 424. Diamond at the extremes. R.J. Hamers

2:50 COLL 425. Rainbow-coloured Pickering emulsions: Behaviour of pigment particles at fluid interfaces. B. Binks, S.O. Olusanya

3:40 COLL 426. Assembly for nanofabrication in the magnetic recording industry. R. Ruiz

### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS

### Polymer Science at the Interface of Industry, Government & Academics

#### National Laboratory Directions

Sponsored by POLY, Cosponsored by COLL, PMSE and SCHB

## WEDNESDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 121A

### Colloidal & Interfacial Chemistry for Water Treatment & Recycling

I. Chernyshova, P. Somasundaran, *Organizers*

S. Ponnurangam, *Organizer, Presiding*

8:30 COLL 427. Nano-enabled filters for point-of-use water treatment in developing countries: turning theory into practice. T. Dankovich, J. Levine, C. Carson

8:50 COLL 428. New core-shell magnetic nanoparticles prepared by polydopamine chemistry mediated surface-initiated live radical polymerization for efficient uranium adsorption. G. Ye, Y. Yang, F. Wu

9:10 COLL 429. Preparation of silver nanoparticles on synthetic electrospun PAA nanofibers for antimicrobial applications. M. Mofidfar, G.E. Wnek

9:30 COLL 430. Versatile magnetically-active hybrid networks (MHNs): From crude oil remediation to Pickering emulsifiers. J.A. Flores, A. Pavia Sanders, A. Jahnke, Y. Chen, D.J. Pochan, Z. Chen, K.L. Wooley

9:50 Intermission.

10:05 COLL 431. Combining the Polanyi-Dubinin-Manes framework with molecular models to predict adsorption isotherms of aqueous organic contaminants on activated carbons. D. Knappe, I. Mezzari, W.A. Alexander, T. Speth

10:30 COLL 432. Understanding the role of colloidal particles in lead release to drinking water. G. Gagnon, B. Trueman

10:55 COLL 433. Column with magnetic activated carbon functionalized by amines for water purification. A. Al-Absi, T.A. Saleh

**11:15 COLL 434.** Concentration of aqueous contaminants in water using polyelectrolyte complex coacervates. M. Zhao, N. Zacharia

**11:35 COLL 435.** Superhydrophobic oil and water separations. R.C. Advincula

**11:55 COLL 436.** Superparamagnetic microspheres for selective binding and magnetic enrichment of palladium: synthesis, adsorptive behavior and mechanism study. F. Wu, G. Ye, J. Chen

## Section B

Pennsylvania Convention Center  
Room 121B

### Nanostructured Interfaces: From Fundamentals of Sensing & Catalysis to Applications

J. R. Regalbuto, *Organizer*

C. Zhong, *Organizer, Presiding*

H. He, *Presiding*

**8:30** Introductory Remarks.

**8:35 COLL 437.** In situ growth of ultrafine and ligand-free noble metal nanoclusters on carbon supports through a "soft nitriding" method. B. Liu, H. Yao, L. Jin, J. Rusling, S.L. Suib, J. He

**9:05 COLL 438.** Controllably fabrication of graphene and graphene-like materials with tailored structures for metal free catalytic applications. M. Patel, K. Savaram, F. Hu, F. Luo, F. Carol, R. Mendelsohn, E.L. Garfunkel, M. Szostak, H. He

**9:35 COLL 439.** Plasmonic enhanced energy transfer and charge separation at the interface between sensitizers and TiO<sub>2</sub>-encapsulated metallic nanoparticles. Y. Yang, H. Gobeze, F. DSouza, J. Li

**10:05** Intermission.

**10:20 COLL 440.** Designing high-performance one-dimensional catalysts for small molecule reactions: Probing size- and composition-dependent electrocatalytic behavior in noble metal nanowires. S.S. Wong

**10:50 COLL 441.** Withdrawn.

**11:10 COLL 442.** Metal-organic coordination networks at surfaces to control single-site transition metal oxidation state. C. Tempas, D. Skomski, B.J. Cook, T. Morris, A.V. Polezhaev, D.L. Wisman, K.A. Smith, K.G. Caulton, S.L. Tait

**11:30 COLL 443.** Colloidal sphere-patterned and electrosynthesized thin polythiophene arrays for molecularly imprinting polymer (MIP) sensing. B.B. Tiu, R.C. Advincula

## Section C

Pennsylvania Convention Center  
Room 121C

### Surface Modification to Control Cell/Surface Interactions

E. P. Khralampieva, A. M. Peterson, *Organizers, Presiding*

**8:30 COLL 444.** Designing flexible laminated bionanocomposite and nanoshells. V.V. Tsukruk

**9:00 COLL 445.** Immune modulatory biomaterials for cell-based therapies. O. Veisheh

**9:30 COLL 446.** Designing novel oriented ApoE nanoconstructs for enhanced interaction with the blood brain barrier. L.M. Herda, D.R. Hristov, E. Polo, K. Alnahdi, D. Garry, D. Hudecz, K. Dawson

**9:50 COLL 447.** Retinoid loaded filomicelles induce cell differentiation via sustained biomolecular signaling. K. Sivalingam Anbazhagan, P. Nair, I. Ivanovska, D.E. Discher

**10:10** Intermission.

**10:20 COLL 448.** ROS responsive polymers for drug and cell delivery in regenerative applications. C. Duvall

**10:50 COLL 449.** Novel strategies to modulate the inflammatory response to biomaterial. K.L. Spiller

**11:20 COLL 450.** Hydrogen-bonded multi-layers of tannic acid as mediators of T-cell immunity. V.A. Kozlovskaya, L.E. Padgett, B. Xue, H.M. Tse, E.P. Khralampieva

**11:40 COLL 451.** Silica-based surface modification of disposable gloves as bacteria repelling hygienic surfaces for healthcare environment. J. Oh, L. Cisneros-Zevallos, M. Akbulut

## Section D

Pennsylvania Convention Center  
Room 122A

### Elucidating the Molecular-Level Interactions between Biological Membranes & Engineered Nanomaterials

F. Perreault, *Organizer*

S. Romero-Vargas Castrillon, *Organizer, Presiding*

**8:30 COLL 452.** Distinct mechanisms involved in fumed silica, graphene oxide, rare earth oxide, and multi-wall carbon nanotube-induced membrane damage. T. Xia

**8:50 COLL 453.** Second harmonic generation spectroscopy for probing oxidized multiwalled carbon nanotubes at supported lipid bilayers. A. McGeachy, L.L. Olenick, J. Troiano, R. Lankone, E. Melby, T. Kuech, E. Ehimaghe, J.A. Pedersen, H. Fairbrother, F. Geiger

**9:10 COLL 454.** Biopores inside synthetic membranes of giant unilamellar vesicles (GUVs) as model of cell membranes. M. Gami, M. Lomora, T. Einfalt, F. Itel, I.A. Dinu, W. Meier, C. Pailvan

**9:30 COLL 455.** Membrane oxidation as a primary mechanism of antimicrobial activity of graphene oxide. F. Perreault, A.F. de Faria, S. Nejjati, M. Elimelech

**9:50** Intermission.

**10:05 COLL 456.** Influence of peripheral membrane proteins on nanoparticle interaction with model cell membranes. J.A. Pedersen, E. Melby, T. Kuech, A.C. Mensch, M.D. Torelli, A. Vartanian, C.J. Murphy, R.J. Hamers

**10:25 COLL 457.** Supported lipid bilayers containing lipids with varying transition temperatures studied by vibrational sum frequency generation spectroscopy. L.L. Olenick, A. McGeachy, M. Dogangun, J. Troiano, E. Melby, J.A. Pedersen, F. Geiger

**10:45 COLL 458.** Qualitative and quantitative analyses of the molecular-level interaction between membrane and model cell membranes. B. Li, F. Wu, X. Lu, X. Han, Z. Chen

**11:05 COLL 459.** Impact of nanoscale lithium nickel manganese cobalt oxide (NMC) on the gram-positive and gram-negative bacteria. C.L. Haynes

**11:25 COLL 460.** Withdrawn.

**11:45** Concluding Remarks.

## Section E

Pennsylvania Convention Center  
Room 122B

### Nanoparticles for Measuring/Controlling Cell Signaling

Y. Jun, K. Salaita, *Organizers, Presiding*

**8:30 COLL 461.** Tracking plasmonic particle motion in optical tweezers and in living cells. J. Feldmann

**9:05 COLL 462.** Nanoconjugation and its impact on endosomal signaling: A case study of the epidermal growth factor receptor. B.M. Reinhard

**9:40 COLL 463.** Cellular photostimulation with hydrogen-bonded organic semiconductor microcrystal interfaces. M. Jakesova, M. Litvinukova, M. Sytnyk, W. Heiss, R. Schindl, N. Saricicci, E.D. Glowacki

**10:00** Intermission.

**10:30 COLL 464.** Gold-polymer core-shell nanoparticles as optically triggered mechanical actuators. K. Salaita

**11:05 COLL 465.** Gold nanoparticle arrays for plasmon-enhanced single-molecule fluorescence in live bacteria. S.A. Lee, J.D. Flynn, J.S. Biteen

**11:25 COLL 466.** Simultaneous cytosolic delivery of siRNA and chemotherapeutics for enhanced breast cancer therapy. J. Hardie, Y. Jiang, E. Tetraut, P. Ghazi, G. Yesilbag Tonga, M.E. Farkas, V.M. Rotello

## Section F

Pennsylvania Convention Center  
Room 123

### Basic Research in Colloids, Surfactants & Nanomaterials

#### Nanomedicine

R. Nagarajan, *Organizer*

L. W. Place, *Presiding*

**8:30 COLL 467.** Rapid cytosolic delivery of protein coupled with nuclear trafficking signals using nanoparticle stabilized capsules. M. Ray, R. Tang, Z. Jiang, V.M. Rotello

**8:50 COLL 468.** Multifunctional polymer nanoparticles: Combinatorial therapy for triple negative breast cancers. C. Evans, A. Sorolla, D. Ho, E. Wang, C.F. Ormonde, R. Rashwan, S. Iyer, P. Blancafort

**9:10 COLL 469.** Development of biodegradable nanophotosensitizers through bioinspired route for photodynamic therapy applications. J. Bhaumik, S. Kirar, N. Thakur, J. Laha, U. Banerjee

**9:30 COLL 470.** Ultrasensitive real-time imaging of cancer cells based on multi-functional nanoscale probes. X. Wang

**9:50 COLL 471.** Surfaces presenting  $\alpha$ -phenyl mannoside derivatives enable formation of stable, high coverage, non-pathogenic *Escherichia coli* biofilms against pathogen colonization. Z. Zhu, J. Wang, A. Lopez, F. Yu, Y. Huang, A. Kumar, S. Li, L. Zhang, C. Cai

**10:10 COLL 472.** Development of microcapsules with dual functionality - vector and antimicrobial protection. L.W. Place, S. Gulcius Lagoy, S. Sherman

**10:30 COLL 473.** Withdrawn.

**10:50 COLL 474.** Quantification of nanoparticle tumor delivery efficiency. S. Wilhelm, A. Tavares, Q. Dai, S. Ohta, J. Audet, H. Dvorak, W. Chan

**11:10 COLL 475.** Polyamine/nucleotide coacervates strongly partition RNA to mimic early Earth protocells and modern cellular compartments. E.A. Frankel, P.C. Bevilacqua, C.D. Keating

**11:30 COLL 476.** Sensitive detection of RNA viruses with the help of reverse transcription loop-mediated isothermal amplification, magnetic nanoparticles, and chemiluminescence. N. He, Z. Li, Y. Deng, J. Wang

**11:50 COLL 477.** Synthesis of multifunctional magneto/plasmonic liposomes for drug delivery applications. R. Stiuftiu, C. Iacovita, G. Stiuftiu, S. Nitica, C. Lucaci

## Section G

Pennsylvania Convention Center  
Room 124

### Plasmonic Colloidal Nanostructures: From Creation to Applications

#### Non-Metal Plasmonic Particles & Novel Metal Particles

Y. Han, D. Qin, Y. Yin, *Organizers*

Y. Sun, *Organizer, Presiding*

C. Gao, *Presiding*

**8:30 COLL 478.** Plasmonic metal oxide nanocrystals. D.J. Milliron, A. Agrawal, J. Kim, R.W. Johns, F. Krieg

**9:05 COLL 479.** Phase, size, and composition dependent plasmonic properties of colloidal In<sub>2</sub>O<sub>3</sub> nanocrystals. H. Fang, P.V. Radovanovic

**9:25 COLL 480.** Plasmonic metal sulfide nanocrystals. W. Bryks, B. Marin, S. Hsu, A.R. Tao

**9:55** Intermission.

**10:30 COLL 481.** Metal nanoparticles: from classical confinement to quantum confinement. R. Jin

**11:00 COLL 482.** Controlled synthesis of plasmonic noble metal nanoparticles. C. Gao

**11:30 COLL 483.** Synthesis of various plasmonic nanoframes and their optical characterization. H. Jang, S. Lee, J. Yoon, S. Park

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## Section H

Pennsylvania Convention Center  
Room 125

**Basic Research in Colloids,  
Surfactants & Nanomaterials**
**Colloids & Interfaces**

R. Nagarajan, *Organizer*

S. L. Tait, *Presiding*

- 8:30 COLL 484.** Organization of methacrylate monomers at hydrophilic and hydrophobic interfaces probed by sum frequency generation vibrational spectroscopy (SFGVS). **N.M. Adhikari**, K.A. Cimatú
- 8:50 COLL 485.** Benzoic acid and its pH dependent penetration through interfaces. **B. Peters**, A. Groninger, D. Crick, D.C. Crans
- 9:10 COLL 486.** Designing responsive behavior in dynamic self-assemblies of small molecule systems at surfaces. **S.L. Tait**, B. Hirsch, H.D. Castillo, J.R. Dobscha, Y. Liu, J.M. Espinosa Duran, D. Ashley, Y.V. Serada, M. Baik, P. Ortoleva, A.H. Flood
- 9:30 COLL 487.** Bilayer films for enhanced dehydration of solution-processed dielectric thin films. **C.K. Perkins**, D. Park, R. Mansergh, S. Decker, D.A. Keszler
- 9:50 COLL 488.** Understanding the behavior of ionic liquids at carbonaceous surface. **R.M. Espinosa-Marzal**, L.A. Jurado
- 10:10 COLL 489.** Overcompensation and kinetics: Examining polyelectrolyte diffusion in thin films. **H. Fares**, J.B. Schlenoff
- 10:30 COLL 490.** Gold nanorings-enhanced singlet oxygen generation by using polyelectrolyte multilayers as nanoscale control in the near infrared. **Y. Hu**, J. Kanka, K. Liu, H. Wang, H. Du
- 10:50 COLL 491.** Battery slurry microstructure as a function of formulation. **S. Morelly**, N. Alvarez, M. Tang
- 11:10 COLL 492.** Potential mechanism describing color richness in squid *Doryteuthis pealeii* chromatophores. **S.R. Dinneen**, M.E. Greenslade, L.F. Deravi
- 11:30 COLL 493.** Insight into MWCNTs-phosphonium ionic liquid nanofluids: Interaction and rheology study. **S. Satam**, E. Sancaktar
- 11:50 COLL 494.** Tic-tac-toe binary lattices from interfacial self-assembly of branched and spherical nanocrystals. **A. Castelli**, J. de Graaf, M. Prato, L. Manna, M.P. Arciniegas

**Polymer Science at the Interface of  
Industry, Government & Academics**
**National Lab/Industry/  
University Collaborations**

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**Impacts of Nanotechnology &  
Single Molecule Spectroscopy  
in Biology & Medicine**

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## WEDNESDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 121A

**Colloidal & Interfacial Chemistry  
for Water Treatment & Recycling**

I. Chernyshova, S. Ponnuram, *Organizers*

P. Somasundaran, *Organizer, Presiding*

- 2:00 COLL 495.** Ion sorption, diffusion, and transport in polymer membranes. **B.D. Freeman**
- 2:30 COLL 496.** Rapid and efficient separation of oil from oil-in-water emulsions using a Janus Cotton fabric. **Z. Wang**, Y. Wang, G. Liu
- 2:50 COLL 497.** Inorganic-organic thiol-ene coated mesh for oil/water separation. **Q. Chen**, A.C. de Leon, R.C. Advincula
- 3:10 COLL 498.** Membrane distillation for desalination: Experimental studies with precipitating scaling salts. **K.K. Sirkar**
- 3:40** Intermission.
- 3:55 COLL 499.** Nanofiltration membranes for the removal of organic pollutants from wastewater: A critical review of methods of preparation and fouling control. **E. Yanful**, A. Atisha
- 4:25 COLL 500.** Novel polymer membrane chemistries for water treatment and reuse. **S. Bhattacharjee**, J. Wang, E.M. van Hoek
- 4:50 COLL 501.** Enhancing solar harvest of interfacial solar membrane for water purification. **X. Huang**, Y. Yu, O. de Llergo, Z. Cheng
- 5:15 COLL 502.** Scalable fabrication of underwater superoleophobic membranes from polymer-grafted silica nanoparticles for oil/water separation. **Z. Liao**, G. Wu, D. Lee, S. Yang
- 5:35 COLL 503.** Inverse opal-templated multiscale architected membranes with tunable separation properties. **P. Yoo**

## Section B

Pennsylvania Convention Center  
Room 121B

**Nanostructured Interfaces:  
From Fundamentals of Sensing  
& Catalysis to Applications**

J. R. Regalbutto, *Organizer*

C. Zhong, *Organizer, Presiding*

A. Chen, *Presiding*

- 2:00** Introductory Remarks.
- 2:05 COLL 504.** Bimetallic Ru-Pt and Pt-Co fuel cell catalysts prepared by strong electrostatic adsorption and electrodeless deposition. **J. Tengco**, B. Tavakoli Mehrabadi, W. Diao, Y. Zhang, A. Wongkaew, T. Garrick, J. Weidner, J.R. Regalbutto, J. Monnier
- 2:35 COLL 505.** Synthesis and electrochemical study of palladium based nanomaterials. **A. Chen**, S. Konda, C. Ostrom
- 3:05 COLL 506.** Nanoparticle-structured interfaces in catalysis and sensing. **C. Zhong**
- 3:35** Intermission.

**3:50 COLL 507.** Porous binary composite catalysts for CO oxidation and water-gas shift reaction. **C. Guild**, S. Seraji, A. Meguerdichian, T. Jafari, D. Vovchok, J. Rodriguez, S.D. Senanayake, S.L. Suib

**4:20 COLL 508.** Design of highly-controlled layered films of nanoparticles through copper-catalyzed click chemistry. **M. Williams**, A.V. Teplyakov

**4:40 COLL 509.** Supported gold nanoparticles for sensing and photothermal applications. **S. Hunyadi Murph**

**5:00 COLL 510.** Porous biocompatible polymer nanocapsules with nanometer-thin walls: applications in sensing & catalysis. **S. Dergunov**, M. Kim, E. Pinkhassik

## Section C

Pennsylvania Convention Center  
Room 121C

**Surface Modification to Control  
Cell/Surface Interactions**

E. P. Kharlampieva, A. M. Peterson, *Organizers, Presiding*

**2:00 COLL 511.** Fine control of cell adhesion and morphology with polyelectrolyte multilayers. **J.B. Schlenoff**, C.J. Arias, J. Martinez, T.C. Keller

**2:30 COLL 512.** Controlling nanostructure within hydrogels for directing cell-matrix interactions. **A.M. Kloxin**

**3:00 COLL 513.** Tailoring of polyelectrolyte multilayer surface properties and growth factor release. **C. Salvi**, I. Ding, **A.M. Peterson**

**3:20 COLL 514.** Peptide-conjugated hydrogel cubes with pH/redox-sensitivity for anti-cancer drug delivery. **B. Xue**, V.A. Kozlovskaya, M. Manuvakhova, F. Liu, L. Klampfer, E.P. Kharlampieva

**3:40** Intermission.

**3:50 COLL 515.** Self-defensive antibacterial polymer coatings. **S.A. Sukhishvili**

**4:20 COLL 516.** Withdrawn.

**4:40 COLL 517.** Bioactive carbohydrate surfaces and microarrays for fibrin-mediated bacterial adhesion. **H. Dong**, J.L. Terrell, D.A. Sarkes, N. Zander, E.L. Holthoff, J. Jahnke, D.N. Stratis-Cullum

**5:00 COLL 518.** Robust protein films fabricated via nanoimprint lithography: A versatile approach for constructing functional biomaterials. **L. Wang**, B. duncan, E. Jeoung, B. Creran, R. Tang, K. Saha, Y. Yeh, C. Subramani, T. Kishida, Y. Engel, V.M. Rotello

## Section D

Pennsylvania Convention Center  
Room 122A

**Elucidating the Molecular-  
Level Interactions between  
Biological Membranes &  
Engineered Nanomaterials**

F. Perreault, S. Romero-Vargas Castrillon, *Organizers*

F. Perreault, *Presiding*

**2:00 COLL 519.** Biofouling of receptor-doped polymeric electrochemical sensing membranes. **P. Buhlmann**, A.J. Dittmer, X. Chen

**2:20 COLL 520.** Examining the interactions between graphene oxide and model biological membranes through confocal microscopy. **M. Hu**, B. Ackerman, M. McCaffery, K. Chen

**2:40 COLL 521.** Retinal cell labeling using hybrid lipid-coated gold nanorods. **M.R. Mackiewicz**, J. Stoddard, Y. Jia, G. Liu, S. Gao, A. Pechauer, D. Huang, T.J. McGill

**3:00 COLL 522.** *In situ* characterization of the nanoparticle biomolecular corona. **M. Lo Giudice**, L.M. Herda, E. Polo, K. Dawson

**3:20** Intermission.

**3:35 COLL 523.** Single cell analysis uncovers unique cellular responses to distinct nanoparticle properties. **G. Orr**, H. Mitchell, M. Markkille, W. Christer, D. Hu, C. Szymanski, Y. Xie, A. Heredia-Langner

**3:55 COLL 524.** Cascade reactions in confined spaces at the nanoscale for replacing part of an impaired metabolic pathway. **M. Lomora**, M. Garni, A. Najer, I.A. Dinu, S. Mantri, M. Spulber, C. Palivan

**4:15 COLL 525.** Structural elucidation and multi-functionalization of cell membrane-coated nanoparticles. **H. Zhou**, Z. Fan, **H. Cheng**

**4:35 COLL 526.** Alteration of membrane compositional asymmetry by LiCo<sub>2</sub> nanosheets. **M. Dogangun**, M.N. Hang, J. Troiano, A. McGeachy, E. Melby, J.A. Pedersen, R.J. Hamers, F. Geiger

**4:55 COLL 527.** Scavenging components of the biomolecular corona using an *in vitro* liver model. **S. Lara Martinez**, F. Alnasser, D. Garry, E. Polo, M. Lo Giudice, D.R. Hristov, Y. Yan, K. Dawson

## Section E

Pennsylvania Convention Center  
Room 122B

**Nanoparticles for Measuring/  
Controlling Cell Signaling**

Y. Jun, K. Salaita, *Organizers, Presiding*

**2:00 COLL 528.** Magnetic actuation of intracellular signalling in mammalian cells. **C. Monzel**, C. Vicario, M. Coppey, **M. Dahan**

**2:35 COLL 529.** Coordination of molecular motors during axonal transport revealed by nanoparticles. **B. Cui**

**3:10** Intermission.

**3:40 COLL 530.** Magnetic nanoparticles: A precision tool for cell imaging and activations. **J. Cheon**, J. Lee, J. Kim

**4:15 COLL 531.** Efficient and non-toxic gene delivery by triblock terpolymer micelles. **U.S. Schubert**, A. Traeger

**4:35 COLL 532.** Frizzled7-targeted nanoshells enable selective photothermal therapy and blockade of Wnt signaling in triple-negative breast cancer. **R. Riley**, **E. Day**

## Section F

Pennsylvania Convention Center  
Room 123

### Basic Research in Colloids, Surfactants & Nanomaterials

#### Peptides, Lipids & DNA

R. Nagarajan, *Organizer*

G. Narsimhan, *Presiding*

**2:00 COLL 533.** Bioinorganic interface: Mechanistic studies of protein-directed nanomaterial synthesis. K. Roth, T. Zarkovic Grove

**2:20 COLL 534.** Thermodynamics and kinetics of Watson-Crick base pairing-driven assembly of DNA origami nanostructures. J. Zenk, J. Fern, R. Schulman

**2:40 COLL 535.** Supramolecular design of antimicrobial peptides: Balance of nanostructure, cytotoxicity and antimicrobial activity. H. Dong, D. Xu

**3:00 COLL 536.** Free energy of pore formation by aggregates of melittin in 1,2-dioleoyl-sn-glycero-3-phosphocholine (DOPC) and 1,2-di-(9Z-octadecenoyl)-sn-glycero-3-phospho-(1'-rac-glycerol) (DOPG) mixed lipid bilayer by molecular dynamics simulation. Y. Lyu, N. Xiang, X. Zhu, G. Narsimhan

**3:20 COLL 537.** Membrane penetration and stability of gold nanoparticles and luminescent semiconductor quantum dots coated with poly (oxonorborene)-based synthetic mimics of antimicrobial peptides (SMAMPs) in aqueous media. Z. Zheng

**3:40 COLL 538.** Exploration of the aggregation and gelation process of short and medium sized peptide chains. D.M. DiGiuseppi, S.A. Farrell, J. Kraus, R. Schweitzer-Stenner

**4:00 COLL 539.** DNA-functionalized metal oxide nanoparticles: From fundamental surface science to applications. J. Liu, B. Liu

**4:20 COLL 540.** High-density DNA-coated particles and clusters. J. Oh, I. Jo, Y. Wang, D. Pine, G. Yi

**4:40 COLL 541.** Molecular dynamics investigation of the sequence specific binding of single-stranded DNA (ssDNA) with chiral single-walled carbon nanotubes (SWCNTs). K.R. Hinkle, F.R. Phelan

**5:00 COLL 542.** Co-crystallization of nanoparticle-PEG conjugates and protein. H. Kim, V.L. Colvin

**5:20 COLL 543.** Lipid phase coexistence forms the basis of the permeability barrier of the outer skin layer. C.M. MacDermid, M.L. Klein, G. Fiorini

## Section G

Pennsylvania Convention Center  
Room 124

### Plasmonic Colloidal Nanostructures: From Creation to Applications

#### Enhanced Spectroscopy

Y. Han, D. Qin, Y. Yin, *Organizers*

Y. Sun, *Organizer, Presiding*

S. Zou, *Presiding*

**2:00 COLL 544.** Plasmonic colloidal nanoparticles: Gateway to extreme radiative decay engineering. M.H. Mikkelsen

**2:30 COLL 545.** Correlating metal-enhanced fluorescence and structural properties in Ag@SiO<sub>2</sub> core-shell nanoparticles. P. Legros, J. Asselin, A. Grégoire, D. Boudreau

**2:50 COLL 546.** Super-resolution imaging of plasmonic nanostructures: from ligand binding to plasmon coupling. K.A. Willets

**3:20** Intermission.

**3:50 COLL 547.** Generalized model for the surface enhanced Raman scattering and surface enhanced/quenched fluorescence. S. Zou

**4:20 COLL 548.** Shaped, ultra-fast, ultra-intense laser processing of nanomaterials. R.J. Levis

**4:50 COLL 549.** Designing multicolor long range nanoscopic ruler for imaging of heterogeneous tumor cells. P.C. Ray

### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

*Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS*

### Polymer Science at the Interface of Industry, Government & Academics Industry/University Collaborations

*Sponsored by POLY, Cosponsored by COLL, PMSE and SCHB*

## THURSDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 121A

### Colloidal & Interfacial Chemistry for Water Treatment & Recycling

S. Ponnuram, P. Somasundaran, *Organizers*

I. Chernyshova, *Organizer, Presiding*

**8:30 COLL 550.** Treatment of emerging contaminants using advanced oxidation processes. G. Achari

**8:55 COLL 551.** Competitive passivation mechanisms on copper surfaces in industrial water treatment. P.R. Frail, G. Zorn, R. Sharghi-Moshahin, M. Morra

**9:20 COLL 552.** Electrocoagulation mechanisms during water and wastewater treatment: Insights from removal of viruses and boron. S. Chellam

**9:45 COLL 553.** Capacitive deionization: Emerging trends and new directions. M. Suss

**10:15** Intermission.

**10:30 COLL 554.** Shock electro dialysis. M.Z. Bazant, S. Schlumberger, N. Lu, M. Conforti, M. Suss

**10:55 COLL 555.** Two-dimensional carbon nanomaterials for next generation water treatment membrane. K. Rasool, M. Helal, C. Ren, A. Ali, Y. Gogotsi, K.A. Mahmood

**11:20 COLL 556.** One-step synthesis of {001} facet exposed TiO<sub>2</sub> sheets doped with sulfur on graphene with enhanced photocatalytic activity. W. Wang, Z. Wang, J. Liu, Z. Zhang, L. Sun

**11:45 COLL 557.** New mechanistic and predictive model for ion adsorption equilibrium in capacitive deionization. Q. Li, A. Heldenbrand, J. Kim

## Section B

Pennsylvania Convention Center  
Room 121B

### Nanostructured Interfaces: From Fundamentals of Sensing & Catalysis to Applications

J. R. Regalbuto, *Organizer*

C. Zhong, *Organizer, Presiding*

M. M. Maye, *Presiding*

**8:30** Introductory Remarks.

**8:35 COLL 558.** Catalytic activities of transition metal nanoparticles in carbon-carbon bond cleavage of complete ethanol oxidation reaction. Z. Wu, Y. Chen, M. Zhang, L. Wang

**9:05 COLL 559.** Controlling phase behavior and oxidation rates in core/alloy nanoparticles. M.M. Maye, L. Pathade, T.L. Doane

**9:35 COLL 560.** Nanostructured heated gold electrodes for DNA hybridization detection using enzyme labels. A. Walter, F. Langschwager, F. Marken, G. Fleischig

**9:55** Intermission.

**10:10 COLL 561.** X-ray assisted heterogeneous catalysis. J. Lien, T. Guo

**10:40 COLL 562.** Oxidation resistance interfaces in colloidal core/alloy nanoparticles. L. Pathade, T.L. Doane, M.M. Maye

**11:00 COLL 563.** Elucidating the electronic properties of colloidal-synthesized 2D nanostructures. A.J. Biacchi, S. Le, B.G. Aberding, J.A. Hagmann, E.J. Heilweil, C.A. Richter, A.R. Hight Walker

**11:20 COLL 564.** SERS nanoprobe based on cyanine dye J-aggregates of gold nanoparticles. H. Cheng

## Section C

Pennsylvania Convention Center  
Room 121C

### Surface Modification to Control Cell/Surface Interactions

E. P. Kharlampieva, A. M. Peterson, *Organizers, Presiding*

**8:30 COLL 565.** Dynamic bacterial response to engineered surface features. M.M. Santore, S. Kalasin, K. Kolewe, J.D. Schiffman

**9:00 COLL 566.** Dynamic hydrogels for investigating YAP/TAZ-mediated mechanotransduction. S.R. Caliani, C.B. Rodell, R.G. Wells, J.A. Burdick

**9:30 COLL 567.** Glycopolymers interaction with cells and bacteria: From cellular uptake to surface-functional devices. U.S. Schubert, C. Weber

**9:50 COLL 568.** Living surface of a polyelectrolyte multilayer and its role in cell adhesion. R. Surmaitis, C.J. Arias, J.B. Schlenoff

**10:10** Intermission.

**10:20 COLL 569.** Self-assembled polymeric nanomaterials for immunomodulation. J.T. Wilson

**10:50 COLL 570.** Nitric oxide release from PLGA-PVA nanoparticles to reduce bacteria growth. N. Reger, W.S. Meng, E.S. Gawalt

**11:10 COLL 571.** Influence of protein surface coverage on anomalously strong adsorption sites. Y. Cai, D.K. Schwartz

## Section D

Pennsylvania Convention Center  
Room 122A

### Elucidating the Molecular-Level Interactions between Biological Membranes & Engineered Nanomaterials

F. Perreault, *Organizer*

S. Romero-Vargas Castrillon, *Organizer, Presiding*

**8:30 COLL 572.** Role of bio-coronas in the enzymatic oxidation of single-walled carbon nanotubes. A. Star

**8:50 COLL 573.** Evaluating the role of polymer structure on cell uptake and endosomal escape of nanopolyplexes for peptide drug delivery. E. Dailing, B. Evans, K. Kilchrist, C. Duval

**9:10 COLL 574.** Interactions between graphene oxide and human serum albumin proteins: Implications for nanoparticle-membrane interactions. K. Chen, X. Liu, C. Yan

**9:30 COLL 575.** Membrane interaction of PEGylated superparamagnetic nanoparticles. N. Gal, A. Scheberl, A. Lassenberger, L. Herrero Nogareda, E. Reimhult

**9:50** Intermission.

**10:05 COLL 576.** Biohybrid of multi-heme cytochrome and surfaces of Au and graphene: Protein adsorption and electron transfer. T. Wei

**10:25 COLL 577.** Developing phenylenevinylene conjugated oligoelectrolytes for membrane-targeting antimicrobial functions. H. Yan, Z. Rengert, J. Hinks, G.C. Bazan

**10:45 COLL 578.** Intracellular processing of nanoparticles: Novel methods to recover intracellular nanomaterials. F. Muraca, A. Alahmari, G. Vaz, E. Polo, F. Bertoli, K. Dawson

**11:05 COLL 579.** Direct views of the nano-bio interface. F. Geiger

## Section E

Pennsylvania Convention Center  
Room 122B

### Nanoparticles for Measuring/Controlling Cell Signaling

Y. Jun, K. Salaita, *Organizers, Presiding*

**8:30 COLL 580.** T-cell-bound nanoparticles providing cell-regulated release of supporting signals. D.J. Irvine

**9:05 COLL 581.** Genome editing *in vivo* with the delivery of Cas9 ribonucleoprotein and donor DNA complexed to gold nanoparticles. N. Murthy

**9:40** Intermission.

**10:10 COLL 582.** Active, dissipative, and dynamic behaviors of giant vesicles subject to transvesicular osmotic gradients. A.N. Parikh

**10:45 COLL 583.** Nanoscale spatial regulation of epidermal growth factor receptor signaling. Z. Gartner, S. Liang

**11:20** Concluding Remarks.

## Section F

Pennsylvania Convention Center  
Room 123

**Basic Research in Colloids,  
Surfactants & Nanomaterials**
**Nanomaterial Applications**

R. Nagarajan, *Organizer*

Y. Mao, *Presiding*

**8:30 COLL 584.** Preparation, growth mechanism and uses of one-dimensional nanostructures. S. Hunyadi Murph

**8:50 COLL 585.** Bio-inspired synthetic giant clam system for solar energy applications. H. Kim, S. Vahidinia, A. Holt, A. Sweeney, S. Yang

**9:10 COLL 586.** Tunable optical properties of 2D nanowire lattices. S.J. Boehm, L. Kang, D. Werner, C.D. Keating

**9:30 COLL 587.** Design, synthesis, and characterization of mixed ionic/electronic conducting surface layers adsorbed on metal oxide particles. J. Richards, N.J. Wagner, P. Butler

**9:50 COLL 588.** Hydrogen storage by nanostructured graphene and metal hybrids enhanced with spill-over mechanism. Y. Mao, L. Wei

**10:10 COLL 589.** Graphene origami for 3D functional structures and devices. W. Xu, H. Kwag, A. Sarkar, K. Kwok, C. Yoon, J. Liu, T.D. Nguyen, D.H. Gracias

**10:30 COLL 590.** Self-organization of organic molecules on graphite for photovoltaics. J.M. Espinosa Duran, D. Ashley, H. Castillo, J. Dobscha, B. Hirsch, Y. Liu, Y. Sereda, M. Baik, A.H. Flood, S.L. Tait, P. Ortoleva

**10:50 COLL 591.** Designing hierarchical supramolecular interactions for organic 2D crystal assemblies at the liquid-solid interface. H.D. Castillo, J.R. Dobscha, Y. Liu, J.M. Espinosa Duran, D. Ashley, Y.V. Serada, B. Hirsch, M. Baik, P. Ortoleva, A.H. Flood, S.L. Tait

**11:10 COLL 592.** *In situ* synthesis of single-molecule electronic components. M.S. Inkpen, L.M. Campos, Y.R. Leroux, P. Hapiot, L. Venkataraman

**11:30 COLL 593.** Withdrawn.

**11:50 COLL 594.** Assembling and aligning multicomponent nanowires with van der Waals forces. B.D. Smith, D. Kirby, X. Kong, Z. Gobert, C. Albright, K.A. Fichthorn, C.D. Keating

## Section G

Pennsylvania Convention Center  
Room 124

**Basic Research in Colloids,  
Surfactants & Nanomaterials**
**Bio-Nano Materials**

R. Nagarajan, *Organizer*

S. A. Claridge, *Presiding*

**8:30 COLL 595.** Self-assembling extracellular matrix proteins as materials for the condensation of silica nanostructures. C.M. Gomes, L.F. Deravi

**8:50 COLL 596.** Study of *in vivo* efficacies of antibody dependent cell cytotoxicity of antibody functionalized gold nanoparticles. M. Ahmed

**9:10 COLL 597.** Dimensional control of orthogonal chemical interfaces using polymerizable amphiphiles. S.A. Claridge

**9:30 COLL 598.** Thermophilic ferritin: A versatile nanocontainer for the encapsulation of nanoparticles and other useful cargo. K.W. Pulsipher, I.J. Dmochowski

**9:50 COLL 599.** Optimizing the bio-nano interface via a multi-coordinating polymer coating. W. Wang, X. Ji, A. Kapur, H.M. Mattoussi

**10:10 COLL 600.** Toward single-molecule biophysical surface-enhanced Raman spectroscopy with nanostar-liposomes bioconjugates. W. Lum, I. Bruzas, L. Sagile

**10:30 COLL 601.** Bio-orthogonal coupling on hydrophilic quantum dots. N. Zhan, G. Palui, J. Merkl, H.M. Mattoussi

**10:50 COLL 602.** Increased oxidation in lipid membranes from Cu<sup>2+</sup> bound to phosphatidylethanolamine. A.M. Sendekci, M.F. Poyton, X. Cong, P.S. Cremer

**11:10 COLL 603.** Nanocomposites hydroxyapatite: Polysaccharide hydrogels for bone regeneration. M. Kowaleff, G. Nunez, D. Akpatsu, M. Jitianu, N. O'Connor, A. Jitianu

**Polymer Science at the Interface of  
Industry, Government & Academics**
**Industry/University Collaborations**

Sponsored by POLY, Cosponsored by COLL, PMSE and SCHB

**COMP**
**Division of Computers  
in Chemistry**

H. Woodcock, M. Feig and J. Shen,  
*Program Chairs*

**BUSINESS MEETINGS:**

Business Meeting, 3:00 PM: Sat

**SUNDAY MORNING**

## Section A

Sonesta Philadelphia Downtown  
Whistler A

**Modeling Water & Solvation in  
Biochemistry: Developments  
& Applications**

Cosponsored by PHYS

E. Alexov, R. Luo, *Organizers*

W. Yang, *Presiding*

**8:30 COMP 1.** Simulating biomolecules with implicit solvent models: GB, PB and 3D-RISM. D.A. Case

**9:00 COMP 2.** Solvation vs. aggregation in dense protein solutions. M. Feig

**9:30** Intermission.

**9:45 COMP 3.** Solvent exchange in liquid water and rate theory. L.X. Dang

**10:15 COMP 4.** Integration of electrostatics and solvation into statistical machine learning approaches for the quantitative modeling of protein-DNA binding affinities. T. Chiu, R. Rohs

**10:45 COMP 5.** Quantifying uncertainty in biomolecular solvation. N.A. Baker, H. Lei, X. Yang, G. Wei

## Section B

Sonesta Philadelphia Downtown  
Hopper

**Designing Functional Biomaterials:  
Connecting Experiment with  
Theory & Simulation**

Cosponsored by PHYS and POLY

H. Nguyen, J. Shen, *Organizers*

B. H. Morrow, *Presiding*

**8:30** Introductory Remarks.

**8:40 COMP 6.** Using computation and experiment to explore the sequence space for short peptide self-assembly. R. Uljin, T. Tuttle

**9:10 COMP 7.** Using molecular tuning to design functional polypeptides. T.J. Deming

**9:40 COMP 8.** Pattern formation of confined periodically sequenced polypeptides. R.S. Tu

**10:10** Intermission.

**10:25 COMP 9.** Materials construction through peptide computational design and solution assembly. D.J. Pochan

**10:55 COMP 10.** Using theory and computation to guide the design of proteins, protein assemblies, and bimolecular materials. J.G. Saven

**11:25 COMP 11.** Structure and properties of bioinspired, conductive coiled-coil fibers from *de novo* peptides. R.K. Spencer, N. Ing, A. Hochbaum

## Section C

Sonesta Philadelphia Downtown  
Warhol

**Quantum Mechanics**

Cosponsored by PHYS

S. E. Wheeler, *Organizer*

R. Bhattacharjee, *Presiding*

**8:30 COMP 12.** Self-consistent implementation of meta-GGA exchange-correlation functionals within the ONETEP linear-scaling DFT code. J.C. Womack, C. Skylaris

**9:00 COMP 13.** CAM-LDA0: The reincarnation of the local density approximation. C.H. Borca, M.A. Mosquera, M.A. Ratner, G. Schatz

**9:20 COMP 14.** Principles and applications of a new Koopmans' theorem like range-separated density functional theory. Y. Jin, R.J. Bartlett

**9:40 COMP 15.** London-dispersion corrected SCAN: hybrid-level accuracy with a non-empirical meta-generalized gradient approximation. J.G. Brandenburg, J.E. Bates, A. Ruzsinszky, J. Sun, J.P. Perdew

**10:00** Intermission.

**10:15 COMP 16.** Exciton coupled-cluster theory for large-scale electronic structure calculations. A.D. Dutoi, Y. Liu

**10:45 COMP 17.** Convergence of ground and excited state properties in solution using combined quantum/classical methods. M.R. Provorse, X.S. Vazquez, J. Milanese, C. Isborn

**11:15 COMP 18.** Efficient implementation of molecules-in-molecules fragment-based approach for chiroptical vibrational spectra of large molecules. K. Jose, K. Raghavachari

**11:45 COMP 19.** Using agent-based modeling to bridging the length scales between DFT molecular level calculations and continuum scale modeling. L.E. Achenie

## Section D

Sonesta Philadelphia Downtown  
Benton

**Designing Chemical  
Libraries for Screening**

S. Das, *Organizer*

A. Shelat, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:45 COMP 20.** Strategies for the identification of scaffold families in chemical libraries and their application in a compound stability study. C. Laggner, Y. Shayo, C. Johnson, C. Loomis

**9:15 COMP 21.** Novel methods for predicting and prioritizing design ideas from SAR matrices. L. Zhang, K. Johnson, J. Starr, J. Millbank, A. Kuhn, C. Poss, V. Shanmugasundaram

**9:45 COMP 22.** Profile-QSAR Gen 2: Deep learning kinase IC<sub>50</sub> predictions for novel compounds as accurate as 4-pt IC<sub>50</sub>s. E.J. Martin, V. Polyakov, L. Tian

**10:15** Intermission.

**10:30 COMP 23.** What can your library do for you? R. Guha, D. Nguyen, A. Jadhav

**11:00 COMP 24.** ChemLG – A smart and massively parallel molecular library generator. M. Afzal, J. Hachmann

**11:30 COMP 25.** Compound evolution taken by STORM: First ideas turn into genuine possibilities. C. Detering

**12:00** Panel Discussion.

## Section E

Sonesta Philadelphia Downtown  
Wyeth Gallery C

**Drug Discovery**
**Case Studies in SBDD**

M. R. Landon, Y. Tseng, *Organizers*

S. K. Lakkaraju, *Presiding*

**8:30 COMP 26.** HRD motif as the central hub of the signaling network for activation loop autophosphorylation in Abl kinase. G. La Sala, L. Riccardi, R. Gaspari, A. Cavalli, O. Hantschel, M. De Vivo

**9:00 COMP 27.** Comparative analysis of the structural determinants of endogenous cannabinoids. V.K. Yadav, K.M. Elokely, M.L. Klein

**9:30 COMP 28.** Structural basis for antagonist selectivity in orexin receptors. K. Babaoğlu

**10:00** Intermission.

**10:15 COMP 29.** Lovastatin lactone may improve constipation in irritable bowel syndrome (IBS) by inhibiting enzymes in the archaeal methanogenesis pathway. S.M. Muskal, D. Sloman, D. Kokai-Kun, D. Pimentel, D. Wachter, D. Gottlieb

**10:45 COMP 30.** Examination of hydroxyethylamino sulfonamide derivatives as anti-HIV-1 protease inhibitors using molecular dynamics and free energy calculations. D. Das, H. Hayashi, Y. Takamatsu, M. Aoki, R. Yedidi, A.K. Ghosh, H. Mitsuya



**11:15 COMP 31.** Structure-based approach to identify selective JAK1 inhibitors for treatment of autoimmune diseases. R. Unwalla, M.L. Vazquez, N. Kaila, J.W. Strohbach, S. Han

**11:45 COMP 32.** Development of new oxindole-based PI3K- $\delta$  inhibitors using structure-based drug design. X. Fradera

### Advanced Potential Energy Surfaces

#### Classical Simulation Models & Methods

Sponsored by PHYS, Cosponsored by COMP

#### WCC Merck Research Award Symposium

Sponsored by WCC, Cosponsored by ANYL, BIOL, COMP, MED, MPPG, ORGN, POLY and PROF

## SUNDAY AFTERNOON

### Section A

Sonesta Philadelphia Downtown Whistler A

#### Modeling Water & Solvation in Biochemistry: Developments & Applications

Cosponsored by PHYS

E. Alexov, R. Luo, *Organizers*

M. Feig, *Presiding*

**1:30 COMP 33.** MN15: A new density functional for covalent and noncovalent interactions. D.G. Truhlar, H.S. Yu, X. He, S.L. Li

**2:00 COMP 34.** Quantum chemical framework for next-generation force fields: the explicit polarization model for water. J. Gao

**2:30 COMP 35.** Exploring water penetration in proteins and its functional implications. Q. Cui

**3:00** Intermission.

**3:15 COMP 36.** Towards a balanced implicit solvent force field for intrinsically disordered proteins. K. Lee, J. Chen

**3:45 COMP 37.** Single-site multipole water and the hydrophobic effect. T. Ichiye

**4:15 COMP 38.** Quantum mechanics / molecular mechanics method combined with resolution-adapted all-atomic and coarse-grained model. L. Shen, H. Hu, W. Yang

### Section B

Sonesta Philadelphia Downtown Hopper

#### Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation

Cosponsored by PHYS and POLY

H. Nguyen, J. Shen, *Organizers*

A. Hochbaum, *Presiding*

**1:30 COMP 39.** Experimental and computational design of stimuli-responsive diagnostic and therapeutic self-assembling peptide vehicles. J.E. Goldberger, C.J. Buettner, A. Wallace

**2:00 COMP 40.** Functional materials from peptide amphiphiles: theory and experiment. G.C. Schatz

**2:30 COMP 41.** Bioactive and bio-inspired supramolecular biomaterials. S.I. Stupp

**3:00** Intermission.

**3:15 COMP 42.** Controlling polysaccharide hydrogel structure, properties and function. G.F. Payne

**3:45 COMP 43.** Modeling pH-sensitive biomaterials. B.H. Morrow

**4:15 COMP 44.** Stimuli-responsive biomaterials utilizing superparamagnetic particles. S. Minko

### Section C

Sonesta Philadelphia Downtown Warhol

#### Emerging Technologies in Computational Chemistry

C. L. Simmerling, *Organizer, Presiding*

**1:30 COMP 45.** Software ecosystem for the data-driven design of chemical systems and the exploration of chemical space. J. Hachmann, M. Haghghatdari, W. Evangelista, M. Afzal, C. Shih, B.A. Moore, M. Pechagin, Y. Tian

**2:00 COMP 46.** Geometrical descriptors of time-dependent transition states. G. Craven

**2:30** Intermission.

**2:45 COMP 47.** Higher accuracy NMR crystallography at lower computational cost. J. Hartman, G.J. Beran

**3:15 COMP 48.** Leveraging a computational chemistry app store to compute high accuracy lattice energies of molecular crystals. R. Richard, D. Sherrill

**3:45 COMP 49.** Workflow development at Merck through Merck-Rutgers collaboration. Y. Hu, B. Sherborne, T. Lee, D.A. Case, D.M. York, Z. Guo

### Section D

Sonesta Philadelphia Downtown Benton

#### Designing Chemical Libraries for Screening

S. Das, *Organizer*

A. Shelat, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:45 COMP 50.** Predictive QSPR modeling of photochromic systems. F. Jabeen, M. Ossowski, P.R. Boujjuok

**2:15 COMP 51.** Development of lower cost sampling methods to accelerate the discovery of CARM1 inhibitors. Y. Zhang, L. Du, C. Rupakheti, Q. Wang, D.N. Beratan

**2:45 COMP 52.** Enriching chemical libraries with target binding site pharmacophore matching. S. Das, A. Singh, J.J. Bowling, E. Griffith, R.E. Lee, A. Shelat

**3:15** Panel Discussion.

### Section E

Sonesta Philadelphia Downtown Wyeth Gallery C

#### Drug Discovery

##### Advances in Methods for Structure-Based Drug Design

M. R. Landon, Y. Tseng, *Organizers*

N. Kumar, *Presiding*

**1:30 COMP 53.** Relative binding free energy calculations to accelerate drug discovery. W. Sherman

**2:00 COMP 54.** DOCK6 developments to assist in structure-based design. R.C. Rizzo

**2:30 COMP 55.** Practicalities of molecular dynamics in ligand pose evaluation in a discovery workflow. X. Zhu, D. Langley, S. Johnson

**3:00** Intermission.

**3:15 COMP 56.** Turning binders into activators. R.P. Pemberton

**3:45 COMP 57.** Peptide design challenges: a comparison and contrast to small molecule design. D.J. Diller, A.S. Bayden, J. Swanson, M. Jarosinski, J. Audie

**4:15 COMP 58.** Conformational sampling of macrocycles: Recent progress. P.C. Hawkins

### Advanced Potential Energy Surfaces

#### Classical Simulation Methods & Software

Sponsored by PHYS, Cosponsored by COMP

## MONDAY MORNING

### Section A

Sonesta Philadelphia Downtown Whistler A

#### Modeling Water & Solvation in Biochemistry: Developments & Applications

Cosponsored by PHYS

E. Alexov, R. Luo, *Organizers*

T. Luchko, *Presiding*

**8:30 COMP 59.** Constant pH molecular dynamics: From RNA to viral capsids and Bac. C.L. Brooks

**9:00 COMP 60.** Water penetration determines the pKa of protein internal ionizable groups. X. Wu, A. Damjanovic, J. Lee, B. Brooks

**9:30** Intermission.

**9:45 COMP 61.** Use of Monte Carlo sampling and continuum electrostatics to derive energies of charge changes in proteins: Examples from cytochrome c oxidase and photosystem II. M. Gunner, C. Chenel, D. Matta, X. Cai, S. Salah, W. Szejjis

**10:15 COMP 62.** Should I stay or should I go: Proton transfer revisited. P. Czodrowski

**10:45 COMP 63.** pH regulates BACE1 enzymatic activity and inhibitor binding. C.R. Ellis

### Section B

Sonesta Philadelphia Downtown Whistler B

#### Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation

Cosponsored by PHYS and POLY

H. Nguyen, J. Shen, *Organizers*

R. Mannige, *Presiding*

**8:30 COMP 64.** Programming functional nanoscale DNA-based materials. M. Bathe

**9:00 COMP 65.** Rational design of functional biomaterials and programmable assembly pathways. H. Nguyen

**9:30 COMP 66.** Kinetic engineering of DNA self-assembly processes. R. Schulman

**10:00** Intermission.

**10:15 COMP 67.** Effect of oligonucleic acid (ONA) backbone design on the thermodynamics of ONA hybridization and melting. A. Jayaraman, A. Ghobadi

**10:45 COMP 68.** Understanding the relationship between physical and electronic structure within biologically-inspired perylene diimide molecular array. N. Frey, A. Mazaheripour, C. Markegard, A. Bartlett, H. Nguyen, A.A. Gorodetsky, S. Sharifzadeh

**11:15 COMP 69.** Thermodynamic model of heterochromatin formation through epigenetic regulation. Q. MacPherson, S. Mao, P. Mulligan, E. Koslover, A. Spakowitz

### Section C

Sonesta Philadelphia Downtown Warhol

#### Quantum Mechanics

Cosponsored by PHYS

S. E. Wheeler, *Organizer*

J. J. Shepherd, *Presiding*

**8:30 COMP 70.** *Ab initio* propagator studies of the electronic structure of diffuse and valence anions: From fullerenes to double Rydbergs. J.V. Ortiz

**9:00 COMP 71.** Fresh look at the shape and Feschbach resonances in the CO<sub>2</sub> anion using equation of motion coupled cluster (EOM-CC) and the stabilization method. A. Bazante, R.J. Bartlett

**9:20 COMP 72.** Trapping transient species: Trianionic polyaromatic systems. A.Y. Rogachev

**9:50 COMP 73.** Solvation and transport of carbon dioxide in molten carbonates: evidence of an oxo-Groththuss mechanism via a pyrocarbonate anion. D. Corradini, F. Coudert, R. Vuilleumier

**10:20** Intermission.

**10:35 COMP 74.** Computational investigation of boronic and borinic acid interactions with poly-ols and saccharides. J.D. Larkin

**11:05 COMP 75.** Iron porphyrin electrocatalysts for oxygen reduction: Mechanistic insight. N. Kumar, M. Pegis, B.A. McKeown, J.M. Mayer

**11:35 COMP 76.** Composite approaches for accurate predictions of lanthanide and actinide chemistry. C.C. Peterson, D.A. Penchoff, A.K. Wilson

**12:05 COMP 77.** Withdrawn.

### Section D

Sonesta Philadelphia Downtown Benton

#### Sharing Pharmaceutical Industry Data: Outlook & Opportunities

B. Sherborne, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:40 COMP 78.** New momentum in pre- and post-competitive pharma data sharing - getting the right data to drive the science. B. Sherborne, C. Peishoff, V.A. Feher, E.S. Manas, V. Shanmugasundaram, L. Shewchuk-Chapman, C.W. Hutchins

**9:10 COMP 79.** Data sharing and beyond: Lessons learned from the life sciences industry. C.I. Nitsche

9:40 COMP 80. ChEMBL database – Experiences as a data broker. L. Bellis

10:10 COMP 81. D3R: Leveraging datasets to drive progress in protein-ligand modeling for computer-aided drug design. V.A. Feher

10:40 Panel Discussion.

### Section E

Sonesta Philadelphia Downtown  
Wyeth Gallery C

#### QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications

Cosponsored by PHYS

J. Gao, J. Pu, W. Yang, *Organizers*

Y. Shao, *Presiding*

8:30 Introductory Remarks.

8:35 COMP 82. Studies of chemical reactions of organic molecules, enzymes, and metal-organic frameworks by means of QM/MM and QM/QM computational approaches. H. Hirao

9:05 COMP 83. Redefining enzyme catalysis: Chemical control in the battle against fidelity in promiscuous terpene synthases. D.T. Major

9:35 COMP 84. Multiple-environment single-system quantum mechanical molecular mechanical methods and their applications in reaction pathway studies. Y. Shao, E.R. Rosta, H.L. Woodcock, W. Yang, B. Brooks

10:05 Intermission.

10:20 COMP 85. Mechanistic strategies in ribozymes: Catalytic roles of metal ions, nucleobases, and cofactors. S. Hammes-Schiffer, P.C. Bevilacqua

10:50 COMP 86. Enzymatic chemical step mechanism coupled with artificial enzyme design from path sampling calculations. S.D. Schwartz

11:20 COMP 87. Computational enzymology: from mechanistic studies to modulator design. Y. Zhang

#### Advanced Potential Energy Surfaces QM with MM

Sponsored by PHYS, Cosponsored by COMP

#### Shedding Light on the Dark Genome: Methods, Tools & Case Studies

Sponsored by CINP, Cosponsored by BIOT, COMP and MEDI

## MONDAY AFTERNOON

### Section A

Sonesta Philadelphia Downtown  
Whistler A

#### Modeling Water & Solvation in Biochemistry: Developments & Applications

Cosponsored by PHYS

E. Alexov, R. Luo, *Organizers*

A. V. Onufriev, *Presiding*

1:30 COMP 88. Ras signaling: A challenge to the biological sciences. H. Jang, R. Nussinov

2:00 COMP 89. Modeling intermolecular interactions and liquid-liquid phase equilibria in cell-like conditions. S. Qin, H. Zhou

2:30 Intermission.

2:45 COMP 90. Thermodynamics of virus capsid assembly in aqueous solution. K.M. Merz

3:15 COMP 91. Electrostatics and binding properties of G-protein coupled receptors. R. Abagyan, I. Kufareva

3:45 COMP 92. Interpreting thermodynamic profiles of aminoadamantane compounds inhibiting the M2 proton channel of influenza A by free energy calculations. N. Homeyer, H. Ioannidis, F. Kolarov, G. Gauglitz, C. Zikos, A. Kolocouris, H. Gohlke

### Section B

Sonesta Philadelphia Downtown  
Whistler B

#### Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation

Cosponsored by PHYS and POLY

H. Nguyen, J. Shen, *Organizers*

S. Sharifzadeh, *Presiding*

1:30 COMP 93. Protein assemblies by design. V.P. Conticello

2:00 COMP 94. Designing nanogel star polymers for drug delivery applications: Insight from simulations. A.C. Carr, W.C. Swope, V. Piuonova, J.E. Rice, R.D. Miller, J.W. Pitera

2:30 COMP 95. New class of highly stable and self-repairing membrane-mimetic 2D materials assembled from lipid-like peptoids. C. Chen

3:00 Intermission.

3:15 COMP 96. Peptoid nanosheets exhibit a new secondary-structure motif. R. Mannige

3:45 COMP 97. Grafted polymer layers for biomaterials. I.A. Luzinov

4:15 COMP 98. Harnessing biomimetic cryptic bonds to form self-reinforcing gels. S. Biswas, V.V. Yashin, A.C. Balazs

### Section C

Sonesta Philadelphia Downtown  
Warhol

#### Molecular Mechanics

M. Feig, *Organizer*

S. Capponi, *Presiding*

1:30 COMP 99. Using theory and experiment to elucidate the origin of product specificity in PRMT1. O. Acevedo, S. Gathiaka, B. Boykin, B. Caceres, J. Hevel

2:00 COMP 100. Computational modelling structure-function relationships of tyrosyl-protein sulfotransferase. C. Christov, T. Karabencheva-Christova, W. Singh

2:30 COMP 101. Temperature effects on the dynamics of light harvesting complex II. Y. Wang, Y. Weng, J. Gao

3:00 COMP 102. Cooperative motion of a key positively charged residue and metal ions for DNA replication catalyzed by Y-family polymerases. V. Genna, R. Gaspari, M. Dal Peraro, M. Devivo

3:30 Intermission.

3:45 COMP 103. Description and assessment of common RNA dinucleotide conformations generated by different force field / water model combinations. H.S. Hayatshahi, T.E. Cheatham

4:15 COMP 104. Delineating ion modulated conformational changes in ribosomal RNA using grand-canonical Monte-Carlo/molecular dynamics simulations. S.K. Lakkaraju, J.A. Lemkul, A.D. Mackerell

4:45 COMP 105. Molecular dynamics studies of the effects of histone variant on nucleosome dynamics. J. Wereszczynski

### Section D

Sonesta Philadelphia Downtown  
Benton

#### Sharing Pharmaceutical Industry Data: Outlook & Opportunities

B. Sherborne, *Organizer, Presiding*

1:30 Introductory Remarks.

1:40 COMP 106. Rapid, accurate and reproducible binding affinity calculation for drug discovery: A retrospective analysis of the Pfizer Pan-Trk Program. S. Wan, A. Bhati, P.V. Coveney, S. Skerratt, K. Gore, S.K. Bagal, V. Shanmugasundaram, K. Omoto

2:20 COMP 107. Developing a community resource for the understudied kinome. T.M. Willson

2:50 COMP 108. Advancing quantitative biophysical predictions: What can be gained from industry-academic data sharing? J.D. Chodera

3:30 COMP 109. Beyond data sharing: Using real-world data for teaching real-world computational workflows and for benchmarking new methods. J.M. Jansen, R.E. Amaro, Y. Tseng, W.D. Cornell, E.X. Esposito, P. Walters

4:00 Panel Discussion.

### Section E

Sonesta Philadelphia Downtown  
Wyeth Gallery C

#### QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications

Cosponsored by PHYS

J. Gao, J. Pu, W. Yang, *Organizers*

L. V. Slipchenko, *Presiding*

1:30 COMP 110. Quantum embedding method to simulate proton reduction reactions in transition-metal catalysts. P. Huo, J. Goodpaster, T.F. Miller

2:00 COMP 111. Full embedding QM/MM with the effective fragment potential method. L.V. Slipchenko

2:30 COMP 112. Studies of natural and artificial photosynthesis. V.S. Batista

3:00 Intermission.

3:15 COMP 113. Simulating chemical and redox processes in solution and in enzymes. W. Yang

3:45 COMP 114. QM/MM simulations of electron/proton transfer reactions and protein excited states. M. Elstner

4:15 COMP 115. Photobiology in action: excited-state QM/MM simulations for understanding photodynamics in biological systems. D. Morozov, G. Groenhof

#### Advanced Potential Energy Surfaces

##### Excited State Surfaces

##### & Spectroscopy

Sponsored by PHYS, Cosponsored by COMP

#### Tetrahedron Prize for Creativity in Organic Chemistry Symposium

Sponsored by ORGN, Cosponsored by BIOL, COMP and MEDI

#### Undergraduate Research Posters

##### Computational Chemistry

Sponsored by CHED, Cosponsored by COMP and SOCED

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

H. L. Woodcock, *Organizer*

8:00 - 10:00

187-188, 191, 197, 206, 209, 211, 215, 227, 231, 237-239, 242-243, 246, 248, 251, 253, 255, 259-261, 264, 266-267, 272, 275-277, 283-284, 288, 292, 295, 297-303, 305-306. See subsequent listings.

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## TUESDAY MORNING

## Section A

Sonesta Philadelphia Downtown  
Whistler B

### Modeling Water & Solvation in Biochemistry: Developments & Applications

Cosponsored by *PHYS*

E. Alexov, R. Luo, *Organizers*

X. Wu, *Presiding*

**8:30 COMP 116.** Mathematical methods for solvation and binding free energy predictions. G. Wei

**9:00 COMP 117.** Sampling protein functional dynamics via solvation force fluctuation. W. Yang

**9:30 COMP 118.** Solvation free energy decomposition using the 3D-RISM theory of molecular solvation. T. Luchko

**10:00** Intermission.

**10:15 COMP 119.** Choice of water model matters. A.V. Onufriev

**10:45 COMP 120.** Polarizable force fields for condensed phase simulation. T.L. Head-Gordon

**11:15 COMP 121.** Determining polarizable force fields with electrostatic potentials from quantum mechanical linear response theory. H. Wang, W. Yang

## Section B

Sonesta Philadelphia Downtown  
Whistler A

### Molecular Mechanics

M. Feig, *Organizer*

J. Huang, *Presiding*

**8:30 COMP 122.** Development of TraPPE-UA2 models for ethane and ethylene and adsorption in all-silica zeolites. M.S. Shah, M. Tsapatsis, J.I. Siepmann

**9:00 COMP 123.** Kirkwood-Buff derived force field for polyols. N. Kariyawasam Manachighe, P.E. Smith

**9:30 COMP 124.** Development of torsional potentials for the KBFF model of peptides and proteins. S. Karunaweera, P.E. Smith

**10:00 COMP 125.** Improved conformational sampling of intrinsically disordered proteins with the modified CHARMM36 protein force field. J. Huang, A.D. Mackerell

**10:30** Intermission.

**10:45 COMP 126.** Charge models for force fields from condensed phase quantum calculations. W.C. Swope, J.E. Rice

**11:15 COMP 127.** Efficient and accurate pKa calculator using the QM-NBB method. F.L. Kearns, P.S. Hudson, S. Boresch, H.L. Woodcock

**11:45 COMP 128.** Continuous constant pH molecular dynamics with particle mesh Ewald and titratable water. Y. Huang, W. Chen, J.A. Wallace, J. Shen

## Section C

Sonesta Philadelphia Downtown  
Warhol

### Quantum Mechanics

Cosponsored by *PHYS*

S. E. Wheeler, *Organizer*

Y. Jin, *Presiding*

**8:30 COMP 129.** Energy decomposition analysis with a well-defined charge-transfer term for interpreting intermolecular interactions. J. Herbert, K. Lao

**9:00 COMP 130.** Energy decomposition analysis in an adiabatic picture – assessing the effect of different components of an intermolecular interaction on molecular properties. Y. Mao, P. Horn, M.P. Head-Gordon

**9:20 COMP 131.** Insight into the locality of intermolecular interactions in organic crystals using conceptual density functional theory. R. Bhattacharjee, M. Zhang, T. Li

**9:50 COMP 132.** Electron scattering in Liouville space: From coherence to decoherence to incoherence? R. Jörn

**10:20** Intermission.

**10:35 COMP 133.** Quantum chemistry strategies for the transition metals: Towards nondynamic electron correlation. A.K. Wilson

**11:05 COMP 134.** Linear-response absorption spectra from explicitly time-dependent CC2. A.E. DePrince

**11:35 COMP 135.** Exact Quantum Monte Carlo calculations for the H-H-H system at the sub-microhbar level. J.B. Anderson

## Section D

Sonesta Philadelphia Downtown  
Benton

### Polypharmacology: How Little Can One Afford? How Much Can You Predict?

P. Walters, *Organizer*

P. Czodrowski, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 COMP 136.** Polypharmacology: Useful? C.G. Bologa, O. Ursu, J.J. Yang, T.I. Oprea

**9:05 COMP 137.** Decoding polypharmacology from phenotypic screens. M.N. McCarroll, L. Gendeleev, D. Kokel, M.J. Keiser

**9:35 COMP 138.** BIOSEA: leveraging compound bioactivity data for prospective target identification and phenotypic screening. A. Cortes Cabrera, D. Lucena Agell, M. Redondo-Horcajo, I. Barasoain, F. Diaz, B. Fasching, P. Petrone

**10:05** Intermission.

**10:20 COMP 139.** Application of polypharmacology in daily research project work. M. Bieler

**10:50 COMP 140.** Comprehensive analysis in drug target identification using protein sequence, structure, and ligand similarity approaches. Y. Chen, R. Tolbert, A.M. Aronov, G. McGaughey, P. Walters, L. Meireles

**11:20 COMP 141.** Mapping the binding sites of the annotated structural proteome – Implications for polypharmacology. N. Brown

## Section E

Sonesta Philadelphia Downtown  
Wyeth Gallery C

### QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications

Cosponsored by *PHYS*

J. Gao, J. Pu, W. Yang, *Organizers*

H. Lin, *Presiding*

**8:30 COMP 142.** Graphical methods for systematic and predictive reaction exploration in complex systems and environments. P.M. Zimmerman

**9:00 COMP 143.** Molecular kinetics from biased simulations. E.R. Rosta

**9:30 COMP 144.** Adaptive-partitioning QM/MM for dynamics simulations. A. Duster, C. Garza, M. Zarecki, H. Lin

**10:00** Intermission.

**10:15 COMP 145.** Beyond QM/MM: Development of multistate density functional theory with explicit polarization for charge transfer processes. J. Gao

**10:45 COMP 146.** Withdrawn.

**11:15 COMP 147.** Polarizable/multipolar and long-range corrected methods for QM/MM simulations. E.G. Kratz, R.E. Duke, G.A. Cisneros

### Advanced Potential Energy Surfaces

#### Ab initio Molecular Dynamics

Sponsored by *PHYS*, Cosponsored by *COMP*

## TUESDAY AFTERNOON

## Section A

Sonesta Philadelphia Downtown  
Whistler B

### Drug Discovery

#### Novel Approaches in Ligand-Based Drug Design & Cheminformatics

M. R. Landon, Y. Tseng, *Organizers*

A. Abbaspour Tamijani, *Presiding*

**1:30 COMP 148.** Evaluation of the virtual screening performance and core-hopping potential of common pharmacophore hypotheses derived from phase's novel pharmacophore feature-based shape alignment. M. Repasky, S. Dixon, E. Mack, W. Duncan, C. Von Bargen

**2:00 COMP 149.** *In silico* design of  $\beta$ -secretase 1 (BACE1) inhibitors. R. Fraczekiewicz, D. Miller, M.S. Lawless, R.D. Clark

**2:30** Intermission.

**2:45 COMP 150.** Structural diversity and potency range distribution of scaffolds in bioactive compounds and assessment of scaffold hopping versus activity cliff formation. D. Stumpfe, D. Dimova, J. Bajorath

**3:15 COMP 151.** Extraction of structure-activity relationship information from activity cliff clusters via matching molecular series. D. Dimova, J. Bajorath

**3:45 COMP 152.** Marvin Live: An integrated tool for knowledge driven/information rich live design sessions. A. Strácz, A. Costache

## Section B

Sonesta Philadelphia Downtown  
Whistler A

### Molecular Mechanics

M. Feig, *Organizer*

N. Chen, *Presiding*

**1:30 COMP 153.** Atomistic simulation of diblock-like peptoids forming membrane-mimetic 2D material. M.D. Baer, C. Chen

**2:00 COMP 154.** Modeling anisotropy of vapor deposited films for OLED application. D. Yu, S.G. Arturo, D. Devore, K. Kearns, J. Kramer, S. Mulkhpadhyay, L. Spencer, P. Trefonas

**2:30 COMP 155.** Utilizing Gibbs ensemble molecular dynamics and hybrid Monte Carlo/molecular dynamics simulations for efficient study of polymer-solvent phase equilibria. T.E. Gartner, T.H. Epps, A. Jayaraman

**3:00 COMP 156.** Modeling ion specific effects: Toward correlations with hydrophobic solvation via aqueous interfacial fluctuations. S.A. Patel

**3:30** Intermission.

**3:45 COMP 157.** Understanding peptide self-assembly with multiscale modeling. J. Li

**4:15 COMP 158.** Mapping the kinetic folding and binding networks of amyloid- and helix-forming peptides using coarse master equations. C.T. Leahy, R.D. Murphy, S.C. McCartan, B. Tywoniuk, Y. Yuan, A. Crowe, G. Sánchez-Sanz, D. Roy, N. Buchete

**4:45 COMP 159.** Effect of lipids and cholesterol on the stability of the amyloid precursor protein (APP) homodimer. M. Audagnotto, M. Dal Peraro

## Section C

Sonesta Philadelphia Downtown  
Warhol

### Material Science

H. L. Woodcock, *Organizer*

G. Leuty, *Presiding*

**1:30 COMP 160.** Breaking badly: DFT-D2 gives sizeable errors for tensile strengths in bulk solids. B.M. Wong

**2:00 COMP 161.** (110) Facet of rutile GeO<sub>2</sub> energetics: A dispersion-corrected DFT study. A. Abbaspour Tamijani

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**2:30 COMP 162.** Superhard borides: mechanism of hardness, its anisotropy, and ways to enhance it. **A. Alexandrova**

**3:00** Intermission.

**3:20 COMP 163.** Development of an improved intermolecular force field for MoS<sub>2</sub> adsorption simulations. **G.M. Leuty**, H. Turner, V. Varshney, C. Muratore, R.J. Berry

**3:50 COMP 164.** Computational design of highly active Ir catalysts for water oxidation. **K. Yang**, V.S. Batista

**4:20 COMP 165.** Oxygen reduction reaction catalysis in graphene-conjugated pyrazine with a cationic nitrogen. **N. Ricke**, J.J. Shepherd, M.G. Welborn, T.A. Van Voorhis

## Section D

Sonesta Philadelphia Downtown  
Benton

### Polypharmacology: How Little Can One Afford? How Much Can You Predict?

P. Czodrowski, *Organizer*

P. Walters, *Organizer, Presiding*

**1:30 COMP 166.** Predicting surprising polypharmacology. **A.N. Jain**, A.E. Cleves

**2:00 COMP 167.** What is required for alchemical free energy methods to be useful in predicting drug polypharmacology? **J.D. Chodera**

**2:30 COMP 168.** Kinome wide off-target prediction by mining structural and profiling data. **S. Fulle**, A. Volkamer, B. Merget, S. Turk, S. Eid, F. Rippmann

**3:00** Intermission.

**3:15 COMP 169.** Polypharmacology prediction with SPIDER for *de novo* designed compounds and natural products. **D. Reker**, G. Schneider

**3:45 COMP 170.** Contrasting polypharmacology and pains. **A. Tropsha**, S. Capuzzi

**4:15 COMP 171.** Understanding cytotoxicity in high-throughput screening collections using an *in silico* polypharmacological prediction protocol. **L. Mervin**, Q. Cao, I. Barrett, M. Firth, D. Murray, O. Engkvist, A. Bender

**4:45** Concluding Remarks.

## Section E

Sonesta Philadelphia Downtown  
Wyeth Gallery C

### QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications

*Cosponsored by PHYS*

J. Gao, J. Pu, W. Yang, *Organizers*

H. L. Woodcock, *Presiding*

**1:30 COMP 172.** Interpreting solvent effects on chemical reactivity using QM/MM simulations. **O. Acevedo**

**2:00 COMP 173.** Transition-tempered metadynamics accelerates the convergence of free energy surfaces in biomolecular systems from QM/MM simulation. **R. Sun**, O. Sode, J.F. Dama, G.A. Voth

**2:30 COMP 174.** Recent advances in the development of QM/MM free energy methods to study biocatalysis. **D.M. York**

**3:00** Intermission.

**3:15 COMP 175.** QM/MM simulations of organic and enzymatic reactions in solution. **J.Z. Vilseck**, W.L. Jorgensen

**3:45 COMP 176.** Understanding metalloenzyme catalysis with QM/MM free energy simulations. **Q. Cui**

**4:15 COMP 177.** Obtaining accurate QM/MM free energies using novel sampling and reweighting approaches. **P.S. Hudson**, F.L. Kearns, S. Boresch, H.L. Woodcock

## TUESDAY EVENING

### Section A

Pennsylvania Convention Center  
Hall E

#### NVIDIA GPU Award

*Financially supported by NVIDIA Corporation*

M. E. Berger, *Organizer*

**6:00 - 8:00**

**COMP 178.** Extending excited state quantum chemistry to large-scale systems using graphical processing units. **B. Fales**, B. Levine

**COMP 179.** Leveraging GPU-accelerated molecular dynamics simulations to compute and analyze the 4D chemical descriptor space of ERK2 kinase inhibitors. **J. Ash**, D. Fourches

**COMP 180.** Atomic multipole polarizable model for nucleotides. **C. Lu**, J.W. Ponder

**COMP 181.** Convolutional neural networks for protein-ligand scoring. **M. Ragoza**, J. Collins, D. Koes

**COMP 182.** Cholesterol-enriched bilayers present a substantial barrier to oxygen permeation. **C.R. Smith**, K. Bueche, R. Dotson, G. Angles, **S.C. Plas**

### Section A

Pennsylvania Convention Center  
Hall E

#### OpenEye Outstanding Junior Faculty Award in Computational Chemistry

C. L. Simmerling, *Organizer*

**6:00 - 8:00**

**COMP 183.** Electronic excitation dynamics in liquid water under proton irradiation. **Y. Kanai**

**COMP 184.** Elucidating heterogeneous ice nucleation mechanisms using large scale rare event simulations. **S. Sarupia**, B. Glatz, R. Defever, W. Hanger, L. Ngo, A. Apon

**COMP 185.** Discovery of reaction mechanisms, catalysts, and materials by new quantum chemical simulation methods. **P.M. Zimmerman**

**COMP 186.** Divide and conquer the electronic structure of condensed phases: Ground states and dynamics in real and imaginary time. **M. Pavanello**

### Section A

Pennsylvania Convention Center  
Hall E

#### Poster Session

H. L. Woodcock, *Organizer*

**6:00 - 8:00**

**COMP 187.** Understanding the effect of amino acid conformation on binding affinity to Au(111) using quantum mechanical calculations. **M.C. Small**, J.L. Terrell, D.A. Sarkes, B.L. Adams, H. Dong, J. Jahnke, D.N. Stratis-Cullum, M. Hurley

**COMP 188.** Multi-scale simulation of amyloid fibril growth: Trap states and main pathways. **Z. Jia**, A. Beugelsdijk, J.D. Schmit, J. Chen

**COMP 189.** Structure and mode of action of organophosphate pesticides: A computational study. **L.K. Rathnayake**, S.H. Northrup

**COMP 190.** AutoDock-GIST: Incorporating thermodynamics of active-site water into scoring function for accurate protein-ligand docking. **S. Uehara**, S. Tanaka

**COMP 191.** Identification of rare oligosaccharide conformers using swarm-enhanced sampling molecular dynamics (sesMD). **I. Alibay**, K.K. Burusco, N.J. Bruce, R.A. Bryce

**COMP 192.** De novo design of proteins to encapsulate nonbiological cofactors. **J. Blum**, J.G. Saven

**COMP 193.** Modeling the structure and reactivity of Al<sup>3+</sup>/Fe<sup>3+</sup> substitution in kaolinite. **T. Hicks**, R.K. Szilagyi

**COMP 194.** *In silico* modeling of dopamine transporter and design of novel neuroprotective agents. **T. Djikic**, K. Yelekci

**COMP 195.** Design of orthogonal split inteins in silico. **S.C. Arbor**

**COMP 196.** Challenges in generating bioactive small molecule conformations. **Q. Yang**, B.K. Rai, X.J. Hou

**COMP 197.** What does it take to drive our prediction accuracy up? **Y. Gao**, A. Crespo, A. Verras, Y. Li, R. Wang, M. Holloway, Y. Hu, Z. Guo, B. Sherborne

**COMP 198.** Exploring conformations of human fatty acid synthase inhibitors using replica exchange molecular dynamics. **N. Mele**, M. Miljak, R. Ward, J. WEssex

**COMP 199.** Comparative theoretical study of oxygen adsorption on neutral and anionic Ag<sub>n</sub> and Au<sub>n</sub> clusters (n = 2 - 25). **J.D. Watts**, M. Liao, M. Huang

**COMP 200.** Surprisal-based adaptive sampling of all-atom simulations for rapid convergence of Markov state models. **G. Miller**, V. Voelz

**COMP 201.** Probing the effects of N-methylation on peptide-protein interactions using alchemical free energy perturbation. **M. Hurley**, A. Wakefield, V.A. Voelz

**COMP 202.** Assessment of actinide/lanthanide complexation using density functional theory. **A. Dinescu**, T. Weaver

**COMP 203.** pH dependent NMR chemical shifts of model peptides. **E. Artikis**, C.L. Brooks

**COMP 204.** Application of virtual screening and molecular dynamic simulations to the discovery of new antibiotics for LpxC in gram-negative bacteria. **V.K. Thilakarathne**

**COMP 205.** Molecular dynamics investigation of the stability of sarcin/ricin domains: Towards using adaptively biased MD to find the full dynamic range of RNA. **J.M. Imamoto**, M.F. Bruist

**COMP 206.** Modeling 10000 antibodies in about an hour: Leveraging the power of the Amazon Cloud. **E. Metwally**, A. Ajamian

**COMP 207.** Hierarchical nanoparticles in photodynamic therapy. **N. Eldabagh**, J. Foley

**COMP 208.** Constant pH molecular dynamics simulations of pH responsive polymers. **A. Sharma**

**COMP 209.** Application of extended Huckel Theory to pharmacophore modeling. **A. Ajamian**

**COMP 210.** Investigation of the role of metal ion in the active site of hammerhead ribozyme by Hamiltonian replica exchange molecular dynamics simulations. **H. Chen**, D.M. York

**COMP 211.** Identification and statistical analysis of structurally conserved waters via R. **E.X. Esposito**

**COMP 212.** Nanoscale structure of lipid bilayers revealed by *in-silico* and experimental small angle neutron scattering. **M. Dorrell**, F. Heberle, J. Katsaras, E. Lyman

**COMP 213.** Nonlinear onset of calcium wave propagation in cardiac cells. **O. Zavalov**

**COMP 214.** Using Markov state models to better understand the effects of mutations on folding. **H. Wan**, V.A. Voelz

**COMP 215.** Rationalizing non-standard interactions in ligand design: The duality of halogens. **A. Deschènes**

**COMP 216.** Employing genetic algorithms to drive *de novo* design. **C.D. Singleton**, W.J. Allen, R.C. Rizzo

**COMP 217.** Developing mutant-specific inhibitors of HER2 incorporating bridging water molecules. **J. Guo**, S. Collins, T. Miller, R.C. Rizzo

**COMP 218.** Computational screening and selection of linear peptide hairpin mimetics by implicit solvent molecular simulation. **Y. Ge**, B. Kier, N.H. Andersen, V.A. Voelz

**COMP 219.** Visible light-driven energy transfer: Hybrid engineered nanostructures versus plasmonic resonance in solar cell applications. **J. Coddington**, J. Foley

**COMP 220.** Stirring a low Reynolds number MARTINI. **A. Zgorski**, E. Lyman

**COMP 221.** Evaluation of multi-function scoring strategies for DOCK. **Y. Zhou**, R.C. Rizzo

**COMP 222.** Computation calorimetry. **A. Webb**, C. Arnarez, E. Lyman

**COMP 223.** MARTINI coarse-grained simulations of pH-driven aggregation of EAK16 peptides. **L. Chong**, S. Mushnoori, M. Dutt

**COMP 224.** Ultra-coarse-grained models for gelling-forming mucins. **P. Lin**, F. Ramezanghorbani, C.M. Colina

**COMP 225.** Characterization of the binding pocket of FABP5 by docking studies and molecular dynamics simulations of ligands discovered by high throughput screening. **C.D. Bruce**, B. Brown, N. Hunter

**COMP 226.** DMS: An equation-free multiscale molecular dynamics simulator. **A. Abi Mansour**, P. Ortoleva

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

- COMP 227.** Computer aided discoveries: Predictive modeling for polymers, coating systems and drug like molecules. **F. Jabeen, M. Ossowski, P.R. Boudjouk**
- COMP 228.** Early stage of acid-induced BBL unfolding. **Z. Yue, J. Shen**
- COMP 229.** Study on the gas and heat-treated graphite edge planes using reactive forcefield. **H. Guk, D. Chung, D. Kim, S. Choi**
- COMP 230.** Mechanism of diastereoselective encapsulation of tartaric acid by arylamide foldamers: a computational investigation. **M. Wujcik, V. Pophristic, Z. Liu**
- COMP 231.** Relative importance of energy components in CMDwater – a computational tool for making decisions about displacing crystallographic waters during lead optimization. **A.S. Bayden**
- COMP 232.** Computational filters for virtual screening of new battery electrolyte solvents. **D. Chung, D. Kim, H. Guk, S. Choi**
- COMP 233.** Development of a general approach to study pH-reaction mechanism of nucleic acid systems. **J. Ouyang, C. Gaines, D.M. York**
- COMP 234.** Density functional theoretical study on 2,7-carbazole and thieno[3,4-c]pyrrole-4,6-dione-based copolymers. **Y. Cho, S. Hwang, H. Woo**
- COMP 235.** Density functional theoretical study on alkoxy- or alkylthio-substituted phenylene and benzothiadiazole containing photovoltaic polymers. **S. Hwang, H. Woo**
- COMP 236.** Coarse-grained model for multi-scale enhanced sampling of disordered protein conformations. **X. Liu, J. Chen**
- COMP 237.** Exploring pH-modulated binding of BACE1 inhibitors by constant pH molecular dynamics. **C. Tsai, C.R. Ellis, J. Shen**
- COMP 238.** New Ewald method for ab initio QM/MM molecular dynamics simulation. **T.J. Giese, D.M. York**
- COMP 239.** Water dominates the specific antithrombin-heparin interaction. **P.D. Mosier, W. Yu, U.R. Desai, A.D. Mackerell, A. Sarkar**
- COMP 240.** Ongoing developments in the CHARMM general force field. **G. Mukherjee, K. Vanommeslaeghe, A.D. Mackerell**
- COMP 241.** Cation size effects on first electronic transition of proton-water cluster: electronic delocalization of hydrated proton in liquid water. **T. Goto, K. Bec, Y. Ozaki**
- COMP 242.** Effect of fluorinated sugar on antiproliferation factor (APF) conformational properties. **A. Aytenfis, J.J. Barchi, A.D. Mackerell**
- COMP 243.** Democratizing the creation and application of machine learning models with AutoQSAR. **M. Repasky, S. Dixon, J. Duan, C. Von Bargen**
- COMP 244.** Conformational sampling of intrinsically disordered peptides by enhanced sampling methods. **M. Mijak, N. Mele, E. Haensele, D. Whitley, L. Banting, T.R. Clark, R. Ward, J.W. Essex**
- COMP 245.** N-heterocyclic carbene-based nickel and palladium complexes: A DFT comparison of the Mizoroki-Heck catalytic cycles. **V.H. Menezes da Silva, A. A. C. Braga, T.R. Cundari**
- COMP 246.** Unified framework for computer-aided biologics design. **R. Alvarez, H. Shadnia**
- COMP 247.** Molecular encapsulation of sugar alcohols by arylamide foldamers: a computational chemistry study. **E.C. Fluck, Z. Liu, V. Pophristic**
- COMP 248.** Improved AMOEBA ions for aqueous salt solution simulation. **Z. Wang, J.W. Ponder**
- COMP 249.** Action at a distance: How distal residues contribute to catalysis in human phosphoglucose isomerase. **S.C. Begay, P.J. Beuning, M.J. Ondrechen**
- COMP 250.** *De novo* ligand design using DOCK6. **B.C. Fochtman, W.J. Allen, R.C. Rizzo**
- COMP 251.** Seamless integration of 2D and 3D SAR to guide medicinal chemistry. **J. Chisholm, M. Gastreich, E. Champness, C. Detering, P. Hunt, T. Mansley, C. Lemmen, M. Segall**
- COMP 252.** Evaluation of the solubility of cellulose in water: Free energy calculation using ER method. **K. Ueda, M. Matsushita, K. Kataoka, Y. Matsubara**
- COMP 253.** Unique mechanistic characteristics of the *glmS* ribozyme. **K. Kostenbader, D.M. York**
- COMP 254.** Molecular simulation study of the polycyclic aromatic small molecules as amyloid beta 40 modulators for treatment of Alzheimer's disease. **C. Jin, J. Kim, J. Shin, E. Tumurbaatar, S. Jee, S.S. Jang**
- COMP 255.** Parametrization of halogen bonds in the CHARMM general force field. **F. Lin, I. Soteras, K. Vanommeslaeghe, J.A. Lemkul, K. Armacost, A.D. Mackerell**
- COMP 256.** Classification of distinct conformers of  $\beta_2$ -adrenergic receptor ( $\beta_2$ AR) based on binding affinity of ligands through docking studies. **E.D. Akten, G. Dilcan**
- COMP 257.** Principal component analysis applied to jacobian matrices from structural kinetic modeling. **N.J. Carbonaro, I.F. Thorpe**
- COMP 258.** Theoretical investigation of the relaxation energies and coupling constants in a series of pyrene derivatives fused with N-, S-, and O-containing heterocycles. **B. Wex, M. Nakhoul, E. Challita, A. Merhi**
- COMP 259.** Post-transition state dynamics and micro solvation effects of F atom + CH<sub>3</sub>CN → HF + CH<sub>2</sub>CN exothermic reaction. **S. Pratihari, X. Ma, R. Scott, W.L. Hase**
- COMP 260.** D3R 2015 and 2016 challenges: Evaluation of predictions for the grand and mini challenges. **S.M. Gathiaka, M. Chiu, J. Grethe, S. Liu, H. Yang, S. Burley, R.E. Amaro, V. Feher**
- COMP 261.** Strategies for improving accuracy in carbohydrate NMR chemical shifts computations via free energy simulation. **P.S. Hudson, B.C. Pollard, M.F. Crowley, H.L. Woodcock**
- COMP 262.** Application of wavelet transform for tumor/non-tumor classification of high-dimensional microarray data. **Z. Heidari, A. Ardakani, J. Ghasemi**
- COMP 263.** Predicting properties of fuels using molecular dynamics. **B.H. Morrow, M. Gustafson, J.A. Harrison**
- COMP 264.** Improving conformational sampling of RNA using the GB-Neck2 implicit solvent model. **K. Lam, C.L. Simmerling**
- COMP 265.** Evaluation of natural enzymes for catalysis of Morita-Baylis-Hillman reaction. **N. Gencçakir, N. Celebi-Olcum, B. Akbulut**
- COMP 266.** Building up boron nanomaterials: From B to B<sub>24</sub> and beyond. **B. Catalano, G. Curtin, D. Vassileva, J.R. Rocha**
- COMP 267.** Monosubstituted phenylboronic acids, R-B(OH)<sub>2</sub> (R = C<sub>6</sub>H<sub>5</sub>, C<sub>6</sub>H<sub>4</sub>CH<sub>3</sub>, C<sub>6</sub>H<sub>4</sub>NH<sub>2</sub>, C<sub>6</sub>H<sub>4</sub>OH, and C<sub>6</sub>H<sub>4</sub>F): A computational investigation. **N.Z. Rao, J.D. Larkin, C.W. Bock**
- COMP 268.** Evaluation of natural enzymes for catalysis of Morita-Baylis-Hillman reaction. **N. Gencçakir, N. Celebi-Olcum, B. Akbulut**
- COMP 269.** Implementing experiment directed simulations. **D.B. Amirkulova, A. White**
- COMP 270.** Investigation of allene oxide to cyclopentenone cyclization mechanism through a diradical oxyallyl intermediate. **S. Hebert, J.K. Cha, A.R. Brash, H.B. Schlegel**
- COMP 271.** Mutational analysis of A1-domain interface residues that enhance the binding affinity of A2-domain of the blood coagulation factor VIIIa: A computational binding free-energy study. **S. Shearin, D. Venkateswarlu**
- COMP 272.** Targeting viral receptors using binding free energy-based virtual screening and GPU-accelerated software. **B. Zhang, D. Kilburg, R.P. Murelli, R.M. Levy, E. Gallicchio**
- COMP 273.** *In silico* approaches to design power conversion efficient organic dyes for dye-sensitized solar cells: Amalgamation of direct QSPR and first principles approach. **J.K. Roy, S. Kar, J.R. Leszczynski**
- COMP 274.** Discovery of novel HIV-1 integrase by pharmacophore and structured-based virtual screening. **A. Ardakani, Z. Heidari, J. Ghasemi**
- COMP 275.** Structural insight into agonist activity of cannabinoid receptor type-2 ligands using molecular dynamics simulation. **V.K. Yadav, K.M. Elokely, M.L. Klein**
- COMP 276.** Investigating the fluorescence mechanism of boron-nitrogen based glucose chemosensors with QM/MM. **F.L. Kearns, C. Robart, M.T. Kemp, J.D. Larkin, H.L. Woodcock**
- COMP 277.** Computational investigation of boronic acids with common antioxidant species. **D. Hobbs, J.D. Larkin**
- COMP 278.** Computational application of Hartree-Fock theory: characterizing relationships between fundamental atomic properties. **L. VanLaar, R.L. Dekock**
- COMP 279.** *In silico* profiling of activating mutations in cancer. **E.J. Jordan, R. Radhakrishnan**
- COMP 280.** Binding of apolipoprotein-based nanoparticles to amyloid beta and the effect on amyloid beta misfolding for the treatment of Alzheimer's disease: a molecular simulation study. **S. Jee, Y. Kim, S.S. Jang**
- COMP 281.** Inhibitory mechanism of a fullerene derivative against amyloid- $\beta$  peptide aggregation: an atomistic simulation study. **Y. Sun**
- COMP 282.** Synthesis, spectroscopic characterization, *in vitro* bioactivities, interaction with DNA and DFT study of aliphatic ferrocenyl ureas. **F. Asghar, A. Badshah, I.S. Butler**
- COMP 283.** Effective Hamiltonian modeling of molecular water oxidation catalysts with multiple transition metal centers: Highly-scalable studies of catalyst stability for renewable energy applications. **J.R. Buchwald, V. Meunier, P.H. Dinolfo**
- COMP 284.** Alchemical computational methodologies for the estimation of binding free energies of supramolecular complexes. **R. Pal, L.B. Wickstrom, E. Gallicchio**
- COMP 285.** Luminescence properties of gold and silver nanoparticles. **K.M. Weerawardene, C.M. Alkens**
- COMP 286.** Withdrawn.
- COMP 287.** Accelerated discovery of high-refractive-index polymers using first-principles modeling, virtual high-throughput screening, and data mining. **M. Afzal, C. Cheng, J. Hachmann**
- COMP 288.** Effects of polarization and entropy on crystal polymorph free energies. **E. Dybeck, N.P. Schieber, M.R. Shirts**
- COMP 289.** Withdrawn.
- COMP 290.** Mechanistic design of chemically diverse polymers with applications on pharmaceuticals. **L.I. Mosquera-Giraldo, C.H. Borca, X. Meng, K.J. Edgar, L.V. Slipchenko, L. Taylor**
- COMP 291.** Biophysically inspired model for functionalized nanocarrier targeting to live cells. **R. Natesan, D. Eckmann, P. Ayyaswamy, V. Muzykantov, R. Radhakrishnan**
- COMP 292.** Comparative study of chemically modified nucleosome core. **K. Chakraborty**
- COMP 293.** Combinatorial approach to calculating binding free energies of HIV-RT and clinically relevant mutants using multisite lambda dynamics. **K. Armacost, C.L. Brooks**
- COMP 294.** Advanced molecular simulations of reaction mechanisms and complex reaction environments in the methanol to olefins process. **K. De Wispelaere, V. Van Speybroeck**
- COMP 295.** Dissociation mechanism for a dimeric photoreceptor protein from multi-scale simulation. **H. Ren, D. Zhong, J. Gao**
- COMP 296.** Mobility of Cu cations in the zeolite SSZ-13. **F. Goettl, A.M. Love, P. Sautet, I. Hermans**
- COMP 297.** Modeling activation states in the voltage-gated proton channel 1 (Hv1) as a strategy for drug discovery. **E. Gianti, L. Delemotte, M.L. Klein, V. Carnevale**
- COMP 298.** Utilization of the AMOEBA force field to predict host-guest binding affinities. **M.L. Laury, J.W. Ponder**

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- COMP 299.** Molecular dynamics-based exploration of conformational space spanned by variably sulfated chondroitin disaccharides. **B. Nagarajan**, N. Sankaranarayanan, U.R. Desai
- COMP 300.** Specific lipid binding sites identified by coarse-grained simulations. **C. Amarez**, X. Periole, S. Marrink, E. Lyman
- COMP 301.** Computational modeling of 2-O,3-O-desulfated heparin interaction with p300 histone acetyltransferase. **N. Sankaranarayanan**, D. Afosah, J. Vovnoy, U.R. Desai
- COMP 302.** Interface-induced renormalization of electrolyte's energy levels in magnesium batteries. **N. Kumar**, D. Siegel
- COMP 303.** Ethanol infiltration into demineralized dentin collagen fibrils via molecular dynamics simulations. **S. Jee**, F.R. Tay, D.H. Pashley, S.S. Jang
- COMP 304.** From ionization of small acetylene clusters to the first aromatic ring: A different path for hydrocarbon growth. **T. Stein**, M.P. Head-Gordon, B. Bandyopadhyay, M. Ahmed
- COMP 305.** Explanation not simulation: *Ad informatio* approaches to learning chemical principles. **P. Adler**, J. Schrier, A.J. Norquist, S. Friedler
- COMP 306.** Predictive QSPR model leading to virtual screening of fullerene derivatives to evaluate key structural attributes critical for photoconversion efficiency as polymer solar cell acceptors. **S. Kar**, N. Sizochenko, L. Ahmed, V.S. Batista, J.R. Leszczynski
- COMP 307.** Large-scale complete active space self-consistent field methods. **A.E. DePrince**
- COMP 308.** Withdrawn.
- COMP 309.** Computer-aided drug design and development of anti-tubercular agents as multi-target inhibitors. **K. Jani**, D. Savjani
- COMP 310.** Using projection methods to explore transition metal chemistry. **H.P. Hratchian**
- COMP 311.** Heterogeneous structure and dynamics of membranes at the nanoscale. **E. Lyman**
- COMP 312.** Towards understanding the self-assembly of peptide-based nanotubes. **M.D. Mayes**
- COMP 313.** Characterizing protein hydration to inform its solubility, interactions, and assemblies. **E. Xi**, R. Remsing, **A. Patel**
- COMP 314.** Economic method for selecting high-quality receptor structures for target-based virtual screening. **Z. Huang**, C.F. Wong
- COMP 315.** Integrative modeling of pre-initiation complex (PIC) assemblies at the core promoter. **C. Yan**, Y. He, I.N. Ivanov, E. Nogales
- COMP 316.** Assembling macromolecular complexes by evolutionary optimization. **G. Tamo**, **M. Dal Peraro**
- COMP 317.** PB-SAM, a novel solution to the Poisson-Boltzmann equation for applications ranging from protein simulations to polymer membrane design. **L. Felberg**, M. Soniat, D. Brookes, E. Yap, T.L. Head-Gordon
- COMP 318.** Scalable polarizable molecular dynamics using Tinker-HP. **L. Lagardère**, F. Lipparini, B. Stamm, Y. Maday, N. Gresh, G.A. Cisneros, E.G. Kratz, C. Narth, E. Polack, L. Jolly, J.W. Ponder, P. Ren, **J.A. Piquemal**
- COMP 319.** Prediction of pKa shift in enzymes using quantum mechanical calculations and thermodynamic integration. **H. Chen**, T. Lee, B.L. Golden, D.M. York
- COMP 320.** Development of Markov state models from molecular dynamics simulations: Allosteric of PDZ case study. **K. Thayer**, B. Lakhani, D.L. Beveridge
- COMP 321.** Quantum mechanical modeling of energy conversion in nanoscale. **Y. Zhang**
- COMP 322.** Virtual screening of asymmetric selectivity in catalysis. **E. Limé**, **P. Norrby**, R. Munday, D. Buttar, S. Tomasi, E.C. Hansen, O. Wiest
- COMP 323.** Predicting protein ligandability by quantifying desolvation of the binding sites. **S. Vukovic**, D.J. Huggins
- COMP 324.** Computational study of a dinuclear copper(I) complex from reaction of a mixed-valence dicopper hydride. **S. Zhang**, **H. Fallah**, T.R. Cundari, T.H. Warren
- COMP 325.** Theoretical study of the ground and excited state tautomers in curcumin using DFT based methods. **B.K. Grewal**, D. Ghosh
- COMP 326.** Mechanistic investigation of palladium-catalyzed N-C bond formation with DFT methods. **Q. Jiang**, T.R. Cundari
- COMP 327.** Accurate prediction of reaction enthalpies using density functional theory: Systematic error corrections via connectivity-based hierarchy (CBH). **A. Sengupta**, K. Raghavachari
- COMP 328.** Exploring phase separation and domain formation in lipid bilayers through molecular simulation. **G.A. Pantelopulos**, T. Nagai, J.E. Straub
- COMP 329.** Molecular interactions of complex biological systems in rare and orphan diseases. **K. Nguyen**, L. Tian, D. Li, M. March, R. Pellegrino, C. Kao, P. Sleiman, H. Hakonarson
- COMP 330.** Virtual high-throughput screening methods testing at the small molecule screening facility of the University of Wisconsin-Madison. **S.S. Ericksen**, H. Wu, S.A. Wildman, F. Hoffmann
- COMP 331.** Transition tempered metadynamics and transition path sampling of ATP hydrolysis in actin filaments. **O. Sode**, R. Sun, S. Lee, G.A. Voth
- COMP 332.** Optimal point charge approximation, from 3-atom water molecule to million-atom chromatin fiber. **S. Izadi**, R. Anandakrishnan, A.V. Onufriev
- COMP 333.** Design of new theoretical and computational methods through the development of computer systems. **C.H. Hector**, J.V. Ortiz
- COMP 334.** Multiscale approach to designing drug-specific nanocarriers for anticancer drug delivery. **W. Jiang**, X. Wang, S. Nangia
- COMP 335.** Predictive sampling of long-timescale protein functional motions in explicit solvent. **X. Li**, C. Lu, W. Yang
- COMP 336.** Digging deep: A combined SAPT and NBO study towards the fundamental origin of CH...X and NH...X interactions in receptor-anion complexes. **A. Sengupta**, A.H. Flood, K. Raghavachari, Y. Liu

## Section A

Pennsylvania Convention Center  
Hall E

### Wiley Computers in Chemistry Outstanding Postdoc Award

**K. N. Kirschner**, *Organizer*

6:00 - 8:00

**COMP 337.** Odd order dispersion interactions in the effective fragment potential method. **E. Guidez**, M.S. Gordon

**COMP 338.** Polarizable force field for DNA and RNA based on the classical drude oscillator model. **J.A. Lemkul**, A.D. Mackerell

## WEDNESDAY MORNING

### Section A

Sonesta Philadelphia Downtown  
Whistler B

### Drug Discovery Modeling ADME & Development Endpoints

**M. R. Landon**, Y. Tseng, *Organizers*

**H. S. Hayatshahi**, *Presiding*

**8:30 COMP 339.** Studying the interaction of cocaine with ceramide: insights into the blood brain barrier. **R.J. Gillams**, S.K. Callear, S.E. McLain

**9:00 COMP 340.** Increasing the probability of success of hit series with *in silico* ADME profiles. **J. Sanders**, D.C. Beshore, T. Bueters, J.C. Culbertson, J. Fells, H. Gunaydin, A. Haidle, J. Imbriglio, E. Joshi, B.E. Mattioni, K. Menzel, A. Rusinko, N. Sciammetta, R.P. Sheridan, A. Verras, A.M. Walji

**9:30 COMP 341.** QSAR modeling of hERG inhibitors using a mix and match approach. **A. Zakharov**, N.J. Martinez, T. Zhao, D. Nguyen, N. Southall

10:00 Intermission.

**10:15 COMP 342.** Using descriptors to address ADME/Tox challenges in peptide-based drug discovery. **A.S. Bayden**, J. Audie, J. Swanson, M. Jarosinski, D.J. Diller

**10:45 COMP 343.** Computational support of process chemistry at Merck. **E.C. Sherer**

**11:15 COMP 344.** Repeat manager as the bridge between data processing and data reporting. **S.E. Miller**, J. Feng, S. Arnstein, L. Wang

## Section B

Sonesta Philadelphia Downtown  
Whistler A

### Molecular Mechanics

**M. Feig**, *Organizer*

**V. K. Yadav**, *Presiding*

**8:30 COMP 345.** Adventures in the world of lipids: Towards the routine simulation of complex membranes and membrane bound proteins. **R.C. Walker**, B. Madej, C. Lin, C. Dickson, A. Skjerve, L. Yang, I.R. Gould

**9:00 COMP 346.** Computational investigation of domain registration of membrane rafts. **N. Chen**, P.B. Moore

**9:30 COMP 347.** Molecular modeling of structure and dynamics of K-Ras at a lipid membrane containing PIP<sub>2</sub>. **Z. Li**, M. Buck

**10:00 COMP 348.** Exploring the role of solvation in ion channel folding. **D. Granata**, P. Po, M.L. Klein, C. Deutsch, V. Carnevale

10:30 Intermission.

**10:45 COMP 349.** Weighted ensemble method reveals the *I-V* relationships in a K<sup>+</sup> ion channel. **S. Capponi**, J.L. Adelman, J.M. Rosenberg, M. Grabe

**11:15 COMP 350.** pH-dependent mechanism of the M2 proton channel revealed by constant pH molecular dynamics. **W. Chen**, J. Shen

**11:45 COMP 351.** Simulations of homo-oligomeric ion channels embedded within a lipid membrane. **T.H. Nguyen**, C. Moore, Z. Liu, **P.B. Moore**

## Section C

Sonesta Philadelphia Downtown  
Warhol

### Material Science

**H. L. Woodcock**, *Organizer*

**N. Kumar**, *Presiding*

**8:30 COMP 352.** Modeling materials and charge transfer for lithium-ion batteries. **L. Raguette**, R. Jörn

**9:00 COMP 353.** Charge transport mechanisms in solid phase redox end members: S and Li<sub>2</sub>S. **N. Kumar**, H. Park, D. Siegel

**9:30 COMP 354.** Ab initio study of charge carrier dynamics in polyoxotitanate clusters and fullerene-like polyoxotitanium cage. **D. Vogel**, D. Kilin

10:00 Intermission.

**10:20 COMP 355.** Ab initio study of charge carrier dynamics and fragmentation of gas-phase lanthanum cyclopentadienyl complexes. **Y. Han**, Q. Meng, B. Rasulev, P.S. May, M.T. Berry, **D. Kilin**

**10:50 COMP 356.** Virtual screening and evaluation of highly efficient organometallic light-emitting materials. **S. Kwak**, D.J. Giesen, T.F. Hughes, Y. Cao, A. Goldberg, J. Gavartin, S. Dixon, M. Halls

**11:20 COMP 357.** Electron dynamics at metal-organic interfaces: Triplet and singlet excitons. **S. Zhang**, **M. Pavanello**

Technical program information  
known at press time.

The official technical program  
for the 252nd ACS National  
Meeting is available at:  
[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



## Section D

Sonesta Philadelphia Downtown  
Benton

## Computational Study of Water

## Methods &amp; Biological Applications

D. J. Sindhikara, *Organizer*

R. Remsing, *Presiding*

**8:30 COMP 358.** Improved generalized born water model for MD simulations of proteins and nucleic acids. C.L. Simmerling, H. Nguyen, K. Kasavajhala, H. Huang, K. Lam

**9:00 COMP 359.** Recent applications of the WaterMap methodology to binding energy prediction and thermodynamic analysis of biomolecular recognition. W. Sherman

**9:30 COMP 360.** Frustrated water networks on protein active site surfaces. K. Haider, M.K. Gilson, T.P. Kurtzman

**10:00** Intermission.

**10:15 COMP 361.** Water in dopamine receptors: Using solvation thermodynamics to modify a lead compound for specificity. S. Ramsey, T.P. Kurtzman, W. Harding, I.L. Alberts

**10:45 COMP 362.** Making a splash in implicit solvent: Application of inhomogeneous solvation theory and continuum solvation to host-guest binding affinity predictions. L.B. Wickstrom, R. Pal, K. Haider, J. Xia, W. Flynn, T.P. Kurtzman, R.M. Levy, E. Gallicchio

**11:15 COMP 363.** Bridging disparate levels of theory in free energy simulation using non-equilibrium work. P.S. Hudson, H.L. Woodcock, S. Boresch

## Section E

Sonesta Philadelphia Downtown  
Wyeth Gallery C

## QM/MM Simulation of Chemical &amp; Biochemical Reaction Pathways: Recent Developments &amp; Applications

*Cosponsored by PHYs*

J. Gao, W. Yang, *Organizers*

J. Pu, *Organizer, Presiding*

**8:30 COMP 364.** Toward quantitative understanding of how ABC-transporters hydrolyze ATP: Development of the reaction path force matching QM/MM method. J. Pu

**9:00 COMP 365.** New methodological developments for the study of enzymatic chemical reactions. I. Tuñon

**9:30 COMP 366.** MIMIC: A new multiscale interface for first-principles molecular dynamics. U. Rothlisberger

**10:00** Intermission.

**10:15 COMP 367.** New approaches to QM/MM: Anchor points reactive potentials and system-specific molecular mechanics with semiglobal internal coordinates and electrostatic screening. D.G. Truhlar, K.R. Yang, X. Xu, J. Zheng, S.L. Li, B. Wang

**10:45 COMP 368.** Recent advances in QM/MM simulations of enzymatic reactions. W. Thiel

**11:15 COMP 369.** Development and acceleration of multiscale QM/MM methods for simulations of complex biomolecular systems. K. Nam

## Advanced Potential Energy Surfaces

## Applications of Advanced Potential Energy Models &amp; Methods

*Sponsored by PHYs, Cosponsored by COMP*

## Computational Chemistry &amp; Toxicology in Chemical Discovery &amp; Assessment (QSARs)

*Sponsored by AGRO, Cosponsored by COMP, ENVR and TOXI*

## WEDNESDAY AFTERNOON

## Section A

Sonesta Philadelphia Downtown  
Whistler B

## Drug Discovery

## Hybrid Methods in Computer-Aided Drug Design

M. R. Landon, Y. Tseng, *Organizers*

L. Ahmed, *Presiding*

**1:30 COMP 370.** Data-driven design of kinase inhibitors with controlled polypharmacology. C. Da, M. Stashko, S.V. Frye, X. Wang, D. Kireev

**2:00 COMP 371.** Imbalance in chemical space: How to facilitate the identification of protein-protein interaction inhibitors. M.A. Kuenemann, C.M. Labbe, A. Cerdan, O. Sperandio

**2:30 COMP 372.** Optimizing Surrogate AutoShim: Fast and accurate target-customized docking without a protein structure. E.J. Martin, B. Samudio

**3:00** Intermission.

**3:15 COMP 373.** Novelty score: Prioritising compounds that potentially form novel protein-ligand interactions and novel scaffolds using an interaction centric approach. H.J. Patel, G.M. Morris

**3:45 COMP 374.** Whole-protein (holistic) scoring scheme for virtual screening achieves higher success rates than single-site scoring. S. Dadgar, D. Tesolin, R. Kamstra, W.B. Floriano

**4:15 COMP 375.** Structural informatics modeling, drug discovery, and pharmacophore elucidation of novel synergy-based inhibitors for drug resistant bacterial infection. J.H. Nettles, E.K. Crispell, S. Chennamadhavuni, J.P. Snyder, D. Liotta, D.S. Weiss

## Section B

Sonesta Philadelphia Downtown  
Whistler A

## Molecular Mechanics

M. Feig, *Organizer*

L. Raguetta, *Presiding*

**1:30 COMP 376.** Solving the macrocycle problem in silico. D.J. Sindhikara, T. Day, K. Borrelli

**2:00 COMP 377.** Predicting PPI druggability using mixed-solvent simulations. P. Ghanakota, D. Lupyran, K.J. Lumb, H. Van Vlijmen, W. Sherman, T. Beuming

**2:30 COMP 378.** Exploring protein-protein interactions using the site-identification by ligand competitive saturation (SILCS) method. W. Yu, A.D. Mackerell

**3:00 COMP 379.** Computing absolute binding free energies for host-guest complexes. F. Tofoleanu, B. Brooks

**3:30** Intermission.

**3:45 COMP 380.** What makes enzymes work? Exploring life in P-T-X. T. Ichiye

**4:15 COMP 381.** Conformational flexibility and ligand binding in NIRE SAM-dependent methyltransferase: A molecular dynamics study. T. Karabencheva-Christova, W. Singh, C. Christov

**4:45 COMP 382.** Identification of a human thiol receptor highly responsive to thiols in the presence of Cu(I) and Ag(I) ions: QM/MM and mutagenesis studies. L. Ahmed, S. Li, R. Zhang, Y. Pan, H. Matsunami, E. Block, H. Zhuang, V.S. Batista

## Section C

Sonesta Philadelphia Downtown  
Warhol

## Material Science

H. L. Woodcock, *Organizer*

J. E. Bates, *Presiding*

**1:30 COMP 383.** Computational efforts to probe PEO-PS diblock copolymer assemblies. K. Chakraborty

**1:50 COMP 384.** Impact of amorphous environment on the melting temperature of polyethylene envisioned by fine-grained simulation. A. Shamloo

**2:10 COMP 385.** Computational design of di- and tripeptide aggregates. S. Mushnoori, M. Dutt

**2:30** Intermission.

**2:50 COMP 386.** Multicomponent diffusion of penetrant, solvent, and rubbery polymer ternary mixtures. S.A. Bringuier, M.J. Varady, T.P. Pearl, J.B. Cabalo, C.K. Knox, B.A. Mantooth

**3:10 COMP 387.** Probing hydrogen-bonding and steric effects on multicomponent diffusion of small organic penetrants through solvated polyurethane and polyhydroxyurethane. C.K. Knox, J.B. Cabalo, M. Varady, S.A. Bringuier, T.P. Pearl, R. Lambeth, B.A. Mantooth

**3:30 COMP 388.** Computational design of amphiphile-based nanoparticles. X. Yu, M. Dutt

**3:50 COMP 389.** Predictive mix-QSAR modeling of antifouling surface coating systems containing quaternary ammonium salts. F. Jabeen, B. Rasulev, M. Ossowski, P.R. Boudjouk

## Section D

Sonesta Philadelphia Downtown  
Benton

## Computational Study of Water

## Models, Properties &amp; Phenomena

D. J. Sindhikara, *Organizer*

P. S. Hudson, *Presiding*

**1:30 COMP 390.** Timescale separation between energy contributions in the effective fragment potential. C.H. Borca, L.V. Slipchenko

**2:00 COMP 391.** Electronically coarse grained model for water predicts water's signature properties from supercooled water to ice to the supercritical regime. G.J. Martyna

**2:30 COMP 392.** Dissecting hydrophobic and ionic hydration. R. Remsing

**3:00** Intermission.

**3:15 COMP 393.** Activity coefficients of tetra-n-butyl ammonium chloride at varying concentrations and temperatures calculated using molecular dynamics simulations. R.L. Napoleon, R. Wigent, P.B. Moore

**3:45 COMP 394.** Surface tension of NaCl solution: Molecular dynamics simulation on the concentration and temperature dependence. X. Wang, H. Su, U. Pöschl, Y. Cheng

**4:15 COMP 395.** Neutralization of water self-ions via 3D H-bond networks vs. 1D H-bond wires: a Lewis study. J. Herzfeld, C. Bai

## Section E

Sonesta Philadelphia Downtown  
Wyeth Gallery C

## QM/MM Simulation of Chemical &amp; Biochemical Reaction Pathways: Recent Developments &amp; Applications

*Cosponsored by PHYs*

J. Gao, J. Pu, W. Yang, *Organizers*

G. S. Kedziora, *Presiding*

**1:30 COMP 396.** Investigation of RNase A 2'-O-transesterification mechanisms via a series of 1D, 2D and 3D QM/MM simulations. M. Huang, T.D. Dissanayake, D.M. York

**2:00 COMP 397.** Quantum mechanics on the fly for bond breaking in molecular dynamics simulation of strained polymers. G.S. Kedziora, S. Barr, J. Moller, G. Leuty, R. Berry, T. Breitzman

**2:30 COMP 398.** Investigation of the reaction mechanism of the twister ribozyme supports a new twist on general acid catalysis. C. Gaines, D.M. York

## Advanced Potential Energy Surfaces MM from QM

*Sponsored by PHYs, Cosponsored by COMP*

## Computational Chemistry &amp; Toxicology in Chemical Discovery &amp; Assessment (QSARs)

*Sponsored by AGRO, Cosponsored by COMP, ENVR and TOXI*

## THURSDAY MORNING

## Section A

Sonesta Philadelphia Downtown  
Whistler B

## Drug Discovery

## Consider the Data

M. R. Landon, Y. Tseng, *Organizers*

E. Gianti, *Presiding*

**8:30 COMP 399.** Avoiding missed opportunities by analysing the sensitivity of our decisions. M. Segall, I. Yusof, E. Champness, P. Hunt

**9:00 COMP 400.** 3D-RISM driven method to establish the complete solvent site structure in macromolecular crystallographic refinement: Implications for structure based drug design. O. Borbulevych, L. Westerhoff

**9:30 COMP 401.** Optimal decomposition of hydrogen-bonded water clusters for drug design. E. Gianti, R.J. Zauhar, M.L. Klein, G. Fiorin

## Section B

Sonesta Philadelphia Downtown  
Whistler A

## Molecular Mechanics

M. Feig, *Organizer*

F. L. Kearns, *Presiding*

8:30 COMP 402. Withdrawn.

9:00 COMP 403. Inferring perturbed Markov state model kinetics upon thermodynamic reweighting. V.A. Voelz, G. Zhou, H. Wan

9:30 COMP 404. Efficient molecular dynamics of biomolecules using a swarm-enhanced sampling scheme. R.A. Bryce

10:00 Intermission.

10:15 COMP 405. Mixing machine learning with experiment: Nonlinear learning of assembly landscapes and mechanisms from particle tracking data. A. Long, J. Zhang, S. Granick, A. Ferguson

10:45 COMP 406. Correlation analysis of molecular dynamics simulation: Beyond the assumption of stationarity. K. Ho, D. Hamelberg

11:15 COMP 407. Compression of molecular dynamics (MD) simulation trajectories using wavelet transform. Z. Heidari, D.R. Roe, C. Bergonzo, J. Ghasemi, T.E. Cheatham

## Section C

Sonesta Philadelphia Downtown  
Warhol

## Material Science

H. L. Woodcock, *Organizer*

K. R. Yang, *Presiding*

8:30 COMP 408.  $\pi$ -Stacking pancake bonding: computational challenges. M. Kertesz, Z. Mou

9:00 COMP 409. Quantum chemical study of electronic coupling in carbon nanostructures. M. Kim, J. Klos, M.H. Alexander, Y. Wang

9:30 COMP 410. Correlated calculations of magnetic and optical properties of trigonal zigzag graphene nanodisks. H. Chakraborty, A. Shukla

10:00 Intermission.

10:20 COMP 411. Fingerprint functions and graph theory as complimentary techniques for high-throughput crystal structure comparison. K. Ryan, M. Shatruk, M. Mustyakimov

10:40 COMP 412. Hierarchical multiscale simulation of materials: Application to Taylor Anvil and Steven impact tests of RDX. B.C. Barnes, K. Leiter, R. Becker, J. Knap, J.K. Brennan

11:00 COMP 413. Withdrawn.

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## ENFL

## Division of Energy and Fuels

X. Wang and D. Heldebrant, *Program Chairs*

## OTHER SYMPOSIA OF INTEREST:

CO<sub>2</sub> Reduction: Electrocatalysis (see CATL, Wed)

Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives (see CATL, Mon, Tue, Wed)

Applied Catalysis for Environmental Applications (see ENVR, Tue, Wed)

Chemistry of Biomass Wastes Conversion to Energy & Chemicals (see ENVR, Tue, Wed)

Nanoparticles: Synthesis, Characterization & Their Application in Catalysis (see COLL, Sun, Mon)

Chemistry of Materials: Nanomaterials (see INOR, Sun, Tue)

## SOCIAL EVENTS:

ENFL Business/Social Hour, 12:00 PM: Mon

ENFL Dinner (Tickets Required), 6:00 PM: Tue

## BUSINESS MEETINGS:

ENFL Program & Executive Committee Meeting, 3:00 PM: Sun

## SUNDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 108B

## USA-China Symposium on Energy

*Cosponsored by ENVR*

Y. H. Hu, *Organizer*

F. Jin, *Organizer, Presiding*

Q. Li, *Presiding*

8:30 Introductory Remarks.

8:35 ENFL 1. Effect of interfacial interaction on catalytic and electrochemical reduction of CO<sub>2</sub>. Q. Ge

9:10 ENFL 2. New strategy for highly efficient CO<sub>2</sub> reduction by water spilling with solar biomass energy-driven two-step process. G. Yao, F. Jin

9:45 ENFL 3. Modified Chou Model for negative temperature dependence in the hydrogenation of hydrogen storage materials. H. Long, Q. Li

10:05 Intermission.

10:15 ENFL 4. Shape and surface engineering of monodisperse nanocrystals for photocatalysis and electrocatalysis. C.B. Murray, M. Cargnello, S. Zhang, V.V. Doane-Nguyen, T.R. Gordon, M. Cui, H. Yun, J. Luo, S. Najm, P. Fornasiero, R.J. Gorte

10:50 ENFL 5. Integration of carbon capture and subsequent conversion. L. He

11:25 ENFL 6. Novel method for converting carbon dioxide into carbon under mild conditions. Y. Chen, Z. Jing

11:45 ENFL 7. Reduction of CO<sub>2</sub> into HCOOH with 2-pyrrolidinone under hydrothermal conditions. Y. Yang, F. Jin

12:05 Concluding Remarks.

## Section B

Pennsylvania Convention Center  
Room 108A

## Water-Energy Nexus

*Cosponsored by ENVR and MPPG*

D. Shuai, W. Zhang, *Organizers, Presiding*

8:30 Introductory Remarks.

8:35 ENFL 8. Effect of operating parameters in a high rate activated sludge A-stage system on carbon capture for methane production. M. Kinyua, W. Thomas, M. Elliott, B. Wett, S. Murphy, K. Chandran, C. Bott

9:05 ENFL 9. Highly active Pt-Ni and Ni catalysts for catalyzing the decomposition of hydrogen iodide, as part of the sulfur iodine cycle for hydrogen production from water. A. Singhanian, A.N. Bhaskarwar, V.V. Krishnan, D. Parvatalu

9:35 ENFL 10. Photoelectrochemical hydrogen generation using multi-band III-nitride nanowire arrays. H.P. Nguyen

10:05 Intermission.

10:20 ENFL 11. Probing nanoscale characteristics of hydrophilized polyethersulfone membranes. W. Fu, S. Mitra, W. Zhang

10:50 ENFL 12. Fabrication of Cu/Ti nanoelectrode for electrochemical denitrification of groundwater. M. Li, X. Liu

11:20 ENFL 13. Enhanced desalination and kinetics using cyclopentane hydrates in water-in-oil emulsions. L. Yining, G. Jing, G. Chen

11:50 Concluding Remarks.

## Section C

Pennsylvania Convention Center  
Room 113A

## Unconventional Energy on Heavy Oil &amp; Shale Gas

*Cosponsored by ENVR and MPPG*

E. Hensen, *Organizer*

B. Shen, Z. Wu, *Organizers, Presiding*

F. Xiao, *Presiding*

8:30 Introductory Remarks.

8:35 ENFL 14. Light olefin synthesis from shale gas feedstock by catalytic routes. A. Bhan

9:10 ENFL 15. Hollow zeolite encapsulated Ni-Pt bimetal for sintering and coking resistant dry reforming of methane. X. Guo

9:40 ENFL 16. Nanoscale design of bifunctional catalysts and its impact on hydroconversion. J. Zecevic, G. Vanbutsele, K. De Jong, J. Martens

10:10 ENFL 17. Demineralization pathways for oil shale semicoke byproduct conversion to a sorbent material. A. Suleimenov, J.L. Goldfarb

10:30 Intermission.

10:40 ENFL 18. Engineering the H<sub>2</sub>S splitting cycle for oil sands bitumen upgrading: Can we recover hydrogen from H<sub>2</sub>S too? H. Wang, W. Zhang, M. Liang, A. Moniri

11:15 ENFL 19. Controllable synthesis of ZSM-5/EU-1 co-crystalline zeolite. L. Sun, Y. Zhang, Y. Gong

11:45 ENFL 20. Influence of pore structure of the zeolite USY on catalytic cracking of Jatropha Curcas oil. Q. Zheng, B. Shen

12:05 ENFL 21. Preparation a shape-selective zeolite material and its application in heavy oil catalytic cracking. P. Zeng

## Section D

Pennsylvania Convention Center  
Room 109B

## Degradation of Materials for Energy &amp; Fuel Production

*Cosponsored by ENVR and MPPG*

S. Nair, *Organizer*

J. Baltrusaitis, Z. Wu, *Organizers, Presiding*

8:30 Introductory Remarks.

8:35 ENFL 22. Controlled synthesis of sintering-resistant catalysts through nanostructured materials. S. Dai

9:10 ENFL 23. Strategies for protecting the active site in chemical conversion on Ni-CeO<sub>2</sub> catalysts: Insights from *in-situ* studies over models and powders. S.D. Senanayake, Z. Liu, D. Grinter, D. Vovchok, C. Guild, S.L. Suib, J. Rodriguez

9:45 ENFL 24. Cascade aldolization and self-deoxygenation over Zn,Zr<sub>2</sub>O<sub>7</sub> mixed oxides: The effect of surface acidity on the catalyst deactivation. J. Sun, R. Baylon, D. Mei, K.J. Martin, P. Venkatasubramanian, Y. Wang

10:20 Intermission.

10:30 ENFL 25. *Operando* IR investigations on catalysts for fuel synthesis and conversion: Reaction mechanisms and deactivation. M. Daturi, P. Bazin, O. Marie, A. Roger, S. Thomas

11:05 ENFL 26. Assessing deactivation processes of supported vanadium oxide catalysts at a molecular-level; an *operando* Raman methodology approach. M.V. Martinez-Huerta, M. Guerrero-Perez, M.A. Banares

11:40 ENFL 27. Formation of platinum oxide films on the surface of platinum nanoparticles during propane oxidation. C. O'Brien, G. Jenness, D.G. Vlachos, I. Lee

12:00 ENFL 28. Effect of surface structure on CO<sub>2</sub> adsorption on TiO<sub>2</sub> nanoparticles: Experimental and theoretical investigations. U. Tumuluri, J. Howe, W. Mountfield, M. Li, K. Walton, D. Sholl, S. Dai, Z. Wu

## Section E

Pennsylvania Convention Center  
Room 107B

## Solar Fuels: Power to the People

*Cosponsored by ENVR and MPPG*

Y. H. Hu, R. T. Koodali, Y. Zhang, *Organizers*

Y. Ng, H. Wang, *Presiding*

8:30 Introductory Remarks.

8:35 ENFL 29. Exciton dissociation and plasmon induced hot electron transfer in semiconductor/metal quantum rod heterostructure. T. Lian

9:05 ENFL 30. Plasmonic metal-semiconductor heterojunctions for solar energy conversion. N. Wu, S. Cushing, J. Li, D. Chu

9:35 ENFL 31. Co/TiO<sub>2</sub> catalysts for photocatalytic CO<sub>2</sub> reforming of methane. W. Wei, Y.H. Hu

9:55 Intermission.

10:05 ENFL 32. On establishing a consortium to print polymer photovoltaic cells. A. Holmes

**10:35 ENFL 33.** Molecular analogs of MoS<sub>2</sub> edges for hydrogen-evolution electrocatalysis and their applications in dye-sensitized solar fuels. Y. Wu

**11:05 ENFL 34.** Solar hydrogen evolution from Ru-bipyridyl dye sensitized and titanium dioxide nanoclusters dispersed on periodic cubic MCM-48 silica mesoporous material. S. Rasalingam, R. Peng, C. Wu, K. Mariappan, R.T. Koodali

**11:35 ENFL 35.** Poly(*para*-phenylene) type polymers for photocatalytic water splitting. R.S. Sprick, D.J. Woods, B. Bonillo, P. Guiglion, B.J. Slater, M. Zwijnenburg, D. Adams, A.I. Cooper

**11:55** Concluding Remarks.

## Section F

Pennsylvania Convention Center  
Room 103C

### Energy & Fuels Joint Award for Excellence in Publishing

D. Dadyburjor, E. B. Fox, M. Kidder, *Organizers*

K. B. Hicks, *Presiding*

**8:30 ENFL 36.** Production of stable, partially deoxygenated pyrolysis oils via tail gas reactive pyrolysis. C.A. Mullen, A. Boateng, N.M. Goldberg, Y. Elkasabi, M.A. Schaffer, P. Tarves

**9:15 ENFL 37.** Post-processing of tail-gas reactive pyrolysis bio-oil into fuels and chemicals. Y. Elkasabi, C.A. Mullen, A. Boateng

**9:45 ENFL 38.** Mobile combustion reduction integrated pyrolysis system (CRIPS) for on-farm production of bio-oil. M.A. Schaffer, N.M. Goldberg, C.A. Mullen, A. Boateng

**10:15** Intermission.

**10:30 ENFL 39.** Transportation fuels via a two-stage thermal deoxygenation process. M.C. Wheeler, S.J. Eaton, W.J. DeSisto

**11:00 ENFL 40.** Enhanced stability of pyrolysis oil HDO catalysts on mesoporous alumina. Q. Liu, U. Joshi, J.R. Regalbuto

**11:30 ENFL 41.** Field productivities of Napier grass for production of sugars and ethanol. B.S. Dien, W. Anderson, M. Lamb, P. O'Bryan, P. Slininger

## Section G

Pennsylvania Convention Center  
Room 102A

### Biomass

*Cosponsored by CATL, ENVR and MPPG*

L. Ramos, B. Xu, H. Zhao, *Organizers, Presiding*  
T. Li, *Presiding*

**8:30 ENFL 42.** Fundamental understanding of acid-base catalysis for the upgrading of biomass-derived feedstocks. Y. Wang

**9:00 ENFL 43.** Support and promoter effects on biofuel upgrading. Z. He, M. Hu, X. Wang

**9:30 ENFL 44.** Molybdenum carbide catalyzes the conversion of biomass pyrolysis vapors to paraffinic and aromatic compounds. E.A. White, C. Mukarakate, M. Griffin, C.P. Nash, M. Yung, M.R. Nimlos, D. Ruddy, J. Schaidle

**10:00 ENFL 45.** Developing porous over coated nano-catalyst with SAXS. T. Li, R.E. Winans, B. O'Neill, J.A. Dumesic

**10:30** Intermission.

**10:40 ENFL 46.** Bio-oil separation and stabilization by near-critical propane fractionation. D.M. Ginosar, L.M. Petkovic, F.A. Agblevor

**11:10 ENFL 47.** Fractionation of bio-oils using supercritical fluids. L.M. Petkovic, D.M. Ginosar, C.M. Hrbac, S. Lwin

**11:40 ENFL 48.** Idaho National Laboratory's new process using low cost waste woody materials to produce biofuels. A.M. Gaffney

**12:10 ENFL 49.** Biomass depolymerization via acidified molten salt hydrates. S. Sadula, B. Saha, D.G. Vlachos

### Low Temperature Catalysis

*Sponsored by CATL, Cosponsored by ENFL and MPPG*

### Small Molecules Activated by Homogeneous Metal Catalysts

*Sponsored by CATL, Cosponsored by ENFL and MPPG*

## SUNDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 108B

### USA-China Symposium on Energy

*Cosponsored by ENVR*

Y. H. Hu, *Organizer*

F. Jin, *Organizer, Presiding*

Q. Ge, *Presiding*

**1:30** Introductory Remarks.

**1:35 ENFL 50.** Selective hydrodeoxygenation catalysts for furfural and hydroxymethylfurfural. C. Wang, J. Luo, R.J. Gorte

**2:10 ENFL 51.** Oriented growth of Zn<sub>2</sub>In<sub>2</sub>S<sub>4</sub>/In(OH)<sub>3</sub> heterojunction by a facile hydrothermal transformation as an efficient photocatalyst for H<sub>2</sub> production. Y. Li

**2:45 ENFL 52.** Hydrogen production via steam reforming of dimethyl ether. Z. Liu

**3:20** Intermission.

**3:30 ENFL 53.** Advances in CO<sub>2</sub> conversion. Y.H. Hu

**4:05 ENFL 54.** Kinetic models for hydrogen storage materials. Q. Li, Y. Pang

**4:40 ENFL 55.** Angstrom aggregates in ionic liquids for green engineering. S. Zhang

**5:15** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 108A

### Novel Nanomaterials

### Advanced Electrocatalysts

*Cosponsored by CATL and ENVR*

X. Xu, Y. Yang, *Organizers*

X. Wang, Z. Wu, S. Zuo, *Organizers, Presiding*

**1:30 ENFL 56.** Novel electrode materials for energy conversion and storage device. Y.H. Hu

**2:00 ENFL 57.** Well-defined nanostructured metal oxide electrocatalysts for photoelectrocatalytic water splitting. Z. Chen, B.E. Koel

**2:30 ENFL 58.** Bimetal-organic framework self-adjusted synthesis of support-free nonprecious electrocatalysts for efficient oxygen reduction. B. You, Y. Sun

**3:00 ENFL 59.** Understanding the active site in electrocatalysis. A.R. Asthagiri

**3:30 ENFL 60.** Metal-modified carbides as low-cost and impurity-tolerant electrocatalysts. J.G. Chen

**4:00 ENFL 61.** Durability improvement due to gradient cathode catalyst layer. R. Maric, H. Yu, A. Baricci, L. Guetaz, A. Casalegno

**4:30 ENFL 62.** Chemical control over stable supported high-coverage nanoparticle layers. M. Williams, A.V. Teplyakov

**5:00 ENFL 63.** Nanostructured thin-film electrocatalysts for water splitting. Y. Yang

## Section C

Pennsylvania Convention Center  
Room 113A

### Unconventional Energy on Heavy Oil & Shale Gas

*Cosponsored by ENVR and MPPG*

E. Hensen, *Organizer*

B. Shen, Z. Wu, *Organizers, Presiding*

X. Guo, *Presiding*

**1:30 ENFL 64.** Oil sands bitumen outlook — challenges and opportunities. S. Ng, H. Ling, Y. Zhang, N. Heshka, E. Little, Q. Wei

**2:05 ENFL 65.** Mass transfer behaviors in porous catalytic materials: an important basic science for heavy oil catalytic conversion. Y. Qin, L. Song

**2:35 ENFL 66.** Utilizing of hydrogen transfer reaction for catalytic cracking of polycyclic aromatic hydrocarbons. I. Shimada, C. Uno, K. Takizawa, M. Osada, H. Fukunaga, N. Takahashi, T. Takatsuka

**3:05 ENFL 67.** Impact of process parameters on the deposition of fines present in bitumen-derived gas oil in a fixed-bed hydrotreater. R. Rana, A. Dalai, J. Adjaye, S. Badoga

**3:25** Intermission.

**3:30 ENFL 68.** Sustainable routes for synthesizing zeolite catalysts. F. Xiao, Q. Wu, N. Sheng, L. Wang, X. Meng

**4:05 ENFL 69.** Evaluation of shale gas resources using a high pressure water laboratory maturation method: application to the UK Bowland shale. C.E. Snape, C. Uguna, C. Vane, W. Meredith, V. Moss-Hayes, A. Carr

**4:35 ENFL 70.** Intensified pyrolysis for asphaltene utilization in thermal plasma. Y. Cheng, T. Li, Y. Cheng

**5:05 ENFL 71.** ZSM-5 microstructure and its performance for catalytic cracking hexane and naphtha. T. Ma, B. Li, Z. Geng, Y. Song, G. Li, L. Zhang, Y. Gong

**5:25** Concluding Remarks.

## Section D

Pennsylvania Convention Center  
Room 109B

### Degradation of Materials for Energy & Fuel Production

*Cosponsored by ENVR and MPPG*

S. Nair, *Organizer*

J. Baltrusaitis, Z. Wu, *Organizers, Presiding*

S. D. Senanayake, *Presiding*

**1:30 ENFL 72.** Interactions of acid gases with metal oxide nanoclusters and models of MOF-2. L. Flores, J.G. Murphy, Z. Fang, M. Outlaw, M. Chen, T. Straatsma, J. Howe, D. Sholl, D.A. Dixon

**2:05 ENFL 73.** Computational characterization of defects in zeolitic imidazolate frameworks. J.R. Schmidt

**2:40 ENFL 74.** *Ab initio* study of small molecule interactions in mixed-metal metal-organic frameworks. J.D. Howe, C.R. Morelock, Y. Jiao, K. Walton, D. Sholl

**3:15** Intermission.

**3:25 ENFL 75.** Engineering nanoporous materials with increased acid gas resistance. R. Lively, G. Zhu, S. Pang, Y. Liu, U. Tumulari, Z. Wu, D. Sholl, S. Nair, C.W. Jones

**4:00 ENFL 76.** Towards the thermally stable site-isolated Pd catalysts. M. Piernawieja-Hermida, Z. Lu, Z. Wu, Y. Lei

**4:35 ENFL 77.** Catalytic ethanolysis of lignin over zeolites of various porosity and acidity. Y. Wang, N. Baxter, H. Barnett, S. Wang

**4:55 ENFL 78.** Hydrothermal stability of ZSM-5 zeolite. M.T. Timko, A.R. Maag

**5:15** Concluding Remarks.

## Section E

Pennsylvania Convention Center  
Room 107B

### Solar Fuels: Power to the People

*Cosponsored by ENVR and MPPG*

Y. H. Hu, R. T. Koodali, Y. Zhang, *Organizers*

D. Radu, W. Wei, *Presiding*

**1:30** Introductory Remarks.

**1:35 ENFL 79.** Flow-enabled self-assembly of formamimidinium lead iodide large grains for high-performance perovskite solar cells. Z. Lin, M. He, B. Li

**2:05 ENFL 80.** Cold thoughts on perovskite fever. T. Xu

**2:35 ENFL 81.** Impact of surface defects on the photoactivity of photocatalysts. C. Wang

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3:05 Intermission.

3:15 ENFL 82. Low over-potential Ni(111) particles in metal-organic frameworks for visible photocatalytic H<sub>2</sub> generation. G. Lu

3:45 ENFL 83. Engineering bismuth vanadate nanostructures for photocatalytic and photoelectrochemical water splitting. Y. Ng

4:15 ENFL 84. Elemental loss in thin-film PV originated from nanoparticles precursors. D. Radu, D. Berg, M. Liu, K. Dobson, P. Hwang, C. Lai

4:45 ENFL 85. Bioinspired engineering of photothermal materials from butterfly wings. W. Zhang, J. Tian, D. Zhang

5:15 Concluding Remarks.

## Section F

Pennsylvania Convention Center  
Room 103C

### Novel Materials for Gas Separation, Storage & Utilization

#### Gas Separation

*Cosponsored by ENVR and MPPG*

Z. He, L. Li, D. T. Tran, X. Wang, *Organizers*

Z. He, W. Koros, *Presiding*

1:30 Introductory Remarks.

1:35 ENFL 86. Metal organic framework membranes for Kr/Xe separation. M.A. Carreon, P.K. Thallapally

2:10 ENFL 87. Novel customized amorphous fluoropolymer (CAF) membranes for olefin-paraffin separation. H. Murnen, S. Majumdar, Y. Koizumi, K. Loprete, K. Pennisi, S. Nemser, A. Feiring, N. Shangquan

2:35 ENFL 88. Improvement of gas separation properties of polybenzimidazole membranes for gas separations at high pressure and high temperature through thermal treatment. E.V. Perez, K.J. Balkus, J.P. Ferraris, I.H. Musselman

3:00 ENFL 89. Multiscale simulation and controllable synthesis of porous adsorption materials. D. Cao, X. Zeng

3:25 Intermission.

3:45 ENFL 90. Nanoporous materials for gas storage and separation: Theoretical aspects. R. Belosludov, Y. Kawazoe

4:10 ENFL 91. Hydrogen sulfide removal from carbon dioxide-containing gas mixture on molecular basket sorbents. W. Quan, X. Wang, C. Song

4:35 ENFL 92. Development of flexible faujasitic zeolite membranes for CO<sub>2</sub> capture. B. Wang, S. Chakraborty, P.K. Dutta

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## Section G

Pennsylvania Convention Center  
Room 102A

### Biomass

*Cosponsored by CATL, ENVR and MPPG*

L. Ramos, B. Xu, H. Zhao, *Organizers, Presiding*

1:30 ENFL 93. Kinetics of C-C coupling of carboxylic acids via ketonization and acylation over zeolites. A. Gumdiyala, M. Godavarthy, B. Wang, S. Crossley

2:00 ENFL 94. Explaining observed solvent effects on Ru surfaces: a microkinetic analysis. J. Bond, O.A. Ali Abdelrahman

2:30 ENFL 95. Pathways to selectively form individual aromatic products from ethanol. D. Flaherty

3:00 ENFL 96. Catalytic consequences of micropore topology, mesoporosity, and acidity on the hydrolysis of biomass over zeolite catalysts. D. Liu

3:30 ENFL 97. Coupling biological and chemical catalysis for the production of bio-based polyamides. J.E. Matthiesen, M. Suastegui, J. Carraher, Z. Shao, J. Tessonier

4:00 ENFL 98. Adsorption-enhanced hydrolysis of glucan oligomers into glucose over three-dimensionally ordered mesoporous carbon catalysts. P. Dornath, P. Dauenhauer, W. Fan

4:30 ENFL 99. Molecular design of cooperative interactions for heterogeneous catalytic materials to tune catalytic rates and selectivities. N.A. Brunelli, M. Whitaker, N. Deshpande, A. Parulkar

5:00 ENFL 100. Solvent effect in catalytic upgrading of biomass-derived furanics. B. Wang, R. Bababrick, Z. Zhao, D.E. Resasco

### Small Molecules Activated by Homogeneous Metal Catalysts

*Sponsored by CATL, Cosponsored by ENFL and MPPG*

## MONDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 108B

#### USA-China Symposium on Energy

*Cosponsored by ENVR*

F. Jin, *Organizer*

Y. H. Hu, *Organizer, Presiding*

G. S. Hwang, *Presiding*

8:30 Introductory Remarks.

8:35 ENFL 101. Redesigning the platinum ORR catalyst for fuel cell application. Y. Xia

9:10 ENFL 102. Hydrogen sensing platforms for a sustainable fuel economy. E. Borguet

9:45 ENFL 103. Metal-free cathode catalyst for oxygen reduction reactions. X. Wang, Z. Wu, z. Yao, Z. Iqbal, E. Benchafra

10:20 Intermission.

10:30 ENFL 104. Preparation and assessment of the active sites in aniline-derived Fe-N-C oxygen reduction catalyst. B. Xu

11:05 ENFL 105. Mechanism of light degradation of methylammonium lead iodide perovskites. J.Z. Zhang

11:40 ENFL 106. Li<sub>2</sub>OHCL crystalline electrolyte for stable metallic lithium anode in all-solid-state batteries. H. Wang, Z. Hood, A.S. Pandian, J.K. Keum, C. Liang

12:05 Concluding Remarks.

## Section B

Pennsylvania Convention Center  
Room 108A

### Novel Nanomaterials

#### Advanced Nanomaterials & Theoretical Calculation

*Cosponsored by CATL and ENVR*

S. Zuo, *Organizer*

X. Wang, Z. Wu, X. Xu, Y. Yang, *Organizers, Presiding*

8:30 ENFL 107. Perovskite quantum dots (PQDs): a model system for understanding the origin of instability of organo-metal perovskites. J.Z. Zhang

9:00 ENFL 108. Novel nanostructured materials for energy applications. F. Jiao

9:30 ENFL 109. Nano-structured Cu/SiO<sub>2</sub> catalysts for ester hydrogenation systems with balanced Cu<sup>0</sup> and Cu<sup>+</sup> active species. X. Ma, Y. Wang, S. Huang, Z. Yujuan, S. Wang

10:00 ENFL 110. Crystal phase-controlled synthesis of novel noble metal nanomaterials. H. Zhang

10:30 ENFL 111. Computational study on the surface stability of spinel MgAl<sub>2</sub>O<sub>4</sub> materials. Q. Cai, J. Wang, Y. Wang, D. Mei

11:00 ENFL 112. Discovery and optimization of multicomponent metal oxide catalysts using density functional theory. M.J. Janik

11:30 ENFL 113. Anharmonic effects on material properties at high temperatures from ab initio molecular dynamics simulations. M. Lee, R. Rousseau, V. Glezakou

12:00 ENFL 114. Fabrication of palladium concave nanocrystals via auto-catalytic tip overgrowth. N. Su, X. Chen, B. Yue, H. He

## Section C

Pennsylvania Convention Center  
Room 113A

### ENFL Storch Award Symposium

A. M. Herring, *Organizer*

R. E. Winans, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 ENFL 115. Hydrogenation and hydrogenolysis reactions involved in treatment of water contaminated with chlorinated hydrocarbons. H. Sohn, G. Celik, S. Gunduz, P. Edmiston, U.S. Ozkan

9:05 ENFL 116. Kinetic and thermodynamic studies of hydrogen activation in molecular complexes: approaches to catalysis and energy storage using amine boranes. T. Autrey

9:35 ENFL 117. Direct hydrocarbon polymer electrolyte membrane fuel cells: Where there's smoke there's sometimes fire! A.M. Herring, V. Nguyen, H. Sarode

10:05 Intermission.

10:20 ENFL 118. How high can conversions and deoxygenation of biomass reach without the need for high hydrogen pressure? C.E. Snape

10:50 ENFL 119. New concept of pH-swing process for biomass conversion to fuels and chemicals. C. Song

11:20 ENFL 120. Investigation of the thermochemical decomposition of substituted aryl ether lignin model compounds. M. Kidder, A. Buchanan III

## Section D

Pennsylvania Convention Center  
Room 109B

### Innovative Chemistry & Materials for Electroenergy Production & Storage Solid-State Batteries

*Cosponsored by ENVR and MPPG*

J. Guo, Y. Jung, Y. Shao, G. Wu, *Organizers*

L. Hu, *Organizer, Presiding*

Y. Seok Jung, *Presiding*

8:30 Introductory Remarks.

8:35 ENFL 121. Towards the development of solid-state batteries: addressing the challenges in replacing liquid with solid electrolytes and enabling Li metal anodes. J. Sakamoto

9:05 ENFL 122. Garnet based Li-metal batteries. L. Hu

9:35 ENFL 123. Development of glass-ceramic solid electrolytes for all-solid-state rechargeable Li or Na batteries. A. Hayashi, M. Tatsumisago

10:05 ENFL 124. Withdrawn.

10:25 Intermission.

10:40 ENFL 125. Toward intimate ionic contacts for high-performance sulfide-based all-solid-state lithium-ion batteries. K. Park, D. Oh, Y. Nam, S. Oh, Y. Jung

11:10 ENFL 126. Development of sulfide electrolyte all solid-state batteries for high energy density. T. Watanabe, Y. Aihara, S. Fujiki, S. Ito, T. Yamada

11:40 ENFL 127. Optimizing alkali ionic conductivity in materials. S. Ong

12:10 ENFL 128. Superionic conducting Li<sub>2</sub>PS<sub>2</sub>Br solid electrolytes synthesized using ethanol *via* liquid-phase technique. S. Yubuchi, A. Hayashi, M. Tatsumisago

## Section E

Pennsylvania Convention Center  
Room 107B

### Solar Fuels: Power to the People

*Cosponsored by ENVR and MPPG*

Y. H. Hu, R. T. Koodali, Y. Zhang, *Organizers*

D. Radu, Y. Zhang, *Presiding*

8:30 Introductory Remarks.

8:35 ENFL 129. Tuning the chemistry of mixed lead halide perovskites. P.V. Kamat

9:05 ENFL 130. On the design of new low cost photocatalysts for efficient solar water oxidation. L. Vayssieres

9:35 ENFL 131. Towards harvesting more photons by developing nanostructured materials and assemblies. D. Ma

10:05 ENFL 132. Solar energy for fuel production. Y.H. Hu

10:35 Intermission.

10:45 ENFL 133. Photoelectrochemical solar energy conversion using new earth-abundant electrocatalysts and semiconductors. S. Jin

**11:15 ENFL 134.** High efficiency at low applied voltage from Sb-doped SnO<sub>2</sub>/BiVO<sub>4</sub> core/shell nanorod-array photoanodes. L. Zhou, L. Titova, P.M. Rao

**11:45 ENFL 135.** Charge transport through organic molecular wires embedded in ultrathin insulating inorganic layer. E. Edri

**12:15** Concluding Remarks.

## Section F

Pennsylvania Convention Center  
Room 103C

### Novel Materials for Gas Separation, Storage & Utilization

#### Storage

*Cosponsored by ENVR and MPPG*

Z. He, L. Li, D. T. Tran, X. Wang, *Organizers*  
M. A. Carreon, Z. He, *Presiding*

**8:30 ENFL 136.** Advanced membranes for gas separations: Entropy engineering at the sub-nanometer scale. W. Koros

**9:05 ENFL 137.** Novel polyethers for membrane CO<sub>2</sub>/N<sub>2</sub> separation. J. Liu, C. Cheng, H. Lin

**9:30 ENFL 138.** Synthesis of nitrogen-rich and ultra-microporous organic polymers for separation of carbon dioxide from gas mixtures. J.J. Taylor, A.L. Byrd, N.A. Loes, B.G. Graffagna, K.A. VonArx, P. Drazkowsky, M. Rabbani

**9:55 ENFL 139.** Low-viscous and highly efficient CO<sub>2</sub> capture by aqueous absorbent of multi amine functionalized ionic liquid. B. Lv, Z. Zhou, G. Jing

**10:20** Intermission.

**10:40 ENFL 140.** Permanent CO<sub>2</sub> storage via enhanced ex-situ mineralization using heat treated serpentine. C. Zhou, A.A. Park

**11:05 ENFL 141.** Non-aqueous amine-based solvents for carbon dioxide capture with low regeneration energy. P.K. Koech, D. Malhotra, D.J. Heldebrant, A.J. Karkamkar, Z. Feng, M.E. Bearden

**11:30 ENFL 142.** Novel porous organic ligand polymers (POLs) as highly efficient heterogeneous catalysts. F. Xiao, Z. Dai, Q. Sun, L. Wang, X. Meng

## Section G

Pennsylvania Convention Center  
Room 102A

### Biomass

*Cosponsored by CATL, ENVR and MPPG*

L. Ramos, *Organizer*

B. Xu, H. Zhao, *Organizers, Presiding*

R. Weber, E. A. White, *Presiding*

**8:30 ENFL 143.** Modifying liquid-solid interfaces for the processing of renewable fuels. D.C. Cantu, Y. Wang, V. Glezakou, R. Rousseau, R.S. Weber

**9:00 ENFL 144.** Modeling catalytic vapor phase upgrading using first principles. R. Surendran Assary, C. Liu, L. Cheng, L.A. Curtiss

**9:30 ENFL 145.** Multi-dimensional phase diagrams for the coadsorption of aromatic oxygenates and hydrogen on metallic surfaces. V. Vorotnikov, G.A. Ferguson, K. Gruchalla, N. Wunder, J. Clark, T. Bartholomew, D. Robichaud, G. Beckham

**10:00 ENFL 146.** Hydrodepolymerized cellulosic diesel fuel (HDCD): Characterization, development of a surrogate fuel mixture, and engine combustion. D.J. Luning Prak, B. Lee, P.C. Trulove, J. Cowart

**10:20 ENFL 147.** Sterically protected and electronically activated azamacrocyclic catalysts for lignin depolymerization: a new approach to biomass valorization. M. Chorghade

**10:40** Intermission.

**10:50 ENFL 148.** Biofuel synthesis in supercritical fluids. J. Kim, Y.H. Lee

**11:10 ENFL 149.** Chemical viability of bio-oils pyrolyzed from different feedstocks. R. Ware, S. Rowland, R.P. Rodgers, A.G. Marshall

**11:30 ENFL 150.** Exploring the mechanisms of fast pyrolysis of hemicelluloses via tandem mass spectrometry and quantum chemical calculations: A synthetic model compound study. P. Murria, J.C. Degenstein, M. Easton, H. Zhu, J.J. Nash, R. Agrawal, N. Delgass, F. Ribeiro, H.I. Kenttamaa

**11:50 ENFL 151.** Effect of biochar surface chemistry on pyrolytic phenolic compound production from lignin. K. Jung, J. Park

**12:10 ENFL 152.** Elucidation of ethanol to 1,3-butadiene reaction mechanism: combined experimental and DFT study. W. Taifan, J. Baltrusaitis

### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

#### Hydrolysis & Chemical Conversion

*Sponsored by CATL, Cosponsored by ENFL and MPPG*

#### In Situ & Operando Spectroscopy of Catalysts

*Sponsored by CATL, Cosponsored by ENFL*

## MONDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 108B

#### USA-China Symposium on Energy

*Cosponsored by ENVR*

Y. H. Hu, F. Jin, *Organizers*

Y. Wang, B. Xu, *Presiding*

**1:30** Introductory Remarks.

**1:35 ENFL 153.** Understanding and design of graphene-based materials for supercapacitors. G.S. Hwang, A.J. Pak, E. Paek

**2:10 ENFL 154.** 3D pore-scale transport resolved model of Li-air batteries. C. Andersen, H. Hu, Y. Sun

**2:45 ENFL 155.** Multi-shelled metal oxides prepared via an anion-adsorption mechanism for lithium-ion batteries. J. Wang, R. Yu, H. Zhao, D. Wang

**3:20** Intermission.

**3:30 ENFL 156.** Development of bifunctional catalysts for highly selective conversions of synthesis gas to liquid fuels and lower olefins. K. Cheng, J. Kang, Q. Zhang, Y. Wang

**4:05 ENFL 157.** Freestanding nanofiber electrodes for supercapacitors and batteries. V. Kalra

**4:35 ENFL 158.** Hydrothermal carbonization of chitosan for high-performance supercapacitor electrode materials. X. Qi, L. Zhu, F. Shen

**5:05** Concluding Remarks.

## Section B

Pennsylvania Convention Center  
Room 108A

### Novel Nanomaterials

#### CO<sub>2</sub> Conversion & Other Applications

*Cosponsored by CATL and ENVR*

X. Wang, *Organizer*

Z. Wu, X. Xu, Y. Yang, S. Zuo, *Organizers, Presiding*

**1:30 ENFL 159.** Novel catalytic materials for the activation of CO<sub>2</sub>: Tuning activity and selectivity at the metal-oxide and metal-carbide interfaces. J. Rodriguez

**2:00 ENFL 160.** Rational design of redox catalysts for hydrocarbon oxidation, water-splitting, and CO<sub>2</sub> utilization. F. Li

**2:30 ENFL 161.** Highly efficient synthesis of hydrogen storage material of formic acid from CO<sub>2</sub> and water. H. Zhong, F. Jin

**3:00 ENFL 162.** Metal-organic frameworks: synthesis and oxygen electrocatalysis. B. Chen

**3:30** Intermission.

**3:40 ENFL 163.** Tunable metallic foams as platforms for synthesizing highly active oxygen reduction and alcohol oxidation catalysts. A. Co

**4:10 ENFL 164.** Unconventional catalysts for electrochemical hydrogen evolution and carbon dioxide reduction. N. Kornienko

**4:30 ENFL 165.** Cobalt nanocrystal assembled hollow nanoparticles for electrocatalytic hydrogen generation from neutral-pH water. M. Ma

**5:00 ENFL 166.** Stable single Co atoms/N-doped porous carbon superior ORR catalyst. Y. Li

## Section C

Pennsylvania Convention Center  
Room 113A

### ENFL Storch Award Symposium

R. E. Winans, *Organizer*

A. M. Herring, *Organizer, Presiding*

**1:30 ENFL 167.** Reaction networks and kinetics for hydrothermal conversion of biomass to biocrude. P.E. Savage, D. Hietala, J. Sheehan

**2:00 ENFL 168.** Experimental and modeling studies for biomass pyrolysis yields. M.A. Serio, M.A. Wojtowicz

**2:30 ENFL 169.** Modeling lignin pyrolysis reaction mechanisms. M.T. Klein

**3:00** Intermission.

**3:15 ENFL 170.** Mechanisms for molecular weight growth formation in alkene pyrolysis. K. Wang, S. Villano, A.M. Dean

**3:45 ENFL 171.** Products from catalytic fast pyrolysis of biomass. M.R. Nimlos, C. Mukarakate, A.N. Wilson

**4:15 ENFL 172.** Mechanistic adventure: Pyrolysis of oxygenated model compounds. P.F. Britt, A. Buchanan III, M. Kidder, A. Beste

## Section D

Pennsylvania Convention Center  
Room 109B

### Innovative Chemistry & Materials for Electroenergy Production & Storage

#### Supercapacitors

*Cosponsored by ENVR and MPPG*

L. Hu, Y. Jung, Y. Shao, G. Wu, *Organizers*

J. Guo, *Organizer, Presiding*

Y. Shao, *Presiding*

**1:30** Introductory Remarks.

**1:35 ENFL 173.** Smart electrolytes for rechargeable batteries. P. Liu

**2:05 ENFL 174.** Overcoming materials challenges in all-solid-state Li-ion batteries: Insights from atomistic modeling. Y. Mo

**2:35 ENFL 175.** High-performance NiCo<sub>2</sub>S<sub>4</sub>@Ni(OH)<sub>2</sub> core-shell hybrid nanosheet arrays as advanced electrodes for hybrid supercapacitors. Y. Yang, D. Cheng, J. Xiong

**2:55 ENFL 176.** Electrospun poly(acrylonitrile-co-itaconic acid) as porous carbon precursor for high performance supercapacitor: Study of *in situ* porogen activity of itaconic acid in copolymer. N.C. Abeykoon, S. Mahmood, J.P. Ferraris

**3:15** Intermission.

**3:30 ENFL 177.** 2D carbides and nitrides of transition metals (MXenes): Synthesis, structure and energy storage applications. Y. Gogotsi

**4:00 ENFL 178.** From electric double-layer to pseudocapacitance: A joint DFT approach. D. Jiang

**4:30 ENFL 179.** Excellent performance of 3D carbon nanomaterials for electric double-layer capacitors at wide range temperature. L. Chang, Y.H. Hu

**4:50 ENFL 180.** Confined polymerization of pyrrole between 2D titanium carbide (MXene) for high performance pseudocapacitive electrodes. M. Boota, B. Anasori, M. Zhao, M.W. Barsoum, Y. Gogotsi

**5:10 ENFL 181.** Preparation of high purity polyaniline and polyaniline-CNT electrodes for pseudocapacitors. S. Simotwo, C. Delre, V. Kalra

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## Section E

Pennsylvania Convention Center  
Room 107B

2D Materials: Graphene & Beyond  
& their Device Applications

Cosponsored by ENVR

V. Barone, Y. Lin, G. Yu, *Organizers*

L. Hu, Y. Zhu, *Organizers, Presiding*

**1:30 ENFL 182.** MXene-TiO<sub>2</sub> composites as effective photocatalysts for hydrogen production under visible light irradiation. R. Peng, Z. Wu

**1:45 ENFL 183.** In-depth study of Sn-based composite materials as anode for high energy Na-ion batteries. C. Ma, B. Qu, Y. Lu, J.Y. Lee, S. Okada, Y. Meng

**2:00 ENFL 184.** Computational discovery and prediction of synthesis conditions for novel 2D materials for energy technologies and spintronic devices. R. Henni

**2:30 ENFL 185.** Buckled atomic sheets: Adventures with phosphorene and silicene for low-energy systems. D. Akinwande

**3:00 ENFL 186.** Application of two dimensional structures for perovskite solar cells. J. Huang

**3:30** Intermission.

**3:40 ENFL 187.** Optoelectronic properties of monolayer MoS<sub>2</sub> and WSe<sub>2</sub>-MoS<sub>2</sub> lateral heterostructures probed using photocurrent spectral atomic force microscopic imaging. M. Strano

**4:20 ENFL 188.** Controlling chemical and electrochemical properties of low-dimensional nanostructures using mechanical strain. C. Pint, N. Muralidharan, L. Oakes, R. Carter

**4:50 ENFL 189.** Graphene oxide based cathode for lithium-sulfur batteries. J. Guo

## Section F

Pennsylvania Convention Center  
Room 103C

Novel Materials for Gas Separation,  
Storage & Utilization

## Utilization

Cosponsored by ENVR and MPPG

Z. He, L. Li, D. T. Tran, X. Wang, *Organizers*

Z. He, Y. Liu, *Presiding*

**1:30 ENFL 190.** Characterization and testing of hierarchal carbon-based physical sorbents for CO<sub>2</sub> capture. J. He, J. Wilcox

**2:05 ENFL 191.** Novel liquid-like nanoparticle organic hybrid materials (NOHMs) based electrolyte for combined CO<sub>2</sub> capture and conversion. M. Gao, A.A. Park

**2:30 ENFL 192.** CO<sub>2</sub> speciation and solvent structure of CO<sub>2</sub> anhydrous capture fluids. D.J. Heldebrant, D. Malhotra, M. Jones, T. Headen, D.C. Cantu, V. Glezakou, R. Rousseau

**2:55 ENFL 193.** Thermodynamic complexity of CO<sub>2</sub> capture in metal-organic framework sorbents. D. Wu, J.J. Gassensmith, T. McDonald, X. Guo, Z. Qian, S.V. Ushakov, P. Zhang, J.R. Long, A. Navrotsky

**3:20** Intermission.

**3:40 ENFL 194.** Rational design and development of energy efficient CO<sub>2</sub>-binding organic liquids for flue gas clean up. D. Malhotra, P.K. Koech, D.J. Heldebrant, D.C. Cantu, V. Glezakou, R. Rousseau, Z. Feng

**4:05 ENFL 195.** Effectively coupling simulation and experiment to identify materials for gas separations and sequestration applications. P.M. Forster, K.V. Lawler, E. Siska, A. Sharma

**4:30 ENFL 196.** Methane conversion to syngas using dopant modified metal oxide composites in chemical looping reforming. L. Qin, Z. Cheng, M. Guo, M. Xu, J.A. Fan, L. Fan

**4:55** Concluding Remarks.

## Section G

Pennsylvania Convention Center  
Room 102A

## Biomass

Cosponsored by CATL, ENVR and MPPG

L. Ramos, B. Xu, H. Zhao, *Organizers, Presiding*

**1:30 ENFL 197.** Green biorefinery concept as a future of sustainable biomass utilization. A.R. Morais, A.M. da Costa Lopes, R. Bogel-Lukasik

**2:00 ENFL 198.** Long way to industrial enzymes in commercial biomass conversion into cellulosic ethanol. A.R. Gaspar, V.S. Muller, E.A. Silva, P.V. Iyer, J.J. Liu

**2:30 ENFL 199.** Characterization of the macroscopic and microscopic properties of pretreated corn stover. D.K. Johnson

**3:00 ENFL 200.** LignoForce™ lignin characterization and potential high-value applications. M. Paleologou

**3:30 ENFL 201.** Kinetics and mathematical modeling of agave bagasse hemicellulose using hydrothermal pretreatment under biorefinery concept. H.A. Ruiz

**4:00 ENFL 202.** Ethanol production from cane bagasse using different process configurations. D. Fockink, L. Ramos

**4:30 ENFL 203.** Enhancement of biodiesel production from microbial community of waste activated sludge by nZVI and FeCl<sub>3</sub>. J. Liu, Y. Shen, L. Lu, K. Peng, X. Huang

**4:50 ENFL 204.** Withdrawn.

**5:10 ENFL 205.** Lignin S/G ratio facilitates *Populus* solubilization during consolidated bioprocessing. A. Dumitrache, H. Akinoshio, M. Rodriguez, X. Meng, C. Yoo, J. Natzke, N. Engle, R. Sykes, T. Tschaplinski, W. Muchero, A.J. Ragauskas, B.H. Davison, S. Brown

## Section H

Pennsylvania Convention Center  
Halls A/B

Advances in Chemistry  
of Energy & Fuels

Cosponsored by ENVR and MPPG

D. J. Heldebrant, X. Wang, *Organizers*

**2:00 - 4:00**

**ENFL 206.** Precious metal-free nanomaterial for sustainable electrocatalytic application. Y. Liu, C. Wang

**ENFL 207.** Investigation of solid electrolyte interface (SEI) formed in nanoporous silicon and meso silicon sponge electrode materials by using hyperpolarized <sup>129</sup>Xe NMR spectroscopies. Y. Mao, M. Song, R. Hopson, N. Karan, D. Kim, J. Joo, L. Wang, P. Guduru, M.J. Sailor

**ENFL 208.** Platinum-metal/titanium as the anode catalyst for DBHFC. E. Norkus, A. Balciunaite, A. Zabielaite, I. Stankeviciene, A. Jagminiene, V. Kepeniene, L. Tamasauskaitė-Tamasiunaite

**ENFL 209.** Controlling the morphology and composition of Ag/Ag-halide hybrid nanostructures and their enhanced visible light induced photocatalytic properties. T. Yu, W. Kim, A. Shahzad

**ENFL 210.** Supercapacitors utilizing electrodes derived from polyacrylonitrile incorporating tetramethylammonium oxalate as a porogen. S. Peranathan, J.S. Bonso, J.P. Ferraris

**ENFL 211.** Sodium soft solid crystals as electrolytes for sodium ion batteries. P.R. Chinnam, B. Fall, M. Zdzilla, S.L. Wunder, A.A. Jalil

**ENFL 212.** Possibility of making a kilo-watt inverter driven by the 3<sup>rd</sup> positive EMF. O. Ide

**ENFL 213.** Novel hollow NiCo<sub>2</sub>O<sub>4</sub> hierarchical microspheres with enhanced electrochemical performance. L. Wang, Q. Hao

**ENFL 214.** Multifunctional peptides for bio-tethering and self-assembly of lithium ion battery electrode. A. Winton

**ENFL 215.** Synthesis of NiCo<sub>2</sub>O<sub>4</sub>/boron and nitrogen co-doped graphene for high-performance supercapacitors. X. Jiao, Q. Hao

**ENFL 216.** Bioelectrocatalytic hydrogen evolution at low voltage: Self-supported microbial carbon aerogel anode, metal-free CoP nanowire cathode and highly effective electron transfer. B. Tang

**ENFL 217.** In situ Raman microspectroscopy monitoring of cellulose hydrolysis. M. Tyufekchiev, G. Tompsett, M.T. Timko

**ENFL 218.** Utilizing grass extract to harvest the energy of the sun. D. Kerecman, L. Warner, J. DiBussolo, J. Hu

**ENFL 219.** Withdrawn.

**ENFL 220.** Rapid and accurate determination of the lignin content of lignocellulosic biomass by solid-state NMR. L. Fu, S.A. McCallum, J. Miao, C. Hart, G.J. Tudryn, F. Zhang, R.J. Linhardt

**ENFL 221.** Fuel ethanol production from dilute sulfuric acid-calcium hydroxide co-pretreated corn stover. Y. Zhu

**ENFL 222.** Conversion of biomass into high quality fuel with ionic liquids. J. Xin

**ENFL 223.** Identification of glycerol oxidation products on silver using *in situ* surface-enhanced Raman spectroscopy. Y. Ha, R.C. Ambrosio, A.A. Gewirth

**ENFL 224.** Aerobic cultivation of oleaginous yeast strains to produce fatty acids for biofuel application. K. Notarangelo, P. Tootaja, C. Crownhart, T. Manganello, J. De Oliveira, A. Wamakima, K. Oluwole, A. Kendrick, J. Hamel

**ENFL 225.** Microbial production of cis-muconic acid from lignin. Z. Choo, F. Girma, E. Valentine, K. Notarangelo, E. Bernal, J. Jaramillo, J. Torres, R. Pei, E. Mule, J. Tang, R. Gomes, D. Muñoz, W. Livernois, J. De Oliveira, A. Wamakima, K. Oluwole, A. Kendrick, J. Hamel

**ENFL 226.** Investigation of Hailaer coal pyrolysis by large-scale ReaxFF molecular dynamics. M. Zheng, X. Li, L. Guo

**ENFL 227.** MOFs template CoO<sub>x</sub>/C composites with superior hydrogenation. Y. Jiang, X. Zhang, Q. Sheng

**ENFL 228.** Production of hydrocarbons using furfural-derived intermediates for blending into jet and diesel fuels. H.M. Pilath

**ENFL 229.** Dehydrogenation of propane on PtSn-based catalysts: synergistic effects of support. L. Jiacheng, Z. Zhao, J. Li

**ENFL 230.** 2D axisymmetric modeling investigation of membrane methane steam reformers. G. Panagakos, E. Stamatakis, G. Stubos, K. Panopoulos, A. Stubos

**ENFL 231.** Synthesis and hydrogen sorption characteristics of mechanically alloyed Mg(Ni<sub>1-x</sub>Mn<sub>x</sub>)<sub>2</sub> intermetallics. E. Gkanas, G. Panagakos, M. Khouz, A. Ioannidou, A. Donac, G. Stoian, N. Lupu, M. Gjoka, S. Makridis

**ENFL 232.** Comparative study of products distribution for iterative use of methylcyclohexane as hydrogen carrier. X. Cui

**ENFL 233.** Novel strategy to reduce sintering, based on polymorphic materials, and application to carbon capture and storage. X. He, M. Zhao

**ENFL 234.** First-principles design of selective Ag catalysts for CO<sub>2</sub> electrochemical reduction. S. Wang, H. Xin

**ENFL 235.** Development of coal chemical looping combustion and gasification: a brief review. P. Wang, N. Means, D. Berry, M. Massoudi

**ENFL 236.** Boron nitride nanosheets as effective support for polyethyleneimine in CO<sub>2</sub> adsorption. K. Huang, S. Dai

**ENFL 237.** Gold nanorods self-assembly by dielectrophoretic and applications in solar cells. C. Lin, W. Sun, S. Liu, L. Liu, C. Cheng, F. Ko, S. Hu

**ENFL 238.** Molecular tuning of redox shuttling at layered transition metal dichalcogenides for counter electrodes in dye-sensitized solar cells. J. Wang, H. Xin

**ENFL 239.** Pt nanoparticles enhanced rutile TiO<sub>2</sub> nanorod bundles with high photocatalytic performance for hydrogen production from water splitting. L. Li

**ENFL 240.** Catalytic degradation of chlorobenzene on CrCe/AlFe pillared clay catalysts. S. Zuo, C. Qi

**ENFL 241.** Synthesis of MoS<sub>2</sub>/Pd composites via a facile sonochemical approach for oxygen reduction reaction. L. Zuo, L. Jiang, J. Zhu

**ENFL 242.** Au Nanoparticles modified Ni/TiO<sub>2</sub>-nanotubes as the anode catalyst for DBHFC. L. Tamasauskaitė-Tamasiunaite, A. Balciunaite, D. Santos, E. Norkus

**ENFL 243.** Remarks on thermal conductivity of slag. P. Wang, M. Massoudi

Technical program information  
known at press time.  
The official technical program  
for the 252nd ACS National  
Meeting is available at:  
[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



**ENFL 244.** Fluorine release and retention during fixed bed combustion of pyrolyzed coal chars. **N. Tsubouchi**, Y. Mochizuki, N. Iwabuchi, Y. Akama, Y. Ohtsuka

**ENFL 245.** Hydrogenation and decomposition of asphaltene in liquid phase. **Q. Sheng**, G. Wang, C. Gao, M. Hu, L. Yao, J. Gao

**ENFL 246.** Adsorption desulfurization performance and mechanism over La-introduced NiY zeolite. **L. Cao**, L. Zhao, B. Shen

**ENFL 247.** Fission-fusion synthesis of nanoalloys from individual bulk metals assisted by molten lithium. H. Barkholtz, J. Gallagher, T. Li, Y. Liu, R.E. Winans, J. Miller, D. Liu, T. Xu

**ENFL 248.** CFD simulations of impregnating and drying equipment for S-Zorb catalysts. **Z. Zhu**, L. Lv, Z. Tian, S. Hou

**ENFL 249.** CFD simulation of compressible flow in transfer lines. **Y. Qin**, X. Li

**ENFL 250.** Mechanistic investigation on the La<sub>2</sub>O<sub>3</sub>-catalyzed oxidative coupling of methane reaction. **S. Li**, C. Chu, S. Wang, L. Cong, Y. Zhao, Y. Sun

**ENFL 251.** Control catalytic properties of nanoclusters using isorecticular metal-organic frameworks. **X. Li**, T. Goh, C. Xiao, **W. Huang**

### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

#### Hydrolysis & Chemical Conversion

Sponsored by *CATL*, Cosponsored by *ENFL* and *MPPG*

#### In Situ & Operando Spectroscopy of Catalysts

Sponsored by *CATL*, Cosponsored by *ENFL*

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

X. Wang, *Organizer*

#### 8:00 - 10:00

6, 10, 15, 31, 33, 36, 39, 49, 77, 82, 85, 96, 101, 110, 114, 134-135, 138, 141, 164, 166, 180, 189, 191, 198, 202, 237, 239-240, 246, 250. See previous listings.

263, 283, 285, 329, 337, 340, 357, 375, 382, 399, 441, 448, 456, 460, 471, 476-477, 492, 501, 509. See subsequent listings.

## TUESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 108B

#### USA-China Symposium on Energy

Cosponsored by *ENVR*

Y. H. Hu, *Organizer*

F. Jin, *Organizer, Presiding*

J. Z. Zhang, *Presiding*

**8:30** Introductory Remarks.

**8:35 ENFL 252.** Functional energy materials: From 1D and 2D polymers to 3D carbon nanomaterials. **L. Dai**

**9:10 ENFL 253.** Ultrafast carrier dynamics in photovoltaic absorber materials. **J.B. Baxter**

**9:45 ENFL 254.** Thermal and mechanical integrity of PbTe-based nanostructured thermoelectric materials. **F. Ren**

**10:15** Intermission.

**10:25 ENFL 255.** Power generation and storage systems: model-guided optimal design, operation and integration. **M. Soroush**

**11:00 ENFL 256.** Strategies for engineering polymers to enhance energy capture and storage. **K.K. Lau**

**11:35 ENFL 257.** Photonic nanostructures for efficient solar-to-fuel energy conversion. **L. Zhang**

**12:05 ENFL 258.** Morphology and acidity control of SAPO-34 zeolite. **W. Jin**, B. Shen

**12:25** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 108A

#### Novel Nanomaterials

##### Biorelated

Cosponsored by *CATL* and *ENVR*

X. Wang, *Organizer*

Z. Wu, X. Xu, Y. Yang, S. Zuo, *Organizers, Presiding*

**8:30 ENFL 259.** Novel approaches and nanomaterials for biofuel cells. **Z. Iqbal**

**9:00 ENFL 260.** Microwave enabled rapid fabrication of phosphors and phosphors co-doped graphitic carbon with hierarchic porous structure. **M. Patel**, K. Savaram, F. Luo, M. Khoshi, F. Carol, R. Mendelsohn, E.L. Garfunkel, M. Szostak, **H. He**

**9:30 ENFL 261.** Synthesis and sensitivity of plasmonic nanoparticles. **G. Liu**, A. Khan

**10:00 ENFL 262.** Bio-templated Pt catalyst for methanol electrochemical oxidation. **W. Li**, J. Zhang, S. Dai

**10:30 ENFL 263.** Bio-inspired nanostructures for solar energy conversion study. **N. Bakhranov**, J. Johnson, S. Kudabergerov, **N. Nuraje**

**11:00 ENFL 264.** Defect-tolerant materials design for efficient and stable solar-fuel production. **S. Hu**

**11:30 ENFL 265.** Semiconductor nanomaterials for solar water splitting and cell interfaces. **G. Zheng**

**12:00 ENFL 266.** Dealloyed nanoporous materials for energy storage/conversion applications: Challenges and opportunities. **X. Liu**, **Y. Ding**

### Section C

Pennsylvania Convention Center  
Room 113A

#### ENFL Storch Award Symposium

R. E. Winans, *Organizer*

A. M. Herring, *Organizer, Presiding*

**8:30 ENFL 267.** Atomic layer deposition overcoating: Tuning catalyst selectivity for biomass conversion. **C.L. Marshall**, X. Gu, C. Canlas, A.J. Kropf, J.P. Greeley, J.A. Dumesic, P.C. Stair

**9:00 ENFL 268.** Oxygen removal for biomass on transition metal phosphide catalysts. **H. Zhao**, P.P. Bui, S.T. Oyama

**9:30 ENFL 269.** Oxygenates conversion over oxide surfaces: interplay between acid-base and redox site. **Z. Wu**, S.H. Overbury

**10:00** Intermission.

**10:15 ENFL 270.** Catalytic hydrodeoxygenation on metal carbides. **M.M. Sullivan**, C. Chen, **A. Bhan**

**10:45 ENFL 271.** Operando studies of catalysis with x-ray scattering and spectroscopy. **R.E. Winans**, T. Li, S. Lee, S. Lee

**11:15 ENFL 272.** Neutron scattering spectroscopy: A powerful and underutilized method to probe catalysis. **D.A. Lutterman**, L. Daemen, Y. Cheng, A. Ramirez-Cuesta

### Section D

Pennsylvania Convention Center  
Room 109B

#### Innovative Chemistry & Materials for Electroenergy Production & Storage

##### Flow Batteries & Non-Li Alkali Metal Batteries

Cosponsored by *ENVR* and *MPPG*

L. Hu, Y. Jung, Y. Shao, *Organizers*

J. Guo, G. Wu, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 ENFL 273.** Lithium redox flow batteries for stationary energy storage. **Y. Ding**, G. Yu

**9:05 ENFL 274.** Recent development of redox flow batteries. **W. Wang**

**9:35 ENFL 275.** Redox-active organic compounds as potential electrode materials for rechargeable batteries. **H. Lee**, D. Shin, **S. Hong**

**10:05 ENFL 276.** Manufacturing of 2D transition metal carbides (MXenes)-based nanocomposite films for electrochemical energy storage. **M. Zhao**, C. Ren, M. Ghidui, X. Xie, M.W. Barsoum, Y. Gogotsi

**10:25** Intermission.

**10:40 ENFL 277.** Self-assembly synthesis of electrode architectures. **S. Dai**

**11:10 ENFL 278.** Iron fluoride nanoparticles as a high-capacity cathode for sodium-ion batteries. **G. Ali**, **K. Chung**

**11:40 ENFL 279.** Coupling in-situ TEM and ex-situ analysis to understand heterogeneous sodiation of antimony. **D. Mitlin**

**12:10 ENFL 280.** Potassium-ion oxygen battery based on a high capacity antimony anode. **W.D. McCulloch**, X. Ren, M. Yu, Z. Huang, Y. Wu

### Section E

Pennsylvania Convention Center  
Room 107B

#### 2D Materials: Graphene & Beyond & their Device Applications

Cosponsored by *ENVR*

V. Barone, Y. Lin, Y. Zhu, *Organizers*

L. Hu, G. Yu, *Organizers, Presiding*

**8:30 ENFL 281.** Chemistry of MXenes: A new large family of 2D solids with exceptional promise. **M.W. Barsoum**

**9:10 ENFL 282.** Regulation of electric behavior in two-dimensional inorganic solids for energy applications. **C. Wu**

**9:40 ENFL 283.** Polycrystalline 2D materials: A theorist's view. **O. Zayzev**

**10:10** Intermission.

**10:25 ENFL 284.** Scalable holey graphene electrodes for energy storage. **Y. Lin**, J. Kim, J.W. Connell

**10:55 ENFL 285.** Group IV graphene materials as a canvas; painting properties via covalent chemistry. **J.E. Goldberger**

**11:25 ENFL 286.** Interlayer exciton between graphene and monolayer MoS<sub>2</sub>. **Q. Zhang**, C. Naylor, Z. Gao, R. Wu, Z. Luo

**11:40 ENFL 287.** Ion-exchange and cation solvation reactions in Ti<sub>3</sub>C<sub>2</sub> MXene. **M. Ghidui**, J. Halim, S. Kota, D. Bish, Y. Gogotsi, M.W. Barsoum

**11:55 ENFL 288.** 2D layered graphene flakes, transition metal dichalcogenides and their energy applications. **H. Lee**

### Section F

Pennsylvania Convention Center  
Room 103C

#### Computational Chemistry for Energy Application

Cosponsored by *CATL* and *MPPG*

L. Cheng, H. Xin, *Organizers, Presiding*

**8:30 ENFL 289.** Excited state dynamics in nanoscale materials for solar energy harvesting. **O.V. Prezhdo**

**9:00 ENFL 290.** Theoretical insights into multiscale electronic processes in organic photovoltaics. **S. Tretiak**

**9:30 ENFL 291.** Electron dynamics of large systems from real-time TDDFTB. **B.M. Wong**, M.B. Oviedo, N. Ilawe

**10:00 ENFL 292.** Theoretical design of hydrogen-evolving molecular electrocatalysts. **S. Hammes-Schiffer**

**10:30 ENFL 293.** Modeling solid-solid interfaces relevant to lithium ion batteries. **K. Leung**

**11:00 ENFL 294.** Computational studies of decomposition mechanisms of catechol compounds for aqueous redox flow battery application. **L. Cheng**, K. Smith, P. Redfern, L.A. Curtiss

**11:30 ENFL 295.** Achieving accurate reduction potential predictions for anthraquinones in water and aprotic solvents: Explicit solvent and ion pair. **H. Kim**, T.G. Goodson, P.M. Zimmerman

**11:50 ENFL 296.** Electron transfer reactions in condensed phase. **V. Vaissier**, M. Mavros, T.A. Van Voorhis

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**12:10 ENFL 297.** Photon-absorbing charge-bridging states in organic photovoltaic devices of diketopyrrolopyrrole-based donor and PCBM. M. Fujii, S. Koda, K. Yamashita

## Section G

Pennsylvania Convention Center  
Room 102A

### Advances in Chemistry of Energy & Fuels

#### Catalysts & Nanoparticles in Energy Conversion

Cosponsored by ENVR and MPPG

X. Wang, *Organizer*

D. J. Heldebrand, M. Li, *Organizers, Presiding*

**8:30 ENFL 298.** Synthesis and hydrodesulfurization properties of NiMo catalysts supported on novel micro-mesoporous material Beta-KIT-5. H. Zhang, Y. Li, A. Duan, Z. Zhao, J. Fan, Z. Xia

**8:50 ENFL 299.** Withdrawn.

**9:10 ENFL 300.** Synthesis, characterization, and catalytic performance of novel hierarchically porous material in the hydro-upgrading for FCC gasoline. J. Fan, A. Duan, Z. Zhao, H. Zhang, Z. Xia

**9:30** Intermission.

**9:50 ENFL 301.** Optimization on composite zeolite for producing propylene and clean gasoline. X. Wei, J. Gong

**10:10 ENFL 302.** Loading of iron and cerium nanoparticles on activated carbon for the desulfurization of thiophenes. T.A. Saleh, G. Danmaliki

**10:30 ENFL 303.** Synthesis of beta modified TUD-1 material and its application in the catalysts for the hydrodesulfurization of FCC diesel. A. Duan, Z. Xia, Z. Zhao, H. Zhang, J. Fan

**10:50** Intermission.

**11:10 ENFL 304.** Doubling the power conversion efficiency in CdS/CdSe quantum dot sensitized solar cells with a ZnSe passivation layer. F. Huang, J. Liu, G. Cao

**11:30 ENFL 305.** Functional semiconducting nanomaterials and applications in energy conversion. A. Hosseini, H. Farsi, Z. Li

**11:50 ENFL 306.** Novel synthesis of bismuth and bismuth antimony nanowire composites for thermoelectric energy conversion. K. Vandaele

**12:10 ENFL 307.** Design and synthesis of electrically conductive composites for energy efficient advanced materials. Q. Nadeem, R. Gill, M. Batool, T. Fatima

#### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

#### Thermochemical Conversion & Upgrading

Sponsored by CATL, Cosponsored by ENFL and MPPG

### Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

### In Situ & Operando Spectroscopy of Catalysts

Sponsored by CATL, Cosponsored by ENFL

#### Chemistry of Biomass Wastes Conversion to Energy & Chemicals

Sponsored by ENVR, Cosponsored by ENFL

## TUESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 108B

#### USA-China Symposium on Energy

Cosponsored by ENVR

Y. H. Hu, F. Jin, *Organizers*

D. Ma, N. Wu, *Presiding*

**1:30** Introductory Remarks.

**1:35 ENFL 308.** Catalytic hydrothermal gasification of microalgae for producing hydrogen and methane-rich gas. J. Jiao, P. Duan, F. Wang

**2:10 ENFL 309.** Nanostructured materials: synthesis by wet chemical and pulsed laser ablation approaches and applications in catalysis and solar energy. D. Ma

**2:45 ENFL 310.** Energy efficient, environmentally responsive building skin. S. Yang

**3:20** Intermission.

**3:30 ENFL 311.** Engineering of inorganic semiconductors for solar fuel generation. N. Wu

**4:05 ENFL 312.** Synthesis of 1D, 2D, and 3D structures of phosphorus. H. Ji, J. Smith, D. Hagaman

**4:40 ENFL 313.** Revealing pyrolysis chemistry in complex systems with large scale ReaxFF molecular dynamics. X. Li, M. Zheng, F. Nie, X. Liu, M. Gao, T. Zhang, L. Guo

**5:00** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 108A

#### Novel Nanomaterials

#### Porous Materials & Other Nanoparticles

Cosponsored by CATL and ENVR

X. Wang, *Organizer*

Z. Wu, X. Xu, Y. Yang, S. Zuo, *Organizers, Presiding*

**1:30 ENFL 314.** Novel materials for saving precious metals in (solid) heterogeneous catalysts. B. Xu

**2:00 ENFL 315.** Hollow nano-structured zeolite crystals as multi-functional catalysts and materials for energy and environmental applications. C. Dai, A. Zhang, X. Guo, C. Song

**2:30 ENFL 316.** Development of open framework chalcogenide materials for energy related applications. P. Feng, X. Chen, Q. Lin, X. Bu

**3:00 ENFL 317.** Nano/microscale metal-organic framework materials with selective adsorption and sensing property. W. Sun, Z. Qi, J. Yang, Q. Liu

**3:30 ENFL 318.** Plasmon-enhanced spectroscopy with shell-isolated mode. J. Li

**4:00 ENFL 319.** Confined synthesis of three-dimensionally ordered mesoporous-imprinted zeolites and their applications in catalysis and separation. C. Chang, W. Fan

**4:30 ENFL 320.** Investigation of porosity and connectivity in mesoporous silicon sponge materials using hyper-polarized <sup>129</sup>Xe NMR spectroscopy. Y. Mao, D. Kim, R. Hopson, J. Joo, M.J. Sailor, L. Wang

**5:00 ENFL 321.** Iron based bimetallic sulfide and its hydrodesulfurization of DBTs: A study on strong synergy effect. H. Li, B. Shen

### Section C

Pennsylvania Convention Center  
Room 113A

#### ENFL Storch Award Symposium

A. M. Herring, *Organizer*

R. E. Winans, *Organizer, Presiding*

**1:30 ENFL 322.** Comprehensive characterization of oxygen heteroatom-containing species in complex petroleum mixtures. R.P. Rodgers, Y. Corilo, D.C. Podgorski, S. Rowland, P. Lalif, A. Clingenpeel, W.K. Robbins

**2:00 ENFL 323.** Deciphering complex biomass upgrade processes with in-situ spectroscopies. B.M. Murphy, N. Gould, B. Xu

**2:30 ENFL 324.** Extended duration low temperature conversion of oil shale. A. Chaffee, Y. Fei, M. Marshall, W. Jackson, M.L. Gorbaty, P. Cassidy

**3:00** Intermission.

**3:15 ENFL 325.** Exploring and visualizing coal char oxy-fuel combustion with large-scale (but simplified) atomistic simulations. J.P. Mathews

**3:45 ENFL 326.** GCMC simulations of nitrogen-doped micro and mesoporous carbon sorbents for CO<sub>2</sub> capture. P.C. Psarras, J. He, J. Wilcox

**4:15 ENFL 327.** Novel design of liquid-like nanoparticle organic hybrid materials with tunable chemical and structural properties for CO<sub>2</sub> capture and conversion. A.A. Park

**4:45** Concluding Remarks.

### Section D

Pennsylvania Convention Center  
Room 109B

#### Innovative Chemistry & Materials for Electroenergy Production & Storage

#### Electrocatalysis

Cosponsored by ENVR and MPPG

J. Guo, L. Hu, Y. Jung, Y. Shao, *Organizers*

G. Wu, *Organizer, Presiding*

Y. Shao, *Presiding*

**1:30** Introductory Remarks.

**1:35 ENFL 328.** In situ environmental TEM techniques for understanding the structure optimizations of electrocatalysts. H. Yang

**2:05 ENFL 329.** Large-size graphene tube catalysts for sustainable electrochemical energy storage and conversion. G. Wu

**2:35 ENFL 330.** Integrated photoelectrochemical solar energy conversion and electrochemical storage devices. S. Jin

**3:05** Intermission.

**3:20 ENFL 331.** Role of composition and structure in mixed metal oxyhydroxide oxygen evolution electrocatalyst. S.W. Boettcher

**3:50 ENFL 332.** Evolution of multi-functional nanoporous metal electrocatalysts. J.D. Snyder

**4:20 ENFL 333.** Metal oxide-carbon hybrid engineered by heteroatom-doping as electrode materials for energy storage and conversion. R. Yang

**4:50 ENFL 334.** Effect of pH on the activity of hydrogen oxidation reaction/hydrogen evolution reaction over PtRu bimetallic catalysts. J. Nash, J. Zheng, Y. Wang, B. Xu, Y. Yan

### Section E

Pennsylvania Convention Center  
Room 107B

#### 2D Materials: Graphene & Beyond & their Device Applications

Cosponsored by ENVR

V. Barone, L. Hu, G. Yu, *Organizers*

Y. Lin, Y. Zhu, *Organizers, Presiding*

**1:30 ENFL 335.** 2D metal chalcogenide and metal layered double hydroxide (LDH) materials and their heterostructures for electrocatalysis and device applications. S. Jin, L. Samad, M. Shearer

**2:00 ENFL 336.** Investigation of anhydrous proton transport on functionalized graphene. A. Bagussetty, K. Johnson, P. Choudhury, B.S. Derksen, E. Gatto

**2:15 ENFL 337.** High resolution solid state NMR studies of graphene oxide and reduced graphene oxide. M. Guo

**2:30 ENFL 338.** Probing sodium insertion mechanism in graphene oxides by in situ TEM. K. He, C. Wang, J. Cumings

**3:00 ENFL 339.** Metal intercalation in graphite: a computational perspective. V. Barone

**3:30** Intermission.

**3:40 ENFL 340.** Synthesis and applications of novel two-dimensional nanomaterial. H. Zhang

**4:20 ENFL 341.** Functional flexible/wearable supercapacitors. C. Zhi

**4:50 ENFL 342.** Flexible micro-supercapacitors based on graphene. X. Chen

### Section F

Pennsylvania Convention Center  
Room 103C

#### Computational Chemistry for Energy Application

Cosponsored by CATL and MPPG

L. Cheng, H. Xin, *Organizers, Presiding*

**1:30 ENFL 343.** Tests of scaling relations at boundary sites of oxide supported metal catalysts. P. Mehta, W.F. Schneider

**2:00 ENFL 344.** Hydrogenolysis mechanism of furfural on Ru/RuO<sub>2</sub> catalyst. A. Mironenko, D.G. Vlachos

**2:30 ENFL 345.** Electron delocalization in aromatic ring on hydrodeoxygenation of phenol on Pt(111). D. Liu, G. Li, H. Wang, J. Han, X. Zhu, Q. Ge

**3:00 ENFL 346.** Understanding how pH and alkali cations affect cyclic voltammograms and the hydrogen oxidation reaction on transition metal surfaces. **I. McCrum**, M.J. Janik

**3:30 ENFL 347.** First-principles guided catalyst optimization and kinetic evaluation for hydrogen fuel production. **B. Liu**, M. Zhou

**4:00 ENFL 348.** Non-adiabatic effects and electronic excitations during dissociation on catalytic surfaces. **M. Montemore**, R. Hoyt, E. Kaxiras

**4:30 ENFL 349.** Theoretical investigation of the non-aqueous oxygen reduction reaction in Li-O<sub>2</sub> batteries. **W. McKee**, S. Rawal, **Y. Xu**

**5:00 ENFL 350.** Mechanistic insights into aqueous phase acetic acid ketonization over monoclinic zirconia. **Q. Cai**, J.A. Lopez-Ruiz, A.R. Cooper, K.O. Albrecht, J. Wang, **D. Mei**

## Section G

Pennsylvania Convention Center  
Room 102A

### Advances in Chemistry of Energy & Fuels

#### Batteries

*Cosponsored by ENVR and MPPG*

*X. Wang, Organizer*

*D. J. Heldebrant, M. Li, Organizers, Presiding*

**1:30 ENFL 351.** Chemical pre-intercalation approaches for improved electrochemical performance of emerging energy storage electrodes. **M. Clites**, E. Pomerantseva

**1:50 ENFL 352.** How to get more jolt for your bolt: Direct enhancement of lithium-ion batteries utilizing a biological tool kit. **S.J. Riley**, M.A. Allen

**2:10 ENFL 353.** Syndiotactic polystyrene based ionogel membranes for high temperature lithium-ion batteries. **P. Raut**, Y. Chen, Y. Zhu, S.C. Jana

**2:30 ENFL 354.** High ionic conductivity and Li<sup>+</sup> transference numbers in mechanically strong ion gels made from multi-ionic salts, methyl cellulose and an ionic liquid as electrolytes for lithium batteries. **P.R. Chinnam**, V.K. Chatara, S. Chereddy, R. Mantravadi, S.L. Wunder

**2:50** Intermission.

**3:00 ENFL 355.** Development of flexible power sources using nanomaterials and polymers. **X. Meng**, Z. Wang, S. Mitra

**3:20 ENFL 356.** Efficient lithium storage from three-dimensional graphene-derived nanomaterials. **H. Yen**, H. Tsai, M. Zhou, A. Chen, E.F. Holby, S. Choudhury, X. Wang, L. Zhu, H. Lin, L. Dai, L. Adamska, S. Tretiak, G. Wu, H. Wang

**3:40** Intermission.

**3:50 ENFL 357.** Tunnel structured manganese oxides for electrochemical energy applications. **B.W. Byles**, E. Pomerantseva

**4:10 ENFL 358.** Role of physicochemical properties on electrochemical performance for one dimensional manganese oxide electroactive materials. **K.J. Takeuchi**

**4:30 ENFL 359.** Case study - probing electron and ion transport over multiple length scales. **A.C. Marschilok**

## Green Chemistry Innovations & Opportunities in Industry for Young Professionals

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### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

#### Thermochemical Conversion & Upgrading

*Sponsored by CATL, Cosponsored by ENFL and MPPG*

#### Chemistry of Biomass Wastes Conversion to Energy & Chemicals

*Sponsored by ENVR, Cosponsored by ENFL*

## WEDNESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 108B

#### USA-China Symposium on Energy

*Cosponsored by ENVR*

*Y. H. Hu, F. Jin, Organizers*

*W. Wei, Z. Zhang, Presiding*

**8:30** Introductory Remarks.

**8:35 ENFL 360.** Graphene-enabled nano/bio hybrids for chemical detection and medical diagnostics. **A.T. Johnson**

**9:10 ENFL 361.** Bicontinuous biphasic liquid media for continuous reactive separations. **M. Haase**, N. Sharifi-Mood, K.J. Stebe, **D. Lee**

**9:45 ENFL 362.** Research on morphology genetic materials templated from nature species. **D. Zhang**

**10:20** Intermission.

**10:30 ENFL 363.** Producing high quality bio-oils through structured upgrading reactor. **Z. Zhang**, L. Mao, **Y. Li**

**11:05 ENFL 364.** Life cycle assessment of biochemical and thermochemical bio-product pathway. **S. Spataro**, V. Larnaudie, L. Nguyen, Y. Sorunmu, P.M. Billen

**11:40 ENFL 365.** Study of anaerobic biodegradability of rice straw hydrothermal liquefaction (HTL) products: aqueous products after extraction with different organic solvents. **H. Chen**, G. Luo, **S. Zhang**, J. Chen

**12:10** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Room 108A

#### Novel Nanomaterials

#### Advanced Catalysts for Fuel Production

*Cosponsored by CATL and ENVR*

*X. Wang, Organizer*

*Z. Wu, X. Xu, Y. Yang, S. Zuo, Organizers, Presiding*

**8:30 ENFL 366.** Mechanistic insights into metal Lewis Acid-mediated catalytic transfer hydrogenation reactions. **B. Xu**, D.G. Vlachos

**9:00 ENFL 367.** Low temperature titration investigation of the role of formate in methanol synthesis - participants or spectators? **Y. Yang**, D. Mei, C.H. Peden, C. Mirns, C.T. Campbell

**9:30 ENFL 368.** Novel functional carbon catalysts for advanced biofuel precursors. **B. Saha**, S. Dutta

**10:00 ENFL 369.** Rhodium- and iridium-mediated functionalization of the carborane [CB<sub>10</sub>H<sub>12</sub>]<sup>-</sup> anion for the synthesis of boron cluster-based materials. **S. Duttwyler**

**10:30 ENFL 370.** X-ray absorption spectroscopic study of N-doping effect in carbon cathodes for lithium-sulfur batteries. **Y. Chen**, D. Wang

**11:00 ENFL 371.** Identification and comparison of the hydrogen-evolution activity of bridging and terminal disulfide in MoS<sub>2</sub> catalysts under acidic environment. **C. Hu**, Z. Chen, G. Fu, **N. Zheng**

**11:30 ENFL 372.** Fabricating unique interfaces for base-free hydrogen production from formaldehyde solution at mild conditions. **J. Fan**

**12:00 ENFL 373.** Functionalized carbon nanotube-supported metal nanoparticles as efficient catalysts for green chemical reactions. **W. Deng**, Q. Zhang, **Y. Wang**

### Section C

Pennsylvania Convention Center  
Room 113A

#### Progress in Coal to Liquids & Gases

*Cosponsored by ENVR and MPPG*

*W. Li, Organizer*

*Q. Cheng, J. Zhang, Organizers, Presiding*

*W. Li, Presiding*

**8:30 ENFL 374.** Production of JP-8 jet fuel from coal. **A.J. Lucero**, J. Meng, B. Koob, K. Mastro, S. Gangwal

**8:55 ENFL 375.** Selective hydrogenation of acetylene over Na<sub>2</sub>S-Pd/SAC catalysts. **M. Hu**, X. Wang

**9:15 ENFL 376.** H<sub>2</sub> production from enhanced water gas shift reaction in a Mg(OH)<sub>2</sub> slurry system. **X. Chen**, K. Fricker, A.A. Park

**9:35 ENFL 377.** Alternative way to produce renewable fuel from hydrodeoxygenation of plant oils over nickel phosphide catalysts. **W. Li**

**9:55 ENFL 378.** Syngas to fuel and chemicals with high efficiency via Fischer-Tropsch synthesis. **L. Zhong**, H. Wang, **Y. Sun**

**10:15** Intermission.

**10:25 ENFL 379.** Fischer-Tropsch synthesis targeted to gasoline-range hydrocarbons. **C. Zhu**, A. Paluch, **G.M. Bollas**

**10:50 ENFL 380.** Direct synthesis of organic carbonates by oxidative carbonylation over Schiff base palladium complexes catalyst. **Q. Cheng**

**11:10 ENFL 381.** Carbon emission reduction potential of hybrid energy systems for coal chemical industry in China. **Z. Tang**, Q. Chen, M. Lv, L. Kong, **Y. Sun**

**11:30 ENFL 382.** Enhanced near-zero-CO<sub>2</sub>-emission chemicals-oriented oil production from coal and natural gas with looping based CO<sub>2</sub> recycling. **X. Huang**, X. Wang, **M. Fan**

**11:50 ENFL 383.** Co-pyrolysis of coal and direct coal liquefaction residue. **X. Li**, D. Fu, L. Li, B. Li, **W. Li**

**12:10 ENFL 384.** Clean synthesis of methylene diphenyl diisocyanate with low environmental impact. **W. Xue**

## Section D

Pennsylvania Convention Center  
Room 109B

### Innovative Chemistry & Materials for Electroenergy Production & Storage Li-S Batteries

*Cosponsored by ENVR and MPPG*

*Y. Jung, Y. Shao, G. Wu, Organizers*

*J. Guo, L. Hu, Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 ENFL 385.** Flame retardant additives for lithium sulfur batteries. **W. Shen**, F. Lin, J. Yang, **J. Wang**

**9:05 ENFL 386.** Functional organosulfide electrolyte for high performance lithium-sulfur batteries. **S. Chen**, Y. Gao, **D. Wang**

**9:35 ENFL 387.** Rapid sulfur-melt integration into electrospun carbon nanofibers as free-standing, binder-free cathodes in lithium sulfur batteries. **C. Dillard**, V. Kalra

**9:55 ENFL 388.** Novel reduced graphene oxide/S composite for high performance lithium/sulfur batteries. **P. Zuo**

**10:15** Intermission.

**10:30 ENFL 389.** Exploiting ionomeric materials for high performance lithium-sulfur batteries. **H. Kim**

**11:00 ENFL 390.** High performance iron-doped lithium manganese phosphate cathode materials for lithium-ion batteries. **P. Zuo**

**11:30 ENFL 391.** Stable room-temperature sodium-sulfur battery. **S. Wei**, L.A. Archer

**11:50 ENFL 392.** Withdrawn.

## Section E

Pennsylvania Convention Center  
Room 107B

### 2D Materials: Graphene & Beyond & their Device Applications

*Cosponsored by ENVR*

*L. Hu, Y. Lin, Y. Zhu, Organizers*

*V. Barone, G. Yu, Organizers, Presiding*

**8:30 ENFL 393.** Graphene-based metal-free catalysts for ORR and beyond. **C. Hu**, M. Wang, **L. Dai**

**9:10 ENFL 394.** One-dimensional nanomaterials for energy storage. **L. Mai**

**9:40 ENFL 395.** Graphene oxide-based electrodes for long-life, high-energy lithium/sulfur batteries. **M. Song**

**10:10** Intermission.

**10:25 ENFL 396.** Exfoliation and sodium cycling behavior of transition metal dichalcogenide nanosheets. **L. David**, M. Abass, **G. Singh**

**10:55 ENFL 397.** Designing two-dimensional nanomaterials for electrochemical energy storage. **L. Peng**, Y. Zhu, **G. Yu**

**11:25 ENFL 398.** Graphene growth on Cu surfaces: From mechanism studies to protocol design. **Z. Li**



**11:55 ENFL 399.** Perovskite-type LaSrMnO electrocatalyst with uniform porous structure for an efficient Li-O<sub>2</sub> battery cathode. Y. Yang, Q. Yuan

## Section F

Pennsylvania Convention Center  
Room 103C

### Computational Chemistry for Energy Application

Cosponsored by CATL and MPPG

L. Cheng, H. Xin, *Organizers, Presiding*

**8:30 ENFL 400.** Simulations of water-solid interfaces. H.H. Kristoffersen, R. Liu, J.E. Shea, H. Metiu

**9:00 ENFL 401.** Charge screening effect in zeolite-catalyzed C-C coupling reactions. B. Wang

**9:30 ENFL 402.** Design of functionalized metal organic frameworks for CO<sub>2</sub> hydrogenation: The effect of MOF topology and functional group. J. Ye, K. Johnson

**10:00 ENFL 403.** Automated toolkit for discovery in inorganic chemistry. H.J. Kulik, E. Ioannidis, T.Z. Gani

**10:30 ENFL 404.** Investigation of A<sub>n</sub>A'<sub>1-x</sub>Mn<sub>x</sub>B<sub>1-x</sub>O<sub>3</sub> perovskites for chemical looping with oxygen uncoupling (CLOU) through first principles calculations. A. Mishra, F. Li, E.E. Santiso, N. Galinsky

**10:50 ENFL 405.** Insights into uranium speciation and extraction from the sea. D. Jiang

**11:20 ENFL 406.** Hydrothermal and mechanical stability of metal-organic frameworks: Influence of linker functionalization and defects. F. Trouselet, F. Couderc

**11:50 ENFL 407.** Predicting light hydrocarbon diffusion through zeolitic imidazolate frameworks for separation applications. R.J. Verploegh, S. Nair, D. Sholl

**12:10 ENFL 408.** DFTMD simulations of pyridinium catalyzed CO<sub>2</sub> reduction. X. Fan, J. Cheng

## Section G

Pennsylvania Convention Center  
Room 102A

### Advances in Chemistry of Energy & Fuels

#### Batteries, CO<sub>2</sub> Capture, Pyrolysis Modeling & Others

Cosponsored by ENVR and MPPG

X. Wang, *Organizer*

D. J. Heldebrant, M. Li, *Organizers, Presiding*

**8:30 ENFL 409.** Anisotropic singlet fission in organic single crystals. Y. Rao, D. Sun, B. Xu, Y. Wu, X. Li, A. Harutyunyan, H. Dai, G. Chen

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

**8:50 ENFL 410.** Electrochemically induced reduction displacement reactions: Enhanced conductivity from the particle to the systems level. E.S. Takeuchi

9:10 Intermission.

**9:20 ENFL 411.** Predictive guide for collective CO<sub>2</sub> adsorption properties of Mg-Al mixed-oxides. H. Lee, S. Kwon, J. Seo, I. Jung, Y. Son, C. Lee, K. Lee, H. Kwon

**9:40 ENFL 412.** Structural factors determining amine thermal degradation in CO<sub>2</sub> capture. Q. Huang

**10:00 ENFL 413.** Development of mathematical model for lignite pyrolysis with solid heat carrier or gas heat carrier. F. Li, J. Feng, W. Li, T.S. Wiltowski

10:20 Intermission.

**10:30 ENFL 414.** Utilization of nitrogen doped carbonized metal organic framework for high stability room temperature sodium-sulfur battery. Y. Chen, Y. Zhu

**10:50 ENFL 415.** Use of mechanochemistry to modify hydrothermal chars. M.T. Timko

**11:10 ENFL 416.** Peace-weapons ammunition destruction and comprehensive utilization of disarmament. J. Liu, D. Wang, X. Liu, Y. Su, J. Han, Z. Di, W. Zhang

### CO<sub>2</sub> Reduction: Electrocatalysis

Sponsored by CATL, Cosponsored by ENFL and MPPG

#### Energy Storage Applications of Ammonia: Synthesis, Storage, Safety & Utilisation

Sponsored by CATL, Cosponsored by ENFL and MPPG

#### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

#### Lignin Conversion

Sponsored by CATL, Cosponsored by ENFL and MPPG

#### Chemistry of Biomass Wastes Conversion to Energy & Chemicals

Sponsored by ENVR, Cosponsored by ENFL

## WEDNESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 108B

#### USA-China Symposium on Energy

Cosponsored by ENVR

Y. H. Hu, F. Jin, *Organizers*

Y. Sun, F. Tao, Y. Zhang, *Presiding*

1:30 Introductory Remarks.

**1:35 ENFL 417.** Nanostructured molybdenum trioxide for electrical energy storage. X. Xiao, J. Zhou, Y. Gogotsi

**2:10 ENFL 418.** Making connections: Theory and modeling to link mechanical, electronic, and optical properties of hybrid/halide perovskites. A.M. Rappe, F. Zheng, L. Tan, D. Saldana-Greco, R. Katti, L. Kronik, D.A. Egger, S. Liu

**2:45 ENFL 419.** Clean coal technologies based on methanol platform. Y. Zhang, W. Di, F. Zhang, X. Xu, Y. Liu

3:20 Intermission.

**3:30 ENFL 420.** Green urbanization in China based on ecological carbon capture and recycle: Biomass and microalgae's role. L. Kong, Z. Tang, W. Wei, Y. Sun

**4:05 ENFL 421.** Application of ambient pressure x-ray photoelectron spectroscopy to studies of catalysis: Surface of catalysis in reactants. F. Tao, L. Nguyen, Y. Tang

4:40 Concluding Remarks.

## Section B

Pennsylvania Convention Center  
Room 108A

### Novel Nanomaterials

#### Rational Design

Cosponsored by CATL and ENVR

X. Wang, *Organizer*

Z. Wu, X. Xu, Y. Yang, S. Zuo, *Organizers, Presiding*

**1:30 ENFL 422.** Transition-metal-doped, nanostructured lithium zirconate as a high-specific-capacity lithium-ion battery cathode. D.G. Truhlar, S. Huang, Y. Fang, B. Wang, B.E. Wilson, N. Tran, W.H. Smyrl, A. Stein

**2:00 ENFL 423.** Nanostructured electrode materials for Li/Na ion storage. A. Yan

**2:30 ENFL 424.** Inorganic nanogels for ultrafast charging lithium ion batteries. X. Chen

**3:00 ENFL 425.** Rational design of inorganic/carbon composite nanostructures for energy storage and conversion. Z. Jin

**3:30 ENFL 426.** In-situ TEM & x-ray absorption study of lithium sulfur battery. H. Liao

**4:00 ENFL 427.** Ionic conductors for solid-state dye-sensitized solar cells. Z. Wang

**4:30 ENFL 428.** Tailoring ZnO nanocrystal thin films as electron-transporting layers for solution-processed light-emitting diodes and solar cells. Y. Jin

**5:00 ENFL 429.** Stimuli responsive materials based on a polymer bilayer structure. S. Zeng, D. Zhang, W. Huang, Z. Wang, S.G. Freire, X. Yu, A. Smith, E. Huang, H. Nguon, L. Sun

## Section C

Pennsylvania Convention Center  
Room 113A

#### Heterogeneous Catalysis for Selective Oxidation & Reduction toward a Green Production

#### Selective Oxidation

Cosponsored by CATL and ENVR

F. Tao, *Organizer*

J. J. Bravo-Suarez, *Organizer, Presiding*  
W. Huang, *Presiding*

1:30 Introductory Remarks.

**1:35 ENFL 430.** Roles of Re and Cs as promoters for Ag/ $\alpha$ -Al<sub>2</sub>O<sub>3</sub> in high selectivity ethylene epoxidation catalysts. J.R. Monnier, W. Diao, C.D. DiGiulio, M.T. Schaal, S. Ma

**2:15 ENFL 431.** Selective hydrodeoxygenation of anisole on a cobalt oxide-based bi-functional catalyst. S. Zhang, Y. Tang, F. Tao

**2:45 ENFL 432.** Influences of alloying and surface modification on the direct synthesis of H<sub>2</sub>O<sub>2</sub> on metal clusters. D. Flaherty

**3:15 ENFL 433.** Computational studies of ethylene epoxidation on a mesoporous metal-substituted silica heterogeneous catalyst. P.D. Patel, K.G. Steenbergen, B.B. Laird, W. Thompson

3:45 Intermission.

**3:55 ENFL 434.** Understanding the important role of reactant-adsorption on the surface of supported Au catalysts for selective oxidation of benzyl alcohol. J. Fan

**4:25 ENFL 435.** Encapsulated intermetallic nanoparticle for selective furfural hydrogenation. W. Huang, R. Malgal Ganesh, L. Wang, D.D. Johnson, S. Zhang, F. Tao, C. Xiao

**4:55 ENFL 436.** Nb-incorporated mesoporous silicates for selective ethylene epoxidation. S.K. Maiti, W. Yan, A. Ramanathan, P.D. Patel, W. Thompson, B. Subramaniam

5:25 Concluding Remarks.

## Section D

Pennsylvania Convention Center  
Room 109B

### Innovative Chemistry & Materials for Electroenergy Production & Storage

#### Li-Ion & Li-O<sub>2</sub> Batteries

Cosponsored by ENVR and MPPG

J. Guo, L. Hu, Y. Jung, Y. Shao, *Organizers*

G. Wu, *Organizer, Presiding*

Y. Seok Jung, *Presiding*

1:30 Introductory Remarks.

**1:35 ENFL 437.** Li-air flow battery for accelerated separation of O<sub>2</sub> reduction reaction and discharge product storage. K. Takechi, F. Mizuno, P.J. Kenis, B. Kim, S. Verma, S. Ma, A. Desai

**1:55 ENFL 438.** Unusual one-step formation of Fe<sub>2</sub>O<sub>3</sub>/MnO<sub>2</sub> core-shell hollow nanorods as a high performance anode material for lithium ion batteries. S. Hao, Y. Huang

**2:15 ENFL 439.** Poly(arylene ether)-based single-ion conductors for lithium-ion batteries. G. Yang, H. Oh, K. Xu, C. Chanthad, I. Alperen Ayhan, Q. Wang

**2:35 ENFL 440.** Naturally synthetic: A biological toolbox for non-biological challenges. M.A. Allen, E. Barannikova, S.J. Riley, A. Winton

**2:55 ENFL 441.** Porous 2D transition metal carbides (MXenes) for high-performance lithium-ion storage. C. Ren, M. Zhao, T. Makaryan, J. Halim, M. Boota, M.W. Barsoum, Y. Gogotsi

3:15 Intermission.

**3:30 ENFL 442.** Molecular triangles for organic rechargeable batteries. D. Kim, K. Hermann, A. Prokofjevs, M.T. Otley, C. Pezzato, J.F. Stoddart

**3:50 ENFL 443.** Nanoscale organization of cathode materials for Li-ion battery via biotemplating. E. Barannikova, M.A. Allen

**4:10 ENFL 444.** Novel malleable thermosets for solid-state battery application. W. Zhang, P. Tayntoni, J. Whiteley, S. Lee

**4:30 ENFL 445.** Anthraquinone functionalized reduced graphene oxide as electrode material for rechargeable batteries. B. Esat, S. Bahceci Sertkol, A. Momchilov

**4:50 ENFL 446.** Sustainable power sources based on high efficiency thermopower wave devices. T. Liu, S. Mahajan, A. Cottrill, Y. Kunai, D. Bender, J. Castillo, S. Gibbs, M. Strano

## Section E

Pennsylvania Convention Center  
Room 107B

### 2D Materials: Graphene & Beyond & their Device Applications

*Cosponsored by ENVR*

V. Barone, G. Yu, Y. Zhu, *Organizers*

L. Hu, Y. Lin, *Organizers, Presiding*

**1:30 ENFL 447.** Role of oxygen in tuning the optical and catalytic properties of copper oxide nanosheets. Z. Fishman, Y. He, B. Liu, B. Rudsteyn, G.L. Haller, V.S. Batista, L. Ptefferle

**1:45 ENFL 448.** MoS<sub>2</sub> nanosheets for dye-sensitized solar cells. W. Wei, Y.H. Hu

**2:00 ENFL 449.** Self-dispersed crumpled graphene balls in oil for friction and wear reduction. J. Huang

**2:30 ENFL 450.** Intercalation optoelectronics in 2D materials. L. Hu

**3:00 ENFL 451.** Self-assembly of graphene and its application for densifying energy storage. Q. Yang

**3:30** Intermission.

**3:40 ENFL 452.** Redox-active 2D covalent organic framework films. C.R. DeBlase, K. Hernandez, K. Silberstein, G. Rodriguez-Calero, R.P. Bisbey, H.D. Abruna, W. Dichtel

**4:20 ENFL 453.** Nanoporous graphene and graphene quantum dots: clean synthesis, structural characterization and applications. T. Han

**4:50 ENFL 454.** Graphene-based membranes for energy-efficient gas and liquid separation. H. Park

## Section F

Pennsylvania Convention Center  
Room 103C

### Mesoporous Zeolites

*Cosponsored by CATL*

Z. He, K. Li, *Organizers*

J. Garcia Martinez, *Organizer, Presiding*

J. Gilson, *Presiding*

**1:30** Introductory Remarks.

**1:35 ENFL 455.** Top-down and bottom-up approaches to nanosized and hierarchical zeolites. T. Okubo

**2:15 ENFL 456.** Hierarchical zeolites with uniform mesopores prepared by a mixed approach. J.M. Escola

**2:45 ENFL 457.** Post-synthesized small crystal Y zeolite with ultrahigh mesopores and controllable pore size distributions. C. Li, B. Shen

**3:15** Intermission.

**3:35 ENFL 458.** Advanced microscopy for mesoporous zeolite characterization: inter- and intraparticle heterogeneity. M. Roeffaers

**4:15 ENFL 459.** Organotemplate-free synthesis of mesoporous ZSM-5 zeolite. F. Xiao, L. Wang, H. Zhang

**4:45 ENFL 460.** Template-free synthesis of hierarchical zeolite by solvent-free crystallization. Y. Wang, J. Song, N. Baxter, S. Wang

## Section G

Pennsylvania Convention Center  
Room 102A

### Advances in Chemistry of Energy & Fuels

Production, Refinery & Storage of Fuel Compounds

*Cosponsored by ENVR and MPPG*

X. Wang, *Organizer*

D. J. Heldebrant, M. Li, *Organizers, Presiding*

**1:30 ENFL 461.** Auto-ignition characteristics of conventional and synthetic alternative jet fuels in a motored engine and an optically accessible constant volume spray combustion chamber. D. Kang, V. Kaslaskar, A.L. Boehman

**1:50 ENFL 462.** Determination of iron, nickel and vanadium in petroleum heavy oil and residue samples: comparison of different preparation methods and elemental analysis techniques. J. Nelson, G. Gilleland, L. Poirier, S. Wall, F.A. Lopez-Linares, L. Berhane

**2:10 ENFL 463.** Storage and oxidation stabilities of biodiesel and its blends with ULSD and NATO F-76. J. Fu, S.Q. Turn, P.A. Gimeno

**2:30 ENFL 464.** Toward the conversion of phytoremediation biomass to cellulosic bioethanol. N. Brosse

**2:50** Intermission.

**3:00 ENFL 465.** High-pressure conversion of C<sub>5</sub>-C<sub>7</sub> alkanes for aircraft endothermic cooling. E.P. Schreiner, S. Teketel, R.F. Lobbo

**3:20 ENFL 466.** Reducing the carbon intensity of methanol through bi-reforming. P. Roy, A. Raju, S. Franco, C. Park

**3:40 ENFL 467.** Solubility of carbon dioxide, methane, nitrogen, and oxygen in triglycerides: Measurement and correlation. M. Howlader, N. Rai, W.T. French

**4:00** Intermission.

**4:10 ENFL 468.** Identification of products formed by iron corrosive carboxylic acids by FT-ICR mass spectrometry. L.C. Krajewski, V. Lobodin, W.K. Robbins, A.G. Marshall, R.P. Rodgers

**4:30 ENFL 469.** Polymer cement composites for geothermal wells. M.I. Childers, K.A. Rod, T.J. Roosendaal, M.C. Endres, W. Um, D.N. Tran, J. Chun, P.K. Koech, C.A. Fernandez

**4:50 ENFL 470.** In-situ potentiodynamic analysis of the electrolyte/silicon electrodes interface reactions - A sum frequency generation vibrational spectroscopy study. Y. Horowitz, G.A. Somorjai

**5:10 ENFL 471.** Role of strain and ligand effect in selective hydrogen production from formic acid decomposition on the bimetallic Pd/M catalysts. J. Cho, S. Lee, J. Han, S. Yoon, S. Nam, K. Lee, H. Ham

### CO<sub>2</sub> Reduction: Electrocatalysis

*Sponsored by CATL, Cosponsored by ENFL and MPPG*

### Catalysts & Catalytic Technologies for Conversion of Biomass & Its Derivatives

#### Conversion to Chemicals & Fuels

*Sponsored by CATL, Cosponsored by ENFL and MPPG*

## WEDNESDAY EVENING

### Chemistry of Biomass Wastes Conversion to Energy & Chemicals

*Sponsored by ENVR, Cosponsored by ENFL*

## THURSDAY MORNING

### Section B

Pennsylvania Convention Center  
Room 108A

#### Novel Nanomaterials

##### Various

*Cosponsored by CATL and ENVR*

X. Wang, *Organizer*

Z. Wu, X. Xu, Y. Yang, S. Zuo, *Organizers, Presiding*

**8:30 ENFL 472.** Stacked core-shell nanorod array electrocatalyst by a HIPS-GLAD method for enhanced ORR in PEMFCs. F.M. Yurtsever, M. Begum, M. Yurukcu, T. Karabacak

**8:50 ENFL 473.** One-pot, one-step direct fabrication of spinel/layered Li excess cathode materials for high performance rechargeable lithium ion batteries. K. Savaram, J. Zhao, R. Huang, F. Wang, H. He

**9:10 ENFL 474.** TiN<sub>2</sub>: prediction of a novel stoichiometry of semiconducting titanium nitride 2D sheets with low metal content. V. Barone

**9:30 ENFL 475.** Optoelectronic application of nanoGUMBOS. N. Siraj, T.E. Karam, L.H. Haber, I.M. Warner

**9:50 ENFL 476.** Crystalline and amorphous TiO<sub>2</sub> low energy bandgap nanomaterials and their energy and environmental applications. H. Lee

**10:10 ENFL 477.** Synthesis of magnetic cellulose nanocrystals for high performance applications. P. Dhar, A. Kumar, V. Katiyar

**10:30 ENFL 478.** Nano-structures and thin films by pulsed laser deposition for engineering and technology applications. R. Gupta

**10:50 ENFL 479.** Withdrawn.

**11:10 ENFL 480.** Next generation of lithium-ion battery materials with high energy. J. Zhao, J. Wang, B. Li, Y. Yang, J. Huang

**11:30 ENFL 481.** Copper doped mesoporous CeO<sub>2</sub> catalysts for the water gas shift reaction. D. Vovchok, C. Guild, J. Llorca, W. Xu, S.D. Senanayake, J. Rodriguez, S.L. Suib

**11:50 ENFL 482.** Enhanced ethanol productivity through the use electrospun alginate threads. A. Nordmeier, D. Chidambaram

### Section C

Pennsylvania Convention Center  
Room 113A

### Heterogeneous Catalysis for Selective Oxidation & Reduction toward a Green Production

#### Selective Oxidation & Reduction

*Cosponsored by CATL and ENVR*

F. Tao, *Organizer*

J. J. Bravo-Suarez, *Organizer, Presiding*

T. A. Jackson, P. Mueller, *Presiding*

**8:30** Introductory Remarks.

**8:35 ENFL 483.** Controlling environments for catalytic hydrogen and oxygen transfer on solid supports. A. Palermo, A. Okrut, N. Grosso-Giordano, R. Ouyang, A. Solovoy, D. Ertler, S.I. Zones, B.C. Gates, A.S. Katz

**9:15 ENFL 484.** Enhanced two-dimensional dispersion of group V metal oxides on silica. J. Grant, C.A. Carrero, A.M. Love, R. Verel, P. Mueller, I. Hermans

**9:35 ENFL 485.** Selective tandem catalysis by metal nanoclusters encapsulated in metal-organic frameworks. X. Li, C. Xiao, T. Goh, W. Huang

**9:55 ENFL 486.** Highly active and selective thallium doped ceria supported gold catalyst for benzyl alcohol aerobic oxidation. C. Santra, J.J. Bravo-Suarez, F. Tao, B. Sreedhar, J.K. Pandey, B. Chowdhury

**10:15** Intermission.

**10:25 ENFL 487.** C-H bond oxidation by Mn(IV)-oxo species and catalytic applications. T.A. Jackson

**10:55 ENFL 488.** Methane-to-methanol conversion in the zeolite SSZ-13. F. Goeltl, P. Sautet, I. Hermans

**11:25 ENFL 489.** Syngas conversion to higher alcohols: Application of novel KCoRhMo catalysts supported over carbon nanohorns (CNHs) and its by-products (OCP & OCP). P.E. Boahene, A.K. Dalai, R. Sammynaiken

**11:55** Concluding Remarks.

### Section D

Pennsylvania Convention Center  
Room 109B

### Innovative Chemistry & Materials for Electroenergy Production & Storage

#### Electrocatalysis for Low-Temperature Fuel Cells & CO<sub>2</sub> Reduction

*Cosponsored by ENVR and MPPG*

J. Guo, L. Hu, Y. Jung, Y. Shao, *Organizers*

G. Wu, *Organizer, Presiding*

Y. Shao, *Presiding*

**8:30** Introductory Remarks.

**8:35 ENFL 490.** Functionalization of graphene for efficient energy conversion and storage. L. Dai

**9:05 ENFL 491.** Highly dense Cu nanowires for low-overpotential CO<sub>2</sub> reduction. D. Raciiti, K. Livi, C. Wang

**9:35 ENFL 492.** Comparative study of the influence of N,N'-dialkyl vs N,N'-diaryl electron donors ancillary ligands on the photocurrent and photovoltage in dye-sensitized solar cells (DSSCs). S. Ashraf, D. El-Sherbiny, H.M. Siddiqi, J. Akhtar, A. El Shafei

**9:55 ENFL 493.** Electrospun carbon nanofiber aerogel meets polyimide-derived carbon sheets: a rational structural design for environmental protection and energy storage. F. Lai

**10:15** Intermission.

**10:30 ENFL 494.** Non-precious metal oxygen reduction catalysis in fuel cell: rational design from catalyst to electrode. D. Liu

**11:00 ENFL 495.** Electrocatalysis on transition metal-oxide films epitaxially grown on single crystal substrates. J. Suntivich

**11:30 ENFL 496.** Electrochemical synthesis of ammonia under ambient conditions using novel solvents with high nitrogen solubility and wide electrochemical window. K. Kim, H. Yoon, J. Han

**11:50 ENFL 497.** Dynamic surface stress response during reversible Mg electrodeposition and stripping. Y. Ha, Z. Zeng, C.J. Barile, J. Chang, R.G. Nuzzo, J.P. Greeley, A.A. Gewirth

### Section E

Pennsylvania Convention Center  
Room 107B

#### 2D Materials: Graphene & Beyond & their Device Applications

*Cosponsored by ENVR*

L. Hu, Y. Lin, G. Yu, *Organizers*

V. Barone, Y. Zhu, *Organizers, Presiding*

**8:30 ENFL 498.** Defect engineering in 2-dimensional materials: From theory to applications. M. Terrones

**9:10 ENFL 499.** Effect of quantum confinement on electron correlation in atomically thin Nb<sub>3</sub>SiTe<sub>6</sub>. J. Wei

**9:40 ENFL 500.** Tailoring the electrical properties of graphene oxide over multiple length scales. J.M. Mativetsky

**10:10** Intermission.

**10:25 ENFL 501.** Funding opportunities at the Army Research Office (ARO) and research programs in the Materials Science Division at ARO. C.V. Varanasi

**10:55 ENFL 502.** Hydrogen bonding assembled organic 2D semiconductor. Y. Zhu

**11:25 ENFL 503.** Inversion symmetry breaking in MoTe<sub>2</sub> probed by second harmonic generation. R. Beams, S. Krylyuk, I. Kalish, B. Kalanyan, J.E. Maslar, A. Davydov, S.J. Stranick

**11:40 ENFL 504.** Synthesis and characterization of 2D molybdenum carbide (MXene). S. Kota, J. Halim, M. Lukatskaya, M. Naguib, M. Zhao, E. Moon, J. Pitcock, J. Nanda, S. May, Y. Gogotsi, M.W. Barsoum

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

### Section F

Pennsylvania Convention Center  
Room 103C

#### Mesoporous Zeolites

*Cosponsored by CATL*

J. Garcia Martinez, K. Li, *Organizers*

Z. He, *Organizer, Presiding*

T. Okubo, *Presiding*

**8:30 ENFL 505.** Mesoporosity in zeolites: a tool to mitigate their deactivation by coking and optimize their regeneration. J. Gilson, L. Lakiss, F. Ngoye, C. Canaff, S. Laforge, Y. Pouilloux, Z. Qin, M. Tarighi, K. Thomas, V. Valtchev, A. Vicente, C. Fernandez, L. Pinarid

**9:10 ENFL 506.** Catalytic fast pyrolysis of biomass derived furans over hierarchical ZSM-5 catalysts. J. Gou, X. Qi, V. Vattipalli, W. Fan

**9:40 ENFL 507.** Bifunctional zeolites for the adsorptive desulfurization of model fuels. K. Lee, J. Vaila

**10:10** Intermission.

**10:30 ENFL 508.** 3D nanoscale imaging of zeolite-based catalysts. J. Zecevic, C. Gommès, H. Friedrich, P. de Jongh, K. De Jong

**11:10 ENFL 509.** Synthesis and characterization of nanogibbsite with or without MCM-41 in an ambient environment. L. Pan

**11:40** Concluding Remarks.

### Section G

Pennsylvania Convention Center  
Room 102A

#### Advances in Analytical Methods in Petroleum Upstream Applications

##### Measurements for the People: Understanding What You Sought

C. F. Ovalles, C. E. Rechsteiner, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 ENFL 510.** Overview of analytical methods used for qualifying hydraulic fracturing fluids. M.A. Reynolds

**9:05 ENFL 511.** In situ combustion, in situ upgrading reaction monitoring, and upgrading mapping for Athabasca bitumen and its processed products. L.A. Carbognani, C. Hovsepian, C.E. Scott, P. Pereira-Almao, R. Moore, S. Mehta, M. Ursenbach

**9:35 ENFL 512.** Characterization of asphaltene: Kinetic aspects. E. Rogel

**10:05** Intermission.

**10:15 ENFL 513.** Impact of solubility parameter measurements on predicted asphaltene gradients. Application to reservoir connectivity. E. Rogel, C.F. Ovalles, A.E. Pomerantz, J. Zuo, O.C. Mullins

**10:45 ENFL 514.** Application of high-temperature gas chromatography coupled with inductively coupled mass spectrometry (HTGC-ICP-MS) for metal distribution in crude oil cuts. L. Poirier, J. Nelson, C.E. Rechsteiner, M.M. Boduszynski, M.M. Moir, D. Leong, F.A. Lopez-Linares

**11:15 ENFL 515.** New green sample preparation techniques for the determination of trace metals in petroleum source rock. A. Akinlua

**11:45 ENFL 516.** Analysis of deposit and product oils from resid hydrocracking unit using Fourier transform ion-cyclotron resonance mass spectrometry. K. Katano, T. Suzuki, R. Tanaka

**12:15** Concluding Remarks.

#### Crystal Defects on Surface Reactivity & Heterogeneous Photocatalysis

*Sponsored by ENVR, Cosponsored by ENFL*

### THURSDAY AFTERNOON

#### Crystal Defects on Surface Reactivity & Heterogeneous Photocatalysis

*Sponsored by ENVR, Cosponsored by ENFL*

## ENVR

### Division of Environmental Chemistry

D. Dionysiou, *Program Chair*

#### OTHER SYMPOSIA OF INTEREST:

**ACS Award in Analytical Chemistry: Symposium in honor of William R. Heineman** (see ANYL, Mon)

**Colloidal & Interfacial Chemistry for Water Treatment & Recycling** (see COLL, Wed, Thu)

**Catalysis in Automotive Emission Control** (see CATL, Tue)

**Elucidating the Molecular-Level Interactions Between Biological Membranes & Engineered Nanomaterials** (see COLL, Tue, Wed, Thu)

**Molecular Modeling of Surface-Mediated Electrochemical & Sorption Reactions at Environmental Interfaces** (see GEOC, Sun)

**Physical Chemistry of Atmospheric Processes** (see PHYS, Sun, Mon, Tue, Wed, Thu)

#### SOCIAL EVENTS:

**Reception**, 6:00 PM: Tue

**Dinner**, 7:30 PM: Tue

#### BUSINESS MEETINGS:

**Business Meeting**, 7:00 PM: Sun

**Executive Committee Meeting**, 7:30 PM: Sun

**Long Range Planning Meeting**, 3:00 PM: Sun

**Program Planning Meeting**, 2:00 PM: Sun

### SUNDAY MORNING

#### Section A

Loews Philadelphia Hotel  
Commonwealth Hall C

#### Aquatic Chemistry: Symposium in honor of Professor Alan T. Stone

##### Interfaces of Organic, Inorganic & Surface Chemistry in Natural & Engineered Systems

B. Deng, T. J. Strathmann, D. Vasudevan, *Organizers*

C. Huang, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 ENVR 1.** Puzzling redox behavior of arsenic in sulfidic waters. G.R. Helz

**9:10 ENVR 2.** Chromium fate and transport in estuarine sediments. E.J. Bouwer, A. Wadhawan, A. Graham

**9:35 ENVR 3.** Bioinorganic chemistry of bacterial manganese oxidation. B.M. Tebo

**10:00 ENVR 4.** Surface reactivity of biogenic manganese oxides. O. Duckworth

**10:25** Intermission.

**10:40 ENVR 5.** Changing the manganese paradigm: Soluble manganese(III) is ubiquitous in natural waters and sedimentary pore waters. G.W. Luther, V.E. Oldham, B.M. Tebo, M.R. Jones, A. Mucci, B. Sundby

**11:05 ENVR 6.** Nanoscale investigations of heterogeneous nucleation and growth of manganese (hydr)oxide in aqueous environments. Y. Jun, H. Jung

**11:25 ENVR 7.** Manganese and iron oxides in mixtures with other metal oxides: Interaction mechanisms and redox reactivity. H.J. Zhang, S. Taujale, J. Huang, K. Rasamani

**11:45 ENVR 8.** Transformation of benzimidazole anthelmintic agents from reactions with manganese oxide. S. Liou, S. Wu, W. Chen

#### Section B

Loews Philadelphia Hotel  
Washington A

#### Nanotechnology for Sustainable Agriculture & Food Systems

*Cosponsored by AGRO and CEI*

P. Demokritou, J. C. White, *Organizers*

G. Lowry, N. B. Saleh, *Organizers, Presiding*

**8:15** Introductory Remarks.

**8:25 ENVR 9.** Power of novel metal oxide-carbon nanotube heterostructures: enabling microwave to disinfect water for aquaculture. J. Plazas-Tuttle, D. Das, N.B. Saleh

**8:50 ENVR 10.** Engineered Water Nanostructures (EWNs): A chemical free, nanotechnology based antimicrobial platform for inactivation of foodborne microorganisms across the farm-to-fork continuum. P. Demokritou, G. Pyrgiotakis

**9:15 ENVR 11.** FRET-based quantum dot sensor for detection of botulinum neurotoxin serotypes A and B. Y. Wang, H.C. Fry, I. Medintz, G.E. Skinner, K.M. Schill, T.V. Duncan

**9:40 ENVR 12.** Nanoscale micronutrients suppress plant disease and increase crop yield. J.C. White, W. Elmer

**10:05** Intermission.

**10:20 ENVR 13.** Applications of cerium oxide nanoparticles for plant salt stress enhancement in agriculture. X. Ma, L. Rossi

**10:45 ENVR 14.** Impact of metal and metal oxide nanoparticle speciation and solubility on their bioavailability to terrestrial and aquatic plants. G. Lowry, J. Stegemeier, X. Gao, E. Spielman-Sun, S. Rodrigues

**11:10 ENVR 15.** Advanced nanomaterials for catalytic dephosphorylation and phosphorus recovery. M. Manto, C. Wang



**11:35 ENVR 16.** Starch stabilized silver nanoparticles, synthesis and their adsorption-desorption pattern for dichlorvos insecticide. N.E. Ihegwuagu, R. Sha'Ato, T. Tor-Anyini, L. Nnamonu, B. Sone, O. Omojola, M. Maaza

## Section C

Loews Philadelphia Hotel  
Commonwealth Hall B

### Formation & Transformation of Atmospheric Aerosols: Air Pollution to Climate Change: Symposium in honor of Professor Renyi Zhang

#### Atmospheric Nucleation & SOA Formation

V. K. Sharma, Y. Wang, *Organizers*

M. Hu, A. Khalizov, *Organizers, Presiding*

**8:15** Introductory Remarks.

**8:20 ENVR 17.** Laboratory and field studies of secondary organic aerosol formation and oxidative aging using the potential aerosol mass oxidation flow reactor. C.E. Kolb, A. Lambe, T.B. Onasch, P. Massoli, J.H. Kroll, L.R. Williams, M.R. Canagaratna, J.T. Jayne, D.R. Worsnop, P. Davidovits, W. Brune

**8:45 ENVR 18.** Inferring the stoichiometry and energetics of critical cluster formation from laboratory nucleation measurements. R. McGraw

**9:05 ENVR 19.** Impact of temperature dependence on the contribution of organics to new particle formation in the atmosphere. F. Yu

**9:30 ENVR 20.** Withdrawn.

**9:50 ENVR 21.** Investigation of nucleation events in an industry zone in Nanjing China. J. Zheng, Y. Ma, D. Yang

**10:10** Intermission.

**10:25 ENVR 22.** Role of sub-2 nm particles in new particle formation. S. Lee

**10:50 ENVR 23.** New particle formation under the complex air pollution in China. M. Hu, Z. Wu, S. Guo, Z. Wang, D. Yue, A. Wiedensohler, M. Boy, D. Collins, R. Zhang

**11:15 ENVR 24.** Formation of secondary organic aerosol from chlorine-initiated oxidation of C10 hydrocarbons. D. Wang, L. Hildebrandt Ruiz

**11:35 ENVR 25.** Anthropogenic control of biogenic SOA: sulfate as a trigger for aqSOA from isoprene. R. Volkamer, E. Waxman, N. Kille, J. Elm, T. Kurten, N. Sareen, A. Carlton

## Section D

Loews Philadelphia Hotel  
Washington B

### Innovative Materials & Technologies for Environmental Sustainability

#### Approaches for Sustainable Metal Recovery & Removal

*Cosponsored by CEI*

J. C. Crittenden, Q. Li, W. Zhang, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 ENVR 26.** Withdrawn.

**8:55 ENVR 27.** Material flow analysis for used and recycled electronic materials. J.A. Glaser, E. Sahle-Demessie, T. Richardson, C.W. Lee, S.R. Al-Abed

**9:15 ENVR 28.** Stoichiometric hardness removal without use of brine or mineral acid as regenerant: A novel approach to sustainable softening. J. Li, A. SenGupta

**9:35 ENVR 29.** Interaction of Ferritin with phosphate and arsenate in relation to formation of ultra-small nanoparticles at loading with Fe. T. Hiemstra, W. Zhao

**9:55** Intermission.

**10:15 ENVR 30.** Synergistic oxidation and removal of arsenite from groundwater using an energy-efficient advanced electrocoagulation. Y. Si, G. Li, C. Feng, F. Zhang

**10:35 ENVR 31.** Fast arsenate adsorption kinetics for iron-impregnated ordered mesoporous carbon: Batch tests and mass transfer assessment. Z. Wang, W. Hu, Z. Kang, N. Cai, B. Deng

**10:55 ENVR 32.** Synthesis of novel composites-Diatom immobilized with metal oxides for removal of water pollutants. M. Thakkar

**11:15 ENVR 33.** Hexavalent chromium removal via composite carbon nanotubes electrically conductive ultrafiltration membranes. W. Duan, A. Ronen, G. Chen, H. Liu, S.L. Walker, D. Jassby

**11:35** Concluding Remarks.

## Section E

Loews Philadelphia Hotel  
Washington C

### Poly- & Perfluoroalkyl Substances: Environmental Behavior & Pollution Control

D. Chiang, E. R. McKenzie, D. Woodward, *Organizers*

Q. Huang, L. S. Lee, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:10 ENVR 34.** Water quality and co-contaminant effects on PFAA sorption and transport through saturated porous media. E.R. McKenzie, R.L. Siegrist, J.E. McCray, C.P. Higgins

**8:35 ENVR 35.** How does hydro-oleophobicity of perfluorocarbon chain affect interfacial behavior and mechanism of perfluorooctane sulfonate in oil-water mixture? P. Meng, S. Deng

**9:00 ENVR 36.** PFOA transport into deep marine water-is the abyss a permanent sink? L.J. Thibodeaux

**9:25 ENVR 37.** Development of a conceptual site model for PFAS fate and transport incorporating PFAA precursors. J. Burdick, E. Houtz, I. Ross

**9:50** Intermission.

**10:10 ENVR 38.** PFAS best practices for sampling and analysis and future considerations. M. Aucoin

**10:35 ENVR 39.** Assessment of PFAS in soil and groundwater: New analytical technologies for comprehensive analysis of PFAS including precursors. I. Ross, E. Houtz, J. Burdick, A. Horneman

**11:00 ENVR 40.** Targeted improvements of analytical method for poly- and perfluoroalkyl substances in water, soil and sediment at PFAS-contaminated sites. D. Chiang

**11:25 ENVR 41.** Field deployable PFAS sensors for on-site assessments. L. Chen, J. Thompson, M. Rossi

## Section F

Loews Philadelphia Hotel  
Congress A

### Impacts of Energy Systems on Water Treatment

P. Mouser, D. L. Plata, *Organizers*

K. D. Good, J. M. Vanbrienen, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:45 ENVR 42.** Bromide, chloride, and associated brine constituents in waters from coal-bearing rocks in Pennsylvania. C.A. Cravotta

**9:10 ENVR 43.** Modeling bromide concentration contributions from coal-fired power plants in southwestern Pennsylvania. K.D. Good, J.M. Vanbrienen

**9:35 ENVR 44.** Effect of bromide discharges on source water bromide levels and disinfection by-product formation in North Carolina. D. Knappe, A. Greune, V. Edeback

**10:00 ENVR 45.** Five-year review of water quality monitoring of Beaver Run Reservoir in Westmoreland County, PA. N.R. Mc Elroy, B. Okey, J. Richburg

**10:25** Intermission.

**10:40 ENVR 46.** Assessing the risk associated with increasing bromide in drinking water sources in the Monongahela River, Pennsylvania. Y. Wang, J.M. Vanbrienen

**11:05 ENVR 47.** Electrochemical selective bromide removal from energy wastewater. M. Sun, G. Lowry, K.B. Gregory

**11:30 ENVR 48.** Impact of slickwater fracturing fluid composition and shale interactions on membrane fouling of flowback water. B. Xiong, S. Roman-White, B. Farina, T. Tasker, W.D. Burgos, M. Kumar, A.L. Zydney

**11:55** Concluding Remarks.

## Section G

Loews Philadelphia Hotel  
Congress B

### Advances in Understanding PPCP Fate in Wastewater Collection & Treatment Systems

L. A. Rodenburg, *Organizer*

N. Fahrenfeld, *Organizer, Presiding*

**8:30 ENVR 49.** Withdrawn.

**8:50 ENVR 50.** Identification and measurement of morphine in wastewater by SPE and LC-MS and determination of the morphine structure in solution by NMR and RDC. F. Mahmoudi, W. Carroll

**9:10 ENVR 51.** Antimicrobial chemicals are prevalent and problematic in dust as well as in wastewater treatment. E.M. Hartmann, R. Hickey, T. Hsu, C. Betancourt Román, J. Chen, R. Schwager, J. Kline, G. Brown, R.U. Halden, C. Huttenhower, J. Green

**9:35 ENVR 52.** Factors controlling antibiotics levels in biosolids. B. Blackburne, N. Fahrenfeld, L.A. Rodenburg

**9:55 ENVR 53.** Influence of different wastewater solids treatment methods on concentrations of triclosan, triclocarban, and their transformation products in biosolids. D. Armstrong, N. Lozano, C.P. Rice, M. Ramirez, A. Torrents

**10:15** Intermission.

**10:30 ENVR 54.** Detection of compounds of emerging concern in municipal wastewater treatment facilities in El Paso, TX. J. Bezares-Cruz, Y.A. Garcia, M.B. Cox, W. Lee, W. Walker

**10:50 ENVR 55.** Emerging contaminants in the Delaware River Watershed. D. Villmanovic, R.E. Hannah, R.P. Suri, G. Andaluri, R. MacGillivray

**11:10 ENVR 56.** Impact of wastewater treatment plants on microplastics in freshwater water. S. Estahbanati, N. Fahrenfeld

**11:30 ENVR 57.** Microplastics in the aqueous environment: Sources, sinks and ecological consequences. R.Y. Lochhead, M. Shows, A.G. Marks, K.C. Deniakos, S.E. Morgan

## Section H

Loews Philadelphia Hotel  
Congress C

### Advances in Innovative Designs & Process Cost Estimation Techniques for Advanced Water Purification Technologies

Y. G. Adewuyi, E. Sahle-Demessie, *Organizers, Presiding*

**8:15** Introductory Remarks.

**8:20 ENVR 58.** Lead and cadmium removal from wastewater using magnetized fast pyrolysis biochar from timber industry waste wood. A.G. Karunanayake, O.A. Todd, M. Crowley, R. Anderson, T. Mlsna

**8:45 ENVR 59.** Plasma-based water treatment: Targeted application and guidelines for process scale-up. S. Mededovic, C. Bellona, T.M. Holsen, G. Stratton, F. Dai

**9:10 ENVR 60.** Ibuprofen and ibuprofen-lysinate removal by adsorption and advanced oxidation process (AOPs). M. Manickavachagam, G. Andaluri, S. Rominder

**9:35 ENVR 61.** Charge and size selective ion sieving through  $Ti_3C_2T_x$  MXene membranes. C. Ren, K.B. Hatzell, M.H. Alhabeb, Z. Ling, K.A. Mahmoud, Y. Gogotsi

**10:00** Intermission.

**10:15 ENVR 62.** MOFs-embedded thin film composite membranes for reverse osmosis applications. M. Kadhom, W. Hu, B. Deng

**10:40 ENVR 63.** Organic fouling in membrane capacitive deionization systems. L. Southworth, R.D. Cusick

**11:05 ENVR 64.** Biodesalination of brackish water and sea water using halophytic algae. E. Sahle-Demessie, A. Aly Hassan, T. Richardson

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**11:30 ENVR 65.** Advances in the development of cost estimation methodologies for emerging environmental remediation technologies involving advanced oxidation processes. Y.G. Adewuyi

### Geochemistry of the Subsurface: CO<sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal

#### Clay, MD Simulation & Electronic Structure

Sponsored by GEOC, Cosponsored by ENVR

#### Good Laboratory Practices for the Agrochemical Professional

Sponsored by AGRO, Cosponsored by ANYL and ENVR

#### USA-China Symposium on Energy

Sponsored by ENFL, Cosponsored by ENVR

#### Water-Energy Nexus

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Terrestrial Field Dissipation Studies

#### Current Regulatory Guidance, Study Design & Utility of Data in Exposure & Risk Characterization

Sponsored by AGRO, Cosponsored by ENVR

#### Innovative Approaches in Designing Agrochemical Metabolism Studies

Sponsored by AGRO, Cosponsored by ENVR

#### Unconventional Energy on Heavy Oil & Shale Gas

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#### Degradation of Materials for Energy & Fuel Production

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#### Solar Fuels: Power to the People

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Biomass

Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG

## SUNDAY AFTERNOON

### Section A

Loews Philadelphia Hotel  
Commonwealth Hall C

#### Aquatic Chemistry: Symposium in honor of Professor Alan T. Stone

#### Interfaces of Organic, Inorganic & Surface Chemistry in Natural & Engineered Systems

B. Deng, C. Huang, T. J. Strathmann, Organizers

D. Vasudevan, Organizer, Presiding

1:30 Introductory Remarks.

**1:35 ENVR 66.** Effects of Mn(II) on the oxidative dissolution of U(IV)- and Cr(III)-containing solid. D. Giammar, Z. Wang, C. Pan

**2:00 ENVR 67.** Oxalate in soils, plants and water: Role in controlling trace metal solubility. M.B. Mc Bride

**2:25 ENVR 68.** Iron oxides in reactive systems. R. Penn

**2:50 ENVR 69.** Effect of crystal habit, surface structure, and aggregation on goethite adsorption capacities. K. Livi, M. Villalobos, R. Leary, J. Einsle, J. Barnard, P. Midgley, D.A. Sverjensky, A. Goodridge

3:10 Intermission.

**3:30 ENVR 70.** Role of coordination chemistry in mercury transformation. L. Liang

**3:55 ENVR 71.** Microbial cell surface-mediated mercury reduction, oxidation, and sorption on methylmercury biosynthesis. B. Gu, H. Lin, X. Lu, L. Liang

**4:20 ENVR 72.** Reductive dissolution of iron (oxyhydr)oxide by 2,6-dimethoxy-1,4-hydroquinone and the generation of hydroxyl radicals. L. Krumina, G. Lyngsie, A. Tunlid, P. Persson

**4:40 ENVR 73.** Interactions and oxidative reactivity in binary mixtures of goethite and  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> or soluble Al ions. K. Rasamani, S. Tadjale, L. Baratta, H.J. Zhang

### Section B

Loews Philadelphia Hotel  
Washington A

#### Next Generation Techniques for Prevention & Precise Growth of Biofilms at the Interface of Nanomaterials & Electrochemistry

S. Aggarwal, A. Badireddy, V. Gadhamshetty, Organizers, Presiding

1:30 Introductory Remarks.

**1:35 ENVR 74.** Biofilm formation and control in water distribution systems. Y. Seo

**1:55 ENVR 75.** Effects of surface topography and low-frequency electric fields on bioadhesion. R. Badireddy

**2:15 ENVR 76.** Investigating approaches to mitigate biofilms in drinking water distribution systems. S. Aggarwal

**2:35 ENVR 77.** Characterizing Sulfate-reducing- G20 biofilm growth on Metal dichalcogenide using electrochemical and spectroscopic techniques. K. Chilkoor Gopala, N. Shrestha, V. Gadhamshetty

2:55 Intermission.

**3:10 ENVR 78.** Effect of water chemical composition on mechanical and structural properties of simulated drinking water biofilms. Y. Shen, R.M. Espinosa-Marzal, W. Liu, P. Huang, G. Monroy, S. Boppart, T.H. Nguyen

**3:30 ENVR 79.** Influence of multi-species biofilm formation on corrosion of cast iron. F. Batmanghelich, L. Li, Y. Seo

**3:50 ENVR 80.** Polymeric membranes modified with bioinspired polydopamine and silver nanoparticles for water purification applications. M. Fleming, K. Chen

**4:10 ENVR 81.** Correlation between electrochemical impedance and biofilm growth rate in the microbial capacitive deionization cell used for flowback water treatment. N. Shrestha, G. Chilkoor, V. Gadhamshetty

**4:30 ENVR 82.** Biofilms in a simulated drinking water systems- impact of disinfection and pipe material on biofilm abundance and microbial community. S. Aggarwal, Y. Jeon, C.K. Gomez-Smith, T. LaPara, R.M. Hozalski

4:50 Concluding Remarks.

### Section C

Loews Philadelphia Hotel  
Commonwealth Hall B

#### Formation & Transformation of Atmospheric Aerosols: Air Pollution to Climate Change: Symposium in honor of Professor Renyi Zhang

#### Aerosol-Cloud-Climate Interactions

M. Hu, A. Khalizov, V. K. Sharma, Organizers

Y. Wang, Organizer, Presiding

J. Fan, Presiding

**1:30 ENVR 83.** How and how much air pollution has contributed to climate changes in China? Z. Li

**1:55 ENVR 84.** Climate response to anthropogenic aerosol forcing. C. Wang

**2:20 ENVR 85.** Dominant snow-forming processes in warm and cold mixed-phase orographic clouds: Effects of cloud condensation nuclei and ice nuclei. J. Fan, L. Leung, D. Rosenfeld, P.J. DeMott

**2:45 ENVR 86.** Secondary inorganic aerosols in China: Contributions from emissions, chemistry, and meteorology. Y. Wang

**3:10 ENVR 87.** Biomass burning smoke and deep convection during the 2011 midlatitude continental convective clouds experiment (MC3E). T. Logan, X. Dong, B. Xi, J. Wang, J. Tian

3:30 Intermission.

**3:45 ENVR 88.** How fast do we pollute pristine marine air that flows onshore? D. Rosenfeld

**4:10 ENVR 89.** Aerosol-cloud-interaction conundrum and buffering mechanisms. Y. Liu

**4:35 ENVR 90.** Aerosol – cloud – radiation interactions on the North China plain. C. Zhao

**5:00 ENVR 91.** Aerosol-cloud-climate interactions from a modeling perspective. Y. Wang

### Section D

Loews Philadelphia Hotel  
Washington B

#### Innovative Materials & Technologies for Environmental Sustainability

#### Approaches for Sustainable Metal Recovery & Removal

Cosponsored by CEI

J. C. Crittenden, Q. Li, W. Zhang, Organizers, Presiding

A. Badireddy, Presiding

1:30 Introductory Remarks.

**1:35 ENVR 92.** Synergistic effect of metal combinations in ferrite nanoparticles for arsenate and arsenite removal. X. Wei, N. Cady, A. Mosier

**1:55 ENVR 93.** Adsorption of lead ions from aqueous phase on mesoporous silica with P-containing pendant groups. C. Gunathilake, M.S. Kadanapitiye, S. Huang, M. Jaronic

**2:15 ENVR 94.** Development of biosorption process using sewage sludge for treating acid mine drainage. N. Kim, J. Seo, D. Park

**2:35 ENVR 95.** Synthesis, characterization, and heavy metal metal binding properties of new sugar-based glycolipid surfactants. S.M. Fathi, R.M. Maier, J.E. Pemberton

**2:55 ENVR 96.** Identification of rare earth elements in electronics waste: Towards advanced-material recycling strategies. R.M. Coulthard, M.P. O'Connor, D.L. Plata

3:15 Intermission.

**3:35 ENVR 97.** Fixed-bed column adsorption of rare earth elements from geothermal brines. J.C. Callura, C.W. Noack, K.M. Perkins, N. Washburn, D.A. Dzombak, A. Karamalidis

**3:55 ENVR 98.** Recovery of lithium and cobalt from spent rechargeable batteries by fungal bioleaching. A. Lobos, J.A. Cunningham, V.J. Harwood

**4:15 ENVR 99.** Efficient uranium extraction from oceans: an economical approach towards up-keeping nuclear reactors in the future. A.C. Dassanayake, C. Gunathilake, S. Brown, S. Dai, M. Jaronic

**4:35 ENVR 100.** XAFS investigation of how amidoxime functionalized adsorbents bind uranium for extraction from seawater. C.W. Abney

4:55 Concluding Remarks.

### Section E

Loews Philadelphia Hotel  
Washington C

#### Poly- & Perfluoroalkyl Substances: Environmental Behavior & Pollution Control

Q. Huang, E. R. McKenzie, D. Woodward, Organizers

D. Chiang, L. S. Lee, Organizers, Presiding

1:30 Introductory Remarks.

**1:35 ENVR 101.** Environmental pollution and water quality criteria perfluorinated chemicals in China. Z. Liu, X. Wang

**2:00 ENVR 102.** PFAS in surface water and fish tissue from the Delaware River. R. MacGillivray

**2:25 ENVR 103.** Branched ultra short chain Fluorosurfactants- A new class of surface active material combining outstanding eco toxicological behavior with superior technical performance. R. Friedrich

**2:50 ENVR 104.** RNA-seq analysis reveals the hepatotoxicity mechanism of perfluoroalkyl alternatives HFPO2 and HFPO4 exposure in mice. J. Dai

3:15 Intermission.

**3:30 ENVR 105.** Mechanistic insights into the adsorption of perfluoroalkyl substances on activated carbon. D.J. Van Hooymissen, S. Vyas

**3:55 ENVR 106.** Enhanced sorption of perfluoro-alkyl substances. Y. Aly, D. McInnis, M.F. Simcik

**4:20 ENVR 107.** Sorption and regeneration of GAC for remediation of perfluoroalkyl contaminants in groundwater. M. Crimi, T. Holsten, C. Bellona, E. Dickenson, C. Divine, D. Sriwardena, N. Kunte, B. Nzeribe Nwedo

**4:45 ENVR 108.** Electrochemical degradation of PFOA and PFOS by porous Ti<sub>2</sub>O<sub>3</sub> anode in batch and filtration modes. H. Lin, J. Niu, S. Liang, Q. Luo, Q. Huang

**5:10 ENVR 109.** Experimental and theoretical insights into the photochemical decomposition of environmentally persistent perfluorocarboxylic acids. R. Qu, J. Liu, C. Li, L. Wang, Z. Wang

## Section F

Loews Philadelphia Hotel  
Congress A

## Impacts of Energy Systems on Water Treatment

K. D. Good, J. M. Vanbriesen, *Organizers*  
P. Mouser, D. L. Plata, *Organizers, Presiding*

- 1:30 ENVR 110.** What goes in must come out: Organic compounds in oil sands, their extraction products, and environmental implications. B. Drollette, D. Gentner, D.L. Plata
- 2:00 ENVR 111.** Non-target screening for polar to semi-polar organic compounds in hydraulic fracturing fluids. M. Nell, D. Helbling
- 2:30 ENVR 112.** In situ biodegradation of alkyl ethoxylates by halotolerant bacteria in a hydraulically fractured shale well. M. Volker, G.J. Getzinger, D.W. Hoyt, D.L. Plata, K. Wrighton, P. Mouser
- 3:00 ENVR 113.** Hydraulic fracturing fluid reactivity: organic transformations in the shale rock parameter space. A.J. Sumner, D.L. Plata
- 3:25** Intermission.
- 3:35 ENVR 114.** River-lake sediment record of historical oil and gas wastewater disposal in western Pennsylvania. N.R. Warner, W.D. Burgos, P. Drohan, T.J. Geeza, L.E. Castillo Meza
- 4:05 ENVR 115.** Reactive propping agent to immobilize heavy metals and radionuclides in the subsurface during hydraulic fracturing. V. Prigiobbe, Z. Ye
- 4:30 ENVR 116.** Removal of boron from hydraulic fracturing flowback water by aluminum and iron electrocoagulation prior to discharge. S. Chellam
- 4:55 ENVR 117.** Withdrawn.
- 5:20** Concluding Remarks.

## Section G

Loews Philadelphia Hotel  
Congress B

## Advances in Understanding PPCP Fate in Wastewater Collection &amp; Treatment Systems

N. Fahrenfeld, L. A. Rodenburg, *Organizers, Presiding*

- 1:30 ENVR 118.** Removal of micropollutants in biofilters: Hydrodynamic effects on biotransformation rates. C.M. Carpenter, D.E. Helbling
- 1:50 ENVR 119.** Role of nitrifying bacteria in fate of triclosan. E. Lauchnor, K. Bodle
- 2:10 ENVR 120.** Towards an improved mechanistic understanding of sulfate radical oxidation of PPCPs: A meta-analysis and QSAR modelling study. T. Ye, S. Luo, Z. Yang, R. Xiao
- 2:30** Intermission.
- 2:45 ENVR 121.** Reaction kinetics and transformation products for ozonation of the oxybenzone, octinoxate, and octocrylene UV-filters. L.M. Blaney, Z. Hopkins
- 3:10 ENVR 122.** Ozonation degradation of an antidepressant fluoxetine in aqueous solution: Byproducts, pathway and toxicity. Y. Zhao, S. Chen, S. Zhang, G. Yu
- 3:30 ENVR 123.** Ozonation of antibiotics in water with a high bromide (Br<sup>-</sup>) content. O. Heegun, Y. Jung, M. Kwon, J. Kang

- 3:50 ENVR 124.** Degradation of atrazine by UV/chlorine: Efficiency, influencing factors, and products. X. Kong, J. Jiang, J. Ma
- 4:10** Intermission.
- 4:25 ENVR 125.** Effect of bicarbonate anion on the TiO<sub>2</sub> photocatalytic degradation of methotrexate. W. Lai, A.Y. Lin
- 4:45 ENVR 126.** Phototransformation of meperidine and methadone in aqueous environment. Y. Lin, M. Hsieh, A.Y. Lin
- 5:05 ENVR 127.** Sunlight photodegradation of ketamine in the presence of free chlorine. Y. Wang, W. Lai, Y. Chuang, A.Y. Lin

## Section H

Loews Philadelphia Hotel  
Congress C

## Advancing Teaching &amp; Learning in Environmental Chemistry Courses: Innovative Tools &amp; Techniques

Financially supported by AEEPS

N. Dai, A. Shah, J. Sivey, *Organizers, Presiding*

- 1:30** Introductory Remarks.
- 1:35 ENVR 128.** Environmental success stories: Teaching a positive-message non-science's majors course in environmental chemistry. F.M. Dunnivant
- 1:55 ENVR 129.** Inquiry-based learning in environmental chemistry throughout a liberal arts college chemistry curriculum. A. Graham
- 2:15 ENVR 130.** Comparison of student self-assessment and course performance: Feedback for teaching and learning of aquatic chemistry. N. Dai
- 2:35** Intermission.
- 2:50 ENVR 131.** Integration of environmental principles in chemical engineering design. L. Soh
- 3:10 ENVR 132.** Enhancing learning of analytical chemistry techniques for environmental applications at the graduate level: Course design, optimization, and challenges. A. Shah
- 3:30 ENVR 133.** Exploration in environmental chemistry laboratory. J. Zhang
- 3:50** Intermission.
- 4:05 ENVR 134.** Liquid chromatography simulator software as a discovery-based learning tool for environmental and instrumental analysis courses. J. Sivey
- 4:25 ENVR 135.** Incorporating modeling software and overarching problems to promote students learning in aquatic chemistry. W. Xu
- 4:45 ENVR 136.** Free educational software, videos, and e-textbooks for environmental chemistry. F.M. Dunnivant
- 5:05** Concluding Remarks.

## Advances in Residues Analysis of Bee Relevant Matrices: Analytical Methods &amp; Sampling Techniques

Sponsored by AGRO, Cosponsored by AGFD and ENVR

Geochemistry of the Subsurface: CO<sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal CO<sub>2</sub> sequestration

Sponsored by GEOC, Cosponsored by ENVR

## USA-China Symposium on Energy

Sponsored by ENFL, Cosponsored by ENVR

## Increasing the Value of Water Monitoring Data for Pesticide Fate &amp; Effects Evaluations

Sponsored by AGRO, Cosponsored by ENVR and TOXI

## Novel Nanomaterials

## Advanced Electrocatalysts

Sponsored by ENFL, Cosponsored by CATL and ENVR

## Extraction Efficiency-Bridging between Metabolism Studies &amp; Residue Analytical Methods

Sponsored by AGRO, Cosponsored by AGFD and ENVR

## Unconventional Energy on Heavy Oil &amp; Shale Gas

Sponsored by ENFL, Cosponsored by AGFD and MPPG

## Degradation of Materials for Energy &amp; Fuel Production

Sponsored by ENFL, Cosponsored by ENVR and MPPG

## Glyphosate: Current Status &amp; Future Prospects

Sponsored by AGRO, Cosponsored by AGFD and ENVR

## Solar Fuels: Power to the People

Sponsored by ENFL, Cosponsored by ENVR and MPPG

## Novel Materials for Gas Separation, Storage &amp; Utilization

## Gas Separation

Sponsored by ENFL, Cosponsored by ENVR and MPPG

## Biomass

Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG

## MONDAY MORNING

## Section A

Loews Philadelphia Hotel  
Commonwealth Hall C

## Aquatic Chemistry: Symposium in honor of Professor Alan T. Stone

## Interfaces of Organic, Inorganic &amp; Surface Chemistry in Natural &amp; Engineered Systems

B. Deng, C. Huang, D. Vasudevan, *Organizers*

T. J. Strathmann, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:20 ENVR 137.** Aquatic chemistry in practice. J. Hering

**8:45 ENVR 138.** Direct ring cleavage of aromatic compounds during oxidative water treatment. C. Prasse, J. Van Buren, D.L. Sedlak

**9:10 ENVR 139.** Role of halide ions in oxidative water treatment. U. von Gunten

**9:35 ENVR 140.** From electrochemical reduction of oxyanions to photo-electrochemical degradation of hazardous organic compounds in dilute aqueous solutions and beyond. C. Huang, H. Liu, S. Park

**10:00** Intermission.

**10:15 ENVR 141.** Advances in water treatment with permanganate and intermediate manganese species formed in situ for enhanced degradation of organic pollutants and removal of algae and heavy metals. J. Ma, J. Jiang, P. Wang, H. Cheng, Y. Gao, L. Wang, J. Zhao, J. Yang, X. Huangfu

**10:40 ENVR 142.** Permanganate oxidations: Organic intermediates, products and ambient chemistry effects. X. Xia, A.T. Stone

**11:00 ENVR 143.** Application of ferrate oxidation for eliminating pharmaceuticals in source-separated human urine. C. Luo, V.K. Sharma, C. Huang

**11:20 ENVR 144.** Kinetics and mechanisms of Cr(VI) formation via the oxidation of Cr(III) solid phases by chlorine in drinking water. H. Liu

**11:40 ENVR 145.** Chemical structure impacts on surface enhanced Raman spectroscopic detection of environmental pollutants. P.J. Vikesland, H. Wei

## Section B

Loews Philadelphia Hotel  
Washington A

## Chemistry of Environmental Sorptive &amp; Oxidative Processes: Symposium in honor of Joseph J. Pignatello

A. MacKay, M. Sander, D. Zhao, *Organizers*

F. Xiao, B. Xing, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:15 ENVR 146.** Transport and sorption of persistent organic pollutants on suspended particles in rivers. P. Grathwohl

**8:45 ENVR 147.** Adsorption and reactions of organic compounds on pyrogenic carbonaceous surfaces: So, what else is new? J.J. Pignatello

**9:15 ENVR 148.** Reversible resistant model of adsorption desorption as a data analysis tool. D.M. Ditoro, H.E. Allen

**9:45** Intermission.

**10:00 ENVR 149.** Entropy driven sorption and intraparticle diffusion for hydrophobic organic compounds: An underlying process commonality. A. Sengupta

**10:30 ENVR 150.** Comparison of lead removal by different adsorbents. X. Meng, Q. Shi, A. Terracciano, Y. Zhao, C. Wei, J. Ge, H. Su

**11:00 ENVR 151.** Interactions of atrazine and lamotrigine with carbon nanotubes: Effects of co-introduction of DOM and solution conditions. B. Chefetz, M. Engel

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**11:30 ENVR 152.** Factors controlling the adsorption of perfluoroalkyl substances by activated carbon. D. Knappe, L. Dudley, M. Sun, A. Lindstrom, M. Strynar

### Section C

Loews Philadelphia Hotel  
Regency Ballroom C2

**Formation & Transformation of Atmospheric Aerosols: Air Pollution to Climate Change: Symposium in honor of Professor Renyi Zhang**

#### Composition & Properties of Atmospheric Particles

M. Hu, V. K. Sharma, Y. Wang, *Organizers*

A. Khalizov, *Organizer, Presiding*

S. Brooks, *Presiding*

**8:00 ENVR 153.** Mass Spectrometry of Atmospheric Aerosol: 1 nanometer to 1 micron. D.R. Worsnop

**8:25 ENVR 154.** Size dependence of phase transitions in aerosol nanoparticles. Y. Cheng, H. Su, T. Koop, E. Mikhailov, U. Pöschl

**8:50 ENVR 155.** Viscosity effects on photochemical processes in secondary organic materials. M. Hinks, M.V. Brady, H. Lignell, M. Song, J.W. Grayson, A.K. Bertram, P. Lin, A. Laskin, J. Laskin, S.A. Nizkorodov

**9:10 ENVR 156.** Synthesis and surface-specific analyses of constituents relevant for secondary organic aerosols. M.A. Upshur, H.M. Chase, M.M. Vega, Y. Zhang, L. Fu, H. Wang, S.T. Martin, R.J. Thomson, F. Geiger

**9:30 ENVR 157.** Surface-active substances in primary and secondary atmospheric aerosols. Z. Wu, Y. Liu, Y. Wang, Y. Bai, M. Hu

**9:50** Intermission.

**10:05 ENVR 158.** Broadening our conceptual model of organic compounds in atmospheric aerosol: Viscous liquids catalyze ice nucleation. S. Brooks

**10:30 ENVR 159.** Nanospectroscopic and nanomechanical studies on individual aerosols of urban pollution. L. Wang, Y. Li, X. Xu

**10:50 ENVR 160.** Markedly enhanced absorption and direct radiative forcing of black carbon under polluted urban environments. J. Peng, M. Hu, S. Guo, Z. Du, J. Zheng, D. Shang, M.L. Zamora, L. Zeng, M. Shao, Y. Wu, J. Zheng, Y. Wang, C. Glen, D. Collins, M.J. Molina, R. Zhang

**11:10 ENVR 161.** Optical properties of secondary organic aerosols generated by photo-oxidation of aromatic compounds under different environmental conditions. W. Wang, K. Li, J. Li, M. Ge

**11:30 ENVR 162.** Withdrawn.

**Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)**

### Section D

Loews Philadelphia Hotel  
Washington B

#### Innovative Materials & Technologies for Environmental Sustainability

#### Approaches for Water Disinfection & Removal of Emerging Contaminants

*Cosponsored by CEI*

J. C. Crittenden, Q. Li, W. Zhang, *Organizers, Presiding*

M. Li, *Presiding*

**8:30** Introductory Remarks.

**8:35 ENVR 163.** Engineering electrochemical oxidation processes for the removal of emerging contaminants. X. Meng, R. Xie, Y. Chen, J.C. Crittenden

**8:55 ENVR 164.** Electro-oxidation of tetracycline by a Magnéli phase  $Ti_4O_7$  anode. S. Liang, H. Lin, Q. Huang

**9:15 ENVR 165.** Electrochemical-biological synergistic remediation of trichloroethylene. W. Chen, F. Zhang

**9:35 ENVR 166.** Reevaluation of ferrate(VI) decomposition in water with natural organic matters (NOMs). Y. Deng, C. Jung

**10:00** Intermission.

**10:15 ENVR 167.** Composite of hydrophilic polyurethane foams enriched with PAC to enhance adsorption capacity and control rate of contaminants from aqueous solutions. N. Massalha, A. Brenner, C. Sheindorf, Y. Haimov, I. Sabbah

**10:35 ENVR 168.** Flexible, switchable aerogel composites as reusable sorbents for oil capture and recovery. O. Karatum, D.L. Plata

**10:55 ENVR 169.** Sol-gel immobilized vault nanoparticles for water treatment applications. M. Wang, D. Abad, V. Kichhoefer, L.H. Rome, B. Dunn, S. Mahendra

**11:15 ENVR 170.** Renewable enzyme biocatalysis for water reuse: cell surface display fungal laccases for degradation of persistent micropollutants. Y. Chen, M. Kumar, N. Wei

**11:35 ENVR 171.** High-level quantum calculations of sulfate radical generation for remediation of contaminated groundwater. B.M. Wong, H. Liu, E. Garcia

**11:55** Concluding Remarks.

### Section E

Loews Philadelphia Hotel  
Washington C

#### Poly- & Perfluoroalkyl Substances: Environmental Behavior & Pollution Control

D. Chiang, Q. Huang, L. S. Lee, *Organizers*

E. R. McKenzie, D. Woodward, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 ENVR 172.** Fungal biotransformation of 6:2 fluorotelomer alcohol (6:2 FTOH). N. Merino, M. Wang, R. Ambrocio, K. Mak, A. Gao, E. O'Connor, L. Tseng, S. Mahendra

**8:30 ENVR 173.** Anaerobic biotransformation of 6:2 fluorotelomer thioether amidosulfonate in aqueous film-forming foam (AFFF). S. Yi, K. Harding, E. Houtz, W. Zhuang, M. Hansen, J.A. Field, D.L. Sedlak, L. Alvarez-Cohen

**8:55 ENVR 174.** Degradation of perfluoroalkyl acids by enzyme catalyzed oxidative humification reactions. Q. Luo, Q. Huang

**9:20 ENVR 175.** Fate of the perfluoroalkyl substances and their precursors in pilot- and full-scale direct potable reuse facilities. C. Glover, E. Dickenson

**9:45** Intermission.

**10:00 ENVR 176.** Complete defluorination of perfluorinated compounds by hydrated electrons generated from 3-indole-acetic-acid in organo-modified montmorillonite. C. Gu

**10:25 ENVR 177.** Decomposition of perfluorooctanoic acid by hydrated electrons in the presence of different organomontmorillonite and indole derivatives. H. Tian, C. Gu

**10:50 ENVR 178.** Remediation of perfluorinated and polyfluorinated organic compounds in complex mixtures with hydrated electrons. J. Liu, X. Xiao, C. Schaefer, L. Ferguson, C.P. Higgins, T.J. Strathmann

**11:15 ENVR 179.** Decomposition of perfluorinated carboxylic acids with four different acids: Reaction kinetics, pathways and mechanisms. J. Liu, R. Qu, Z. Wang

### Section F

Loews Philadelphia Hotel  
Congress A

#### Advances & Challenges in Food-Energy-Water Nexus

*Cosponsored by AGRO and CEI*

S. Ahuja, S. Chae, D. D. Dionysiou, Y. Lin, *Organizers*

I. Chowdhury, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:05 ENVR 180.** Managing challenges of the food-energy-water nexus. S. Ahuja

**8:30 ENVR 181.** Techno-economic assessment of desalination technology for application in agriculture. P. Welle, J. Medillin Azuara, J. Viers, M.S. Mauter

**8:55 ENVR 182.** Integrated energy-water planning in the eastern interconnection. K. Quinter, V.C. Tidwell, E. Carraway, D. Ladner

**9:20 ENVR 183.** Food, energy water nexus, complicated by global climate and the need for new technology. J.W. Finley

**9:45** Intermission.

**10:00 ENVR 184.** Multi-objective optimization model for minimizing cost and environmental impact in shale gas water and wastewater management. T.V. Bartholomew, M.S. Mauter

**10:25 ENVR 185.** Engineered natural treatment systems at the food-energy-water nexus: The influence of vegetation on micropollutant fate. G.H. LeFevre, A.C. Portmann, R.G. Luthy

**10:50 ENVR 186.** Unexpected ion-exchange reactivity of nanometric scheelite: Applications in food, energy, and water sectors. A.W. Applett, C.K. Perkins

**11:15 ENVR 187.** Impact of cerium oxide nanoparticles on plant water use efficiency at different environmental conditions. X. Ma

**11:40** Concluding Remarks.

### Section G

Loews Philadelphia Hotel  
Congress B

#### Understanding Nanomaterial Behavior: Breakthroughs & Challenges

A. Orlov, *Organizer*

N. Savage, *Organizer, Presiding*

**9:00 ENVR 188.** Nanotechnology environmental, health, and safety challenges: A National Nanotechnology Coordination Office perspective. L. Friedersdorf

**9:20 ENVR 189.** Nanotechnology environmental, health, and safety challenges, research, and opportunities panel. N. Savage

**9:40 ENVR 190.** Nanotechnology health implications research consortium. S. Nadadur

**10:00 ENVR 191.** Nanotechnology environmental, health, and safety challenges, research, and opportunities federal panel: NIST perspective. D. Kaiser

**10:20 ENVR 192.** Withdrawn.

**10:40** Intermission.

**10:50** Panel Discussion.

**11:50** Concluding Remarks.

### Section H

Loews Philadelphia Hotel  
Congress C

#### Synthetic Biology & Genetically Modified Organisms

#### Evolution or Revolution? Policy Challenges & Opportunities in the Biotechnology Golden Age

*Cosponsored by AGFD, AGRO, CEI and COMSCL*

C. W. Avery, *Organizer*

S. H. DeLuca, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:05 ENVR 193.** Caterpillar cross tolerance/resistance to *Bacillus thuringiensis*: Don't forget our history. R.M. Roe, A. Dhammi, J. Zhu, D. Reisig, R.W. Kurtz

**8:25 ENVR 194.** Pros and cons of the first 20 years of GMO cotton production. K. Edmisten

**8:45 ENVR 195.** Local vs. global population editing: A novel and responsible approach to gene drive. C. Noble, A. Chavez, J. Schulak, J. Olejarz, A. Smidler, G. Church, M. Nowak, K. Esvelt

**9:05 ENVR 196.** Starting a dialog about GMOs with non-majors through three editions of *Chemistry in Context*. J.P. Ellis

**9:25 ENVR 197.** Public and policy engagement on synthetic biology. K. Costa

**9:45** Intermission.

**10:15 ENVR 198.** Engineering biology for the U.S. bioeconomy. M. Maxon, K. Christiansen

**10:35 ENVR 199.** First things first: What is a GMO? A. Massey

**10:55 ENVR 200.** Legal and regulatory implications of genetic engineering for the chemical community. L.L. Bergeson

**11:15 ENVR 201.** Genetically engineered governance: Why international governance systems need their DNA engineered to keep pace with genomic technologies. T. Kuiken

### Geochemistry of the Subsurface: CO<sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal

#### Water Film & General Shale

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#### USA-China Symposium on Energy

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#### Novel Nanomaterials

#### Advanced Nanomaterials & Theoretical Calculation

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#### Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations

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#### Novel Analytical Methods for Analysis of Emerging Contaminants of Concern: Advances & Challenges

Sponsored by AGRO, Cosponsored by ANYL and ENVR

#### Innovative Chemistry & Materials for Electroenergy Production & Storage

#### Solid-State Batteries

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Neonicotinoid Insecticides: Use, Fate & Effects

Sponsored by AGRO, Cosponsored by ENVR

#### Solar Fuels: Power to the People

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#### Glyphosate: Current Status & Future Prospects

Sponsored by AGRO, Cosponsored by AGFD and ENVR

#### Novel Materials for Gas Separation, Storage & Utilization

#### Storage

Sponsored by ENFL, Cosponsored by ENVR and MPPG

#### Biomass

Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG

## MONDAY AFTERNOON

### Section A

Loews Philadelphia Hotel  
Commonwealth Hall C

#### Aquatic Chemistry: Symposium in honor of Professor Alan T. Stone

#### Interfaces of Organic, Inorganic & Surface Chemistry in Natural & Engineered Systems

C. Huang, T. J. Strathmann, D. Vasudevan, *Organizers*

B. Deng, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 ENVR 202. Predicting environmental partitioning via quantum chemistry, Abraham parameters and pp-LFERS. D.M. Ditoro, Y. Liang, T. Torralba-Sanchez

2:00 ENVR 203. Cheminformatics applications and physicochemical property calculators: A powerful combination for the encoding of process science. E.J. Weber, C.T. Stevens

2:25 ENVR 204. Experimental vs. theoretical oxidation potentials of organic reductants. P.G. Tratnyek, A.S. Pavitt, E.J. Bylaska

2:50 ENVR 205. Elucidating electron transfer mechanisms of oxidation of inorganic pollutants by ferrate(VI): Density functional theory computations approach. V.K. Sharma, C.A. Huerta-Aguilar, T. Pandiyan

3:15 Intermission.

3:30 ENVR 206. Environmental fate data as inputs to modeling pesticide concentrations in ground and surface water. A.C. Barefoot

3:55 ENVR 207. Metabolization and degradation kinetics of the urban-use pesticide fipronil by white rot fungi *Trametes versicolor*. J. Wolfand, G.H. LeFevre, R.G. Luthy

4:15 ENVR 208. Variations in the properties of dissolved natural organic matter. D.L. Macalady, S. Orsetti, E. Subdiaga, S.B. Haderlein

4:40 ENVR 209. Revisiting molecular weight and polydispersity measurements by high-pressure size exclusion chromatography: Accounting for changes in analytical standards and isolation techniques. B. McAdams, G. Aiken, W. Arnold, Y. Chin

### Section B

Loews Philadelphia Hotel  
Washington A

#### Chemistry of Environmental Sorptive & Oxidative Processes: Symposium in honor of Joseph J. Pignatello

A. MacKay, M. Sander, D. Zhao, *Organizers*

F. Xiao, B. Xing, *Organizers, Presiding*

1:30 ENVR 210. Evolution of environmental sorption processes into mainstream soil/sediment remediation. U. Ghosh

2:00 ENVR 211. Insights into nanoparticle interaction with cell surfaces from model systems. J.A. Pedersen

2:30 ENVR 212. Sorption mechanisms of organic contaminants by carbonaceous nanomaterials. X. Wang, X. Shen

3:00 Intermission.

3:15 ENVR 213. Pore effect on sorption of hydrophobic organic chemicals (HOCs) to synthetic porous materials. D. Zhu

3:45 ENVR 214. Green synthesis of graphene oxide hydrogels with superior mechanical properties and contaminant adsorption capacity. N. Yousefi, K. Wong, A. Angulo, N. Tufenkji

4:15 ENVR 215. Sorption of heavy metals on pyrogenic carbonaceous materials: Roles of carboxyl ligands. S.M. Uchimiya

4:45 ENVR 216. Removal of organic and inorganic contaminants by carbon-based sorbents. B. Gao

5:15 Concluding Remarks.

### Section C

Loews Philadelphia Hotel  
Regency Ballroom C2

#### Formation & Transformation of Atmospheric Aerosols: Air Pollution to Climate Change: Symposium in honor of Professor Renyi Zhang

#### Gas-Phase & Gas-Particle Reactions

M. Hu, A. Khalizov, V. K. Sharma, Y. Wang, *Organizers*

C. Qiu, L. Wang, *Presiding*

1:30 ENVR 217. Determination of atmospheric amines and amides in urban Shanghai, China. L. Yao, M. Wang, L. Wang

1:50 ENVR 218. Heterogeneous reaction mechanism of gaseous HNO<sub>3</sub> with solid NaCl: a density functional theory study. F. Xu, N. Zhao, Q. Zhang, W. Wang

2:10 ENVR 219. Thermochemistry and kinetic modeling for OH addition to trifluoroethene. J.W. Bozzelli, S. Yomme

2:30 ENVR 220. Quantitative structure-activity relationship for hydroxyl radical oxidized polychlorinated biphenyls in the gas phase. S. Luo, R. Xiao, T. Ye, Z. Yang

2:50 Intermission.

3:05 ENVR 221. Particles in the marine atmosphere. P. Liss

3:30 ENVR 222. Thermostability and hygroscopicity of monoethanolammonium carboxylates for evaluating environmental impacts of carbon dioxide sequestration by reversible chemical absorption. X. Zhang, J. Dawson, C. Qiu, A. Khalizov

3:50 ENVR 223. OH-initiated oxidation of m-xylene on black carbon aging. S. Guo, M. Hu, Y. Lin, M.E. Gomez, M.L. Zamora, D. Collins, R. Zhang

4:10 ENVR 224. Heterogeneous ozonolysis of trimethylamine on the typical model atmospheric particle. Y. Liu, Y. Ge, B. Chu, H. He

4:30 ENVR 225. Formation, transformation, and impacts of atmospheric aerosols under polluted environments. R. Zhang

### Section D

Loews Philadelphia Hotel  
Washington B

#### Innovative Materials & Technologies for Environmental Sustainability

#### Approaches for Water Disinfection & Removal of Emerging Contaminants

Cosponsored by CEI

J. C. Crittenden, Q. Li, W. Zhang, *Organizers, Presiding*

1:30 Introductory Remarks.

1:35 ENVR 226. Multi-functional gel materials for malodor control. L. Luk, W. Han, K. Yeung

1:55 ENVR 227. Identification and quantification of free radicals generated by zerovalent bimetallic Fe/Al in water. H.L. Lien, C. Yu

2:15 ENVR 228. Porous materials for advanced water treatment. M. Manickavachagam, S. Rominder, J. Wu, M. Sillanpaa

2:35 ENVR 229. Surface plasmonic photothermal water disinfection. S. Loeb, C. Li, J. Kim

2:55 ENVR 230. Two approaches to achieve visible light upconversion for environmental application. J. Kim

3:20 Intermission.

3:35 ENVR 231. Role of alkynes in CNT synthesis: Towards improved production quality and environmental sustainability. M.J. Giannetto, W. Shi, E.R. Meshot, D.L. Plata

3:55 ENVR 232. Direct deposition of conductive carbon nanotube-polymer composite thin films on membrane surfaces for filtration performance enhancement. A.V. Dudchenko, D. Jassby

4:15 ENVR 233. Anion recovery from water by cross-linked cationic surfactant nanoparticles across ultrafiltration membranes. M. Chen, C.T. Jafvert

4:35 ENVR 234. Self-healing properties of microcapsule-embedded and hydrogel-composite water filtration membranes. B. Getachew, S. Kim, J. Kim

4:55 ENVR 235. Comparison of energy efficiency and power density in pressure retarded osmosis and reverse electro dialysis. N. Yip, M. Elimelech

5:15 Concluding Remarks.

### Section E

Loews Philadelphia Hotel  
Washington C

#### Poly- & Perfluoroalkyl Substances: Environmental Behavior & Pollution Control

D. Chiang, Q. Huang, L. S. Lee, D. Woodward, *Organizers*

E. R. McKenzie, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 ENVR 236. Destruction of PFOS in groundwater: a new in situ remediation technology for per / polyfluorinated alkyl substances. J. Hurst, T. Pancras, J. Burdick, E. Houtz, J. McDonough, A. Mushtaque, A. Horneman, I. Ross

2:00 ENVR 237. Remediation of perfluoroalkyl substances (PFAS) with OxyZone<sup>®</sup>, a multi-oxidant blend. A. Moore

2:25 ENVR 238. Ex situ treatments of Aqueous Film-Forming Foam impacted water. G.M. Birk, D.F. Alden, R. Stuart

2:50 ENVR 239. Treatment of perfluoroalkyl acids by nonthermal plasma processes. C. Bellona, S. Mededovic-Thagard, T.M. Holsen, F. Dai, G. Stratton, E. Dickenson

3:15 Intermission.

3:30 ENVR 240. Evaluation of ex situ PFAS treatment technologies. D. Chiang

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3:55 ENVR 241. Review of PFOS bio-concentration factors (BCFs) in fish and the implications on the PFAS treatment cost. D. Bogdan, U. Vedagiri, G. Hendrix, D. Woodward, K. Davis

4:20 ENVR 242. PFAS panel: What, when, and why to analyze and remediate PFASs. D. Woodward

5:20 Concluding Remarks.

## Section F

Loews Philadelphia Hotel  
Congress A

### Advances & Challenges in Food-Energy-Water Nexus

*Cosponsored by AGRO and CEI*

S. Ahuja, I. Chowdhury, D. D. Dionysiou, Y. Lin, *Organizers*

S. Chae, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 ENVR 243. Rotavirus control for safe and sustainable production of leafy greens. T.H. Nguyen, J. Shisler, M. Fuwaza, E. Araud, R. Smith, J. Juwig

2:00 ENVR 244. Advances and challenges in recycling of high strength organic waste and wastewater for clean water and energy. S. Chae

2:25 ENVR 245. Evaluation of Microbial Fuel Cell implementation at the advanced wastewater treatment plant at Blue Plains, Washington DC. B.V. Kjellerup, E. Bergman, J. Greaves, M. Daigneault

2:50 ENVR 246. Identifying data gaps in understanding feasibility of reuse of nanoparticles-containing wastewater in aquaculture. A. Kumar, P. Gurian, A. Anandan, D. Singh, B. Sundaram

3:15 Intermission.

3:30 ENVR 247. Air emission implications of expanded wastewater treatment at coal-fired generators. D.B. Gingerich, X. Sun, A.P. Behrer, I. Azevedo, M.S. Mauter

3:55 ENVR 248. Trace element allocation across air pollution control devices in coal fired power plants. X. Sun, D. Gingerich, I. Azevedo, M.S. Mauter

4:20 ENVR 249. Rice uptake of organic arsenic species: Competition with silicon. M. Limmer, A. Seyfferth

4:45 Concluding Remarks.

## Section G

Loews Philadelphia Hotel  
Congress B

### Developing International Policies for Nanoparticles in the Environment

R. Luque, S. O. Obare, *Organizers, Presiding*

1:30 Introductory Remarks.

1:35 ENVR 250. Chemical speciation of anthropogenic nanoparticles. S.O. Obare

2:00 ENVR 251. Nanomagnetism in the environment: A review. P.A. Augusto, T. Castelo-Grande, A.M. Estevez, D. Barbosa

2:25 ENVR 252. Influence of environmental factors on the mutagenic effects of iron oxide nanoparticles. N. Dissanayake, K.M. Current, S.O. Obare

2:50 ENVR 253. Bio-nanocomposites based on iron oxides: Preparation and catalytic applications. A.M. Balu, D. Padrón, A. Romero, R. Luque

3:15 Intermission.

3:25 ENVR 254. Adsorption of cerium oxide nanoparticles on silica and kaolinite. X. Ma

3:50 ENVR 255. Influence of chemical composition on the photodegradation and photostability of carbon dots: A sustainable fluorescent nanoparticle. M.J. Gallagher, B. Zhi, B. Frank, J. Da, T. Curry, C. Haynes, H. Fairbrother

4:15 ENVR 256. Benign by design nanomaterials from biomass and waste: Synthesis and applications. R. Luque

4:40 ENVR 257. Metal-hexacyanoferrates functionalized magnetic nanoadsorbents for the removal of radioactive cesium from water. H. Yang, K. Hwang, C. Park, K. Lee, B. Seo, J. Moon

5:05 Concluding Remarks.

## Section H

Loews Philadelphia Hotel  
Congress C

### Synthetic Biology & Genetically Modified Organisms

#### The Debate: What Role Should We Play in the Biotechnology Era?

*Cosponsored by AGFD, AGRO, CEI† and COMSCI*

S. H. DeLuca, *Organizer*

C. W. Avery, *Organizer, Presiding*

1:30 ENVR 258. Dealing with dual use: Risk governance in synthetic biology. M.J. Palmer

1:55 ENVR 259. Regulating the unregulatable: Policy considerations for the national security threats posed by advances in genetic engineering. G. Bonheyo, K.M. Omberg, K. Rodda, G. Hund, S. Frazer

2:20 Concluding Remarks.

2:25 Intermission.

2:35 Introductory Remarks.

2:40 Panel Discussion: What Roles Should We Play in the Biotechnology Era?

3:55 Concluding Remarks.

### Geochemistry of the Subsurface: CO<sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal

#### Contamination & Waste

*Sponsored by GEOC, Cosponsored by ENVR*

#### USA-China Symposium on Energy

*Sponsored by ENFL, Cosponsored by ENVR*

#### Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations

*Sponsored by AGRO, Cosponsored by ENVR and TOXI*

## Novel Nanomaterials

### CO<sub>2</sub> Conversion & Other Applications

*Sponsored by ENFL, Cosponsored by CATL and ENVR*

### Novel Analytical Methods for Analysis of Emerging Contaminants of Concern: Advances & Challenges

*Sponsored by AGRO, Cosponsored by ANYL and ENVR*

### Neonicotinoid Insecticides: Use, Fate & Effects

*Sponsored by AGRO, Cosponsored by ENVR*

### Innovative Chemistry & Materials for Electroenergy Production & Storage

#### Supercapacitors

*Sponsored by ENFL, Cosponsored by ENVR and MPPG*

#### Glyphosate: Current Status & Future Prospects

*Sponsored by AGRO, Cosponsored by AGFD and ENVR*

### 2D Materials: Graphene & Beyond & their Device Applications

*Sponsored by ENFL, Cosponsored by ENVR*

## Undergraduate Research Posters

### Environmental Chemistry

*Sponsored by CHED, Cosponsored by ENVR and SOCED*

### Environmental Fate & Modeling of Agriculturally-Related Chemicals

*Sponsored by AGRO, Cosponsored by ENVR*

### Novel Materials for Gas Separation, Storage & Utilization

#### Utilization

*Sponsored by ENFL, Cosponsored by ENVR and MPPG*

### Pollinators: Agrochemicals, Behavior & Disease

*Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI*

### Biomass

*Sponsored by ENFL, Cosponsored by CATL, ENVR and MPPG*

### Advances in Chemistry of Energy & Fuels

*Sponsored by ENFL, Cosponsored by ENVR and MPPG*

## MONDAY EVENING

### Section I

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

D. D. Dionysiou, *Organizer*

8:00 - 10:00

532-535, 537-538, 540-542, 545-549, 552-553, 556-557, 562, 565-567, 569-570, 578, 581, 584, 588-591, 593-594, 597, 604, 612, 617, 623, 628, 635-636, 639-642, 644-655, 657, 659, 663, 665, 670, 672, 675, 677, 680, 682, 684, 686-688, 691-697, 704-705, 712, 715-716, 718-719, 721-722, 724, 726, 797. See subsequent listings.

## TUESDAY MORNING

### Section A

Loews Philadelphia Hotel  
Washington B

### Aquatic Chemistry: Symposium in honor of Professor Alan T. Stone

#### Interfaces of Organic, Inorganic & Surface Chemistry in Natural & Engineered Systems

B. Deng, C. Huang, T. J. Strathmann, D. Vasudevan, *Organizers*

R. F. Carbonaro, *Presiding*

8:00 Introductory Remarks.

8:05 ENVR 260. Aquatic chemistry in engineered systems: The reactions of nano-silver during washing. B. Nowack

8:30 ENVR 261. Complexation of III/V ions to industrial nanoparticles used in chemical mechanical polishing (CMP) process. X. Bi, P.K. Westerhoff

8:50 ENVR 262. Transport of oxidized multi-walled carbon nanotubes through silica based porous media: Investigation of removal mechanisms and mathematical modeling. W.P. Ball

9:15 ENVR 263. Light-independent redox reactions of graphene oxide in water. C.T. Jafvert, Y. Zhao

9:40 Intermission.

9:55 ENVR 264. Adsorption of Ca<sup>2+</sup> on graphene oxide and significant effect on its colloidal stability. A. Terracciano, J. Zhang, C. Christodoulatos, F. Wu, X. Meng

10:15 ENVR 265. Molecular framework for *Anastrepha* pheromone communication results from abiotic environmental hydrolysis of the lipophilic terpenoid, suspensolide. S.S. Walse

10:40 ENVR 266. Formation and implications of bioactive steroid transformation products. D.M. Cwierzny, E.P. Kolodziej

11:00 ENVR 267. Structure-reactivity relationships for cobalt-catalyzed defluorination of perfluorinated organic compounds in water. J. Liu, X. Xiao, Y. Fang, L. Ferguson, C.P. Higgins, C. Schaefer, T.J. Strathmann

11:20 ENVR 268. Poly(vinylene fluoride) (PVDF)/Nitrogen doped TiO<sub>2</sub> (N-TiO<sub>2</sub>) mixed matrix hollow fiber membranes (HFMs) with advanced antifouling properties under visible light irradiation. J. Yin, X. Wang, B. Deng

### Section B

Loews Philadelphia Hotel  
Washington A

### Chemistry of Environmental Sorptive & Oxidative Processes: Symposium in honor of Joseph J. Pignatello

A. MacKay, M. Sander, B. Xing, *Organizers*

F. Xiao, D. Zhao, *Organizers, Presiding*

8:00 Introductory Remarks.

8:10 ENVR 269. Advances in the field of advanced oxidation processes for the treatment of cyanotoxins, pharmaceuticals and other contaminants of emerging concern. D.D. Dionysiou

8:40 ENVR 270. Anodic oxidation of contaminants by surface and solution-phase oxidants. J.M. Barazesh, C. Prasse, D.L. Sedlak

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



**9:10 ENVR 271.** Activated permanganate: A new advanced oxidation process? P.G. Tratnyek, X. Guan, S. Bo

**9:40** Intermission.

**9:55 ENVR 272.** Effects of carbonate radicals on photochemical oxidation of mercury in freshwater systems. B. Gu, F. He, L. Liang

**10:25 ENVR 273.** Novel nanomaterials for environmental pollutant sensing, and destruction, and renewable energy production. Y. Chen

**10:55 ENVR 274.** Oxidative formation of environmentally persistent free radicals under environmentally relevant conditions. U.G. Nwosu, R.L. Cook

**11:25 ENVR 275.** Role of reactive species in degradation of emerging contaminants under UV/chlorine and UV/peracetic acid conditions. C. Huang, P. Sun, M. Cai

## Section C

Loews Philadelphia Hotel  
Regency Ballroom C2

**Formation & Transformation of Atmospheric Aerosols: Air Pollution to Climate Change: Symposium in honor of Professor Renyi Zhang**

**Atmospheric Observations & Health Impacts**

M. Hu, A. Khalizov, V. K. Sharma, Y. Wang, *Organizers*

E. C. Fortner, M. Levy, *Presiding*

**8:00 ENVR 276.** Influence of traffic on the black carbon concentration: Investigations in Leipzig, Germany, and La Paz, Bolivia. A. Wiedensohler

**8:25 ENVR 277.** Space-based observations of the chemical lifetime and emission rate of NO<sub>2</sub>: Measuring the role of winds in non-linear chemistry. R.C. Cohen

**8:50 ENVR 278.** Utilizing positive matrix factorization (PMF) in the identification of specific biomass burning fuel sources measured with a soot particle aerosol mass Spectrometer (SP-AMS) during smoke chamber and wildfire measurements. E.C. Fortner, T.B. Onasch, M.R. Canagaratna, J. Shilling, M. Pekour, P. Massoli, L.R. Williams, J.T. Jayne, D.R. Worsnop

**9:10 ENVR 279.** Reduction in local ozone levels in urban São Paulo due to a shift from ethanol to gasoline use. F. Geiger, A. Salvo

**9:35 ENVR 280.** Identifying sources of high PM<sub>2.5</sub> concentrations in the West Silver Valley of Idaho, USA. R. Li, R. Kotchenruther, R. Hardy

**9:55** Intermission.

**10:10 ENVR 281.** Air pollutants and human health: What have we learned so far? M. Levy Zamora, R. Zhang

**10:30 ENVR 282.** Maternal exposure to sulfur based particulate matter alters postnatal growth and health in rats. M.C. Satterfield, J. Brown, A. Miller, M.L. Zamora, K. Dunlap, R. Burghardt, G. Johnson, F. Bazer, G. Wu, C. Meininger, R. Zhang

**10:50 ENVR 283.** Air pollution exposures among pregnant women in a United States-Mexico border town. K. Koehler, J.C. Pulczinski, S. Vallamsundar, J. Zietsman, N. Johnson

**11:10 ENVR 284.** Biomarkers of prenatal exposure to particulate air pollution in U.S. and Chinese populations. N.M. Johnson, J.C. Pulczinski, K. Rychlik, J. Guo, W. Shi, G. Carrillo-Zuniga, J. Zietsman, S. Vallamsundar, K. Koehler, M. Levy, R. Zhang

**11:30 ENVR 285.** Health effects of fine particles (PM<sub>2.5</sub>) in ambient air. T. Zhu, Y. Han

## Section D

Loews Philadelphia Hotel  
Commonwealth Hall A2

**Innovative Materials & Technologies for Environmental Sustainability**

**Approaches for Renewable Energy & Water Resources**

*Cosponsored by CEI*

J. C. Crittenden, Q. Li, W. Zhang, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 ENVR 286.** Exploitation of chitin as a renewable feedstock for the synthesis of cationic and amphoteric glucosaminoside surfactants and their characterization. R. Palos Pacheco, L.L. Kegel, R. Gonzalez, R. Polt, J.E. Pemberton

**8:25 ENVR 287.** Functional polymers from wood-based sustainable resources. H. Liu, H. Chung

**8:45 ENVR 288.** Polyethyleneimine impregnated nano-silica used for CO<sub>2</sub> capture from flue gas. K. Li, J. Jiang, F. Yan

**9:05 ENVR 289.** Use of absorbent ionomers in partitioning bioreactors. S. Bacon, J. Parent, A.J. Daugulis

**9:25** Intermission.

**9:40 ENVR 290.** Bio-oil recovery & CO<sub>2</sub> recycling by waste stream enhanced microalgal growth & low energy CO<sub>2</sub>-assisted extraction. P. Champagne

**10:05 ENVR 291.** Modeling energy loss in membrane capacitive deionization systems with a high resolution one-dimensional equivalent circuit. X. Shang, K.C. Smith, R.D. Cusick

**10:25 ENVR 292.** Novel hybrid zirconium oxide nanoparticles for concurrent defluoridation and desalination: Field level demonstration. M.S. German, J. Li, A. Sengupta

**10:45 ENVR 293.** Composition analysis and low energy consuming treatment method for industrial sucralose wastewater. H. Wei, S. Chen, S. Zhang, Q. Zhang, X. Hao

**11:05 ENVR 294.** Biologically active filters: An advanced treatment process for removal of pharmaceuticals and personal care products. S. Zhang, S. Gitungo, L.B. Axe, R.F. Raczko, J.E. Dyksen

**11:25 ENVR 295.** Immobilized anaerobic biomass in PAC-enriched polyurethane for increasing stability and tolerance of bio-systems for high organic loads and pollutant shocks. N. Massalha, A. Brenner, C. Sheindorf, I. Sabbah

**11:45** Concluding Remarks.

## Section E

Loews Philadelphia Hotel  
Washington C

**Chemistry of Biomass Wastes Conversion to Energy & Chemicals**

*Cosponsored by ENFL*

A. Abbas, S. Spataro, *Organizers*

M. Tu, M. Zhao, *Organizers, Presiding*

**8:30 ENVR 296.** Hydrothermal carbonization (HTC) of organic fraction of municipal solid waste (OFMSW) pulp and anaerobically treated OFMSW digestate. M. Reza, K. Holtman, C. Coronella

**8:50 ENVR 297.** Quantitative prediction of microalgae hydrothermal liquefaction. Y. Li, S. Leow, A. Fedders, B. Sharma, J. Guest, T. Dong, N. Nagle, P. Pienkos, T.J. Strathmann

**9:10 ENVR 298.** Lignin alkylation enhances enzymatic hydrolysis of biomass. M. Tu, C. Lai

**9:30 ENVR 299.** Anaerobic digestion performance of hydro-thermally pretreated municipal solid wastes and the evolution of acidogens community. W. Li, F. Wang, W. Wang

**9:50 ENVR 300.** One-pot chemoselective oxidation and C<sub>α</sub>-C<sub>β</sub> bond cleavage in lignin β-O-4 model compounds and lignin. S. Dabral, J.G. Hernandez, P.C. Kamer, C. Bolm

**10:10** Intermission.

**10:25 ENVR 301.** Methane fermentation of microalgae with hydrothermal treatment: effect of temperature. F. Wang, W. Li, X. Hua, Y. Wang, W. Wang

**10:45 ENVR 302.** Cultivation and harvesting of microalgae in photobioreactor for biodiesel production and simultaneous nutrient removal. E. Salama, M. Eldalatomy, I. Yang, B. Jeon

**11:05 ENVR 303.** Repeated-batch fermentation of microalgal biomass for high yield bioethanol employing immobilized *Saccharomyces cerevisiae*. M. Eldalatomy, S. Saha, S. Chang, B. Jeon

**11:25 ENVR 304.** Continuous fermentation for bioethanol production using combined pretreatment of mixed microalgal biomass. M. Lee, J. Hwang, B. Jeon

**11:45 ENVR 305.** Anaerobic digestion of renewable materials for biogas production: Experimental stage to the field. O.O. Adetule

## Section F

Loews Philadelphia Hotel  
Congress A

**Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications**

*Cosponsored by CEI, HIST and NOM*

T. C. Williamson, *Organizer*

M. A. Benvenuto, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 ENVR 306.** Lost elements: The periodic table's shadow side. M. Orna

**9:05 ENVR 307.** History of the element concept. R. Barth

**9:25 ENVR 308.** Experimenting with the elements. M.A. Thomson

**9:45 ENVR 309.** Element 118: A chemistry odyssey. S.C. Burdette, B.F. Thornton

**10:05 ENVR 310.** Noble gases and the periodic table: A study in mutual reinforcement. C.J. Giunta

**10:25** Intermission.

**10:35 ENVR 311.** Next generation elements. L.H. Kolopajlo

**10:55 ENVR 312.** Periodic table of the elements: A review of the future. P.J. Karol

**11:15 ENVR 313.** Element 118: Teaching a new element to new students. G. Nguyen, J. Pothoof, D. Archey, P. Venugopal, M.A. Benvenuto

**11:35 ENVR 314.** Periodic table from chemical compounds. G. Restrepo

## Section G

Loews Philadelphia Hotel  
Congress B

**Water Purification Systems**

*Cosponsored by CEI*

S. Ahuja, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:05 ENVR 315.** Solving problems of arsenic contamination of groundwater. S. Ahuja

**8:30 ENVR 316.** Transforming the global arsenic crisis into an economic enterprise: Role of hybrid anion exchange nanotechnology (HAIX-nano). M.S. German, J. Li, A. SenGupta

**8:55 ENVR 317.** Reactive ion exchange-assisted high removal capability for trace Cr(VI) removal. S. Sarkar, R. Verma, A. SenGupta

**9:20 ENVR 318.** Purification of water containing arsenic by amine-rich polymeric adsorbent. T. Jafari, J. Macharia, E. Moharreri, T. Jiang, S.L. Suib

**9:45** Intermission.

**10:05 ENVR 319.** Bromine radical species reaction under advanced oxidation process condition. A. Lechner, S.P. Mezyk

**10:30 ENVR 320.** Chloramine chemistry in treated wastewaters. L. Twight, K.D. Couch, S.P. Mezyk

**10:55 ENVR 321.** Metal contaminated water: Associated problems and their solutions via green and sustainable pathway for waste water purification. R.K. Sharma

**11:20 ENVR 322.** Cactus goo removes different pollutants to clean water. N. Alcantar, A. Buttice, D. Fox, R.G. Toomey, D. Stebbins, T. Peng, F. Guo

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**Section H**

Loews Philadelphia Hotel  
Congress C

**Combined Biological-Chemical Reactions for Contaminant Transformation**

*Cosponsored by AGRO*

E. J. Bouwer, K. T. Finneran, *Organizers, Presiding*

8:00 Introductory Remarks.

8:05 ENVR 323. Mechanism and applications of black carbon-mediated microbial contaminant transformation. Y. Yu, J.M. Saquing, P.T. Imhoff, P. Chiu

8:25 ENVR 324. Heavy metal remediation via biologically driven calcium carbonate precipitation. E. Lauchnor, N. Zambare, R. Gerlach

8:45 ENVR 325. Microbial response to antimony contamination in severely-antimony-contaminated environments and bioremediation thereof by an onsite field-scale bioreactor. W. Sun, V. Krumins, E. Xiao, Y. Dong, T. Xiao

9:05 ENVR 326. Effect of phospholipid coating on pyrite oxidation and bacterial communities under simulated acid mine drainage (AMD) conditions. B. Van Aken, D.R. Strongin, A. Pierre Louis, H. Yu, S. Shumlas, M. Schoonen

9:25 ENVR 327. Sustainable technologies for mine influenced water treatment in different water chemistry. S.R. Al-Abed, P. Pinto, J. McKernan

9:45 Intermission.

10:00 ENVR 328. Biofilm covered activated carbon particles enhance bioremediation of polychlorinated biphenyl (PCBs) in sediment. B.V. Kjellerup, S.J. Edwards, A.L. Prieto

10:20 ENVR 329. Transformation of carbon tetrachloride and chloroform by tetrachloroethene and trichloroethene respiring anaerobic mixed cultures. K. Vickstrom, M.F. Azizian, L. Semprini

10:40 ENVR 330. Enhanced microbial sulfate removal and recovery through a novel electrode-integrated bioreactor. C.L. Chun, S.N. Constantine, A.C. Schumann, D.S. Jones

11:00 ENVR 331. Electrically conductive particles supporting direct interspecies electron transfer in anaerobic microbial communities. Q. Cheng, C. Murray, D.F. Call

11:20 ENVR 332. Microbial reductive dechlorination of selected PCB tracker pair congeners in the Hudson and Grasse River sediment microcosms without nutrients amendment. Y. Xu

**USA-China Symposium on Energy**

*Sponsored by ENFL, Cosponsored by ENVR*

Technical program information known at press time.

The official technical program for the 252<sup>nd</sup> ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

**Chemistry, Safety & Technology of GMO Foods**

*Sponsored by AGFD, Cosponsored by AGRO, CEI, COMSCI and ENVR*

**Novel Nanomaterials****Biorelated**

*Sponsored by ENFL, Cosponsored by CATL and ENVR*

**Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches**

*Sponsored by AGRO, Cosponsored by AGFD, ENVR and TOXI*

**Innovative Chemistry & Materials for Electroenergy Production & Storage****Flow Batteries & Non-Li Alkali Metal Batteries**

*Sponsored by ENFL, Cosponsored by ENVR and MPPG*

**2D Materials: Graphene & Beyond & their Device Applications**

*Sponsored by ENFL, Cosponsored by ENVR*

**Advances in Chemistry of Energy & Fuels****Catalysts & Nanoparticles in Energy Conversion**

*Sponsored by ENFL, Cosponsored by ENVR and MPPG*

**TUESDAY AFTERNOON****Section A**

Loews Philadelphia Hotel  
Washington B

**Aquatic Chemistry: Symposium in honor of Professor Alan T. Stone****Interfaces of Organic, Inorganic & Surface Chemistry in Natural & Engineered Systems**

B. Deng, C. Huang, T. J. Strathmann, D. Vasudevan, *Organizers*

B. Novack, *Presiding*

1:30 Introductory Remarks.

1:35 ENVR 333. TiO<sub>2</sub> facets determine arsenic adsorption and photo-oxidation. C. Jing, L. Yan

1:55 ENVR 334. Spectroscopic and DFT study on arsenic removal using lanthanum-impregnated activated alumina. Q. Shi, C. Jing, X. Meng

2:15 ENVR 335. Mechanistic study of arsenic and fluoride removal using granular TiO<sub>2</sub>-LaCO<sub>3</sub>OH adsorbent. L. Yan, C. Jing

2:35 ENVR 336. Aqueous-phase reduction of nitrobenzene by sulfide mediated by varying-sized black carbon fractions. C. Wei, H. Fu, X. Qu, D. Zhu

2:55 ENVR 337. Increased reductive dechlorination of chlorinated hydrocarbons in surface-mediated Fe(II) associated with goethite by adding low concentration of quinine moieties. R. Maithreepala, S. Haderlien

3:15 Intermission.

3:35 ENVR 338. Effect of in-situ CO<sub>2</sub> sparging on chemistry of groundwater impacted by caustic brine discharges. R.F. Carbonaro, R.D. Mutch, K.J. Rader, P.K. Gupta, J.J. Morris

3:55 ENVR 339. Laccase-mimicking activity of manganese oxide nanomaterials for pollutant conversion. X. Wang, Z. Wang, Q. Huang

4:15 ENVR 340. Aquatic chemistry of cyanobacteria threats- assessment of the release of taste and odor compounds and toxins from cyanobacteria through drinking water treatment oxidants. C. Moldaenke, B. Santiago, A. Dahlhaus, S. Kuppers, P.L. Schorr

4:35 ENVR 341. Mechanisms and products of BPA oxidation by Mn(IV) oxide. M.A. Ginder-Vogel, S.J. Balgooyen, C.K. Remucal

4:55 ENVR 342. Phosphorus recovery from anaerobic digester effluents by using dolomite lime. J. Ge, Y. Song, X. Liu, X. Meng

5:15 Concluding Remarks.

**Section B**

Loews Philadelphia Hotel  
Washington A

**Chemistry of Environmental Sorptive & Oxidative Processes: Symposium in honor of Joseph J. Pignatello**

A. MacKay, M. Sander, B. Xing, *Organizers*  
F. Xiao, D. Zhao, *Organizers, Presiding*

1:30 ENVR 343. Photochemical production of reactive species in algal cultivation systems by photo-excitation of algal-excreted extracellular organic matter. R. Tenorio, J. Guest, T.J. Strathmann

2:00 ENVR 344. Degradation of organic contaminants by free radicals in biochars. B. Pan, J. Yang, M. Wu, X. Dong, J. Peng, B. Xing

2:30 ENVR 345. Intricacy of dissolved organic carbon release from biochars and its implications to antibiotics sorption. W. Zhang, C. Liu, H. Li, B.J. Teppen, S. Boyd

3:00 Intermission.

3:15 ENVR 346. Novel high-capacity and photo-regenerable material for efficient removal of polycyclic aromatic hydrocarbons. D. Zhao, W. Liu, Z. Cai, S. O'Reilly

3:45 ENVR 347. Predicting organic cation sorption coefficients: Accounting for affinity and abundance of exchange ions using a probe molecule. W.C. Jolin, R. Goyetche, K. Carter, J. Medina, D. Vasudevan, A. MacKay

4:15 ENVR 348. Interactions of metallic species with thermally air-oxidized black carbon (char) in the presence of soil organic matter. F. Xiao, R. Hanson, N. Lindstrom

4:40 ENVR 349. Heterogeneous Fenton reaction at circumneutral pH: Myths and facts. A. Pham

5:05 ENVR 350. Photochemical processes in estuarine and coastal waters. K.M. Parker, W. Mitch

**Section C**

Loews Philadelphia Hotel  
Regency Ballroom C2

**Nanotechnology for Environmental Solutions & Remediation**

M. Cledon, K. D. Hristovski, *Organizers*

D. Barcelo, *Organizer, Presiding*

1:30 ENVR 351. Nanotechnology for value-addition and decontamination. S. Brar

2:00 ENVR 352. Antibacterial Ti<sub>3</sub>C<sub>2</sub>TX MXene nanosheets: Towards advanced wastewater treatment membranes. K. Rasool, M. Helal, A. Ali, C. Ren, Y. Gogotsi, K.A. Mahmoud

2:25 ENVR 353. Natural organic matter effects on bacterial tolerance of silver ion and silver nanoparticles. A.J. Bertuccio, R.D. Tilton

2:50 ENVR 354. Bacterial responses and resilience in environmental and engineered systems challenged with CuO nanoparticles. J.D. Moore, A.J. Bertuccio, R.D. Tilton, G. Lowry, K.B. Gregory

3:15 ENVR 355. Impacts of nanoparticles on population-level behavior in bacteria: Quorum sensing and autolysis. E. McGivney, J.M. Vanbriesen, K.B. Gregory

3:40 Intermission.

3:55 ENVR 356. Withdrawn.

4:20 ENVR 357. High fluoride removal capacity by hybrid anion exchanger dispersed with hydrated zirconium oxide nanoparticles synthesized through a novel route. S. Naskar, S. Sarkar

4:45 ENVR 358. Simultaneous removal of fluoride and nitrate by ion exchange media impregnated with alumina nanoparticles. J. Markovski, K.D. Hristovski, P.K. Westerhoff

5:10 ENVR 359. Capture of nitrogen in eutrophic fresh water by Nanochar. M. Naghdi, S. Brar, M. Cledon

**Section D**

Loews Philadelphia Hotel  
Commonwealth Hall A2

**Applied Catalysis for Environmental Applications**

A. Savara, S. Zhao, *Organizers*

A. Orlov, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 ENVR 360. Focusing light into nanostructures for water splitting. S. Bahauddin, H. Robatjazi, C. Doiron, X. Liu, T. Tumkur, W. Wang, B. Jiang, P. Wray, I. Thomann

2:05 ENVR 361. In situ XANES/EXAFS and DRIFTS studies on CO<sub>2</sub> photo-reduction with H<sub>2</sub>O by Cu/TiO<sub>2</sub> photocatalyst. Y. Li, L. Liu, J. Miller

2:35 ENVR 362. Silver-inserted zinc rhodium oxide and bismuth vanadium oxide for overall water-splitting under red light. H. Irie

3:05 ENVR 363. Hot electrons generated from upconversion process in doped quantum dots for enhanced photocatalysis. D.H. Son

3:30 Intermission.

3:55 ENVR 364. Achieving sustainable water treatment: Graphitic carbon nitride for persistent waterborne contaminant removal with visible light irradiation. D. Shuai, Q. Zheng

4:20 ENVR 365. One-step synthesis of graphene foams attached with TiO<sub>2</sub> sheets for water treatment. W. Wang, Z. Wang, J. Liu, Z. Zhang, L. Sun

4:45 ENVR 366. Triplet-triplet annihilation upconversion for semiconductor photocatalyst sensitization using sub-bandgap photons: Initial successes and applications in environmental remediation. A.L. Hagstrom, H. Kim, C. Li, J. Kim

5:05 Concluding Remarks.

## Section E

Loews Philadelphia Hotel  
Washington C

### Chemistry of Biomass Wastes Conversion to Energy & Chemicals

Cosponsored by ENFL

A. Abbas, M. Zhao, *Organizers*

S. Spataro, M. Tu, *Organizers, Presiding*

1:30 ENVR 367. Alkaline thermal treatment of Biomass to produce high purity H<sub>2</sub> with in-situ carbon capture. H. Zhou, A.A. Park

1:50 ENVR 368. Exploration of Na<sub>2</sub>ZrO<sub>3</sub> as both CO<sub>2</sub> acceptor and reforming catalyst for hydrogen production from biomass gasification. M.H. Memon, H. Zhuo, M. Zhao

2:10 ENVR 369. Pseudo-component method to predict interaction features of biowaste and plastics. Y. Long, H. Zhou, A. Meng, Q. Li, Y. Zhang

2:30 ENVR 370. Pyrolysis characteristics of 18 kinds of biomass waste. Y. Long, A. Meng, H. Zhou, L. Qin, Y. Zhang, Q. Li

2:50 Intermission.

3:05 ENVR 371. Behavior of dioxin in biomass waste chemical looping process: Thermodynamic simulation and pilot-scale demonstration. X. Hua, W. Wang

3:25 ENVR 372. Design of co-gasification of dried sludge and woody biomass for synthesis gas production in a fixed bed downdraft gasifier using ASPEN PLUS. V.S. Sikarwar, M. Zhao

3:45 ENVR 373. Exploiting the catalytic activity of clay minerals on in situ upgrading of pyrolysis biofuels with simultaneous production of heterogeneous adsorbents for water treatment. G. Dou, J.L. Goldfarb

4:05 ENVR 374. Potential of pyrolytic coconut shell as a sustainable bio-filler for natural rubber. Y. Fan, G.D. Fowler, C. Norris

4:25 ENVR 375. Transformation of nitrogen and phosphorus during (hydro)thermal treatments of biosolids. R. Huang, Y. Tang

## Section F

Loews Philadelphia Hotel  
Congress A

### Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications

Cosponsored by CEI, HIST and NOM

T. C. Williamson, *Organizer*

M. A. Benvenuto, *Organizer, Presiding*

1:30 ENVR 376. Natural history of the periodic table of (available) elements. B.J. McFarland

2:00 ENVR 377. Rare earth elements: Purification, sustainability and recycling. E.J. Schelter, B. Cole, P. Carroll

2:20 ENVR 378. Analytical methodologies for arsenic, selenium and mercury: A historical perspective. L.H. Kolopajlo

2:40 ENVR 379. It's all in the sludge: Elements that are always byproducts. M.A. Benvenuto, G. Nguyen, J. Pothoof

3:00 ENVR 380. Mobility of naturally-occurring radioactive materials (NORM) in bit cuttings from unconventional drilling operations. E. Eitheim, A. Nelson, T. Forbes

3:20 Intermission.

3:30 ENVR 381. Where do metals come from? Using the context of portable electronics in general chemistry curricula. B.D. Fahlman

3:50 ENVR 382. Polonium-210 accumulates in lake bottom sediments: What are the radioecological implications? A. Nelson, T. Forbes, M.K. Schultz

4:10 ENVR 383. Hydrogen to livermorium: A philatelic history of the periodic table. D. Rabinovich

4:30 ENVR 384. Palladium: The word, the element, and its place in society. G.W. Ruger

4:50 Concluding Remarks.

## Section G

Loews Philadelphia Hotel  
Congress B

### Water Purification Systems

Cosponsored by CEI

S. Ahuja, *Organizer, Presiding*

1:30 ENVR 385. Investigation of radical chlorine species in advanced oxidation processes. J. Castillo, S.P. Mezyk

1:55 ENVR 386. Rate constant determination for alkyl nitrates and oxidizing radicals utilized in advanced oxidative processes. S. Arciva, B. Daws, S.P. Mezyk, M.P. Schramm

2:20 ENVR 387. Investigation of thermal chloramine reaction kinetics occurring in treated wastewaters. J. Gleason, S.P. Mezyk, K.P. Ishida

2:45 ENVR 388. Application of bromine (HOBr/OBr<sup>-</sup>) for saltwater disinfection. Y. Jung, Y. Jung, J. Kang

3:10 Intermission.

3:30 ENVR 389. Selective silica separations from waste water using ion-exchange media. K. Sasan, P. Brady, T.M. Nenoff

3:55 ENVR 390. Graphene oxide/magnesium(hydro)oxide nanocomposites as superior sorbents for methylene blue removal from aqueous solutions. M. Heidarizad, S.S. Sengor

4:20 ENVR 391. Assessment of sludge wastes generated from selected water treatment plants for use as soil conditioner and plant fertilizer in Nigeria. E. Inam, E. Dan, K. Funtula, J. Essien, K. Semple, A. Odon, S. Kang

4:45 ENVR 392. Determination of nitrate anion in waste water from nine selected areas of coastal Guyana via a spectrophotometric method. R.C. Jagessar

5:10 Concluding Remarks.

## Section H

Loews Philadelphia Hotel  
Congress C

### C. Ellen Gonter Graduate Student Awards

T. Anderson, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 ENVR 393. Identification and toxicological evaluation of unsubstituted and novel PAH derivatives in pavement sealcoat products. I. Titaley, A. Chlebowski, L. Truong, R.L. Tanguay, S.L. Simonich

2:00 ENVR 394. Development of polymer-iron oxide hybrid nanofiber networks for metal sequestration in point-of-use water treatment applications. K. Greenstein, G. Parkin, D.M. Cwiertny

2:25 ENVR 395. Seasonal and spatial variabilities in the water chemistry of prairie pothole wetlands influence the photoproduction of reactive intermediates. A.J. McCabe, W. Arnold

2:50 ENVR 396. Chlorination revisited: Does Cl<sup>-</sup> serve as a catalyst in the chlorination of phenols? S. Lau, S. Abraham, A. Roberts

3:15 Intermission.

3:30 ENVR 397. Halogen radicals as an unrecognized source of marine photo-oxidants in coastal waters. K.M. Parker, W. Mitch

3:55 ENVR 398. Destruction of iodinated pharmaceuticals by UV-254 nm based advanced oxidation processes. X. Duan, X. He, S.P. Mezyk, R. Marfil-Vega, D.D. Dionysiou

4:20 ENVR 399. Sorption of dioctyl sodium sulfosuccinate to coastal Gulf of Mexico sediment. B.S. Adewale, B.J. Brownawell

### Experimental Studies of the Molecular Scale Processes at Environmental Interfaces

#### Interface Structure & Oxides

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#### Green Chemistry Innovations & Opportunities in Industry for Young Professionals

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#### Porous Materials & Other Nanoparticles

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#### Agrochemicals & Pollinators: Current Science & Risk Assessment Approaches

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#### Innovative Chemistry & Materials for Electroenergy Production & Storage

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#### Environmental Risk Assessment of Down-the-Drain Chemicals

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#### Environmental Study Design: Current & Emerging Guidelines

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#### Glyphosate: Current Status & Future Prospects

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#### Increasing the Value of Water Monitoring Data for Pesticide Fate & Effects Evaluations

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#### Advances in Chemistry of Energy & Fuels

#### Batteries

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## WEDNESDAY MORNING

### Section A

Loews Philadelphia Hotel  
Commonwealth Hall A2

#### Nanomaterials in the Environment & Biological Systems

#### Physicochemical & Biological Processes Affecting Their Transformation & Transport

W. H. Lee, P. Yi, *Organizers*

S. Joo, *Organizer, Presiding*

8:30 ENVR 400. Detection and quantification of engineered nanoparticles from water and wastewater using modified silica microspheres. X. Wei, S. Brenner, M. Carpenter

8:55 ENVR 401. Role of aspect ratio on gold nanomaterial transport through saturated porous media. D. Das, A. Hornstra, N. Burrows, C.J. Murphy, P.J. Vikesland, N.B. Saleh

9:20 ENVR 402. Release of carbon nanotubes from polypropylene-carbon nanotube composites by solar-induced weathering. E. Sahle-Demessie, C. Han, A. Zhao, H. Grecsek

9:45 ENVR 403. Development of model systems to explore potential mass transfer from nanotechnology-enabled plastics into foods and the environment. K. Pillai, P. Gray, A. Bajaj, R. Bleher, C. Tien, L. Sung, T.V. Duncan

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10:10 Intermission.

10:25 ENVR 404. Influence of surface functional groups on the degradation of graphene nanomaterials in the aquatic environment. I. Chowdhury, L.M. Guiney, M. Hersam

10:50 ENVR 405. Release potential of consumer products containing engineered nanomaterials. E. Barnes, J. Brame, D.P. Martin, J.G. Coleman, A.J. Kennedy, M.D. Robert, C. Weiss, A.R. Poda, A.J. Bednar, J.A. Steevens

11:15 ENVR 406. Investigating interfacial reactions of nano-ZnO particles with contaminants. S. Joo, S. Seo, M.R. Knecht, R. Lawrence, C. Su

11:40 ENVR 407. Monitoring the mass distribution during silver nanoparticle transformations in simulated environmental media. J.M. Pettibone

## Section B

Loews Philadelphia Hotel  
Washington A

### Chemistry of Environmental Sorptive & Oxidative Processes: Symposium in honor of Joseph J. Pignatello

A. MacKay, M. Sander, B. Xing, D. Zhao, *Organizers*

F. Xiao, *Organizer, Presiding*

8:00 Introductory Remarks.

8:10 ENVR 408. Activated carbon-mediated alkaline hydrolysis of alkyl halides (methyl bromide). H. Hsieh, J.J. Pignatello

8:35 ENVR 409. Adsorption and desorption of organic compounds by humic acid-coated carbon nanotubes. W. Wu, B. Xing

9:00 ENVR 410. Nanoparticles of pyrogenic carbonaceous material: Characterization and interactions with engineered nanoparticles. P. Yi, J.J. Pignatello

9:25 ENVR 411. Regulation of morphological wrinkles and folds on activated graphene nanosheets for high-efficient removal of hydrophobic organic contaminants. J. Wang, B. Chen, B. Xing

9:50 Intermission.

10:05 ENVR 412. Enthalpy of oxidation for characterized soils for use in groundwater remediation. N. Moulton, S.P. Mezyk, M. Becker

10:30 ENVR 413. Cation- $\pi$  interaction: An unnegligible interaction for ionizable compounds' sorption on pyrogenic carbonaceous materials. Q. Zhao

10:55 ENVR 414. H/C atomic ratio as a mediate parameter between pyrolysis temperature, aromatic cluster and sorption ability of biochar to naphthalene and phenanthrene. X. Xiao, B. Chen

11:20 ENVR 415. As (V) removal by activated iron powder enhanced by amorphous iron oxides in simulated wastewater. L. Xu, Y. Huang

## Section C

Loews Philadelphia Hotel  
Commonwealth Hall C

### Nanotechnology for Environmental Solutions & Remediation

D. Barcelo, M. Cledon, *Organizers*

K. D. Hristovski, *Organizer, Presiding*

8:00 ENVR 416. Recyclable magnetic Co-ferrite nanoparticles for the removal of 2-phenylbenzimidazole-5-sulfonic acid (PBSA) in water. A. Al Anazi, W. Abdelraheem, C. Han, L. Sygellou, M. Arfanis, P. Falaras, D.D. Dionysiou

8:25 ENVR 417. Adsorption of phenanthrene by superfine powdered activated carbon and electrospun polystyrene nanofiber composites. O.G. Apul, N. Hoogesteijn, D. Ladner, P.K. Westerhoff

8:50 ENVR 418. Designed mesoporous materials/polyvinylidene fluoride hybrid membranes for sequestration of large-sized dissolved organic pollutants. W. Teng, J. Fan, W. Zhang, D. Zhao

9:15 ENVR 419. Methylation of hemoglobin to enhance flocculant performance. M. Essandoh, R.A. Garcia, G. Strahan

9:40 Intermission.

9:55 ENVR 420. Nanoparticle-supported lipid bilayers as an in-situ remediation strategy for persistent organic contaminants in the soil environment. P. Garlapati, S.L. Wunder, B. Kim

10:20 ENVR 421. Phenol oxidation by persulfate catalyzed by core-shell structured nanosized zero-valent iron. C. Kim, T.T. Trinh, J. Ahn, I. Hwang

10:45 ENVR 422. Metabolic responses of *Mytilus galloprovincialis* to fullerene soot in microcosms exposure experiments. D. Barcelo, J. Sanchis, M. Farre

11:10 ENVR 423. Mechanisms of developmental toxicity of metal oxide nanoparticles in marine organisms. C. Torres, B. Wu, K. Ramos, C.J. Chang, G.N. Cherr

11:35 ENVR 424. Nanoparticle effects on plants. T. Vanek, P. Landa

## Section D

Loews Philadelphia Hotel  
Washington B

### Applied Catalysis for Environmental Applications

A. Savara, S. Zhao, *Organizers*

A. Orlov, *Organizer, Presiding*

8:00 Introductory Remarks.

8:05 ENVR 425. Mathematical modeling and simulation of a non-isothermal photocatalytic solar CPC reactor: Effect of the temperature on the kinetic of reaction rate. M. Mueses, F. Machuca-Martinez, M. Molano-Mendoza

8:25 ENVR 426. Enhanced photocatalytic treatment of pharmaceuticals using immobilized nanocomposite thin films. L. Lin, H. Wang, P. Xu

8:45 ENVR 427. Nano-sized ruthenium compound as a true catalyst for water oxidation in the reaction of ruthenium red and cerium (IV) ammonium nitrate. A. Shirazi Amin, M. Najafpour, B. Sarvi, S. Hosseini, B. Deljoo, A. El-Sawy, M. Aindow, S.L. Suib

9:05 Intermission.

9:25 ENVR 428. Sustainable treatment of nitrate using a novel three-phase trickle-bed reactor. C.J. Werth, A. Bergquist, T.J. Strathmann, G. Gildert

9:55 ENVR 429. Carbon-based bimetal hybrids for catalytic hydrodehalogenation of trichloroethylene. J. Jiao, K. Meduri, O.J. Graham, P.G. Tratnyek

10:25 ENVR 430. Catalytic hydrodechlorination of trichloroaniline using resin supported palladium. D. Zhao, B. Han, J. Wang, J. Li

10:55 ENVR 431. Catalytic hydrogenation of 4-nitrophenol by palladium-resin composites. H.J. Zhang, N. Jadbabaei

11:20 ENVR 432. Microbial synthesis of Pd/Fe<sub>3</sub>O<sub>4</sub>, Au/Fe<sub>3</sub>O<sub>4</sub>, and PdAu/Fe<sub>3</sub>O<sub>4</sub> nanocomposites for catalytic reduction of nitroaromatic compounds. T. Ya

11:40 Concluding Remarks.

## Section E

Loews Philadelphia Hotel  
Washington C

### Chemistry of Biomass Wastes Conversion to Energy & Chemicals

*Cosponsored by ENFL*

A. Abbas, M. Tu, M. Zhao, *Organizers*

S. Spataro, *Organizer, Presiding*

8:30 ENVR 433. Valorisation of biomass derivatives via cross metathesis to PET precursor compounds. E. Saraci, L. Wang, K.H. Theopold, R.F. Lobo

8:50 ENVR 434. Catalytic mechanism of iron salts in CO<sub>2</sub> activation and magnetization of low-grade hydrochar from biomass waste for removal of pharmaceutical and personal care products. F. Qian, X. Zhu, Y. Liu, S. Zhang, J. Chen

9:10 ENVR 435. Turning lignocellulose waste into solvent with lower carbon footprint. J. Mellentine, A. DeVierno, L.N. Grice, J. Whitford

9:30 ENVR 436. Co-adsorption behavior of perfluorochemicals (PFCs) and hexavalent chromium anions on aminated wheat straw. T. Zhao, X. Yao

9:50 Intermission.

10:05 ENVR 437. Electrochemical deoxygenation of lignocellulosic pyrolysis oil: process understanding for prospective life cycle assessment. P.M. Billen, Y. Sorunmu, D. Santosa, R. Rousseau, V. Glezakou, J. Elwell, J. Hartvigsen, S. Elangovan, M. Karanjikar, S. Spataro

10:25 ENVR 438. Characterization of a carbon-based biochar from grape seed pyrolysis: Towards industrial waste recycling. N.F. Adegboyega, M.A. Kelm, C. Cunningham, W.C. Hockaday

10:45 ENVR 439. Computational comparison of biomass pretreatments: Cellulose deconstruction under water-cosolvent conditions. M.D. Smith, X. Cheng, L. Petridis, B. Mostofian, J.C. Smith

11:05 ENVR 440. Improvement of the treatment effectiveness of heavy metals with energy sunflower plants with calcium peroxide and phytohormones. T. Yeh

11:25 ENVR 441. Enhanced biodiesel cold flow properties by triacetin production via interesterification. L. Soh, M. Senra, R. Elias

## Section F

Loews Philadelphia Hotel  
Congress A

### Microbial & Molecular Tools to Determine the Fate & Biotransformation of Emerging Contaminants

*Cosponsored by AGRO*

U. Tezel, *Organizer*

B. Z. Haznedaroglu, S. G. Pavlostathis, *Organizers, Presiding*

8:00 Introductory Remarks.

8:05 ENVR 442. Combining high throughput omics tools with targeted DNA, RNA and protein quantification techniques to model respiration rates of specific organohalide contaminants by *Dehalococcoides* strains. R. Richardson, G.L. Heavner, C. Mansfeldt, A. Rowe, J.J. Werner

8:50 ENVR 443. Biomarkers for validating 1,4-dioxane biodegradation in contaminated groundwater. P. Gedalanga, S. Zhang, Y. Miao, S. Mahendra

9:15 ENVR 444. Catabolic biomarkers for sensitive and fast quantification of 1,4-dioxane biodegradation activities at impacted aquifers. M. Li, Y. Liu, Y. He, Y. Yang, J. Mathieu, P.J. Alvarez

9:40 Intermission.

10:00 ENVR 445. Understanding the metabolism of 4-OH-2',5'-dichlorobiphenyl by the model plant *Arabidopsis thaliana* using whole-genome expression microarrays. B. Van Aken, S. Subramanian

10:25 ENVR 446. Micropollutant biotransformation in activated sludge: Exploring linkages between observed reaction types and microbial community characteristics. S. Achermann, P. Falás, Y. Men, C. Mansfeldt, A. Joss, H. Singer, K. Fenner

10:50 ENVR 447. Novel oxygenase detoxifies benzalkonium chlorides in the environment. E. Ertekin, U. Tezel

11:15 ENVR 448. Differential sensitivity of wetland-derived nitrogen cycling microorganisms to copper nanoparticles. V.C. Reyes, N. Merino, P. Gedalanga, J. Van Nostrand, S. Keely, S. De Long, J. Zhou, S. Mahendra

## Section G

Loews Philadelphia Hotel  
Congress B

### Disinfection By-Products: What Have We Learned about Dissolved Organic Matter Precursors?

*Financially supported by AEESP*

L. M. Blaney, O. Keen, J. A. Korak, *Organizers*

A. T. Chow, M. Gonsior, H. Liu, *Organizers, Presiding*

8:00 Introductory Remarks.

8:10 ENVR 449. Effect of chlorination on the algal toxin microcystin: A non-targeted screening for disinfection by-products. M. Gonsior, J. Luek, P. Schmit-Kopplin

8:35 ENVR 450. Dissolved organic matter and disinfection byproduct precursors in Coastal Blackwater River – A case study of South Carolina flooding. A.T. Chow, A.M. Ruecker, H. Uzun, T. Karanfil, M.T. Tsui

**9:00 ENVR 451.** Enhanced aromatic carbon loading, DBP formation potential, and hydrologic variability following beetle-induced tree mortality. B. Brouillard, E. Dickenson, K. Mikkelsen, J. Sharp

**9:25 ENVR 452.** Microbial diversity and DBP formation potential of biofilms harvested from different pipe materials. H. Tung, G. Wang

**9:50** Intermission.

**10:10 ENVR 453.** Algal organic matter as precursors for nitrosamines: The importance of biomolecules. N. Dai, W. Tomkiewicz

**10:35 ENVR 454.** Comparison of nitrosamine precursors in natural and anthropogenic inputs to drinking water treatment plants. C. Glover, T. Zeng, E. Marti, W. Mitch, E. Dickenson

**11:00 ENVR 455.** Predicting trihalomethane formation using classification trees. L. Strahs, M.J. Small, J. Wilson, J.M. Vanbriesen

**11:25 ENVR 456.** Exports of dissolved organic carbon and disinfection byproduct precursors from prescribed burnt forests. W. Zhang, H. Uzun, U. Cerdem, C. Olivares, T.A. Coates, F. Rogers, T. Karanfil, A.T. Chow

## Section H

Loews Philadelphia Hotel  
Congress C

### Recent Advances in Remediation Strategies & Technologies for the Cleanup of Hazardous Waste Sites

E. R. McKenzie, *Organizer*

A. Pham, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:10 ENVR 457.** Major characteristics and challenges of treatment of high pH, high Si groundwater at a contaminated site in western Washington. G. Korshin, M.M. Benjamin

**8:30 ENVR 458.** Mechanism for simultaneous removal of <sup>99</sup>Tc and Cr by Fe(OH)<sub>2</sub> mineral transformation. S. Salow, W. Um, D. Kim, M.J. Schweiger, M. Engelhard, M.E. Bowden, A.A. Kruger, W.W. Lukens

**8:50 ENVR 459.** Withdrawn.

**9:10 ENVR 460.** Application of nanoparticle zerovalent iron coupled with polyphosphate for groundwater remediation: A sequential redox treatment, stability, and toxicity. H. Kim, M. Kim, H. Kim, C. Lee

**9:30 ENVR 461.** Utilizing geochemical modeling to assess in situ bio-reduction/immobilization of uranium at an in situ recovery mining site utilizing membrane infused gaseous hydrogen. L. Haynes, L.W. Clapp

**9:50** Intermission.

**10:05 ENVR 462.** Is phytoremediation of asbestos contaminated sites feasible? C. Gonneau, S.K. Mohanty, J. Willenbring, B. Casper

**10:25 ENVR 463.** Is bioremediation of asbestos fibers feasible? S.K. Mohanty, C. Gonneau, A. Salamatipour, B. Casper, J. Willenbring

**10:45 ENVR 464.** Comparison of the bioavailability and bioaccessibility of TCDD from candidate in-situ sorbent amendments. J.B. Sallach, Y. Zhang, R. Crawford, N.E. Kaminski, H. Li, C.T. Johnston, B.J. Teppen, S.A. Boyd

**11:05 ENVR 465.** In situ and down-hole diagnostic tools for site characterization and remediation. E.M. Driver, I.B. Roll, S.D. Supowit, R.U. Halden

**11:25 ENVR 466.** Fouling mechanism and control strategies during microfiltration of inorganic colloids. R. Malaisamy, R. Rollock, Y. Fennell, K.L. Jones

### Experimental Studies of the Molecular Scale Processes at Environmental Interfaces

#### Redox

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#### USA-China Symposium on Energy

*Sponsored by ENFL, Cosponsored by ENVR*

#### Chemistry, Safety & Technology of GMO Foods

*Sponsored by AGFD, Cosponsored by AGRO, CEI†, COMSCI and ENVR†*

#### Environmental Fate, Transport & Modeling of Agriculturally-Related Chemicals

*Sponsored by AGRO, Cosponsored by ENVR*

#### Novel Nanomaterials

#### Advanced Catalysts for Fuel Production

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#### Progress in Coal to Liquids & Gases

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#### Computational Chemistry & Toxicology in Chemical Discovery & Assessment (QSARs)

*Sponsored by AGRO, Cosponsored by COMP, ENVR and TOXI*

#### Innovative Chemistry & Materials for Electroenergy Production & Storage

##### Li-S Batteries

*Sponsored by ENFL, Cosponsored by ENVR and MPPG*

##### 2D Materials: Graphene & Beyond & their Device Applications

*Sponsored by ENFL, Cosponsored by ENVR*

##### Advances in Chemistry of Energy & Fuels

##### Batteries, CO<sub>2</sub> Capture, Pyrolysis Modeling & Others

*Sponsored by ENFL, Cosponsored by ENVR and MPPG*

## WEDNESDAY AFTERNOON

### Section A

Loews Philadelphia Hotel  
Commonwealth Hall A2

#### Nanomaterials in the Environment & Biological Systems

#### Physicochemical & Biological Processes Affecting Their Transformation & Transport

S. Joo, P. Yi, *Organizers*

W. H. Lee, *Organizer, Presiding*

**1:30 ENVR 467.** Comparative toxicity effects of carboxylated carbon nanotubes to fresh water and marine algae. M. Thakkar

**1:55 ENVR 468.** Contrasting effects of graphene materials on microbial reduction of nitrobenzene and ferrihydrite. G. Liu, J. Zhou, X. Zhang, N. Wang

**2:20 ENVR 469.** Uptake, distribution, and effects of nano alumina in terrestrial plants at the cellular and macro-scale levels. J. Mui, K. Hayes, B. Kim

**2:45 ENVR 470.** Effect of soil organic content on the absorption of two commercial ZnO nanomaterials and its influence in nutrient composition of red kidney beans (*Phaseolus vulgaris* var. Red Hawk). I.A. Medina-Velo, A.C. Barrios, O.E. Dominguez, J.A. Hernandez-Viezcas, J.L. Gardea-Torresdey

**3:10** Intermission.

**3:25 ENVR 471.** Lipid exchange envelope penetration (LEEP) of nanoparticles for plant engineering: A universal localization mechanism. M. Wong, R. Misra, J. Giraldo, S. Kwak, Y. Son, M. Landry, J.W. Swan, D. Blankschtein, M. Strano

**3:50 ENVR 472.** Activated sludge microbial community response to variations in gold nanoparticle morphology and surface coating. J. Metch, P.J. Vikesland, C.J. Murphy, N. Burrows, A. Pruden

**4:15 ENVR 473.** Impacts of silver nanoparticle transformations on *Pseudomonas Aeruginosa* GFP biofilm. T. Adegboye, K.L. Jones, P. Ymeleleki, M. Ramamoorthy, Y. Fennell

**4:40 ENVR 474.** Electrochemical micro/nano-sensor for in situ monitoring of nutrients and chemical compounds in engineered and natural aquatic systems. W.H. Lee, X. Ma, J. Church

### Section B

Loews Philadelphia Hotel  
Washington A

#### Chemistry of Environmental Sorptive & Oxidative Processes: Symposium in honor of Joseph J. Pignatello

A. MacKay, M. Sander, B. Xing, D. Zhao, *Organizers*

F. Xiao, *Organizer, Presiding*

**1:30 ENVR 475.** Biochars as adsorbents for microcystin-LR removal: Effects of pyrolysis temperature and resulting physicochemical properties. Z. Wang, H. Zheng, J. Zhao, X. Luo, X. Su, B. Xing

**1:55 ENVR 476.** Advanced oxidation process for DNAN using UV/H<sub>2</sub>O<sub>2</sub>. S. Hailei, C. Christodoulatos, B. Smolinski, P. Arienti, X. Meng

**2:20 ENVR 477.** Laccase-catalyzed degradation of sulfadimethoxine in the presence of natural mediators. S. Liang, Q. Luo, Q. Huang

**2:45 ENVR 478.** Enhanced aerobic diclofenac removal with sulfide modified nanoscale zero valent iron (S-nZVI) as substitute of nanoscale zero valent iron (nZVI) in nZVI/O<sub>2</sub> system. Y. Su, X. Zhou, Y. Zhang

**3:10** Intermission.

**3:25 ENVR 479.** Solubility enhancement and QSPR correlations for polycyclic aromatic hydrocarbons complexation with cyclodextrins: A model for dissolved organic matter. W. Blanford, H. Gao, E.B. Ledesma

**3:50 ENVR 480.** Removal of hexavalent chromium from solutions by a novel biochar supported nanoscale iron sulfide composite. H. Lyu, Y. Gong, Y. Huang, J. Tang

**4:15 ENVR 481.** Enhancement on Fenton system by N-substituted hydroxylamines. L. Chen, Y. Huang, J. Zhang, B. Wu, P. Wang

**4:40 ENVR 482.** Selective catalytic reduction of NO with NH<sub>3</sub> over MoFe/Beta catalysts: Effect of Mo loading. J. Liu, J. Liu, Z. Zhao

**5:05 ENVR 483.** Quantum chemical investigations on oxidation pathways of PPCPs by singlet state oxygen and ozone. S. Zhang

### Section C

Loews Philadelphia Hotel  
Commonwealth Hall C

#### Nanotechnology for Environmental Solutions & Remediation

D. Barcelo, K. D. Hristovski, *Organizers*

M. Cledon, *Organizer, Presiding*

**1:30 ENVR 484.** Fiber optics as a fixed-film substrate for photocatalysis via UV-LED irradiation. H. Stancil, L. Ling, J. Kim, P.K. Westerhoff, K.D. Hristovski

**1:55 ENVR 485.** Reductive photocatalysis of azo dyes using TiO<sub>2</sub> nano-particles in the presence of some natural anti-oxidants as hole scavengers. M. Doshi, U.D. Patel, B. Shah, J. Ruparelia

**2:20 ENVR 486.** Facile fabrication of stable monolayer graphene in water for super-high adsorption of aromatic pollutants. K. Yang, B. Chen, J. Wang

**2:45 ENVR 487.** Size effects of graphene nanosheets on the adsorption capability of three-dimensional graphene-based macrostructures. Y. Shen, B. Chen

**3:10** Intermission.

**3:30 ENVR 488.** From coal fly ash to ordered mesoporous nano-silica: A novel twice-carbonation strategy. F. Yan, J. Jiang, M. Zhao, Y. Xu

**3:55 ENVR 489.** Membrane gas separation accelerated by hollow nanospheres. J. Zhang, S.M. Mahurin, S. Dai

**4:20 ENVR 490.** Reprogrammable multiplexed visual detection of mercury and silver ions with picomolar sensitivity. M. Rana, M. Balcioglu, M.V. Yigit

**4:45 ENVR 491.** Microplasma-assisted rapid synthesis of luminescence nitrogen-doped carbon dots for uranium detection. Z. Wang, Y. Lu, J. Chen

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**Section D**

Loews Philadelphia Hotel  
Washington B

**Applied Catalysis for Environmental Applications**

A. Orlov, A. Savara, S. Zhao, *Organizers*  
S. Zhao, *Presiding*

- 1:30 ENVR 492.** Development of a base metal three way catalyst for motorcycle development of a base metal based three-way catalyst for motorcycles. P. Tran, Y. Liu, H. Horimura, A. Isawa, K. Ueno
- 1:55 ENVR 493.** Sodium carbonate optimized dual functional material for CO<sub>2</sub> adsorption and catalytic conversion to methane. S. Wang, R.-J. Farrauto, D. Eida
- 2:20 ENVR 494.** Application of Pt@CeO<sub>2</sub> core/shell structures for low temperature oxidation of CO and CH<sub>4</sub>. S.P. Phivilay, K. Takanabe, P. Fornasiero
- 2:45 ENVR 495.** Pt-Based nanotube structures without carbon supports for fuel cell catalysts. S. Kim, S. Park
- 3:10** Intermission.
- 3:25 ENVR 496.** Degradation of methyl parathion using citrate stabilized gold nanoparticles. R. Nita, S. Trammell, G. Ellis, M. Moore, C.M. Soto, D.H. Leary, J. Fontana, S.F. Talebzadeh, D. Knight
- 3:50 ENVR 497.** Waste reduction in a continuous bulk polymerization process with chemistry that matters. D. Li, G. Flowers
- 4:15 ENVR 498.** Solar photocatalytic degradation of emergent contaminants in a pilot-scale CPC reactor. J.A. Colina-Marquez, M.A. Mueses
- 4:40 ENVR 499.** Chitosan/hydroxyapatite/Fe<sub>3</sub>O<sub>4</sub> magnetic composite for metal-complex dye AY220 removal: Recyclable metal-promoted fenton-like degradation. L. Wu, K. Xu, X. Hou
- 5:05** Concluding Remarks.

**Section E**

Loews Philadelphia Hotel  
Washington C

**Creating & Exploiting Salinity Gradients**

C. Gorski, B. E. Logan, M. S. Mauter, *Organizers, Presiding*

- 1:30** Introductory Remarks.
- 1:40 ENVR 500.** Salinity gradient energy with PRO, RED, and CapMix: Prospects, progress, and challenges. N. Yip
- 2:10 ENVR 501.** Relating charge efficiency and ion removal in electrochemical deionization systems. S. Shanbhag, J.F. Whitacre, M.S. Mauter

- 2:30 ENVR 502.** Modeling convective and diffusive mass transport in capacitive deionization electrodes. A. Iddya, M.S. Mauter, S. Shanbhag
- 2:50 ENVR 503.** Net energy output of salinity gradient power generation with pressure-retarded osmosis: What configurations Are feasible? A. Straub, A. Deshmukh, M. Elimelech
- 3:10 ENVR 504.** Salinity-gradient flow battery for converting salinity differences to electrical power. T. Kim, M. Rahimi, B.E. Logan, C. Gorski
- 3:30** Intermission.
- 3:50 ENVR 505.** Specific ion effects in charged polymer membranes. Y. Ji, G.M. Geise
- 4:10 ENVR 506.** Electricity generation from natural and engineered salinity gradients using reverse electrodialysis. D.F. Call, R. Kingsbury, C. Boggs, S. Zhu, F. Liu, O. Coronell
- 4:30 ENVR 507.** Ion exchange membrane resistance: Modeling and simulation of membrane characteristics and concentration dependency and its implication in reverse electrodialysis. B. Zhang, J.G. Hong, S. Xie, Y. Chen
- 4:50 ENVR 508.** Osmotic ballasts improve the energy efficiency of closed-loop electrodialytic processes. R. Kingsbury, O. Coronell
- 5:10 ENVR 509.** Application of thermally regenerative battery to remove copper from wastewater. M. Rahimi, Z. Schoener, X. Zhu, F. Zhang, C. Gorski, B.E. Logan

**Section F**

Loews Philadelphia Hotel  
Congress A

**Microbial & Molecular Tools to Determine the Fate & Biotransformation of Emerging Contaminants**

*Cosponsored by AGRO*

- B. Z. Haznedaroglu, S. G. Pavlostathis, *Organizers*  
U. Tezel, *Organizer, Presiding*
- 1:30 ENVR 510.** Biotransformation and biodegradation of insensitive munitions compounds in soil. J. Field, R. Sierra-Alvarez, M. Krzmarzick, C.L. Madeira, C.I. Olivares, J.D. Chorover, L.M. Abrell
- 2:15 ENVR 511.** Biotransformation and inhibitory effect of furanic and phenolic compounds in the anode of a microbial electrolysis cell (MEC). X. Zeng, M.A. Collins, A. Borole, S.G. Pavlostathis
- 2:40 ENVR 512.** Microbial transformation of tetracycline and sulfonamide antibiotics. X. Li, Y. Leng, R. Levine, Y. Zhang, J. Bao, D.D. Snow, L. Durso
- 3:05** Intermission.
- 3:25 ENVR 513.** Aerobic and anaerobic biotransformation of N-ethyl perfluorooctane sulfonamide (N-EtFOSA) in soil from a constructed wetland. T. Yin, A. Pal, K.Y. Gin
- 3:50 ENVR 514.** Effects of residual antibiotics in groundwater on survival and pathogenicity of Salmonella. B.Z. Haznedaroglu, S.L. Walker
- 4:15** Concluding Remarks.

**Section G**

Loews Philadelphia Hotel  
Congress B

**Disinfection By-Products: What Have We Learned about Dissolved Organic Matter Precursors?**

*Financially supported by AEEESP*

- A. T. Chow, M. Gonsior, H. Liu, *Organizers*  
L. M. Blaney, O. Keen, J. A. Korak, *Organizers, Presiding*
- 1:30** Introductory Remarks.
- 1:35 ENVR 515.** Interaction between natural organic matter and oxidants: Reactivity, competition, oxidation by-product formation and precursor control. U. von Gunten
- 2:00 ENVR 516.** Ternary model to quantitate the speciation of chlorine, bromine and iodine containing trihalomethanes. G. Korshin, M. Yan
- 2:25 ENVR 517.** Formation of halo-acetonitriles, haloacetamides and nitrogenous heterocyclic compounds from chloramination of resorcinol. M. Nihemaiti, J. Le Roux, J. Croue
- 2:50 ENVR 518.** Withdrawn.
- 3:15** Intermission.
- 3:35 ENVR 519.** Biases in non-targeted mass spectrometric disinfection by-product research. J. Luek, M. Gonsior
- 4:00 ENVR 520.** Use of an online LED UV fluorescence sensor for high time resolution DOM monitoring and predicting DBPs formation potential during water treatment. W. Li, M. Cao, M. Dodd, A. Li, G. Korshin
- 4:25 ENVR 521.** Application of a new online sensor for monitoring natural organic matter in drinking water treatment. C. Moldaenke, A. Dahlhaus, M. Wagner, D. Lohse, P.L. Schorr
- 4:50 ENVR 522.** Structure-property relationships between fulvic and humic acid sorbates and activated carbon sorbent. M.J. Wells, M.Y. Abouleish
- 5:15** Concluding Remarks.

**Section H**

Loews Philadelphia Hotel  
Congress C

**Recent Advances in Remediation Strategies & Technologies for the Cleanup of Hazardous Waste Sites**

A. Pham, *Organizer*  
E. R. McKenzie, *Organizer, Presiding*

- 1:30 ENVR 523.** Development of innovative technologies for the remediation of DNAPL source zones throughout their lifecycle. D.W. Tomlinson, E. Cox, D. Reynolds, G. Grant, D. Major, C. Ross, N.D. Durant
- 2:10 ENVR 524.** Kinetics and efficiency of contaminant oxidation by heat-activated persulfate: Implications for in situ remediation by EK-TAP technology. A. Pham, N. Zrinyi, M. Kondakow
- 2:30 ENVR 525.** Cometabolism of 1,4-dioxane and chlorinated solvent mixtures by Rhodococcus rhodochrous grown on isobutane. S. Thankitkul, S. Rich, M. Azizian, M. Hyman, L. Semprini
- 2:50 ENVR 526.** Headspace GC/PID for on-site screening of soil and water at hazardous waste sites. J.N. Driscoll, J.L. Maclachlan

- 3:10 ENVR 527.** Oxidative remediation of per- and polyfluoroalkyl substances. T. Bruton, D. Sedlak
- 3:30** Intermission.

- 3:50 ENVR 528.** Perfluoroalkyl acid (PFAA) transport in saturated porous media as affected by chemical oxidants and trichloroethylene (TCE). E.R. McKenzie, R.L. Siegrist, J.E. McCray, C.P. Higgins
- 4:10 ENVR 529.** Intramolecular transformations in fluorochemicals probed by chemical computations. D.J. Van Hoomissen, S. Vyas
- 4:30 ENVR 530.** Development of a novel time-release mechanism for water treatment polymer to promote sorption of perfluoroalkyl substances in groundwater environments. M. McCarty, M.F. Simcik, W. Arnold
- 4:50 ENVR 531.** New green remediation technology Ultrasound-assisted supercritical extraction applied to soil remediation. T. Castelo-Grande, P.A. Augusto, A.M. Estevez, D. Barbosa
- 5:10** Concluding Remarks.

**USA-China Symposium on Energy**

*Sponsored by ENFL, Cosponsored by ENVR*

**Experimental Studies of the Molecular Scale Processes at Environmental Interfaces****Carbonates & Phyllosilicates**

*Sponsored by GEOC, Cosponsored by ENVR*

**Chemistry, Safety & Technology of GMO Foods**

*Sponsored by AGFD, Cosponsored by AGRO, CEI+, COMSCI and ENVR†*

**Environmental Fate, Transport & Modeling of Agriculturally-Related Chemicals**

*Sponsored by AGRO, Cosponsored by ENVR*

**Novel Nanomaterials****Rational Design**

*Sponsored by ENFL, Cosponsored by CATL and ENVR*

**Heterogeneous Catalysis for Selective Oxidation & Reduction toward a Green Production****Selective Oxidation**

*Sponsored by ENFL, Cosponsored by CATL and ENVR*

**Computational Chemistry & Toxicology in Chemical Discovery & Assessment (QSARs)**

*Sponsored by AGRO, Cosponsored by COMP, ENVR and TOXI*

**Innovative Chemistry & Materials for Electroenergy Production & Storage****Li-Ion & Li-O<sub>2</sub> Batteries**

*Sponsored by ENFL, Cosponsored by ENVR and MPPG*

**2D Materials: Graphene & Beyond & their Device Applications**

*Sponsored by ENFL, Cosponsored by ENVR*

**Advances in Chemistry of Energy & Fuels****Production, Refinery & Storage of Fuel Compounds**

*Sponsored by ENFL, Cosponsored by ENVR and MPPG*

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



## WEDNESDAY EVENING

## Section I

Pennsylvania Convention Center  
Hall D

### Advances & Challenges in Food-Energy-Water Nexus

*Cosponsored by AGRO and CEI*

S. Ahuja, S. Chae, I. Chowdhury, D. D. Dionysiou, Y. Lin, *Organizers*

6:00 - 8:00

ENVR 532. Interaction forces between microalgae cells and membrane surface based on XDLVO theory in algae harvesting using axial vibration membrane. F. Zhao, Y. Zhang, H. Chu, X. Zhou

ENVR 533. Withdrawn.

ENVR 534. Nutrient cycling in arid river corridors: Advancing the food-energy-water nexus by closing nutrient loops. J. Mortensen, R. González-Pinzón, C. Dahm, J. Wang, L. Zeglin, D. Van Horn

ENVR 535. Water quality and public health: Role of wastewater. T. Tongesayi, S. Tongesayi

ENVR 536. Analysis of ground turmeric samples with a handheld X-ray fluorescence analyzer. M.Y. Wu, S. Baghaie, S. Thomas, M.A. Benvenuto, E. Roberts-Kirchhoff

## Section I

Pennsylvania Convention Center  
Hall D

### Advances in Innovative Designs & Process Cost Estimation Techniques for Advanced Water Purification Technologies

Y. G. Adewuyi, E. Sahle-Demessie, *Organizers*

6:00 - 8:00

ENVR 537. Modification of polysulfone (PSF) hollow fiber membrane (HFM) with zwitterionic or charged polymers for water purification. P. Wan, M. Bernards, B. Deng

ENVR 538. 1,4-Dioxane removal in flow-through water treatment system using combined ozone and ultrasound. M. Dietrich, R.C. Smith, G. Andalari, R.P. Suri

## Section I

Pennsylvania Convention Center  
Hall D

### Advances in Understanding Antibiotics, Antibiotic Resistance Genes & Antibiotic-Resistant Bacteria in Engineered & Natural Environments

*Cosponsored by AGRO*

K. Chu, C. Huang, J. McLain, *Organizers*

6:00 - 8:00

ENVR 539. Photocatalysis of triclosan and triclocarban by tetrapod zinc oxide and nitrogen-doped reduced graphene oxide. M. Hwangbo, B.S. Abada, Y. Shao, K. Chu

ENVR 540. Investigating the photochemical fate of triclosan as a function of water quality parameters. M. Petrie, G. Waligroski, A.M. Grannas

ENVR 541. Environmental influences and fate of triclosan in a Southeastern Pennsylvania watershed: Sources in the East Branch of the Brandywine Creek. G. Waligroski, K. Hanley, A.M. Grannas, S. Goldsmith

ENVR 542. Efficacy of multilevel antimicrobial coating in reducing vancomycin-resistant Enterococci in hospital ward. B. Zhong, H. Leung, J. Kwan, K. Yeung

ENVR 543. Photolytic fate of poultry antibiotics in agricultural wastewater. K. Mangalgiri, L.M. Blaney

ENVR 544. Identification of fluoroquinolone antibiotics and resistant bacteria in Indian sewage treatment plants. J. K. P. Sihag, P. Jaroliya, P. Mandal, S. Sarkar

ENVR 545. Bioavailability of soil-sorbed tetracycline to *Escherichia coli* bioreporter: Agar diffusion assay and direct microscopic observation. Z. Chen, G. Wang, Y. Zhang, Y. Gao, W. Zhang, D. Zhu, S.A. Boyd, H. Li

## Section I

Pennsylvania Convention Center  
Hall D

### Advances in Understanding PPCP Fate in Wastewater Collection & Treatment Systems

N. Fahrenfeld, L. A. Rodenburg, *Organizers*

6:00 - 8:00

ENVR 546. Suspect screening for organic micropollutants in wastewater influent and effluent in New York state. A. Pochodylo, D. Helbling

ENVR 547. Adsorption of pharmaceuticals in columns packed with palygorskite-montmorillonite clay particles. N.D. Danielson, T. Berhane, M.P. Krekeler, J. Levy

ENVR 548. Isotope-dilution extraction and analysis of priority contaminants in BNR slurry. O. Quinones, B. Vanderford, E. Dickenson

## Section I

Pennsylvania Convention Center  
Hall D

### Advancing Teaching & Learning in Environmental Chemistry Courses: Innovative Tools & Techniques

*Financially supported by AEESP*

N. Dai, A. Shah, J. Sivey, *Organizers*

6:00 - 8:00

ENVR 549. Withdrawn.

## Section I

Pennsylvania Convention Center  
Hall D

### Applied Catalysis for Environmental Applications

A. Orlov, A. Savara, S. Zhao, *Organizers*

6:00 - 8:00

ENVR 550. Hybrid inorganic-organic composites of layered double hydroxides with g-C<sub>3</sub>N<sub>4</sub> for high-efficiency removal of organic pollutants. L. Mohapatra, K. Parida

ENVR 551. Construction of Fe<sub>3</sub>O<sub>4</sub>/BiVO<sub>4</sub>/bentonite composites and their photocatalytic degradation of toxic organic pollutants in wastewater. H. Zhang, Z. Tong, Y. Tang, Y. Wang, N. Chen

ENVR 552. Novel Diatom-Fe composites as catalyst for photodegradation of Rh-6G in aqueous media. M. Thakkar

ENVR 553. Use of metal chloride additives as Lewis Acids in the liquid phase reaction of furfural and furfuryl alcohol. S. Ogozaly, K. Marotta, L.A. Welch

ENVR 554. Scaling-up solar CPC photocatalytic reactors for phenol removal. J.A. Colina-Marquez, M.A. Mueses

ENVR 555. Degradation of methyl orange using active carbon/Fe as a heterogeneous Fenton-like catalyst. J. Liang, J. Zhang, J. Li, W. Zhang

ENVR 556. Self-assembly of various morphological WO<sub>3</sub> and its superior photocatalytic activity. M. Manickavachagam, J. Wu, M. Sillanpaa

ENVR 557. Understanding one-electron transfer mechanisms of oxidation of cyanide by ferrates (FeVI, FeV, and FeIV): Density functional theory calculations. C.A. Huerta-Aguilar, V.K. Sharma, P. Thangarasu

ENVR 558. Transfer hydrogenation on supported palladium catalysts for reduction of aqueous contaminants. P.G. Tratnyek, B. Zhang, G. O'Brien Johnson, K. Meduri, J. Jiao, C. Xu

ENVR 559. Ozonation of dimethyl phthalate by Fe-NiO<sub>x</sub> in the water. J. Zhang, G. Zhang

ENVR 560. Commercial micro-sized ZnO catalytic ozonation for p-chloro-nitrobenzene degradation in water: Efficiency and reaction mechanism. X. Zhenzhen, Y. Ben, Z. Chen

ENVR 561. Withdrawn.

ENVR 562. Catalytic oxidation of vinyl chloride and CO over ruthenium oxides supported on heterostructured CoPO-MCF materials. C. Tian

ENVR 563. Catalytic ozonation of phenolic wastewater by ceramic supported metal oxide catalysts. S. Lee, L. Chang, S. Chen, K. Yu

ENVR 564. Phytochemical approach to substitute toxic chemicals in nanotechnology. B. Kumar, K. Smita, L.H. Cumbal

ENVR 565. Photoelectrochemical water splitting with a SrTiO<sub>3</sub>/Nb / SrTiO<sub>3</sub> n<sup>+</sup>-n homojunction structure. J. Cen, Q. Wu, J. Tao, D. Yan, K. Kisslinger, M. Liu, A. Orlov

ENVR 566. Novel SCRPF path with the three-dimensional ordered macroporous Ce<sub>0.9-x</sub>Zr<sub>x</sub>Fe<sub>0.1</sub>O<sub>2</sub> catalysts for the simultaneous removal of PM and NO<sub>x</sub> from diesel engines. Y. Cheng, J. Liu, Z. Zhao

## Section I

Pennsylvania Convention Center  
Hall D

### Aquatic Chemistry: Symposium in honor of Professor Alan T. Stone

#### Interfaces of Organic, Inorganic & Surface Chemistry in Natural & Engineered Systems

B. Deng, C. Huang, T. J. Strathmann, D. Vasudevan, *Organizers*

6:00 - 8:00

ENVR 567. Mechanism of Cr(VI) reduction by oxalic acid in the presence of Mn(II). F. Wang, B. Deng, C. Lin

ENVR 568. Removal of methyl orange from aqueous solution using HJ clay-supported nanoscale zero-valent iron. Y. Zhao, X. Li, Q. Shi, J. Ge, B. Xi, B. Gong, R. Li

ENVR 569. Electrochemistry of phenols, anilines, and related shuttle compounds. A.S. Pavitt, P.G. Tratnyek

ENVR 570. Microbial leaching of iron from hematite into seawater mediated via Anthraquinone-2,7-disulfonate as a model of humic substance. A. Aneksampant, M. Fukushima

ENVR 571. Biodegradation of diazinon using a freshwater microalga *Chlorella vulgaris*. M.B. Kurade, J. Xiong, B. Jeon

ENVR 572. Reductive dechlorination of TCE and PCE by magnetite: Is it relevant? J.D. Culpepper, M. Scherer, D. Latta

ENVR 573. Biodegradation of carbamazepine using freshwater microalga *Chlamydomonas mexicana* and *Scenedesmus obliquus* and the determination of its metabolic fate. J. Xiong, B. Jeon

ENVR 574. Effect of pH on the physicochemical properties of δ-MnO<sub>2</sub> in the dark and in the light. F. Marafatto, A. Schwartzberg, B. Gilbert, J. Pena

ENVR 575. Disinfection of *Legionella pneumophila* associated with simulated-drinking-water-biofilm: Cultivability, infectivity, and implication of risk assessment. Y. Shen, W. Liu, N. Ashbolt, T.H. Nguyen

## Section I

Pennsylvania Convention Center  
Hall D

### Chemistry of Biomass Wastes Conversion to Energy & Chemicals

*Cosponsored by ENFL*

C. Huang, J. McLain, M. Tu, M. Zhao, *Organizers*

6:00 - 8:00

ENVR 576. Efficient hydrogen production from pyrolysis of waste beech wood by applying multi-functional Ni/Co-CaO/SiO<sub>2</sub> powder in TG-MS system. X. Cui, X. Zhao, M. Zhao

ENVR 577. Study on qualitative characterization of bio-liquid from food wastes at various reaction conditions. S. Park, S. Lee, S. Bae

ENVR 578. DRIFTS, ATR and transmission FTIR sampling techniques for quantitative measurements on lignocellulose. M. Gogna, R.E. Goacher

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ENVR 579. Isolation of lignin from biomass using biobased flocculants with a co-flocculant and a flocculant aid. D.J. Piazza, R.A. Garcia, J.H. Lora

### Section I

Pennsylvania Convention Center  
Hall D

#### Chemistry of Environmental Sorptive & Oxidative Processes: Symposium in honor of Joseph J. Pignatello

A. MacKay, M. Sander, F. Xiao, B. Xing, D. Zhao, *Organizers*

6:00 - 8:00

ENVR 580. Adsorption of nitroaromatic compounds from aqueous solution by surface silylated MCM-41. Q. Qin, Y. Xu, J. Ma

ENVR 581. Water at the ionic liquid vapor interface using ambient pressure X-ray photoelectron spectroscopy. A. Broderick, J.T. Newberg, Y. Khalifa

ENVR 582. Basic study on influence of humic substances and iron and aluminum ions on acetamiprid sorption onto a paddysoil. H. Murano, K. Suzuki, S. Kayada, M. Saito, N. Yuge, T. Arishiro, A. Watanabe, T. Isoi

ENVR 583. Sonolytic and sonocatalytic decomposition of salicylic acid by high frequency ultrasound. B. Savun, A. Ziyilan Yavas, N.H. Ince

ENVR 584. Fate and transport of common organic pollutants through water saturated cores of Berea sandstone. S.P. Labrecque, W. Blanford

ENVR 585. Influence of chemical oxidation on adsorption properties of carbonaceous materials with different structures: porous structure vs. dispersible structure. H. Zhang, D. Zhang, X. Dong, J. Peng, S. Ghosh, B. Pan

ENVR 586. Adsorption of 2-naphthalene sulfonic acid on a novel bifunctional weakly basic anion exchanger from aqueous solution. Y. Sun

ENVR 587. Effect of frequency and specific power on sonochemical decolorization of azo-dye. A. Ziyilan Yavas, Z. Eren, N.H. Ince

ENVR 588. Sorption of organic and inorganic pollutants on thermally treated sediments with high organic matter content. M. Wu, D. Zhou, F. Chen, B. Pan

### Section I

Pennsylvania Convention Center  
Hall D

#### Combined Biological-Chemical Reactions for Contaminant Transformation

*Cosponsored by AGRO*

E. J. Bouwer, K. T. Finneran, *Organizers*

6:00 - 8:00

ENVR 589. Enhanced dechlorination of highly chlorinated solvents in groundwater through amendment with hydroxypropyl-beta-cyclodextrin. M.P. Pecoraro, W. Blanford

ENVR 590. Effect of surface treatment on GAC as an electron acceptor in microbial transformation reactions. A.M. Redwan, K. Millerick

ENVR 591. Extracellular iron reduction by the Gram-positive fermenter *Clostridium beijerinckii*. J.K. Choi, N. Yee

ENVR 592. Analysis of polychlorinated biphenyls in effluent discharged from a wastewater treatment plant during dry and wet weather periods. B.V. Kjellerup, R. Jing, E. Wilson, S. Fusi, A. Chan

### Section I

Pennsylvania Convention Center  
Hall D

#### Creating & Exploiting Salinity Gradients

C. Gorski, B. E. Logan, M. S. Mauter, *Organizers*

6:00 - 8:00

ENVR 593. Enhanced capacitive deionization performance using electrodes with polysaccharide binders. M. Kim, R.D. Cusick

ENVR 594. Fouling resistant nanocomposite cation exchange membrane with enhanced salinity gradient power generation for reverse electro-dialysis. X. Tong, B. Zhang, Y. Chen

### Section I

Pennsylvania Convention Center  
Hall D

#### Crystal Defects on Surface Reactivity & Heterogeneous Photocatalysis

D. D. Dionysiou, R. Doong, C. Huang, H. L. Ong, *Organizers*

6:00 - 8:00

ENVR 595. Competitive deionization of metal ions by carbon aerogel. C.J. Chin, M. Lee

ENVR 596. Development of novel copper removal technology by fluidized-bed homogeneous crystallization (F-BHC). C. Huang, Y. Shih, Y. Huang

ENVR 597. Green synthesis of multifunctional mesoporous composites from display panel glasses for selective adsorption of metal ions. C. Tsai, R. Doong, H. Hung

ENVR 598. Fluoride removal by waste oyster shell. Y. Chang, J. Liu

ENVR 599. Synthesis of graphene/carbon nanotube electrode for nonylphenol detection and removal in water: Principles and applications. Y.D. Dai, C. Huang, Y.J. Lin, P. Chiang

ENVR 600. Phosphate recovery by fluidized-bed homogeneous granulation process. Y. Huang, P. Caddarao, F. Ballesteros, M. Lu

ENVR 601. Impaired water desalination using resin wafer electrodeionization: Breakthrough in energy-efficient water reclamation. P. Tseng, S. Pan, Y.J. Lin, C. Hsieh, P. Chiang

ENVR 602. 3D nanoscale imaging and photocatalytic disinfection mechanism of *E. coli* (gram-negative) and *S. aureus* (gram-positive) with modified N-doped and N-Tourmaline-doped TiO<sub>2</sub> composites under visible light radiation. J. Tzeng, C. Weng, Y. Huang, Y. Lin

ENVR 603. Improvement of electrochemical performance of lithium iron phosphate coated with carbon sources using rheological phase method. C. Hsieh, C. Chang

ENVR 604. Withdrawn.

ENVR 605. Hydrothermal synthesizing Ce-doped TiO<sub>2</sub> photocatalysts for degradation 2-chlorophenol under visible light irradiation. J. Lin, K. Sopajaree, A. Gongglom, M. Lu

ENVR 606. Preparation, characterization and application of a Ti/SnO<sub>2</sub>-Sb/PbO<sub>2</sub> electrode exemplified by the anodic degradation of reactive black 5. S. Li, Y. Huang, Y. Shih

ENVR 607. Dispersible nanocomposites of functionalized graphene oxide reinforced polyethylene for packaging application. G. Toh, H.L. Ong, K. Bindumadhavan, R. Doong

ENVR 608. Synthesis and characterization of palladium-carbon-doped TiO<sub>2</sub> particles for adsorption and photo-oxidation of reactive black 5. C. Weng, Y. Lin, W. Luo

ENVR 609. Effect of calcination temperature on structural and magnetic properties of photocatalytic TiO<sub>2</sub>/CoFe<sub>2</sub>O<sub>4</sub> nanocomposites. C. Dong, C. Chen, C. Hung

ENVR 610. Preparation of β-PbO<sub>2</sub>-coated graphite electrode for electro-oxidation of ammonia. Y. Shih, Y. Huang

ENVR 611. Photo-electrochemical treatment of organic pollutants in the electro-fenton process. T. Chen, C. Chou, S. Yen

ENVR 612. Template free synthesis of ZnO doped WO<sub>3</sub> and undoped WO<sub>3</sub> catalyst for photocatalysis of perfluorooctanoic acid. S. Singh, S. Lo, M. Chen

ENVR 613. Withdrawn.

### Section I

Pennsylvania Convention Center  
Hall D

#### Developing International Policies for Nanoparticles in the Environment

*Financially supported by IUPAC*

R. Luque, S. O. Obare, *Organizers*

6:00 - 8:00

ENVR 614. Effects of metal ions on the antimicrobial properties of silver nanoparticles. C. Bonner

ENVR 615. Influence of agricultural pesticides on nanoparticle stability. N. Dissanayake, K.M. Current, S.O. Obare

ENVR 616. Oxidation of thioanizoles by ZnO-Fe<sub>3</sub>O<sub>4</sub>-Au hybrid composite under visible light. T. Pandiyan, A. Itztani Cervantes, C. Huerta Aguilar

ENVR 617. Environmental usage of poly(2-acrylamido-2-methyl-1-propan-sulfonic acid sodium salt-co-3-acrylamidopropyl-trimethyl ammonium chloride)-Lentinus tigrinus (Bull.) Fr. composite hydrogel. D. Alpaslan, T. Ersen, S. Kubilay, Y. Uzun, A. Savran, N. Aktas

ENVR 618. Optimization with response surface methodology of toluidine blue biosorption conditions from aqueous solutions by *Polyporus squamosus* (Huds.) Fr. and *Lentinus tigrinus* (Bull.) Fr. fungi as biosorbent. D. Alpaslan, T. Ersen, S. Kubilay, Y. Uzun, A. Kul, N. Aktas

### Section I

Pennsylvania Convention Center  
Hall D

#### Formation & Transformation of Atmospheric Aerosols: Air Pollution to Climate Change: Symposium in honor of Professor Renyi Zhang

M. Hu, A. Khalizov, V. K. Sharma, Y. Wang, *Organizers*

6:00 - 8:00

ENVR 619. High levels of secondary aerosols exacerbating haze in Beijing during the autumn. T. Feng, G. Li, J. Cao, W. Zhou, N. Bei

ENVR 620. Withdrawn.

ENVR 621. Seasonal Variations of nitrate formation mechanisms in Shanghai. Y. Tao, X. Ye

ENVR 622. Closure study of aerosol optical properties at a regional background mountainous site in Eastern China. L. Yuan, Y. Yin, H. Xiao, X. Yu, J. Hao, K. Chen, C. Liu

ENVR 623. Modeling optical properties of anthropogenic soot with various morphology and mixing states. E.N. Eckl, J.F. Phillips, C. Qiu, C.J. Stopera, A. Khalizov

ENVR 624. Using single-particle scattering depolarization signal to measure ice nuclei with a continuous flow diffusion chamber. J. Zenker, S. Brooks

ENVR 625. Physical and chemical analysis of laboratory and ambient lake spray aerosol. N. May, J.L. Axson, A.E. Watson, I.D. Colon-Bernal, A.P. Ault, K.A. Pratt

ENVR 626. Experimental and theoretical studies of new particle formation. Y. Li, M. Levy, R. Zhang

ENVR 627. Functionality of organic species on aerosol nucleation and growth. J. Secret, W. Wang, Y. Zhu, R. Zhang

ENVR 628. Heterogeneous reactions of alkyamines with dicarboxylic acids relevant to secondary organic aerosol formation. W. Marrero-Ortiz, B. Turner, M.E. Gomez, A. Khalizov, S. Brooks, R. Zhang

ENVR 629. Development of an electrostatic collection-desorption electrospray ionization mass spectrometry for chemical analysis of ambient aerosols. A. Khalizov, Q. Zhang, D. Lazar

ENVR 630. Investigation of aerosol-cloud interaction at different altitude over the plateau. X. Chou

ENVR 631. Contributions of regional transport to the summertime air quality in Beijing. J. Wu, G. Li

ENVR 632. Characteristics of cloud systems over the Tibetan Plateau and East China during boreal summer. J. Chen, X. Wu, Y. Yin, H. Xiao

ENVR 633. Global climate models intercomparison of anthropogenic aerosols effects on regional climate over north Pacific. J. Hu, R. Zhang, B. Pan, Y. Lin, Y. Wang, Y. Ming

ENVR 634. Evaluation of NASA GISS Post-CMIP5 single column model simulated cloud and precipitation using the ARM SGP observations. L. Zhang, X. Dong, A. Kennedy, B. Xi, Z. Li

ENVR **635.** Response of marine boundary layer cloud properties to aerosol perturbations from the 19-month AMF-Azores campaign. J. Liu, Z. Li, M. Cribb

ENVR **636.** Withdrawn.

ENVR **637.** Anthropogenic influence on decadal aerosol trends and aerosol-cloud interactions over the western North Atlantic Ocean. A. Jongeward, Z. Li

ENVR **638.** Impacts of Saharan dust on the genesis and evolution of Hurricane Earl (2010). B. Pan, R. Zhang, Y. Wang, Y. Lin, J. Hu, J. Hsieh

ENVR **639.** Interactions between precipitation, lightning activity and anthropogenic aerosols over Houston, Texas. Y. Lin, Y. Wang, R. Orville, R. Zhang

ENVR **640.** Role of wind shear at different vertical levels: Regulating aerosol impact. Q. Chen, J. Fan

ENVR **641.** Effects of atmospheric aerosols on climate and air quality in Eastern US using a source-oriented WRF/Chem model. H. Zhang, F. Han, H. Guo

ENVR **642.** Physiologic and epigenetic alterations in offspring following prenatal exposure to particulate matter air pollution in two strains of mice. K. Rychlik, J.C. Pulczynski, M.L. Zamora, R. Zhang, N.M. Johnson

ENVR **643.** Validation of novel biomarkers of traffic-related ambient air pollution exposure in a susceptible south Texas population. J.C. Pulczynski, K. Rychlik, T. Ramani, T. McDonald, G. Carrillo-Zuniga, K. Koehler, J. Zietsman, N.M. Johnson

## Section I

Pennsylvania Convention Center  
Hall D

### General Posters

D. D. Dionysiou, *Organizer*

6:00 - 8:00

ENVR **644.** Potential concentrations of select trace metals from road salt corrosion. P. Pascucci

ENVR **645.** Efforts towards understanding the natural occurrence of silver nanoparticles in the environment: How close are we? N.F. Adegboye, A.D. Olaitan, M. Brantley, T. Solouki, W.C. Hockaday, V.K. Sharma

ENVR **646.** Applying differential ion-mobility spectrometry to improve LC-MS/MS analysis of emerging organic contaminants. C. Hao

ENVR **647.** Biological transformations and toxicity of PCBs in wastewater treatment. B.V. Kjellerup, C. Draghi, S.J. Edwards, N.A. Andrade, R. Jing

ENVR **648.** TiO<sub>2</sub> modified with WO<sub>3</sub> applied to waste of Colombian gold mining. A. Arce-Sarria, C.L. Caicedo-Rosero, F. Machuca-Martinez, J.A. Colina-Marquez

ENVR **649.** Fabrication of magnetic nanoparticles from red mud for arsenic removal. Z. Katircioglu, S. Dursun, M. Yavuz

ENVR **650.** Recent accidents in the universities laboratories: Root causes, lessons learned and prevention. E.A. Dada, K. Olanrewaju, O. Anyaegbu, E. Mogbo

ENVR **651.** Best practices to improve laboratory safety: Implementing the CSI concepts. A. Nandedkar

ENVR **652.** Distribution and source apportionment of polycyclic aromatic hydrocarbon in human placenta in Kunming, China. J. Peng, X. Dong, M. Wu, B. Pan, F. Ai

ENVR **653.** Lab and field worker emergency alert and location system proposal. K. Brown, P.B. Shaw, R. Voorhees, A.R. Brandes, S. Glover, J. Snawder, M. Breitenstein

ENVR **654.** Evaluation of multiple heavy metals and metalloids in glass beads used in retroreflective road markings. M.B. Rosen, L. Pokhrel, B. Dubey

ENVR **655.** EPA online prediction physicochemical prediction platform to support environmental scientists. A.J. Williams, K. Mansouri, C. Grulke, J. Edwards, J. Smith, J. Foster, D. Lyons

ENVR **656.** Degradation mechanisms of Microcystin-LR during UV photolysis and UV/H<sub>2</sub>O<sub>2</sub> reactions: By-products and pathways. K. Zoh, B. Moon, T. Kim, M. Kim

ENVR **657.** Use of <sup>129</sup>I in monitoring nuclear releases to the sediments of Lake Ontario. U. Rao, M. Kruge, Y. Muramatsu, C. Blithe, M. Montemarano

ENVR **658.** Water quality assessment and determination of pollution sources in Souss-Masa Basin in Agadir, Morocco. A.E. Madi, H. Hadjeres, H. Youssef, S. Boutaleb, B. Husseine, M. Yatini

ENVR **659.** Detection of benzene and alkylated benzene derivatives in fuel contaminated environments via cyclodextrin-promoted fluorescence modulation. D.J. DiScenza, M. Verderame, M. Levine

ENVR **660.** Impacts of nanoceria in the nutritional quality of tomato fruits (*Solanum Lycopersicum* L.). A. Barrios, C.M. Rico, J. Trujillo-Reyes, I.A. Medina-Velo, N. Zuverza-Mena, J.R. Peralta-Videa, J.L. Gardea-Torresdey

ENVR **661.** Characterization of physicochemical and toxicological properties of ceria nanoparticles. M. Baalousha

ENVR **662.** Withdrawn.

ENVR **663.** Hazardous byproducts of improperly managed electronic waste. J. Dietrich, E. Sahle-Demessie, T. Richardson, J.A. Glaser

ENVR **664.** Global monitoring of chemical contamination derived from plastics surrounding Japan. M. Okada, K. Koizumi, T. Kusui, H. Katsura, K. Saitoh, D. Takahashi, D.M. Karl, N. Maximenko, K. Saido, T. Hiaki

ENVR **665.** Automated extraction and analysis of explosives in soil samples with supercritical fluids. W. Hedgepeth, K. Tanaka

ENVR **666.** Application of solvent extraction for lithium recovery from diluted shale gas produced water. E. Jang, E. Chung, Y. Jang

ENVR **667.** Fabrication of large-scale graphene oxide thin-film composite membrane and its module for gas separation. M. Yoo, J. Shin, S. Lee, J. Seon, H. Lee, H. Park

ENVR **668.** Graphene oxide-based membranes for CO<sub>2</sub> separation. J. Shin, M. Yoo, H. Lee, J. Seon, S. Lee, H. Park

ENVR **669.** Photochemical oxidation of selenium and formation of selenate oxyanions. M. Teii, P. Larese-Casanova

ENVR **670.** Understanding fluorescence energy transfer for toxicant detection and environmental monitoring efforts. M. Verderame, D.J. DiScenza, N. Serio, M. Levine

ENVR **671.** Low-temperature green method for the chemical degradation of tributylphosphate. D. Kennedy, C.A. Valdez, R.N. Leif, B.P. Mayer

ENVR **672.** Optimal experimental designs for estimating Henry's law constants via the phase ratio method. A. Kapelner, A. Krieger, W. Blanford

ENVR **673.** Comparison of mercury in water analysis using cold vapor AA and gold preconcentration/PID. J.N. Driscoll, J.L. Maclachlan

ENVR **674.** Low temperature catalyst for VOC abatement. Q. Wang, H. Chen, L. Luk, W. Han, K. Yeung

ENVR **675.** Occurrence of methylmercury in rice-based infant cereals and estimation of daily dietary intake of methylmercury for infants. W. Cui, G. Liu, Y. Cai

ENVR **676.** Using a high throughput screening method to help discover risky organic contaminants in the environment. Q. Bu, W. Zhong, D. Wang, Q. Luo, Y. Xu, Z. Wang

ENVR **677.** Determination of Arsenic (III) using gold nanoparticles-modified screen-printed carbon electrodes immobilized with acetylcholinesterase enzyme. D. Orefuwa, B. Workie, E. Sahle-Demessie, T. Li

ENVR **678.** Concentrations and toxic equivalence of polychlorinated dioxins/furans and coplanar PCBs in fillet samples of fish at near-shore locations in Lake Ontario. J.J. Pagano, T.M. Holsen, A.J. Garner

ENVR **679.** Role of singlet oxygen in electrochemical disinfection of water contaminated with E.coli. N. Barashkov, T. Sakhno, V. Krykunova, I. Irgibaeva

ENVR **680.** Leaching behavior of the boron and fluorine in fly ashes recovered from electrostatic precipitators of pulverized coal-fired plants. N. Tsubouchi, K. Shibuya, Y. Muto, Y. Ohtsuka

ENVR **681.** TEPA-Loaded Stellate Mesoporous Silica Nanoparticles (Stellate MSN) for CO<sub>2</sub> Capture. D. Radu, N. Pizzi, C. Lai

## Section I

Pennsylvania Convention Center  
Hall D

### Impacts of Energy Systems on Water Treatment

K. D. Good, P. Mouser, D. L. Plata, J. M. Vanbriesen, *Organizers*

6:00 - 8:00

ENVR **682.** Tunable anion exchange to treat Marcellus flowback wastewater and recover barium using impaired acid mine drainage (AMD). J. Li, A. SenGupta

ENVR **683.** Withdrawn.

## Section I

Pennsylvania Convention Center  
Hall D

### Innovative Materials & Technologies for Environmental Sustainability

*Cosponsored by CEI*

J. C. Crittenden, Q. Li, W. Zhang, *Organizers*

6:00 - 8:00

ENVR **684.** Graphene-wrapped Bi<sub>2</sub>O<sub>3</sub>CO<sub>3</sub> core-shell structures with enhanced quantum efficiency profit from an ultrafast electron transfer process. D. Li, Y. Zhang

ENVR **685.** Low cost ceramic membrane applications in drinking water treatment. W. Fu, X. Zhang, X. Fan, H. Noguchi, W. Zhang

ENVR **686.** Flame retardants: New approaches to reduce exposure. C.P. Zane, M. Pasquinelli, N.R. Vinueza, Y. Chen, D. Hinks, N. Zhang, E. Yildirim, A. Tonelli

ENVR **687.** Synthesis and application of a cross-linked cationic surfactant micelle for removing anions from water. M. Chen, C.T. Jafvert

ENVR **688.** High throughput detection and identification of chemical excursions via GC-MS. P. Kaur, C.N. Stedwell, J.D. Debord

ENVR **689.** Solar light-active upconversion nanocrystal embedded mesoporous carbon-TiO<sub>2</sub> hybrid films toward highly efficient photocatalysis. H. Kwon, K. Chung, R. Boppella, S. Kochuveedu, Y. Jang, D. Kim

## Section I

Pennsylvania Convention Center  
Hall D

### Nanomaterials in the Environment & Biological Systems

#### Physicochemical & Biological Processes Affecting Their Transformation & Transport

S. Joo, W. H. Lee, P. Yi, *Organizers*

6:00 - 8:00

ENVR **690.** Interaction of nano-ZnO sunscreen with marine diatom algae: Safety implication of nanoproducts. S. Joo, S. Seo, E. Spisni, C. Su

ENVR **691.** Influence of products-derived nano-TiO<sub>2</sub> on marine environments. S. Joo, S. Seo, A. Galletti, C. Su

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**ENVR 692.** Nanostructured phosphate sensors based on Co-Cu electrodes fabricated with a sacrificial glass fiber paper template. X. Wang, J. Church, W.H. Lee, H.J. Cho

**ENVR 693.** Organic-nanomaterial-aggregate and dispersion of polyaromatic hydrocarbons in water. E. Sahle-Demessie, C. Han, A. Zhao, H. Grecsek, Y. Oh, S. Chae

**ENVR 694.** Effects of surface chemistry on the physiological and biochemical interactions between nano-TiO<sub>2</sub> and basil (*Ocimum basilicum*). W. Tan, W. Du, A. Barrios, R. Armendariz Jr., N. Zuverza-Mena, Z. Ji, C.H. Chang, J.I. Zink, J. Hernandez-Viezcas, J. Peralta-Videa, J.L. Gardea-Torresdey

**ENVR 695.** Insight on the CdSe/ZnS quantum dot dissolution. P. Paydary, P. Larese-Casanova

**ENVR 696.** Quantitative structure-activity relationships of functionalized carbon nanotubes. R. Lougee, D. Fourches

**ENVR 697.** Modulation of the physiological and biochemical effects of copper nanoparticles in kidney beans (*Phaseolus vulgaris*) treated with kinetin. S. Apodaca, J.R. Peralta-Videa, J.L. Gardea-Torresdey

**ENVR 698.** Influence of nanoparticles of pyrogenic carbonaceous material on the colloidal stability of cerium oxide nanoparticles. P. Yi, J.J. Pignatello

**ENVR 699.** Response of anaerobic granular sludge to single-wall carbon nanotube exposure. L. Li, Z. Tong

**ENVR 700.** Effect of continuous AgNP addition on surface characteristics of activated sludges. A. Geyik, F. Cecen

**ENVR 701.** Changes in the production of protein-EPS in an activated sludge receiving AgNP. A. Geyik, F. Cecen

**ENVR 702.** Investigation of environmental quality improvement from application of natural gas. Y. Zhang, R. Li, C. Wang, Z. Gu

## Section I

Pennsylvania Convention Center  
Hall D

### Nanotechnology for Environmental Solutions & Remediation

D. Barcelo, M. Cledon, K. D. Hristovski, Organizers

6:00 - 8:00

**ENVR 703.** Chemical-free removal of aqueous zinc by underwater plasma discharge. Y.H. Lee, A.N. Saqib

**ENVR 704.** Nanoselenium sponge technology for mercury removal from water. S. Ahmed, J. Brockgreitens, A. Abbas

**ENVR 705.** Evaluation of cyclodextrin modified zeolites as sorbent for removal of common organic pollutants from water streams. W. Blanford, B. Sang, S. Mai

**ENVR 706.** Goethite/silica nanocomposite effective at adsorption of arsenic (V) from aqueous solutions. R. Attinti, D. Sarkar, K. Barrett, R. Datta

**ENVR 707.** Cr(VI) removal by membrane-based zerovalent metallic nanoparticles in wastewater. L. Chang, S. Lee, K. Yu, S. Chen

**ENVR 708.** Determination of COD using SWCNT/TiO<sub>2</sub>/GCE electrodes. C.J. Chin, Y. Lu

**ENVR 709.** Flow of lipid vesicles and nanoparticles through microfluidic channels. P. Garlapati, E.S. Sani, Y. Tang, M. Kiani, B. Kim, S.L. Wunder

## Section I

Pennsylvania Convention Center  
Hall D

### Nanotechnology for Sustainable Agriculture & Food Systems

Cosponsored by AGRO and CEI

P. Demokritou, G. Lowry, N. B. Saleh, J. C. White, Organizers

6:00 - 8:00

**ENVR 710.** Kinetic studies of ceria nanocrystals for catalytic dephosphorylation. M. Manto, C. Wang

## Section I

Pennsylvania Convention Center  
Hall D

### Next Generation Techniques for Prevention & Precise Growth of Biofilms at the Interface of Nanomaterials & Electrochemistry

S. Aggarwal, A. Badireddy, V. Gadhamshetty, Organizers

6:00 - 8:00

**ENVR 711.** Influence of supporting materials on biofilm formation and subsequent cyanotoxin degradation. Y. Jeon, Y. Seo

**ENVR 712.** Reduction of viable microorganisms and biofilm formation via modification of surfaces with a novel antimicrobial system. V. Singh, D. Jofat, G. O'Mullan, W. Blanford, R. Engel

## Section I

Pennsylvania Convention Center  
Hall D

### Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment

Cosponsored by AGRO

X. Li, J. J. Pignatello, B. Xing, L. Zhu, Organizers

6:00 - 8:00

**ENVR 713.** Levels and distributions of organophosphorus pesticides in agricultural soils from the Yangtze River Delta of China. J. Sun, L. Pan, X. Li, L. Zhu

**ENVR 714.** Contamination and risk assessment of DDTs in agricultural soils from the Yangtze River Delta of China. J. Sun, L. Pan, X. Li, L. Zhu

**ENVR 715.** Atrazine contamination in agricultural soils from the Yangtze River Delta of China and associated health risks. J. Sun, D. Tsang, L. Pan, L. Zhu, X. Li

**ENVR 716.** Catalytic hydrodechlorination of diclofenac on Pd/CeO<sub>2</sub> catalysts. K. Wu, Z. Xu, S. Zheng, D. Zhu

**ENVR 717.** Occurrence and distribution of pharmaceutical compounds in the vadose zone of a wastewater irrigated field in Northern China. L. Ma, G. Li

**ENVR 718.** Photochemistry of dissolved black carbon released from biochar. H. Fu, X. Qu, D. Zhu

**ENVR 719.** Selective sorption removal of phenanthrene by resins from anionic and nonionic surfactant solutions. K. Yang, Y. Zeng, C. Zhou

## Section I

Pennsylvania Convention Center  
Hall D

### Poly- & Perfluoroalkyl Substances: Environmental Behavior & Pollution Control

D. Chiang, Q. Huang, L. S. Lee, E. R. McKenzie, D. Woodward, Organizers

6:00 - 8:00

**ENVR 720.** Thermochemical properties ( $\Delta H^\ddagger_{(298)}$ ,  $S^\ddagger_{(298)}$ ,  $Cp(T)$ ) and bond dissociation energies for fluorinated methanols and fluorinated methyl hydroperoxides: CH<sub>3</sub>-F<sub>2</sub>OH and CH<sub>3</sub>-F<sub>2</sub>OOH. J.W. Bozzelli, H. Wang

**ENVR 721.** Helical nature of perfluorochemicals and its implications. M.A. Pagenkopf, D.J. Van Hoomissen, S. Vyas

## Section I

Pennsylvania Convention Center  
Hall D

### Recent Advances in Remediation Strategies & Technologies for the Cleanup of Hazardous Waste Sites

E. R. McKenzie, A. Pham, Organizers

6:00 - 8:00

**ENVR 722.** Withdrawn.

**ENVR 723.** Cometabolic degradation of 1,4-dioxane by an ethane-oxidizing culture. P.G. Koster Van Groos, P. Hatzinger, S. Streger, R. Rezes, C. Condee, C. Schaefer

**ENVR 724.** Remediation of 1,2-dichloropropane in aqueous environments by reductive dehalogenation. N. Lapeyrouse, C.G. Lewis, T.E. Shaw, C.A. Clausen, C. Yestrebtsky

**ENVR 725.** Rates of reduction for competing <sup>99</sup>Tc and Cr removal by Fe(OH)<sub>2</sub> in Hanford waste streams. W. Um, S. Saslow, D. Kim, M.J. Schweiger, A.A. Kruger

**ENVR 726.** Sono-electro-Fenton degradation of 4-chlorophenol in aqueous media. R. Nazari, L. Rajić, A. Alshawabkeh

**ENVR 727.** Groundwater remediation by pump and treat at an organic contaminated site in Beijing. Z. Qu, H. Wang, Z. Sang

**ENVR 728.** Oxidation of microcystin-LR by Fe(II)-tetrapolyphosphate in the presence of oxygen: Effect of calcium and magnesium ion. M. Kim, H. Kim, C. Lee

## Section I

Pennsylvania Convention Center  
Hall D

### Water Purification Systems

Cosponsored by CEI

S. Ahuja, Organizer

6:00 - 8:00

**ENVR 729.** Preferential degradation of Nonyl Phenol on modified TiO<sub>2</sub> nanotubes. Z. Fan

**ENVR 730.** Tailoring surface imprinted polymeric particles for removing organic and inorganic toxins from aqueous bodies. A. Mujahid, S. Farheen, T. Hussain, H. Raza

### Geochemistry of the Subsurface: CO<sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal

Sponsored by GEOC, Cosponsored by ENVR

## THURSDAY MORNING

### Section A

Loews Philadelphia Hotel  
Congress A

### Nanomaterials in the Environment & Biological Systems

#### Physicochemical & Biological Processes Affecting Their Transformation & Transport

S. Joo, W. H. Lee, Organizers

P. Yi, Organizer, Presiding

**8:00 ENVR 731.** Transformations and biological impact of emerging energy storage materials. M.N. Hang, I. Gunsolus, J. Bozich, H.A. Wayland, E. Melby, J.A. Pedersen, R. Klaper, C.L. Haynes, R.J. Hamers

**8:25 ENVR 732.** Adsorption of human serum albumin proteins on graphene oxide. C. Yan, X. Liu, K. Chen

**8:50 ENVR 733.** Interactions of cerium oxide nanoparticles with model cell membranes: QCM-D measurements and theoretical analysis. P. Yi, W. Gu, X. Liu, K. Chen

**9:15 ENVR 734.** Integrated methodology for assessing the potential toxicity of engineered nanoparticles in embryonic zebrafish. E. Dumitrescu, X. Liu, D. Karunaratne, K. Wallace, S. Andreescu

9:40 Intermission.

**9:55 ENVR 735.** Probing the force interactions between silver nanoparticles and protein-modified surfaces using atomic force microscopy. X. Liu, K. Livi, K. Chen

**10:20 ENVR 736.** Exposure of few layer graphene to Limnodrilus hoffmeisteri modifies the graphene and changes its bioaccumulation by other organisms. L. Mao

**10:45 ENVR 737.** Correlation between nanoparticle attachment to model cell membranes and nanoparticle in vitro toxicity. X. Chang, W. Henderson, S. Martin, D.C. Bouchard

**11:10 ENVR 738.** Microbial degradation of polymer nanocomposites containing carbon nanotubes. D.G. Goodwin, D. Phan, Z. Xia, I.S. Boyer, T. Devahif, T. Gordon, L. Kuwama, X. Lu, C. Gao, E.J. Bouwer, H. Fairbrother

**11:35 ENVR 739.** Withdrawn.

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## Section B

Loews Philadelphia Hotel  
Washington A

### Advances in Understanding Antibiotics, Antibiotic Resistance Genes & Antibiotic-Resistant Bacteria in Engineered & Natural Environments

*Cosponsored by AGRO*

K. Chu, C. Huang, J. McLain, *Organizers, Presiding*

8:30 Introductory Remarks.

8:35 ENVR 740. Metagenomic survey of antibiotic resistance genes in four paired reclaimed and potable water distribution systems. E. Garner, J. McLain, M. Edwards, A. Pruden

8:55 ENVR 741. Antibiotic-resistant bacteria and genes in drinking water. R. Destiani, M.R. Templeton

9:15 ENVR 742. Antibiotics and antibiotic resistance in surface drinking water sources. K.H. Wammer, M.A. Andreone, C.J. Heiling, S.W. Beck, H. Cheryl, D.R. Stoll, T. LaPara

9:35 ENVR 743. Fate, transport, and management of antibiotics and antibiotic resistance genes in the agroecosystem. X. Li, S. Bartelt-Hunt, D.D. Snow, J. Gilley

9:55 ENVR 744. Antibiotic resistance genes in lake sediments in watersheds impacted by agricultural runoff and by treated municipal wastewater. K. Sandberg, J.F. Kerrigan, D.R. Engstrom, W. Arnold, T. LaPara

10:15 ENVR 745. Changes in antibiotic resistance gene abundance during wastewater treatment processes. B.V. Kjellerup, J. Holt

10:35 Intermission.

10:50 ENVR 746. Microbial control with polyvalent phages is significantly enhanced by competitive exclusion by pre-exposed phage-production hosts. P. Yu, J. Mathieu, Y. Yang, P.J. Alvarez

11:10 ENVR 747. Evaluation of various disinfection processes for isolated multidrug resistant bacteria in wastewater treatment plant. R.B. Mahar, A. Mohaghegh Motlagh, A. Bhattacharjee, R. Goel

11:30 ENVR 748. Estrogen-induced antibiotic resistance. O. Conroy-Ben

11:50 ENVR 749. Strategies to improve triclosan biodegradation in nitrifying activated sludge. D. Lee, K. Chu

12:10 Concluding Remarks.

## Section C

Loews Philadelphia Hotel  
Congress B

### Crystal Defects on Surface Reactivity & Heterogeneous Photocatalysis

*Cosponsored by ENFL*

*Financially supported by AEESP*

D. D. Dionysiou, R. Doong, *Organizers*

C. Huang, H. L. Ong, *Organizers, Presiding*

8:00 Introductory Remarks.

8:05 ENVR 750. Point defects in compounds. F. Lu

8:40 ENVR 751. Investigating the surface reactions and mechanisms during the reduction of manganese and iron oxide and oxyhydroxide phases by sulfide. G.W. Luther

9:15 ENVR 752. Photocatalytic reduction of hexavalent chromium in aqueous solutions by TiO<sub>2</sub>/PAN nanofibers. H. Zhou, H.Q. Nguyen, B. Deng

9:40 ENVR 753. Oxygen deficient titanium dioxide: A low cost material for water treatment. B.P. Chaplin, Y. Jing, S. Nayak

10:05 Intermission.

10:20 ENVR 754. Enhanced reactivity of metal/metal oxide-porous carbon nanocomposites for electrochemical and photocatalytic applications. R. Doong, C. Lin, K. Bindumadhavan

10:45 ENVR 755. Green synthesis of TiO<sub>2</sub> for visible light photocatalytic activities. H. Lee, S. Muniandy, S. Tan, S. Sasidharan, N. Mohd Kaus

11:10 ENVR 756. Fabrication of  $\alpha$ -MnO<sub>2</sub> nano-particle and nano-rod composite electrodes for capacitive deionization. Y. Chen, Y. Juang, C. Huang

11:35 ENVR 757. Development of solar light-activated photocatalysts for the treatment of contaminants of emerging concern in water. D.D. Dionysiou

## Section D

Loews Philadelphia Hotel  
Washington B

### Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment

*Cosponsored by AGRO*

X. Li, B. Xing, L. Zhu, *Organizers, Presiding*

8:00 ENVR 758. Mitigation and remediation of organic contaminated soils. F. Li, C. Wang, J. Sun, L. Pan, L. Zhu

8:30 ENVR 759. Biodegradation of 1,4-dioxane in chlorinated solvent mixtures. S. Zhang, P. Gedalanga, S. Mahendra

8:50 ENVR 760. Black carbon facilitated dechlorination of DDT and its metabolites in the presence of sulfides. K. Ding, W. Xu

9:10 ENVR 761. Enhanced photodegradation of atrazine in the presence of montmorillonite clay and indole-3-acetic acid. C. Gu

9:30 ENVR 762. Oxidation of benzo[a]pyrene by laccase of *Trametes versicolor* in soil enhanced bound-residue formation and alleviated disturbance to soil bacterial community. J. Zeng, Q. Zhu, Y. Wu, X. Lin

9:50 ENVR 763. Adhesion of *Shewanella oneidensis* MR-1 to goethite and its impact on the transformation of enrofloxacin. W. Yan, C. Jing

10:10 Intermission.

10:20 ENVR 764. Organic pollutant uptake and distribution in plant cuticle: direct observation and diffusion model. B. Chen, Q. Li, Y. Li

10:40 ENVR 765. Comparison of thermal and microwave remediation for a Nigerian oil polluted soil and implications of phytoremediation for photosynthetic efficiency. E.O. Nwaichi, A. Ogunkeyede, C.E. Snape

11:00 ENVR 766. Impacts of polycyclic aromatic hydrocarbons (PAHs) emitted by coking industry base on cabbages from neighboring vegetable plots in Shanxi province, north of China. G. Xiong, Y. Zhang, Y. Duan, C. Cai, X. Wang, J. Li, S. Tao, W. Liu

11:20 ENVR 767. Hexachlorobutadiene (HCBD) in pumpkin seedlings after hydroponic exposure. X. Hou, J. Liu, G. Jiang

11:40 ENVR 768. Foliar uptake: An important pathway for the accumulation of Hexabromocyclododecanes in plant leaves. H. Zhu, H. Sun, Y. Yao, X. Ren, F. Wang

## Section E

Loews Philadelphia Hotel  
Washington C

### Bioanalytical Tools for Chemicals of Emerging Concern in the Environment

*Cosponsored by AGRO*

R. Marfil-Vega, L. A. Weinrich, *Organizers, Presiding*

8:00 Introductory Remarks.

8:05 ENVR 769. Metachromatic interactions of a dye probe and compounds associated with membrane fouling. X. Xie, G. Korshin

8:25 ENVR 770. Detection of sartans, related compounds and TPs in real-world aqueous environmental samples using fragment ion search and HRMS. D. Barcelo, B. Zonja, M. Lopez de Alda

8:45 ENVR 771. Stable isotope probing for active acidophilic methanotrophs capable of degrading trichloroethylene. Y. Shao, P. Hatzinger, S. Streger, K. Chu

9:05 Intermission.

9:20 ENVR 772. In vitro estrogenic activity of endocrine disrupting chemicals mixtures using interaction model. H. Yu, D.J. Caldwell, C. Johnson, R.P. Suri

9:40 ENVR 773. Dioxin-like potencies and concentrations of AhR-active compounds in sediments of Meiliang Bay, Tai Lake, China determined by in vitro bioassay and instrumental analysis. Y. Xu

10:00 ENVR 774. Evaluation of microbial communities in biologically active filters and their effectiveness in treating pharmaceuticals and personal care products. S. Zhang, S. Courtois, S. Gitungo, L.B. Axe, R.F. Raczkó, J.E. Dyksen

10:20 Intermission.

10:35 ENVR 775. Withdrawn.

10:55 ENVR 776. Determination of aqueous film forming foams (AFFFs) in the environment using multivariate statistical analysis of liquid chromatography high resolution mass spectrometry (LC/HRMS) data. D. Stevens, L. Mullin, G. Cleland, A. Karmann

11:15 ENVR 777. Advancements in analysis for emerging organic contaminants in water. T. Anumol, S. Mohsin, J. Zweigenbaum

11:35 Concluding Remarks.

### Environmental Risk Assessment of Down-the-Drain Chemicals

*Sponsored by AGRO, Cosponsored by ENVR*

### Experimental Studies of the Molecular Scale Processes at Environmental Interfaces

### Adsorption, Water Purification & Biomolecules

*Sponsored by GEOC, Cosponsored by ENVR*

### Subsurface Fate of Pesticides

*Sponsored by AGRO, Cosponsored by ENVR*

## Novel Nanomaterials

## Various

*Sponsored by ENFL, Cosponsored by CATL and ENVR*

### Heterogeneous Catalysis for Selective Oxidation & Reduction toward a Green Production

### Selective Oxidation & Reduction

*Sponsored by ENFL, Cosponsored by CATL and ENVR*

### Innovations in Human Health Exposure & Risk Assessment

*Sponsored by AGRO, Cosponsored by ENVR and TOXI*

### Innovative Chemistry & Materials for Electroenergy Production & Storage

### Electrocatalysis for Low-Temperature Fuel Cells & CO<sub>2</sub> Reduction

*Sponsored by ENFL, Cosponsored by ENVR and MPPG*

### 2D Materials: Graphene & Beyond & their Device Applications

*Sponsored by ENFL, Cosponsored by ENVR*

## THURSDAY AFTERNOON

## Section A

Loews Philadelphia Hotel  
Congress A

### Nanomaterials in the Environment & Biological Systems

### Physicochemical & Biological Processes Affecting Their Transformation & Transport

S. Joo, W. H. Lee, P. Yi, *Organizers*

J. M. Pettibone, N. B. Saleh, *Presiding*

1:15 ENVR 778. Probe the existence of oxidation debris on the surface of graphene oxide nanosheet and its effect on adsorption capability. X. Chen, B. Chen

1:35 ENVR 779. Photo-transformation of titanium dioxide- and zinc oxide-mutualized carbon nanotube heterostructures in aqueous environment. I.V. Sabaraya, D. Das, N.B. Saleh

1:55 ENVR 780. Aggregation kinetics of graphene quantum dots in aqueous solutions: Complex pH-dependence of mono-/di-valent electrolytes. Q. Li, B. Chen

2:15 ENVR 781. Platinum group element release from nanomaterials in automobile catalytic converter emissions. D. Aruguete, M. Murayama

2:35 Intermission.

2:50 ENVR 782. Molecular dynamics simulations of small nanoparticles aggregation ( $D < 5$  nm) in aqueous solution. J. Lu, H. Liu, F. Cui

3:10 ENVR 783. Theoretical predictions of stable LiCoO<sub>2</sub> (001) surface and phosphate anion adsorption at the oxide-water interfaces. X. Huang, C. Yang, M.N. Hang, R.J. Hamers, S.E. Mason

3:30 ENVR 784. On the sulfidation kinetics of silver nanoparticles in fulvic acid, an across length scale synchrotron X-ray study. F. Zhang, A.J. Allen, J.M. Pettibone, J. Liu

**3:50 ENVR 785.** Polymeric capping and the stability of silver nanoparticles: Effects before steric hindrance. S. Youn, T. Zhu, D. Lawler

**4:10 ENVR 786.** Electroanalytical methods in characterization of metal sulphide nanoparticles in water environment. I. Ciglenecki

## Section B

Loews Philadelphia Hotel  
Washington A

### Advances in Understanding Antibiotics, Antibiotic Resistance Genes & Antibiotic-Resistant Bacteria in Engineered & Natural Environments

*Cosponsored by AGRO*

K. Chu, C. Huang, J. McLain, *Organizers, Presiding*

**1:15** Introductory Remarks.

**1:20 ENVR 787.** Influence of soil texture and drought stress on antibiotic uptake into produce. S. Bartelt-Hunt, B. Sallach, D. D. Snow, X. Li, L. Hodges

**1:40 ENVR 788.** Fate and transformation of veterinary antibiotics in soils. C. Chen, K. Knowlton, A. Pruden, P. Ray, K. Xia

**2:00 ENVR 789.** Bioavailability of geosorbent-sorbed tetracycline to an *Escherichia coli* bioreporter for expression of antibiotic resistance. Y. Zhang, W. Zhang, D. Zhu, S.A. Boyd, J. Tiedje, B.J. Teppen, H. Li

**2:20 ENVR 790.** Phenolic acids alter selective pressure of tetracycline on an *Escherichia coli* for expression of antibiotic resistance by impairing bacterial efflux pump. Z. Chen, Y. Zhang, Y. Gao, D. Zhu, W. Zhang, S.A. Boyd, H. Li

**2:40 ENVR 791.** Historical trends and spatial distribution of antibiotics in Minnesota lakes and rivers. J.F. Kerrigan, D.R. Engstrom, K.D. Sandberg, T. LaPara, W. Arnold

**3:00** Intermission.

**3:15 ENVR 792.** Comparing analysis techniques for antibiotic resistance genes (ARG) degradation in UV treatment. P. Chang, B. Juhrend, T.M. Olson, K. Wigginton, C. Marrs

**3:35 ENVR 793.** Kinetics and mechanism of sulfamethoxazole degradation by UV, UV/H<sub>2</sub>O<sub>2</sub>, and UV/persulfate (PDS) and influence of bicarbonate. Y. Yang, G. Liu, X. Lu, W. Liu, J. Jiang, J. Ma

**3:55 ENVR 794.** Structure-dependent reduction mechanisms of isoxazoles by aqueous Fe<sup>III</sup>-tiron complex. Y. Chen

**4:15 ENVR 795.** Copper and silver vanquishing of hospital acquired "superbugs": An economical solution to a major public health problem. J.R. Ellis

**4:35** Concluding Remarks.

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## Section C

Loews Philadelphia Hotel  
Congress B

### Crystal Defects on Surface Reactivity & Heterogeneous Photocatalysis

*Cosponsored by ENFL*

*Financially supported by AEESP*

C. Huang, H. L. Ong, *Organizers*

D. D. Dionysiou, R. Doong, *Organizers, Presiding*

**1:15 ENVR 796.** Properties evaluation on biocomposites from palm kernel shell and polypropylene. H.L. Ong, G. Toh, W. Owi

**1:40 ENVR 797.** Heterogeneous structure of 1-D mixed phase TiO<sub>2</sub> nanorod arrays with enhanced photocatalytic activity. L. Kao, L. Ya Hsuan

**2:05 ENVR 798.** Development of molybdenum disulphide-graphene quantum dots nanostructure for electrochemical applications. K. Bindumadhavan, R.S. Sahu, R. Doong

**2:30 ENVR 799.** Solution metal ions functioning as redox shuttles for enhancing photocatalytic performance of hematite electrodes: a potential route for additional energy sequestration during wastewater treatment. T. Wang, Y. Cheng, Y. Wu, C. Lin, C. Wang

**2:55** Intermission.

**3:10 ENVR 800.** Forward osmosis-membrane distillation (FO-MD) hybrid process by utilizing poly(propylene oxide) as a bio-degradable draw agent. S. Chen, S.S. Ray

**3:35 ENVR 801.** Reduced graphene oxide based bimetallic Ni/Fe nanohybrids for rapid dechlorination of trichloroethylene. R.S. Sahu, D. Li, R. Doong

**4:00 ENVR 802.** Withdrawn.

**4:25 ENVR 803.** Sulfate radical-mediated degradation of sulfadiazine by CuFeO<sub>2</sub> rhombohedral crystal-catalyzed peroxymonosulfate: Synergistic effects and mechanisms. Y. Feng, K. Shih

**4:50 ENVR 804.** In situ synthesis of g-C<sub>3</sub>N<sub>4</sub> based nanocomposites with enhanced UV- and visible-light photocatalytic activities. Y. Hu

## Section D

Loews Philadelphia Hotel  
Washington B

### Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment

*Cosponsored by AGRO*

B. Xing, L. Zhu, *Organizers*

X. Li, *Organizer, Presiding*

**1:15 ENVR 805.** Key role played by dissolved black carbon in slow sorption kinetics and sorption hysteresis of hydrophobic organic chemicals to rice-residue-derived biochar. B. Wang, H. Fu, X. Qu, H. Li, W. Zhang, D. Zhu

**1:35 ENVR 806.** Molecular fractionation of dissolved organic matter induced by adsorption on soil minerals and soil inorganic components. J. Lv, S. Zhang, Z. Huang, L. Luo

**1:55 ENVR 807.** Dynamic changes in the sorption capacity of biochar-amended soils: A field study. H. Sun, X. Ren, X. Yuan, H. Zhu

**2:15 ENVR 808.** Facilitated transport of phenanthrene and oxytetracycline by oxidized-multiwalled carbon nanotubes in soil columns. J. Fang, M. Wang, B. Shen, D. Lin

**2:35 ENVR 809.** Adsorption, mobility, and bioaccessibility of PBDEs: Roles of heavy metals, natural organic matter, and fertilizers. X. Zhu, X. Yang, D. Tsang

**2:55** Intermission.

**3:05 ENVR 810.** Polychlorinated biphenyls in agricultural soils from the Yangtze River Delta of China: Contamination characteristics, combined ecological effects, and human health risks. J. Sun, L. Pan, D. Tsang, L. Zhu, X. Li

**3:25 ENVR 811.** Effects of environmental organic matters on the distribution of bisphenol A in soil-water interface. Y. Zhou, W. Chen

**3:45 ENVR 812.** Phthalate ester contamination in facility agriculture and cumulative health risk assessment. J. Gao

**4:05** Discussion.

### Environmental Risk Assessment of Down-the-Drain Chemicals

*Sponsored by AGRO, Cosponsored by ENVR*

### Environmental Study Design: Current & Emerging Guidelines

*Sponsored by AGRO, Cosponsored by ENVR*

### Advances in Agrochemical Metabolism & Metabolomics

*Sponsored by AGRO, Cosponsored by ANYL and ENVR*

## FLUO

### Division of Fluorine Chemistry

N. Vasdev, *Program Chair*

**OTHER SYMPOSIA OF INTEREST:**  
Polymeric Materials as Imaging Agents & Theranostics (see POLY, Tue)

## SUNDAY EVENING

### Section A

Pennsylvania Convention Center  
Hall D

### Radiopharmaceutical Chemistry

*Cosponsored by INOR, MEDI, NUCL and POLY*

A. Almutairi, C. J. Anderson, S. Lapi, J. Lux, A. B. Packard, G. D. Tamagnan, N. Vasdev, *Organizers*

**7:00 - 9:00**

**FLUO 1.** Trifluoromethylthiolation and perfluoroalkylthiolation of sp<sup>2</sup> C-H Bonds with new fluoromethylthiolating reagent R<sub>3</sub>SO<sub>2</sub>Na. J. Lvqi

**FLUO 2.** Development of <sup>18</sup>F-labeled 2-(1-(3-fluorophenyl)-2-oxo-5-(pyrimidin-2-yl)-1,2-dihydropyridin-3-yl) benzonitrile for imaging AMPA receptors with PET. G. Yuan, N. Vasdev, S. Liang

**FLUO 3.** First [<sup>18</sup>F]trifluoromethylthiolation of aliphatic electrophiles based on difluorocarbene. R. Cheng, J. Zheng, L. Wang, N. Vasdev, J. Xiao, S. Liang

**FLUO 4.** VPAC1 targeted <sup>64</sup>Cu-TP3805 imaging of KRAS2-activated lung cancer in transgenic mice. S.K. Tripathi, K. Zhang, N. Mehta, Y. Wang, E. Wickstrom, B. Lu, M. Thakur

## MONDAY MORNING

### Section A

Philadelphia Marriott Downtown  
Franklin 3

### Radiopharmaceutical Chemistry

*Cosponsored by INOR, MEDI, NUCL and POLY*

A. Almutairi, C. J. Anderson, S. Lapi, J. Lux, *Organizers*

A. B. Packard, G. D. Tamagnan, N. Vasdev, *Organizers, Presiding*

**8:20** Introductory Remarks.

**8:30 FLUO 5.** Silicon-based <sup>18</sup>F-radiochemistry: From basic radiochemistry to in vivo imaging with positron emission tomography. R. Schirmacher

**9:00 FLUO 6.** Development of new transition-metal-mediated radiofluorination reactions. K.J. Makaravage, A.F. Brooks, S. Lee, S. Thompson, N. Ichiishi, A. Mossine, M. McCamant, M.S. Sanford, P.J. Scott

**9:20 FLUO 7.** Extending fluorinase C-<sup>18</sup>F bond biocatalysis to last-step labelling for positron emission tomography (PET). S. Thompson, Q. Zhang, M. Onega, S. McMahon, I.N. Fleming, S. Ashworth, J.H. Naismith, J. Passchier, D. O'Hagan

**9:40 FLUO 8.** Radiosynthesis of fluorine-18 labeled difluoromethylenes. S. Liang, H. Shi, T. Ritter, N. Vasdev

**10:00** Intermission.

**10:20 FLUO 9.** What else can be done with a single quadrupole mass spectrometer in an [F-18] radiochemical laboratory? T.L. Collier, S. Liang, N. Stephenson, A.B. Knight, E. Osborn, K. Hammond, N. Vasdev

**10:40 FLUO 10.** Recent advances in the preparation of reactive [<sup>18</sup>F]- for PET tracer synthesis. J.A. Inkster, A.B. Packard

**11:00 FLUO 11.** Synthesis of (CF<sub>2</sub>)<sup>18</sup>F trifluoroacetates and trifluoroacetamides using Cu(I) complexes. A. Bernejo Gómez, M. Cortés, M. Lübcke, M.J. Johansson, M. Schou, K. Szabo

**11:20 FLUO 12.** Radiochemical synthesis of metafluorinated pyridines via direct nucleophilic fluorination of pyridine N-oxides: Synthesis of [<sup>18</sup>F]-fluoro-4-aminopyridine. P. Brugarolas, R. Freifelder, S. Cheng, O.T. De Jesus

## MONDAY AFTERNOON

### Section A

Philadelphia Marriott Downtown  
Franklin 3

### Radiopharmaceutical Chemistry

*Cosponsored by INOR, MEDI, NUCL and POLY*

A. Almutairi, C. J. Anderson, J. Lux, G. D. Tamagnan, *Organizers*

S. Lapi, A. B. Packard, N. Vasdev, *Organizers, Presiding*

**1:00 FLUO 13.** <sup>18</sup>F-labeled amino acids for oncologic imaging: updates and future prospects. J. McConathy



**1:20 FLUO 14.** Small molecular drug conjugates as cancer theranostics. A. Kumar, T. Mastren, B. Wang, J. Hsieh, G. Hao, X. Sun

**1:40 FLUO 15.** Development of small molecule based pet probes for imaging of cancer c-MET expression. Z. Cheng

**2:00 FLUO 16.** Targeting genomic biomarker, VPAC1, for oncologic imaging. M. Thakur

**2:20 FLUO 17.** Copper-64 PET imaging of CXCR4: Configurationally restricted bis-tetraazamacrocyclic chemokine receptor antagonists. B. Burke, C.S. Miranda, G.S. Clemente, S. Nigam, J. Domarkas, R.E. Lee, J. Thompson, T. D'huys, D. Schols, C. Cawthorne, S.J. Archibald

**2:40** Intermission.

**3:00 FLUO 18.** Radiolabeled probes for imaging PARP1 expression levels in tumors with PET. R.H. Mach

**3:20 FLUO 19.** Synthesis and preliminary PET imaging studies of [<sup>18</sup>F] MK-6240: A radiotracer for imaging neurofibrillary tangles (NFTs) in Alzheimer's Disease. A.M. Walji, I. Bennacef, C. Stump, H.G. Selnick, J. Li, E. Hostettler, J. Mulhearn, Z. Zeng, P. Miller, C. Salinas, B. Connolly, L. Ganter, M. Holahan, S. O'Malley, M. Purcell, K.A. Riffel, J. Balsells, J. OBrien, A. Soriano, A. Ogawa, S. Xu, E. Joshi, J. Della Rocca, J. Schachter, D. Hesik, D. Schenk, C. Sur, A. Struyk, K. Babaoglu, T. Lohith, Y. Wang, J. Fu, S. Celen, G.M. Bormans, M. Vandenberghe, R. Vandenberghe, J. de Hoon, M. Koole, K. Van Laere, K. Serdons, K. Yang, J. Evelhoch, P.J. Coleman

**3:40 FLUO 20.** Accessing radio-labeled CHK1 inhibitor [<sup>18</sup>F] CCT245737. C. Watson, D.R. Turton, T. Matthews, I. Collins, G. Smith

**4:00 FLUO 21.** Tetraazamacrocycles as zirconium-89 chelators. D. Pandya, N. Bhatt, C. Day, H. Yuan, T. Wadas

**4:20 FLUO 22.** Towards PET tracers for imaging  $\beta$ -glucocerebrosidase activity. C. Phenix, B. Adams, S.J. Lees, D. Tesolin, S. Niccoli

**4:40** Concluding Remarks.

## TUESDAY MORNING

### Polymeric Materials as Imaging Agents & Theranostics

#### Drug Delivery

Sponsored by POLY, Cosponsored by FLUO, INOR, MEDI and NUCL

## TUESDAY AFTERNOON

### Polymeric Materials as Imaging Agents & Theranostics

#### Medical Imaging

Sponsored by POLY, Cosponsored by FLUO, INOR, MEDI and NUCL

## GEOC

### Division of Geochemistry

A. Ilgen, Program Chair

#### OTHER SYMPOSIA OF INTEREST:

**Characterization, Reactivity, Sorption & Thermochemical Properties of Mixed Oxides: Symposium in honor of Alexandra Navrotsky** (see COLL, Sun, Mon, Tue)

**Fundamental Research in Colloids, Surfaces & Nanomaterials** (see COLL, Sun)

**Occurrence, Behavior & Remediation of Mixed Organic Pollution in Soil & Sediment** (see ENVR, Wed, Thu)

**Chemistry of Environmental Sorptive & Oxidative Processes: Symposium in honor of Joseph J. Pignatello** (see ENVR, Mon, Tue, Wed)

#### SOCIAL EVENTS:

**Reception, 6:00 PM:** Tue

#### BUSINESS MEETINGS:

**Executive Committee Meeting, 6:00 PM:** Sun

## SUNDAY MORNING

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon A

#### Geochemistry of the Subsurface: CO<sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal

#### Clay, MD Simulation & Electronic Structure

Cosponsored by ENVR

W. D. Burgos, N. Warner, *Organizers*

D. A. Dixon, J. Loring, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 GEOC 1.** Structural, thermodynamic, and transport properties at clay interfaces from molecular simulation. J.A. Greathouse

**9:05 GEOC 2.** Molecular simulation studies in support of CO<sub>2</sub> sequestration and natural gas recovery processes. L.J. Criscenti, C. Tenney, T. Ho, R.T. Cygan, Y. Wang

**9:35 GEOC 3.** Withdrawn.

**9:55 GEOC 4.** Molecular dynamics simulations of clay-water-gas interactions for sustainable energy and environment. G. Gadikota, I.C. Bourg

**10:15** Intermission.

**10:30 GEOC 5.** Expandable clays in wet supercritical CH<sub>4</sub> and CH<sub>4</sub>/CO<sub>2</sub> mixtures: Implications for CO<sub>2</sub>-enhanced gas production. E.S. Ilton, J. Loring, D.W. Hoyt, S. Burton, D.A. Dixon, C.J. Thompson, O. Qafoku, K.M. Rosso, B. McGrail, H.T. Schaeff

**11:00 GEOC 6.** Oedometric small-angle neutron scattering: In Situ observation of strain in clay-rich samples under non-hydrostatic stress. J. Heath, T. Dewers, M. Ding, R.P. Hjelm

**11:30 GEOC 7.** Dissolution kinetics of muscovite as a function of pH at elevated temperatures. K.D. Lammers, M.M. Smith, S.A. Carroll

**11:50 GEOC 8.** Nanostructural control of methane and carbon dioxide transport and adsorption in kerogen. L.J. Criscenti, T. Ho, Y. Wang, I. Akkutlu

## SUNDAY AFTERNOON

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon A

#### Geochemistry of the Subsurface: CO<sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal

#### CO<sub>2</sub> Sequestration

Cosponsored by ENVR

D. A. Dixon, J. Loring, *Organizers*

W. D. Burgos, N. Warner, *Organizers, Presiding*

**1:30 GEOC 9.** Effect of supercritical CO<sub>2</sub> on cation binding and dynamics and H<sub>2</sub>O in smectites and smectite-natural organic matter composites. G.M. Bowers, N. Loganathan, O. Yazaydin, U.V. Reddy, R.J. Kirkpatrick, D.W. Hoyt, S. Burton

**2:00 GEOC 10.** Interactions of CO<sub>2</sub>/brine/rock under CO<sub>2</sub> sequestration conditions. Y. Soong, B. Howard, D. Crandall, R. McLendon, G. Irdi, R. Dilmore, L. Zhang, R. Lin, I. Haljasmaa

**2:20 GEOC 11.** Novel statistical method to quantify uncertainties associated with mineral dissolution and precipitation modeling under geologic carbon storage conditions. L. Zhang, A. Namhata, R. Dilmore, Y. Soong

**2:40 GEOC 12.** Transition of CO<sub>2</sub>-EOR to carbon storage: Experimentally constrained reactive transport model. S.A. Carroll, M. Smith, Y. Hao, H. Mason

**3:10** Intermission.

**3:25 GEOC 13.** Geochemistry of shale-fluid reactions at pore and fracture scales. J.R. Bargar, A.M. Kiss, A.H. Kohli, A.L. Harrison, A.D. Jew, M.K. Dustin, C.M. Joe-Wong, K. Maher, G.E. Brown, M. Zosback, L. Yijin, C. David

**3:55 GEOC 14.** Mineralogical alteration of Mancos Shale under conditions relevant to unconventional gas reservoirs. J.N. Kruichak, A. Ilgen, M. Rodriguez, J. Griego, Y. Wang

**4:15 GEOC 15.** Reaction-driven evolution of subsurface fracture aperture and permeability: Effects of mineralogy and confining stress. K. Spokas, C.A. Peters, L. Pyrak-Nolte

**4:35 GEOC 16.** Withdrawn.

### Section B

Philadelphia Marriott Downtown  
Franklin 3

#### Molecular Modeling of Surface-Mediated Electrochemical & Sorption Reactions at Environmental Interfaces

Cosponsored by COLL

L. J. Criscenti, *Organizer*

V. Alexandrov, S. E. Mason, *Organizers, Presiding*

**1:30 GEOC 17.** Ab initio thermodynamics investigation of the factors that determine oxidation of UO<sub>2</sub> surfaces. A.M. Chaka, J. Stubbs, P.J. Eng, J.R. Bargar, E.S. Ilton

**2:10 GEOC 18.** Density functional theory modeling of chromate adsorption onto ferrihydrite nanoparticles. J.D. Kubicki, N. Kabengi, M. Chrysochoou

**2:30 GEOC 19.** Water adsorption on Olivine(010) surfaces: Effect of doping. T. Liu, A.R. Asthagiri, D. Cole

**3:00 GEOC 20.** Adsorption induced restructuring of water at mineral-water interfaces as probed by theory and experiment for arsenate on alumina. M. Welford, J.G. Catalano, S.E. Mason

**3:20 GEOC 21.** Atomic-scale study of oriented attachment of ZnO. Z. Shen, S.N. Kerisit, K.M. Rosso

**3:40** Intermission.

**3:55 GEOC 22.** Atomistic simulations and mixed layered modeling of clay mineral. M. Holmboe

**4:25 GEOC 23.** Intercalation of scCO<sub>2</sub> in variably hydrated Ca-Montmorillonite and consequences for CH<sub>4</sub> recovery. M. Lee, V. Glezakou, B. McGrail

## MONDAY MORNING

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon A

#### Geochemistry of the Subsurface: CO<sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal

#### Water Film & General Shale

Cosponsored by ENVR

W. D. Burgos, N. Warner, *Organizers*

D. A. Dixon, J. Loring, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 GEOC 24.** Water behavior in nanoporous regimes relevant to shale. D. Cole, M. Gruszkiewicz, A. Striolo

**9:05 GEOC 25.** Role of mineralogy in controlling water uptake in shales exposed to mixed surfactant fracturing fluids. B. Ellis, S. Das

**9:35 GEOC 26.** Real-time imaging of mineral carbonation in wet scCO<sub>2</sub> *in situ* by high-pressure atomic force microscopy. X. Zhang, A.S. Lea, K.M. Rosso, J. Loring, B. McGrail, H.T. Schaeff

**9:55** Intermission.

**10:10 GEOC 27.** Deposition, hydrocarbon formation, and water-rock interaction in the Appalachian Basin, USA: Geochemical and multi-isotope tools. B.W. Stewart, R.C. Capo, T.T. Phan, A. Hakala

- 10:40 GEOC 28.** Reductive weathering of black shale and the release of barium and radium by hydraulic fracturing. D. Renock, J. Landis, M. Sharma
- 11:10 GEOC 29.** Geochemistry and metal release of Marcellus Shale and surrounding rock formations. T. Tasker, A. Grant, T.J. Geeza, N.R. Warner, W.D. Burgos
- 11:30 GEOC 30.** From nanofluidics to basin-scale flow in shale: Tracer investigations. Y. Wang

## MONDAY AFTERNOON

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon A

#### Geochemistry of the Subsurface: CO<sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal

#### Contamination & Waste

*Cosponsored by ENVR*

D. A. Dixon, J. Loring, *Organizers*  
W. D. Burgos, N. Warner, *Organizers, Presiding*

**1:30 GEOC 31.** Withdrawn.

**2:00 GEOC 32.** ShaleXenvironment: A multi-disciplinary effort to assess the environmental implications for shale gas exploration and production in Europe. A. Striolo, A. Jones

**2:20 GEOC 33.** Biocide-pyrite interactions: Degradation and transformation of DBNPA. N. Consolazio, A. Hakala, G. Lowry, A. Karamalidis

**2:40** Intermission.

**2:55 GEOC 34.** Environmental concerns with NORM generated by shale gas extraction: Management strategies and health risks. R.D. Vidic, T. Zhang, C. He

**3:25 GEOC 35.** Actinide sorption in a brine/dolomite rock system: Evaluating the degree of conservatism in  $K_d$  ranges used in performance assessment models. T.M. Ditttrich, D.T. Reed

**3:45 GEOC 36.** Sodium silicate treatment to attenuate uranium mobility in the acidic groundwater plumes. V. Anagnostopoulos, A. Hernandez, C. Wipfli, Y. Katsenovich, M. Denham

**4:05 GEOC 37.** Investigation of NH<sub>3</sub>(g) treatment for the immobilization of uranium in the presence of pure minerals. H.P. Emerson, S. Di Pietro, Y. Katsenovich

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

A. Ilgen, *Organizer*

**8:00 - 10:00**

11, 20, 26, 28, 33, 35, 37.

See previous listings.

41, 43-44, 57, 65, 68-70, 81, 83-85, 87. See subsequent listings.

## TUESDAY MORNING

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon A

#### Interfacial Biogeochemical Controls on Inorganic Contaminants

#### Biogeochemistry

M. A. Ginder-Vogel, A. Seyfferth, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 GEOC 38.** Influence of pH and natural chelating agents on the transformation of nanoscale lithium nickel manganese cobalt oxide. D.R. Garvey, J.A. Pedersen, M.N. Hang, R.J. Hamers

**8:45 GEOC 39.** Subsurface release of cesium and strontium: Relative contribution of colloids, natural organic matter and major cations. S.K. Mohanty, T.M. Ditttrich, J. Sainers, J.N. Ryan

**9:05 GEOC 40.** Chromium conundrum: Determining the stability of legacy contamination. J. Fischel, D.L. Sparks

**9:25 GEOC 41.** Geochemical triggers for asbestos fibers mobility in groundwater. S.K. Mohanty, A. Salamatiour, D. Jerolmack, J. Willenbring

**9:45 GEOC 42.** Trace metal transformation in wetland soils and the impact of trace metals on methane production. N.M. Crompton, Y. Sun, A.S. Bradley, E.A. Hasenmueller, L.G. Chambers, J.G. Catalano

**10:05** Intermission.

**10:20 GEOC 43.** Quantifying the controls of manganese oxides on geogenic arsenic release to groundwater. M. Polizzotto, E.C. Gillispie, O. Duckworth

**11:00 GEOC 44.** Hydrologic controls on arsenic cycling due to tidal fluctuation. X. Yu, J.J. LeMonte, J.W. Stuckey, D.L. Sparks, J.G. Cargill, C.J. Russoniello, H.A. Michael

**11:20 GEOC 45.** Water and Si management effects on trace element accumulation in rice (*Oryza sativa* L.). D. Amaral, A. Seyfferth

**11:40 GEOC 46.** Effects of silicon-rich soil amendments on arsenic concentrations in rice (*Oryza sativa*) grain. F. Teasley, A. Seyfferth

**12:00** Concluding Remarks.

## TUESDAY AFTERNOON

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon A

#### Experimental Studies of the Molecular Scale Processes at Environmental Interfaces

#### Interface Structure & Oxides

*Cosponsored by ENVR*

E. Elzinga, A. Rouff, *Organizers*

A. Ilgen, H. Wang, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 GEOC 47.** Second harmonic generation (SHG) primer for probing mineral/water interfaces. F. Geiger

**1:45 GEOC 48.** Solving the phase problem in second harmonic generation studies of solid/aqueous interfaces. P. Ohno, F. Geiger

**2:15 GEOC 49.** Structure and dynamics of water at alumina surfaces. A. Tuladhar, S. Dewan, J.D. Kubicki, E. Borguet

**2:35 GEOC 50.** Measuring the chalcopyrite (001) surface: A case study for microcrystal surface scattering. J. Stubbs, P.J. Eng

**2:55 GEOC 51.** Deciphering the role of dehydration in cation exchange at the quartz-water interface using flow-microcalorimetry. N. Allen, N. Kabengi

**3:15** Intermission.

**3:30 GEOC 52.** Heterogeneous nucleation and growth of impure Fe(III) hydroxide and heavy metal immobilization: Integration of X-ray scattering, microbalance, microscopy, and aqueous chemistry. Y. Hu, C. Dai, X. Zuo

**4:10 GEOC 53.** Characterization of surface charge of anatase and rutile using flow adsorption microcalorimetry. T. Hawkins, M.L. Machesky, N. Kabengi

**4:30 GEOC 54.** Structure and dynamics of C-O-H fluid mixtures under nanoconfinement. D. Cole, A. Striolo, S. Gautam, S. Ok, S. Patankar, D.L. Tomasko, K.T. Mueller, N.M. Washton, D.W. Hoyt, A. Andersen, A. Phan, T. Le

**5:10 GEOC 55.** Methane – natural clay interfacial interactions as revealed by high pressure magic angle spinning (MAS) NMR. S. Ok, D.W. Hoyt, N.M. Washton, J. Sheets, S. Welch, K.T. Mueller, D. Cole

## WEDNESDAY MORNING

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon A

#### Experimental Studies of the Molecular Scale Processes at Environmental Interfaces

#### Redox

*Cosponsored by ENVR*

A. Ilgen, H. Wang, *Organizers*

E. Elzinga, A. Rouff, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 GEOC 56.** Redox chemistry between Cr(VI) and As(III) on iron oxide. D.R. Strongin, E. Cerkez, R.J. Reeder, J.D. Kubicki, N. Bhandari

**8:45 GEOC 57.** Chromium(VI) reduction by mixed iron(II/III)-bearing clay minerals. C.M. Joe-Wong, K. Maher, G.E. Brown

**9:05 GEOC 58.** Reactivity of Fe(III) in the octahedral sheet of natural and synthetic Fe-phylosilicates: XAS study. A. Ilgen

**9:25 GEOC 59.** Insights into ternary surface species of Fe(II) and phthalic acid on goethite and the impact on reductive reactivity. J. Huang, H.J. Zhang

**9:45 GEOC 60.** Atom probe tomography and second harmonic generation studies for probing zero-valent iron passivation. M.D. Boamah, F. Geiger

**10:05** Intermission.

**10:20 GEOC 61.** Arsenopyrite surface reactions facilitated by electron transfer in the presence of dissolved Fe<sup>3+</sup> and molecular oxygen. Y. Jun, C.W. Neil

**11:00 GEOC 62.** Mn-54 radiotracer evidence for Mn atom exchange between aqueous Mn(II) and vermiculite ( $\delta$ -Mn(IV)O<sub>2</sub>). E. Elzinga

**11:20 GEOC 63.** Withdrawn.

**11:40 GEOC 64.** Time-resolved X-ray diffraction study on the uptake of contaminant lead to triclinic and hexagonal birnessites. F. Ling, P.J. Heaney, J.E. Post

## WEDNESDAY AFTERNOON

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon A

#### Experimental Studies of the Molecular Scale Processes at Environmental Interfaces

#### Carbonates & Phyllosilicates

*Cosponsored by ENVR*

E. Elzinga, A. Rouff, *Organizers*

A. Ilgen, H. Wang, *Organizers, Presiding*

**1:30** Introductory Remarks.

**1:35 GEOC 65.** Ra uptake into barite. J. Weber, F. Brandt, M. Klinkenberg, J. Barthel, U. Breuer, D. Bosbach

**2:15 GEOC 66.** Three-dimensional structure of the barite (001)-water interface. J. Bracco, S. Lee, F. Heberling, P. Fenter, A.G. Stack, J. Stubbs, P.J. Eng

**2:55 GEOC 67.** Salinity effects on arsenic incorporation during barite precipitation treatment of idealized shale gas wastewaters. J.P. Fitts, A. Lanzirrotti, A.S. Acerbo, C.S. Yong, B.M. Dazas, X. Huang, E. Nazaretski, G. Rogers, K. Spokas, R. Tappero, H. Yan, C.A. Peters

**3:15 GEOC 68.** Porosity generation during mineral replacement of calcite (CaCO<sub>3</sub>) by cerussite (PbCO<sub>3</sub>). K. Yuan, S. Lee, V. De Andrade, N.C. Sturchio, P. Fenter

**3:35** Intermission.

**3:50 GEOC 69.** Anion exclusion and diffusion in smectite clay barriers. I.C. Bourg, R.M. Tinnacher, M. Holmboe, C. Tourmassat

**4:30 GEOC 70.** Distribution of monovalent cations adsorbed on the muscovite (001) – water interface: Comparison between X-ray reflectivity and molecular dynamics simulations. S. Lee, I.C. Bourg, P. Fenter

**4:50 GEOC 71.** Desorption of cesium from clay minerals: Sequential extraction schemes and effects of natural organic matter. H. Yoon, A. Ilgen, M. Mills

**5:10 GEOC 72.** Broadband dielectric spectroscopy study of smectites, collation of simulations and experiments. B. Dazas, B. Gilbert, I.C. Bourg

## WEDNESDAY EVENING

### Section A

Pennsylvania Convention Center  
Hall D

#### Experimental Studies of the Molecular Scale Processes at Environmental Interfaces

E. Elzinga, A. Ilgen, A. Rouff, A. G. Stack, *Organizers*

**6:00 - 8:00**

**GEOC 73.** Catechol degradation on hematite/silica – gas interface as affected by gas composition and the formation of environmentally persistent free radicals. H. Li, B. Pan, B. Xing

**GEOC 74.** Understanding molecular-level mechanisms for wettability alteration on mineral surfaces. M.C. Marcano, S. Walker, U. Becker

**GEOC 75.** Degradation of soil-sorbed 17-estradiol using carboxymethyl cellulose stabilized manganese oxide nanoparticles: Column studies. B. Han, D. Zhao

**GEOC 76.** Global monitoring of styrene oligomer contamination surrounding Japan. K. Amamiya, K. Koizumi, K. Takatama, N. Maximenko, B. Kwon, S. Chung, K. Yamada, T. Takemura, K. Saïdo, T. Hiaki

**GEOC 77.** Macroscopic and spectroscopic studies of the adsorption of As(III) and As(V) on synthetic Fe(II)-Al(III)-layered double hydroxide minerals. L. Bhattacharya, E. Elzinga

**GEOC 78.** Association of pharmaceutical compounds with struvite, an orthophosphate salt formed in wastewater effluent. A. Rabinovich, A. Rouff

**GEOC 79.** Nanoporous goethite controlling the mobility of uranium in saprolite subsoil: Long-term sorption and desorption experiments. H. Jung, H. Xu, H. Konishi, E.E. Roden

**GEOC 80.** Fluid behavior in nanoporous silica. S. Ok, B. Hwang, T. Liu, S. Welch, J. Sheets, T. Mal, M. Berman, A. Rua, S.G. Greenbaum, S. Deepansh, P.J. Grandinetti, D. Cole

**GEOC 81.** Sulfate-reducing bacteria produce high levels of chromophoric dissolved organic matter. K. Thompson, M. Gonsior, J. Luek, R.K. Larsen

## Section A

Pennsylvania Convention Center  
Hall D

### Geochemistry of the Subsurface: CO<sub>2</sub> Sequestration, Unconventional Oil & Gas Extraction, Geothermal Reservoirs & Radioactive Waste Disposal

*Cosponsored by ENVR*

W. D. Burgos, D. A. Dixon, J. Loring, N. Warner, *Organizers*

6:00 - 8:00

**GEOC 82.** Application of voltammetric techniques towards iron and sulfur redox speciation in geologic fluids from coal and shale formations. A. Hakala, M. Stuckman, J. Gardiner, T.T. Phan, B. Kutchko, C. Lopano

**GEOC 83.** Analysis of water behavior in porous media using NMR spectroscopy and micro-X-ray-computed tomography. B. Hwang, S. Ok, D. Srivastava, A.G. de Araujo Ferreira, T. Mal, A. Swift, E.L. Oliveira, T. Bonagamba, P.J. Grandinetti, D. Cole

**GEOC 84.** Contribution of colloids to major and trace element contents and isotopic compositions (Li and Sr) of water co-produced with natural gas from Marcellus Shale. T.T. Phan, A. Hakala

## THURSDAY MORNING

### Section A

Philadelphia Marriott Downtown  
Grand Ballroom Salon A

### Experimental Studies of the Molecular Scale Processes at Environmental Interfaces

#### Adsorption, Water Purification & Biomolecules

*Cosponsored by ENVR*

A. Ilgen, H. Wang, *Organizers*

E. Elzinga, A. Rouff, *Organizers, Presiding*

8:00 Introductory Remarks.

**8:05 GEOC 85.** Mechanisms and pathways of phytate degradation by different enzymes: Application of NMR, HPLC, and stable isotope methods to track products, pathways, and isotope effects. M. Sun, J. Wu, D. Jaisi

**8:45 GEOC 86.** Differential pair distribution function and spectroscopic characterization of phosphate and phytate adsorption and precipitation on ferrihydrite surfaces. M. Zhu, X. Wang

**9:05 GEOC 87.** Integrated chemical and biological reactive SAT zones for remediation of nitro-aromatic contaminated groundwater. Y.S. Yang, Y.L. Wen

**9:25 GEOC 88.** Synergistic removal of zinc and copper in greenhouse waste effluent by struvite. A. Rouff, M.V. Ramlogan, A. Rabinovich

**9:45 GEOC 89.** In situ ATR-FTIR study of biomolecule adsorption onto montmorillonite: Building the foundation of organo-mineral associations in soil. M. Schmidt, C.E. Martinez

10:05 Intermission.

**10:20 GEOC 90.** Interactions of biomolecules and bacteria with titanium at the mineral microbe frontier. A. Valentine

**10:40 GEOC 91.** Use of STA-PTA-FTIR for the adsorption of ammonia gas onto various substrates. M.V. Ramlogan

**11:00 GEOC 92.** Size, density, and electromagnetic separations of coal fly ash for rare earth element enrichment. R. Lin, E. Roth, T. Bank, B. Howard, Y. Soong, E.J. Granite

**11:20 GEOC 93.** Recovery of rare earth elements from coal and coal byproducts: What have we learned from the USGS CoalQual database? R. Lin, E. Roth, T. Bank, Y. Soong, E.J. Granite

**11:40 GEOC 94.** Trial of copper and lead analyzing in interstitial water in Tokyo Bay, Japan by anodic stripping voltammetry (ASV). H. Katsura

**12:00 GEOC 95.** Synthesis of tributyl phosphate (TBP)-coated apatite for uranium removal. H. Kim, W. Um

## HIST

### Division of the History of Chemistry

S. Rasmussen, *Program Chair*

#### OTHER SYMPOSIA OF INTEREST:

**Citation for Chemical Breakthrough Award to Rice University: Symposium honoring Robert Curl** (see PRES, Sun)

#### SOCIAL EVENTS:

**HIST Award Dinner**, 6:30 PM: Tue

#### BUSINESS MEETINGS:

**Business Meeting**, 1:00 PM: Sun

**Executive Committee Meeting**, 5:00 PM: Sun

## SUNDAY MORNING

### Section A

Philadelphia Marriott Downtown  
Franklin 4

#### HIST Tutorial & General Papers

S. C. Rasmussen, *Organizer*

J. S. Jeffers, *Presiding*

**8:00 HIST 1.** HIST Tutorial: History of chemistry of chemists, by chemists, and for chemists. C.J. Giunta

**8:40 HIST 2.** Why isn't noble gas chemistry 30 years older? The failed (?) 1933 experiment of Yost and Kaye. J.A. Labinger

**9:10 HIST 3.** Cuprene: A historical curiosity along the path to polyacetylene. S.C. Rasmussen

**9:40 HIST 4.** History of copper mining at the Mansfelder Land. C. Hahn

#### Citation for Chemical Breakthrough Award to Rice University: Symposium honoring Robert Curl

*Sponsored by PRES, Cosponsored by HIST*

## SUNDAY AFTERNOON

### Section A

Philadelphia Marriott Downtown  
Franklin 4

#### A Salute to Ted Benfey at 90: Science, History, Culture & a Commitment to Humanism

J. Seeman, *Organizer, Presiding*

1:30 Introductory Remarks.

**1:40 HIST 5.** Beckman Center for the History of Chemistry: the second generation. M. Bowden

**2:00 HIST 6.** Some thoughts about a typology of experiments in early modern chymistry. W. Newman

**2:20 HIST 7.** Another look at the Kekulé-Couper question. A.J. Locke

**2:40 HIST 8.** Sharing treasures and honoring Ted Benfey. J. Seeman

3:00 Intermission.

**3:15 HIST 9.** O. Theodore Benfey: A vital spirit and intellect. P.J. Ogren

**3:35 HIST 10.** Ted Benfey and three Quaker colleges: teacher, mentor and colleague. D. Macinnes

**3:55 HIST 11.** Back to the roots. H.J. Peiper

**4:15 HIST 12.** Biting snakes and other tales: Growing up with Ted Benfey. P. Benfey

**4:35 HIST 13.** Reflections on nine stimulating and fascinating decades. O.T. Benfey

## MONDAY MORNING

### Section A

Philadelphia Marriott Downtown  
Franklin 4

#### Chemistry in America: 1676-1876

G. D. Patterson, *Organizer, Presiding*

**9:00 HIST 14.** Introduction to chemistry in America before 1876. G.D. Patterson

**10:00 HIST 15.** Earliest chemistry teaching in the United States: The second battle of Princeton. S.K. Vanderkam

10:30 Intermission.

**10:45 HIST 16.** New England chymistry in the generation after George Starkey. W. Newman

11:15 HIST 17. Withdrawn.

## MONDAY AFTERNOON

### Section A

Philadelphia Marriott Downtown  
Franklin 4

#### Chemistry in America: 1676-1876

G. D. Patterson, *Organizer, Presiding*

**1:30 HIST 18.** Impact on 19<sup>th</sup> century chemistry by the faculty and students of Philadelphia's Central High School. R.A. Eglolf

**2:00 HIST 19.** Edgar Fahs Smith and chemistry in America before 1876. L. Farrington

**2:30 HIST 20.** Rachel Littler Bodley, first female professor of chemistry at a medical college. J. Hayes

3:00 Intermission.

**3:15 HIST 21.** Charles Frederick Chandler: founding father of the ACS. E.W. Cook

**3:45 HIST 22.** Chemistry of T. Sterry Hunt (1826-1892). G.D. Patterson

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## MONDAY EVENING

## Section A

Pennsylvania Convention Center  
Halls D/E

## Sci-Mix

S. C. Rasmussen, *Organizer*

8:00 - 10:00

24, 36, 39, 41-42. See subsequent listings.

## TUESDAY MORNING

## Section A

Philadelphia Marriott Downtown  
Franklin 6

### Charles C. Price, 1965 ACS President: Exploring his Legacy after 50 Years

R. A. Egolf, J. Hayes, *Organizers, Presiding*

8:30 Introductory Remarks.

8:35 HIST 23. Charles C. Price, 1965 ACS President: an overview of his life and service. J. Hayes

9:05 HIST 24. Professional genealogy of Charles C. Price. V.V. Mainz

9:35 Intermission.

9:50 HIST 25. From reaction mechanisms, synthetic polymers, and chemotherapeutics, to the evolution of life: the wide-ranging scientific life of Charles Price. R.A. Egolf

10:20 HIST 26. Charles C. Price: the man and his work. M.M. Joulie

10:50 HIST 27. Charles C. Price and the formation of the Chemical Heritage Foundation. R.S. Brashear

11:20 Concluding Remarks.

### Chemical Business of the People, by the People, for the People

Sponsored by PRES, Cosponsored by HIST, MPPG and SCHB‡

### Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eiel

Sponsored by ORGN, Cosponsored by BMGT, CHED, CINF, HIST, INOR, MEDI, MPPG, PMSE and SCHB

### Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications

Sponsored by ENVR, Cosponsored by CEI, HIST and NOM

## TUESDAY AFTERNOON

## Section A

Philadelphia Marriott Downtown  
Franklin 6

### HIST Award Symposium Honoring Ursula Klein

G. D. Patterson, *Organizer*

M. Nye, *Organizer, Presiding*

A. J. Rocke, *Presiding*

1:00 Introductory Remarks.

1:10 HIST 28. Methode de nomenclature chimique (1787): A document of transition. W. Lefevre

1:40 HIST 29. Periodic table as scaffold and foundation: paper tools and demarcation. M. Gordin

2:10 HIST 30. Erlenmeyer as capitalist and entrepreneur: A case study of chemical enterprise in mid-19th-century Germany. A.J. Rocke

2:40 HIST 31. Stability and change in chemical problems and methodologies from the 1890s to the 1930s. M. Nye

3:10 Intermission.

3:25 HIST 32. Delayed reaction: The tardy embrace of physical organic chemistry by the German chemical community. S.J. Weininger

3:55 HIST 33. Paper tools, paper things and a third-order science of organization. E. Hepler-Smith

4:25 HIST 34. Chemists for the common good. U. Klein

### Chemical Business of the People, by the People, for the People

Sponsored by PRES, Cosponsored by HIST, MPPG and SCHB‡

### Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications

Sponsored by ENVR, Cosponsored by CEI, HIST and NOM

## WEDNESDAY MORNING

## Section A

Philadelphia Marriott Downtown  
Franklin 6

### HIST Tutorial & General Papers General Papers

S. C. Rasmussen, *Organizer, Presiding*

8:00 HIST 35. Asen Zlatarov (1885-1936): Bulgarian chemist, educator, and writer. N.V. Tsarevsky

8:30 HIST 36. Green vitriol (FeSO<sub>4</sub>·7H<sub>2</sub>O) in Elizabethan and Stuart England: Chemistry and politics. M.D. Sacks, A. Mousavi

9:00 HIST 37. Mysteries surrounding Geber in the discovery of sulfuric acid. A. Mousavi

9:30 HIST 38. Reevaluating the role of glass in the development of distillation apparatus. S.C. Rasmussen, A. Zumbulyadis

10:00 Intermission.

10:15 HIST 39. Maple sugar: America's indigenous chemical engineering product. M. Paragano

10:45 HIST 40. Korean chemical scientists and engineers and ACS. C.H. Do

11:15 HIST 41. How deuterium got its name: A detailed look at the Urey-Brickwedde correspondence. D.J. O'Leary

11:45 HIST 42. Dusting off old ideas: Reviving historical concepts for teaching chemical evolution in *A World from Dust*. B.J. McFarland

## I&amp;EC

## Division of Industrial and Engineering Chemistry

E. Rosenberg, *Program Chair*

## OTHER SYMPOSIA OF INTEREST:

**Colloidal & Interfacial Chemistry for Water Treatment & Recycling** (see COLL, Wed, Thu)

**Novel Nanomaterials** (see ENFL, Sun, Mon, Tue, Wed, Thu)

**Advances in Innovative Designs & Process Cost Estimation Techniques for Advanced Water Purification Technologies** (see ENVR, Sun, Wed)

**Chemistry of Materials: Nanomaterials** (see INOR, Sun)

**Fracking: Economics vs Environment** (see PRES, Mon)

## BUSINESS MEETINGS:

I&EC Division Open Meeting, 4:00 PM: Mon

## SUNDAY AFTERNOON

## Section A

Philadelphia Downtown Courtyard by Marriott  
Grand Ballroom Salon III/IV

### Advances in Green Chemistry

M. E. Kopach, *Organizer, Presiding*

1:30 I&EC 1. Medicines for all initiative. F. Gupton

2:10 I&EC 2. Green chemistry at the academic-industrial interface: Catalysis with Earth abundant transition metals. P.J. Chirik

2:50 I&EC 3. Tungsten and molybdenum dearomatization agents for organic synthesis. W.D. Harman

3:30 I&EC 4. Pot-economy organo-catalytic synthesis of biologically interested compounds with multiple stereocenters. W. Zhang

4:10 I&EC 5. Process development for the synthesis of baricitinib (LY3009104) regulatory starting materials. M.E. Kopach, M.E. Kobierski, K. Seibert, E.W. Crick, D.L. Varie, C.V. Luciani, T.M. Wilson, J.R. Martinelli, P.M. Pollock, M.E. Laurila, K.P. Cole

## MONDAY MORNING

## Section A

Philadelphia Downtown Courtyard by Marriott  
Grand Ballroom Salon III/IV

### General Papers

E. Rosenberg, *Organizer*

L. R. Martin, *Presiding*

8:30 I&EC 6. Custom solubility and partition ratio models for more quantitative agreement to experiment. S.G. Arturo

8:50 I&EC 7. Mono halogen-substituted benzoic acids: Critical evaluation of thermodynamic and thermochemical properties based on experimental measurements and quantum-chemical calculations. S. Verevkin, V. Emel'yanenko, R. Chirico, A. Bazyleva, V. Diky, A. Kazakov, K. Kroenlein

9:10 I&EC 8. Nanoporous silica-amberlite composites for CO<sub>2</sub> adsorption. G. Osei-Prempeh

9:30 I&EC 9. Novel chemical processes in cyanide-based mineral processing: Increasing the efficiency of noble-metal leaching while decreasing the consumption of cyanide. C. Segura, C. Gamarra, A. Alarcón, J.C. Rodriguez-Reyes

9:50 Intermission.

10:00 I&EC 10. Withdrawn.

10:20 I&EC 11. Reparameterization of COSMO-SAC for phase equilibrium properties based on critically evaluated data. E. Paulechka, V. Diky, A. Kazakov, K. Kroenlein, M. Frenkel

10:40 I&EC 12. Colorimetric assay method and its application toward real-time monitoring of palladium level in reaction stream. X. Bu, J. Jo, C.J. Welch

11:00 I&EC 13. Ultrathin flexible silicon photodetector with silver nanowires plasmonic structure for chemiluminescence sensing. L. Liu, C. Lin, S. Liu, W. Sun, C. Cheng, F. Ko

11:20 I&EC 14. Configuration exchanging theory for transport properties and glass formation temperature of ionic liquids. Y. Hu

11:40 I&EC 15. Withdrawn.

## MONDAY AFTERNOON

## Section A

Philadelphia Downtown Courtyard by Marriott  
Grand Ballroom Salon III/IV

### General Papers

E. Rosenberg, *Organizer*

L. R. Martin, *Presiding*

1:30 I&EC 16. Automated data analysis: Integration of at-line and on-line benchtop NMR with automated processing & quantification. S. Riegel, A.R. Hillson, M. Bernstein

1:50 I&EC 17. Behavior of complex fluids in elastohydrodynamic (EHD) lubricated contacts. B. Galmiche, J. Wong

2:10 I&EC 18. Development of DTPA-amino acid conjugates for successful trivalent actinide-lanthanide separations. J.E. Jones, L.S. Natrajan, A. Geist, L.R. Martin

2:30 I&EC 19. Sphorolipid derivatives: Chemical derivatization towards green surfactants for medicinal applications. E. Delbeke, S. Roelants, I. Van Bogaert, K. Van Geem, C.V. Stevens

2:50 Intermission.

3:00 I&EC 20. Synthesis of SiCl<sub>4</sub> from gaseous HCl and Si(OMe)<sub>4</sub>: Reaction development and kinetic studies. J.M. Roberts, D.V. Eldred, D.E. Katsoulis

3:20 I&EC 21. In situ study of polymer behaviour during shear thinning. J. Dench, N. Marx, N. Morgan, J. Wong

3:40 I&EC 22. Green chemistry in the prevention of scale. L.P. Koskan, B.E. Moriarty

4:00 I&EC 23. Tail gas reactive pyrolysis of agricultural plastic and switchgrass mixtures. C. Dorado, C.A. Mullen, A. Boateng

4:20 I&EC 24. Greenness of chemical reactions and synthesis plans using order theory. G. Restrepo

‡Cooperative Cosponsorship

## MONDAY EVENING

## Section A

Pennsylvania Convention Center  
Halls D/E

## Sci-Mix

E. Rosenberg, *Organizer*

8:00 - 10:00

5, 13. See previous listings.

25, 29-30, 48. See subsequent listings.

## TUESDAY MORNING

## Section A

Philadelphia Downtown Courtyard by Marriott  
Grand Ballroom Salon III/IV

## Division of Industrial &amp; Engineering Chemistry Graduate Student Award

M. A. Matthews, P. E. Savage, G. G. Stanley,  
*Organizers, Presiding*

**8:30 I&EC 25.** Amidoxime-functionalized microcrystalline cellulose-mesoporous silica composites for carbon dioxide sorption at elevated temperatures. C. Gunathilake, R. Dassanayake, N. Abidi, M. Jaroniec

**8:50 I&EC 26.** Factors influencing the mode(s) of facilitated ion transfer into room-temperature ionic liquids containing crown ethers. J. Wankowski, M. J. Kaul, M. L. Dietz

**9:10 I&EC 27.** Fundamental water and sodium chloride transport properties in a series of sulfonated crosslinked hydrogel membranes. N. Yan, D.R. Paul, B.D. Freeman

**9:30 I&EC 28.** Ion sorption and transport in ion exchange membranes: Importance of counter-ion condensation. J. Kamcev, B.D. Freeman, D.R. Paul

**9:50 I&EC 29.** Synthesis of electrode materials from CO<sub>2</sub> and their applications in energy conversion and storage. W. Wei, Y.H. Hu

**10:10 I&EC 30.** 3D nanoscale imaging and photocatalytic disinfection mechanism of gram-negative and gram-positive with modified C-doped and C-Pd-doped TiO<sub>2</sub> composites under visible light radiation. J. Tzeng, Y. Lin, C. Weng, Y. Huang

**10:30** Intermission.

**10:50 I&EC 31.** Excellent capacitive deionization of large-surface area and high conductivity carbon materials. L. Chang, Y.H. Hu

**11:10 I&EC 32.** Withdrawn.

**11:30 I&EC 33.** Product formation and kinetics of the non-isothermal hydrothermal liquefaction of soy protein isolate. J. Sheehan

**11:50 I&EC 34.** Production of para-methylstyrene and para-divinylbenzene from furanic compounds. M. Koehle, R.F. Lobo

**12:10 I&EC 35.** Epoxidized soybean oil modified with renewable fatty acids as tougheners for thermosetting epoxy resins. F. Hu, G.R. Palmese

## Ask Dr. Safety: Chemical Security in Research Institutions

Sponsored by CHAS, Cosponsored by CCS and I&EC

## TUESDAY AFTERNOON

## Section A

Philadelphia Downtown Courtyard by Marriott  
Grand Ballroom Salon III/IV

## Green Chemistry Innovations &amp; Opportunities in Industry for Young Professionals

Cosponsored by CATL, CEI, CHAS, ENFL, ENVR, ORGN, POLY, PROF and YCC

Financially supported by Northeastern Section Younger Chemists Committee (NSYCC); NESSE; GCI

R. E. Borg, M. Kipreos, W. A. Lawal, *Organizers, Presiding*

**1:30** Introductory Remarks.

**1:35 I&EC 36.** Internal structure of a chemical company. W.F. Carroll

**2:05 I&EC 37.** Sustainable and green chemistry opportunities in industry. D.J. Constable

**2:35 I&EC 38.** Green chemistry in pharmaceutical R&D in 2016. L.E. Shuster

**3:05 I&EC 39.** Sustainability in chemicals manufacturing research & innovation. A. Sehgal

**3:35** Intermission.

**3:45 I&EC 40.** Sustainability and Eastman. B. Satterfield

**4:15 I&EC 41.** Chemistry careers and green chemistry. C. Jimenez-Gonzalez

**4:45 I&EC 42.** Unintended consequences: Removing barriers to going green working in environmental compliance. F.K. Wood-Black

**5:15** Concluding Remarks.

## TUESDAY EVENING

## Section A

Pennsylvania Convention Center  
Hall D

## General Posters

E. Rosenberg, *Organizer*

6:00 - 8:00

**I&EC 43.** Chemical treatment of galvanized steel by NIR photothermal conversion material. J. Baek

**I&EC 44.** Withdrawn.

**I&EC 45.** Treatment of endocrine disrupting compounds in an advanced ozone membrane reactor. Y. Li, L. Luk, K. Yeung

**I&EC 46.** Performance of a multifunctional gel for H<sub>2</sub>S abatement in a wastewater drainage system. L. Luk, W. Han, K. Yeung

**I&EC 47.** Withdrawn.

**I&EC 48.** Study and removal of ppb level lead (II) from after wash glass bottles in beverage industry. A. Altaf, A. Badshah, M. Ayub

**I&EC 49.** Characterisation of polymer shear thinning using fluorescence lifetime microscopy. J. Dench, N. Morgan, J. Wong

**I&EC 50.** Enzyme enabled one pack peroxide mediated cure for waterborne coatings. S. Arumugam

## INOR

## Division of Inorganic Chemistry

N. Radu and S. Koch, *Program Chairs*

## OTHER SYMPOSIA OF INTEREST:

**Small Molecules Activated by Homogeneous Metal Catalysts** (see CATL, Sun)

**New Trends in Organometallic Chemistry Leading to Organic Synthesis** (see ORGN, Tue)

**Organometallics Distinguished Author Award** (see ORGN, Mon)

**Industrial Innovations in Polymer Chemistry: The Interface between Inorganic Chemistry & Polymer Science** (see POLY, Mon)

**Advances in Teaching Inorganic Chemistry Lecture & Laboratory** (see CHED, Wed)

## SUNDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 115B

## Bioinorganic Chemistry: DNA, RNA &amp; Inorganic Drugs

S. A. Koch, *Organizer*

E. T. Papish, L. A. Yatsunyk, *Presiding*

**8:30 INOR 1.** Tuning insulin-sensitizing activity of polyoxovanadate derivatives by kinetically control their self-assemblies. K. Chen, T. Liu, Y. Wei

**8:50 INOR 2.** Clavanin A, a tunicate antimicrobial peptide: influence of Zn<sup>2+</sup> on its bactericidal activity. A.M. Angeles Boza

**9:10 INOR 3.** Structure and functions of CAGAGG repeat and its interaction with small molecule ligands. L.A. Yatsunyk, E. Brown, Y. Tsai, J. Chen, B. Powell

**9:30 INOR 4.** Rhodium-conjugate fluorescent probes for diagnostic of mismatched DNA. A. Nano, J.K. Barton

**9:50 INOR 5.** Photoactivation of fluorescent dyes via ruthenium(II) polypyridyl ligand exchange. T.N. Rohrabough, J.K. White, C. Turro

**10:10 INOR 6.** Withdrawn.

**10:30** Intermission.

**10:40 INOR 7.** Water speciation chemistry and ex vivo cardiac imaging with a redox-responsive MRI contrast agent. C.R. Goldsmith, M. Yu, M. Ward, D. Schwartz, R. Beyers, R. Cattley

**11:00 INOR 8.** Ruthenium complexes are pH-activated metallo prodrugs (pHAMPs) due to photodissociation under acidic conditions. E.T. Papish, F. Qu, J.L. Gray, J. Lundeen, Y. Kim, E.J. Merino, J.J. Paul

**11:20 INOR 9.** Metal coordination to ligand-modified nucleic acid triplexes. D.R. Jayarathna, H. Stout, C. Achim

**11:40 INOR 10.** RNA binding and inhibition of function by potential anticancer metal complexes. S.S. Jain, C.M. Anderson, I. Sapse, K. Jain, M. Kissai

**12:00 INOR 11.** Sodium binding DNA motif derived from a DNAzyme. J. Liu

**12:20 INOR 12.** Iron(II) 2-amino-6-picolyl-appended CYCLEN complex as pH-responsive paraCEST MRI contrast agent. P.B. Tsitovich, J.R. Morrow

## Section B

Pennsylvania Convention Center  
Room 115C

## Bioinorganic Chemistry: Proteins &amp; Enzymes &amp; Model Systems

S. A. Koch, *Organizer*

Y. Zhang, *Presiding*

**8:30 INOR 13.** Hydride attack on a coordinated ferric nitrosyl: A DFT investigation of the formation of a heme model-HNO derivative. R. Khade, Y. Zhang

**8:50 INOR 14.** Modeling the molybdenum cofactor: An intra-ligand charge transfer investigation. D.R. Gisewhite, B.R. Williams, S. Zhu, S.J. Nietzer Burgmayer

**9:10 INOR 15.** Synthetic models of mono-iron hydrogenase (HMD): Utility of an anthracene-based scaffold for structural & functional modeling. J. Seo, S. Kerns, M.J. Rose

**9:30 INOR 16.** Computational study of the structure-function relationships of the fat mass and obesity associated protein. T. Karabencheva-Christova, W. Singh, J. Ainsley, C. Christov

**9:50 INOR 17.** Conformational dynamics and oxygen binding in non-heme iron and 2-oxoglutarate histone demethylases. C. Christov, T. Karabencheva-Christova, W. Singh

**10:10 INOR 18.** Heme copper oxidase design using genetic code expansion. L. Xiaohong

**10:30 INOR 19.** Magnetostructural correlation for higher nuclearity iron(III)/oxo complexes, and application to Fe<sub>5</sub>, Fe<sub>6</sub>, and Fe<sub>8</sub> clusters. K. Mitchell, K. Abboud, G. Christou

**10:50 INOR 20.** Thiolate-bridged heterobimetallic complexes as electrocatalysts for proton reduction. P. Ghosh, N. Wang, S. Ding, N. Bhuvanesh, V.C. Popescu, M.B. Hall, M.Y. Darensbourg

## Section C

Pennsylvania Convention Center  
Room 116

## Organometallic Chemistry: Catalysis

N. S. Radu, *Organizer*

C. Lu, I. Tonks, *Presiding*

**8:30 INOR 21.** New advances in Ti-catalyzed nitrene transfer: Selective 3 component coupling reactions. I. Tonks, Z.W. Gilbert, X. See, E. Beaumier, T.A. Wheeler

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**8:50 INOR 22.** Catalytic transfer-dehydrogenation of alkanes by titanium-carbon multiple bonds. D. Solowey, P. Carroll, D.J. Mindiola

**9:10 INOR 23.** New tools for the study of high valent catalysis. B. Billow, T.J. McDaniel, A.L. Odum

**9:30 INOR 24.** Associative tandem oligomerization and enchainment polymerization by a group IV amine bis(phenolate) catalyst. T.N. Gunasekara, J. Kim, S. Xiong, A.Z. Preston, K. Steelman, G.A. Medvedev, N. Delgass, J. Caruthers, M.M. Abu-Omar

**9:50 INOR 25.** Mechanistic investigations of the reaction of tris(oxazolonyl) borato magnesium alkyl complexes and hydride sources. K. Boteju, S.R. Neal, N. Lampland, A.D. Sadov

**10:10** Intermission.

**10:15 INOR 26.** Bimetallic base-metal catalysts for activating small molecules. C. Lu, R. Cammarota, L.J. Clouston, L. Gagliardi, V. Bernales, K.D. Vogiatzis

**10:35 INOR 27.** Enantioselective allylic aminations with hindered amine nucleophiles enabled by heterobimetallic Pd-Ti catalysts. W.K. Walker, D.J. Michaelis, R.W. Stokes, M. Talley

**10:55 INOR 28.** Microwave-assisted copper-catalyzed amidation of aryl chlorides via concurrent tandem catalysis. B.P. Clairmont, S. Lin, A.H. MacArthur

**11:15 INOR 29.** Synthesis and characterization of ligand-capped titanium clusters. K.R. McClain, C.E. Johnson, T. Groshens

**11:35 INOR 30.** New ruthenium complexes for the selective catalytic conversion of bio-derived levulinic acid to  $\gamma$ -valerolactone. B.C. Makhubela, T.A. Kapfunde

## Section D

Pennsylvania Convention Center  
Room 117

### Chemistry of Materials: Nanomaterials

C. G. Lugmair, R. M. Richards, B. G. Trewyn, *Organizers*

J. Macdonald, N. Rosa, M. L. Tang, *Presiding*

**8:50 INOR 31.** Synthesis and magneto-optical properties of europium sulfide-europium selenide solid solution colloidal nanocrystals. N. Rosa, H.A. Dalafu, S. Omagari, A. Kawashima, T. Nakanishi, Y. Hasegawa, S.L. Stoll

**9:10 INOR 32.** Engineering colloidal nanoparticle morphology and crystal structure using ion exchange techniques. J.M. Hodges, R.E. Schaak

**9:30 INOR 33.** Formation and fluorescence of Wurtzite CIS. J. Macdonald, A. Leach, S. Suresh

**9:50 INOR 34.** Metal-organic frameworks as platform for the controlled nanostructuring of molecular magnets. M. Wriedt, D. Aulakh, X. Zhang, K.R. Dunbar

## Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

**10:10** Intermission.

**10:20 INOR 35.** 2D silicon telluride, Si<sub>2</sub>Te<sub>3</sub>. K.J. Koski

**10:40 INOR 36.** Synthesis and reactivity of a Cu<sub>26</sub> hydride nanocluster. T.D. Nguyen, G. Wu, T.W. Hayton

**11:00 INOR 37.** Self-assembly of nanoscale materials from inorganic superatomic building blocks. B. Choi, J. Yu, K. Lee, C.P. Nuckolls, M.L. Steigerwald, X. Roy

**11:20 INOR 38.** Ligand enhanced upconversion of near-infrared photons with nanocrystal light absorbers. M.L. Tang

**11:40 INOR 39.** Analysis of time-varying, stochastic gas transport through graphene membranes. L. Drahushuk, L. Wang, S.P. Koenig, K.V. Agrawal, S. Bunch, M. Strano

## Section E

Pennsylvania Convention Center  
Room 118A

### Chemistry of Materials: Materials for Energy & Catalytic Applications

C. G. Lugmair, *Organizer*

B. S. Hanna, G. Sauve, *Presiding*

**8:30 INOR 40.** Highly tunable catalysts for the self-metathesis of 2-butene to propylene. B.S. Hanna, T.J. Kucharski, M.P. Bukhovko, F. Alshafei, M. Khokhar, S. Shaikh, M.L. Ostrat

**8:50 INOR 41.** Synthesis of molybdenum carbide nanoparticles within the pores of a surface-modified SBA-15 hard template for bio-oil upgrading. F.G. Baddour, D.A. Ruddy, C.P. Nash, J. Schaidle

**9:10 INOR 42.** Facile molecular precursor route to nanostructured metal phosphide catalysts. S. Habas, F. Baddour, D. Ruddy, C.P. Nash, J. Schaidle

**9:30 INOR 43.** Ni<sub>x</sub>X<sub>1-x</sub> (X = group 13 metal) alloy thin films in the electrochemical reduction of CO<sub>2</sub>. A.R. Paris, A.B. Bocarsly

**9:50 INOR 44.** CO<sub>2</sub> capture and conversion using metal-organic framework catalysts in continuous flow. B. James, A. Matzger, M.S. Sanford

**10:10 INOR 45.** Alternative electron acceptors based on azadipyromethene complexes for bulk heterojunction organic solar cells. G. Sauve

**10:30** Intermission.

**10:45 INOR 46.** Working towards a solid-state dye sensitized solar cell using vapor phase polymerized PEDOT. S.M. Boyer, F.H. Schreffler, W.E. Bernier, W.E. Jones

**11:05 INOR 47.** Tuning optical absorption and recombination lifetimes in perovskite oxide thin films of La<sub>1-x</sub>Sr<sub>x</sub>FeO<sub>3- $\delta$</sub>  via A-site substitution and oxygen stoichiometry. S. Smolin, M. Scafetta, A. Choquette, M. Steir, J.B. Baxter, S. May

**11:25 INOR 48.** Charge carrier transport in cesium lead halide and related perovskite thin films. S. Dastidar, S. Li, A.D. Dillon, J.B. Baxter, A.T. Fafarman

**11:45 INOR 49.** Amplification of light energy conversion at Q-CdTe sensitized titania inverse opals in selenide and size-dependent growth of type II Q-CdTe/CdSe quantum dots. A.S. Nehme, F. Haydous, L.I. Halaoui

**12:05 INOR 50.** Nitrogen containing carbonaceous material as metal-free anode catalyst for borohydride fuel cell. T. C. Nagaiah

## Section F

Pennsylvania Convention Center  
Room 118B

### Inorganic Catalysts

S. A. Koch, *Organizer*

J. Scanlon, X. Zhao, *Presiding*

**8:30 INOR 51.** Aldehyde deformylation and catalytic C-H activation using a cobalt(II) complex with a tetradentate N-donor ligand. C.R. Goldsmith, Q. Zhang, A. Bell-Taylor

**8:50 INOR 52.** Oxygen reduction to water and hydrogen peroxide with novel cobalt tetrapyrrole complexes. J. Eddy, T. Qiu, G.P. Yap, J. Rosenthal

**9:10 INOR 53.** Hydrogen production catalyzed by molecular Co complexes with pentadentate ligands. X. Zhao, S. Powers, P. Wang, R. Mittapalli, K. Knight, T. Rice, C. Lyons, K. Driskill, G. Liang, C.E. Webster

**9:30 INOR 54.** Bpy-based CO<sub>2</sub> reduction electrocatalysts immobilized on gold electrodes. M.L. Clark, C.P. Kubiak

**9:50 INOR 55.** Tunable molecular MoS<sub>2</sub> edge-site mimics for catalytic hydrogen production. B. Garrett

**10:10** Intermission.

**10:20 INOR 56.** Catalytic oxidation by trinuclear [Cu<sub>3</sub>O<sub>2</sub>] moieties with fluorinated alkoxide ligands. S.F. Hannigan, A. Arnoff, D.G. Hemmer, P. Liebhauer, J. Stanek, T. Roesener, A. Hoffmann, S. Herres-Pawlis, L. Doerfer

**10:40 INOR 57.** Wiring redox non-innocent metallo-ligands to a main group atom: Applications in flow batteries and small molecule multi-electron transformations. G. Menard, T.G. Carroll, C.J. Kirby

**11:00 INOR 58.** Computational study of chemoselectivity of aziridination and amination reactions by silver phenanthroline compounds. J. Scanlon, P. Birschnbach

**11:20 INOR 59.** Investigation of cobalt chain transfer catalyst activity. A.J. Lewis

## Section G

Pennsylvania Convention Center  
Room 118C

### Lanthanide & Actinide Chemistry

A. De Bettencourt Dias, *Organizer*

K. E. Knope, D. A. Penchoff, *Presiding*

**8:30 INOR 60.** Oxidative conversion of U(IV) amide complexes to U(V) and U(VI) imido complexes. A. Tondreau, J.M. Boncella, B. Scott

**8:50 INOR 61.** Computational predictions for separations of lanthanides and actinides. D.A. Penchoff, C. Peterson, G.K. Schweitzer, A.K. Wilson

**9:10 INOR 62.** Understanding the structural chemistry of thorium(IV)-carboxylate complexes isolated from aqueous solution. N.A. Vanagas, M. Ahern, K.E. Knope

**9:30** Intermission.

**9:40 INOR 63.** Synthesis and structural chemistry of tetravalent actinide-ligand complexes. K.E. Knope

**10:00 INOR 64.** Synthesis and characterization of actinyl coordination compounds using ionic liquids. P.A. Smith, P.C. Burns

**10:20 INOR 65.** Tetravalent lanthanide and actinide polynuclear clusters: Correlating molecular structure with stability. S.L. Estes, M.R. Antonio, L. Soderholm

**10:40 INOR 66.** Actinyl cation-cation interactions in the gas phase: (AnO<sub>2</sub><sup>2+</sup>)(AnO<sub>2</sub><sup>m+</sup>), An=U-Am. R. Feng, K.A. Peterson

## SUNDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 115B

### Inorganic Young Investigator Awards

C. Turro, *Organizer, Presiding*

**1:30 INOR 67.** Redox facilitated metal metathesis in metal-organic frameworks. D. Feng, H. Zhou, J. Park, T. Liu

**1:55 INOR 68.** Modulating the dioxygen activation and oxygen atom transfer reactivity of manganese corrolazines. H.M. Neu, D.P. Goldberg

**2:20 INOR 69.** Modeling the interaction of NO and N<sub>2</sub> with biological copper sites. S. Zhang, T.H. Warren

**2:45** Intermission.

**2:55 INOR 70.** Cu-based tetrel-free clathrates with tunable properties and unprecedented structural flexibility. J. Dolyniuk, K. Kovnir

**3:20 INOR 71.** Gas storage and separation in metal-organic frameworks with adsorption-induced phase transitions. J.A. Mason, J.R. Long

**3:45 INOR 72.** Inorganic aromaticity: Synthesis of the diphosphatriazolene anion (P<sub>2</sub>N<sub>3</sub><sup>-</sup>) from simple molecular precursors. A. Velian, C.C. Cummins

**4:10 INOR 73.** Site-isolated reactivity at MOF nodes. C. Brozek, M. Dinca

### Section B

Pennsylvania Convention Center  
Room 115C

### Organometallics Distinguished Author Award Lectureship

P. J. Chirik, *Organizer*

D. J. Mindiola, *Presiding*

**1:30** Introductory Remarks.

**1:35 INOR 74.** Catalytic adventures with f-elements. T.J. Marks

**2:10 INOR 75.** Uranium imido complexes: Understanding how electronic structure influences organometallic reactivity. S.C. Bart, N. Anderson, S.A. Johnson

**2:45** Intermission.

**3:00 INOR 76.** Towards Pt-catalyzed hydrocarbon functionalization. E. Bowes, S. Pal, J. Love

**3:35 INOR 77.** Uranium-arene complexes with  $\delta$ -bonds and their role in electrocatalytic H<sub>2</sub> production from H<sub>2</sub>O. K. Meyer



## Section C

Pennsylvania Convention Center  
Room 116

## Chemistry of Materials: Nanomaterials

C. G. Lugmair, *Organizer*

D. A. Boyne, E. Miller, *Presiding*

**1:30 INOR 78.** Controlling the surface chemistry of superparamagnetic iron oxide nanoparticles. S.N. Cross, K.V. Korpany, D. Majewski, A. Szuchmacher Blum

**1:50 INOR 79.**  $\beta$ -Diketonate and  $\beta$ -ketoesterate tungsten (VI) oxo-alkoxide precursors for chemical vapor deposition of WO<sub>3</sub>. D.C. Bock, R.O. Bonsu, H. Kim, T.J. Anderson, L. McElwee-White

**2:10 INOR 80.** Tunable coloration behavior on Fe-based nano ceramic pigment. Y. Kim

**2:30 INOR 81.** Precursors for pnictide semiconductor quantum dots and rods. A. Das, P.T. Snee, A. Shamirian

**2:50** Intermission.

**3:05 INOR 82.** Analysis of structural and electronic properties of CdS/CdSe nano-heterostructures and their self-assemblies. N. Gogotsi, C.B. Murray

**3:25 INOR 83.** Peptide-directed synthesis of single helical gold nanoparticle superstructures. A. Merg, G. Zhao, A. Mandal, J. Boatz, X. Wang, P. Van Der Wel, P. Zhang, N.L. Rosi

**3:45 INOR 84.** Preservation of the morphology of gold nano-rods integrated into polymer composites by extrusion and injection molding. D.A. Boyne, J.A. Orlicki, M. Griep

**4:05 INOR 85.** Nanocrystal doping stabilizes the perovskite phase of cesium lead iodide thin films. S. Dastidar, D.A. Egger, L. Tan, A.D. Dillon, S. Liu, L. Kronik, A.M. Rappe, A.T. Fafarman, S.B. Cromer

**4:25 INOR 86.** Quantifying the energetics of PbS QD films. E. Miller, D. Kroupa, J. Zhang, P. Schulz, A. Marshall, A. Kahn, S. Lany, J. Luther, M.C. Beard, C.L. Perkins, J. van de Lagemaat

## Section D

Pennsylvania Convention Center  
Room 117

## Chemistry of Materials: Metal Organic Frameworks

C. G. Lugmair, *Organizer*

M. Wriedt, *Presiding*

**1:30 INOR 87.** Photo-functional zwitterionic metal-organic frameworks with tunable adsorption properties. M. Wriedt, D. Aulakh, W. An, X. Zhang, K. Dunbar

**1:50 INOR 88.** Linker modification of Zr-based metal organic frameworks for chemical warfare agent removal. A. Ploskonka

**2:10 INOR 89.** Improved interfacial adhesion in metal-organic framework composite materials. M.S. Denny

**2:30** Intermission.

**2:45 INOR 90.** Ru(II)Tris(2,2'-bipyridine) templated metal organic frameworks- structure and photophysics. R.W. Larsen, L. Wojtas, C. McKeithan

**3:05 INOR 91.** Generating crystal-line covalent metal-organic networks (CMONs) through protecting group syntheses. D.R. Manke

## Section E

Pennsylvania Convention Center  
Room 118A

## Organometallic Chemistry: Applications to Organic Transformations

N. S. Radu, *Organizer*

M. L. Neidig, N. C. Tomson, *Presiding*

**1:30 INOR 92.** Readily prepared, scalable, and air-stable cobalt pre-catalysts for C-H borylation. N. Leonard, P.J. Chirik

**1:50 INOR 93.** Cobalt-catalyzed Suzuki-Miyaura cross coupling: Fundamental insights lead to the discovery of catalytic reactivity. J. Neely, M.J. Bezdek, P.J. Chirik

**2:10 INOR 94.** Studies toward mild palladium(0/II) catalyzed aryl trifluoromethylation. D. Ferguson, J.R. Bour, M.S. Sanford

**2:30 INOR 95.** Transmetalation and reductive elimination from isolable organometallic Ni<sup>IV</sup> complexes. E.A. Meucci, N. Camasso, M.S. Sanford

**2:50 INOR 96.** Direct generation of oxygen-stabilized radicals by H transfer from transition metal hydrides. J. Kuo, J. Hartung, A. Han, J.R. Norton

**3:10 INOR 97.** Highly chemoselective cobalt catalyst for the hydrosilylation and hydroboration of alkenes. A.D. Ibrahim, S.W. Entsminger, A. Fout

**3:30 INOR 98.** Cobalt-catalyzed arene C(sp<sup>2</sup>)-H borylation: Scope, mechanism, and distinctions from precious metal catalysts. J.V. Obligation, S.P. Semproni, I. Pappas, P.J. Chirik

**3:50 INOR 99.** Withdrawn.

**4:10 INOR 100.** Base metal-catalyzed polyborylation of C(sp<sup>2</sup>)-H bonds. W.N. Palmer, P.J. Chirik

## Section F

Pennsylvania Convention Center  
Room 118B

## Main Group Chemistry

T. W. Hudnall, *Organizer*

C. M. Thomas, *Presiding*

**1:30 INOR 101.** Coordination of N-heterocyclic phosphonium (NHP) cations to cobalt using a bidentate NHP/phosphine ligand. M. Bezpalko, C.M. Thomas

**1:50 INOR 102.** Chelating ligands incorporating reactive N-heterocyclic phosphonium cations. C.M. Thomas, M. Bezpalko, D.A. Evers, A. Poitras

**2:10 INOR 103.** Na[OCp] as a synthon in low-coordinate phosphorus chemistry. R.J. Gilliard, R. Suter, Z. Benkó, J.D. Protasiewicz, H. Grützmacher

**2:30 INOR 104.** N-heterocyclic carbenes (NHCs): A new platform for activation of small molecules. E. Lee

**2:50** Intermission.

**3:00 INOR 105.** N-Heterocyclic carbene-phosphinidenes: Applications in the stabilization of reactive main-group and transition metal fragments. A. Doddi

**3:20 INOR 106.** Synthesis of a series of halide bridged aluminum(II) pentamethylcyclopentadienyl compounds. D. Morris, T. Groshens, L. Baldwin, C.E. Johnson

**3:40 INOR 107.** Facile incorporation of chirality in heteroleptic pyridyl aluminum complexes. R. Garcia, D.S. Wright

**4:00 INOR 108.** Computational design of novel low-valent zinc complexes with Zn-Zn bonds. X. Wang

## Section G

Pennsylvania Convention Center  
Room 118C

## Lanthanide &amp; Actinide Chemistry

A. De Bettencourt Dias, *Organizer*

H. He, J. Liu, *Presiding*

**1:30 INOR 109.** High-symmetric 12-coordinated luminescent europium(III)-containing salt. W. Yuan, L. He, G. Tao

**1:50 INOR 110.** Gd-XO: A colourimetric probe for determining rates of complex formation, and the effect of ligand structure, donor groups, and denticity. A.L. Villaraza, M.C. Retrato

**2:10 INOR 111.** Specific recognition of lanthanide ions by DNA. J. Liu

**2:30 INOR 112.** Complexation of PNP ligands with cerium: Structure and reactivity. A. Zabula, K.C. Mullane, H. Yin, A.J. Kosanovich, O. Ozerov, E.J. Schelter

**2:50** Intermission.

**3:00 INOR 113.** Luminescent terbium complex derived from dialdehyde ligand: Synthesis, characterization, structure and their fluorescent properties. R. Chan, P. Elizondo, C. Mena, N. Pérez

**3:20 INOR 114.** Sensitization of near-infrared emission of lanthanide using BODIPY dyes. H. He, P.P. Senevirathne, R.W. Arachchi, A.A. Kukoyi

**3:40 INOR 115.** f element selective extraction using polynitrogen ligands in ionic liquid. J. Dehaut, N.J. Williams, H. Luo, S. Dai

## SUNDAY EVENING

## Section A

Pennsylvania Convention Center  
Hall D

## Bioinorganic Chemistry: DNA, RNA &amp; Inorganic Drugs

S. A. Koch, *Organizer*

**5:30 - 7:30**

**INOR 116.** Incubation of Leishmania tarentolae with vanadium complexes to assess their potential as therapeutic drugs. C. Wallace, C.C. McLauchlan, M.A. Jones

**INOR 117.** Cytotoxic and DNA-binding properties of organorhenium compounds of non-steroidal anti-inflammatory drugs. S. Azemati, S. Pramanik, S.K. Mandal, A.J. Winstead

**INOR 118.** Cytotoxic and DNA-binding studies of organorhenium compounds of amino acids. M. Stevenson, S. Pramanik, S.K. Mandal

**INOR 119.** Eradication of human breast cancer cells through trackable light-induced CO delivery from a designed photoCORM entrapped within mesoporous silica nanoparticles. I. Chakraborty, S. Carrington, J.H. Hauser, S. Oliver, P.K. Mascharak

**INOR 120.** Development of BODIPY-based fluorescent sensors for the detection of intracellular Mg<sup>2+</sup>. Q. Lin, D. Buccella

**INOR 121.** Light-triggered CO delivery to neoplastic target by a water-soluble and biocompatible manganese photoCORM. J. Jimenez, I. Chakraborty, S. Carrington, P.K. Mascharak

**INOR 122.** Synthesis, characterization and in vitro anticancer studies of Ru(II/III), Zn(II), Cu(II) and VO(IV) complexes. P.A. Ajibade

**INOR 123.** Polypyridyl Ru(II) complexes containing diimine-quinone ligands for dual reactivity. L.M. Loftus, T.A. White, C. Turro

**INOR 124.** Ternary complexes with low-denticity fluorescent Mg<sup>2+</sup> sensors: Applications in Mg<sup>2+</sup> and MgATP detection. B. Pinto-Pacheco, S. Schwartz, J. Pitteloud, D. Buccella

**INOR 125.** Photo-activated dirhodium(II,II) complex with potential dual-binding to DNA. R. Akhimi, C. Turro

**INOR 126.** Computational study of intermolecular interactions between L-cysteine and 2-mercaptopyrimidine using DFT, QTAIM, and NBO methods. I. Morkan, A. Morkan, H.C. Yazici, E. Gül, S. Tanyildizi, N. Öztürk

**INOR 127.** Prevention of toxic heavy metal poisoning by chelation. C.P. Kulatileke

## Section B

Pennsylvania Convention Center  
Hall D

## Chemistry of Materials

C. G. Lugmair, *Organizer*

**5:30 - 7:30**

**INOR 128.** Organoboron oxadiazole complexes for organic light-emitting diode applications. K. Wielenberg, J. Hines, P. Kiprof

**INOR 129.** Synthesis and characterization of vanadium oxide thin solid films produced from colloidal suspensions of bronze substrates. A.A. Allothman, A.W. Apblett

**INOR 130.** Investigating MOF mixed-matrix membranes with styrene-based polymers. J. Moreton, M.S. Denny, S. Cohen

**INOR 131.** Synthetic design of crystalline porous frameworks. X. Bu, Q. Zhai, X. Zhao, P. Feng

**INOR 132.** Preservation of material and morphological features in colloidal nanoparticles through ion exchange processes. J.L. Fenton, J.M. Hodges, R.E. Schaack

**INOR 133.** Synthesis and catalytic activity of metal-organic frameworks constructed from Pd-PCP and Pd-POCOP pincer complexes. A. Kassie, C.R. Wade

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**INOR 134.** Fast growth of sub-centimeter single crystal graphene under the folded-up copper foil bridge. R. Wu, Z. Luo

**INOR 135.** Computational and experimental investigation of the release of nitric oxide from *s*-nitrosothiols, mediated through metal organic framework catalysis events. K. Taylor, T.M. Wheat, T. Li, A.W. Maverick, R. Kumar

**INOR 136.** Periodically ordered inorganic nanocomposites from self-assembled block copolymer composites. H. Wakayama, H. Yonekura, Y. Kawai

**INOR 137.** Synthesis of MoO<sub>3</sub> microcrystals and their application in water treatment. S. Chuang, S. Li

**INOR 138.** Controlled synthesis and microwave electromagnetic properties of hcp-Co flake. N. Chen, J. Jiang, C. Xu, L. Zhen

**INOR 139.** Investigating the bonding between metal-oxide supports and metal nanoparticles. A.S. Rosas, M. Strayer, R. Veghte, T.E. Mallouk

**INOR 140.** Oligomeric ruthenium dye for the improved efficiency of water-splitting dye-sensitized solar cells. C. Gray, N.S. McCool, T.E. Mallouk

**INOR 141.** Fabrication of conductive PEDOT wrapped electrospun PMMA fibers. S.M. Boyer, L. Tong, W.E. Bernier, W.E. Jones

**INOR 142.** Grafting and polymerization on Perovskite-based nanosheets. S. Akbarian-Tefaghi, J.B. Wiley

**INOR 143.** Scandium-based metal-organic frameworks for carboxylation of epoxides. B. James, A. Matzger, M.S. Sanford

**INOR 144.** Preparation of 2D metal-organic framework (MOF)-graphene oxide composite for gas adsorption. Z. Li, W. Chen, K. Yeung

**INOR 145.** Compressive properties of metal-organic framework (MOF) aerogels. Z. Liu, W. Chen, W. Han, K. Yeung

**INOR 146.** Electrochemical analysis of Fe-doped anatase nanoparticles for Li- and Na-ion battery applications. J. Clapham, S. Naik, B.D. Fahlman

**INOR 147.** Assessment of the Li capacity of silicon-doped carbonaceous nanostructures. M. Shook, B.D. Fahlman

## Section C

Pennsylvania Convention Center  
Hall D

### Inorganic Catalysts

S. A. Koch, *Organizer*

5:30 - 7:30

**INOR 148.** Kinetic studies using <sup>31</sup>P-NMR on the base-mediated breakdown of VX in the presence of zinc(II) complexes. C.A. Valdez, D. Kennedy, S. Hok, B.P. Mayer

**INOR 149.** Reactivity and mechanistic understanding of metal-nitride complexes toward NH<sub>3</sub> activation. M. Keener, G. Menard

**INOR 150.** Frustrated solvation structures can enhance electron transfer rate in layered manganese oxide materials. R.K. Bhullar

**INOR 151.** Ligand substituent and solvation effects on activity, dormancy, and tacticity in a series of zirconium-based polymerization catalysts. A.Z. Preston, J. Kim, G.A. Medvedev, N. Delgass, J. Caruthers, M.M. Abu-Omar

**INOR 152.** Main group-transition metal communication for oxidative catalysis. C.J. Kirby, G. Menard

**INOR 153.** Characterization of cross-coupling reactions of simple iron salts with phenyl nucleophiles. S. Carpenter, M.L. Neidig

**INOR 154.** Photocatalytic metal-organic frameworks for 2,2,2-trifluoroethylation of styrenes. X. Yu, S. Cohen

**INOR 155.** Oxygen reduction via self-assembled cofacial catalysts. A.N. Oldacre, T.R. Cook

**INOR 156.** Efficient water oxidation by mattagamite phase CoTe<sub>2</sub>. I. McKendry, A.C. Thenuwara, S. Shumlas, H. Peng, D.R. Strongin, M. Zdzilla

**INOR 157.** Investigating the role of redox load distribution in oxidative catalysis. C. Hunt, G. Menard

**INOR 158.** Tethering metal-centered radicals for substrate activations and catalysis. S. Dey, B.B. Wayland, M. Zdzilla

**INOR 159.** Modified Tris(2-pyridylmethyl) amine (TPMA) and tris[2-(dimethylamino)ethyl]amine (Me<sub>6</sub>TREN) hybrid ligand for the use in copper mediated atom transfer radical addition (atra). A.J. Rupprecht, M. Novak, T. Pintauer

**INOR 160.** Development of novel and highly efficient copper catalysts for atom transfer radical addition (ATRA). M. Novak, A. Kaur, T. Pintauer

**INOR 161.** Hydrogenation of ketones using ammonia borane and dimethylamine borane as a hydrogen donor. S. Tanyildizi, I.A. Morkan, S. Ozkar

**INOR 162.** Microstructure and characterization of SiC foam with varied cell size fabricated by replica impregnation method. S. Kim, J. Bang, W. Kwon, D. Shin, Y. Kim

**INOR 163.** CMK-3 supported NiPd alloy nanoparticles and their synergistic effect on catalytic activity. A. Kim, H. Park, J. Park, K. Park

**INOR 164.** Preparation of ordered mesoporous copper oxide nanostructures with enhanced catalytic properties. A. Kim, S. Jang, K. Park

**INOR 165.** Come to cobalt: Synthesis and characterization of novel cobalt-SNS complexes for H<sub>2</sub> fuel catalysis. J. Koob, C.M. Thomas

## Section D

Pennsylvania Convention Center  
Hall D

### Main Group Chemistry

T. W. Hudnall, *Organizer*

5:30 - 7:30

**INOR 166.** Exploring the reactivity of aluminum hydride heterobimetallics. A.C. Brown, A.B. Altman, J. Arnold, S.G. Minasian

**INOR 167.** Role of cations in the design of new borate architectures. D.M. Schubert, D. Neiner, M.E. Bowden, M. McCray

**INOR 168.** Tuning the electronic parameters of N-heterocyclic carbenes through the introduction of *p* acidic boryl group. W. Liu, C. Chiu

**INOR 169.** Synthesis and characterization of new phosphazene materials. P.J. Nance, P. Wisian-Neilson

**INOR 170.** Silylene-stabilized boron cations. H. Tsai, C. Chiu

**INOR 171.** Tuning phosphorescence via number and position of methoxy substituents in difluoroboron  $\beta$ -diketonates. M.L. Daly, C.A. DeRosa, T.P. Butler, W.A. Morris, C. Kerr, M. Sabat, C. Fraser

**INOR 172.** Enhancement of electron-deficient character of organoboron macrocycles. N. Baser-Kirazli, F. Jaekle

## Section E

Pennsylvania Convention Center  
Hall D

### Nanomaterials in Biology & Medicine

J. Galan-Mascaros, K. Sorasaenee, *Organizers*

5:30 - 7:30

**INOR 173.** Multicolored luminescent difluoroboron  $\beta$ -diketonate poly(ethylene glycol)-poly(lactic acid) block copolymer nanoparticles. C. Kerr, C.A. DeRosa, M.L. Daly, C. Fraser

**INOR 174.** Surface functionalized metal-oxo polymer nanobeads as potential T<sub>1</sub> MRI contrast agents with dual reporting capability. V.A. Dahanayake, S.L. Stoll

**INOR 175.** Targeting folate receptors with fluorescent dye-metal oxide nanoconjugates. A. Kuipers, P. Promdret, A. Henry, C. Blumenfeld, A. Hovsepian, T. Khuu, E. Fernandez, R.A. Moats, H.B. Gray, K. Sorasaenee

## Section F

Pennsylvania Convention Center  
Hall D

### Organometallic Chemistry: Catalysis

N. S. Radu, *Organizer*

5:30 - 7:30

**INOR 176.** Nickel complexes of deprotonated HN(CH<sub>2</sub>CH<sub>2</sub>PPr<sub>2</sub>)<sub>2</sub> and their reactivity. N.P. Nambukara Wellala, J. Luebking, J.A. Krause, H. Guan

**INOR 177.** Development of enantioselective H-D exchange reactions by Ru-[NNN] pincer complexes. L.V. Hale, N.K. Szymczak

**INOR 178.** Investigation of the non-thermodynamic factors governing metal-ligand bond dissociation rates. B. Gordon, K.D. Field, M. Blessent, T. Zhou, K. Krogh Jespersen, A.S. Goldman

**INOR 179.** Ligand-appended hydrogen-bond donors impart reactivity differences in ruthenium-terpyridine complexes. E.W. Dahl, N.K. Szymczak

**INOR 180.** Upgrading isopentane to para-xylene precursors by alkane metathesis. T. Bhatti, A.S. Goldman

**INOR 181.** Zwitterionic (NHC)Au(I) catalyst in a silver-free, acid-free alkyne hydration reaction. K. Weerasiri

**INOR 182.** N-Heterocycle formation via ppm loading iron C-H activation catalysis. C. Lidston, M.J. Wilding, D. Iovan, T. Betley

**INOR 183.** CO<sub>2</sub> photoreduction in tandem with carbonylation reactions. D. Chen, G. Dobreiner

**INOR 184.** Lewis acids in Pd-mediated arylation of amides. J. Becica, G. Dobreiner

## Section G

Pennsylvania Convention Center  
Hall D

### Understanding Cluster Cofactors Through Biomimetic Models

M. Zdzilla, *Organizer*

5:30 - 7:30

**INOR 185.** Cubane topology in manganese clusters with high oxidation states as structural and reactive models the oxygen evolving center in photosystem II. S. Vaddypally, S.K. Kondaveeti, I.G. McKendry, D.J. Jovinelli, M. Zdzilla

**INOR 186.** Isolation and characterization of precursors to a tris(N,N'-diphenylhydrazido)-manganese(IV) propeller complex. J.D. McCall, M. Zdzilla

**INOR 187.** Reactive unchelated manganese cluster biomimics of the oxygen evolving complex. C. Koellner, M. Zdzilla

**INOR 188.** Synthesis of low coordination, high oxidation state manganese cubane clusters and improving reactivity of biomimetic oxygen evolving complexes. D.J. Jovinelli, S. Vaddypally, M. Zdzilla

**INOR 189.** Self-assembled, labile, multinuclear manganese clusters with bi- and tri-dentate ligands to model the oxygen-evolving complex. M. Gau, M. Zdzilla

### Radiopharmaceutical Chemistry

Sponsored by FLUO, Cosponsored by INOR, MEDI, NUCL and POLY

## MONDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 115B

### DIC Young Investigator Awardees: Where Are They Now?

C. C. Cummins, J. D. Protasiewicz, T. H. Warren, *Organizers, Presiding*

9:00 Introductory Remarks.

9:10 **INOR 190.** Metal-ligand multiple bonds, extracting function from electronic structure. T. Betley

9:35 **INOR 191.** Solid-state chemistry career in undergraduate and PhD research programs. R.T. Macaluso

10:00 **INOR 192.** Bioinspired oxidative reactivity: From Cu to Pd and Ni. L.M. Mirica

10:25 **INOR 193.** Structure function relationships in metalloenzymes: From cobalamins to de novo di-iron proteins. A.J. Reig

10:50 Intermission.

11:00 **INOR 194.** Inexpensive architectures for the production of fuels from carbon dioxide and sunlight. J. Rosenthal

11:25 **INOR 195.** Small-molecule chemical tools for hydrogen sulfide research. M.D. Pluth

11:50 **INOR 196.** From elemental phosphorus to nanoscale phosphides and many things in between. B.M. Cossairt

## Section B

Pennsylvania Convention Center  
Room 115C

## Inorganic Chemistry Lectureship

J. D. Protasiewicz, W. B. Tolman, *Organizers, Presiding*

**8:30 INOR 197.** Application of data mining for the investigation of coordination chemistry of salts and polyoxometalates with phosphatase and the ribosome. D.C. Crans, C.C. McLauchlan

**8:55 INOR 198.** Learning about dinitrogen activation using synthesis, spectroscopy, and theory. P.L. Holland, S.F. McWilliams, K. Grubel

**9:20 INOR 199.** Probing nature's pathway for undoing nitrogenase's hard work: Biochemical and spectroscopic investigation of nitrification. K.M. Lancaster, J.D. Caranto, M. Smith, J. Uebler, A.C. Wilbert, R.C. Walroth

**9:45 INOR 200.** How is metal covalency reflected in ligand field parameters? F. Neese, E. Suturina, M. Atanasov

**10:10** Intermission.

**10:20 INOR 201.** Transforming work-horse electron transfer proteins into energy-converting metalloenzymes. H.S. Shafaat, J.W. Slater, A. Manesis, H. Monaco, C.R. Schneider

**10:45 INOR 202.** Inorganic chemistry at 55: A look back and a view forward. W.B. Tolman

**11:10 INOR 203.** X-ray spectroscopic studies of nitrogenase and hydrogenase active sites. S. DeBeer

## Section C

Pennsylvania Convention Center  
Room 116

## Organometallic Chemistry: Applications to Materials &amp; Polymer Science

N. S. Radu, *Organizer*

P. J. Walsh, *Presiding*

**8:30 INOR 204.** Synthesis of biodegradable polymers via ring-opening polymerization mediated by iron(II) complexes. A. Kaur, J.A. Byers

**8:50 INOR 205.** Functional Mo carbynes: Selective late-stage installation and their control over ring-opening alkyne metathesis polymerization (ROAMP). S. von Kugelgen, R. Sifri, F.R. Fischer

**9:10 INOR 206.** Effect of the structure of silyl ether amine curing agents on the properties of cross-linked epoxy networks. Z.S. Bassampour, S.M. Budy, D.Y. Son

**9:30 INOR 207.** Redox-controlled polymerization with an iron-based catalyst. A.B. Biernesser, K.R. Delle Chiaie, J. Curley, J.A. Byers

**9:50 INOR 208.** Secondary coordination sphere effects in heterobimetallic Ni/Zn ethylene polymerization catalysts. A. Smith, I. Tonks

**10:10 INOR 209.** Valence band dependent charge transport in bulk molecular electronic devices incorporating highly conjugated multi-[[porphinato) metal] oligomers. R. Wang, R.C. Bruce, J. Rawson, M.J. Therien, W. You

**10:30 INOR 210.** Dialkyl Complexes of Ta and Nb supported by the [CF<sub>3</sub>-ONO]<sup>3-</sup> trianionic pincer ligand and ROMP of norbornene. S. VenkatRamani, I. Ghiviriga, K. Abboud, A.S. Veige

## Section D

Pennsylvania Convention Center  
Room 117

## Manipulation of Energy &amp; Electron Transfer in Molecules &amp; Devices

K. Hanson, J. T. Hupp, J. K. McCusker, G. J. Meyer, K. S. Schanze, G. F. Strouse, *Organizers*  
D. L. Ashford, *Presiding*

**8:30 INOR 211.** Do bases in the second coordination sphere aid CO<sub>2</sub> reduction? E. Fujita, L. Duan, G. Manbeck, M. Kowalczyk, D.J. Szalda, Y. Himeda, J.T. Muckerman

**9:00 INOR 212.** Molecular photoelectrocatalysts for hydrogen evolution in water. A.J. Miller, M. Chambers, C.L. Pitman

**9:30 INOR 213.** Photo-enhanced hydrolysis of phosphate esters using Cu(II) bipyridine-capped plasmonic nanoparticles. S. Trammell, R. Nita, B. Martin, M. Moore, J. Fontana, D. Knight

**10:00** Intermission.

**10:30 INOR 214.** Making O-O bonds: Single-site vs. O-O coupling. Y. Xie, D.W. Shaffer, G. Manbeck, D.J. Szalda, J.J. Concepcion

**11:00 INOR 215.** Photocatalytic approach to C-C cross-coupling reactions. A.K. Vannucci, A. Paul

**11:30 INOR 216.** Development of a DFT model of the mechanism of syngas production by [Ru(tpy)(Mebim-py)(OH<sub>2</sub>)]<sup>2+</sup> (tpy = 2,2',6',2''-terpyridine; mebim-py = 3-methyl-1-pyridyl-benzimidazol-2-ylidene) in water. J.T. Muckerman, C.K. Schauer, A.J. Miller, T.J. Meyer

## Section E

Pennsylvania Convention Center  
Room 118A

## Nanomaterials in Biology &amp; Medicine

J. Galan-Mascaros, *Organizer*

K. Sorasaenee, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 INOR 217.** Multifunctional mesoporous silica nano-particles controlled by nanomachines for biomedical targeting, imaging and drug delivery. J.I. Zink

**9:20 INOR 218.** Predictable heating and positive MRI contrast from a mesoporous silica-coated iron oxide nanoparticle. C.L. Haynes

**10:05** Intermission.

**10:20 INOR 219.** Highly sensitive imaging of cancer with functional nanoparticles. K. Gonda, N. Ohuchi

**11:05 INOR 220.** Novel organic nanoparticles for cancer multimodality imaging and therapy. Z. Cheng

## Section F

Pennsylvania Convention Center  
Room 118B

## Secondary Coordination Sphere Influences: Stability, Reactivity &amp; Everything in Between

A. R. Fout, N. K. Szymczak, *Organizers*

C. Scarborough, *Organizer, Presiding*

N. C. Tomson, *Presiding*

**8:30** Introductory Remarks.

**8:35 INOR 221.** Rational design of secondary coordination sphere interactions to tune redox potentials and activities of biosynthetic models of metalloproteins. Y. Lu, P. Hosseinzadeh, S. Tian, A. Bhagi-Damodaran, Y. Yu, C. Cui

**9:05 INOR 222.** Understanding the thermodynamic requirements for utilizing proton-relays in oxygen reduction electrocatalysts. M. Pegis, N. Kumar, S. Raugei, J.M. Mayer

**9:25 INOR 223.** Dictating substrate binding and imparting distinct reactivity by secondary-sphere groups. N.K. Szymczak

**9:55** Intermission.

**10:05 INOR 224.** Pincer-crown ether ligands that bridge the primary and secondary coordination spheres: Hemilability and cation binding in catalysis. A.J. Miller, J. Smith, S. Kerr, M. Kita, J. Grajeda, L. Gregor

**10:35 INOR 225.** Separating primary and secondary coordination sphere effects through ligand modification in non-heme iron complexes. Z. Gordon, M.J. Drummond, A. Fout

**10:55 INOR 226.** Architectural complexity within the secondary coordination sphere. A. Borovik

## Section G

Pennsylvania Convention Center  
Room 118C

## Understanding Cluster Cofactors Through Biomimetic Models

*Financially supported by Bruker AXS, Bruker Biospin, Thermo Fisher Scientific, Shimadzu Corporation*

M. Zdilla, *Organizer, Presiding*

L. J. Murray, *Presiding*

**8:30** Introductory Remarks.

**8:35 INOR 227.** Studies of high-oxidation state Mn(IV/V) and Mn(IV/VII) cubane clusters: Electronic structure and reactivity of models of proposed S4 states of photosystem II. M. Zdilla, S. Vaddypally, S.K. Kondaveeti

**8:55 INOR 228.** Tuning reactivity of biologically inspired clusters via metal and bridging anion composition. T. Agapie

**9:15 INOR 229.** Preparation and properties of biomimetic clusters. A. Borovik

**9:35 INOR 230.** Functional manganese models of the oxygen-evolving complex in photosystem II. T. Michaelos, R.H. Crabtree, G.W. Brudwig

**9:55** Intermission.

**10:10 INOR 231.** Water oxidation: Principles and catalysts based on nature's design. G.C. Dismukes, P.F. Smith, C.M. Gates

**10:30 INOR 232.** Photocatalytic water oxidation by multinuclear transition metal cores that mimic the natural oxygen evolving center. M. Bonchio

**10:50 INOR 233.** Computational chemical studies on the oxygen evolving complex of photosystem II: A comparison of experimental/theoretical, structural, spectroscopic and substrate interaction results. S. Petrie, R. Terrett, R. Stranger, R. Pace

**11:10 INOR 234.** Understanding the mechanism of solar water oxidation in natural and artificial water oxidation catalysts. K.V. Lakshmi

**11:30 INOR 235.** Understanding structure and function of the oxygen evolving complex, Mn<sub>4</sub>Cu cluster of the photosystem II. Y. Pushkar

**11:50** Concluding Remarks.

## Organometallics Distinguished Author Award

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## Radiopharmaceutical Chemistry

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## Eminent Scientist Lecture

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## MONDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 115B

## DIC Young Investigator Awardees: Where Are They Now?

C. C. Cummins, J. D. Protasiewicz, T. H. Warren, *Organizers, Presiding*

**1:30 INOR 236.** From YI to PI: Exploring alkyne hydrogenation featuring an electron-rich cobalt catalyst. A.R. Fout

**1:55 INOR 237.** Ligand exchange reactions at CdSe nanocrystal surfaces. J.L. Dempsey, R.R. Knauf

**2:20 INOR 238.** Molecular interfaces for energy catalysis. Y. Surendranath, M. Jackson, S. Oh, C. Kaminsky, T. Fukushima, T. Marshall-Roth, S. Chu

**2:45 INOR 239.** CO<sub>2</sub> Reduction at homogeneous and heterogeneous metal sites. C.T. Saouma, M. Bhattacharya, T. Elkin, L. Mueller, F. Wang, K. Webb

**3:10** Intermission.

**3:20 INOR 240.** Organic-inorganic hybrids for their energy applications. J. Park, H. Zhou

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- 3:45 **INOR 241.** Polyoxometalate alkoxide clusters as redox-active metalloligands. E.M. Matson, F. Li
- 4:10 Concluding Remarks.

## Section B

Pennsylvania Convention Center  
Room 115C

### Chemistry of Materials: Metal Organic Frameworks

- C. G. Lugmair, *Organizer*  
P. Li, C. R. Wade, *Presiding*
- 1:30 **INOR 242.** Anchored MPV reduction in a robust metal-organic framework. P. Larson, J. Cheney, A.F. Cozzolino
- 1:50 **INOR 243.** Latest and greatest about the other FMOFs and their non-porous congeners. M.A. Omary, R.M. Almotawa, J.F. Ivy, W.K. Yaseen, S. Marpu, M.A. Rawashdeh-Omary
- 2:10 **INOR 244.** Structural insight into redox hopping electron transport metal organic frameworks. P. Celis-Salazar, S. Ahrenholtz, A.J. Morris
- 2:30 **INOR 245.** Synthesis and reactivity of metal-organic frameworks assembled from transition metal pincer complexes. C.R. Wade, A. Kassie, N. Mucha
- 2:50 Intermission.
- 3:05 **INOR 246.** Flexibility, defects, and disorder in soft porous crystals: Molecular insight from computational chemistry. F. Couderc, A. Boutin, A. Fuchs
- 3:25 **INOR 247.** Photo-induced degradation and drug delivery via a UiO-type MOF nanocarrier. C. Epley, A.J. Morris
- 3:45 **INOR 248.** Design rules for enzyme immobilization in hierarchical mesoporous metal-organic frameworks. P. Li, J.A. Modica, M. Mrksich, J.T. Hupp, O.K. Farha

## Section C

Pennsylvania Convention Center  
Room 116

### Coordination Chemistry: Characterization & Applications

- S. A. Koch, *Organizer*  
M. P. Jensen, C. H. Mahler, *Presiding*
- 1:30 **INOR 249.** Solvent cage effects: Predicting the cage recombination efficiency using microviscosity. J. Barry
- 1:50 **INOR 250.** Light-harvesting and electrochemical properties of iridium(III) and ruthenium(II) curcuminoid photosensitizers for dye sensitized solar cells. G.E. Gilligan, T. Nanchung, R.T. Weber, J.J. Rochford
- 2:10 **INOR 251.** Tunable vanadium(IV) complexes as molecular quantum memories. J. Zadrozny, M.D. Krzyaniak, D.E. Freedman

- 2:30 **INOR 252.** Fe(II), Co(II), and Ni(II) complexes of macrocycles with imidazole pendants for ParaCEST MRI applications. P.J. Burns, J.R. Morrow

- 2:50 **INOR 253.** Mechanistic investigation of nitrene group transfer for the group 6 metal imido complexes incorporating a vertical series of group 14 substituents,  $(\eta^5-C_5Me_5)M[N(Pr)C(Me)N(Pr)]$  (NEMe<sub>5</sub>) were M = Mo and W; E = C, Si and Ge. R.R. Thompson, A. Keane, P. Zavalij, A.N. Vedernikov, L.R. Sita

- 3:10 **INOR 254.** P-31 NMR spectra of transition-metal phosphine complexes. C.H. Mahler, J.A. Beamon, L. Bottorf, B. Eck, A. Hunter, R. McAtee, T. Williams, B. Zarzyczny

3:30 Intermission.

- 3:40 **INOR 255.** Structural characterization of thermochromic and spin equilibria in Ni(detu)<sub>2</sub>. M.P. Jensen, I.A. Alfurayj, V.G. Young

- 4:00 **INOR 256.** Quantitative structure-activity relationships of cobalt pyrophosphate complexes against Mycobacterium tuberculosis. T.J. Greenfield, R. Doyle

- 4:20 **INOR 257.** Developing photonic devices from multi-emissive rhenium complexes. N.J. Azzarelli, R. Doyle, J.A. Zubieta

- 4:40 **INOR 258.** Some metal (II) complexes of bidentate Schiff bases with benzylidene moiety: Synthesis, structures, and their biological potency. J.A. Obaleye, C.O. Oseghale, M.O. Bamigboye, A.A. Ajibola, P.O. Obaleye

- 5:00 **INOR 259.** Heterogeneous in-situ photoCORMs for aerobic palladium-catalyzed carbonylation. L.M. Berreau, S. Anderson

- 5:20 **INOR 260.** Activation of dinitrogen, ammonia, hydrazine and water by a terpyridine bis(phosphine) molybdenum platform. M.J. Bezdek, S. Guo, P.J. Chirik

## Section D

Pennsylvania Convention Center  
Room 117

### Manipulation of Energy & Electron Transfer in Molecules & Devices

- K. Hanson, J. T. Hupp, J. K. McCusker, G. J. Meyer, K. S. Schanze, G. F. Strouse, *Organizers*  
K. Omberg, *Presiding*

- 1:30 **INOR 261.** TATB texture effects: Anisotropy in a plastic bonded explosive. D.G. Thompson, R.B. Schwarz, C. Liu, L.G. Hill, G.W. Brown, R. DeLuca

- 2:00 **INOR 262.** Strain functionals for characterizing atomistic geometries and deformation processes. E.M. Kober

- 2:30 **INOR 263.** New paradigms for old molecules: Polypyridylruthenium complexes as antibacterial agents for drug-resistant pathogens. R. Keene

- 3:00 **INOR 264.** Research summary: The Meyer research group. T.J. Meyer

3:30 Intermission.

- 4:00 **INOR 265.** Photophysical properties of nonlinear absorbing materials. D.J. Stewart, T.A. Grusenmeyer, S. Long, D.M. Krein, Z. Yu, R. Kannan, M.J. Dalton, T.M. Cooper, L. Tan, J.E. Haley

- 4:30 **INOR 266.** MLCT excited states of polypyridyl ruthenium(II) and osmium(II) complexes in ionic nanospheres. A. Ito

- 5:00 **INOR 267.** Intramolecular iron(II) to titanium(IV) charge transfer: Relevance to DSSCs, blue sapphire, and moon rocks. P.S. Wagenknecht

## Section E

Pennsylvania Convention Center  
Room 118A

### Nanomaterials in Biology & Medicine

J. Galan-Mascaros, K. Sorasaenee, *Organizers*  
G. Such, *Presiding*

- 1:30 **INOR 268.** Unlocking the potential of spherical nucleic acids in biology and medicine. C.A. Mirkin

- 2:15 **INOR 269.** Protein-based synthesis of hybrid nanostructures for biology and medicine. F. Baneyx

3:00 Intermission.

- 3:15 **INOR 270.** Polymer-based radio-immunoconjugates for tumor imaging and cancer therapy. M. Winnik, Y. Lu, P. Liu, A.J. Boyle, G. Ngo Njock Mbong, S. Yook, R.M. Reilly

- 4:00 **INOR 271.** Biodegradable metal contrast agents for multi-energy X-ray imaging. D. Cormode

## Section F

Pennsylvania Convention Center  
Room 118B

### Secondary Coordination Sphere Influences: Stability, Reactivity & Everything in Between

C. Scarborough, N. K. Szymczak, *Organizers*  
A. R. Fout, *Organizer, Presiding*  
A. J. Miller, *Presiding*

- 1:30 **INOR 272.** Dinitrogen functionalization by iron  $\beta$ -diketiminato complexes enhanced through alkali metal cation chelation. S.F. McWilliams, B.Q. Mercado, P.L. Holland

- 1:50 **INOR 273.** Reversible molecular catalysis for H<sub>2</sub> oxidation/production, achieved with outer coordination sphere interactions. W.J. Shaw, N. Boralugodage, A. Dutta

- 2:20 **INOR 274.** Merging secondary coordination influence with redox-activity in coordination compounds. J.D. Gilbertson

2:50 Intermission.

- 3:00 **INOR 275.** Coordination chemistry of hydrogen peroxide. C. Scarborough, C.M. Wallen, R.J. Harris, M.R. Leidy, D. Liu

- 3:30 **INOR 276.** Tuning redox potentials by incorporating Lewis acids into the secondary coordination sphere. J.Y. Yang, A. Reath, T. Chantarojsiri, J. Khosrowabadi

- 4:00 **INOR 277.** Iridium hydrogen bonded hydrides, metal coordinated H<sub>2</sub> rapid exchange, and remote functionalization. J.P. Shanahan, C.M. Moore, N.K. Szymczak

- 4:20 **INOR 278.** New proton responsive ligands for transition metal catalysts that facilitate carbon dioxide reduction. E.T. Papish, D.L. Gerlach, S. Siek, D.B. Burks

## Section G

Pennsylvania Convention Center  
Room 118C

### Understanding Cluster Cofactors Through Biomimetic Models

Financially supported by Bruker AXS, Bruker Biospin, Thermo Fisher Scientific, Shimadzu Corporation

M. Zdzila, *Organizer*

K. V. Lakshmi, S. C. Lee, *Presiding*

1:30 Introductory Remarks.

- 1:35 **INOR 279.** High-spin cluster reaction site design as functional mimics towards biological polynuclear cofactors. T. Betley

- 1:55 **INOR 280.** Improving proton delivery by controlling ligand dynamics in nickel electrocatalysts for H<sub>2</sub> production. R. Bullock, A.J. Cardenas, A.M. Appel, M.J. O Hagan

- 2:15 **INOR 281.** Fe-H intermediates in a cofactor-modified [FeFe]-hydrogenase. T.B. Rauchfuss, R. Gilbert-Wilson, C. Pham, V. Pelmenschikov, W.W. Lubitz, J. Siebel, E. Reijerse, S. Cramer

- 2:35 **INOR 282.** Classic organometallics as synthons and molecular probes of hydrogenase active sites. M.Y. Darensbourg, A.M. Lunsford, P. Ghosh, S. Ding, V.C. Popescu, M.B. Hall

- 2:55 **INOR 283.** Trinuclear copper clusters and Cu<sub>2</sub>: O<sub>2</sub> reduction and varying the bridging chalcogenide in tricopper compounds. L.J. Murray

3:15 Intermission.

- 3:30 **INOR 284.** Advanced X-ray spectroscopic studies of iron-sulfur clusters. S. DeBeer

- 3:50 **INOR 285.** Nitrogenase-inspired chemistry: Syntheses, properties, and reactions of imide-containing iron-sulfur clusters. S.C. Lee, L. Tan, B. Nayyar

- 4:10 **INOR 286.** Cluster active sites of nitrogenase: Stereo-electronic flexibility of Fe(Mo)-sulfide clusters. K. Tatsumi

- 4:30 **INOR 287.** Biological nitrogen fixation by nitrogenase and biomimetic complexes. B.M. Hoffman

- 4:50 **INOR 288.** Insights into the FeMoco of nitrogenase from unsaturated iron compounds supported by sulfides and thiolates. P.L. Holland, N. Arnet, A. Brosnahan, I. Coric, B.Q. Mercado

5:10 Concluding Remarks.

### Radiopharmaceutical Chemistry

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### Industrial Innovations in Polymer Chemistry: The Interface between Inorganic Chemistry & Polymer Science

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### Undergraduate Research Posters

#### Inorganic Chemistry

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## MONDAY EVENING

## Section A

Pennsylvania Convention Center  
Halls D/E

## Sci-Mix

S. A. Koch, N. S. Radu, *Organizers*

8:00 - 10:00

116, 120, 123, 130, 132-133, 135, 141-142, 144, 151, 155, 158, 161-162, 165, 168-169, 171, 176-178, 180, 182, 185, 189. See previous listings.

393, 396, 401-402, 410-411, 416, 420, 424, 428, 433, 435, 440, 443, 473-475, 478-479, 482, 484, 486, 629, 632, 635, 638, 641-643, 650-652, 656, 668, 671, 676, 681-682, 684, 686, 691-693. See subsequent listings.

## TUESDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 115B

## Inorganic Nanoscience Award

S. E. Skrabalak, *Organizer, Presiding*

8:20 Introductory Remarks.

8:30 **INOR 289.** Synthetic inorganic nanochemistry: A platform for discovering new materials and turning cartoons into reality. R.E. Schaak

9:00 **INOR 290.** Assembly and disassembly of layered materials. M. Strayer, T. Senftle, X. Fan, N. Kovtyukhova, R. Uppuluri, A.S. Rosas, R.M. Rioux, M.J. Janik, T.E. Mallouk

9:30 **INOR 291.** Precise chemical, physical, and electronic nanoscale contacts. P.S. Weiss

10:00 **INOR 292.** Dislocation-driven growth of nanomaterials and lead halide perovskite nanowire lasers. S. Jin

10:30 Intermission.

10:45 **INOR 293.** Designing of optical and electronic materials on the mesoscale through nanocrystal assembly. C.B. Murray, B.T. Diroll, E.A. Gauding, Y. Wu, W. Chen, E. Goodwin, S. Oh, M. Cargnello, T. Paik, C.R. Kagan, D. Jishkariani, B. Donnio

11:15 **INOR 294.** Metal-ligand chemistry in multimetallic nanoparticle synthesis and performance. J. Millstone

11:45 **INOR 295.** Seed-mediated co-reduction as a route to Pd-Cu nanostructures. S.E. Skrabalak

## Section B

Pennsylvania Convention Center  
Room 115C

## Chemistry of Materials: Synthesis &amp; Properties

C. G. Lugmair, *Organizer*

A. P. Purdy, *Presiding*

8:30 **INOR 296.** Inorganic solvent-processable thermosetting materials from reactions of P(CN)<sub>3</sub> with dicyan-amides. A.P. Purdy, B.L. Chaloux, J.P. Yesinowski, A. Epshteyn

8:50 **INOR 297.** Novel group IV polyazido compounds. P. Deokar, R.M. Haiges, K.O. Christe

9:10 **INOR 298.** EuS-ZnS Core-shell nanocrystals: Synthesis and magnetic properties. D.J. James, S.L. Stoll

9:30 **INOR 299.** Ni/Fe - Reevesite-type anionic clays prepared by coprecipitation - structure and morphology. M. Jitianu, D. Akpatsu, A. Patel, A. Jitianu

9:50 Intermission.

10:05 **INOR 300.** Synthetic, structural and magnetic studies of new Mn<sub>3</sub>, Mn<sub>2</sub> and Mn<sub>3</sub> clusters from the use of methyl 2-pyridyl ketone oxime in manganese phosphinate and phosphonate chemistry. O.A. Adebayo, K. Abboud, G. Christou

10:25 **INOR 301.** Synthetic approaches to samarium chalcogenide nanomaterials. S.E. Ingram, S.L. Stoll

10:45 **INOR 302.** Recent progress in cluster based materials. S.L. Stoll

11:05 **INOR 303.** Noncentrosymmetry induced by oxygen octahedral rotations competing with octahedral sliding in Ruddlesden-Popper phases, HRTiO<sub>4</sub> (R = rare earths). A. Sen Gupta, H. Akamatsu, F. Brown, M. Strayer, M.T. Nguyen, T.E. Mallouk, V. Gopalan

## Section C

Pennsylvania Convention Center  
Room 116

## Industrial Inorganic Chemistry

N. S. Radu, J. F. Walzer, *Organizers, Presiding*

8:30 **INOR 304.** Stabilized alkali metals: All of the bang, none of the boom! S.M. Bellows, J.R. Vargas, R.A. Fisher

9:00 **INOR 305.** Precursors for strained silicon: Volatile higher silanes, carbosilanes and germane. B. Arkles, Y. Pan, G.L. Larson

9:30 **INOR 306.** From bench to bottle. H. Nienaber

10:00 **INOR 307.** Probing the structure and reactivity of metallocene catalysts. K.M. Clark, A. Hock, M. Foody, B. Liu

10:30 **INOR 308.** Commercial applications of olefin metathesis. P. Wheeler, A. Johns, N. Duffy, R.L. Pederson

11:00 **INOR 309.** Enabling modern transition-metal catalysis in drug discovery and development using high-throughput experimentation. S. Dreher

11:30 **INOR 310.** Combined high-throughput and mechanistic approach to the development of catalytic reactions for the synthesis of active pharmaceutical ingredients. D. Leitch

12:00 **INOR 311.** Development of a cost-effective Suzuki-Miyaura coupling method of aryl fluorosulfonates. M. Ober, P.S. Hanley, A.L. Krasovskiy, G. Whiteker, W.J. Kruper

## Section D

Pennsylvania Convention Center  
Room 117

## Manipulation of Energy &amp; Electron Transfer in Molecules &amp; Devices

K. Hanson, J. T. Hupp, J. K. McCusker, G. J. Meyer, K. S. Schanze, G. F. Strouse, *Organizers*  
M. Sheridin, *Presiding*

8:30 **INOR 312.** Light-driven, multi-electron transfer activation of a water oxidation catalyst. G.J. Meyer, T. Meyer, K. Hu, M. Brennaman, S. Marquard

9:00 **INOR 313.** Dipoles at molecule-semiconductor interfaces: energy level alignment and charge transfer properties. E. Galoppini

9:30 **INOR 314.** Injection and cross-surface electron transfer effects in a ruthenium-based chromophore-catalyst assembly on TiO<sub>2</sub>. M.K. Brennaman, M. Norris, M.K. Gish, R.A. Binstead, A. Lapides, S.P. Hill, T. Dilbeck, Y. Zhou, E. Baduell, K. Hu, G.J. Meyer, J.L. Templeton, J.M. Papanikolas, T.J. Meyer

10:00 Intermission.

10:30 **INOR 315.** Energy and electron transfer dynamics of photon upconversion in self-assembled bilayers. K. Hanson, S.P. Hill, T. Dilbeck, Y. Zhou, E. Baduell

11:00 **INOR 316.** Light harvesting polymers for solar fuels conversion. K.S. Schanze, G. Leem, Z. Morseth, J. Jiang, J.M. Papanikolas

11:30 **INOR 317.** Transition metal complexes as electron mediators in dye sensitized solar cells. C.A. Bignozzi

## Section E

Pennsylvania Convention Center  
Room 118A

## Nanomaterials in Biology &amp; Medicine

J. Galan-Mascaros, K. Sorasaene, *Organizers*  
D. Cormode, *Presiding*

8:30 **INOR 318.** Metal organic frameworks as nitric oxide catalysts for the improved biocompatibility of medical devices. M.M. Reynolds

9:15 **INOR 319.** Phlexiparticles: Flexing the power of pH to escape the endosome. G. Such, A.S. Wong, N. Kongkatijomjorn, K. Fang, E. Czuba, A.P. Johnston

10:00 Intermission.

10:15 **INOR 320.** Corrole nanobiologics as therapeutics in oncology. L. Medina-Kauwe

11:00 **INOR 321.** Nanostructured metal fuels and iodine oxides for defeating bio-agents. T.P. Weis

## Section F

Pennsylvania Convention Center  
Room 118B

## Secondary Coordination Sphere Influences: Stability, Reactivity &amp; Everything in Between

A. R. Fout, C. Scarborough, *Organizers*

N. K. Szymczak, *Organizer, Presiding*

J. D. Gilbertson, *Presiding*

8:30 **INOR 322.** Anion reduction facilitated by secondary coordination sphere interactions in a non-heme system. A.R. Fout

9:00 **INOR 323.** Secondary sphere modifications influence reactivity in ruthenium-based (de)hydrogenation catalysis. E.W. Dahl, N.K. Szymczak

9:20 **INOR 324.** When two are better than one: Bifunctional catalysts that move protons for organic chemistry and energy. D.B. Grotjahn

9:50 Intermission.

10:00 **INOR 325.** Reactivity of metal complexes supported by ligands with functionalized pendant arenes. T. Agapie

10:30 **INOR 326.** Cati-"ON" switch: Controlling reactivity using an iridium-hydride pincer-crown ether system. M. Kita, A.J. Miller

10:50 **INOR 327.** Nonheme iron complexes and the role of substrate orientation in the first and second coordination spheres. D.P. Goldberg, S. Sahu, L.R. Widger, A. McQuilken

## Section G

Pennsylvania Convention Center  
Room 118C

## Lanthanide &amp; Actinide Chemistry

A. De Bettencourt Dias, *Organizer*

A. T. Johnson, J. Rack, *Presiding*

8:30 **INOR 328.** Progress toward isolation of a cerium(IV)-imido complex. L. Solola

8:50 **INOR 329.** Synthesis and photoluminescent properties of lanthanide doped bismuth-organic materials. R.L. Ayscue, K.E. Knope

9:10 **INOR 330.** Femtosecond interligand dynamics in highly luminescent lanthanide complexes. J. Rack, A.W. King, J. Wilkerson, B.J. Holliday

9:30 **INOR 331.** Synthesis and spectroscopy of chromogenic actinium chelators and actinium solution chemistry. B.W. Stein, M. Ferrier, S.A. Kozimor, E.R. Birnbaum, K. John, J.W. Engle, J.M. Berg

9:50 Intermission.

10:00 **INOR 332.** Effect of temperature independent paramagnetism of uranium(VI) ions on <sup>13</sup>C NMR shifts and U(III) reduction of organic esters and amides. K.C. Mullane, P. Hrobarik, B. Manor, P. Carroll, E.J. Schelter

10:20 **INOR 333.** Synthesis and characterization of volatile chelates of quadrivalent neptunium. A.T. Johnson, G. Parker, S. Dickens, J. Pfeiffer

10:40 **INOR 334.** Concerted reductive elimination of alkyls from uranium(IV) using a redox active α-dimine ligand. S.A. Johnson, S.C. Bart, P.E. Fanwick, J.J. Kiernicki

## Connectivity &amp; the Global Reach of Chemistry: Honoring the Life &amp; Scientific Contributions of Ernest L. Eliel

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### Polymeric Materials as Imaging Agents & Theranostics

#### Drug Delivery

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### GSSPC: From Bench-to-Bench & Beyond: Engaging People with High Impact Chemistry

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## TUESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 115B

#### Chemistry of Materials: Nanomaterials

C. G. Lugmair, R. M. Richards, B. G. Trewyn, Organizers

D. Carnevale, M. Shatruk, Presiding

**1:30 INOR 335.** Polycatenar ligand control of the synthesis and self-assembly of colloidal nanocrystals. D. Jishkariani, B. Diroll, M. Cargnello, C.B. Murray, B. Donnio

**1:50 INOR 336.** Elucidation of the nature of surface hydrides on silicon nanocrystals through NMR spectroscopy. M. Mobarok, J.G. Veinot

**2:10 INOR 337.** Surface-modified silicon nanoparticles with ultrabright and color-tunable fluorescence. Q. Li, R. Jin, M. Zhou, Z. Shao

**2:30 INOR 338.** Colloidal synthesis of white-light emitting ultrasmall organo-metal halide perovskite nanoclusters. M. Teunis, R. Sardar

**2:50 INOR 339.** Ultra-small  $\text{Ge}_{1-x}\text{Sn}_x$  quantum dots with orange-red photoluminescence. R.J. Esteves, S.A. Hafiz, D.O. Demchenko, U. Ozgur, I.U. Arachchige

**3:10 INOR 340.** Modifying magnetic properties in core@shell nanoparticles. D. Carnevale, M. Shatruk, G.F. Strouse

**3:30** Intermission.

**3:45 INOR 341.** Generalized mechanistic model for the chemical vapor deposition of 2D transition metal dichalcogenide monolayers. A. Govind Rajan, J.H. Warner, D. Blankschtein, M. Strano

**4:05 INOR 342.** Functionalisation of two-dimensional transition metal dichalcogenides: The reactions of metal acetates or organic thiols with  $\text{MoS}_2$ . A.R. McDonald

**4:25 INOR 343.** Core-shell FePt@Co nanomagnets exhibiting enhanced energy product. D. Carnevale, M. Shatruk, G.F. Strouse

**4:45 INOR 344.** Flame synthesis of  $\text{Mo}_{17}\text{O}_{47}$  nanowire-arrays. P. Allen, L. Cai, P.M. Rao

### Section B

Pennsylvania Convention Center  
Room 115C

#### Main Group Chemistry

T. W. Hudnall, Organizer

A. F. Cozzolino, Presiding

**1:30 INOR 345.** Anion binding with an electroneutral bidentate Sb(III) system. J. Qiu, A.F. Cozzolino

**1:50 INOR 346.** Novel stibonium cations ( $[\text{Sb}]^+$ ) for the catalytic transformation of aldehydes into symmetric ethers,  $\alpha$ - $\beta$  unsaturated aldehydes and 1,3,5-trioxanes. R.N. Arias, D. Devarajan, R.M. Mushinski, T.W. Hudnall

**2:10 INOR 347.** Addition of transition metal carbonyl and organic fragments to main group based anions. L.G. Perla, S.C. Sevov

**2:30 INOR 348.** Influence of Lewis acid strength on molecular properties of Lewis acid-base adducts. Z.M. Heiden, A.P. Lathem, J.L. Fernandez

**2:50 INOR 349.** Small molecule activation using an inverse frustrated Lewis pair approach. S. Mummadi, D. Unruh, C. Krempner

**3:10** Intermission.

**3:20 INOR 350.** Fluorescent frustrated Lewis pairs for sensing small molecules. Z.M. Heiden

**3:40 INOR 351.** Boron and phosphorus analogue of fluorene. P. Rupar

**4:00 INOR 352.** B-N containing polyaromatic hydrocarbons via electrophilic borylation. K. Liu, M. Yusuf, F. Jaekle

**4:20 INOR 353.** Nitrogen-rich complexes of p-block elements: Highly endothermic polytetrazolates and polyazides. P. Portius, B. Crozier, L. James, Z. Smallwood, R. Campbell

**4:40 INOR 354.**  $\text{CO}_2$  mediated oxygen atom transfer from peroxide dianion. S. Zhang, M.J. Nava, N. Lopez, D.G. Nocera, C.C. Cummins

### Section C

Pennsylvania Convention Center  
Room 116

#### Manipulation of Energy & Electron Transfer in Molecules & Devices

K. Hanson, J. T. Hupp, J. K. McCusker, G. J. Meyer, K. S. Schanze, G. F. Strouse, Organizers  
J. J. Paul, Presiding

**1:30 INOR 355.** Ultrafast spectroscopic studies of electronic- and vibrational-state evolution in Ru(II) charge-transfer complexes. J.K. McCusker

**2:00 INOR 356.** Photo-initiated energy transfer within metal-organic framework materials. J.T. Hupp, M.C. So, O.K. Farha, A. Peterson, S. Goswami

**2:30 INOR 357.** Quantum dot triplet sensitizers: A new frontier in photochemistry. C. Mongin, S. Garakyaraghi, F.N. Castellano

**3:00 INOR 358.** Metal nanoparticles and Energy Transfer: Radiative vs non-radiative enhancement effects on a plasmonic particle. G.F. Strouse

**3:30** Intermission.

**4:00 INOR 359.** Proton-coupled electron transfer processes underpinning the electrocatalytic generation of hydrogen. J.L. Dempsey, N. Elgrishi, B. McCarthy, E. Rountree

**4:30 INOR 360.** Ultrafast dynamics in molecular assemblies for solar energy conversion. J.M. Papanikolas

**5:00 INOR 361.** Nanofibrous photocatalysts modified by electron and hole injecting dyes for degradation of environmental toxins. W.E. Jones

### Section D

Pennsylvania Convention Center  
Room 117

#### Nanomaterials in Biology & Medicine

K. Sorasane, Organizer

J. Galan-Mascaros, Organizer, Presiding

**1:30 INOR 362.** Magnetic chemoradiotherapeutic holmium iron garnet nanoparticles for cancer treatment. J. Lin, I. Munawera, Y. Shi, A.J. Di Pasqua, K.J. Balkus

**1:55 INOR 363.** Enhancement of UV upconversion luminescence in lanthanide doped  $\text{NaYF}_4$  nanocrystals under near infrared excitation. C. Valdes, Y. Mao

**2:20 INOR 364.** Surface derivatization of zirconium phosphate nanoparticles for active targeting: Potential nanocarrier for doxorubicin anticancer drug. J. González, Y. Kan, V. Bakhmitov, A. Clearfield, J.L. Colon

**2:45 INOR 365.** Multimodal imaging-guided antitumor photothermal therapy and drug delivery using bismuth selenide nanomaterials. Z. Li, M. Yu, Y. Sun

**3:10** Intermission.

**3:20 INOR 366.** Exploring unconventional heat-triggered release from core-shell  $\text{Fe}_3\text{O}_4/\text{SiO}_2$  mesoporous silica nanoparticles. P. Saint-Cricq-Riviere, J.J. Zink

**3:45 INOR 367.** Synthesis of dipyrromethenes dyes and their use as chemical probes for metal ion imaging in biological systems. M. El Khatib, S. Vinogradov

**4:10** Panel Discussion.

**5:10** Concluding Remarks.

### Section E

Pennsylvania Convention Center  
Room 118A

#### Solid-State Inorganic Chemistry

C. G. Lugmair, V. Poltavets, Organizers

A. J. Norquist, B. Zoellner, Presiding

**1:30 INOR 368.** Defect-dopant interactions in lanthanide-doped group IIIA oxide nanocrystals: Controlling the dopant oxidation state and luminescence properties. V. Ghodsi, M. Hegde, P.V. Radovanovic

**1:50 INOR 369.** Dopant-defect correlations in transition metal doped titanium oxides. K.A. Lehuta, A. Haldar, S. Capo, J. Campbell, K.R. Kittilstved

**2:10 INOR 370.** Thermal stabilization of metal-organic framework-derived catalytic single sites through nanocasting. C. Malonzo, P. Ana, L. Gallington, L. Ren, S. Shaker, S. Prinslow, A. Thompson, J.D. Borycz, I. Kim, T. Wang, Z. Li, K.W. Chapman, J. Myers, A.B. Martinson, O.K. Farha, J.T. Hupp, C. Lu, L. Gagliardi, R. Penn, M. Tsapatsis, A. Stein

**2:30 INOR 371.** Controlling the reduction of dopants in inorganic materials. R. Gautier, G. Behrh, H. Barroux, H. Serier-Brault, S. Jobic

**2:50 INOR 372.** Magnetic semiconductor solid solutions:  $\text{EuS}(1-x)\text{Se}(x)$  and  $\text{Eu}(1-x)\text{Sm}(x)\text{Se}$ . H.A. Dalafu, S.L. Stoll

**3:10 INOR 373.** Polar compounds with desirable properties: Identifying new examples of functional materials. J.W. Bennett, B. Monserrat, K. Garrity, K.M. Rabe, D. Vanderbilt

**3:30 INOR 374.** Complex metal nitrides grown from Ca/Li flux. M. Dickman, S.E. Lattner

**3:50 INOR 375.** Small bandgap p-type semiconductors for solar driven reactions. B. Zoellner, P.P. Sahoo, P.A. Maggard

**4:10 INOR 376.**  $\text{Cu}_4\text{TiSe}_4$ : A new material for potential solar and thermoelectric applications. E. Chen, L. Williams, E. Kloupakis, P.F. Poudeu, P. Poudeu

**4:30 INOR 377.** Understanding and optimizing exploratory hydrothermal reactions. A.J. Norquist

**4:50 INOR 378.** Tunable optical properties via a solid-solution for persistent luminescent applications. E. Finley, A. Cobb, A. Duke, J. Brgoch

**5:10 INOR 379.** Oxidative mechanochemical processing of noble metals: Solvent-free preparation of salts and coordination complexes from elemental palladium and gold. L. Do, T. Frisic

### Section F

Pennsylvania Convention Center  
Room 118B

#### Secondary Coordination Sphere Influences: Stability, Reactivity & Everything in Between

A. R. Fout, C. Scarborough, N. K. Szymczak, Organizers, Presiding

**1:30 INOR 380.** Mechanistic insights into catalytic nitrite reduction utilizing Fe(II) complexes supported by a tripodal ligand platform featuring a secondary coordination sphere. Y. Park, A. Fout

**1:50 INOR 381.** Building charge in the secondary coordination sphere. S. McCollom, P. Carroll, N.C. Tomson

**2:20 INOR 382.** High valent metal oxo and nitrene cores in chemistry and biology. K. Ray

**2:50** Intermission.

**3:00 INOR 383.** Tuning the reactivity of  $\text{Re}^{\text{V}}(\text{O})$  and  $\text{Mn}^{\text{V}}(\text{O})$  complexes by Lewis acids in the second coordination sphere. J. Zaragoza, M. Siegler, D.P. Goldberg

**3:20 INOR 384.** Second coordination sphere influence the mode of action of metal-based drugs and their efficacy. K.A. Doucette, K.N. Hassell, D.C. Crans

**3:50 INOR 385.**  $\text{CO}_2$  Hydrogenation and formic acid dehydrogenation using Ir(III) complexes with NHC-pyridinol chelates. S. Siek, D. Burks, D.L. Gerlach, J.M. Tesh, C.R. Thompson, R. Vasquez, N. Chambers, D.B. Grotjahn, E.T. Papish

**4:10 INOR 386.** Exploring the role of pendant amines in metal complexes for  $\text{N}_2$  reduction and  $\text{NH}_3$  oxidation. M. Mock, E.S. Wiedner, P. Bhattacharya, D. Prokopchuk

**4:40** Concluding Remarks.

### Section G

Pennsylvania Convention Center  
Room 118C

#### Organometallic Chemistry: New Ligand Platforms

N. S. Radu, Organizer

C. A. Bradley, Presiding

**1:30 INOR 387.** 2-aminosubstituted indenyl ligands as versatile supports for transition metals. C.A. Bradley

**1:50 INOR 388.** Withdrawn.



**2:10 INOR 389.** Trans-spanning ligands for unprecedented macrocycle cavity size, applied to water oxidation catalysis. D.B. Grotjahn, J.M. Kamdar, D.C. Marelius, A.L. Rheingold, C.E. Moore, D.K. Smith

**2:30 INOR 390.** Influence of the metal geometry on the reactivity of palladium carbene complexes. B. Barrett, V.M. Iluc

**2:50 INOR 391.** Dihydrogen activation by late transition metal PNP pyrrole-based pincer complexes. J.A. Kessler, V.M. Iluc

**3:10 INOR 392.** Amido- and aryl-centered pincer complexes of rhenium. O. Ozerov, A.J. Kosanovich, J.H. Reibenspies

### GSPPC: From Bench-to-Bench & Beyond: Engaging People with High Impact Chemistry

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## TUESDAY EVENING

### Section A

Pennsylvania Convention Center  
Hall D

### Bioinorganic Chemistry: Proteins & Enzymes & Model Systems

S. A. Koch, *Organizer*

5:30 - 7:30

**INOR 393.** Methane monooxygenase model using a naphthyridine based ligand to access multiple copper oxidation states and reactive copper-oxygen cores. N.L. Gagnon, J. Sachs, W.B. Tolman

**INOR 394.** Synthesis and investigation of novel hydroquinone ring-cleaving dioxygenase model complexes. N. Porter, T.E. Machonkin, P.L. Holland

**INOR 395.** Gold phosphine coordinated thiolates: Synthesis, characterization and biological activity of eplauranofin the c-1 anomer of the antiarthritic agent, auranofin. C. Shaw, D.T. Hill, P.J. Sadler

**INOR 396.** Inter-peptidic Cu(II) exchange in GHK, GHW, DAHK, and DAHW peptides: Exploring how metal coordination differences affect metal exchange rates between two peptides of similar binding affinity. C. Beuning, C. Hureau, D.C. Crans

**INOR 397.** Investigating the role of the pterin dithiolene ligand in the molybdenum cofactor. S.J. Nieter Burgmayer, D.R. Gisewhite, B.R. Williams, S. Zhu

**INOR 398.** Withdrawn.

**INOR 399.** Investigation of pyran cyclization dynamics in synthetic molybdenum cofactor models. A. Nagelski, D. Gisewhite, S.J. Nieter Burgmayer

**INOR 400.** Long-range, multiple-site concerted proton electron transfer in metallopeptide constructs. B. Koronkiewicz, J.M. Mayer

**INOR 401.** Synthesis, characterization and redox behavior of metalloporphyrazines. H. Gao, J.T. Groves

**INOR 402.** Understanding short, strong hydrogen bonds between anions in non-aqueous solvents. N.H. Rhys, S. Cantalupo, J. Turner, L. Doerrer, S.E. McLain

**INOR 403.** Oxygen atom transfer mediated by molybdenum oxo complexes and Lewis acid. L. Elrod, E. Kim

**INOR 404.** Programmable inorganic scaffolds based on sponge biomimicry for 3D marine, mammalian cell culture and bioelectronics. K. Punia, M. Bucaro, A. Mancuso, C. Cuttitta, A. Marsillo, W. L'amoreaux, K.S. Raja

**INOR 405.** Withdrawn.

**INOR 406.** Designing and characterizing metallocoporphyrins for catalytic oxidation. T.M. Keller, M. Zdzilla, C.E. Schafmeister

**INOR 407.** Improving the efficiency of nicastransferrin expression. A. Gallo, A. Valentine

**INOR 408.** Redox-triggered Fe(III)/Fe(II) and Co(III)/Co(II) spin state switches for MRI applications. P.B. Tsitovich, J.R. Morrow

**INOR 409.** Spectroscopic and computational investigation of mammalian thiol dioxygenases. S.L. Dillon, B.G. Fox, T.C. Brunold

**INOR 410.** Molecular insights into the biosynthesis of co-enzyme B12 and cysteine oxidation by model complexes of cysteine dioxygenase. N. Stracey, J.C. Escalante, F. Costa, A.T. Fiedler, A. Fisher, T.C. Brunold

**INOR 411.** Heterobimetallic, thiolate bridged complexes inspired by acetyl-Co-A synthase active sites. X. Meng, L. Xufeng, P. Ghosh, M.Y. Darensbourg

### Section B

Pennsylvania Convention Center  
Hall D

### Coordination Chemistry: Characterization & Applications

S. A. Koch, *Organizer*

5:30 - 7:30

**INOR 412.** Synthesis, characterization, biological investigations and transition metals coordination of alpha pyridoin-benzylhydrazide derivatives. D.A. Alwaheeb

**INOR 413.** Electronic properties of ruthenium and iridium complexes of curcuminoid dyes. T. Nanchung, G.E. Gilligan, R.T. Weber, J.J. Rochford

**INOR 414.** Synthesis, characterization and photocatalysis of palladium (II)-BODIPY complexes for Sonogashira coupling. B.J. Krzesinski, P.O. Ebukuyo, H. He

**INOR 415.** Synthesis, photo physical studies, and effect of unwanted regeneration on the performance of Ru(II) complexes as sensitizers for solar cells. P.A. Ajibade

**INOR 416.** Transition metal complexes as paraCEST and para-SHIFT agents. C.J. Bond, J.M. Cox, J.B. Benedict, J.R. Morrow

**INOR 417.** Speciation of model titanium enterobactin complex utilizing spectrophotometric titrations. C.J. Herbst-Gervasoni, A. Valentine

**INOR 418.** Influences of trifluoromethyl ligands on transition metal electronic structure and their implications for metal-mediated trifluoromethylation. J.T. Lukens, K.M. Lancaster

**INOR 419.** Synthesis, characterization, and magnetic properties of copper (II) 2-((1H-benzimidazol-2-yl)methylamino)acetic acid polymeric complex. C. Venkata Ramana Reddy

**INOR 420.** Squaramide metal-organic frameworks as catalysts. X. Zhang, Z. Zhang, J.A. Boissonnault, S. Cohen

**INOR 421.** Correlation of ligand rigidity to thermodynamic stabilities and <sup>1</sup>H/<sup>17</sup>O relaxivity using solution structural properties and dynamics of Mn(II) open-chain complexes. A. Lee, A. Hallilovic, T.D. Westmoreland

**INOR 422.** Investigation of ion pairing effects on NMR measurements of rotation barriers in cationic chromium(VI) phosphine complexes. K. Aldrich, B. Billow, A.L. Odum

**INOR 423.** Heavy-atom-free naphthalenediimide singlet oxygen photosensitizer and naphthalenediimide-incorporated metal-organic framework for the efficient photo-oxidation of amines and sulfides. L. Zeng, C. Duan

**INOR 424.** Anion effects in oxidative aliphatic carbon-carbon bond cleavage reactions of Cu(II) chlorodiketionate complexes. L.M. Berreau, S. Saraf, A. Milaczewska, T. Borowski, C. James, D.L. Tierney, M. Popova, A. Arif

**INOR 425.** Solvent cage effects: Developing practical methods of predicting the solvent cage recombination efficiency. J. Barry

**INOR 426.** Luminescent rare earth metal complexes coordinating with neutral oxygen ligands. P.K. Yuen, C. Lau

**INOR 427.** Octahedral Cu<sub>4</sub>L<sub>4</sub> clusters with zwitterionic ligands: Trace water leads to changes in luminescence. Y. Yu, X. Huang

**INOR 428.** Functionalized metallo-fluorine-porphyrins: Synthesis, spectroscopy, and electrochemical determinations. T. Chavez-Gil, C.R. Madufor

**INOR 429.** Synthesis, electrochemistry, and spectroscopic studies of metallo-fluorene-porphyrins as dye-photosensitizer building blocks. T. Chavez-Gil, C.I. Goede

**INOR 430.** Schiff bases of benzoyl/diamide-salem with axial N-Boc-pyridine moieties and their Cu(II), V(IV) complexes: Synthesis, characterization, crystal structure and activity. T. Chavez-Gil, J.W. Merritt

**INOR 431.** Copper-hydroxo chelates of clofibrac acid (CA). Reaction of Cu<sup>2+</sup> with CA. Y.Z. Hamada

### Section C

Pennsylvania Convention Center  
Hall D

### Lanthanide & Actinide Chemistry

A. De Bettencourt Dias, *Organizer*

5:30 - 7:30

**INOR 432.** Photosensitization of molecular cerium(III) compounds. Y. Qiao, H. Yin, B. Manor, P. Carroll, E.J. Scheller

**INOR 433.** Understanding the electronic structure of heavy elements using EPR spectroscopy. J.A. Stull, B. Stein, E. Hayes, A. Tondreau, S.A. Kozimor, S. Stoll

**INOR 434.** Effects of crystal structure details on the luminescence efficiency of some europium and terbium tris(pyrazolyl)borate complexes. A.W. Addison, E.A. Mikhalyova, V.V. Pavlishchuk, M. Zeller, A.V. Kandel, S.S. Smola, V.P. Dotsenko

**INOR 435.** Actinide-chloride complexes isolated from acidic aqueous solution. J.N. Wacker, K. Knope

**INOR 436.** Synthesis, characterization and photophysical studies of DOTA-Yb complexes of BODIPY-based ligands. R.W. Arachchi, P.P. Senevirathne, A.W. Stewart, H. He

**INOR 437.** Conjugated BODIPY/phenanthroline ligands for sensitized NIR emission of ytterbium (III). P.P. Senevirathne, A.A. Kukoyi, H. He

**INOR 438.** Investigation of task specific ionic liquids (TSILs) for lanthanides and actinides separation. H. Luo

**INOR 439.** PCET reactivity of Sml<sub>2</sub>(H<sub>2</sub>O)<sub>x</sub> with electron rich substrates. S. Kolmar, B. Beekley, J.M. Mayer

**INOR 440.** Fluorinated Eu(III)-containing complexes with applications in redox sensing. L.A. Basal, J. Romero, M.D. Bailey, R.G. Pautler, M.J. Allen

**INOR 441.** Probing the electrochemical behavior of rare-earth and actinide dipicolinic acid complexes and derivatives. M.L. Marsh

**INOR 442.** Crystallization growth of (LaCeTb)PO<sub>4</sub> and the morphology controlled preparation of phosphor particles for improved luminescence property. W. Zhu, X. Zhou, H. Pei, W. Zhu, Y. Li

**INOR 443.** Withdrawn.

**INOR 444.** Synthesis and reactivity of cerium<sup>IV</sup> tris(tert-butoxy)siloxide complexes. J. Friedrich, C. Maichle-Mössmer, R. Anwander

**INOR 445.** Rare Earth separations: Investigation and modification of the TrINOx ligand system. B.E. Cole, B. Manor, P. Carroll, E.J. Schelter

### Section D

Pennsylvania Convention Center  
Hall D

### Manipulation of Energy & Electron Transfer in Molecules & Devices

K. Hanson, J. T. Hupp, J. K. McCusker, G. J. Meyer, K. S. Schanze, G. F. Strouse, *Organizers*

5:30 - 7:30

**INOR 446.** Electrocatalytic reduction of CO<sub>2</sub> by Ru-based molecular catalyst in aqueous solution. Y. Wang, C. Dares, S.L. Marquard, T.J. Meyer

**INOR 447.** Spectroelectrochemical studies of ruthenium complexes containing the pH-dependent ligand 4,4'-dihydroxy-2,2'-bipyridine. E. Peterson, M.H. Roeder, N.A. Piro, W.S. Kassel, T. Dudley, J.J. Paul

**INOR 448.** Acrylate functionalized ligands for electropolymerization of transition metal complexes. S.L. Shepherd, D.P. Harrison

**INOR 449.** Square wave voltammetric identification of adsorbed phosphonated Ru(III) poly-pyridyl decomposition products. J. Hyde, D.P. Harrison

**INOR 450.** Photo-electrocatalytic hydrogen production by soluble molybdenum sulfide complexes. P.R. Fontenot, B. Shan, A. Greene, B. Wang, S. Simpson, J.T. Mague, J.P. Donahue, R.H. Schmehl

**INOR 451.** Water oxidation by ruthenium complexes incorporating multifunctional bipyridyl diphosphonate ligands. Y. Xie, D.W. Shaffer, A. Lewandowska-Andralojc, D.J. Szalda, J.J. Concepcion

**INOR 452.** Molecular assemblies based on porphyrin chromophores and Ru(II) polypyridyl catalysts for light-driven H<sub>2</sub>O oxidation. A. Nayak, S. Roy, B.D. Sherman, A. Lapidés, K. Hu, M. Brennaman, R.R. Knauf, L. Alibabaei, S. Marquard, T.J. Meyer

**INOR 453.** Implications of hydrophobic interactions for dye-sensitized photoelectrosynthetic cells (DSPEC). M. Eberhart, K. Wee, T.J. Meyer

**INOR 454.** Mechanism of O-O bond formation in photoelectrochemical water oxidation on hematite photoanode. W. Song, Y. Zhang, A. Liu, C. Chen, J. Zhao

**INOR 455.** Mechanistic considerations in water oxidation catalysis by ruthenium bipyridine-dicarboxylate and ruthenium bipyridine-phosphonate-carboxylate complexes. D.W. Shaffer, J.J. Concepcion

**INOR 456.** Photoanode assemblies based on Ru(bda) catalysts for water splitting. M.V. Sheridan, B. Sherman, T.J. Meyer

**INOR 457.** Metal phosphonate nanocages for electrocatalytic water oxidation. A. Paul

**INOR 458.** Photochemical hydrogen generation using Pt(II) bis-pyridyl benzene complexes that serve as chromophore and catalyst. A.D. Kulkarni, R.H. Schmehl

**INOR 459.** Doing without oil: Assessing the energy challenge using simple calculations for biomass-derived aviation fuel. N. Winterton

**INOR 460.** Reduction of the ruthenium containing anticancer agent KP1019 using glutathione and serotonin. L.K. Stultz, A. Rebic, H.R. Day

**INOR 461.** Evaluation of paint malodor. J.N. Younathan

**INOR 462.** Thin films at Eastman chemical company. D.L. Ashford

**INOR 463.** Dye molecule-anchored platinum nanoparticles. I. Weiss, P. Catsoulis, B. Yang, E. Galoppini, A.G. Agrios

**INOR 464.** Thin blocking layer deposited by ALD to enhance the dye-sensitive photoelectrochemical water oxidation performance. D. Wang, B. Farnum, T.J. Meyer

**INOR 465.** Cobalt oxide inverse opal nanostructures as cathode in Li-O<sub>2</sub> battery. S. Cho, Y. Jang, D. Kim

**INOR 466.** Dipole effects at chromophore/metal oxide semiconductor interfaces. H. Fan, S. Rangan, R.A. Bartynski, E. Galoppini

**INOR 467.** Long-lived charge separation states on dye-sensitized p-type semiconducting oxides with layer-by-layer assemblies. B. Shan, B.H. Farnum, T.J. Meyer

**INOR 468.** Photoinduced reductive quenching and hydrogen release from carbonyl polypyridyl osmium (II) complexes investigated by time-resolved visible and infrared spectroscopy. R.E. Adams, T.A. Grusenmeyer, R.H. Schmehl

**INOR 469.** Proton coupled electron transfer reactions of mono and diamino bis(bipyridine) ruthenium complexes. B.C. Pemberton, R.H. Schmehl

**INOR 470.** Photophysical properties of bimetallic and trimetallic Cyanide-bridged Ru(II) polypyridines. Evidence of delocalization in the excited state. P.S. Oviedo, A. Cadranell, J.H. Hodak, L. Baraldo

**INOR 471.** Ultrafast solvent reorientation response to large amplitude motion in charge transfer-based Ru(II) excited state. M. Carey, J.K. McCusker

## Section E

Pennsylvania Convention Center  
Hall D

### Organometallic Chemistry: Applications to Materials & Polymer Science

N. S. Radu, *Organizer*

5:30 - 7:30

**INOR 472.** PolyMOFs: Exploring polymer size effects and accessibility of metal-organic frameworks. S. Ayala, Z. Zhang, H. Nguyen, S.A. Miller, S. Cohen

**INOR 473.** Polyketones for hole transports materials. E. Samples

**INOR 474.** Development of iron(II) catalysts for atom transfer radical polymerization. S.E. Jenny, M.R. Donley, L.M. Thierer, L.M. Round, N.A. Piro, W.S. Kassel, D.L. Zubris

**INOR 475.** Salen-Mn(V) catalyzed synthesis of poly(silyl ether)s from diols, dicarbonyls and hydrosilanes. S. Vijayaraj, V.K. Chidara, G. Du

**INOR 476.** Ring opening copolymerization of cyclic anhydrides and epoxides catalyzed by amido-oxazolinato zinc complexes. V.K. Chidara, S. Abbina, M. Shaik, G. Du

## Section F

Pennsylvania Convention Center  
Hall D

### Organometallic Chemistry: New Ligand Platforms

N. S. Radu, *Organizer*

5:30 - 7:30

**INOR 477.** Transition metal complexes of a new phosphine ligand featured with metal-ligand cooperativities. L. Alhthlo, E. Nwangwa, K. Ding

**INOR 478.** First-row metal complexes of the chelating guanidine ligand 2,6-bis(1,4,6-triazabicyclooctenyl)pyridine. N.A. Piro, L. Wilkinson, W.S. Kassel

**INOR 479.** Synthesis of N<sub>2</sub>S<sub>2</sub> ligands and their coordination chemistry. V. Mdluli, P.J. Hubbard, D.R. Manke

**INOR 480.** Utility of 2-hydroxypyridine within terpyridines as a secondary coordination sphere design element. J.P. Shanahan, C.M. Moore, N.K. Szymczak

## Section G

Pennsylvania Convention Center  
Hall D

### Solid-State Inorganic Chemistry

C. G. Lugmair, V. Poltavets, *Organizers*

5:30 - 7:30

**INOR 481.** Doping effect of europium on luminescence properties of magnesium borate. A. Morkan, E. Gül

**INOR 482.** Covalent metal-organic networks (CMONs) generated through protecting group based syntheses. M. Roy, A.L. Lonardo, D.R. Manke

**INOR 483.** Synthesis and band gap determination of nano nickel borate material co-doped with terbium and manganese. A. Morkan, E. Gül, I. Morkan

**INOR 484.** Determination of the oxygen non-stoichiometry of the oxygen storage materials LnBaMn<sub>2</sub>O<sub>5±δ</sub> (Ln = Y, Gd, Pr). K. Jeamjumnunja, W. Gong, T. Makarenko, A.J. Jacobson

**INOR 485.** Settling a scientific debate by investigating the structure-property relationships of disordered Aurivillius phases. E.K. Qian, W. Surta, M. Dolgos

**INOR 486.** Probing structural adaptability in templated vanadium selenites. R. Xu, A.J. Norquist

## WEDNESDAY MORNING

### Section A

Pennsylvania Convention Center  
Room 115B

#### Bioinorganic Chemistry: Proteins & Enzymes & Model Systems

S. A. Koch, *Organizer*

G. Ulas, *Presiding*

**8:30 INOR 487.** Geometrical and electronic properties of the manganese(IV)/iron(III) cofactor of Chlamydia trachomatis ribonucleotide reductase unveiled by a combination of EXAFS and XANES spectra simulations, and molecular orbital calculations. E.M. Sproviero

**8:50 INOR 488.** De novo designed metalloproteins as models of radical enzymes. G. Ulas, T. Lemmin, Y. Wu, G.T. Gassner, W.F. Degradó

**9:10 INOR 489.** Design and synthesis of single-chain nanoparticles functionalized with a diiron cluster: A completely synthetic [FeFe] hydrogenase. C.A. Tooley, E.B. Berda, S. Pazicni

**9:30 INOR 490.** Tunable metalloproteins by manipulating metal ligand frameworks. C. Hsieh, C. Chen, B. Su, J. Carey

**9:50 INOR 491.** Crystallographic examination of thiolate-rich sites designed to control heavy metal geometries in de novo metalloproteins. L. Ruckthong, J. Stuckey, V.L. Pecoraro

10:10 Intermision.

**10:20 INOR 492.** Advances in the preparation of redox active NiFe complexes based on NiN<sub>2</sub>S<sub>2</sub>-Fe(NO)<sub>2</sub> as synthetic analogues of [NiFe]-hydrogenase enzyme active site. P. Ghosh, R.B. Chupik, C. Hsieh, N. Bhuvanesh, M.Y. Darensbourg

10:40 INOR 493. Withdrawn.

**11:00 INOR 494.** Probing biomolecular copper(I) coordination equilibria from the picomolar to zeptomolar range. M. Morgan, A.H. Nguyen, A.M. McCallum, D. Bourassa, P. Bagchi, H.L. Hancock, J. Bacsa, C.J. Fahrni

**11:20 INOR 495.** Synthetically accessible tetrapyrrole metal complexes as efficient photosensitizers of singlet oxygen. A.M. Potocny, J. Rosenthal

11:40 INOR 496. Withdrawn.

### Section B

Pennsylvania Convention Center  
Room 115C

#### Coordination Chemistry: Synthesis & Characterization

S. A. Koch, *Organizer*

T. R. Cook, W. S. Kassel, *Presiding*

**8:30 INOR 497.** Synthesis, characterization, and reactivity of Cl-Nb(PrNPPPh)<sub>3</sub>M-Br complexes (M = Fe, Co, Cu). G. Culcu, C.M. Thomas

**8:50 INOR 498.** Heterobimetallic gold(II) complexes of substituted trispyridylphosphines. How substituents and choice of metal ion affect the physical properties of the metal-ligand complexes. A.K. Frampton, N.A. Piro, W.S. Kassel

**9:10 INOR 499.** Quasi-1D chains with metal-philic interactions. J. Guillet, A.S. Hyre, I. Bhowmick, M.P. Shores, L. Doerfer

**9:30 INOR 500.** Coordination-driven self-assembly of photophysically active donor and acceptor building blocks into emissive metallacycles and cages. T.R. Cook, Y. Zhang, C.E. Hauke

**9:50 INOR 501.** Synthesis, characterization, and reactivity of trinuclear O/S single-atom adducts. J. Teesdale, T. Betley

**10:10 INOR 502.** Synthesis and reactivity of a Lewis acid supported nickel complex. C. Juda, T. Betley

10:30 Intermision.

**10:40 INOR 503.** Synthesis and thermodynamic characterization of alternative complexants for trivalent actinide/lanthanide differentiation. C. Heathman, T.S. Grimes, P.R. Zalupski

**11:00 INOR 504.** Synthesis of diverse azole-containing chelating agents. M. Nozari, A.W. Addison, M. Zeller, G. Reeves, L.M. Wolf, L.E. Crist, K.R. Hess

**11:20 INOR 505.** Synthesis and reactivity of chromium-containing trinuclear complexes, Cr<sub>3</sub>M (M=Cr, Ni). A.K. Bartholomew, T. Betley

**11:40 INOR 506.** Affinity-tuned Zn(II)-selective emission-ratiometric fluorescent probes for two-photon excitation microscopy. A.M. McCallum, D. Bourassa, M. Morgan, S. Sumalekshmy, C.J. Fahrni

**12:00 INOR 507.** Understanding phosphine-metal interactions in high valent systems using ligand donor parameters (LDPs). K. Aldrich, B. Billow, A.L. Odum

### Section C

Pennsylvania Convention Center  
Room 116

#### Electrochemistry

B. L. Lucht, *Organizer*

J. Rosenthal, *Presiding*

**8:30 INOR 508.** CO<sub>2</sub> reduction using a 3D printed flow electrolysis assembly. S.M. Velardo, J. Rosenthal

**8:50 INOR 509.** Improving the photostability of cyanide-bridged dimanganese complexes for electrocatalytic reduction of carbon dioxide. H. Kuo, T.W. Shaw, A.B. Bocarsly

**9:10 INOR 510.** Fine tuning electron transport phenomena through surface modification of electrodes. R.C. Pupillo, J. Rosenthal, D.A. Watson, A. Gieter

**9:30 INOR 511.** Electron tunneling through metal oxides on Si(111) photocathodes: Trap states, density of states, and states of confusion. R. Pekarek, K. Kearney, A. Rockett, M.J. Rose

**9:50** Intermission.

**10:00 INOR 512.** Onset of cathodic silence in an anodic oxide film on gold. R.P. Giron, G.S. Ferguson

**10:20 INOR 513.** Bi-molecular electron or energy transfer between Ru(bpy)<sub>3</sub> and ferrocene derivatives. E.R. Young, N. Pascual-Leone, C. Drolen, E. Conklin

**10:40 INOR 514.** Photoswitchable ligand with metal-coordinated species for light harvesting. A. Rajput, A.F. Cozzolino

**11:00 INOR 515.** Novel diffusimeter for high rate liquid diffusion, novel diffusion law, brilliant mass transfer, heat transfer, and for simulating oceanographic double diffusive convection. A. Khair, N.K. Dey, M.H. Rashid, S. Mahmud, M.S. Alam, M.Z. Sultan

## Section D

Pennsylvania Convention Center  
Room 117

### Manipulation of Energy & Electron Transfer in Molecules & Devices

K. Hanson, J. T. Hupp, J. K. McCusker, G. J. Meyer, K. S. Schanze, G. F. Strouse, *Organizers*  
C. Fecenko Murphy, *Presiding*

**8:30 INOR 516.** Operando methods for the characterization of energy materials. H.D. Abruna

**9:00 INOR 517.** Graphene molecules: Synthesis, electronic properties and applications. Z. Ji, M. Sykora

**9:30 INOR 518.** Role of the ligand on the properties of polypyridinic transition metal complexes: From fundamental studies to potentiality in devices. B.L. Loeb

**10:00** Intermission.

**10:30 INOR 519.** Elucidation of oxidative instability of adsorbed, phosphonate-derivatized Ru(III) polypyridyl complexes on metal oxide electrode. D.P. Harrison, J. Hyde, K. Hanson, A.K. Vannucci, A. Lapides, L. Alibabaei, M. Norris, T.J. Meyer

**11:00 INOR 520.** Molecular water oxidation catalysts mile stones. A.D. Llobet

**11:30 INOR 521.** Robust molecular iron catalysts for water oxidation. J.W. Jurs, L. Chen, H.A. Dulaney

## Section E

Pennsylvania Convention Center  
Room 118A

### Environmental & Energy-Related Inorganic Chemistry

S. A. Koch, *Organizer*

A. T. Farfaran, S. W. Sheehan, *Presiding*

**8:30 INOR 522.** Bonding and function of nickel-phosphine H<sub>2</sub> catalysts to silicon(111) photoelectrodes: C-C Covalent attachment and metal-oxide/phosphonate adsorption. H. Kim, J. Seo, R. Pekarek, M.J. Rose

**8:50 INOR 523.** Self-exchange charge transport for solar energy conversion. T.C. Motley, B.N. DiMarco, G.J. Meyer

**9:10 INOR 524.** Catalytic dehydrogenation of formic acid catalyzed by some Ir catalysts at mild temperature less than 100 °C under high pressure. H. Kawanami, M. Iguchi, Y. Himeda

**9:30 INOR 525.** Systematic modification of layered manganese-oxide complexes for cheap and efficient water-oxidation catalysis. I. McKendry, A.C. Thenuwara, S. Shumlas, H. Peng, R. Remsing, D.R. Strongin, M. Zdilla

**9:50 INOR 526.** Tuning metal oxide supports for water-splitting dye-sensitized photoelectrochemical cells. J. Swierk, C.A. Schmuttenmaer

**10:10 INOR 527.** Fabrication of copper indium selenide thin films by electrophoretic deposition of nanocrystals under flow. A.D. Dillon, L. Le Quoc, B. Opanant, S. Dastidar, S. Mengel, J.B. Baxter, A.T. Farfaran

**10:30** Intermission.

**10:40 INOR 528.** Fabrication and characterization of mesoporous films of CuSb<sub>2</sub>S<sub>2</sub> nanoplates for solar cell applications. M.E. Edley, J.T. Conley, J.B. Baxter

**11:00 INOR 529.** Why catalysts activate H<sub>2</sub>: Aqueous metal hydride bond strengths in the ground and excited states. C.L. Pitman, K.R. Brereton, A.J. Miller

**11:20 INOR 530.** Enzymatic nitrous oxide production by cytochrome P460 from the ammonia oxidizing bacterium *Nitrosomonas europaea*. A.C. Vilbert, J.D. Caranto, K.M. Lancaster

**11:40 INOR 531.** Exploring non-innocent ligand oxidation of polypyridyl ruthenium complexes. B.C. Pemberton, R.H. Schmehl

**12:00 INOR 532.** Generation of renewable fuel using catalytic wastewater electrolysis. S.W. Sheehan, S.M. Ricci, J.M. Vaillancourt, C.W. Wohler

**12:20 INOR 533.** Panchromatic photo-reductants and photo-oxidants that manifest excitation-wavelength dependent photo-induced electron transfer or hole transfer dynamics. T. Jiang, N. Polizzi, J. Rawson, O. Jean-Hubert, M.J. Therien

## Section F

Pennsylvania Convention Center  
Room 118B

### Inorganic Spectroscopy

S. A. Koch, V. C. Popescu, *Organizers*

M. A. Omary, J. Vura-Weis, *Presiding*

**8:30 INOR 534.** Photophysics and structure-property relationships of iridium complexes containing beta-diketonate ligands with reverse saturable absorption (RSA) properties. R.M. O'Donnell, W.M. Shensky, M.J. Ferry, P. Zavalij, J. Shi

**8:50 INOR 535.** Exploring metal ligand covalency with core spectroscopies: Rationalizing reactivity (or lack thereof) in [Cu(CF<sub>3</sub>)<sub>4</sub>]<sup>-</sup> and in [Cu(R<sub>2</sub>NO)X<sub>2</sub>]<sup>-</sup>. R.C. Walroth, K.M. Lancaster

**9:10 INOR 536.** Spectroscopic evidence for cation induced excited state reorientation in neutral ruthenium polypyridyl sensitizers. E.E. Beauvilliers, G.J. Meyer

**9:30 INOR 537.** Time-resolved infrared spectroscopy of ruthenium(II) complexes with diimine quinone ligands. T.J. Whittemore, T.A. White, C. Turro

**9:50 INOR 538.** Shrinking the synchrotron: Tabletop M-edge XANES of coordination complexes. J. Vura-Weis, K. Zhang, M. Lin, E.S. Ryland, M.A. Verkamp, K. Benke, F.M. de Groot, G.S. Girolami

**10:10** Intermission.

**10:20 INOR 539.** Giant spin-orbit splitting in Au(I)-phosphine complexes. M.A. Omary, B.M. Otten, P.S. Bagus

**10:40 INOR 540.** Photorefractive in thin and thick photochromic hybrid materials. M.Y. Livshits, J. Rack

**11:00 INOR 541.** Redox in the Co<sub>2</sub>O<sub>4</sub> topology: Electronic structure contributions to the formation of high-valent states relevant to the oxygen evolution reaction. R.G. Hadt, D.K. Hayes, C. Brodsky, A.M. Ullman, D.M. Casa, M.H. Upton, D.G. Nocera, L.X. Chen

**11:20 INOR 542.** Solvent dynamics and reactions: Ultrafast infrared spectroscopy of Vaska's complex and its adducts. B. Jones, A.M. Massari

**11:40 INOR 543.** Enhancing C-H amination reactivity of high-spin iron complexes via nitrogen atom redox. M.J. Widing

## Section G

Pennsylvania Convention Center  
Room 118C

### Organometallic Chemistry: Catalysis

N. S. Radu, *Organizer*

L. Jia, O. Ozerov, *Presiding*

**8:30 INOR 544.** Borylation reactions catalyzed by iridium pincer complexes. O. Ozerov, W. Shih, L. Press, C. Lee, B.J. Foley, J. Zhou

**8:50 INOR 545.** Synthesis and reactivity of pyridine-based-PNP pincer osmium complexes. N. Lease, E.M. Pelczar, A.S. Goldman

**9:10 INOR 546.** Enantioselective H-D exchange of  $\alpha$ -chiral amines by Ru-[NNN] pincer complexes. L.V. Hale, N.K. Szymczak

**9:30 INOR 547.** Catalytic borylation of methane using late-transition metal complexes. K.T. Smith, S. Berritt, M. Gonzalez Moreira, S. Ahn, M.R. Smith, M. Baik, D.J. Mindiola

**9:50 INOR 548.** Phosphinines and phosphabarrelenes: A comparison study. M. Rigo, C. Mueller

**10:10 INOR 549.** Tail-to-tail dimerization of styrene via dehydrogenative coupling of styrene C-H bonds by a pincer iridium complex. B. Li, T. Zhou, T.J. Emge, A. Alape Seetharam, F.E. Celik, K. Krogh-Jespersen, A.S. Goldman

**10:30** Intermission.

**10:35 INOR 550.** Zwitterionic nickel(II) catalysts for CO-alkene alternating copolymerization. L. Jia

**10:55 INOR 551.** Thermally controlled iridium-catalyzed transfer hydrogenations. Z.M. Heiden, N.R. Treich

**11:15 INOR 552.** C-C bond formation in the isomerization of norbornene co-catalyzed by (phebox)Ir(OAc)(H) and Na<sup>+</sup> cation. A combined experimental and computational study. Y. Gao, C. Guan, K. Krogh-Jespersen, A.S. Goldman

**11:35 INOR 553.** One-pot Pd-catalyzed synthesis of aromatic sulfonyl fluorides. N.D. Ball, I. Rodriguez, A. Tribby, S. Sharifuddin

**11:55 INOR 554.** Some new perspectives on the efficient outer sphere hydrogenation of ketonic substrates. J.C. Gordon, P. Dub, B. Scott

## WEDNESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Room 115B

### Chemistry of Materials: Materials for Energy & Catalytic Applications

C. G. Lugmair, *Organizer*

A. J. Morris, Y. N. Regmi, *Presiding*

**1:30 INOR 555.** Probing the charge storage mechanism of layer-structured MnO<sub>2</sub> and NiO<sub>2</sub>H<sub>x</sub> pseudocapacitive materials using *operando* Raman spectroscopy. D. Chen, M.A. El-Sayed, M. Liu

**1:50 INOR 556.** Synthesis of 3-dimensional graphene on multi-block nanorods array for lithium ion battery. S. Cho, S. Park

**2:10 INOR 557.** Water splitting photoanode devices incorporating the Ru(bda) water oxidation catalysts. M.V. Sheridan, B. Sherman, T.J. Meyer

**2:30 INOR 558.** Photo- and electro-catalytic water oxidation by metal organic frameworks. S. Lin, S. Ahrenholtz, P. Usov, W. Maza, A.J. Morris

**2:50 INOR 559.** Activation of sodium cobaltates for water oxidation catalysis through chemical etching. H. Ji, G. Sahasrabudhe, M. Vallon, A.B. Bocarsly, R.J. Cava

**3:10 INOR 560.** Effect of anisotropic physical properties of Cu(In,Ga<sub>1-x</sub>)<sub>2</sub>(Se,S)<sub>2</sub> (CIGS) single crystal photocatalysts on water splitting. J.J. Frick, S. Kushwaha, J.W. Krizan, M.F. Baruch, R.J. Cava, A.B. Bocarsly

**3:30** Intermission.

**3:45 INOR 561.** Hydration dependent electrocatalytic activities of bimetallic oxides of Ni, Co and Fe. Y.N. Regmi, B.M. Leonard

**4:05 INOR 562.** Phase-controlled photocatalytic activity of Ga<sub>2</sub>O<sub>3</sub> nanocrystals. S. Jin, V. Ghodsi, J. Byers, P.V. Radovanovic

**4:25 INOR 563.** Improvement in photocatalytic activity of p-type CuRhO<sub>2</sub>. J.E. Park, J.W. Krizan, R.J. Cava, A.B. Bocarsly

**4:45 INOR 564.** Use of ether and siloxane functionalized ionic liquids and their mixtures as advanced electrolyte for lithium-ion batteries. D. Mandal

**5:05 INOR 565.** Microwave synthesis of Li<sub>2</sub>MnO<sub>3</sub> nanocrystals for Li-ion batteries. P.A. Medina, B.D. Fahlman, Y. Sun

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**Section B**

Pennsylvania Convention Center  
Room 115C

**Chemistry of Materials:  
Synthesis & Properties**

C. G. Lugmair, *Organizer*

J. S. Holt, X. Sun, *Presiding*

**1:30 INOR 566.** Achieving maximum dye loading within zeolite channels. J.S. Holt, T. Dabertin

**1:50 INOR 567.** Structure-property relationships in novel bismuth(III)-organic compounds. A.K. Adcock, B. Gibbons, K. Knope

**2:10 INOR 568.** Organometallic chemistry approach to crystalline tungsten disulfide. H. Zhang, A. Hock

**2:30 INOR 569.** Racemates and optical activity. R. Gautier, J.M. Klingsporn, R.P. Van Duyne, K.R. Poeppelmeier

**2:50 INOR 570.** Assembly of superatomic binary solids driven by charge transfer interactions. A. Voevodin, X. Roy, L.M. Campos

**3:05 Intermission.**

**3:25 INOR 571.** Tungsten nitrido precursors for deposition of WN<sub>x</sub>C<sub>y</sub> thin films. M.M. Nolan, A. Koley, S. Kim, T.J. Anderson, L. McElwee-White

**3:45 INOR 572.** New route for synthesis of well-crystallized sodium-doped yttrium hydroxide and its universality in formation of rare earth hydroxides. S. Khan, S. Lee, J. Park, S. Cho

**4:05 INOR 573.** One-pot and ultrafast synthesis of nitrogen and phosphorus co-doped carbon dots with dual wavelength fluorescence emission and high quantum yield. X. Sun, Y. Lei

**Section C**

Pennsylvania Convention Center  
Room 116

**Coordination Chemistry:  
Synthesis & Characterization**

S. A. Koch, *Organizer*

A. Mukherjee, *Presiding*

**1:30 INOR 574.** Synthesis of coordination complexes of late transition metals: experimental and theoretical understanding. A. Mukherjee

**1:50 INOR 575.** Stereoisomerism in ruthenium complexes of chiral, linear tetradentate aminosulfoxide ligands. T.J. Brunner, A.L. Rheingold

**2:10 INOR 576.** Synthesis and reactivity of saturated N-heterocyclic thione (NHT) and selone (NHSe) ligands. J.R. Patterson, D. Rabinovich

**2:30 INOR 577.** Exploring the metal-metal interactions in a series of heterobimetallic Ti/M and V/M complexes (M = Fe, Co, Ni, and Cu). C.M. Thomas, B. Wu, S. Kuppuswamy

**2:50 INOR 578.** Withdrawn.

**3:10 INOR 579.** 5-Phosphasemibullvalenes: A new class of chiral ligands. M. Rigo, C. Mueller

**3:30 Intermission.**

**3:40 INOR 580.** Benchmark synthetic route to heteroleptic alkyl-phosphine oxides. D. Tyler, A.J. Kendall

**4:00 INOR 581.** Luminescent benzo-phospholes as ligands for transition metals. A. Grimm, J.D. Protasiewicz

**4:20 INOR 582.** Spin crossover behavior in Fe(II) complexes with N-alkylated bisimidazoles. J. Hrudka, H. Phan, M. Shatruk

**4:40 INOR 583.** Ligand substituted Mn<sub>12</sub> single molecule magnet derivatives: Characterization and surface organization. N.M. Khatri, M.P. Lansigan, K.D. Pires, J.A. Borchers, P. Butler, D. Keavney, S.E. Lofland, K. Plass, S.L. Stoll

**Section D**

Pennsylvania Convention Center  
Room 117

**Organometallic Chemistry:  
Synthesis & Characterization-  
Late Transition Metals**

N. S. Radu, *Organizer*

D. A. Laviska, *Presiding*

**1:30 INOR 584.** Polynuclear copper hydrides as catalysts for electron transfer from H<sub>2</sub>. S. Liu, J.R. Norton, M.S. Eberhart, M.C. Neary

**1:50 INOR 585.** Cleavage of C-H, N-H, and O-H bonds in a series of polycyclic aromatic substrates by <sup>18</sup>B-PCPIr yielding 4- and 5-member iridocyclic complexes. D.A. Laviska, T.J. Emge, A.S. Goldman

**2:10 INOR 586.** Synthesis, characterization and photophysical properties of phenyl spaced bis-imidazole CCC pincer palladium complexes and their applications in sensing. G. Andrade, G.P. Yap, J. Rosenthal

**2:30 INOR 587.** Synthesis and characterization of early-late polymetallic complexes. P. Dunn, I. Tonks

**2:50 INOR 588.** Isolation and reactivity of nickel(IV) complexes supported by a monoanionic bis(carbene) pincer platform. G. Espinosa Martinez, C. Ocampo, A. Fout

**3:10 INOR 589.** Synthesis and characterization of photoswitchable ruthenium(II)-arene complexes incorporating pyridine and benzothiazole functionalized azopyrazole ligands. K.Y. Ghebreyessus

**3:30 INOR 590.** Synthesis and reactivity of cyclopentadienyl-iridium organohydrazido(2-) complexes. A. Pearce, I. Tonks

**3:50 INOR 591.** New ligand frameworks on Rhenium: Rare modes of reactivity and the development of a highly reactive metal-oxo system. T.D. Lohrey, R.G. Bergman, J. Arnold

**4:10 INOR 592.** Synthesis of dipyrin-cobalt imidos and their reactivity in C-H amination. Y. Baek, T. Betley

**4:30 INOR 593.** High oxidation states: Isolation of decamethylmetallocene-dications. M. Malischewski, M. Adelhardt, J. Sutter, K. Meyer, K. Seppelt

**Section E**

Pennsylvania Convention Center  
Room 118A

**Organometallic Chemistry: Catalysis**

N. S. Radu, *Organizer*

G. Dobereiner, L. Geary, *Presiding*

**1:30 INOR 594.** Platinum catalyzed oxygen atom transfer: Development of a catalytic Wittig reaction. L. Geary

**1:50 INOR 595.** Comparison of aliphatic and aromatic group substitutions at the C2, C5 and C6 positions in the palladium (0)-catalyzed Nazarov-type cyclization. B. Gamez, G. Martinez, M.A. Tius, T. Atesin

**2:10 INOR 596.** Effect of substitution at the critical C5 position on the palladium (0)-catalyzed Nazarov-type cyclization. G. Martinez, B. Gamez, M.A. Tius, T. Atesin

**2:30 INOR 597.** DFT mechanistic study on alkene hydrogenation catalyzed by iron metallaboratone. M. Lei, L. Li

**2:50 INOR 598.** Iron-catalyzed cross-coupling with simple ferric salts. M.L. Neidig

**3:10 INOR 599.** Promoting stoichiometric and catalytic Pd reactions with Lewis acid additives. G. Dobereiner

**3:30 INOR 600.** Addition of HX to Mn-amide bonds: Catalysts for formic acid decomposition. A. Tondreau, J.M. Boncella, B. Scott

**3:50 INOR 601.** Bronsted-Lowry acidity of transition metal hydrides-implications for catalysis. R.H. Morris, M.M. Sung

**4:10 INOR 602.** Group 12 metal mediated carbene insertion to carbon-chlorine bonds of chloromethanes. R. Dias, N.V. Kulkarni

**4:30 INOR 603.** Metal-ligand multiple bonding in group IV complexes. L. Grant, P. Carroll, D.J. Mindiola

**4:50 INOR 604.** Synthesis and reactivity of terminally bound niobium methylidyne and nitride complexes. T. Kurogi, P. Carroll, D.J. Mindiola

**5:10 INOR 605.** Elucidation of In Situ speciation and reactive intermediates in iron-SciOPP catalyzed cross-couplings of alkynyl Grignards with alkyl halides. J.L. Kneebone, W.W. Brennessel, M.L. Neidig

**Section F**

Pennsylvania Convention Center  
Room 118B

**Nanoscience**

R. M. Richards, B. G. Trewyn, *Organizers*

I. U. Arachchige, Y. Mao, M. Mastro, *Presiding*

**1:30 INOR 606.** Observation of switchable photoresponse of a monolayer WSe<sub>2</sub>-mos<sub>2</sub> lateral heterostructure via photocurrent spectral atomic force microscopic imaging. Y. Son, M. Li, C. Cheng, K. Wei, P. Liu, Q. Wang, L. Li, M. Strano

**1:50 INOR 607.** Plasmonic films from solution-processed 2D titanium carbide. A.D. Dillon, M. Ghidui, A. Krick, J. Griggs, S. May, Y. Gogotsi, M. Barsoum, A.T. Fafarman

**2:10 INOR 608.** Colloidal chalcopyrite (CuFeS<sub>2</sub>) nanocrystals as photothermal therapeutic agents. S. Ghosh

**2:30 INOR 609.** Size, shape, and phase control synthesis of crystalline and amorphous tin phosphide nanoparticles. V. Tallapally, R.J. Esteves, I.U. Arachchige

**2:50 INOR 610.** III-nitride nanowire deposition on three-dimensional architectures. M. Mastro

**3:10 Intermission.**

**3:20 INOR 611.** Doped lanthanum hafnate nanocrystals as scintillating materials. Y. Mao, M. Pokhrel, K. Wahid

**3:40 INOR 612.** Large area carbon nanotubes networks via nanoscale welding. A. Dasgupta, N. Perea-Lopez, K. Fujisawa, C. Rotella, L. Pulickal Rajukumar, X. Lepro, Y. Yang, B. T. Hall, A. Elias, R. Baughman, J. Lou, M. Terrones

**4:00 INOR 613.** Remotely controlled phototactic micro swimmers. B. Dai, J. Wang, Z. Xiong, W. Dai, J. Tang

**4:20 INOR 614.** Hierarchically porous, highly conducting, Au/Pd alloy aerogels as high efficiency alcohol oxidation electrocatalysts. L. Nahar, A. Farghaly, J.N. Nowaczyk, I.U. Arachchige

**4:40 INOR 615.** Controlled manipulation of chemically powered nanomotors by electric tweezers for cargo delivery and assembling of NEMS devices. J. Guo, D. Fan

**Section G**

Pennsylvania Convention Center  
Room 118C

**Coordination Chemistry:  
Synthesis & Characterization**

S. A. Koch, *Organizer*

J. P. Donahue, L. R. Falvello, *Presiding*

**1:30 INOR 616.** Screening 6-imino-2-(1,2,3-triazol-4-yl)pyridines for colorimetric metal ion sensing properties. J.R. Jagannathan, J.T. Fletcher

**1:50 INOR 617.** Synthesis and characterization of homo- and heterobimetallic tris(phosphinoamide) complexes of iron and cobalt. K.M. Gramigna, R. Mathialagan, S. Kuppuswamy, C.M. Thomas

**2:10 INOR 618.** Polyoxovanadate alkoxide clusters as novel redox-active ligands. F. Li, W.W. Brennessel, E.M. Matson

**2:30 INOR 619.** Synthesis and characterization of aluminum complexes of redox-active nitroxide-based ligands. C.R. Graves

**2:50 INOR 620.** Novel binding modes of uranyl and vanadium to imide-dioxime ligands. B. Parker, Z. Zhang, J. Arnold, L. Rao

**3:10 Intermission.**

**3:20 INOR 621.** New heteroleptic dithiolenes complexes of the group 10 metals: Syntheses, structures, properties. A. Obanda, R.T. Mackin, K. Martinez, I.V. Rubtsov, R.H. Schmehl, J.T. Mague, S. Sproules, J.P. Donahue

**3:40 INOR 622.** Synthesis and reactivity of N-heterocyclic thione (NHT) and selone (NHSe) derivatives of caffeine. M. Styron, D. Rabinovich

**4:00 INOR 623.** Thiamacrocycles as a versatile building block for coordination polymers and nanomaterials. S. Kim, Y. Kang, E. Lee, I. Park, H. Ju, S. Lee

**4:20 INOR 624.** Twisted half-hexagram-shaped M<sub>4</sub>(OH)<sub>4</sub> cluster and its capacity for hosting closed-shell metals. I. Ara, M. Garcia-Monforte, R. González, L.R. Falvello, M. Tomas

**4:40 INOR 625.** Preparation and characterization of (NBu<sub>4</sub>)[Co(oxalate)<sub>2</sub>(bipy)]·3H<sub>2</sub>O, and simultaneous analysis of its monoclinic and triclinic crystal structures. M. Castro, L.R. Falvello, E. Forcén-Vázquez, P. Guerra, N. Mushale Aref, G. Martinez, M. Tomas

## WEDNESDAY EVENING

## Section A

Pennsylvania Convention Center  
Hall D

**Coordination Chemistry:  
Synthesis & Characterization**

S. A. Koch, *Organizer*

## 5:30 - 7:30

- INOR 626.** Ruthenium tris-bipyridine cage complexes as host systems for alkali and alkaline earth guests. A. Smale, A. Thomas, M. Harris
- INOR 627.** Synthesis of ruthenium macrocycles and ruthenium pendant host systems. C.J. Mendenhall, M. Harris
- INOR 628.** Iron and cobalt complexes with triazole appended macrocycles for CEST applications. E.M. Snyder, J.R. Morrow
- INOR 629.** Synthesis of amide pendant ruthenium host systems. M. McBride, M. Harris
- INOR 630.** Preparation and study of rhenium based cluster complexes. L.F. Szczepura
- INOR 631.** Second coordination sphere stabilization of anion binding to metal complexes of a tripodal triguanidine ligand. R.C. Scarrow
- INOR 632.** Novel supramolecular assemblies of sumanenyl anions with alkali metal ions. S.N. Spisak, Z. Wei, A.Y. Rogachev, T. Amaya, T. Hirao, M.A. Petrukina
- INOR 633.** Corannulene as a tunable scaffold for synthesis of new curved polyaromatic ligands. Z. Zhou, C. Dubceac, S.N. Spisak, Z. Wei, M.A. Petrukina
- INOR 634.** Synthesis of novel manganese(II)-tetrazole clusters as potential high-energy density materials (HEDMs). O. O'Sullivan, M. Zdzilla
- INOR 635.** Metal-dependent cation exchange in labile metal-organic frameworks. X. Wang, H. Zhou
- INOR 636.** Mixed-ligand approach for the design of heterometallic bismuth-transition metal precursors with discrete molecular structures. C.M. Lieberman, Z. Wei, A.S. Filatov, E. Dikarev
- INOR 637.** New synthetic routes in the synthesis of dimethylglyoximate cobalt(III) with some NS based donor ligands. A.A. Ajibola, J.A. Obaleye
- INOR 638.** Eu(III) and Tb(III) complexes of 2-(1,2,3-triazol-4-yl)pyridine-containing tridentate chelators: SPR study of fluorescence emission. M.D. Dillenburg, J.T. Fletcher
- INOR 639.** Comparative study with tetrakis ( $\mu$ 3-(4-methyl-3-nitrophenyl imido lead (II)) and analogous tin (II) as mesa burn rate phenomena complexes. C. Lundell, M. Zdzilla, O. O'Sullivan, M. Gau
- INOR 640.** Detailed thermodynamic characterization of copper(I) with substituted phenanthroline ligands. T.T. Thong, D.A. Vander Griend
- INOR 641.** Characterization of the self-assembly of the 94-piece supramolecular nanostar  $[\text{SO}_4^{2-} \text{@} (\text{CuOHpyrazole})_9]$ , via modeling of spectrophotometric titrations with equilibrium restricted factor analysis. M. Aardema, D.A. Vander Griend
- INOR 642.** Stable magnesium phosphaethynolate,  $\text{Mg}[\text{OCP}]_2$ : Synthesis, structure, and reactivity. R.J. Gilliard, R. Suter, H. Grützmacher, J.D. Protasiewicz

**INOR 643.** Withdrawn.

- INOR 644.** Pillar[5]-bis-thiacrown as a new member of fused macrocycle exhibiting adaptive guest binding via metal ion binding. E. Lee, H. Ryu, S. Lee
- INOR 645.** Copper(I) complexes with an N-heterocyclic thione (NHT) ligand derived from caffeine. C. Kansupada, M. Styron, D. Rabinovich
- INOR 646.** Preparation and characterization of luminescent lanthanide complexes containing O-donor ligand. P.K. Yuen, C. Lau
- INOR 647.** Stereoisomerism and the S-aryl group in ruthenium(II) dichloride complexes of chiral, tetradentate aminosulfonate ligands. C. Stout, T.J. Brunker
- INOR 648.** Synthesis and crystallographic study of zinc and mercury complexes with a three-N-donor asymmetric pyridine-amine ligand 2,9-di(pyridin-2-yl)-1,3,6-triazabicyclo[4.2.1]nonane. M. Hakimi

## Section B

Pennsylvania Convention Center  
Hall D

**Electrochemistry**

B. L. Lucht, *Organizer*

## 5:30 - 7:30

- INOR 649.** Elastic property on Si based anode by using organic-inorganic hybrid binder for reinforcement of adhesion during electrochemical process. H. Choi, P. No, Y. Lee, S. Jung, J. Choi
- INOR 650.** Comparison of the effect of alkali metals on the redox properties of different structures for bridged monovacant polytungstophosphates. J.F. Kirby

## Section C

Pennsylvania Convention Center  
Hall D

**Environmental & Energy-  
Related Inorganic Chemistry**

S. A. Koch, *Organizer*

## 5:30 - 7:30

- INOR 651.** Investigation into the binding of Ti(IV) to microbial siderophores and the potential effects on biofilm growth. K. Jones, A. Valentine
- INOR 652.** Electrocatalytic reduction of  $\text{CO}_2$  by a Mn(II) biquinoline tricarbonyl complex. V. Belkina, M.E. McKinnon, D.C. Grills, J.J. Rochford
- INOR 653.** Protonation and electrochemical reduction of rhodium and iridium-dinitrogen pincer complexes in organic solution. G. Connor, N. Lease, A.S. Goldman, A.J. Miller, P.L. Holland, J.M. Mayer
- INOR 654.** Building bridges: Wiring redox active transition metals to main group elements. T. Carroll, G. Menard
- INOR 655.** Developing new electrolyte materials for redox flow batteries. M.A. Kosswattarachchi, T.R. Cook
- INOR 656.** Heterometallic single-source precursor for the low-temperature preparation of the Li-rich spinel oxide. H. Han, Z. Wei, A.S. Filatov, A.M. Abakumov, E. Dikarev
- INOR 657.** Coordination-driven self-assembled metallacages for host-guest capture of organic pollutants. C. Fulong, T.R. Cook
- INOR 658.** Disproportionation reactions of hydroxylamine mediated by polypyridyl copper complexes in aprotic solvents. J. Uebler, I.M. DiMucci, K.M. Lancaster
- INOR 659.** Nanostructured inorganic CZTS thin film prepared by facile solution process and its application to 3D p-n junction solar cells. S. Sung, S. Park, D. Kim, J. Kang
- INOR 660.** Recombinant expression, mutagenesis, and spectroscopic characterization of archaeal ammonia monooxygenase. M. Smith, J.D. Caranto, K.M. Lancaster

## Section D

Pennsylvania Convention Center  
Hall D

**Inorganic Spectroscopy**

S. A. Koch, V. C. Popescu, *Organizers*

## 5:30 - 7:30

- INOR 661.** Analyzing host-guest interactions of metal-organic framework MIL-100 using spectroscopic methods. L. Hanna
- INOR 662.** X-Ray Raman spectroscopy of metal-oxo species at the Cornell High Energy Synchrotron Source. K. Silberstein, K. Finkelstein, K.M. Lancaster
- INOR 663.** Synthesis and spectroscopic characterization of a novel Ru(II) tris(2,2'-bipyridine) templated metal organic framework derived from Zn(II) and 1,3,5-trisubstituted phenylethynebenzene. C. McKeithan, R.W. Larsen
- INOR 664.** Computational/experimental investigation of oxidative addition and photoinduced reductive elimination in coinage metal cyclotrimers and aggregates thereof: Toward next-generation classes of photocatalysts. B.M. Otten, M.M. Ghimire, S. Tekarli, M.A. Omary
- INOR 665.** Violet-to-red luminescence thermochromism in gold (I) cyclic trinuclear complexes. M.M. Ghimire, V.N. Nesterov, M.A. Omary
- INOR 666.** Integrated stacking motifs of TTF-like donors and cyclic trinuclear acceptor complexes of monovalent coinage metals: Supramolecular structures, magento-opto-electronic properties and potential apps. M.M. Ghimire, O. Camille Simon, V.N. Nesterov, A. Macchioni, C. Zuccaccia, R. Galassi, M.A. Omary
- INOR 667.** Probing small molecule interactions within metalloporphyrin based metal-organic frameworks using spectroscopic methods. N.O. Lahanas

## Section E

Pennsylvania Convention Center  
Hall D

**Nanoscience**

R. M. Richards, B. G. Trewyn, *Organizers*

## 5:30 - 7:30

- INOR 668.** Incorporation of  $\text{Ag}^+$  in PbS quantum dots by cation exchange. A.L. Morris, W.R. Tilluck, P.G. Van Patten
- INOR 669.** Layered oxide nanosheets as model supports for investigating nanoparticle-support interactions by isothermal titration calorimetry and UHV calorimetry. R. Uppuluri, M. Strayer, J. Lownsbury, W. Zhang, T.P. Senftle, M.J. Janik, C.T. Campbell, T.E. Mallouk

**INOR 670.** Phase-effects on cation exchange of metal chalcogenide nanoparticles. K. Plass, R. Kozloski

**INOR 671.** Discovery and characterization of transition metal phosphides as electrocatalysts for the hydrogen evolution reaction. J.F. Callejas, E.J. Popczun, J.M. McEaney, C.G. Read, N.S. Lewis, R.E. Schaak

**INOR 672.** Ligand dependence of the electronic properties of gold nanoparticles: Probing band structure using electron paramagnetic resonance (EPR) spectroscopy. V. Tsonygin, A. Cirri, A. Silakov, B.J. Lear

**INOR 673.** Understanding the formation of high-order hybrid nanoparticles: A microscopic investigation into the pathways governing the bottom-up synthesis of Ag-Pt- $\text{Fe}_3\text{O}_4$  hybrid nanoparticles. J. Morse, R. Schaak

**INOR 674.** Withdrawn.

**INOR 675.** Signature of coexistence of superconductivity and ferromagnetism in two-dimensional NbSe<sub>2</sub> triggered by surface molecular adsorption. Y. Guo

**INOR 676.** Withdrawn.

**INOR 677.** Withdrawn.

**INOR 678.** Plasmonic enhancement of quantum cutting nanophosphors for energy applications. S. Najmr, C.B. Murray

**INOR 679.** Oxygen effects in magic number gold cluster synthesis. T. Dreier, C.J. Ackerson

## Section F

Pennsylvania Convention Center  
Hall D

**Organometallic Chemistry:  
Applications to Organic  
Transformations**

N. S. Radu, *Organizer*

## 5:30 - 7:30

- INOR 680.** Silver-mediated C-H functionalization of benzoquinone in the presence of secondary phosphine oxides and imines: The formations of C-N and C-P bonds. F. Hong
- INOR 681.** C-N Reductive elimination from isolated Pd(IV) complexes. E. Abada, P. Zavalij, A.N. Vedernikov
- INOR 682.** Highly efficient photoredox Ir/Ni catalytic system for photo-reductive C-C coupling. A. Paul, M.D. Smith, A.K. Vannucci

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## Section G

Pennsylvania Convention Center  
Hall D

**Organometallic Chemistry:  
Synthesis & Characterization-  
Early Transition Metals**

N. S. Radu, *Organizer*

5:30 - 7:30

**INOR 683.** Synthesis and investigation of macrocyclic Cr(III)-acetylacetonate complexes: Emission properties and electron delocalization. E. Judkins, S.F. Tyler, T. Ren

**INOR 684.** Synthesis and reactivity of molybdenum carbon dioxide complexes. M. Graziani, L. Briggs, G.R. Lorz, J.R. Vasta, M. Pogash, X. Duan, P.M. Graham

## Section H

Pennsylvania Convention Center  
Hall D

**Organometallic Chemistry:  
Synthesis & Characterization-  
Late Transition Metals**

N. S. Radu, *Organizer*

5:30 - 7:30

**INOR 685.** Synthesis, characterization, and photophysical properties of hybrid N-heterocyclic carbene complexes of copper. L. Tahsini, K. Moseni

**INOR 686.** Synthesis and characterization of novel bis- and tris-cyclometalated iridium (III) complexes for potential use in OLED applications. D.A. Laviska, R. Markese, A. Morris, F. Renner, T. Schreiber

**INOR 687.** Functionalized imidazole-based weakly coordinating anions paired with cationic transition metal catalysts. D.I. Wozniak, A. Hicks, G. Dobreiner

**INOR 688.** Synthesis and reactivity of phosphine ligated palladium(II) (Ar)(CF<sub>3</sub>) complexes. D. Ferguson, J.R. Bour, M.S. Sanford

**INOR 689.** Accessibility and isolation of organometallic Ni<sup>IV</sup> complexes using a diverse set of oxidants. E.A. Meucci, N. Camasso, M.S. Sanford

**INOR 690.** Synthesis, characterization, and photophysical properties of platinum complexes containing benzothiophene-derived ligands. C.M. Anderson, L.M. Duman, M.A. Weinstein, N. Oh, A. Hashmi, J. Tanski

**INOR 691.** Synthesis of high-valent nickel complexes supported by electron rich CCC pincer ligand platform. C. Ocampo, G. Espinosa Martinez, A.R. Fout

**INOR 692.** Withdrawn.

**INOR 693.** Exploring cooperative redox chemistry using iron dipyrroin pacman complexes. E.J. Johnson, C. Kleinlein, T. Betley

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## MEDI

**Division of Medicinal  
Chemistry**

W. Young, *Program Chair*

## OTHER SYMPOSIA OF INTEREST:

**Merck Research Award Symposium** (see WCC, Sun)

**Effectively Harnessing the World's Literature to Inform Rational Compound Design** (see CIN/ Sun)

**Chemistry For the People: Reflections from Perkin Medalists** (see CHED, Mon)

## SOCIAL EVENTS:

**Hall of Fame Reception**, 5:30 PM: Tue

## BUSINESS MEETINGS:

**MEDI Executive Meeting (Closed)**, 8:30 AM: Sun

**MEDI Long-Range Planning Committee Meeting (Closed)**, 5:30 PM: Mon

## SUNDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 114

**Renaissance of Estrogen  
Receptor-Based Therapy**

S. Peukert, X. Wang, *Organizers, Presiding*

**8:30 MEDI 1.** SERMs and SERDs as the cornerstone of endocrine therapy in ER $\alpha$ -positive breast cancer. D. McDonnell, K. Cocce, S. Wardell, J. Norris

**9:10 MEDI 2.** Benzothiophene SERMs, SERDs, MERDs, SEMs, and ShERPAs in endocrine-independent ER+ breast cancer therapy. G.R. Thatcher, D.A. Tonetti, R. Xiong, H. Patel

**9:45 MEDI 3.** GDC-0810: An orally bioavailable selective estrogen receptor degrader for breast cancer. X. Wang

**10:20 MEDI 4.** Tetrahydroisoquinolines as selective estrogen receptor degraders with good oral bioavailability in preclinical species. H. Burks

**10:50 MEDI 5.** Fifty shades of SERD: Designing and characterizing selective estrogen receptor degraders towards clinical candidates. C. De Savi, J.S. Scott, S.L. Degorje

## Section B

Pennsylvania Convention Center  
Room 113C

## General Orals

W. B. Young, *Organizer*

J. B. Schwarz, *Presiding*

**8:30 MEDI 6.** Structure-activity studies of lspD-targeting antimalarials related to MMV008138. Z. Yao, M. Ghavami, R. Elahi, M.E. Simpson, E.F. Merino, M.M. Totrov, M.B. Cassera, P.R. Carlier

**8:50 MEDI 7.** Structure-activity relationship studies of the lipophilic tail region of indole derived sphingosine kinase 2 inhibitors. M. Congdon, Y. Kharel, K.R. Lynch, W. Santos

**9:10 MEDI 8.** Discovery of the first subfamily-selective inhibitor of FTO for novel treatment of obesity and related metabolic syndrome. E.C. Woon, E. Tai, S. Toh, M. Liu, T. Song, M. Agrawal, W. Goh

**9:30 MEDI 9.** Discovery of a novel binder of Lp-PLA<sub>2</sub> and subsequent optimization through rational target design. J.E. Pero, S. Aravapalli, V. Berdini, J. Coyle, P. Day, A. Dodson, P. Grondin, F. Holding, L. Lee, P. Li, E.S. Manas, J.P. Marino, A. Martin, B. McClelland, R. McMenamin, C. Murray, C. Neipp, L. Page, V. Patel, F. Potvain, S. Rich, R.A. Rivero, K. Smith, D. Somers, L. Trotter, R. Velagaleti, G. Williams, A. Woolford, R. Xie

**9:50 MEDI 10.** Synthesis and biological characterization of a novel PTP4A3 inhibitor. J.M. Salamoun, K.E. McQueeney, E.R. Sharlow, J.S. Lazo, P. Wijp

**10:10 MEDI 11.** Discovery of potent, selective, CNS-penetrant potentiators of glycine receptors. E. DiMauro

**10:30 MEDI 12.** Isoform selective AMPK activators. K.O. Cameron

**10:50 MEDI 13.** Discovery of the potent and selective pyridine M<sub>1</sub>, PAM PF-06767832: Evaluation of efficacy and cholinergic side effects. J.E. Davoren

**11:10 MEDI 14.** Discovery of a novel series of aminopyrazine-based A<sub>2a</sub> antagonists for the treatment of Parkinson's disease: Integration of an intramolecular H-bonding strategy in the design of brain-penetrant scaffold. R. Kuang, H. Wu, A. Ali, P.C. Ting, S.M. Levi, M.M. Lo, E. Metzger, T.J. Henderson, Y. Lim, Q. Deng, H. Wang, Y. Yu, R. Anand, K. Dykstra, T. Pereira, S.W. Kraska, R. Hodgson, L. Hyde, E. Parker, D. Mullins, D.B. Prelusky, R.G. Aslanian, A.W. Stamford

**11:30 MEDI 15.** Design and synthesis of a potent, reversible covalent, Oxaborinolin inhibitor of Lp-PLA<sub>2</sub>. S. Hart, V. Berdini, E.E. Boros, N. Curtis, P. Day, A. Daugan, N.E. Faucher, M. Fouchet, P. Grondin, I. Kaldor, W. Kerr, E.S. Manas, M. Mitchell, V. Patel, D. Somers, E. Talbot, M. Toczko, L. Trotter, G. White, A. Woolford

**11:50 MEDI 16.** Discovery of 4-undecylpiperidine-2-carboxamides as selective positive allosteric modulators of the serotonin (5-HT) 5-HT<sub>2C</sub> receptor. E.A. Wold, C. Wild, C. McAllister, C. Crawford, Y. Ding, N.C. Anastasio, R.G. Fox, S. Stutz, R.M. Hartley, H. Chen, M.A. White, K.A. Cunningham, J. Zhou

**Effectively Harnessing the  
World's Literature to Inform  
Rational Compound Design**

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**WCC Merck Research  
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## SUNDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 114

## General Orals

W. B. Young, *Organizer, Presiding*

**1:30 MEDI 17.** Balancing selectivity and safety in a MAP4K4 kinase inhibitor: Advancing potent, selective, and orally bioavailable leads to preclinical toxicity. S.K. Bhattacharya, S.W. Bagley, L. Buckbinder, A.A. Carlo, C. Cortes, R.L. Dow, A.F. El-Kattan, G.B. Freeman, C.R. Guimaraes, A. Skoura

**1:55 MEDI 18.** Discovery and structure-activity relationships of BMS-820132, a potent partial glucokinase activator. Y. Shi, Y. Wang, W. Meng, R. Brigrance, D. Ryono, S. Bolton, H. Zhang, S. Chen, R.A. Smirk, S. Tao, J.A. Tino, K. Williams, R. Sulsky, B.A. Ellsworth, M. Wong, J. Sun, L. Leith, D.Z. Sun, D. Wu, A. Gupta, R. Rampulla, A. Mathur, B. Chen, A. Wang, H. Fuentes, L. Kunselman, M. Cap, J. Zalaznick, X. Ma, H. Liu, J. Taylor, R. Zebo, B. Jones, S. Kalinowski, J. Swartz, A. Staal, K. Omalley, L.M. Kopcho, J. Muckelbauer, C. Chang, S.R. Krystek, S. Spronk, J. Marcinkeviciene, G. Everlof, X. Chen, C. Xu, R. Langish, Y. Yang, Q. Wang, K. Behnia, A. Fura, E. Janovitz, N. Pannacciuilli, S. Griffen, B. Zinker, J. Krupinski, M. Kirby, J. Whaley, R. Zahler, J.C. Barrish, J.A. Robl, P.T. Cheng

**2:20 MEDI 19.** Discovery of ubrogepant (MK-1602): A potent, selective and orally bioavailable CGRP receptor antagonist for the acute treatment of migraine. M.E. Fraley

**2:45 MEDI 20.** Discovery of AZN001: A broad-spectrum capsid-binding human rhinovirus inhibitor. M.A. Cornebise, J. Atherton, S. Bist, S. Butler, T.P. Grebe, M. Hentemann, J. Huang, K.D. Johnson, S.P. Kawatkar, C. McCrea, L. Martin, M. Mondal, M. Rooney, K. Thakur, C. Tiong-Yip, J. Wang, Q. Yu

**3:10 MEDI 21.** Discovery of in vivo inhibitors of lactate dehydrogenase A (LDHA). H.E. Purkey

**3:35 MEDI 22.** SAR evolution of C-17 amines triterpenoids leading to the discovery of the second generation HIV maturation inhibitor BMS-955176. A. Regueiro-Ren, Z. Liu, Y. Chen, N. Sin, S. Sit, J.J. Swidorski, J. Chen, B.L. Venables, Z. Juliang, B. Nowicka-Sans, T. Protack, Z. Lin, B. Terry, H. Samanta, S. Zhang, Z. Li, B.R. Beno, X. Huang, S. Rahematpura, D. Parker, R. Haskell, S. Jenkins, K. Santone, M. Cockett, M. Krystal, U. Hanumegowda, I.B. Dicker, N.A. Meanwell

**4:00 MEDI 23.** Discovery of a first-in-class, potent, selective and orally bioavailable inhibitor of the p97 AAA ATPase (CB-5083). H. Zhou

**4:25 MEDI 24.** Discovery of AZD2716: A novel, potent secreted phospholipase A<sub>2</sub> (sPLA<sub>2</sub>) inhibitor for the treatment of coronary artery disease. D. Pettersen, F. Giordanetto, J. Sandmark, I. Starke, L. Larsson, E. Hurt-Camejo, P. Nordberg

**4:50 MEDI 25.** Developing CDK8 inhibitors as tool compounds: A case study in lean decision making. M. Koehler, P. Bergeron, E.M. Blackwood, K. Bowman, K. Clark, J.R. Kiefer, M.L. McClelland, L. Salphati, S. Schmidt, J. Wu, M.H. Beresini, R. Firestein



## Section B

Pennsylvania Convention Center  
Room 113C

## Role of Water in Ligand Design &amp; Optimization

D. Shivakumar, A. Tebben, S. Wroblewski, *Organizers, Presiding*

## 1:30 Introductory Remarks.

1:35 **MEDI 26.** Water, integral but often overlooked partner in protein-ligand binding. **G. Klebe**

2:20 **MEDI 27.** Interacting with visible or not visible water molecules to gain potency and selectivity. **L. Schio**, H. Minoux, W. Sherman, D. Robinson

2:55 **MEDI 28.** Water, water, everywhere, nor any space left to link? **P. Czodrowski**

3:30 **MEDI 29.** Applying CSD- and PDB-derived binding hotspot analysis to water molecules to aid in ligand design. **C.J. Radoux**, P. Sanschagrin, E. Davis, W. Pitt

4:05 **MEDI 30.** Water-centric methods in structure-based GPCR ligand design. **A. Bortolato**, J.S. Mason, F. Deflorian, B. Tehan, R. Smith, R. Cooke, A. Zhukov, F. Marshall

4:40 **MEDI 31.** Navigating the ocean: Importance of understanding active site waters in drug discovery. **L. Frye**, R. Abel

5:15 Panel Discussion.

## Effectively Harnessing the World's Literature to Inform Rational Compound Design

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## Regional Small Chemical Businesses: Case Histories &amp; Lessons Learned

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## SUNDAY EVENING

## Section A

Pennsylvania Convention Center  
Hall G

## General Posters

W. B. Young, *Organizer*

## 7:00 - 9:00

**MEDI 32.** Transition of lipophilic imidazolium salts from *in vitro* to *in vivo* testing. **M. Southerland**, M. DeBord, N. Alexander, S.M. Paruchuri, L.P. Shriver, C. Wesdemiotis, C. Tessier, M. Panzner, W.J. Youngs

**MEDI 33.** New bromodomain inhibitors with halogen bonding interactions. **A.S. Vincek**, E. Rusinova, J. Meslamani, A. Plotnikov, T. Zhou, M. Ohlmeyer, H. Long, K. Cheung, T. Shen, M. Zimmermann, F.M. Boeckler, M. Zhou

**MEDI 34.** N-arylated 2-amino fused thiophene analogs as potential MEK5/ERK5 pathway inhibitors. **M. Gupta**, P.T. Flaherty, T. Wright, J. Cavanaugh

**MEDI 35.** Utility of monomethyl auristatin (MMA) analogs as payloads for targeted therapies of cancer: Design and synthesis of MMAE and MMAF folate conjugates. **H.K. Santhapuram**, J.F. Vaughn, C.P. Leamon, I.R. Vlahov

**MEDI 36.** Design and synthesis of seco-duocarmycin analogs as warheads in small molecule drug conjugates (SMDCs) for targeted cancer therapies. **G.L. Parham**, C.P. Leamon, I.R. Vlahov

**MEDI 37.** Novel targets for small molecule drug conjugates: Design and synthesis of somatostatin analogs as targeting ligands and their conjugates with cytotoxic warheads. **H.F. Klein**, **F. You**, N. Zou, I.R. Vlahov

**MEDI 38.** Design and synthesis of small molecule drug conjugates: Additional structural motifs. **I.R. Vlahov**, N. Zou, A. Felten, C.P. Leamon

**MEDI 39.** Design, synthesis and early evaluation of hybrids of DNA minor groove binders and DNA-alkylating agents as warheads for small molecule drug conjugates (SMDCs) for targeted cancer therapies. **I.R. Vlahov**, **L. Qi**, S. Hahn, K.Y. Wang, H.K. Santhapuram, A. Felten, J.F. Vaughn, C.P. Leamon

**MEDI 40.** Elucidating the binding mechanism of DAT inhibitors that result in abusable vs. non-abusable atypical DAT inhibitors. **B. Jean**, J.D. Madura, C.K. Surratt

**MEDI 41.** Improved Grp94-selective inhibitors as therapies for gliucoma and metastasis. **V. Crowley**, B.S. Blagg

**MEDI 42.** Discovery of anti-invasive tools and leads for the study and treatment of metastatic cancer: two case studies. **B.I. Roman**, S. Verhasselt, M.E. Bracke, C.V. Stevens

**MEDI 43.** 3',4'-Dimethoxyflavonols: A new group of potential anti-prostate cancer agents. **X. Li**, G. Chen, X. Zhang, Q. Chen

**MEDI 44.** Triazolopyrimidine derivatives as the first potent and selective inhibitors of the kinase GCN2. **D. Dorsch**, A. Wegener, G. Hölzemann, M. Busch, M. Calderini, O. Pöschke

**MEDI 45.** Synthesis and development of new, potent ROCK inhibitors for the treatment of glaucoma. **J.M. Sturdivant**, S.M. Royalty, J.D. Yingling, C.L. Laethem, B. Sherman, G.R. Heintzelman, C.C. Kocpzyński, M.A. deLong

**MEDI 46.** Synthetic strategies for the generation of aliphatic and aromatic bis-imidazoles as carbonic anhydrase activators. **U.K. Mondal**, B. Draghici, J.P. Musco, M.A. Ilies

**MEDI 47.** Synthesis and biological activity of tricosan based  $\beta$ -acetamido ketones. **A.B. Khade**, C.T. A., S.S. Kar, M. Tiwari, V. K.E., V.B. G., G.G. Shenoy

**MEDI 48.** Discovery of BCL-3 inhibitor for the potential treatment of metastatic breast cancer. **C. Bordon**, J. Soukupova, W. Yang, A.D. Westwell, R.W. Clarkson, A. Brancale

**MEDI 49.** Aza-bodipy-steroid conjugates for fluorescence imaging. **S. Osati**, H. Ali, J.E. van Lier

**MEDI 50.** Development of fused heterocyclic betulin conjugates as potential anti-cancer agents. **S. Pathi**, A. Patel, L. Solano, G. Jampana, T. Moosavi, **S.C. Jonnalagadda**

**MEDI 51.** Synthesis of novel benzothiazole derivatives and their biological evaluation against the oncogenic SHP2 phosphatase. **W. Wang**

**MEDI 52.** Design and synthesis of xanthone analogs based on  $\alpha$ -mangostin analogs as new anti-cancer agents. **X. Fei**, S. Seo

**MEDI 53.** Design, synthesis and evaluation of spiro[benzo[d][1,3] dioxine-2,1'-isobenzofuran]-3',4(1H)-dione derivatives as potential anticancer agents. **C. Yin**, Z. Chen, R. Stephani, V.L. Korlipara

**MEDI 54.** Design and synthesis of 4-anilinoquinazoline-acylamino derivatives as VEGFR-2 inhibitors. **L. Sun**, H. Zhang, C. Zhang

**MEDI 55.** Design of inhibitors for the human papillomavirus E6 protein. **D.P. Petrov**, V.J. Davisson, E. Androphy, A. Rietz

**MEDI 56.** Synthesis and properties of curcumin conjugates as green cancer drug delivery system. **K. Punia**, C. Sun, S. Dolai, A. Mancuso, J.E. Fata, M. Castellanos, K.S. Raja

**MEDI 57.** Breast cancer cell MDA viability of extracts from Taylor and Capilahan counties of West-Central Texas plants: *Asclepias syriaca*, *Asclepias viridis*, *Solanum elaeagnifolium*, *Gaillardia pulchella*, and *Glandularia bipinnatifida*. **H. Shin**

**MEDI 58.** Creating new from clinical agents: Discovery of combretastatin, a-4 inspired heterocycles as antitubulin anticancer agents. **N. Hura**, A. Shah, K. Guchhait

**MEDI 59.** Synthesis and evaluation of benzamide and phenyl tetrazole derivatives with amide and urea linkers as BCRP inhibitors. **N. Gujarati**, L. Zeng, Z. Chen, V.L. Korlipara

**MEDI 60.** Cytotoxicity assay of *Combretum farinosum* extracts. **A.K. Addo-Mensah**, **E. Williams**

**MEDI 61.** Computational studies of 2-phenyl indole inhibitors of p97 chaperone. **C. Lim**, J.C. Burnett, R. Gussio, D.M. Huryn, P. Wipf

**MEDI 62.** Side chain optimizations of novel inhibitors of the AAA ATPase p97. **C. Alvarez**, **M. Kovaliov**, M. Laporte, C. Lim, R. Colombo, Z. Yue, S. Bulfer, M. Arkin, D.M. Huryn, P. Wipf

**MEDI 63.** Design and synthesis of heterocyclic inhibitors of the AAA ATPase p97. **M. LaPorte**, **M.J. Houghton**, R. Colombo, Z. Yue, C. Alvarez, M. Kovaliov, C. Lim, L. Samankumura, Y. Yan, N. Green, W.J. Moore, B. Mroczkowski, S. Bulfer, J.R. Neitz, M. Arkin, D.M. Huryn, P. Wipf

**MEDI 64.** Design and characterization of a mercaptophile library for screening cysteine-containing target. **C. Lim**, **T. Lewis**, **M. Liang**, A.J. Chatterley, Y. Tang, M. Arkin, D.M. Huryn, P. Wipf

**MEDI 65.** 2-Phenyl indole piperazine inhibitors of AAA ATPase p97. **A.J. Chatterley**, E. Miller, C. Alvarez, M. Kovaliov, C. Lim, R. Colombo, Z. Yue, M. LaPorte, L. Samankumura, S. Bulfer, M. Arkin, D.M. Huryn, P. Wipf

**MEDI 66.** PEG-conjugated aromatic and heterocyclic sulfonamides as potent carbonic anhydrase inhibitors with anti-tumor activity. **S. Akocak**, **M.R. Alam**, A.M. Shabana, R.K. Sanku, H. Thompson, M.A. Ilies

**MEDI 67.** Exploration of quinazoline derivatives as MEK5 inhibitors. **P.T. Flaherty**, T. Wright, A. Motta, J. Cavanaugh

**MEDI 68.** Prostate-specific membrane antigen targeted phosphoramidate-pro-nucleotides. **H. West**, S.C. Kumarapperuma, A. Hendricks, C.R. Wagner

**MEDI 69.** Designing bispecific aptamers for increased stability in human serum. **G.E. Maio**, H. Zumur, N. Van, S. Batool, P. Mallikaratchy

**MEDI 70.** Structural requirements of histone deacetylase inhibitors: Suberoylanilide hydroxamic acid analogs modified at the C4 position display HDAC6 selectivity. **A.T. Negmeldin**, M.H. Pllum

**MEDI 71.** Design, synthesis, and biological screening of novel CUCS-inspired estrone analogues towards treatment of hepatocellular carcinoma. **M. Mahnashi**, S. Elgazwi, F.T. Halaweish

**MEDI 72.** Anti-tumor studies of N,N'-naphthylmethyl-2-alkyl and N,N'-quinolylmethyl-2-alkyl substituted imidazolium salts. **M. DeBord**, M. Southerland, A. Taraboletti, C. Tessier, S.M. Paruchuri, L.P. Shriver, M. Panzner, W.J. Youngs

**MEDI 73.** Discovery of novel leucyl adenylate analogues as leucyl tRNA synthetase (LRS)-mediated mTORC1 inhibitors. **J. Lee**

**MEDI 74.** Structure based design, synthesis, and study of potent and selective KDM5A/5B (JARID1A/1B) inhibitors. **Z. Nie**, L. Shi, C. Lai, S. O'Connell, J. Xu, R. Stansfield, J. Veal, J. Stafford

**MEDI 75.** Regulation of neural stem cell proliferation and differentiation with molecules that stabilize nucleic acid secondary structure. **L. Fones**, **J. Cave**

**MEDI 76.** Synthesis and biological evaluation of novel 6-substituted pyrrolo[2,3-*d*] pyrimidines with substituted nitrogen bridges as targeted antifolates. **A. Gangjee**, **L.K. Golani**, C.E. Dann, S. Deis, A. Wallace-Povirk, Z. Hou, L.H. Matherly

**MEDI 77.** Inhibitors of the mitochondrial citrate transport protein for targeting lung cancer. **K. Kim**, S. Gadre, H. Fernandez, M. Girgis, A. Uren, M. Avantaggiati, M. Paige

**MEDI 78.** Discovery and optimization of small molecule CSN5 inhibitors for the treatment of cancer. **E. Altmann**, B. Martoglio, M. Renatus, A. Schlierf, M. Schaefer, U. Hassiepen, K. Pfister, A.B. Jefferson, J. Quancard

**MEDI 79.** Structure-activity and structure-toxicity relationships of 1,5-diaryl-penta-1,4-dien-3-ones on prostate cell models. **M. Patanapongpibul**, X. Zhang, G. Ruiz, C. Chen, G. Chen, R. Wang, N. Subrahmanyam, J.Z. Keith, Q. Chen

**MEDI 80.** Structure based design, synthesis and activity studies of small hybrid molecules as HDAC and G9a dual inhibitors. **M. Kondengaden**, L. Zang, P.G. Wang

**MEDI 81.** *In silico* design and synthesis of novel thiourea and phenylsulfonyl-benzamide compounds as anti-prostate cancer agents. **M. Bassetto**, S. Ferla, A. Brancale, C. McGuigan

**MEDI 82.** Exploiting biocatalysis for the production of novel cryptophycin anticancer agents. **J.J. Schmidt**, K.L. Bolduc, S.I. Brody, F.A. Valeriote, D.H. Sherman

**MEDI 83.** Design, synthesis and evaluation antitumoral of quinazoline derivatives. **A.S. Matus-Meza**, M. Herrera-Martinez, P. Talamás-Rohana, F. Hernández-Luis

- MEDI 84.** Discovery of indazole aldosterone synthase inhibitors as potential treatments for resistant hypertension. **S.B. Hoyt**, J.A. Taylor, C. London, A. Cooke, A. Ali, F. Ujjainwalla, J. Tata, M. Struthers, D. Cully, T. Wisniewski, N. Ren, C. Bopp, A. Sok, A. Verras, D.R. Mc Masters, Q. Chen, E. Tung, W. Tang, G. Salituro, J. Clemas, G. Zhou, R. Duffy, Y. Xiong
- MEDI 85.** Discovery and structural development of novel natriuretic peptide receptor A (NPR-A) agonists. **T. Iwaki**, Y. Oyama, T. Tomoo, T. Tanaka, M. Sugiyama, A. Yamaki, M. Furuya
- MEDI 86.** Design & synthesis of novel dihydropyrimidine derivatives as potential L- and T-type calcium channels blockers. **M.T. Ismail**, F. Zhang, O.H. Rizk, A.M. Farghaly, O.M. Aboulwafa, G.W. Zamponi, H.T. Fahmy
- MEDI 87.** ROCK kinase inhibitor prodrug to improve PK properties. **L. Wu**, Z. Chen, Y. Yao, X. Yang, D. Wu, Y. Li, R. Xu, J. Li, S. Chen
- MEDI 88.** Reducing bleeding risks of anticoagulants through a novel partial inhibition approach. **D. Afosah**, S. Verespy, R.S. Boothello, R. Karuturi, U.R. Desai
- MEDI 89.** Sulfonated benzothiazole based inhibitors of endothelial lipase. **J. Johnson**, G. Tora, Z. Pi, M. Phillips, X. Yin, L. Abell, G. Locke, R. Yang, L. Zhao, A. Rose, K. Behnia, X. Chen, M. Galella, A. Chen, D. Taylor, H. Lu, M. Basso, C. Caporuscio, L. Adam, T. Kirchgessner, H. Finlay, R.R. Wexler
- MEDI 90.** Discovery and optimization of novel chemotype LpPLA<sub>2</sub> inhibitors featuring a unique binding mode. **P. Li**, S. Aravapalli, A. Dodson, B. McClelland, E.S. Manas, J. Marino, C. Neipp, J.E. Pero, V. Patel, R.A. Rivero, C. Seath, D. Somers, R. Velagaleti, A. Woolford, R. Xie
- MEDI 91.** Strategies toward structurally constrained diamide inhibitors of FXIa. **M.J. Orwat**, L. Smith, Y. Wang, S. Srivastava, W. Yang, K. Rossi, J. Luetgten, J. Bozarth, A. Wei, V. Ramamurthy, S. Sheriff, J. Myers, P. Morin, D. Seiffert, P.Y. Lam, R.R. Wexler, D. Pinto
- MEDI 92.** Stat5 and chronic myeloid leukemia: Synthesis and biological evaluation of novel inhibitors. **L. Juen**, G. Prié, M. Viaud-Massuard, M. Brachet-Boiteau, J. Bourgeois, F. Gouilleux
- MEDI 93.** Monitoring the progression of structure-activity relationship information during lead optimization. **D. Dimova**, J. Bajorath
- MEDI 94.** Design and synthesis of macrocyclic factor XIa inhibitor. **T. Fang**, J.R. Corte, E. Osuna, W. Yang, Y. Wang, Y.T. Jeon, K. Rossi, A. Rendina, J. Bozarth, S. Sheriff, J. Myers, T. Harper, Z. Lou, J. Zheng, J. Luetgten, D. Seiffert, P.Y. Lam, R.R. Wexler, M.L. Quan
- MEDI 95.** Structure-based design of novel ROR $\gamma$  inverse agonists. **Y. Zheng**, **L. Jia**, J. Yuan, L.W. Dillard, L. Zhuang, K. Fan, C.M. Tice, C. Dong, A.P. Marcus, S.D. Lotesta, P. Noto, S. Meng, K. Lipinski, G. Kandpal, Y. Bukhtiyarov, Y. Zhao, D. Lala, J. Zhou, R. van Order, G. Chen, B.M. McKeever, G. McGeehan, D.A. Claremon, S.B. Singh
- MEDI 96.** Protease inhibitors from derivatives of tranexamic acid. **B.K. Bordoloi**, N. Sarma, R. Eisenberg
- MEDI 97.** New small organic ligands for the natural cytotoxicity receptor Nkp30. **P. Pinheiro**, J. Justino, M.M. Marques
- MEDI 98.** Structural investigation of FISLE-412, a peptidomimetic compound derived from saquinavir that targets lupus autoantibodies. **M. He**, S. VanPatten, K. Cheng, S. Sun, A. Altit, O. Bloom, B. Volpet, B. Diamond, Y. Alabed
- MEDI 99.** Anti-DNA antibodies as a drug target in systemic lupus erythematosus. **S. Vanpatten**, A. Papatheodorou, V. Jeganath, J.M. Crawford, O. Bloom, B.T. Volpe, C. Grant, T. Coleman, B. Diamond, Y. Al-Abed
- MEDI 100.** Discovery of potent and selective ROR $\gamma$  inverse agonists through scaffold hopping using CoreHop™. **Y. Fan**, Z. Liu, Y. Zheng, L. Jia, J. Yuan, L.W. Dillard, L. Zhuang, C.M. Tice, C. Dong, A.P. Marcus, S.D. Lotesta, P. Noto, S. Meng, K. Lipinski, G. Kandpal, Y. Bukhtiyarov, Y. Zhao, D. Lala, J. Zhou, R.V. Orden, G. Chen, B.M. McKeever, G. McGeehan, D.A. Claremon, S.B. Singh
- MEDI 101.** Discovery of novel S1P<sub>2</sub>-sparing S1P<sub>1</sub> & S1P<sub>3</sub> receptor agonists for treatment of multiple sclerosis. **W. Son**, H. Kim, N. Cho, S. Seo, J. Park, K. Sim, J. Seong, S. Lim, K. Park, D. Baek, K. Jeong, A. Pae
- MEDI 102.** Taurine prodrugs: a new class of amino acid anti-inflammatory drug devoid gastric toxicity. **E.O. Vizioli**, R.C. Chelucci, R. Chiqueto, P.L. Bosquesi, J.L. Santos, **C.M. Chin**
- MEDI 103.** Structure-based design of 3-(4-aryl-1H-1,2,3-triazol-1-yl)-biphenyl derivatives as P2Y<sub>14</sub> receptor antagonists. **A. Junker**, R. Balasubramanian, A. Ciancetta, E. Uliasi, E. Kiselev, C. Martingiano, K. Trujillo, G. Mchedlidze, **K.A. Jacobson**
- MEDI 104.** Non selective PDE inhibitors as promising anti-inflammatory medicine. **L. Wu**, P. Zhang, L. Zhang, F. Gao, H. Jia, Z. Chen, R. Xu, J. Li, S. Chen, F. Geng, Y. Shen, B. Liu, X. Ma
- MEDI 105.** Synthesis and development of novel compounds selectively targeting on sphingosine 1-phosphate receptor 1 (S1P1) for treatment of multiple sclerosis. **S. Yeon**, J. Park, T. Ha, J. Choi, B. Jang, S. Kim, Y. Lee, S. Shin, K. Park
- MEDI 106.** 2,5-Isomers of triazole-pyrroropyrimidine act as selective inhibitors of Janus kinase 2 (JAK2) compared to JAK1 and JAK3. **L. Sun-mi**, Y. Kim
- MEDI 107.** Targeting pulmonary inflammation by pharmacological augmentation of leukotriene A<sub>4</sub> hydrolase with 4-methoxydiphenylmethane. **K. Lee**, S. Peyton, H. Lee, M. Burdick, E.M. Chung, S.M. Noble, Y.M. Shim, M. Paige
- MEDI 108.** Design and characterization of peptide inhibitors of the interleukin-1 $\beta$  receptor signaling complex. **K. Lee**, A. Dailing, L. Liotta, A. Luchini, M. Paige
- MEDI 109.** Design and synthesis of small molecule inhibitors of interleukin-1 $\beta$  for the treatment of osteoarthritis. **K. Kim**, A. Dailing, L. Liotta, A. Luchini, M. Paige
- MEDI 110.** Discovery of a novel allosteric thyroid hormone binding site on macrophage migration inhibitory factor (MIF). **S. Sun**, Y. Al-Abed
- MEDI 111.** Design and synthesis of 1,3,4-thiadiazoles as S1P<sub>1</sub> and S1P<sub>3</sub> selective agonists for the treatment of autoimmune diseases. **B. Enugurthi**, E. Martinborough, A.R. Yeager, L. Huang, J. Tamiya, M. Moorjani, M. Boehm, F. Scott, B. Clemons, J. Brooks, R. Powell, H. Dedman, H. Desale, G. Reinhard, G. Timony, R. Peach
- MEDI 112.** Identification of novel arylpiperazinyl butyrolactones 5-HT<sub>2</sub> antagonists as potential inflammatory bowel disease (IBD) therapies. **K. Blatner**, B.E. Blass, D.J. Canney, R. Gao, J.C. Gordon, M. Abou-Gharbia, D.A. Pippin, H. Wang, W. Khan
- MEDI 113.** Identification of Vps34 as a key-off target activity in the search for a suitable PI3K $\delta$  oral inhibitor for the treatment of respiratory diseases and its potential impact on toxicity. **S. Bertrand**, A. Amour, N. Barton, K. Down, C. Edwards, P. Grand, N. Hamblin, Z. Harrison
- MEDI 114.** Asymmetric synthesis and preliminary biological evaluation of heteroaromatic lipoxin A<sub>4</sub> analogues. **A. Zanetti**, E. Butler, C. Loscher, P.J. Guiry
- MEDI 115.** Asymmetric synthesis and biological evaluation of novel heteroaromatic lipoxin A<sub>4</sub> analogues for biological evaluation. **K. Gahan**, E. Butler, M. de Gaetano, C. Godson, P.J. Guiry
- MEDI 116.** Tryptamine derivatives, extracted from Syrian rue seeds, negatively affected *Leishmania tarentolae* in culture: A model study. **K. Eichenberg**, B. Dorsey, A. Broedlow, J. Wickline, M.A. Jones
- MEDI 117.** Synthesis and biological evaluation of 5,7-dihydroxyflavanone derivatives as antimicrobial agent. **S.Y. Kim**, X. Zhang, O. Khalidi, R. Wang, S. Victor, B. Cress, R.A. Gross, M. Koffas, R.J. Linhardt
- MEDI 118.** Inhibitors of LHR-1 as novel anti-parasitic drugs. **C.R. Johnson**, X. Yuan, I. Hamza, F. Xue
- MEDI 119.** New vacuolar-ATPase inhibitors as antiviral therapies. **A. Lindstrom**, D.P. Petrov, R. Davey, D.J. LaCount, V.J. Davison
- MEDI 120.** Synthesis and biological evaluation of polyalthic acid derivatives for the treatment of neglected diseases. **C.S. Mizuno**, A.B. Souza, B.L. Tekwani, S.R. Ambrósio, R. Veneziani
- MEDI 121.** Antibacterial activity of *Combretum farinosum* extracts. **I. Maldonado**, A.K. Addo-Mensah
- MEDI 122.** Synthesis and biological evaluation of pyochelin analogs as potential antibacterial agents against pathogenic bacteria. **J. Kong**, S. Yoganathan
- MEDI 123.** Multidisciplinary approach to design New Delhi metallo- $\beta$ -lactamase-1 (NDM-1) inhibitors. **E.K. Kurbanov**, S. Cohen
- MEDI 124.** Antimicrobial and exfoliative properties of silver(I) N-heterocyclic carbenes. **M. Stromyer**, M. DeBord, K.M. Tiemann, S.R. Crabtree, M.J. Panzner, C. Tessier, D.A. Hunstad, W.J. Youngs
- MEDI 125.** Potent influenza endonuclease inhibitors developed from metal-binding pharmacophore library screen. **C.V. Credille**, S. Cohen
- MEDI 126.** Synthesis and antimicrobial studies of hydrophilic pyrazole derivatives as potent antibacterial agents. **M.A. Alam**, D. Allison, E. Delancey, D. Jones, **A. Gottsponer**, D. Gilmore
- MEDI 127.** Design, synthesis, and evaluation of a carbapenem antibiotic with improved activity against carbapenemase-producing *Klebsiella pneumoniae*. **W. Chai**, **M. Alqurafi**, T.Q. Nguyen, P. Nguyen, J. Kim, C. Edwards, B. Meshram, M. Lohry, M. Cox, D. Le, E. Kim, S. Casco, P. Oelschlaeger, S. Hartouni, J.W. Janc, J.D. Buynak
- MEDI 128.** Development of azotochelin analogues as potential antibacterial leads. **N. Karadhekar**, S. Yoganathan
- MEDI 129.** Synthesis of 2'-C-methyl pseudouridines for the inhibition of HCV RNA polymerase. **I. Sappy**
- MEDI 130.** Boronic acid analogs of anti-HIV therapies: Synthesis and biological evaluation. **S. Burke**, J.W. Tomsho
- MEDI 131.** Synthesis of solithromycin analogues with acyclic desosamine surrogates. **X. Jin**, R.B. Andrade
- MEDI 132.** Structural characterization and inhibition of shikimate kinase from methicillin resistant *Staphylococcus aureus* through homology modeling and molecular docking simulations. **A. Favela-Candia**, R. Moreno-Slierio, E. Sierra-Campos, M.A. Valdez-Solana, J. Cisneros-Martinez, A. Téllez-Valencia, **C.I. Avitia-Domínguez**
- MEDI 133.** Computer assisted drug design to find potential inhibitors of phosphoglycerate mutase 1 from *Plasmodium falciparum*. **L. Rios-Soto**, M. Aguirre-Raudry, E. Sierra-Campos, M.A. Valdez-Solana, M. Gómez-Palacio, A. Téllez-Valencia, **C.I. Avitia-Domínguez**
- MEDI 134.** Structure-based drug design (SBDD), synthesis and evaluation of peptides inhibitors of Y-49  $\beta$ -lactamase from *Mycobacterium tuberculosis*. **J. Gonzalez**, **C.C. Clement**, M. Philipp
- MEDI 135.** Development of inhibitors of the di-zinc metallo beta-lactamase NDM-1. **I.Y. Darwish**, M. Moore, C. Reidl, A. Stewart, P. Thomas, W. Fast, D.P. Becker
- MEDI 136.** Design, synthesis, and evaluation of improved apramycin derivatives for the treatment of MDR infectious diseases. **A. Sonousi**, A. Vasella, E. Böttger, D. Crich
- MEDI 137.** Withdrawn.
- MEDI 138.** Fragment-based design, synthesis, and binding of non-peptide mimics of NS4A and their binding to HCV NS3/4A protease. **M.E. El-Araby**, A. Omar, M.T. Khayat, S. Soror, S. Arold, M. El-Faky, E. Elalem, F. Bamane, H. Asfour
- MEDI 139.** Synthesis and development of the endophenazines as new antibacterial drugs. **M.M. Conda-Sheridan**, M.B. Samad, V.R. Udumula
- MEDI 140.** Characterization of menoctone efficacy against *Plasmodium berghei*. **A. Shaikh**, I.D. Iyamu, L. Blake, S. Siegel, M. Johnson, D. Kyle, R. Manetsch
- MEDI 141.** SAR study of novel anti-fungal agents targeting the synthesis of fungal sphingolipids. **K.H. Raghunandan**, K. Hu, C. Lazzarini, M. DelPoeta, I. Ojima
- MEDI 142.** Estimated binding energies of molecules in the active site of HIV-1 integrase (1BIS.pdb): Results of drug-like and nondruglike molecules with consideration of mutations of 1BIS.pdb using ICM-Pro (Molsoft L.L.C.). **J.B. Ealy**, H. Yazgi, N. Abouomar, J. Cogan

- MEDI 143.** Dipicolinic acid derivatives as inhibitors of New Delhi metallo- $\beta$ -lactamase-1 (NDM-1). **Y. Chen**, C.R. Bethel, P. Thomas, R. Bonomo, W. Fast, S. Cohen
- MEDI 144.** Towards enhanced treatment of tuberculosis: Discovery and development of indole-2-carboxamide scaffold. **J. Stec**, O.K. Onajole, S. Lun, H. Guo, B. Merenbloom, G. Vistoli, W.R. Bishai, A.P. Kozikowski
- MEDI 145.** 8-Hydroxyquinoline as a scaffold for the development of New Delhi metallo- $\beta$ -lactamase-1 Inhibitors. **R. Adamek**, C.V. Credille, W. Fast, S. Cohen
- MEDI 146.** Withdrawn.
- MEDI 147.** Synthesis of novel 2-methoxylated fatty acids as effective inhibitors of clinical isolates of methicillin-resistant *Staphylococcus aureus* (CLMRSA). **N.M. Carballeira**, N. Montano, D. Sanabria, Y. Rivera-Torres
- MEDI 148.** Orally bioavailable antimarial 4(1*H*)-quinolone prodrugs with single-dose cures. **F. Brockmeyer**, A. Monastyrskiy, A.N. LaCrue, T. Mutka, D. Kyle, R. Manetsch
- MEDI 149.** Synthesis and kinetic characterization of mechanism-based inhibitors of tubercular BioA. **C. Eiden**, J.D. Lipscomb, C.C. Aldrich
- MEDI 150.** Towards the synthesis of novel 1,3-azaborines as potential HIV-1 protease inhibitors. **K.M. Norris**, K. Sigurjonsson, M.D. Frank, L. Fabry-Asztalos
- MEDI 151.** New bisabolones isolated from *Calea urticifolia*. **V. Gogineni**, F. León, M. Núñez, S.J. Cutler
- MEDI 152.** Inhibition of phosphoglycerate mutase from *Entamoeba histolytica* by benzimidazole derivatives. **A. Luévano-De la Cruz**, E. Sanabria-Chanaga, A. Hernandez Campos, L. Yépez-Mulia, M. Sarabia-Sánchez, C. Avitia-Domínguez, **A. Téllez-Valencia**
- MEDI 153.** Design, synthesis, and biological evaluation of pyrrolo[2,3-*d*]pyrimidines as potent and selective dihydrofolate reductase inhibitors and potential anti-opportunistic agents. **A. Gangjee**, **K.S. Shah**, S.F. Queener, V. Cody, J. Pace
- MEDI 154.** Synthesis and evaluation of boron-containing inhibitors of the non-mevalonate isoprenoid synthesis pathway. **J.M. Gamrat**, S.J. Burke, B.C. Figula, J.W. Tomsho
- MEDI 155.** Hydroxymethylnitrofurazone (NFOH) in chronic Chagas disease animal model. **C.B. Scarim**, R.C. Consolin Chelucci, I. Martinez, E. Padilha, J.A. da Rosa, R.G. Peccinin, C.R. Andrade, J.L. Santos, **C.M. Chin**
- MEDI 156.** Parmodulins: Biased ligands for protease-activated receptors (PARs). **C. Dockendorff**, D. Gandhi, R. Rosas, Jr., O. Aisiku, J. Dilks, R. Flaumenhaft
- MEDI 157.** Three-ring scaffold with rich biological activity but no commercial availability. **A.S. Bayden**
- MEDI 158.** Evaluation of brain migration and therapeutic effects of novel RXR partial agonist CBT-PMN on cognitive impairment in mice. **O. Shibahara**, M. Watanabe, S. Yamada, M. Akehi, T. Sasaki, T. Hanada, A. Akahoshi, H. Hirano, H. Kakuta
- MEDI 159.** Syntheses of 3-aminopiperidinone amides as CGRP receptor antagonists. **C. Wang**, M.E. Fraley
- MEDI 160.** Preparation and evaluation of a series of  $^{18}\text{F}$ -enkephalin analogues: the first step in the design of potent and selective  $^{18}\text{F}$ -labeled PET tracers for delta opioid receptor imaging. **A. Pirisedigh**, **Y. Dory**, **L. Gendron**, **B. Guerin**
- MEDI 161.** Evaluation of 4-(2-fluoro-4-nitrophenoxy)-1-([ $^{11}\text{C}$ ]methyl)-1,2,3,6-tetrahydropyridine as a MAO-A selective PET-MRI hybrid imaging probe. **L. Drake**
- MEDI 162.** Pyrrolotriazines as potent inhibitors for a novel serine-threonine kinase for indication of neuropathic pain. **B. Dasgupta**, C.D. Dzierba, J.J. Bronson, R. Rajamani, J.E. Grace, J. Lippy, N. Surti, J.M. Brown, L. Hunihan, J. Allen, B. Hamman, K. Baker, K. Savelleva, B. Zambrowicz, C. Bourin, A. Easton, L. Bristow, D. Parker, J.K. Muckelbauer, J. Khan, D.M. Camac, C. Conway, W. Kostich, R. Westphal, J.E. Macor
- MEDI 163.** Design and synthesis of new acetylcholine analogues acting as full agonists for the nicotinic acetylcholine receptor subtype  $\alpha 9\alpha 10$ . **E.G. Perez**, S. Tobias, D.J. Minter, J.C. Boffi, R. Reiff, E. Katz, C. Wedemeyer, A. Elgoyhen
- MEDI 164.** Synthesis and evaluation of C10 and flexible analogues of ( $\pm$ )-stepholidine at dopamine D<sub>2</sub> and  $\alpha 2$  receptors. **S. Gadhiya**, W. Harding
- MEDI 165.** Discovery of C6-truncated purine (N)-methanocarpa nucleoside derivatives as selective A<sub>3</sub> adenosine receptor agonists. **D. Tosh**, A. Ciancetta, E.P. Warnick, R. O'Connor, Z. Chen, E. Gizewski, S. Crane, Z. Gao, J. Auchampach, D. Salvemini, K.A. Jacobson
- MEDI 166.** Design, synthesis and in combo activity of selective  $\sigma$ -1 receptor ligands with robust antinociceptive effect. **G.J. Navarrete Vazquez**, B. Godínez-Chaparro, F.J. López-Muñoz, B. Wünsch, D. Schepmann, A. Austrich-Olivares, J. Espinosa-Juárez, L.A. Melo-Hernández, S. Hidalgo-Figueroa, . Torres-Gómez
- MEDI 167.** 2,4-Dioxo-3-aza-bicyclo[3.1.0]hexane-6-carboxamide derivatives as atypical antipsychotics for the treatment of schizophrenia. **A. Mohammed**, A.K. Shinde, N. Bogaraju, K.R. Sastry, R. Subramanian, S. Eedula, G. Bhyrapuneni, R. Nirogi
- MEDI 168.** Design, synthesis and pharmacological characterization of novel amides as 5-HT<sub>4</sub> receptor agonist. **A.K. Shinde**, A. Mohammed, S. Saraf, V. Bhatta, K. Kandukuri, K.R. Sastry, R. Subramanian, V. Mekala, G. Bhyrapuneni, V. Benade, P. Jayarajan, R. Nirogi
- MEDI 169.** Conjugated amides: Potent and selective histamine H<sub>3</sub> receptor ligands. **R. Nirogi**, **A.K. Shinde**, A. Mohammed, S. Saraf, K. Bojja, P. Achanta, K.R. Sastry, R. Subramanian, G. Bhyrapuneni, N. Muddana, P. Jayarajan
- MEDI 170.** 1-Isopropyl-1*H*-pyrrolo[2,3-*b*]pyridine-6-carboxamide derivatives as 5-HT<sub>4</sub> receptor partial agonists. **A. Mohammed**, A.K. Shinde, S. Gagginapally, K.R. Sastry, R. Subramanian, V. Mekala, G. Bhyrapuneni, P. Jayarajan, R. Nirogi
- MEDI 171.** Synthesis of [ $^{11}\text{C}$ ]MK-1064 as a new PET radioligand for imaging of orexin-2 receptor. **M. Gao**, **M. Wang**, Q. Zheng
- MEDI 172.** Tunable pH-sensitive linker for controlled release. **C. Choy**, C. Ley, J. Geruntho, B. Backer, A. Davis, C.E. Berkman
- MEDI 173.** Technologies for assessing target engagement and their applications in drug discovery. **J. Xiao**, T. Engler, K.W. Furness, S.A. Haney, C.D. Jesudason, T.B. Durham, M.J. Blanco-Pillado
- MEDI 174.** Long-term storage stability problems of screening libraries for drug discovery. **C. Laggner**, C. Johnson, Y. Shayo, C. Hendarto, C. Loomis
- MEDI 175.** NCI small molecule screening libraries available to academic oncology HTS investigators. **R.N. Misra**, M. Eckert, C. Laggner
- MEDI 176.** Methods for clean-up and enrichment of coporate screening collection. **M. Jorgenson**, M. Marigo, A.G. Sams, M. Langgard, L. David
- MEDI 177.** Directed evolution of PET imaging agents by scanning unnatural protease resistance (SUPR) mRNA display. **L. Kelderhouse**, A.N. Hardy, F. Pisaneschi, Y. Peleg, B. Hu, A. Ornelas, P. Yang, S. Gammon, S. Howell, D. Piwnica-Worms, P. Wang, T. Takahashi, R.W. Roberts, S.V. Fiacco, **S.W. Millward**
- MEDI 178.** [ $^{18}\text{F}$ ]JNJ-3 $^{11}$ , a novel tau PET ligand. **F. Rombouts**, D. Moechars, J. Andres, G. Macdonald, V. Chupakhin, X. Langlois, G.M. Bormans, L. Declercq
- MEDI 179.** Urea carboxylic acid derivatives as antischistosomal agents. **C. Wang**, J. Keiser, Y. Dong, J.L. Vennerstrom
- MEDI 180.** Discovery and evaluation of the first small molecules targeting GOAT inhibition *in vivo*. **M.A. Martinez-Grau**, C. Dominguez, C.S. Galka, E.J. Hembre, N.A. Honigschmidt, C.D. Jesudason, S.J. Keding, C. Nevill, G. Ruano, A. Rubio, K.M. Ruley, D.L. Smith, R.A. Brier, M.M. He, Y. Chen, N.A. Reynolds, H. Yang
- MEDI 181.** Withdrawn.
- MEDI 182.** Design, synthesis, and applications of novel PUFA-taxoid probes for fluorescence imaging and  $^{19}\text{F}$  NMR analysis. **S. Yan**
- MEDI 183.** Studies of influence of plasma-activation of compounds on melanogenesis and tyrosinase activity. **F. Jabeen**, A. Ali, Z. Ashraf, E. Ha Choi, P. Attri
- MEDI 184.** Crystallographic study of metalloenzyme inhibitors. **B. Dick**, S. Cohen
- MEDI 185.** Chemoenzymatic synthesis and characterization of multifunctional fluoresceins for breast cancer diagnosis. **G. Shrikhande**, S. Sen, J.E. Puskas
- MEDI 186.** Evaluation of silica stability in methanolic solvents. **J.R. Bickler**, E. Denton
- MEDI 187.** Effective cannabinoid purification by flash chromatography. **J.R. Bickler**, E. Denton
- MEDI 188.** Chemical make-up of plants used in herbal remedies and their applications. **B. Harvey**
- MEDI 189.** Dirhodium catalyzed direct aryl amination. **M.P. Paudyal**, A. Adebessin, D. Ess, Z. Ma, L. Kurti, J.R. Falck
- MEDI 190.** Synthesis of novel photoaffinity probes of antiangiogenic homoisoflavonoids. **W. Sun**, B. Lee, S. Seo, T. Corson
- MEDI 191.** Peptide-based capsules for protein delivery. **Y. Li**, L. Lock, H. Cui
- MEDI 192.** Synthesis of *cis-trans*-2-tert-butoxycarbonylamino-cyclopropanecarboxylic acid. **G. Pan**, H. Jing, H. Li, M. Yang
- MEDI 193.** Delivering phytochemical therapeutics through polymer nanofibers. **A. Mancuso**

## Radiopharmaceutical Chemistry

Sponsored by FLUO, Cosponsored by INOR, MEDI, NUCL and POLY

## MONDAY MORNING

### Section A

Pennsylvania Convention Center Room 114

#### Small Change, Big Impact: Strategic Minor Structural Modifications in Drug Design

T. Tsukamoto, *Organizer, Presiding*

9:00 Introductory Remarks.

9:05 **MEDI 194.** Strategic exploration of the magic methyl effect in drug design. **M.S. Egbertson**

9:40 **MEDI 195.** Challenges and opportunities of implementing halogen bonds in molecular design. **F.M. Boeckler**

10:15 **MEDI 196.** Some applications of fluorine in drug design. **N.A. Meanwell**

10:50 **MEDI 197.** Improvement in aqueous solubility via small structural modifications. **M.A. Walker**

11:25 **MEDI 198.** Strategies to reduce glucuronidation through structural modification. **S. Zimmermann**

### Section B

Pennsylvania Convention Center Room 113C

#### Small Molecule Approaches for the Treatment of Lupus

M. C. Bryan, *Organizer, Presiding*

J. B. Schwarz, *Presiding*

9:00 Introductory Remarks.

9:05 **MEDI 199.** Testing new therapeutics in SLE: Unmet needs and strategies. **A. Davidson**

9:35 **MEDI 200.** Translational studies evaluating Btk inhibition as a therapeutic strategy for the treatment of SLE. **A. Bender**, A. Pereira, K. Fu, E. Sany, Y. Wu, L.M. Liu-Bujalski, R. Caldwell, Y. Chen, H. Tian, F. Morandi, J. Head, M. Genest, S.L. Okitsu, D. Xu, P. Haselmayer, R. Grenningloh

10:05 **MEDI 201.** Discovery of pyridine amide based inhibitors of interleukin receptor-associated kinase 4 (IRAK4) for the treatment of lupus. **J. Hynes**, S. Nair, W.J. Pitts, R. Bhide, R. Schmidt, S. Spergel, V. Ram Reddy Paidi, S. Ratna Kumar, R. Sistla, J.B. Santella, D. Gardner, H. Wu, J.V. Duncia, N. Murugesan, J. Tino, P.H. Carter, J. Carman, S. Dudhgaonkar, R. Srivastava, F. Deborah, C. Goldstine, S. Skala, X. Li, S. Maddi, A. Saxena, K. Palanisamy, A. Chimalakonda, S. Ruepp

10:35 **MEDI 202.** Structure-based design of potent and selective inhibitors of NF- $\kappa$ B inducing kinase (NIK). **N. Blaquiere**, S.T. Staben, G. Castanedo

11:05 **MEDI 203.** E6887: A novel and selective inhibitor of toll-like receptors 7 and 8. **L.D. Hawkins**



## Section C

Pennsylvania Convention Center  
Room 113B

**Solute Carrier (SLC)  
Membrane Transporters as  
Emerging Drug Targets**

M. P. Bourbeau, *Organizer, Presiding*

**9:00 MEDI 204.** SLC transporters in drug response. K. Giacomini

**9:30 MEDI 205.** Structure-based ligand discovery for nutrient transporters. A. Schlessinger

**10:00 MEDI 206.** Discovery of a non-absorbable ASBT inhibitor clinical candidate for treatment of type 2 diabetes. J.L. Collins

**10:30 MEDI 207.** Blocking lactic acid transport: A cancer metabolism-based strategy for finding new antitumor agents. T.D. Bannister, H. Wang, C. Wang, R.N. Nair, C. Yang, W.R. Roush, J.L. Cleveland

**11:00 MEDI 208.** Development of selective uric acid reabsorption inhibitors (SURIs) for the treatment of gout. J. Girardet

**11:30 MEDI 209.** Overview of the progression of Pfizer's SGLT2 inhibitor program from the discovery of ertugliflozin (PF-04971729) to successful POC. V. Mascitti

**International Drug Discovery &  
Development Collaborations**

*Sponsored by SCHB, Cosponsored by  
MEDI, ORGN, POLY and PROF*

**Radiopharmaceutical Chemistry**

*Sponsored by FLUO, Cosponsored  
by INOR, MEDI, NUCL and POLY*

**Shedding Light on the Dark Genome:  
Methods, Tools & Case Studies**

*Sponsored by CINP, Cosponsored  
by BIOT, COMP and MEDI*

**Mass Spectrometry for the  
Masses: Recent Developments  
in Mass Spectrometry Enabled  
Pharmaceutical Discovery,  
Development & Manufacturing**

*Sponsored by ANYL, Cosponsored  
by MEDI and MPPG*

**Forced Degradations in the  
Pharmaceutical Industry**

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by MEDI and MPPG*

## MONDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 114

**Medicinal Chemist's Toolbox:  
Scaffolds & Privileged  
Scaffolds in Drug Design**

N. A. Meanwell, P. M. Scola, K. Yeung,  
*Organizers, Presiding*

**2:00** Introductory Remarks.

**2:05 MEDI 210.** Computational analysis of molecular scaffolds. J. Bajorath

**2:40 MEDI 211.** Spirocyclic scaffolds in drug discovery. C.M. Tice, Y. Zheng, S.B. Singh

**3:15 MEDI 212.** Malaria as a proof of concept of how natural products have inspired the development of preclinical and clinical candidates with diverse mechanisms of action. F. Calderon Romo

**3:50 MEDI 213.** Macrocyclic peptide scaffolds: Passive permeability and oral absorption beyond the rule of 5. S. Lokey

**4:25 MEDI 214.** LipMetE assessment of bioisosteres in medicinal chemistry. A.F. Stepan

## Section B

Pennsylvania Convention Center  
Room 113C

**Medicinal Chemistry of  
Chemical Biology**

R. J. DeVita, *Organizer, Presiding*

**2:00 MEDI 215.** Chemical probes for target validation. M. Bunnage

**2:30 MEDI 216.** Selective modulation of p97-dependent protein homeostasis networks. M. Arkin

**3:00 MEDI 217.** DrugTargetSeqR: An interdisciplinary approach to dissect the mechanisms of action of drugs and chemical probes. T. Kapoor

**3:30 MEDI 218.** Sirtuin inhibitors as anticancer agents. H. Lin

**4:00 MEDI 219.** Designed covalent inhibitors as chemical biology probes and drug development candidates. T.D. Owens

**4:30 MEDI 220.** Chemical and proteome-wide reactivity profiling of covalent serine hydrolase inhibitor chemotypes. M.J. Niphakis

## Section C

Pennsylvania Convention Center  
Room 113B

**Nucleic Acid Therapeutics**

A. C. Bryant-Friedrich, *Organizer*

M. Manoharan, *Presiding*

**2:00** Introductory Remarks.

**2:10 MEDI 221.** Tuning the chemical properties of XNA nucleotides and oligomers for therapeutics and diagnostics. J.M. Heemstra, T. De Costa, Z. Chen, A. Rangel, K. Meek

**2:45 MEDI 222.** RNAi therapeutics: From base pairs to bed side. M. Manoharan

**3:20 MEDI 223.** Expanding the chemical diversity of therapeutic oligonucleotides for the treatment of neurodegenerative disorders. A. Khvorova

**3:55 MEDI 224.** Development of nucleoside analogs as broadly active antiviral agents. G. Painter

**4:30 MEDI 225.** Sequence-based design of small molecules targeting RNA. M.D. Disney, S. Velagapudi, S. Rzuczek

**International Drug Discovery &  
Development Collaborations**

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**Kavli Symposium on Chemical  
Neurotransmission: What  
Are We Thinking?**

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BMGT, CHED, CINP, MEDI, PMSE and SCHB*

**Radiopharmaceutical Chemistry**

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**Tetrahedron Prize for Creativity in  
Organic Chemistry Symposium**

*Sponsored by ORGN, Cosponsored  
by BIOL, COMP and MEDI*

**Undergraduate Research Posters  
Medicinal Chemistry**

*Sponsored by CHED, Cosponsored  
by MEDI and SOCED*

## MONDAY EVENING

## Section A

Pennsylvania Convention Center  
Halls D/E

**Sci-Mix**

W. B. Young, *Organizer*

**8:00 - 10:00**

41, 44-45, 84, 94-95, 158.

See previous listings.

273, 286-287, 345-347, 352, 354-355, 376, 387-388. See subsequent listings.

## TUESDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 114

**Gut Reaction: Opportunities  
& Challenges of Gut-  
Specific Drug Targeting**

B. P. Mc Kibben, D. Smith, *Organizers,  
Presiding*

**8:30 MEDI 226.** Concepts in the design of intestinally targeted drugs. K.J. Filipski, M.V. Varma, A.F. El-Kattan, C.M. Ambler, R.B. Ruggeri, T.C. Goosen, K.O. Cameron

**9:00 MEDI 227.** Discovery of TGR5 agonists with gut restricted action. J.G. Lewis, T. Chen, J.W. Jacobs, P. Finn, D. Rodriguez, J. Kohler, K. Kozuka, L. He, C. Carreras, S. Koo-McCoy, J. Tabora, J. Caldwell

**9:30 MEDI 228.** Physical-property based design of gut-selective CCK1 receptor agonists. K.O. Cameron

**10:00 MEDI 229.** Gut restricted oral peptides as therapeutics for inflammatory bowel disease. L. Mattheakis, X. Cheng, G. Zemedel, L. Bai, V. Tran, H. Celino, B. Frederick, L. Zhao, M. Dogra, J. Tovera, S. Shah, N. Rao, G. Bourne, J. Zhang, J. McMahon, T. Annamalai, A. Bhandari, M. Smythe, D. Patel, D. Liu

**10:30 MEDI 230.** Power of the gut microbiome. G. Hecht

**11:15 MEDI 231.** Strategies to investigate the xenobiotic-metabolizing capabilities of the human gut microbiome. E. Bess, J. Bisanz, P. Spanogiannopoulos, P. Turnbaugh

**11:45** Discussion.

## Section B

Pennsylvania Convention Center  
Room 113C

**Emerging Isosteric Replacement  
Methods: A Fundamental  
Strategy in Drug Design**

T. Fessard, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 MEDI 232.** Applications of bioisosteres in drug design. N.A. Meanwell

**9:00 MEDI 233.** New computational methods to support bioisosteric replacement and molecular library design. N. Brown

**9:25 MEDI 234.** Novel building blocks for discovery chemistry: New vistas and opportunities with bioisosteres. E.M. Carreira

**9:55 MEDI 235.** Strategies towards increasing the 3-dimensionality of the medicinal chemistry design space. A.F. Stepan

**10:20 MEDI 236.** Cubane: A benzene isostere! C.M. Williams

**10:45 MEDI 237.** Isosteric replacement by catalytic fluorination, fluoroalkylation, borylation, silylation, and amination. J.F. Hartwig

**11:15 MEDI 238.** Late-stage functionalization of marketed drugs: Synthesis and use of tetrazolones as a carbonylic acid bioisostere. M.A. Duncon, R. Murray, G. Park, R. Singh

**11:40 MEDI 239.** Development of synthetic methods for the construction of isosteres. G.A. Molander

**12:10** Concluding Remarks.

**Connectivity & the Global Reach  
of Chemistry: Honoring the  
Life & Scientific Contributions  
of Ernest L. Eliel**

*Sponsored by ORGN, Cosponsored  
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MEDI, MPPG, PMSE and SCHB*

**Polymeric Materials as Imaging  
Agents & Theranostics**

**Drug Delivery**

*Sponsored by POLY, Cosponsored by  
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## TUESDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 114

**MEDI Award Symposium**

W. B. Young, *Organizer*

T. D. Bannister, *Presiding*

**2:00 MEDI 240.** Optimization of a benzoxazepinindazole series for human African trypanosomiasis. D. Klug, R. Diaz-Gonzalez, C. Cordon-Obras, D. Rojas-Barros, M. Navarro, M.P. Pollastri

**2:20 MEDI 241.** Synthetic lethal targeting: A new anticancer strategy. K.E. Knewton, C. Perera, B.R. Peterson

**2:40 MEDI 242.** Reactivity-based and genome-guided natural product discovery. J. Tietz, D. Mitchell

**3:00 MEDI 243.** Discovery of an agouti-related protein (AGRP) octapeptide macrocycle derivative with equipotent antagonist pharmacology at the mouse melanocortin-4 receptor as AGRP(87-132). M. Ericson, A. Wilczynski, Z. Xiang, N. Sorensen, C. Haskell-Luevano

**3:20 MEDI 244.** Small molecule induced degradation of bromodomains. D. Buckley

**3:40 MEDI 245.** Drug design for addiction: Targeting the dopamine D<sub>3</sub> receptor. A.H. Newman

**4:25 MEDI 246.** Novel immunomodulators that target toll-like receptors. H.H. Yin

## Section B

Pennsylvania Convention Center  
Room 113C

## Modulation of the Ubiquitin-Proteasome Pathway

E. Altman, V. Cee, J. D. Hansen, *Organizers, Presiding*

- 2:00 MEDI 247.** Targeting the regulatory enzymes in protein ubiquitination. **N. Zheng**
- 2:30 MEDI 248.** New paradigm in drug action: Differentiated gain of function amongst IMiD® analogues binding the E3 ubiquitin ligase, CRL4<sup>CRBN</sup>. **J.D. Hansen**

**3:00 MEDI 249.** Proteolysis targeting chimera (PROTACS): Recruiting proteins to the cellular quality control machinery. **C.M. Crews**

**3:30 MEDI 250.** Structure based design of COP9 directed inhibitors. **M. Renatus, E. Altman, A. Schlier, M. Jones, U. Hassiepen, R. Assenberg, M. Schaefer, J. Quancard, M. Kiffe, A. Weiss, W. Christian, R.C. Sedrani, J. Eder, B. Martoglio, K. Pfister, A. Jefferson**

**4:00 MEDI 251.** Discovery of TAK-243: An investigational, first-in-class inhibitor of the ubiquitin activating enzyme. **J. Ciavarrì**

## Needs &amp; Directions for the Future of Toxicology in Pharmaceutical Development

*Sponsored by TOXI, Cosponsored by MEDI*

## Polymeric Materials as Imaging Agents &amp; Theranostics

## Medical Imaging

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## WEDNESDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 114

## Epigenetics

W. B. Young, *Organizer*

J. E. Macor, *Presiding*

**9:00 MEDI 252.** From a novel HTS hit to a series of potent, selective, orally bioavailable KDM5 inhibitors: A success story utilizing structure- and property-based design. **J. Liang**

**9:25 MEDI 253.** Isoxazole-derived amino acids are bromodomain-binding acetyl-lysine mimics when incorporated in histone H4 peptides and histone H3. **A.R. Sekimik, D. Hewings, N.H. Theodoulou, L. Jursins, K. Lewendon, L. Jennings, T. Rooney, S.J. Conway**

**9:50 MEDI 254.** Fragment-based, structure-enabled discovery of novel pyridone and pyridazinone macrocycles as potent selective BET family bromodomain inhibitors. **L. Wang, J. Pratt, G.S. Sheppard, S. Fidanze, D. Liu, L.A. Hasvold, R. Mantei, C. Park, A. Sarthy, L. Li, D.H. Albert, X. Lin, S. Warder, E. Favre, M.H. Bui, X. Huang, D. Wilcox, R. Wang, T. Magoc, G. Rajaraman, A. Petros, S. Panchal, G. Fang, S.W. Elmore, S. Rosenberg, Y. Shen, K. McDaniel, W. Kati**

**10:15 MEDI 255.** Discovery of an *in vivo* probe for the bromodomain of CBP that is efficacious in a MOLM-16 AML xenograft model. **A. Romero**

**10:40 MEDI 256.** Discovery and structure-based optimization of novel allosteric inhibitors targeting the epigenetic methyltransferase PRC2. **A. Lingel, D. Bussiere, J. Cantwell, M.P. Dillon, Y. Huang, M. Lindvall, M. Sendzik, W. Shu, B.R. Taft**

**11:05 MEDI 257.** Discovery of first-in-class reversible dual inhibitor of DNA methyl transferases and histone methyl transferase (G9a) with *in vivo* activity in different cancer models. **E. San Jose, X. Agirre, O. Rabal, A. Vilas-Zornoza, J. Sanchez-Arias, E. Miranda, A. Ugarte, R. Alvarez, S. Roa, B. Paiva, N. Casares, V. Segura, J. Martin-Subero, G. Castellano, M. Garcia Fernandez de Barrera, J. Rodriguez-Madoz, M. Garcia-Barchino, J. Lasarte, M. Avila, J. Martinez-Climent, F. Prosper, J. Oyarzabal**

**11:30 MEDI 258.** Dual screening using protein-observed fluorine NMR uncovers the first selective inhibitor for BPTF. **A.K. Urlick, L.M. Hawk, M. Cassel, N.K. Mishra, S.E. Kirberger, P. Ycas, C. Dos Santos, W.C. Pomerantz**

## Section B

Pennsylvania Convention Center  
Room 113C

## General Orals

W. B. Young, *Organizer*

R. J. DeVita, *Presiding*

**8:30 MEDI 259.** Structure-based drug design of aminobenzisoxazoles as orally available factor IXa (FIXa) inhibitors. **I. Sakurada**

**8:55 MEDI 260.** Discovery and optimization of the first sub-micromolar, cell permeable, small molecule inhibitors of poly(ADP ribose) glycohydrolase (PARG). **A. McGonagle, B. Acton, J. Ahmet, P. Chapman, E. Fairweather, L. Griffiths, N. Hamilton, N. Hamilton, J. Hitchin, C. Hutton, D. James, C. Jones, S. Jones, A.M. Jordan, D. Mould, D. Ogilvie, K. Smith, A. Stowell, H. Small, J. Tucker, I. Waddell, B. Waszkowycz**

**9:20 MEDI 261.** Discovery of ozanimod (RPC1063): A S1P<sub>1R</sub> and S1P<sub>5R</sub> selective agonist for the treatment of autoimmune disease. **J. Tamiya, E. Martinborough, A.R. Yeager, L. Huang, B. Enugurthi, M. Moorjani, M. Boehm, F. Scott, B. Clemons, J. Brooks, R. Powell, H. Dedman, H. Desale, G. Reinhart, G. Timony, R. Peach**

**9:45 MEDI 262.** Structure-based design of highly potent and selective small-molecule reversible factor D inhibitors blocking *in vivo* alternative complement pathway activation. **J.K. Maibaum, K. Anderson, A. Vulpetti, E. Lorthois, N. Ostermann, S. Liao, S. Randl, O. Rogel, E. Paul, B. Gerhartz, U.A. Argikar, I. Müller, U. Hommel, B. Kinzel, F. Kolb, S. Rüdiger, F. Cumin, R.C. Sedrani**

**10:10 MEDI 263.** Potent, gut-restricted inhibitors of divalent metal transporter 1 (DMT1): Preclinical efficacy against iron overload and safety evaluation. **S. Chowdhury, A. Cutts, L. Ratkay, M. Eyers, C. Young, R. Namdari, J. Cadieux, N. Chahal, M.E. Grimwood, Z. Zhang, S. Lin, I. Tietjen, C. Xie, L. Robinette, L. Sojo, M. Waldbrook, M.D. Hayden, T.S. Mansour, S. Pimstone, Y. Goldberg, M.J. Webb, C. Cohen**

**10:35 MEDI 264.** Development of novel, selective and irreversible PI3K $\delta$  inhibitors. **S.E. Dalton, S.A. Campos, J.T. Bush, D.A. Thomas, M.A. Convery, J.A. Murphy**

**11:00 MEDI 265.** C-linked benzyl triazolopyridine inhibitors of myeloperoxidase. **S. Shaw, B.P. Vokits, L. Abell, M. Basso, C.G. Clark, A. Dilger, F. Duclos, G. Fernando, S. Halpern, S. Jusuf, J. Khan, L.M. Kopcho, X. Liu, F. Lo, G. Locke, R. Narayanan, R.J. Peterson, P. Sleph, J. Smallheer, A. Viet, R.R. Wexler, N. Wurtz, L. Zhao, E.K. Kick**

**11:25 MEDI 266.** Systematic study of the glutathione (GSH) reactivity of *N*-arylacrylamides. **V. Cee, L.P. Volak, Y. Chen, M.D. Bartberger, D.J. Kopeczy, C. Tegley, T. Arvedson, J. McCarter, A.S. Tasker, C.H. Fotsch**

**11:50 MEDI 267.** Discovery of BMS-212 as a potent, liver-selective glucokinase activator clinical candidate. **W. Meng, R. Brigance, H. Zhang, D.S. Yoon, Y. Wang, R.A. Smirk, L. Nielsen, Y. Shi, S.S. Chen, S. Wu, S. Tao, R. Sulsky, R. Zhao, B. Wang, J. Sun, M. Wong, A. Mathur, Y. Yang, J. Taylor, H. Fuentes, X. Ma, R. Ponticelli, R. Zebbo, X. Chen, K. Omalley, L.M. Kopcho, S. Johnson, J. Muckelbauer, C. Chang, Q. Wang, K. Behnia, B. Zinker, A. Wang, E. Janovitz, M. Kirby, J. Whaley, J.C. Barrish, J.A. Robl, P.T. Cheng**

## WEDNESDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Room 114

## First Time Disclosures

L. A. Thompson, *Organizer, Presiding*

**1:30 MEDI 268.** Discovery of AG-120: A first-in-class inhibitor of IDH1 mutant enzymes for the treatment of cancers harboring IDH1 mutations. **J.V. Popovici-Muller, R.M. Lemieux, J. Saunders, F.G. Salituro, K. Yen, K. Straley, E. Tobin, F. Wang, S. Gross, E. Artin, L. Dang, H. Yang, L. Utley, Y. Chen, A. Olaharski, L. Silverman, S. Agresta, M. Su, S.A. Biller**

**2:00 MEDI 269.** JNJ-54175446: A P2X7 receptor antagonist clinical candidate for major depressive disorders. **B.M. Savall**

**2:30 MEDI 270.** SAGE-217: A next-generation neuroactive steroid GABA<sub>A</sub> receptor positive allosteric modulator for the potential treatment of seizure disorders. **A.J. Robichaud**

**3:00 MEDI 271.** Inhibition of autoimmune pathways with dual inhibition of JAK1 and TYK2: Discovery of PF-06700841. **A. Fensome, M. Banker, M.F. Brown, J. Clark, M. Dowty, I.V. Eftremov, B.S. Gerstenberger, A. Gopasamy, M. Hayward, M. Hegen, B. Hollingshead, J. Jussif, J. Knafels, T. Lin, B. Pierce, E. Saiah, R. Sharma, P. Symanovic, F. Vajdos, F. Vincent, Z. Wan, L. Xing, X. Yang, X. Yang, J. Trujillo, L. Zhang**

**3:30 MEDI 272.** Discovery of a pseudokinase domain ligand as an allosteric inhibitor of TYK2 for the treatment of autoimmune diseases. **D.S. Weinstein, S. Wroblewski, R. Moslin, S. Lin, Y. Zhang, S. Spergel, M. Mertzman, J.S. Tokarski, H. Sun, M. Chiny, P.P. Etzing, N. Aranibar, A. Chimalakonda, J. Strnad, A. Zupa-Fernandez, L. Cheng, K. Gillooly, K. McIntyre, P.H. Carter, L. Lombardo, J.R. Burke, J.E. Macor**

**4:00 MEDI 273.** Discovery of NVP-HDM201: Identification of a next-generation Mdm2 inhibitor with superior characteristics. **P. Holzer, P. Chène, S. Ferretti, P. Furet, T. Gabriel, B. Gruenfelder, V. Guagnano, F. Hofmann, J. Kallen, R. Mah, K. Masuya, F. Ramos, S. Ruetz, C. Rynn, A. Schlapbach, T. Stachyra-Valat, S. Stutz, A. Vaupel, S. Jeay**

**4:30 MEDI 274.** Discovery of DRX-065: Characterizing the non-PPAR $\gamma$ , mitochondrial function modulation and anti-inflammatory activity of thiazolidinedione (TZD) enantiomers using deuterium. **A.W. Czarnik, S.H. Dewitt, V. Jacques, L. Van der Ploeg**

## Section B

Pennsylvania Convention Center  
Room 113C

## General Orals

W. B. Young, *Organizer*

A. W. Stamford, *Presiding*

**1:30 MEDI 275.** Distributed drug discovery (D3) in action: Finding inhibitors of *P. aeruginosa*. **W.L. Scott, J.G. Samaritoni, G. Anderson, K.A. Marrs, S. Colglazier, J.R. Hitchens, S.D. Burris, M.S. Ware, M.J. O'Donnell**

**1:50 MEDI 276.** Discovery of potent HCV NS5A inhibitors with pan-genotype activity. **W. Yu, L. Chen, M.P. Dwyer, K. Keertikar, S. Kim, B.J. Lavey, A.G. Nair, R. Rizvi, S.B. Rosenblum, O. Selyutin, B. Shankar, L. Tong, M.K. Wong, D. Yang, Q. Zeng, G. Zhou, B. Hu, B. Zhong, D. Wang, J. Hao, R. Liu, S. Agrawal, D. Carr, L. Rokosz, S. Curry, P. McMonagle, P. Ingravallo, F. Lahser, E. Asante-Appiah, A. Nornair, C.A. Coburn, J.A. Kozlowski**

**2:10 MEDI 277.** Discovery of LY3073084, a novel non-peptide small molecule ghrelin-O-acyl transferase (GOAT) inhibitor. **E.J. Hembre, R.A. Brier, Y. Chen, C. Dominguez, C.S. Galka, M.M. He, N.A. Honigschmidt, C.D. Jesudason, S.J. Kedding, M.A. Martinez-Grau, C. Nevill, N.A. Reynolds, G. Ruano, A. Rubio, K.M. Ruley, D.L. Smith, H. Yang**

**2:30 MEDI 278.** Biotin carboxylase inhibitors with improved antibacterial activity against gram-negative pathogens. **T. Kane, A. Serio, C. Haglund, D. Hildebrandt, G.A. McEnroe, H. Le, K. Wlasicchuk, L. Andrews, M. Linsell, P. Dozzo, R. Cirz, T. Machajewski, D. Neau, N. Anzalone, S. Pakhomova, G.L. Waldrop, F. Cohen**

**2:50 MEDI 279.** Discovery of allosteric WNK inhibitors and *in vivo* proof-of-concept as anti-hypertensive agents. **K. Yamada**

**3:10 MEDI 280.** Optimization of a heteroaryl sulfonamide series of potent, selective and efficacious Nav1.7 inhibitors. **M.M. Weiss, A. Boezio, J. Butler, T.A. Dineen, R. Graceffa, C. Kreiman, T. Kornecook, D.S. La, I.E. Marx, B. Milgram, B. Sparling, B. Moyer**

**3:30 MEDI 281.** Natural product-based drug abuse therapies through the investigation of salvinorin A. **R.M. Saylor, T.E. Prisinzano**

**3:50 MEDI 282.** Development of a new class of ALK2 inhibitor for the study of the most aggressive paediatric brain cancer, DIPG. **L. Hudson, H. Woodward, S. Hoelder**

**4:10 MEDI 283.** Leukotriene A<sub>4</sub> hydrolase aminopeptidase activity as a new target for chronic obstructive pulmonary disease. **M. Paige, K. Lee, S. Peyton, L. Li, S. Fitzpatrick, K. Kim, H. Lee, M. Burdick, S.M. Noble, Y.M. Shim**

**4:30 MEDI 284.** Discovery of a novel, selective and orally bioavailable allosteric PRC2 inhibitor with robust anti-cancer efficacy. **Y. Huang,** J. Zhang, Z. Yu, A. Lingel, Z. Gao, L. Wang, X. Fu, Y. Sun, Q. Zhang, X. Jiang, J. Zhang, M.D. Shultz, Y. Mi, C. O-Yang

**4:50 MEDI 285.** Efficient discovery of lead molecules for hundreds of target proteins in parallel via DNA encoded chemical library: A platform for prioritizing therapeutic targets in a single experiment. **G. Evindar**

## WEDNESDAY EVENING

### Section A

Pennsylvania Convention Center  
Hall E

#### General Posters

W. B. Young, *Organizer*

7:00 - 9:00

**MEDI 286.** Design and optimization of novel tetracyclic pyrolopyridone BET family inhibitors. **S. Fidanze,** R. Mantel, L.A. Hasvold, J. Pratt, G.S. Sheppard, L. Wang, D. Liu, C. Park, A. Sarthy, L. Li, D.H. Albert, X. Lin, E. Faivre, M.H. Bui, X. Huang, D. Wilcox, R. Wang, T. Magoc, G. Rajaraman, G. Fang, S. Rosenberg, Y. Shen, W. Kati, K. McDaniel

**MEDI 287.** Potential of silibinin derivatives in prostate cancer managements. **B. Vue,** S. Zhang, X. Zhang, M. Huang, T. Lee, G. Chen, Q. Chen

**MEDI 288.** Synthesis and SAR of sulfonyl azide-derived NDM-1 inhibitors. **C. Reidl,** M. Moore, I.Y. Darwish, A. Stewart, P. Thomas, W. Fast, D.P. Becker

**MEDI 289.** Design and synthesis of small molecule Hsp70 inducers. **T.F. Ali,** N. Taira, R. Koga, Y. Okamoto, M. Otsuka, M. Fujita

**MEDI 290.** Discovery of ABI-231 analogs as a new generation of tubulin inhibitors targeting the colchicine binding site. **Q. Wang,** K. Arnst, D.D. Miller, W. Li

**MEDI 291.** Biologically active ferrocene based guanidines: Synthesis, antimicrobial, and anti-cancer potential. **A. Altaf,** A. Badshah, R. Gul

**MEDI 292.** Cytotoxic triterpenoids substituted in the position 2. **L. Borkova,** J. Sarek, J. Rehulka, P. Dzubak, M. Hajduch, M. Urban

**MEDI 293.** Host-guest formulations of novel isozyme-selective carbonic anhydrase inhibitors for colon cancer detection and treatment. **O. Ozen Karakus,** R.K. Sanku, U.K. Mondal, M.A. Iliis

**MEDI 294.** Design, synthesis, and biological evaluation of novel PAMAM dendrimer-based tumor-targeted drug delivery systems. **L. Wei,** T. Wang, Y. Sun, Y. Zhang, S. Bahl, Y.G. Teng, I. Ojima

**MEDI 295.** Withdrawn.

**MEDI 296.** Selective DDRs inhibitors as novel therapeutic agents for human cancers and pulmonary fibrosis. **K. Ding**

**MEDI 297.** Preparation of fenbufen boronopinacol, *meta*- and *ortho*-[<sup>18</sup>F]fluoro-fenbufen boronopinacol and [<sup>18</sup>F]fluoro-celecoxib for boron neutron capture therapy of cholangio carcinoma. **C. Yeh,** C. Chang, I. Chung, Y. Chen, T. Chen, Y. Huang, H. Wang, S. Tien, **C. Yu,** Y. Chou, C. Liu, I. Hsie

**MEDI 298.** Synthesis and evaluation of drug-DNA conjugated gold nanoparticles activated by cancer cell specific mRNA. **N. Li,** N.P. Gossai, J. Naumann, P.M. Gordon, J.A. Piccirilli

**MEDI 299.** Discovery of hepatoselective inhibitors of diacylglycerol acyltransferase 2 (DGAT2). **K. Futatsugi,** D.W. Kung, K. Huard, S.T. Orr, S. Cabral, D. Hepworth, S. Bader, M. Boehm, P.A. Carpino, T.V. Magee, M. Herr, S.Y. Lavergne, Q. Li, K. Ahn, R.W. Clark, D.M. Erion, K. Kou, B.A. Pabst, S.M. Perez, J. Purkal, C.C. Jorgensen, J.R. Gosset, A.S. Kalgutkar, T.C. Goosen, M. Niosi, J.C. Pettersen, B. Goodwin

**MEDI 300.** Discovery of human NMUR2 selective hexapeptidic agonists. **K. Taketa,** K. Takayama, K. Mori, Y. Sohma, A. Taguchi, N. Minamino, M. Miyazato, K. Kangawa, Y. Hayashi

**MEDI 301.** Synthetic chemistry core at Albert Einstein College of Medicine. Recent contributions to chemical biology and drug discovery. **L. Nordstrom**

**MEDI 302.** Design, synthesis, and biological evaluation of novel tumor-targeted drug delivery systems for a third-generation taxoid, combretastatin and their combination. **Y. Zong,** I. Ojima

**MEDI 303.** Molecular mimics of classic P-glycoprotein as dual cytotoxic/MDR auto-suppressors or in combination with Paclitaxel. **M.T. Khayat,** M.E. El-Araby, A.M. Omar, A.M. Al-Abd

**MEDI 304.** Novel selective estrogen receptor downregulators developed using endocrine-independent breast cancer cells lines. **R. Xiong,** J. Zhao, L. Gutgesell, D.A. Tonetti, G.R. Thatcher

**MEDI 305.** Design, synthesis and evaluation of WZ4002 analogues as EGFR inhibitors. **A. Romu,** Z. Bin, Z. Chen, V.L. Korlpara

**MEDI 306.** Exploring EGFR kinase-ligand interactions for optimizing dual action inhibitors. **A. Deschenes**

**MEDI 307.** Synthesis of substituted trifluoromethyl ketone targeted antifolates as potential purine synthesis inhibitors. **A. Gangjee,** W. Xiang, L.H. Matherly

**MEDI 308.** In silico design and synthesis of novel estrone analogs utilizing click chemistry targeting colorectal cancer. **F.S. Alotaibi,** F.T. Halawaish

**MEDI 309.** Novel 6-substituted pyrrolo[2,3-*d*]pyrimidine classical antifolates as selective folate receptor substrates and antitumor agents. **A. Gangjee,** X. Li, A. Wallace-Povirk, C. O'Connor, M. Wilson, Z. Hou, L.H. Matherly

**MEDI 310.** Withdrawn.

**MEDI 311.** Design and synthesis of antifolates as targeted antitumor agents: Exploring the benefits of fluorine substitution on the side chain (hetaryl) ring for improved selectivity and potency. **A. Gangjee,** M.P. Ravindra, A. Wallace-Povirk, C. O'Connor, M. Wilson, Z. Hou, L.H. Matherly

**MEDI 312.** Small molecule mimics of a conserved TWX/DFL motif targeting G-alpha-i3. **M.J. Koyack,** R. Rajnarayanan

**MEDI 313.** Development of functionalized aminobenzoboroxoles as anti-cancer agents. **S. Pathi,** L. Solano, B. Patel, A. Kasibotla, **J. Seay,** S.C. Jonnalagadda

**MEDI 314.** Synthesis and biological evaluation of amorfrutin analogs: A unique class of natural product that modulates PPAR $\gamma$  activity. **S. Yoganathan**

**MEDI 315.** Discovery of an inhibitor of the Rpn11 proteasome subunit. **C. Perez,** S. Cohen, R. Deshaies, J. Li, M.J. Rouffet

**MEDI 316.** Chemical modification and structure activity relationship (SAR) of fellutamide B, a natural product with anticancer and anti-tuberculosis activity. **N. Acharekar,** L. Barasa, S. Yoganathan

**MEDI 317.** Scaffold replacement & 3D ligand optimization applied to the discovery of tyrosine kinase inhibitors. **R. Alvarez,** H. Shadnia

**MEDI 318.** Design, synthesis, and anti-proliferation activity of cucurbitacin-inspired estrone analogs targeting pancreatic cancer. **K. Asleud**

**MEDI 319.** New cephalotaxane derivatives for TKI resistant CML. **L. Wu,** Y. Yao, Z. Chen, F. Gao, J. Sun, X. Yang, C. Zhang, J. Li, S. Chen, Z. Zhang

**MEDI 320.** Compounds designed to elevate reactive oxygen species (ROS) and their antiproliferative implications. **R. Elhaggar,** T. Abdelghany, A.M. Omar, M.T. Khayat, M.E. El-Araby

**MEDI 321.** Identification of the small molecule inhibitor for STAT3 pathway through chemical structure focused library screening. **B. Seo,** K. Kim, S. Lee, J. Ahn, J. Hur, Y. Suh

**MEDI 322.** Synthesis and cytotoxic effects of novel glycosylated thiosemicarbazides and their analogs as anticancer agents. **A. Czubatka-Bienkowska,** J. Sarnik, A. Maciejka, **Z.J. Witzczak,** T. Poplawski

**MEDI 323.** Synthesis, characterization, molecular modeling, and potential anticancer activities of novel 1,3,4-thiadiazole derivative. **A. Czubatka-Bienkowska,** A. Maciejka, J. Sarnik, **Z.J. Witzczak,** T. Poplawski

**MEDI 324.** Bicycloheptylamines and cyclohexylamines as  $\sigma_2$  receptor ligands: Potential use as anticancer agents. **M. Alamri,** Z. Ates-Alagoz, A. Adejare

**MEDI 325.** Synthesis and characterization of some new emetine amide derivatives for studies in prostate and breast cancer cells. **N. Brandy,** O. Bakare

**MEDI 326.** Encapsulation and delivery of trastuzumab into human breast cancer cells using cholestosomes. **J. Cubello,** J.F. McArthur, J. Schentag, J. Hughes, L. Mielnicki, M.P. McCourt

**MEDI 327.** Discovery and optimization of triazole compounds as novel BCL6 inhibitors. **H. Cheng,** F. Xue

**MEDI 328.** Synthesis and pharmacological evaluation of new compounds useful to treat sickle cell disease. **T. Ferreira de Melo,** K. Barbieri, R.C. Consolin Chelucci, C. Lanaro, C.M. Chin, J.L. Santos

**MEDI 329.** Synthesis and biological activity of new hybrids phthalimide-furoxan derivatives useful to treat sickle cell disease symptoms. **R.C. Consolin Chelucci,** K.P. Barbieri, M.E. Pires, M.C. Polesi, P.L. Bosquesi, S. Marcondes, I.Z. Carlos, J.L. Santos, C.M. Chin

**MEDI 330.** Nitric oxide donor controllable with yellowish green light. **H. Okuno,** N. Ieda, Y. Hotta, M. Kawaguchi, K. Kimura, H. Nakagawa

**MEDI 331.** Novel adamantane derivatives efficiently inhibit cisplatin resistant ovarian cancer cell line growth. **A. Czubatka-Bienkowska,** J. Sarnik, A. Maciejka, **Z.J. Witzczak,** T. Poplawski

**MEDI 332.** Discovery of dihydrobenzofuran substituted chromene analog as a potent anticancer agent for ovarian cancer. **R. Patil,** A. Kulshrestha, G.K. Katara, K. Beaman, **S. Patil**

**MEDI 333.** Design and synthesis of a library of 8-quinolinethiol based Rpn11 inhibitors. **Y. Ma,** J. Li, C. Perez, R. Deshaies, S. Cohen

**MEDI 334.** Design, synthesis, and biological evaluation of novel metabolically stable (+)-discoder-molide analogues. **B. Guo,** N. Zhang, H.M. McDaid, S.B. Horwitz, A.B. Smith

**MEDI 335.** Withdrawn.

**MEDI 336.** Development of diketopiperazine-type antitumor agent plinabulin prodrug with an IgG binding peptide for generating a tumor selective non-covalent-type antibody-drug conjugate. **K. Muguruma,** F. Yakushiji, R. Kawamata, D. Akiyama, R. Arima, T. Shirasaka, A. Taguchi, K. Takayama, **Y. Hayashi**

**MEDI 337.** Towards a universal Mu-agonist template for alignment modeling of opioid ligands. **Z. Wu,** V.J. Hruby

**MEDI 338.** Designing of selective gamma-secretase inhibitory benzenesulfonamides through comparative *in vitro* and *in silico* analysis. **N. Masand,** S. Gupta, R. Khosa, **V. Patil**

**MEDI 339.** Exploiting solvent effects in drug design and optimization. **A. Ajamian**

**MEDI 340.** Computational approach for performing medicinal chemistry transformations within a 3D active site. **R. Alvarez,** J. Leonard

**MEDI 341.** Property assessment of medium size molecules: Connecting drug-like properties from *in vitro* to *in vivo*. **M.J. Blanco-Pillado,** I. Gonzalez Valcarcel, P. Desai, J. Barrett, G. Sawada, T.N. Vetman

**MEDI 342.** Problem-based learning in drug discovery with MOE. **A. Bonin**

**MEDI 343.** What rings do medicinal chemists use, and why? **M.D. Mackey,** T. Cheeseright, R. Lawrence

**MEDI 344.** Amide-to-ester substitutions modify the permeability and ADME properties of natural and synthetic cyclic peptides. **M. Naylor,** A. Ly, J. Schwochert, P. Desai, I. Gonzalez Valcarcel, J. Barrett, G. Sawada, M.J. Blanco-Pillado, S. Lokey

**MEDI 345.** Structure-based drug design of macrocyclic factor Xla inhibitors. **J.R. Corte,** T. Fang, H. Osuna, D. Pinto, K. Rossi, A. Rendina, J. Bozarth, S. Sheriff, J. Myers, T. Harper, Z. Lou, J. Zheng, J. Luettgen, D. Seiffert, P.Y. Lam, R.R. Wexler, M.L. Quan

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



- MEDI 346.** Optimization of BTK inhibitors to mitigate kinase selectivity, PK and off target shortcomings. **D. Guadeño,** J. Liu, A. Krikorian, X. Gao, J. Wang, S.B. Boga, A. Alhassan, J. Xu, J. Kelly, R. Anand, Y. Yu, O. Selyutin, W. Yu, S. Liu, C. Yang, H. Wu, J. Cai, K.M. Maloney, V. Honak, Y. Gao, S. Tyagarajan, T. Fischmann, J. Presland, M. Mansueto, Z. Xu, E. Leccese, J. Zhang-Hoover, I. Knemeyer, N. Bays, P. Stivers, P. Brandish, A. Hicks, R. Kim, J.A. Kozlowski
- MEDI 347.** Discovery of low clearance PI3Kd templates for the treatment of respiratory disease. **S. Peace**
- MEDI 348.** Synthesis of heteroaromatic lipoxin analogues for treatment of chronic inflammation. **C. Tighe, M. de Gaetano, C. Godson, P.J. Guiry**
- MEDI 349.** Discovery of novel and orally active quinolyl oxazole-based PDE4 inhibitors for the treatment of chronic obstructive pulmonary disease and asthma. **R. Kuang, H. Shue, D. Blythin, P.C. Ting, N. Shih, L. Xiao, X. Chen, D. Gu, J. Schwerdt, J. Cao, H. Wu, D.B. Prelusky, S. Sorota, P. Wu, J. Zhang, X. Zhang, C. Celly, M. Billah, P. Wang**
- MEDI 350.** 7-Heteroaryl-methoxy-triazolopyridines as potent inhibitors of myeloperoxidase. **M. Valente, N. Wurtz, A. Viet, S. Shaw, D. Andrew, J. Khan, S. Jusuf, G. Fernando, X. Liu, G. Locke, L.M. Kopcho, L. Abell, J. Gao, A. Dongre, R.R. Wexler, F. Duclos, E.K. Kick**
- MEDI 351.** Stable lipoxin analogues for biological evaluation. **D. Moran, M. de Gaetano, C. Godson, P.J. Guiry**
- MEDI 352.** Lipobactins: A new class of antibiotics against gram-positive bacteria. **H. Yang, K.H. Chen, J.S. Nowick**
- MEDI 353.** Design, synthesis, antimicrobial evaluation and molecular modeling studies of 4-(5-(2-aminothiazol-4-yl)-1,4-dihydro-2,6-dimethyl-4-*o*-aromatic substituted pyridin-3-yl)thiazol-2-amine derivatives. **P. Tigulla, S. Vankadari**
- MEDI 354.** Exploring structural importances on penetration of the first line tuberculosis prodrug: Pyrazinamide. **B. Peters, D. Crick, D.C. Crans**
- MEDI 355.** Ribosome templated azide-alkyne clickadditions: Synthesis of potent macrolide antibiotics screening by in situ click chemistry. **S. Daher, I.M. Glassford, C.N. Tejaro, R.B. Andrade**
- MEDI 356.** Discovery of iguratimod as a selective, steroid-sparing MIF inhibitor via specificity-guided screening. **J. Bloom, C. Metz, S. Nalawade, K. Cheng, M. He, B. Sherry, T. Forsthuber, Y. Al-Abed**
- MEDI 357.** Elaboration of indole frameworks in the development of allosteric HIV-1 integrase inhibitors. **J. Antwi, P. Koneru, M. Kobe, M. Kvaratskhelia, J. Fuchs**
- MEDI 358.** Parallel inhibition of amino acid efflux and parasite growth of erythrocytic *Plasmodium falciparum* by mefloquine and open-ring analogs: Implication for the mechanism of antimalarial action. **M. Ghavami, C.H. Dapper, K. Holzschneider, M. Klemba, P.R. Carlier**
- MEDI 359.** Luminescence assay for natural product inhibitors of the *Mycobacterium tuberculosis* proteasome. **A. Gunderwala, J.R. Porter**
- MEDI 360.** Biosynthetic intermediates of amicitin produced by engineering mutants. **H.B. Zhang, C. Zhang**
- MEDI 361.** Multicationic quaternary ammonium compounds (MultiQACs): Potent antimicrobial and antibiofilm agents against a variety of scaffolds. **K.P. Minbiole**
- MEDI 362.** Zinc-mediated binding of a low-molecular-weight stabilizer of the host anti-viral factor APOBEC3G. **M.O. Radwan, S. Sonoda, T. Ejima, A. Tanaka, R. Koga, Y. Okamoto, M. Fujita, M. Otsuka**
- MEDI 363.** Arylation of 2-bromo-5-chloro thiophenes with aryl boronic acids, their structural investigations (X-ray and DFT), and in vitro antibacterial and scavenging activities. **N. Rasool**
- MEDI 364.** Synthesis of novel allosteric inhibitors of HIV-1 integrase that bind to the LEDGF/p75 site. **Y. Mansour, P. Koneru, M. Kobe, A. Hoyte, M. Mohamed, M. Kvaratskhelia, J. Fuchs**
- MEDI 365.** Synthesis and biological studies of dihydropyrido pyrimidones. **M.A. Alam, H. Alkhattabi, Z. Alsharif, D. Jones**
- MEDI 366.** Design, synthesis, and evaluation of novel anti-DENV compounds. **G. Giancotti, V. Anastasi, I.M. Trist, J. Bugert, A. Brancale**
- MEDI 367.** Design and synthesis of 1-(2-(2,4-difluorophenyl)-2-hydroxy-3-(1H-1,2,4-triazol-1-yl)propyl)-2-(1-((methyl(3-((methylcarbamoyloxy)methyl)pyridin-2-yl)carbamoyloxy)ethyl)-1H-1,2,4-triazol-2-yl)ium. **L. Peyton, S. Gallagher, E. Allen, N. Herrmann, M. Hashemzadeh**
- MEDI 368.** Some selected metal complexes of proguanil-sulphadiazine mixed ligands: Synthesis, characterization, and antimicrobial studies. **J.A. Obaleye, A.O. Rajee, F.H. Babamale**
- MEDI 369.** Synthesis of benzoxaborole-metronidazole based compounds for *Clostridium difficile*. **L. Solano, E. Lueth, Z. Gardner, T. Schumacher, S.K. Jonnalagadda, S. Gurrupu, D. Imtiazi, C. Ronayne, G.L. Nelson, V. Mereddy, S.C. Jonnalagadda**
- MEDI 370.** Antiplasmodial and other compounds from an *Aniba* sp. **Y. Du, A. Latif, Y. Dai, S. Dalal, M.B. Cassera, M. Goetz, D.G. Kingston**
- MEDI 371.** Overcoming PK limitations via prodrugs to advance a second generation of HIV-1 integrase strand transfer inhibitors. **T.J. Hartingh, I.T. Raheem, A.M. Walji, J. Schreier, M.W. Embrey, T.G. Steele, J.S. Wai, P.J. Coleman, K. Moore, J. Sisko, V.L. Rada, D. Hazuda, J. Truchon, S. Clas, P. Abeywickrema, D.J. Klein, J.M. Sanders, M.D. Miller, J.A. Grobler, N.D. Pajkovic, M.J. Hafez, P. Reardon, A. Bennet, M. Xu, S. Patel, D.C. Dubost, D.A. Powell**
- MEDI 372.** Optimization of macrocyclic peptide triazole HIV-1 inactivators. **A. Ahmed, R. Aneja, K. Acharya, S. Zhang, I. Chaiken**
- MEDI 373.** Design and synthesis of novel nucleotide analogues targeting HCV NS5B. **B. Alabdullah, A.C. Bryant-Friedrich**
- MEDI 374.** Potent, selective and orally efficacious inhibitors of *Plasmodium falciparum* protein kinase G (PfPKG). **D. Harding, S. Osborne, K. Birchall, N. Boulloc, J. Large, A. Merritt, E. Smiljanic-Hurley, M. Wheldon, K. Ansell, C. Kettleborough, D. Whalley, P. Bowyer, L. Stewart, D. Baker**
- MEDI 375.** Trisubstituted thiazoles as potent and selective inhibitors of *Plasmodium falciparum* protein kinase G (PfPKG). **D. Harding, S. Osborne, K. Birchall, N. Boulloc, J. Large, A. Merritt, E. Smiljanic-Hurley, M. Wheldon, K. Ansell, C. Kettleborough, D. Whalley, P. Bowyer, L. Stewart, D. Baker**
- MEDI 376.** Structure-activity-relationship of alkyl and alcohol analogs of omagrigliptin, long acting DPP-4 inhibitors. **D. Feng**
- MEDI 377.** Reversible small molecule inhibitors of endothelial lipase (EL) which increase high density lipoprotein (HDL) concentration *in vivo*. **S. Kim, L. Abell, L. Adam, K. Behnia, M. Basso, C. Caporuscio, A. Chen, J. Jiang, J. Johnson, E. Liu, J. Lloyd, H. Lu, M. Phillips, Z. Pi, A. Rose, D. Taylor, G. Tora, T. Wang, R.R. Wexler, R. Yang, X. Yin, L. Zhao, H. Finlay**
- MEDI 378.** Fluorination of JQ1 slows its metabolism. **S.L. Holmes, J. Williams, C. Santini, F. Li, D. Young**
- MEDI 379.** Finding hits for designing new antidiabetic drugs. Inhibition of protein tyrosine phosphatase 1B. **M. Sarabia-Sánchez, P.J. Trejo, A. Hernandez Campos, R. Castillo-Bocanegra, A. Luévano-De la Cruz, C. Avitia-Dominguez, A. Téllez-Valencia**
- MEDI 380.** Synthesis and SAR of triazole analogs as potent glucokinase activator. **H. Zhang, W. Meng, R. Brigance, Y. Shi, Y. Wang, R.A. Smirk, L. Nielsen, D.S. Yoon, S. Chen, S. Wu, S. Tao, R. Sulsky, S. Spronk, Y. Li, Y. Yang, J. Taylor, H. Fuentes, X. Ma, R. Ponticciello, R. Zebo, X. Chen, K. Omalley, L.M. Kopcho, S. Johnson, J. Muckelbauer, C. Chang, Q. Wang, K. Behnia, B. Zinker, A. Wang, E. Janovitz, M. Kirby, J. Whaley, J.C. Barrish, J.A. Robl, P.T. Cheng**
- MEDI 381.** Optimization of sulfonamide based GPBAR1 (TGR5) agonists. **C. Huang, D. Shi, S.G. Kultgen, J. Healy, Y. Li, A.G. Cole, S. Nawoschik, K. Tovar, B. Fanelli, X. Ma, C. Ebert-Gallo, M. Hayward, J. Nickless, P.D. Stein, M. Webb, B.F. McGuinness, J.R. Beasley**
- MEDI 382.** GPBAR1 (TGR5) agonists with low systemic exposure. **C. Huang, E. Sieber-McMaster, X. Xu, S. Nawoschik, K. Tovar, B. Fanelli, X. Ma, C. Ebert-Gallo, M. Hayward, J. Nickless, P.D. Stein, M. Webb, B.F. McGuinness, J.R. Beasley**
- MEDI 383.** Design, synthesis, and evaluation of (2S, 4R)-ketoconazole sulfonamide analogs as potential treatments for metabolic syndrome. **B.E. Blass, P. Iyer, M. Abou-Gharbia, W.E. Childers, J.C. Gordon, M. Ramanjulu, G.C. Morton, P. Arumugam, J. Boruwa, J.W. Ellingboe, S. Mitra, R. Nimreddy, S. Palival, J. Rajasekhar, S. Shivakumar, P. Srivastava, R.S. Tangirala, K. Venkataramanaiah, M. Yanamandra**
- MEDI 384.** Discovery of 2-thio-5-thiomethyl substituted imidazoles as potent and orally efficacious TGR5 receptor agonists for treatment of type 2 diabetes. **X. Zhang, Z. Sui, J. Kauffman, F. Du, T. Kirchner, C. Hou, Y. Liang, D. Johnson, W.V. Murray, K. Demarest**
- MEDI 385.** Ghrelin O-acyl transferase (GOAT) inhibitors: Optimization of the 6-chloro-2-methyl-5-[2-(4-piperidyl)ethyl]pyrimidin-4-amine scaffold. **G. Ruano, C.S. Galka, E.J. Hembre, N.A. Honigschmidt, M.A. Martinez-Grau, C. Nevill, A. Rubio, R.A. Brier, M.M. He, Y. Chen, N.A. Reynolds, H. Yang**
- MEDI 386.** Discovery of a novel series of *N*-phenylindoline-5-sulfonamide derivatives as potent, selective, and orally bioavailable acyl CoA: monoacylglycerol acyltransferase-2 inhibitors. **K. Sato, H. Takahagi, T. Yoshikawa, O. Kubo, K. Hidaka, S. Morimoto, T. Takai, M. Kamaura, R. Adachi, T. Ishii, T. Maki, K. Take, T. Mochida, S. Takekawa, M. Nakakariya, N. Amano, T. Kitazaki, T. Maekawa**
- MEDI 387.** Design, synthesis, and mechanism of action determination of flupirtine derivatives with enhanced neuroprotective activity. **N. Kinarivala, F. Saadeh, J. Makoujki, R. Boustany, P.C. Trippier**
- MEDI 388.** Discovery and quantitative pharmacology of novel azetidine-containing PDE10A inhibitors. **Q. Liu, A.K. Arnegadze, J.J. Chen, N. Chen, M.J. Frohn, E.H. Hu, M.R. Kaller, V. Ma, T. Nguyen, A. Pickrell, W. Qian, S. Rumfelt, R.M. Rzasa, K. Andrews, S. Zhao, C. Davis, J. Able, J. Shi, G. Hill Della Puppa, M. Dovolatyán, H. Chen, S. Miller, J. Treanor, T. Kornecook, W. Zhong, J.R. Allen**
- MEDI 389.** Design, synthesis and pharmacological evaluation of benzamide derivatives of 1,3,4-thiadiazole as acetylcholinesterase inhibitors for cognitive dysfunction. **A. Kulshrestha, P. Piplani**
- MEDI 390.** GC-MS and GC-IRD studies on S cathinones: Bath salt-type aminoketone designer drugs related to MDPV. **Y. Abiedalla, C.R. Clark, J. DeRuiter, K. Abdelhay**
- MEDI 391.** Syntheses and evaluations of arylbicycloalkylamines as NMDAR antagonists. **M.B. Dybek, A. Adejare**
- MEDI 392.** Synthesis and optimization of truxillic acid-based fatty acid binding protein inhibitors as anti-nociceptive and anti-inflammatory drugs. **K. Hu, S. Tong, M. Elnes, M. Kaczocha, R.C. Rizzo, D. Deutsch, I. Ojima**
- MEDI 393.** Synthesis & evaluation of a dopamine D3 receptor-selective positron emission tomography probe. **M.N. Stewart, B. Hockley, P. Scott**
- MEDI 394.** Synthesis and biological evaluation of novel fluorinated tacrine hybrids against Alzheimer's disease. **C.D. Obi, A. Sledge, C.O. Okoro**
- MEDI 395.** Quinazoline and quinoline derivatives as inhibitors of adaptor associated kinase 1. **R.A. Hartz, V. Ahuja, C.D. Dzierba, B. Dasgupta, W. Kostich, S. Nara, A. Easton, C. Bourin, L. Bristow, J. Brown, L. Huhnihan, M. Guilanello, R. Westphal, R. Rajamani, S. Kiefer, D. Camac, J. Muckelbauer, M. Pokross, V. CM, R. Manepalli, S.K. Sarvasiddhi, S. H. S. Kandula, V. Patankar, R. Brown, N. Surti, J. Lippy, R. Padmanabha, K. Esposito, B. Hamman, J. Allen, K. Baker, K. Savelieva, B. Zambrowicz, S. Pattipati, M. Dokiaia, S. Elavzhagan, K. Dandapani, J.J. Bronson, J.E. Macor**
- MEDI 396.** Synthesis & optimization of vinyl sulfone compounds as Nr1f2 activator. **J. Choi, J. Park, T. Ha, S. Yeon, B. Jang, S. Kim, Y. Lee, S. Shin, K. Park**
- MEDI 397.** Synthesis of imidazobenzodiazepine oxazole bioisosters as potential alpha 2, 3 selective GABA(A) receptors agonists with improved antiepileptic and antinociceptive efficacy. **K. Methuku, G. Li, M.M. Poe, J.M. Witkin, J.M. Schkeryantz, J.M. Cook**
- MEDI 398.** Syntheses and pharmacological characterizations of arylbicycloheptylamines as uncompetitive NMDAR antagonists. **N. Filemban, T. Colestock, J. Wallach, A. Adejare**

**MEDI 399.** Targeting ion channels, transporters, and GPCRs with monoclonal antibodies. **J. Rucker**

**MEDI 400.** Novel sigma-2 receptor modulators for the treatment of Alzheimer's disease. **B.E. Blass, K. Blattner, D.J. Canney, R. Bhandare, J.C. Gordon, M. Abou-Gharbia**

**MEDI 401.** Synthesis and profiling of CNS prodrugs of 5-lipoxygenase (5-LO) inhibitors. **R. Fan, J.C. Gordon, B.E. Blass, M. Abou-Gharbia, W.E. Childers**

**MEDI 402.** New synthetic approach to procyanidins. **I.M. Geraskin, G.A. Kraus**

**MEDI 403.** Development of a multi-gram scale synthesis of *trans*-4-(5-bromo-2-chloro-pyrrolo[2,3-d]pyrimidin-7-yl)-cyclohexanol: A key intermediate for MER/FLT3 dual inhibitors. **L. Rong, J. Li, H. Li, X. Wu, M. Yang**

**MEDI 404.** Synthesis of  $\alpha$ -fluoro nitriles and derivatives. **L. Zhang, G. Liu, X. Wu, M. Yang**

**MEDI 405.** Drug patent lifecycle management through follow-on patents, extending the term of patents and regulatory exclusivities. **D. Chandran, J. Ravula, R. Nirogi**

**MEDI 406.** Microneedles for transdermal delivery of traditional Chinese medicine. **B. Zhong, H.T. Poon, K. Yeung**

**MEDI 407.** Synthesis of hollow mesoporous silica nanoparticles and their application for delivery of multiple peptides for melanoma immunotherapy. **J. Tao, J. Zhu, Z. Zhang, L. Qianqian, C. Yang**

**MEDI 408.** Synthesis of *l*-labeled and unlabeled ethyl succinic anhydrides and application to quantitative analysis of peptides by MALDI and ESI mass spectrometry. **S. Niwayama, M. Zabet-Moghaddam, S. Kurono, A. Shaikh, P. Kattanguru**

**MEDI 409.** On the structure-activity relationship of cADPR and cADPR analogs: a high-field NMR study. **S.M. Graham, J. Plavec, U. Javornik**

**MEDI 410.** Electrochemical halogenation: A new method to synthesize intermediates for tritium labeling. **Z. Tan, Y. Liu, R.M. Helmy, N. Rivera, D. Hesik, J. Su**

**MEDI 411.** Synthesis of biotinylated triterpenes and their use in target identification. **M. Urban, M. Soural, J. Hodon, V. Sidova, J. Sarek, L. Borkova, S. Gurska, P. Dzubak, M. Hajdich**

**MEDI 412.** From propafenone to fumitremorgin C: Probing inhibitor selectivity for P-gp/BCRP. **T. Schwarz, F. Montanari, A. Cseke, K. Wlcek, E. Urban, G.F. Ecker**

**MEDI 413.** Novel architectures for multicationic quaternary ammonium compounds (multiQACs). **S. Al-Khalifa, M. Jennings, W.M. Wuest, K.P. Minbiole**

**MEDI 414.** Tunable polymersomes: Towards enzyme delivery through the blood-brain barrier. **J. Kelly, D.R. Martin, M.E. Byrne**

**MEDI 415.**  $\gamma$ -Radiation generates active chlorine species (ACS) in physiological solutions. A novel mechanism of radioprotection by ACS scavengers. **A.V. Popov, O.P. Mishra, R.A. Pietrofesa, M. Christofidou-Solomidou**

**MEDI 416.** Large-scale synthesis and pre-clinical characterization of a cationic iodinated imaging contrast agent (CA4+) and its use for quantitative computed tomography of *ex vivo* human hip cartilage. **R.C. Stewart, A.N. Patwa, J.D. Freedman, M.C. Wathier, B.D. Snyder, A. Guermazi, M.W. Grinstaff**

**MEDI 417.** 1,2,3-Triazole inhibitors of *Porphyromonas gingivalis* biofilm formation. **F.A. Luzzio, P.C. Patil, D.R. Demuth, J. Tan**

**MEDI 418.** Shape-dependent relaxivity of nanoparticle-based MRI contrast agent. **Y. Shin, K. Culver, M. Rotz, T.J. Meade, M. Hersam, T.W. Odom**

**MEDI 419.** Formulation of insulin for oral dosing. **J. Catalano, J.F. McArthur, J. Hughes, J. Schentag, L. Mielnicki, M.P. McCourt**

## Heterocycles & Aromatics

Sponsored by ORGN, Cosponsored by MEDI†

## New Reactions & Methodology

Sponsored by ORGN, Cosponsored by MEDI†

# NUCL

## Division of Nuclear Chemistry and Technology

**J. Terry, D. Hobart and A. Hixon, Program Chairs**

### OTHER SYMPOSIA OF INTEREST:

**Radiopharmaceutical Chemistry**  
(see FLUO, Sun, Mon)

### SOCIAL EVENTS:

**Social Hour, 6:00 PM:** Tue

### BUSINESS MEETINGS:

**Business Meeting, 5:00 PM:** Tue

**Executive Committee Meeting (Closed), 5:00 PM:** Sun

## SUNDAY MORNING

### Section A

Philadelphia Downtown Courtyard by Marriott Grand Ballroom Salon II

### Nuclear Forensics

T. A. Bredeweg, A. V. Giminaro, *Organizers*

J. D. Auxier, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:05 NUCL 1.** Deciphering a nuclear threat -- Nuclear forensic advances and pressing needs. **H.L. Hall, J. Auxier II, M. Cook, R. Gilbreath**

**9:00** Intermission.

**9:15 NUCL 2.** Morphology and chemical speciation of nuclear materials for forensic science. **M.P. Wilkerson**

**9:35 NUCL 3.** Preparation and characterization of glass analogs for post-detonation debris material. **R. Carter, C. Dorais, J. Coble, A.E. Hixon**

**9:55 NUCL 4.** Evaluation of ammonium bifluoride dissolution of refractory minerals for nuclear forensic analysis. **N.T. Hubley, J.D. Brockman, J.M. Guthrie, J.D. Robertson**

**10:15 NUCL 5.** Neutron imaging studies of *in situ* growth of neutron and gamma detector materials. **J.Z. Lares, C. Crain, N.A. Strange**

## SUNDAY AFTERNOON

### Section A

Philadelphia Downtown Courtyard by Marriott Grand Ballroom Salon II

### Nuclear Forensics

T. A. Bredeweg, A. V. Giminaro, *Organizers*

J. D. Auxier, *Organizer, Presiding*

**1:00** Introductory Remarks.

**1:05 NUCL 6.** Trace element and isotopic signatures of uranium ore concentrates: Forensic applications. **T.L. Spano, A. Simonetti, E. Balboni, C. Dorais, A.E. Hixon, P.C. Burns**

**1:25 NUCL 7.** Online trace-level quantification of uranium in environmental water. **C.E. Duval, T.A. Devol, S.M. Husson**

**1:45 NUCL 8.** Chemical and isotopic characterization of North America uraniumite samples: forensic applications. **E. Balboni, N. Jones, T.L. Spano, C. Dorais, A. Simonetti, A.E. Hixon, P.C. Burns**

**2:05** Intermission.

**2:25 NUCL 9.** Rapid uranium isotopic analysis using ultrafiltration and alpha spectroscopy. **C.E. Duval, T.A. Devol, S.M. Husson**

**2:45 NUCL 10.** New natural uraniumite reference material for nuclear forensic analysis. **C. Dorais, T.L. Spano, E. Balboni, A. Simonetti, A.E. Hixon, P.C. Burns**

**3:05 NUCL 11.** Divalent cation incorporation into actinide oxides. **M.E. Hoover, L.C. Shuller-Nickles**

**3:25 NUCL 12.** Morphological effects of variable calcination conditions for the thermal decomposition of uranyl peroxide. **I. Schwerdt, L.W. McDonald**

## SUNDAY EVENING

### Radiopharmaceutical Chemistry

Sponsored by FLUO, Cosponsored by INOR, MEDI, NUCL and POLY

## MONDAY MORNING

### Section A

Philadelphia Downtown Courtyard by Marriott Grand Ballroom Salon II

### Nuclear Forensics

T. A. Bredeweg, A. V. Giminaro, *Organizers*

J. D. Auxier, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:05 NUCL 13.** Using Sr resin with mixed acid matrices. **D. McLain, C. Liu, R. Sudowe**

**8:25 NUCL 14.** Improving rapid separations for nuclear forensics through computational techniques. **D.A. Penchoff, C. Peterson, J.D. Auxier, H.L. Hall, A.K. Wilson**

**8:45 NUCL 15.** Development of a chemical system for rutherfordium using TEHA and TEHP. **J. Rolfe**

**9:05 NUCL 16.** Rare earth element sorption to UO<sub>2</sub>. **R. Carter, J. Coble, A.E. Hixon**

**9:25** Intermission.

**9:40 NUCL 17.** Modern measurements of uranium decay rates. **T. Parsons-Moss, J. Wimpenny, S. Padgett, S. Faye, R. Williams, T. Wang, P. Renne, T. Harrison, B. Bandong, K. Moody, K. Knight**

**10:00 NUCL 18.** Determination of Am-241 in weapons grade plutonium for chronometry applications. **M.D. Yoho, D.R. Porterfield, J.H. Rim, D.J. Klundt**

**10:20 NUCL 19.** Structural characterization of hydrolyzed of the uranium tetrafluoride solids. **M. DeVore, M.S. Wellons**

## Radiopharmaceutical Chemistry

Sponsored by FLUO, Cosponsored by INOR, MEDI, NUCL and POLY

## MONDAY AFTERNOON

### Section A

Philadelphia Downtown Courtyard by Marriott Grand Ballroom Salon II

### Physicochemical Characterization of Actinides & Fission Products

J. H. Terry, D. Velazquez, *Organizers, Presiding*

**1:00** Introductory Remarks.

**1:05 NUCL 20.** Understanding the surface chemistry of PuO<sub>2</sub>. **D.T. Olive, C. Booth, A. Pugmire, M.P. Wilkerson, F.J. Freibert**

**1:50 NUCL 21.** Determining speciation of U and Pu in spent nuclear fuel via electro-spray ionization mass spectrometry. **L.W. McDonald, T. Vercouter, J.A. Campbell, S.B. Clark**

**2:20 NUCL 22.** Thorium incorporation in phosphates matrices: the case of the rhabdophane and xenotime. **M. Adel, N. Clavier, C. Gausse, D. Qin, S. Szenknect, J. Lozano-Rodriguez, N. Dacheux**

**2:50** Intermission.

**3:10 NUCL 23.** Correlation between surface morphology and crystallographic orientation in polycrystalline UO<sub>2</sub>. **Y. Miao, K. Mo, T. Yao, J. Lian, J. Fortner, L. Jamison, R. Xu, A.M. Yacout**

**3:55 NUCL 24.** Structure and spectra of uranyl fluoride hydrates. **A. Miskowiec, M. Kirkegaard, L. Trowbridge, B. Anderson**

**4:25 NUCL 25.** Withdrawn.

## Radiopharmaceutical Chemistry

Sponsored by FLUO, Cosponsored by INOR, MEDI, NUCL and POLY

## TUESDAY MORNING

### Section A

Philadelphia Downtown Courtyard by Marriott Grand Ballroom Salon II

### Physicochemical Characterization of Actinides & Fission Products

J. H. Terry, D. Velazquez, *Organizers, Presiding*

**8:00 NUCL 26.** Characterization of irradiated metallic fuels using synchrotron radiation and electron microscopy. **M. Okuniewski, A. Aitkaliyeva, J. Harp, K.E. Wright, B.D. Miller, R. Seibert, D. Velazquez, J.H. Terry, H. Sharma, P. Kenesai, J.S. Park, J. Hunter, R. Pokharel, F. Zhang, V. Ganapathy, P. Cassutt, B. Hamilton, J. Almer**

**8:45 NUCL 27.** Oxalate complexation with Hf(IV) and its applications to the PUREX process. **M. Friend, N. Wall**

**9:15 NUCL 28.** Synthesis and characterization of  $\text{Ln}_{1-2}\text{Ca}_2\text{Th}_2\text{PO}_4 \cdot n\text{H}_2\text{O}$  rhabdophane-type precursors to monazite. **M. Adel, N. Clavier, D. Qin, S. Szenknect, C. Gausse, N. Dacheux**

**9:45** Intermission.

**10:00 NUCL 29.** Oak Ridge National Laboratory: Unique isotope research & development. **J. Ezold, S. Hogle**

**10:45 NUCL 30.** Applications of absorption spectroscopy and chemometrics for plutonium monitoring in nuclear materials processing facilities. **R. Lascola, P. O'Rourke, E. Kyser, M. Phillips**

**11:15 NUCL 31.** Synchrotron radiation studies of advanced nuclear energy materials. **J.H. Terry**

### Polymeric Materials as Imaging Agents & Theranostics

#### Drug Delivery

Sponsored by POLY, Cosponsored by FLUO, INOR, MEDI and NUCL

## TUESDAY AFTERNOON

### Section A

Philadelphia Downtown Courtyard by Marriott Grand Ballroom Salon II

#### Nuclear Modeling & Simulation

S. Lapi, *Organizer*

T. A. Bredeweg, *Organizer, Presiding*

**1:00 NUCL 32.** Models for large scale nuclear collective motion --Fission and superheavy element synthesis. **W. Loveland**

**1:30 NUCL 33.** PHITS Monte Carlo simulations for  $^{225}\text{Ac}$  production with 78-192 MeV protons incident on  $^{232}\text{Th}$  targets compared with experimental effective cross sections. **J. Griswold, D.G. Medvedev, J.W. Engle, R. Copping, D.W. Stracener, L.F. Mausner, L.H. Heilbronn, S. Mirzadeh**

**2:00 NUCL 34.** Random probability analysis of recent  $^{48}\text{Ca} + ^{251}\text{Cf}$  experiments. **M.A. Stoyer, S.Y. Strauss, Y.T. Oganessian, F.S. Abdullin, R.A. Boll, N.T. Brewer, S.N. Dmitriev, J. Ezold, K. Felker, R. Grzywacz, J.H. Hamilton, R.A. Henderson, M.G. Itkis, K. Miernik, A.N. Polyakov, J.B. Roberto, K.P. Rykaczewski, A.V. Sabelnikov, R.N. Sagaidak, D.A. Shaughnessy, I.V. Shirokovsky, M.V. Shumeyko, N.J. Stoyer, V.G. Subbotin, A.M. Sukhov, Y.S. Tsyganov, V.K. Utyonkov, A.A. Voinov, G.K. Vostokin**

**2:30** Intermission.

**2:50 NUCL 35.** IsoChain: A user-friendly, two-group nuclear transmutation and decay code. **S. Hogle, J. Griswold, R.A. Boll, S. Mirzadeh**

**3:20 NUCL 36.** Radiation transport modeling to support nuclear forensics measurements. **M.T. Cook**

**3:50 NUCL 37.** Comparison of experimental and computation thermodynamic parameters in lanthanide materials. **J.D. Auxier, D.A. Penchoff, C. Peterson, S. Stratz, S. Shahbazi, H.L. Hall**

### Polymeric Materials as Imaging Agents & Theranostics

#### Medical Imaging

Sponsored by POLY, Cosponsored by FLUO, INOR, MEDI and NUCL

## WEDNESDAY MORNING

### Section A

Philadelphia Downtown Courtyard by Marriott Grand Ballroom Salon II

#### Glenn T. Seaborg Award for Nuclear Chemistry: Symposium in honor of E. (Earl) Philip Horwitz

M. L. Dietz, M. P. Jensen, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:10 NUCL 38. Award Address** (Glenn T. Seaborg Award for Nuclear Chemistry sponsored by the ACS Division of Nuclear Chemistry and Technology). 60 years in radiochemistry: Major highlights. **E.P. Horwitz**

**8:40 NUCL 39.** Use of low pressure chromatography with an automated generator system for generating radioisotopes for nuclear medicine. **J.T. Harvey**

**9:05 NUCL 40.** 20+ Years with Phil Horwitz: a lot of work and a lot of fun. **R. Chiarizia**

**9:30** Intermission.

**9:55 NUCL 41.** From surveyor alpha source to Eichrom: Phil Horwitz's contributions to f-element separations. **K.L. Nash**

**10:20 NUCL 42.** From radiochemistry to ionic liquids and beyond: Lessons from Phil on separations and life. **R.D. Rogers**

**10:45 NUCL 43.** Search for Ac-225. **D.R. McAlister, E.P. Horwitz**

### Section B

Philadelphia Downtown Courtyard by Marriott Grand Ballroom Salon III/IV

#### Nuclear Modeling & Simulation

T. A. Bredeweg, *Organizer*

S. Lapi, *Organizer, Presiding*

**8:00 NUCL 44.** Spectral adjustment techniques for fast neutron energy distribution. **M. Mosby, K. Jackman, J.W. Engle**

**8:30 NUCL 45.** Full-core simulations of the MURR core during steady state operations to accurately predict irradiation parameters for isotope production. **N. Peters, J.D. Robertson**

**9:00 NUCL 46.** Role of simulation in the design and commissioning of FIONA: a new mass analyzer for superheavy elements. **N.E. Esker, J.M. Gates, K.E. Gregorich, G.K. Pang, J. Cerny**

**9:30 NUCL 47.** Modeling microchannel plate detectors for improved performance. **R.T. Desouza**

## WEDNESDAY AFTERNOON

### Section A

Philadelphia Downtown Courtyard by Marriott Grand Ballroom Salon II

#### Glenn T. Seaborg Award for Nuclear Chemistry: Symposium in honor of E. (Earl) Philip Horwitz

M. L. Dietz, M. P. Jensen, *Organizers, Presiding*

**1:00 NUCL 48.** Challenges in chemical separation of  $^{225}\text{Ac}$  produced via proton irradiation of  $^{232}\text{Th}$  target. **S. Mirzadeh, R. Copping, V. Radchenko, M. Fassbender, K. Murphy, D. Denton, A. Owens, R.A. Boll, J. Griswold, J. Fitzsimmons, D.G. Medvedev, L.F. Mausner**

**1:25 NUCL 49.** Investigations using LN, LN2, and LN3 resins for separation of actinium and lanthanum. **R.A. Boll, L.H. Delmau, P.E. Clarice, C. Hindman**

**1:50 NUCL 50.** Extraction chromatography aids medical isotope production. **D.G. Medvedev**

**2:15** Intermission.

**2:35 NUCL 51.** Control of iron in hydro-metallurgical solutions using ion exchange resins. **D. Dreisinger, R. Shaw**

**3:00 NUCL 52.** Diphonix: From Dallas to today. **S. Alexandratos**

**3:25 NUCL 53.** Capture and release chemistry: Harvesting beryllium-7 from Brookhaven LINAC isotope producer's 320 gallons of cooling water. **J. Fitzsimmons, L. Muench**

## THURSDAY MORNING

### Section A

Philadelphia Downtown Courtyard by Marriott Grand Ballroom Salon II

#### Glenn T. Seaborg Award for Nuclear Chemistry: Symposium in honor of E. (Earl) Philip Horwitz

M. L. Dietz, M. P. Jensen, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 NUCL 54.** Overview of solvent extraction technologies for recycle of used nuclear fuel and treatment of radioactive wastes. **T. Todd**

**8:30 NUCL 55.** Evolution from TRUOX to ALSEP. **G.J. Lumetta**

**8:55 NUCL 56.** Developing the caustic-side solvent extraction process for cesium removal from legacy tank waste. **B.A. Moyer**

**9:20** Intermission.

**9:40 NUCL 57.** Sixth period with Philip: Insights into the coordination chemistry of three metals with three extractants. **M.R. Antonio**

**10:05 NUCL 58.** Heavy actinide chemistry with Phil Horwitz. **J. Braley**

**10:30 NUCL 59.** Separations, actinide coordination chemistry, and the butterfly effect: The inspiration and influence of Phil Horwitz. **S.R. Daly, A.V. Blake, J.L. Buckley, Z. Theiler**

## THURSDAY AFTERNOON

### Section A

Philadelphia Downtown Courtyard by Marriott Grand Ballroom Salon II

#### Glenn T. Seaborg Award for Nuclear Chemistry: Symposium in honor of E. (Earl) Philip Horwitz

M. L. Dietz, M. P. Jensen, *Organizers, Presiding*

**1:00 NUCL 60.** Rapid methods for actinides and Sr-89/90 in environmental samples. **S. Maxwell, R. Sudowe**

**1:25 NUCL 61.** Rapid separation of strontium from raw urine using a tandem of regenerated Eichrom columns. **M. Kaminski, M.L. Dietz, C.A. Hawkins, G. Sandi, A. Park, I.A. Shkrob, C. Mertz**

**1:50 NUCL 62.** Improved chemical separations: applications in oceanography. **B. Burnett**

**2:15** Intermission.

**2:35 NUCL 63.** Sequential separation of group II elements including Ra by reverse phase chromatography employing cation exchange resin in citrate media. **A. Owens, R. Copping, R.A. Boll, D. Denton, K. Murphy, S. Mirzadeh**

**3:00 NUCL 64.** Solid-supported ionic liquids for metal ion separation and preconcentration: Where do we stand? **M.L. Dietz, M. Momen, C.A. Hawkins, S.L. Garvey**

**3:25 NUCL 65.** Novel separation systems and the commandments of solvent extraction. **M.P. Jensen**

## ORGN

### Division of Organic Chemistry

**M. McIntosh and R. Broene, Program Chairs**

## SUNDAY MORNING

### Section B

Pennsylvania Convention Center Terrace Ballroom III

#### Synthetic Expansion of Nucleic Acid Function

D. Bong, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 ORGN 1.** Small-molecule detection and enantiopurity measurement using DNA-based sensors. **J.M. Heemstra**

**9:05 ORGN 2.** Modulating nucleic acid structure and function using shape-selective small molecules. **D.M. Chenoweth**

**9:35 ORGN 3.** Development of bifacial recognition codes for manipulation of nucleic acid structures and functions. **D.H. Ly**

**10:10** Intermission.

**10:20 ORGN 4.** Bifacial peptide and polymer nucleic acid: Functional integration of abiotic molecules into DNA and RNA. **D. Bong**

**10:55 ORGN 5.** Designer DNA bases with biological function. **E.T. Kool**

**11:30 ORGN 6.** Function of artificially expanded genetic information systems. **S.A. Benner**



## Section C

Pennsylvania Convention Center  
Terrace Ballroom II

## Nanomaterials

M. C. McIntosh, *Organizer*

D. Jishkariani, *Presiding*

**8:30 ORGN 7.** Dendronization enabled self-assembly and tuning of optical, magnetic and colloidal properties of nanoparticles. **D. Jishkariani**, B. Diroll, M. Cargnello, D. Klein, L. Hough, C.B. Murray, B. Donnio

**8:50 ORGN 8.** Beneficial effect of the mechanical bond on carbon nanotube polymer fillers. **A. Lopez**, M. Moffa, M. Bernal, A. De Juan, J. Fernandez-Blazquez, J.J. Vilatela, D. Pisignano, E.M. Perez

**9:10 ORGN 9.** Metal nanoparticles catalyzed selective carbon-carbon bond activation in the liquid phase. **R. Ye**, B. Yuan, J. Zhao, W. Ralston, C. Wu, D. Toste, G.A. Somorjai

**9:30 ORGN 10.** Effect of processing conditions on the capacitive performance of onion-like carbon. **K. Van Aken**, K. Maleski, T. Mathis, J. Breslin, Y. Gogotsi

**9:50 ORGN 11.** Rapid integration of metal organic frameworks into chemiresistive gas sensors. **K. Mirica**

**10:10 ORGN 12.** Effects of flexibility on permanent porosity of organic cage assemblies. **T.P. Money Penny**, Y. Miao, K.S. Suslick, J. Moore

**10:30 ORGN 13.** Development of a Cu(II)/basic bifunctional metal-organic framework catalyst for one-pot oxidation/Knoevenagel condensation reaction. **Y. Qi**

**10:50 ORGN 14.** Anthracene-N-phenylethylenediamine derived organic nanoparticles: selective ratiometric fluorescent chemosensor for copper (II) and regulated switching ON and OFF of photodynamic therapy (PDT). **M. Gangopadhyay**, A. Jana, M. Bera, S. Biswas, N. Chowdhury, Y. Zhao, N. Singh

**11:10 ORGN 15.** Dimerization modes of triangulene graphene nanoflakes. **Z. Mou**, **M. Kertesz**

**11:30 ORGN 16.** Synthesis of atomically controlled graphene nanoribbon-porphyrin heterojunctions. **W.S. Perkins**, F.R. Fischer

**11:50 ORGN 17.** MILD synthesis of 2D titanium carbide (MXene). **M. Alhabeib**, K. Maleski, Y. Gogotsi

## Section E

Pennsylvania Convention Center  
Room 120A

## New Reactions &amp; Methodology

M. C. McIntosh, *Organizer*

S. E. Wengryniuk, *Presiding*

**8:00 ORGN 18.** Divergent synthesis of cyclopropane-containing compounds for drug discovery. **S. Chawner**, J.A. Bull, M.J. Cases-Thomas

**8:20 ORGN 19.** Hydrophosphination of bicyclobutane nitriles. **J.A. Milligan**, C.A. Busacca, P. Wipf, C.H. Senanayake

**8:40 ORGN 20.** Enantioselective enolate C-acylation: Cation-directed asymmetric synthesis of spirobiindanones. **B.F. Rahemtulla**, H. Clark, M.D. Smith

**9:00 ORGN 21.** Amine-directed photoredox catalyzed C-C bond formation at unactivated sp<sup>3</sup> C-H bonds. **C. Chu**, T. Rovis

**9:20 ORGN 22.** Synthesis of diverse medium-sized heterocycles via novel oxidative rearrangements with hypervalent iodine compounds. **B.T. Kelley**, J.C. Walters, S.E. Wengryniuk

**9:40 ORGN 23.** Palladium-catalyzed decarboxylative synthesis of conjugated allenynes. **M.K. Smith**, J.A. Tunge

**10:00 ORGN 24.** Sulfonyl fluorides as deoxyfluorination reagents. **M.K. Nielsen**, A.G. Doyle

**10:20 ORGN 25.** Ruthenium-catalyzed olefin cross-metathesis with tetrafluoroethylene. **Y. Takahira**, T. Usuda, Y. Morizawa

**10:40 ORGN 26.** Preparation of heteroaryl ethers from azine N-oxides and alcohols. **A.T. Londregan**, Y. Lian, S.B. Coffey, Q. Li

**11:00 ORGN 27.** Ambient-temperature Newman-Kwart rearrangement mediated by organic photoredox catalysis. **C. Cruz**, A. Perkowski, D.A. Nicewicz

**11:20 ORGN 28.** Remote aliphatic C-H oxidation of nitrogen-containing molecules. **K. Feng**, J.M. Howell, J.R. Clark, L.J. Trzepakowski, M. White

**11:40 ORGN 29.** Efficient synthesis of diverse multiring structures through isochromenylium tetrafluoroborate-mediated cascade reactions. **Z. Hu**, S. Yu, H. Zhang, L. Mo, Z. Yao

## Section F

Pennsylvania Convention Center  
Room 119B

## Asymmetric Reactions &amp; Syntheses

M. C. McIntosh, *Organizer*

J. A. Cody, *Presiding*

**8:30 ORGN 30.** Phosphonate-directed catalytic asymmetric hydroboration (CAHB): Chiral tertiary boronic esters and all carbon quaternary stereocenters. **S. Chakrabarty**, J.M. Takacs

**8:50 ORGN 31.** Methodology and mechanistic studies of catalytic asymmetric annulations to form silyl-spirooxindoles. **B. Armstrong**, R. Saylor, B. Shupe, J.P. MacDonald, R. Britt, A.K. Franz

**9:10 ORGN 32.** Development highlights towards a green manufacturing route for Letemovir exploiting novel asymmetric reactions. **Y. Xu**, G.R. Humphrey

**9:30 ORGN 33.** Catalytic enantioselective cycloadditions of enolizable anhydrides and imines. **C.L. Jarvis**, D. Seidel

**9:50 ORGN 34.** Ni-catalyzed, enantioselective arylation of pyridinium ions. **J.P. Lutz**, S.T. Chau, A.G. Doyle

**10:10 ORGN 35.** Enantioselective cooperative organo/metal-catalyzed desymmetrization of 4-propargylamino cyclohexanones. **R. Manzano**, D. Dixon

**10:30 ORGN 36.** C-glycosyl compounds in the synthesis of the phytotoxin diplopyrone. **R.M. Giuliano**, R. Rosano, M. Giovine, J. Grecco, M. Rotella, P. Vagadia

**10:50 ORGN 37.** Mechanochemical enzymatic resolution of secondary alcohols. **J.G. Hernandez**, M. Frings, C. Bolm

**11:10 ORGN 38.** Exploration of an alkynyl halo-prins initiated cationic cascade. **J.A. Cody**, A.J. Frontier

**11:30 ORGN 39.** Enantioselective synthesis of the major metabolite of a CGRP receptor antagonist and mechanism of epoxide hydrolysis. **G. Luo**, L. Chen, C. Conway, W. Kostich, M. Gulianello, B.M. Johnson, A. Ng, J.E. Macor, G.M. Dubowchik

**11:50 ORGN 40.** Enantioselective synthesis of cyclobutanes via sequential Rh-catalyzed bicyclobutanation/Cu-catalyzed homoconjugate addition and design of mixed-ligand chiral rhodium (II) catalysts for enantioselective transformations of  $\alpha$ -alkyl- $\alpha$ -diazoesters. **S. Chintala**, J. Fox

**12:10 ORGN 41.** Multienzymatic, one-pot cascade synthesis of enantiopure lamivudine precursor (2R, 5R)-1,3-oxathiolane. **Y. Ren**, L. Hu, O. Ramstrom

## Section G

Pennsylvania Convention Center  
Room 119A

## Physical Organic Chemistry: Calculations, Mechanisms, Photochemistry &amp; High-Energy Species

M. C. McIntosh, *Organizer*

C. J. Bardeen, *Presiding*

**8:00 ORGN 42.** Conformational dynamics and circular dichroism of proteins: Insights from computational modelling. **C. Christov**, T. Karabancheva-Christova

**8:20 ORGN 43.** Computational study of the reactivity of N-doped graphene as a function of regiotoxic edge substitution using heterocyclic model compounds. **H. Banks**

**8:40 ORGN 44.** Role of coordination in proton-coupled electron-transfer reactions utilizing samarium diiodide (SmI<sub>2</sub>). **T.V. Chciuk**, R.A. Flowers

**9:00 ORGN 45.** How heterogeneous reaction kinetics can amplify motions in photomechanical molecular crystals. **C.J. Bardeen**, F. Tong, M. Hanson

**9:20 ORGN 46.** Synthesis and characterization of N-substituted hydroxyphenyl benzimidazoles. **T. Dudley**, M. Laurich, E. LaCourse, V. Mukku, N.A. Piro, W.S. Kassel, W. Boyko, J.J. Paul

**9:40 ORGN 47.** Aromatic stabilization of functionalized corannulene cations. **J. Li**, A.Y. Rogachev

**10:00 ORGN 48.** Cation- $\pi$  effects in the nucleophile mediated activation of benzyl-aryl carbonates. **G.R. Reddy**, A.S. Avadhani, **S. Rajaram**

**10:20 ORGN 49.** Determining the 3D structure of metal ligand complexes in solution using nuclear magnetic resonance (NMR) spectroscopy via residual dipolar couplings (RDCs). **S. Gukathasan**, W. Carroll

**10:40 ORGN 50.** Oxygen peribridged quinolinium cation mono- and biradicals: Generation and gas-phase reactivity study by using a linear quadrupole ion trap (LQIT) mass spectrometry. **R.R. Kotha**, J.J. Nash, H.J. Kentamaa

**11:00 ORGN 51.** Interplay of protecting groups and its influence on side chain conformation and glycosylation stereoselectivity: the galactopyranosides. **S. Dharuman**, D. Crich

**11:20 ORGN 52.** Kinetics and quantum chemical study of the astatination of aryliodonium salts via nucleophilic substitution. **Y.S. Lee**, F. Guerard, K. Baidoo, J. Gestin, M.W. Brechbiel

**11:40 ORGN 53.** Selectivity in Tsuji-Trost allylation: a conformationally complex reaction. **P. Norrby**, A. Bayesteh

## WCC Merck Research Award Symposium

Sponsored by WCC, Cosponsored by ANYL, BIOL, COMP, MEDI, MPPG, ORGN, POLY and PROF

## SUNDAY AFTERNOON

## Section A

Pennsylvania Convention Center  
Terrace Ballroom IV

## JOC/OL Lectureship Symposium

T. Hanna, *Organizer*

A. B. Smith, *Organizer, Presiding*

D. Poulter, *Presiding*

**1:00** Introductory Remarks.

**1:05 ORGN 54.** Dynamic effects on selectivity of synthetic and biosynthetic reactions. **D.J. Tantillo**

**1:35 ORGN 55.** Nickel-catalyzed stereospecific cross-coupling and reductive coupling reactions. **E.R. Jarvo**

**2:05 ORGN 56.** Photocatalytic C-F functionalization; synthesis of multifluorinated (hetero)arenes. **S. Senaweera**, A. Singh, M. Khaled, **J.D. Weaver**

**2:35 ORGN 57.** Necessity is the mother of invention: Natural products and the chemistry they inspire. **S.E. Reisman**

**3:05** Organic Letters Award Presentation.

**3:10 ORGN 58.** Transitioning organic synthesis from organic solvents to water. Following nature's lead. **B.H. Lipshutz**

**3:55** The Journal of Organic Chemistry Award Presentation.

**4:00 ORGN 59.** Application of desymmetrization in natural product synthesis. **J.S. Johnson**, R.J. Sharpe

## Section B

Pennsylvania Convention Center  
Terrace Ballroom III

## Synthetic Expansion of Nucleic Acid Function

D. Bong, *Organizer, Presiding*

**2:00** Introductory Remarks.

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

- 2:05 ORGN 60.** Optical control of oligonucleotide function in cells and animals. A. Deiters
- 2:40 ORGN 61.** Locked nucleic acid (LNA) in drug discovery and nanotechnology. J. Wengel
- 3:15 ORGN 62.** Making drugs out of siRNAs: Role of chemical modifications for improving potency, specificity, metabolic stability and delivery. M. Manoharan

### Section C

Pennsylvania Convention Center  
Terrace Ballroom II

#### Small Splashes, Big Waves: Research at Primarily Undergraduate Institutions

S. M. Biros, *Organizer*

T. A. Davis, *Organizer, Presiding*

#### 1:00 Introductory Remarks.

- 1:05 ORGN 63.** Synthesis of stereochemically diverse 2-amino sugar building blocks via metallanitrenes. C.M. Rojas
- 1:30 ORGN 64.** Synthetic studies toward the resorcylic acid lactone pochonin J. R. Pongdee

- 1:55 ORGN 65.** Structure and properties of coordination polymers containing hydrogen-bonding capable and conformationally flexible dipyrrolyl ligands: An introductory undergraduate research program at Lyman Briggs College at Michigan State University. R.L. Laduca, A. Sample, C. White

- 2:20 ORGN 66.** Power of darkness: Contrast in fluorogenic dyes. L. Wysocki

#### 2:45 Intermission.

- 3:00 ORGN 67.** Mining soil bacteria for chemical diversity. L.K. Charkoudian
- 3:25 ORGN 68.** Synthesis, evaluation, and fluorescence properties of small molecule DNA ligase inhibitors. G.E. Greco
- 3:50 ORGN 69.** Exploration of selectivity control in reactions for the assembly of non-ribosomal peptide moieties. L. Sanchez
- 4:15 ORGN 70.** Chemical upcycling: Expired drugs as a platform for undergraduate involvement. H.S. Barcana

### Section E

Pennsylvania Convention Center  
Room 120A

#### New Reactions & Methodology

M. C. McIntosh, *Organizer*

C. Brindle, *Presiding*

- 1:00 ORGN 71.** Stereospecific nickel-catalyzed Suzuki cross-couplings of allylic carboxylates to set quaternary stereocenters. K.M. Cobb
- 1:20 ORGN 72.** Visible light-induced reaction of difluoromethylated phosphonium salts as difluoromethyl radical source. F. Qing
- 1:40 ORGN 73.** Iridium-catalyzed direct C-H amination with anilines and alkylamines. Facile oxidative insertion of amino group into iridacycle. H. Kim
- 2:00 ORGN 74.** Room temperature direct  $\beta$ -arylation of thiophenes and benzo[b]thiophenes and kinetic evidence for a Heck-type pathway. C. Colletto, S. Islam, F. Juliá-Hernández, I. Larrosa
- 2:20 ORGN 75.** Transition metal catalyzed halo-functionalization of alkynes. Y. Xing

- 2:40 ORGN 76.** Chemosynthetic livers: Predict, prepare and prove the structure, activity and toxicity of drug metabolites. M. Chorghade, R. Chorghade
- 3:00 ORGN 77.** Polypharmacy and chemosynthetic livers: Predict, prepare and prove the structure, activity and toxicity of drug metabolites. M. Chorghade, R. Chorghade

- 3:20 ORGN 78.** Tunable triarylmethyl cation catalysis: Friedel-Crafts alkylation of indole with N-aryl imines. C. Brindle
- 3:40 ORGN 79.** Development of an iterative chemoselective strategy for polysaccharide synthesis. R.J. Miotto, J. Liu, A. Aponick
- 4:00 ORGN 80.** Strain release as an enabling strategy in medicinal chemistry and drug discovery. J.M. Lopchuk, P.S. Baran
- 4:20 ORGN 81.** Cyclobutanes via hyper-valent iodine catalyzed dimerization of styrenes. I. Colomer Utrera, T.J. Donohoe

### Section F

Pennsylvania Convention Center  
Room 119B

#### Asymmetric Reactions & Syntheses

M. C. McIntosh, *Organizer*

D. G. Hall, *Presiding*

- 1:30 ORGN 82.** New organocatalysts for the stereoselective synthesis of 2-deoxyglycosides: A different mode of action for thiourea organocatalysts. A.C. Colgan, G.A. Bradshaw, N.P. Allen, E.M. McGarrigle
- 1:50 ORGN 83.** Employing novel scaffolds towards the design of next-generation dual hydrogen bond donor catalysts. C.S. Sumaria, M.G. Rombola, V.H. Rawal
- 2:10 ORGN 84.** Decarboxylative asymmetric protonation and allylic alkylation of  $\alpha$ -aryl-oxindoles. P.J. Guiry, M. Jackson
- 2:30 ORGN 85.** Development and mechanistic studies of Rh-catalyzed direct enantioselective alkylation of  $\alpha$ -ketiminoesters. K. Morisaki, H. Morimoto, M. Sawa, R. Yonesaki, K. Mashima, T. Ohshima
- 2:50 ORGN 86.** Regio and diastereoselective hydroxylation of quinolines: Synthesis of the peptidomimetic FISLE-412. A. Altiti, K. Cheng, M. He, Y. Al-Abed

- 3:10 ORGN 87.** Nickel-catalyzed enantioselective cross coupling of aziridines. B. Woods, C. Huang, A.G. Doyle
- 3:30 ORGN 88.** Dual catalysis with boronic acid and chiral amine catalysts: Formation of acyclic quaternary carbon centers via enantioselective allylation of branched aldehydes with allylic alcohols. X. Mo, D.G. Hall
- 3:50 ORGN 89.** Organocatalysis at the service of total synthesis. Á.L. Fuentes, X. Xu, D. Dixon

- 4:10 ORGN 90.** Cyclopentanone alkylations: Synthetic studies towards diterpenoid bicyclic core structures. C.E. Jakobsche

- 4:30 ORGN 91.** Rhodium(II)-catalyzed asymmetric C-H functionalization of ethyl crotonate derivatives and electron-deficient benzylic methyl groups. L. Fu, D. Guptill, H.M. Davies
- 4:50 ORGN 92.** Ru(II)-Pheox catalyzed enantioselective Si-H insertion reaction of diazoacetates. Y. Nakagawa, S. Chanthamath, K. Shibatomi, S. Iwasa

- 5:10 ORGN 93.** Stereochemically flexible synthesis of oxylipins from *Dracontium lortense*. S. Chatterjee, G. Abeykoon, J.S. Chen

### Section G

Pennsylvania Convention Center  
Room 119A

#### Physical Organic Chemistry: Calculations, Mechanisms, Photochemistry & High-Energy Species

M. C. McIntosh, *Organizer*

D. J. O'Leary, *Presiding*

- 1:00 ORGN 94.** Modular synthesis of acenes and their application in singlet fission. E. Kumarasamy, L.M. Campos
- 1:20 ORGN 95.** Photophysical properties of perinone chromophores. B.C. Pemberton, J. Yarnell, S. Garakyaraghi, A. Chakraborty, F.N. Castellano

- 1:40 ORGN 96.** Emergence of bistability and oscillations in organic reaction networks. S.N. Semenov, L.J. Kraft, A. Ainala, M. Zhao, M. Baghbanzadeh, V. Campbell, K. Kang, J.M. Fox, G.M. Whitesides

- 2:00 ORGN 97.** Mechanistic studies of titanocene(III) reductions and bond-forming reactions. G. Fianu, R.A. Flowers, A.R. Gansaeuer

- 2:20 ORGN 98.** Optimization of curcuminoid molecular rotors. R.E. Borg, S. Bellinger Buckley, C. Ellis, J.J. Rochford

- 2:40 ORGN 99.** Expansion of fluorescent protein sensing ability using genetic code expansion. L. Jiang

- 3:00 ORGN 100.** Probing very small chemical shift differences in diastereotopic X-CH<sub>2</sub>D groups. D.J. O'Leary, D.A. Kolin, S.J. Elliott, M. Levitt

- 3:20 ORGN 101.** Quadruple 'ene' reactions of singlet oxygen to the natural product hyperforin: A computed study of polyhydroperoxides with decomposition to hydrotrioxide and carbonyls. J. Olson, I. Abramova, B. Rudshsteyn, N. Walalawela, A. Greer

- 3:40 ORGN 102.** Wavelength dependent, sequentially triggered, dual therapeutic modality with photoinduced fluorescence off-on for real time imaging. K.K. Behara, R. Y. A. Chaudary, S. Biswas, M. Mandal, N. Singh

- 4:00 ORGN 103.** Modeling of Raman shifts upon high pressures of cyclopara-phenylenes. L. Qiu, M. Kertesz

- 4:20 ORGN 104.** Identification of two cationic pseudodimers of an active pharmaceutical ingredient in stressed capsules and the rationale of their formation. Y. Huang, Q. Wang

#### Regional Small Chemical Businesses: Case Histories & Lessons Learned

Sponsored by SCHB, Cosponsored by MEDI, ORGN and PROF

### SUNDAY EVENING

#### Section A

Pennsylvania Convention Center  
Hall D

#### Flow Chemistry & Continuous Processes

R. D. Broene, *Organizer*

#### 8:00 - 10:00

- ORGN 105.** Optimization of bismaleimide synthesis for production via microfluidics. S.M. Torres, T. Robison, J. Hendricks
- ORGN 106.** Continuous-flow synthesis of fluorinated diazomethanes and their applications in the synthesis of pyrazoles and pyrazolines. K.J. Hock, R.M. Koenigs
- ORGN 107.** Development of cost-effective, streamlined access towards Nevirapine for batch and continuous manufacturing platforms. J. Verghese, C. Kong, S. Ahmad, K. Belecki, F. Gupton

#### Section B

Pennsylvania Convention Center  
Hall D

#### Asymmetric Reactions & Syntheses

R. D. Broene, *Organizer*

#### 8:00 - 10:00

- ORGN 108.** Enantioselective synthesis of 1,8-dihydroindeno[2,1-b]pyrroles by an ion-paired-based cooperative catalysis approach. J. Jin, Y. Zhao, P.W. Chan
- ORGN 109.** Halogen bonding in catalysis: Hydrogen transfer to C=N bond with Hantzsch ester and sulfenate alkylation. W. He, C. Tan
- ORGN 110.** Synthesis of a fluorenyl quinoline molecular switch. K. Namjouyan
- ORGN 111.** Enantiodivergent synthesis of tertiary  $\alpha$ -aryl 1-indanones: Elucidation of disparate mechanisms in the palladium-catalyzed decarboxylative asymmetric protonation. C. Kingston, P.J. Guiry
- ORGN 112.** Cu(I)-catalyzed chemo- and stereoselective [3+3] cycloaddition of azomethine ylides with 2-iodoethylenes: Facile access to highly substituted tetrahydro- $\gamma$ -carbolines. W. Yang, W. Deng
- ORGN 113.** Developing new methodologies for Lewis base-catalyzed trialkylorganosilane additions to halogenated carbonyls. T.A. Davis, K.K. Brawley, S. Fouleau, K. Russell
- ORGN 114.** Asymmetric synthesis of  $\gamma$ -lactones through reaction of enediolates with sulfoxonium salts. N. Kerrigan, N. Perraino, S. Kaster

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ORGN **115.** Synthesis and scale-up of enantiomerically pure disubstituted  $\alpha$ -aminonitriles,  $\alpha$ -amino acids, and related compounds. A. Stutz, M. Waibel, J. Burkhard, M. Krämer

ORGN **116.** Enantioselective C–H functionalization of allylic and benzylic sp<sup>3</sup> C–H bonds using *N*-sulfonyl-1,2,3-triazoles. R.W. Kubiak, J.D. Mighion, S.M. Wilkerson-Hill, J. Alford, H.M. Davies

ORGN **117.** Exploring the scope of palladium-catalyzed asymmetric allylic alkylation with nitrogen-containing heterocycles and cycloalkene carbonates. N.K. Zaware, D. Kastrinsky, M. Ohlmeyer

ORGN **118.** Synthesis and investigation of novel water stable lanthanide (III) complexes. I. Janser, B. Buzrukov

ORGN **119.** Computational ligand design in the asymmetric Pauson-Khand reaction of allenol acetates. L. Parrette, G. Lu, L. Jesikiewicz, P. Liu, K.M. Brummond

ORGN **120.** Evaluation of the bifunctional organocatalysts in Friedel-Crafts/substitution domino type reaction. D. Susam, C. Tanyeli

ORGN **121.** Enantioselective synthesis of 2-indolyl-1-nitro derivatives. E. Kanberoglu, C. Tanyeli

ORGN **122.** Efforts towards the asymmetric synthesis of a human T-cell leukemia virus protease inhibitor: An asymmetric glycolate aldol addition reaction pathway employing an N3-(4-methoxyphenoxyacetyl) oxazolidinone-2-thione as a chiral auxiliary. C. Haynes, J.M. Standard, S.R. Hitchcock

ORGN **123.** Optimized route to the tetrafabricin C15–C25 fragment and feasibility studies on fragment coupling. R. Friedrich, J.Q. Bell, A. Garcia, Z. Shen, G. Friestad

ORGN **124.** Asymmetric oxidative coupling of 2-hydroxycarbazoles. P. Sung, Y. Lee, M. Kozlowski

ORGN **125.** Efficient and pot-economical approach for the syntheses of novel  $\alpha,\beta$ -unsaturated carbon, sulfur and phosphorus macrocycles, Sch-725674 and towards 13-desmethyl-lyngboulloside. S. Javed, A. Ganguly, M. Bodugam, J. Torres, P.R. Hanson

ORGN **126.** Efficient synthesis of the C1–C25 fragment of spirastrellolide B. S. Javed, S. Maitra, M. Bodugam, P.R. Hanson

ORGN **127.** Large scale synthesis of a stereotriad. A useful building block toward polyketide natural products. D. Galler, G. Bermudez-Corralles, K.A. Parker

ORGN **128.** Synthesis of enantioenriched bicyclic lactones using Bronsted acid catalyzed desymmetrization. K. Stingley

## Section C

Pennsylvania Convention Center  
Hall D

### Chemistry of Fullerenes, Carbon Nanotubes & Graphene

R. D. Broene, *Organizer*

8:00 - 10:00

ORGN **129.** Fluorescence resonance energy transfer in pyrene-acceptor (flavylium salt, fullerene C<sub>60</sub> and porphyrin) dyads. G. Zaragoza-Galan, E. Rivera, L. Rodríguez-Valdez, N. Sánchez-Bojorge, A. Camacho-Dávila, V. Ramos-Sánchez

ORGN **130.** Stacking-mode-induced reactivity enhancement for twisted bilayer graphene. Y. Ding

ORGN **131.** Synthesis and characterization of thiophene and 9-fluorenone-containing macrocycles. H. Thakellapalli, S. Li, B. Farajidizaji, C. Huang, N.G. Akhmedov, J.L. Petersen, K.K. Wang

ORGN **132.** Functionalized [9]cycloparaphenylenes bearing carbomethoxy and *N*-phenylphthalimido groups. S. Li, C. Huang, H. Thakellapalli, B. Farajidizaji, J.L. Petersen, K.K. Wang

ORGN **133.** Syntheses and structures of cycloparaphenylenes from furan-containing macrocycles. B. Farajidizaji, H. Thakellapalli, S. Li, C. Huang, N.G. Akhmedov, J.L. Petersen, K.K. Wang

ORGN **134.** Aggregation and photophysics of cyclooligo(3,3'-*para*-terphenylene ethynylene) and cyclooligo(3,3'-biphenylene ethynylene) armchair carbon nanobelt precursors. T.A. Dietsche, S.P. Singh, T.S. Hughes

## Section D

Pennsylvania Convention Center  
Hall D

### Materials, Devices & Switches

R. D. Broene, *Organizer*

8:00 - 10:00

ORGN **135.** Expedient *de novo* synthesis of near-infrared emitting fluorophores. J. Richard

ORGN **136.** Light-regulated chiroptical switching elements derived from a versatile, modular design approach. G.D. Jaycox

ORGN **137.** Near infrared aza-bodipy donor materials for vacuum processed bulk heterojunction solar cells. T. Li, R. Meerheim, C. Körner, O. Zeika, K. Leo

ORGN **138.** *N*-phenylindole-diketopyrrolopyrrole-containing dipolar material for dopant-free hole transporting layer of perovskite solar cell. S. Jeon, U.K. Thakur, D. Lee, Y. Wenping, D. Kim, S. Lee, T.K. Ahn, H.J. Park, S.D. Kim, B. Kim

ORGN **139.** Synthesis and electronic properties of TPD based push-pull-push type dye and oligomer. R. Kundu

ORGN **140.** Generation of new thymine polymorphs by solid state dehydration. E.S. Koch, K. McKenna, J.A. Swift

ORGN **141.** Fabrication of gas sensors by drawing using pencils loaded with metal organic frameworks. M. Ko, A. Aykanat, K. Mirica

ORGN **142.** Fabrication of MOF-based chemiresistors on shrinkable film. M. Smith, K. Jensen, P. Pivak, K. Mirica

ORGN **143.** Use of native oils to create naturally-derived antimicrobial surfaces. K. Velez, J.I. Rizzo

ORGN **144.** Polycyclic aromatic hydrocarbons as sublimable adhesives. H. Mitchell, M. Smith, N.D. Blelloch, K. Mirica

ORGN **145.** Synthesis and spectroscopic investigations of fluorescent photoswitches for use in optical materials. S. Patel, A.R. Lippert

## Section E

Pennsylvania Convention Center  
Hall D

### Nanomaterials

R. D. Broene, *Organizer*

8:00 - 10:00

ORGN **146.** Synthesis of MOF-graphene hybrid aerogels. W. Chen, K. Yeung

ORGN **147.** *In vitro* cytotoxicity assessment of anionic and cationic modified cellulose nanocrystals. A. Jimenez, F. Jaramillo, K. Ckless, R. Sunasee

ORGN **148.** Multifunctional nanomaterials from a renewable bioresource, lignin. A.N. Cauley, J.N. Wilson

ORGN **149.** MILD synthesis of large flakes 2D Ti3C2 (MXene). M. Alhabeb, Y. Gogotsi

ORGN **150.** Silica scaffolded nanogold: A new catalysts for Henry reaction. V. Datilus, A. Patel, K. Moran, P. Kaur, B.P. Chauhan, Q.R. Johnson

## Section F

Pennsylvania Convention Center  
Hall D

### Total Synthesis of Complex Molecules

R. D. Broene, *Organizer*

8:00 - 10:00

ORGN **151.** Synthesis of norsesquiterpenoid natural product. K. Kwon

ORGN **152.** Synthetic studies towards the zaragocic acids (squalenolactams). Y. Fegheh-Hassanpour

ORGN **153.** Studies toward the total synthesis of agelastatin A. M.G. Morrow, H. Gholami, B. Borhan

ORGN **154.** Five easy pieces. The total synthesis of phosphoiodyd A (and placotylene A). D. Galler, K.A. Parker

ORGN **155.** Studies towards the asymmetric synthesis of inthomycin C and its incorporation into the total synthesis of oxazolomycin B. S. Balcells Garcia

ORGN **156.** Total synthesis of chaetoglobulin A via asymmetric oxidative phenol coupling reaction. H. Kang, C. Torruellas, Y. Lee, M. Kozlowski

ORGN **157.** Chemoenzymatic synthesis of antithrombotic drug fondaparinux. X. Zhang, D.M. Dickinson, L. Lin, A. Yaksic, F. Zhang, R.J. Linhardt

ORGN **158.** Solid phase synthesis of antimicrobial cyclic hexapeptide wollamide B and analogs. L.S. Tsutsumi, D. Sun

ORGN **159.** Enantioselective total synthesis of (-)-deguelin. S. Lee, J. Ahn, J. Hur, B. Seo, Y. Suh

ORGN **160.** Stereoselective total synthesis of (-)-galiellalactone. J. Ahn, Y. Suh, T. Kim, S. Lee, J. Hur, B. Seo

ORGN **161.** Divergent synthesis of cyclopenta[c] pyran iridoids: syntheses of jatamanin A, F, G and J, gastro-lactone and nepetalactone. J. Hur, J. Sim, B. Seo, S. Lee, J. Ahn, Y. Suh

ORGN **162.** Synthesis of cyclic dinucleotide analogs with bioisosteric phosphate linkages. M. Fletcher, C.E. Burns-Lynch, K.W. Knouse, A. Koval, C.R. Kinzie, W.M. Wuest

ORGN **163.** Efforts towards the total synthesis of 3,4-dihydroxycyclohexan-13E-en-15-*oic* acid, a first in class rad52 inhibitor. E. Hewlett, K. Sullivan, M. Nieborowska-Skorska, M. Abou-Gharbia, T. Skorski, W. Childers

ORGN **164.** Total synthesis and structural revision of aruncin B. A. Ribaucourt, D.M. Hodgson

ORGN **165.** Withdrawn.

ORGN **166.** Developing a target system for bacterial membrane. B. Seelam, D.H. Burns

ORGN **167.** Diverted total synthesis of the anti-biofilm natural product carolacton and analogs thereof. A. Koval, R.S. Brzozowski, K. Morrison, A.E. Solinski, W.M. Wuest

ORGN **168.** Synthetic studies directed towards resorcylic acid lactones (RALs) through a biomimetic approach. P. Pal, N. Jana, S. Nanda

ORGN **169.** Synthesis of charged receptors with a bis phenolic ether scaffold. K. Donavalli

ORGN **170.** Asymmetric total synthesis of paecilomycin F, cochliomycin C, zeaenol, 5-bromo-zeaenol and 3,5-dibromo-zeaenol by Heck coupling and late stage macrolactonization approach. J. Chakraborty, S. Nanda

ORGN **171.** Synthesis of carbohydrate-based natural products. J. More, J. Deegan, K. Delfino

ORGN **172.** Enantioselective synthesis of actinopolymorphol B and its analogs. C.C. Kim

ORGN **173.** Philadelphia Organic Chemists' Club – 70 years of chemistry inspiration. P.J. Walsh, J.M. Karpinski, T.M. Razler, M. Fletcher, S.M. Sieburth

ORGN **174.** Studies towards the total synthesis of non-macrocyclic divergolides through organocatalysis. U. Javed, S. Rasapalli, P.P. Exavier, A.A. Fares

ORGN **175.** Divergent synthesis of six biologically active 4-quinolone natural products isolated from *Pseudonocardia* sp. CL38489. S. Geddis, D.R. Spring

## Section G

Pennsylvania Convention Center  
Hall D

### Physical Organic Chemistry: Calculations, Mechanisms, Photochemistry & High-Energy Species

R. D. Broene, *Organizer*

8:00 - 10:00

ORGN **176.** Small molecule organic solar cells based on benzodithiophene: Synthesis, characterization and application. X. Yin, W. Tang

ORGN **177.** Withdrawn.

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



- ORGN 178.** Continuing quandary: Reaction of the gases HCl and isoprene. **L.M. Mascavage**, P.E. Sonnet, D.R. Dalton
- ORGN 179.** Computational study of SnAP couplings. **S. Tcyrulnikov**, M. Kozlowski
- ORGN 180.** Kinetic evaluation of  $\beta$ -(trimethylsilyl)ethoxy carbonyl group derivatives. **G.C. Daniels**, E. Camerino, J.H. Wynne, E.B. Iezzi
- ORGN 181.** Application of DOSY NMR: Solution state characterizations of lithium hexamethyldisilazide (LiHMDS) complexes with etheral ligands and determination of equilibrium binding constants. **O. Tai**, P.G. Williard
- ORGN 182.** Electronically excited states of helical inversion reaction pathways for o-phenylene. **A. Muraoka**
- ORGN 183.** Kinetic analysis of the reduction of phosphine oxides by silanes: Discovery of the mechanism and drastic rate improvement through silane design. **C. Eiden**, J. Buonomo, C.C. Aldrich
- ORGN 184.** Evaluation of commercial chromophores for photoacoustic imaging by optoacoustic z-scan studies. **E. Ahmad**, S. Bellingier Buckley, M. Hatamimoslehbabadi, C. Yelleswarapu, J.J. Rochford
- ORGN 185.** Integrated panchromatic light-harvesting antenna and charge-separation array: Molecular design and synthesis. **G. Hu**, H. Kang, C.R. Kirmaier, D.F. Bocian, D. Holtan, J.S. Lindsey
- ORGN 186.** Curcuminoid molecular rotors in self-assembled micelles. **R.E. Borg**, C. Ellis, S. Bellingier Buckley, J.J. Rochford
- ORGN 187.** Photochemistry of 3-phenylanthranil, direct detection of triplet arylnitrene. **K.R. Thenna Hewa**, A.D. Gudmundsdottir, D.M. Sriyarthne, M. Abe
- ORGN 188.** Probing the mechanism of sialidation reactions via cation clock kinetics. **H.C. Amarasekara**, D. Crich
- ORGN 189.** Prediction of stereochemistry by Q2MM and the rhodium catalyzed hydrogenation of cyclic dehydro-oligopeptides. **E.C. Hansen**, D. Le, Y.M. Dong, O. Wiest
- ORGN 190.** Epoxidation of oxepins by cytochrome P450; an investigation of the ring opening mechanism of benzene metabolism. **H. Guevara**, R.W. Fitzgerald, A. Greenberg
- ORGN 191.** Examining the reaction rates of oxypyridinium salts with various oxygen nucleophiles. **C. Culy**, P.A. Albiniaik
- ORGN 192.** Synthesis and determination of disassembly mechanisms for various (trimethylsilyl)alkyl carbamate and carbonate derivatives. **E. Camerino**, G.C. Daniels, J.H. Wynne, E. Iezzi
- ORGN 193.** *Ab initio* investigation of the phototransposition mechanism of pyrazines. **N. Kebede**, A.R. Pahel, J.W. Pavlik, **G.J. Hoffman**
- ORGN 194.** Synthesis and NMR analysis of a conformationally controlled  $\beta$ -turn mimetic torsion balance. **A. Lypson**, C. Wilcox
- ORGN 195.** Determining the mechanism of photoreactivity of vinyl azides under low temperature conditions using matrix isolation. **O. Osisioma**, B.S. Ault, A.D. Gudmundsdottir
- ORGN 196.** Withdrawn.

## MONDAY MORNING

### Section A

Pennsylvania Convention Center  
Terrace Ballroom IV

### Organometallics Distinguished Author Award

*Cosponsored by INOR*

P. J. Chirik, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 ORGN 197.** Recent advances in metal catalyzed reactions. **R.H. Grubbs**

**9:10 ORGN 198.** Transition metal-catalyzed amination and amidation reactions. **K.L. Hull**

**9:45** Intermission.

**9:55 ORGN 199.** Single electron processes to enable cross-couplings. **G.A. Molander**

**10:30 ORGN 200.** New directions in nickel-catalyzed cross coupling. **A.G. Doyle**

**11:05** Intermission.

**11:15 ORGN 201.** Cocktail of catalysts and well-defined metal complexes in the catalytic C-C and C-heteroatom bonds formation. **V. Ananikov**

### Section B

Pennsylvania Convention Center  
Terrace Ballroom III

### Role of Organic Chemistry in Early Clinical Drug Development: New Advances in Drug Discovery & Process Chemistry

A. F. Abdel-Magid, R. Vaidyanathan, *Organizers*

J. A. Pesti, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:10 ORGN 202.** Structure-based design of Mcl-1 inhibitors: Interdiction at a protein-protein interface. **S.P. Brown**

**8:45 ORGN 203.** Development of an asymmetric manufacturing process to a synthetically challenging advanced intermediate of an early phase clinical candidate featuring both metal catalyzed and enzyme catalyzed desymmetrization strategies. **R.P. Farrell**, M. Beaver, J.S. Tedrow, S.J. Hedley, A. Wilsily, E. Fang

**9:25 ORGN 204.** Discovery and characterization of LY2784544, a small-molecule tyrosine kinase inhibitor of JAK2V617F. **T.P. Burkholder**

**10:00 ORGN 205.** Synthesis design and development of LY2784544, a small-molecule tyrosine kinase inhibitor of JAK2V617F. **D. Mitchell**

**10:40 ORGN 206.** Curing chronic infection in six major hepatitis C genotypes: Velpatasvir, a potent pan-genotypic NS5A inhibitor co-formulated in a once-daily single-tablet regimen with sofosbuvir. **J. Link**, E. Bacon, G. Cheng, J.J. Cottell, A. Katana, D. Kato, E. Krygowski, E. Mogalian, J. Taylor, A. Trejo-Martin, C. Yang, Z. Yang, S. Zipfel

**11:15 ORGN 207.** Process chemistry development of velpatasvir: A pan-genotypic NS5A inhibitor for the treatment of hepatitis C infection. **K. Sarma**, K. Allan, D. Allen, S. Axt, W. Fu, S. Fujimori, L. Heumann, S. Heumann, G. Huynh, K. Keaton, O. Lapina, C. Levins, L. Li, P. Macleod, D. Mundal, D. Pcion, P. Reddy, C. Rieder, B. Roberts, L. Roeber, N. Shah, B. Shi, M.G. Teresk, S. Wang, T. Wenderski, E. Werner, S. Wolckenhauer, M. Zhang

**11:55** Concluding Remarks.

### Section C

Pennsylvania Convention Center  
Terrace Ballroom II

### Young Investigator Symposium

S. Dreher, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 ORGN 208.** ATR inhibitors for cancer: SBDD and mitigation of TDI. **R. Aversa**, P.A. Barsanti, X. Jin, Y. Pan, R. Elling, R. Jain, M. Knapp, J. Lan, X. Lin, P. Rudewicz, J. Sim, L. Taricani, G. Thomas, L. Xiao, Q. Yue

**9:00 ORGN 209.** Practical processes to selective estrogen receptor degrader GDC-0810. **H. Zhang**, A. McClory, N. Lim, S. Savage, H. Theresa, C. Han, F. Gosselin

**9:25 ORGN 210.** Case studies in process research: Small molecules with big challenges. **M. Schmidt**

**9:50 ORGN 211.** Applications of sulfonyl fluorides in drug discovery and chemical biology. **H. Xu**, L.H. Jones

**10:15 ORGN 212.** Disruption of autophagy *in vivo* via selective Vps34 inhibitors. **E.P. Keaney**, A. Honda, E. Harrington, I. Cornella-Taracido, P. Furet, M. Knapp, M. Glick, E. Triantafellow, W. Dowdle, D. Wiedershain, W. Maniara, C. Moore, M. Schirle, P. Finan, L.G. Hamann, B. Firestone, L. Murphy

**10:40 ORGN 213.** Mining pharmaceutical libraries for new ligands in nickel catalysis. **E.C. Hansen**

**11:05 ORGN 214.** Discovery and development of molecular polyolefin catalysts. **P. Fontaine**

**11:30 ORGN 215.** RET inhibitors for the treatment of irritable bowel syndrome. **H.S. Eitam**, J. Russell, D. Qin, H. Guan, C. Wu, Y. Pan, K. Raha, P. Hastwell, A. King, S. Laquerre, K. Tyler, E. Mohammadi, B. Greenwood-Van Meerfeld, A. Oliff, S. Kumar, M. Cheung

### Section D

Pennsylvania Convention Center  
Room 120B

### Heterocycles & Aromatics

M. C. McIntosh, *Organizer*

G. D. Cuny, *Presiding*

**8:30 ORGN 216.** Synthetic studies of 6a-alkyl 7-oxygenated aporphines. **A. Ku**, **G.D. Cuny**

**8:50 ORGN 217.** Spiroaminals: a new approach to an unstudied heterocycle. **J. Almond-Thynne**, A. Polyzos, A.G. Barrett

**9:10 ORGN 218.** Escaping flatland: C-H borylation/hydrogenation of heteroaromatic and allied compounds. **T.M. Shannon**, R.E. Moleczka, M.R. Smith

**9:30 ORGN 219.** Single-step synthesis of 5,6,7,8-tetrahydroindolizines via annulation of 2-formylpiperidine and 1,3-dicarbonyl compounds. **S. Capomolla**, **N. Lim**, H. Zhang

**9:50 ORGN 220.** Azaborines: unique isosteres for aromatic and heteroaromatic systems. **G.H. Davies**, M. Jouffroy, G.A. Molander

**10:10 ORGN 221.** Withdrawn.

**10:30 ORGN 222.** Synthesis and photochemistry of (hydroxynaphthalenyl)methyl-based photoactivatable nitroxyl donors. **P. Sampson**, Y. Zhou, R. Cink, A.J. Seed, N.E. Brasch

**10:50 ORGN 223.** Synthetic strategy for rapid access to *bis*(phenalenyl)-based polycyclic aromatic hydrocarbons. **M.S. Chen**, C.M. Wehrmann, M. Kerner

### Section E

Pennsylvania Convention Center  
Room 120A

### New Reactions & Methodology

M. C. McIntosh, *Organizer*

H. Ren, *Presiding*

**8:00 ORGN 224.** Efficient, metal free and selective diphosphonation of azoles with trialkyl phosphites. **Z. Zhu**, J. Gong, L. Li, S. Guo, **H. Cai**

**8:20 ORGN 225.** Dual role of thiourea in the thiotrifluoromethylation of alkenes. **P. Ricci**, T. Khotavivattana, L. Pfeifer, M. Medebielle, J.R. Morphy, V. Gouverneur

**8:40 ORGN 226.** Microwave assisted one pot conversion of aldehydes to nitriles. **Y.M. Hijji**, R. Rajan

**9:00 ORGN 227.** Exploiting the oxidizing capabilities of laccases for green chemistry. **M.D. Cannatelli**, A.J. Ragauskas

**9:20 ORGN 228.** Discovery of cross-coupling approaches assisted by organotrifluoroborates. **M. El Khatib**, R. Serafim, G.A. Molander

**9:40 ORGN 229.** Construction of tricyclic ring systems via birch reduction/alkylation-Heck reaction. **A. Krasley**, W.P. Malachowski

**10:00 ORGN 230.** One-step synthesis of aryne precursors. **M. Mesgar**, O. Daugulis

**10:20 ORGN 231.** Copper-catalyzed olefin amino oxygenation using O-benzoylhydroxylamines. **B. Hemric**, Q. Wang

**10:40 ORGN 232.** Discovery of novel macrolide antibiotics: Synthesis of solithromycin analogues with modified desosamin sugar. **M. Lee**

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**11:00 ORGN 233.** Synthesis of  $\alpha$ -benzyloxyamino- $\gamma$ -butyrolactones via a polar radical crossover cycloaddition reaction. C. Cavanaugh, D.A. Nicewicz

**11:20 ORGN 234.** Ruthenium hydride catalyzed silylvinylation of terminal alkenes under high pressure ethylene atmosphere. A.D. Dixon, R.J. Wilson, C.A. Wilhelmsen, D. Clark

**11:40 ORGN 235.** Development of a green and sustainable commercial manufacturing process. H. Ren

## Section F

Pennsylvania Convention Center  
Room 119B

### Asymmetric Reactions & Syntheses

M. C. McIntosh, *Organizer*

J. M. Takacs, *Presiding*

**8:30 ORGN 236.** Cascade approaches to diterpene analogues. A. Lahdenpera, M.D. Smith

**8:50 ORGN 237.** Enantioselective rhodium-catalyzed allylic substitution with an unstabilized aldehyde enolate: Construction of acyclic quaternary stereogenic centers. T.B. Wright, P. Evans

**9:10 ORGN 238.** Linear free energy relationship and kinetic study of the chiral Brønsted-acid catalyzed lactonization of  $\alpha,\alpha$ -disubstituted  $\gamma$ -hydroxy esters. G. Wilson, K.S. Petersen

**9:30 ORGN 239.** Enantioselective intermolecular [3+2]-cycloaddition reactions of 4-aryl-*N*-sulfonyl-1,2,3-triazoles and arenes: Rapid access to 6-substituted dihydroindoles. S.M. Wilkerson-Hill, H.M. Davies

**9:50 ORGN 240.** Stereospecific, nickel-catalyzed Suzuki arylation of tertiary acetates to give highly enantioenriched quaternary stereocenters. B. Biswas, T. Tan, Q. Zhou, K.M. Cobb, M.P. Watson

**10:10 ORGN 241.** Development of pot-economical strategies for the synthesis of natural products and simplified analogs. S. Javed, M. Bodugam, A. Ganguly, J. Torres, P.R. Hanson

**10:30 ORGN 242.** Oxime-directed catalytic asymmetric hydrogenation: Tri- and tetra-substituted alkenes. V. Shoba, J.M. Takacs

**10:50 ORGN 243.** Synergistic ion-binding catalysis: Applications and mechanistic insights in the enantioselective catalysis of anionic sigmatropic rearrangements. C. Kennedy, J.A. Guidera, E.N. Jacobsen

**11:10 ORGN 244.** 2-Azaallyl anions as an umpolung strategy for the  $\alpha$ -functionalization of amines to prepare 1,3-diamines. K. Li

**11:30 ORGN 245.** Total synthesis and stereochemical reassignment of phomolid G. D. McLeod, J. Mc Nulty

**11:50 ORGN 246.** Ion-pair organocatalysis: Asymmetric Baeyer-Villiger oxidation mediated by a flavinium-cinchona alkaloid dimer. K. Yamamoto, P.P. Poudel, K. Arimitsu

## Section G

Pennsylvania Convention Center  
Room 119A

### Physical Organic Chemistry: Calculations, Mechanisms, Photochemistry & High-Energy Species

M. C. McIntosh, *Organizer*

Y. A. Jeilani, *Presiding*

**8:00 ORGN 247.** Designing new photoremovable protecting groups: Photoreactivity of a novel  $\beta$ -ketoester and its derivatives. D.M. Gattin, A.D. Gudmundsdottir

**8:20 ORGN 248.** Synthesis of materials for a photodynamic technique for point-source delivery of sensitizer drug, light and singlet oxygen. A.A. Ghogare, A. Greer

**8:40 ORGN 249.** Natural products synthesis using LED. A. Das, A.D. Gudmundsdottir

**9:00 ORGN 250.** DFT investigation of metalla-Diels-Alder: Triggering chemoselectivity by introducing metal fragments to 1,3-butadiene. K. Kwon, E. Votto, A. Badzai, X. Cui, E. Greer

**9:20 ORGN 251.** Unified free radical mechanisms for the prebiotic formation of nucleobases. Y.A. Jeilani

**9:40 ORGN 252.** Chloromethylation under metal free photocatalysis. A. Iyer, S. Jockusch, J. Sivaguru

**10:00 ORGN 253.** Eosin Y photoredox-catalyzed sulfonylation of alkenes: Scope and mechanism. A. Meyer, B. König

**10:20 ORGN 254.** Metal-free, Visible-light-mediated, decarboxylative alkylation of biomass-derived compounds. J. Schwarz, B. König

**10:40 ORGN 255.** Theoretical study on gold (III)-catalyzed synthesis of bicyclo[4.1.0]heptane products. J.M. Hines, M.R. Siebert

**11:00 ORGN 256.** Thermodynamic study of competing ionic and free-radical pathways in rotenoid biosynthesis. A.K. Kirkpatrick, M.R. Siebert

**11:20 ORGN 257.** Quantum chemical calculations describing the thermal cracking of the fatty acid methyl ester methyl linoleate. Z.R. Wilson, M.R. Siebert

**11:40 ORGN 258.** Energy landscape of nonconventional hydrogen bonding: Natural bond orbital study. M.E. Ayoub

### International Drug Discovery & Development Collaborations

Sponsored by SCHB, Cosponsored by MEDI, ORGN, POLY and PROF

## MONDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Terrace Ballroom IV

### Tetrahedron Prize for Creativity in Organic Chemistry Symposium

Cosponsored by BIOL, COMP and MEDI

S. S. Hall, *Organizer*

S. F. Martin, *Organizer, Presiding*

**1:00** Introductory Remarks.

**1:05 ORGN 259.** Redesign of vancomycin for resistant bacteria. D.L. Boger

**1:55 ORGN 260.** Dynamic criterion for the mechanisms of organic reactions. K.N. Houk

**2:45 ORGN 261.** Physical organic principles applied to point-of-care TB diagnostics. C.R. Bertozzi

**3:35** Intermission.

**3:45** Tetrahedron Prize Presentation.

**3:55 ORGN 262.** Computer-aided discovery of potent enzyme inhibitors. W.L. Jorgensen

**4:55** Concluding Remarks.

### Section B

Pennsylvania Convention Center  
Terrace Ballroom III

### Role of Organic Chemistry in Early Clinical Drug Development: New Advances in Drug Discovery & Process Chemistry

A. F. Abdel-Magid, J. A. Pesti, *Organizers*

R. Vaidyanathan, *Organizer, Presiding*

**1:00** Introductory Remarks.

**1:10 ORGN 263.** Discovery of GDC-0994, a potent and selective ERK1/2 inhibitor in early clinical development.

J.B. Schwarz, J.F. Blake, M. Burkard, J. Chan, H. Chen, K. Chou, D. Diaz, D.A. Dudley, J.J. Gaudino, S.E. Gould, J. Grina, T. Hunsaker, L. Liu, M. Martinson, D. Moreno, C. Orr, P. Pacheco, A. Qin, K. Rasor, L. Ren, K.D. Robarge, S. Shahidi-Latham, J. Stults, F. Sullivan, W. Wang, J. Yin, A. Zhou, M. Belvin, M. Merchant, J. Moffat

**1:45 ORGN 264.** Practical synthesis of ERK inhibitor GDC-0994 on multi-kilogram scale. X. Linghu

**2:25 ORGN 265.** Discovery of ertugliflozin (PF-04971729): An anti-diabetic agent from the structurally unique dioxo-bicyclo[3.2.1]octane class of SGLT2 inhibitors. V. Mascitti

**3:00 ORGN 266.** Chemical development of an SGLT2 inhibitor, ertugliflozin L-PGA. J. Ragan

**3:40 ORGN 267.** Discovery of telaprevir. A.M. Grillo

**4:15 ORGN 268.** Development of a chemical process for the manufacture of telaprevir. G.J. Tanoury, Z. Ye, C.L. Harrison, B.J. Littler, S. Eastham, P.L. Ruggiero, T. Blythe

**4:55** Concluding Remarks.

### Section C

Pennsylvania Convention Center  
Terrace Ballroom II

### Young Investigator Symposium

S. Dreher, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:35 ORGN 269.** Design and application of photoaffinity probes to investigate the mechanism of action of  $\gamma$ -secretase inhibitors and modulators. C. Am Ende

**2:00 ORGN 270.** Evolution of a platform for aerobic processes. M.E. Laurila, E.W. Conder, A.N. Campbell, P.C. Hoffman, N. Zaborenko, W. Sun, C.M. Stobba-Wiley, G.R. Lambertus, M.C. Embry, D.L. Varie, T.T. Kramer, P.K. Milenbaugh, M.D. Johnson, J.R. Martinelli

**2:25 ORGN 271.** Synthetic approaches toward the design of multi-target compounds for the treatment of metabolic disorders and fibrosis. M.R. Iyer, R. Cinar, G. Kunos

**2:50 ORGN 272.** Advances in the direct control of polyethylene oxide molecular weight. A.V. Davis, K. Bell, H. Clements, D. Fuerst, M. Hansen, J. Kang, R.D. Krystosek, L. Naert, P.N. Nickias, M. Rickard, T. Staton

**3:15 ORGN 273.** Chromatographic analysis and separation of short RNA oligonucleotides with novel liquid chromatography methods. M. Biba, C.J. Welch, J.P. Foley

**3:40 ORGN 274.** Development of a practical asymmetric synthesis of a TRPV1 antagonist. D.S. Welch

**4:05 ORGN 275.** Sequential DMC/FAB-catalyzed alkoxylation towards high primary hydroxyl, high equivalent weight polyether polyols. A. Raghuraman, M. Miller, M. Parackar, B. Smith, D. Babb

**4:30 ORGN 276.** Development of a robust process for a cMet inhibitor. J. Milne

### Section D

Pennsylvania Convention Center  
Room 120B

### Heterocycles & Aromatics

M. C. McIntosh, *Organizer*

M. J. Hall, *Presiding*

**1:30 ORGN 277.** Microwave assisted synthesis and characterization of substituted amino-1-alkyl pyridinium salts as ionic liquid. Y.M. Hijji, S. Mohammad, Y. Mohamad, A. Issa, H. Tabba

**1:50 ORGN 278.** One-pot synthesis of benzo-fused *p*-indolequinones from naphthoquinone. S. Mito, Q.H. Luu, J.D. Guerra, C.M. Castaneda, B.A. Garcia

**2:10 ORGN 279.** One-pot syntheses of quinolines and their application as novel proteasome inhibitors. T.J. McDaniel, A.L. Odom, J.P. Tepe, T.A. Lansdell, A.A. Dissanayake, L. Azevedo

**2:30 ORGN 280.** Circularly polarized luminescence from helically chiral boron-chelated dipyrromethenes. M.J. Hall

**2:50 ORGN 281.** Shifting reaction pathways by controlling the reactivity of metal-nitrene intermediate. N. Jana, C. Kong, T. Driver

**3:10 ORGN 282.** Novel 4-aminomethyl-1,2,3-triazols as good anti-tumor agents. F.H. Wu, Z. Wang

**3:30 ORGN 283.** Streamlined synthesis of phenylene-containing PAHs via Pd catalyzed annulation. Y. Xia, Y. Teo, Z. Jin

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

**3:50 ORGN 284.** Synthesis and study of sialic acid analogs. **G.W. Ward**, S.A. France, C.L. Liotta, R. Krishnamurthy, N.V. Hud

**4:10 ORGN 285.** Design and synthesis of potential heterocyclic based CXCR4 modulators. **T.D. Gaines**, G. Adodo, D. Camp, S.R. Mooring

**Section E**

Pennsylvania Convention Center  
Room 120A

**New Reactions & Methodology**

M. C. McIntosh, *Organizer*

J. D. Chisholm, *Presiding*

**1:00 ORGN 286.** Fluoroalkyl substituted diazoalkanes – Powerful reagents for applications in cycloaddition reactions. **R.M. Koenigs**

**1:20 ORGN 287.** 1-Amino-1-oxo-1,3-butadienes – doubly activated dienes for a Diels-Alder reaction. **P. Elkin**, V.H. Rawal

**1:40 ORGN 288.** [4+2] Annulation of *N*-aryl cyclobutylanilines with alkyenes under visible light: An organic reaction catalyzed by self-doped Ti<sup>3+</sup>@TiO<sub>2</sub> visible light catalyst. **J. Wang**, P. Feng, N. Zheng

**2:00 ORGN 289.** New developments towards the synthesis and utilization of 2,2,2-trichloroethyl aryldiazoacetates. **J.D. Mighion**, L. Fu, H.M. Davies

**2:20 ORGN 290.** Investigating trichloroacetimidate substitution reactions. **J.D. Chisholm**, A.A. Adhikari, D. Wallach, B. Duffy, K. Howard

**2:40 ORGN 291.** (Pseudo)halometalation/ carbocyclization transformations: Efficient routes into readily functionalizable natural product cores. **G. Malik**, R.A. Swyka, G.A. Applegate, X. Fei, S.K. Ginoira, J.A. Friest, D.B. Berkowitz

**3:00 ORGN 292.** Selective synthesis of alpha-halo ketones. **P.H. Toy**

**3:20 ORGN 293.** Tandem cyclization by metal triflate catalysis towards polycyclic ethers: Flavors & fragrances applications. **P. Ondet**, L.V. Lempenauer, E. Dunach, G. Lemièrre

**3:40 ORGN 294.** Synthesis of functionalized oxaspirocyclic ethers by bismuth triflate catalysis. **P. Ondet**, G. Lemièrre, E. Dunach, I. Diaf

**4:00 ORGN 295.** Ru-catalyzed C–H arylation of fluoroarenes with aryl halides. **M. Simonetti**, G. Perry, X.C. Cambeiro, F. Juliá-Hernández, J. Arokianathar, I. Larrosa

**4:20 ORGN 296.** Single-electron transmetalation: Radical mediated alkyl transfer in cross-coupling. **D.N. Primer**, J.C. Tellis, M. Jouffroy, D. Ryu, I. Karakaya, G.A. Molander

**4:40 ORGN 297.** Mechanism-based solution to the ProTide synthesis problem. **S.M. Silverman**, B. Simmons, Z. Liu, A. Klapars, A. Bellomo

**Section G**

Pennsylvania Convention Center  
Room 119A

**Total Synthesis of Complex Molecules**

M. C. McIntosh, *Organizer*

Z. A. Kasun, *Presiding*

**1:00 ORGN 298.** Total synthesis of (–)-gephyrotoxin via a cascade approach. **S. Chu**, S. Wallace, M.D. Smith

**1:20 ORGN 299.** Total synthesis of a novel class of peloruside analogues. **N. Jacobs**, D. Van den Bossche, J. Cornelus, M.E. Bracke, J. Van Der Eycken

**1:40 ORGN 300.** Total synthesis of (+)-zincophorin methyl ester via Ir-catalyzed redox-triggered stereopolyad construction. **Z.A. Kasun**, X. Gao, R. Lipinski, M.J. Krische

**2:00 ORGN 301.** Studies towards the total synthesis of (+)-lophotoxin. **J.C. Walker**, S. Werrel, T.J. Donohoe

**2:20 ORGN 302.** Cobalt vs. osmium: An oxidative approach to the EFG-ring system of pectenotoxin-4. **A. Roushanbakhti**

**2:40 ORGN 303.** Total synthesis and biological investigation of promysalin and analogs thereof. **A. Steele**, C. Keohane, K.W. Knouse, S. Rossiter, S. Williams, W.M. Wuest

**3:00 ORGN 304.** Biomimetic total synthesis of Bis-*Strychnos*indole alkaloids (–)-leucoridines A and C through the dimerization of (–)-dihydrovalparicine. **P. Kokkonda**, K.R. Brown, T. Seguin, S.E. Wheeler, S. Vaddypally, M. Zdilla, R.B. Andrade

**3:20 ORGN 305.** Synthesis and biological evaluation of carolacton and analogs. **R.S. Brzozowski**, W.M. Wuest

**3:40 ORGN 306.** Divergent total synthesis of bioactive alkaloids. **M. Dai**

**4:00 ORGN 307.** Biomimetic synthesis of marine natural products: Intricarene, bioschowskyin and providencin, a journey from organic synthesis to computational chemistry. **B. Tang**, R. Paton, G. Pattenden

**4:20 ORGN 308.** Total syntheses of oridamycin A, triptoquinone B and C and isoiresin: Modular terpenoid construction. **J. Feng**, F. Noack, M.J. Krische

**International Drug Discovery & Development Collaborations**

*Sponsored by SCHB, Cosponsored by MEDI, ORGN, POLY and PROF*

**MONDAY EVENING**

**Section A**

Pennsylvania Convention Center  
Halls D/E

**Sci-Mix**

R. D. Broene, *Organizer*

**8:00 - 10:00**

111, 117, 124, 132, 139, 164, 174, 189, 194. See previous listings.

443, 468, 493, 497, 501, 506-507, 514, 533, 677, 683, 694, 727, 731, 740, 742, 761, 764, 775, 779, 783. See subsequent listings.

**TUESDAY MORNING**

**Section A**

Pennsylvania Convention Center  
Terrace Ballroom IV

**Cope Award Symposium**

*Financially supported by Arthur C. Cope Fund*

M. C. McIntosh, *Organizer*

M. K. Boyd, *Presiding*

**8:00** Introductory Remarks.

**8:05 ORGN 309. Award Address** (Arthur C. Cope Early Career Scholars Award sponsored by the Arthur C. Cope Fund). Exciting thiophene rust. **L.M. Campos**

**8:45 ORGN 310. Award Address** (Arthur C. Cope Early Career Scholars Award sponsored by the Arthur C. Cope Fund). Using small molecules to engineer and explore human immunity. **D.A. Spiegel**

**9:25 ORGN 311. Award Address** (Arthur C. Cope Mid Career Scholars Award sponsored by the Arthur C. Cope Fund). Functional glycomics through chemical synthesis. **G. Boons**

**10:05 ORGN 312. Award Address** (Arthur C. Cope Late Career Scholars Award sponsored by the Arthur C. Cope Fund). Chiral phosphoric acid catalyzed enantioselective reactions. **T. Akiyama**

**10:45 ORGN 313. Award Address** (Arthur C. Cope Mid Career Scholars Award sponsored by the Arthur C. Cope Fund). Development of post-synthetic methods for modifying metal-organic frameworks. **S. Cohen**

**11:25 ORGN 314. Award Address** (Arthur C. Cope Mid Career Scholars Award sponsored by the Arthur C. Cope Fund). Hydrogels as synthetic ECM analogs through bio-click reactions. **K.S. Anseth**

**Section B**

Pennsylvania Convention Center  
Terrace Ballroom III

**Young Academic Investigator Symposium**

H. M. Davies, L. McElwee-White, *Organizers*, *Presiding*

**8:00** Introductory Remarks.

**8:05 ORGN 315.** Novel Bronsted acid catalyzed methods for the synthesis of enantioenriched small molecules. **K.S. Petersen**

**8:35 ORGN 316.** Catalytic silylation reactions: Organosilanes and organosilanol–environmentally benign, versatile synthetic building blocks, and synthetic targets. **J. Jeon**

**9:05 ORGN 317.** Catalytic carbonylation enabled total synthesis. **M. Dai**

**9:35 ORGN 318.** Catalytic chirality generation: new strategies for heterocyclic chemistry. **J. Bower**

**10:05 ORGN 319.** Breaking strong bonds: Adventures in sustainable chemistry. **M. Emmert**

**10:35 ORGN 320.** Metal-catalyzed C–C bond forming reactions involving boron-stabilized organometallic nucleophiles. **S. Meek**

**11:05 ORGN 321.** Deciphering the mode of action of rhizosphere natural products via diverted total synthesis. **W.M. Wuest**

**11:35 ORGN 322.** Bio-inspired oxidations applied to the synthesis of small molecules and functional materials. **J. Lumb**

**Section C**

Pennsylvania Convention Center  
Terrace Ballroom II

**Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel**

*Cosponsored by BMGT, CHED, CINP, HIST, INOR, MEDI, PMSE and SCHB*

C. A. Maryanoff, *Organizer*, *Presiding*

**8:20** Introductory Remarks.

**8:25 ORGN 323.** Ernest L. Eliel: A professional's professional. **J. Seeman**

**8:55 ORGN 324.** Importance of electrostatic interactions on the conformational behavior of substituted 1,3-dioxanes. **W.F. Bailey**

**9:25 ORGN 325.** Interplay between organocatalysis and multicomponent reactions in stereoselective synthesis. **D. Garcia Rivera**

**9:55 ORGN 326.** Asymmetric autocatalysis and the origin of homochirality. **K. Soai**

**10:25 ORGN 327.** Stereodivergent synthesis of chiral fullerenes. **M. Suarez**

**10:55 ORGN 328.** Theoretical evidence for the relevance of n(F) → σ\*(C-X) (X = H, C, O, S) stereoelectronic interactions. **E. Juaristi**

**11:25 ORGN 329.** Saccharide structure and mechanism: Walking In the footsteps of Ernest Eliel. **A. Serianni**

**11:55** Concluding Remarks.

**Section D**

Pennsylvania Convention Center  
Room 120B

**Heterocycles & Aromatics**

M. C. McIntosh, *Organizer*

D. A. Rankic, *Presiding*

**8:30 ORGN 330.** Hybrid ROMP reagents and scavengers: Development and applications in sequestration and parallel synthesis. **S. Faisal**, P.K. Maity, R.L. Sourk, Q. Zang, P.C. Kearney, D. Stoianova, P.R. Hanson

**8:50 ORGN 331.** Palladium-catalyzed enolate arylation for the synthesis of isoquinolines. **B.S. Pilgrim**, A.E. Gatland, C.H. Esteves, T.J. Donohoe

**9:10 ORGN 332.** Mechanistic pathways to PAHs: Novel cycloaromatization of ortho-benzoyl enediynes to give benzo[a]fluoren-11-ones via exo-cyclizations at low temperatures. **K.L. Gillespie**, M.M. Lieu, **T.S. Hughes**

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**9:30 ORGN 333.** Synthesis of 4,8-bis(2-dodecyloxy)benzo-[1,2-b:4,5-b']dithiophene-1,1,5,5-tetraoxide (BDT[SO<sub>2</sub>]<sub>2</sub>) based organic semiconductors via copper catalyzed C-H activation. **D. Khambhati, T.L. Nelson**

**9:50 ORGN 334.** Synthesis and reactivity of polyhalogenated BODIPYs and investigation of selectivities of different halogen groups. **N. Zhao, S. Xuan, F. Fronczek, K.M. Smith, G. Vicente**

**10:10 ORGN 335.** Enol ethers as carbonyl surrogates in a new modification of the Skraup-Doebner-von Miller synthesis of 3-aryl quinolines. **C. Brown, J. Mc Nulty**

**10:30 ORGN 336.** T cell activation by pyrimidine derivatives. **D. Fairlie, L. Liu, J. Mak, W. Xu**

**10:50 ORGN 337.** Benzothiazolyl thioureas: Key precursors for the synthesis of iminohiazolidinone and thiazoline heterocycles. **H. Rafique**

**11:10 ORGN 338.** From singleton to scale-up: Optimizing the synthesis of cyclopropyl chromane-derived pyridopyrazine-1,6-dione  $\gamma$ -secretase modulators for the treatment of Alzheimer's disease. **D.A. Rankic, C.M. Stiff, C. Am Ende, J.M. Humphrey, E.X. Yang, L. Xie, T. Butler, M. Pettersson**

## Section E

Pennsylvania Convention Center  
Room 120A

### New Reactions & Methodology

M. C. McIntosh, *Organizer*

G. Moura-Letts, *Presiding*

**8:00 ORGN 339.** Withdrawn.

**8:20 ORGN 340.** Diastereoselective cycloadditions for the synthesis of five-membered ring nitrogen-containing heterocycles. **G. Moura-Letts**

**8:40 ORGN 341.** Catalytic rearrangement of 2-alkoxy diallyl alcohols: Access to polysubstituted cyclopentenones. **L.V. Lempenauer, E. Dunach, G. Lemière**

**9:00 ORGN 342.** Cyclic alkynes as useful synthetic building blocks. **J. Medina, N.K. Garg**

**9:20 ORGN 343.** Enantioselective iridium catalyzed reductive coupling of formaldehyde with allylic acetates: Enantiotopic  $\pi$ -facial discrimination. **V.J. Garza, M.J. Krische**

**9:40 ORGN 344.** Use of TMSCF<sub>3</sub> for *gem*-difluoroolefination of carbonyl compounds: The right conditions. **S. Krishnamoorthy, J. Kothandaraman, J. Saldana, S.G. Prakash**

**10:00 ORGN 345.** Direct synthesis of alkenyl boronic esters from unfunctionalized alkenes: A Boryl-Heck reaction. **W.B. Reid, J. Spillane, S.B. Krause, D.A. Watson**

**10:20 ORGN 346.** Withdrawn.

**10:40 ORGN 347.** Interrupted Kulinkovich-de Meijere Reaction: Substrate arrested formation of amino-ketone scaffolds. **B.P. Derstine, P.B. Finn, S.M. Sieburth**

**11:00 ORGN 348.** Stereospecific rhodium-catalyzed allylic substitution with alkenyl cyanohydrin pronucleophiles: Construction of acyclic quaternary substituted  $\alpha,\beta$ -unsaturated ketones. **B.W. Turnbull, P. Evans**

**11:20 ORGN 349.** Direct C-H, C-X cross-coupling of amines with aryl halides by nickel-photoredox catalysis. **D.T. Ahneman, A.G. Doyle**

**11:40 ORGN 350.** Enantioselective construction of  $\beta$ -amino  $\alpha$ -fluoro nitroalkanes and their conversion to  $\beta$ -fluoro amines using a traceless activating group strategy. **B.A. Vara, J.N. Johnston**

## Section F

Pennsylvania Convention Center  
Room 119B

### Chemistry of Fullerenes, Carbon Nanotubes & Graphene

M. C. McIntosh, *Organizer*

J. A. Kalow, *Presiding*

**9:00 ORGN 351.** Microwave-assisted synthesis and functionalization of carbon materials. **U.S. Schubert, S. Hoeppeper**

**9:20 ORGN 352.** Solvent-free reaction of graphene nanosheets: [4+2] cycloaddition. **J. Seo, J. Baik**

**9:40 ORGN 353.** Transports in graphene aerogels and cryogels. **W. Chen, K. Yeung**

**10:00 ORGN 354.** Mechanically interlocked single wall carbon nanotube (MINTs) based on electron acceptor macrocycles. **A. De Juan, E. Martinez Perrián, E. Lorenzo, E.M. Perez**

**10:20 ORGN 355.** Mechanical improvements in carbon nanotube (CNT) assemblies by electron beam (EB) cross-linking. **J. Severino, A.R. Hopkins**

**10:40 ORGN 356.** Solvothermal synthesis of boron and nitrogen co-doped graphene for modification of graphene properties. **S. Jung, J. Seo, J. Oh, J. Baik**

## Section G

Pennsylvania Convention Center  
Room 119A

### Total Synthesis of Complex Molecules

M. C. McIntosh, *Organizer*

J. Moreno, *Presiding*

**8:30 ORGN 357.** Unified synthetic strategy toward the tubingsin alkaloids. **M. Corsello**

**8:50 ORGN 358.** Concise syntheses of (-)-sungucine, (-)- isosungucine, and (-)-strychnogucine B from (-)-strychnine. **S. Zhao, C. Tejjaro, H. Chen, G. Sirasani, R.B. Andrade**

**9:10 ORGN 359.** Progress towards the total synthesis of guaianolide natural products. **D. Chen, P. Evans**

**9:30 ORGN 360.** Progress toward the syntheses of bis-*Aspidosperma* alkaloids: (-)-melodinine K, (-)-conophylline, and (-)-conophyllidine. **C. Tejjaro, S. Zhao, M. Walla, R.B. Andrade**

**9:50 ORGN 361.** Unconventional approach toward the bromotyrosine derived natural product: 11-deoxyfistularin-3 and its analogues. **P. Das, A.T. Hamme II**

**10:10 ORGN 362.** Asymmetric total synthesis of (-) albobycine. **V.K. Chatare, R.B. Andrade**

**10:30 ORGN 363.** Enantioselective total syntheses of akuammiline alkaloids (+)-strictamine, (-)-2(S)-cathafoline, and (-)-aspidophylline A. **J. Moreno, N.K. Garg**

**10:50 ORGN 364.** Total synthesis of (-)-ceanothine D. **J. Lee, M.M. Joulie**

**11:10 ORGN 365.** Chemoenzymatic methods in the total synthesis of macrolide antibiotics: The 16-membered macrolactone core of tylosin/rosamicin/juvenimicin. **A.N. Lowell, S. Slocum, A.A. Koch, M.D. DeMars, N. Korakavi, J.A. Chemler, D. Hansen, K. Anand, F. Yu, D.H. Sherman**

**11:30 ORGN 366.** Unified approach towards the synthesis of hygrocins and divergolides. **U. Javed, S. Rasapalli, H. Ijaz**

### Analytical Chemistry at the Frontiers of Organic Synthesis: Emerging Tools, Techniques & Strategies

Sponsored by ANYL, Cosponsored by ORGN

## TUESDAY AFTERNOON

### Section A

Pennsylvania Convention Center  
Terrace Ballroom IV

### Cope Award Symposium

Financially supported by Arthur C. Cope Fund

M. C. McIntosh, *Organizer*

P. E. Mahaney, *Presiding*

**1:00 ORGN 367. Award Address** (Arthur C. Cope Mid Career Scholars Award sponsored by the Arthur C. Cope Fund). New catalytic strategies for chemical synthesis. **M. Gaunt**

**1:40 ORGN 368. Award Address** (Arthur C. Cope Late Career Scholars Award sponsored by the Arthur C. Cope Fund). Chemical tools to monitor and manipulate the immune system. **T.J. Kodadek**

**2:20 ORGN 369. Award Address** (Arthur C. Cope Late Career Scholars Award sponsored by the Arthur C. Cope Fund). Nucleic acid damage processes and their consequences: Elucidation and exploitation. **M.M. Greenberg**

**3:00 ORGN 370. Award Address** (Arthur C. Cope Late Career Scholars Award sponsored by the Arthur C. Cope Fund). Unprecedented organic reactions and rational synthesis at 1000 °C. **L.T. Scott**

**3:40** Introduction of Awardee.

**3:50 ORGN 371. Award Address** (Arthur C. Cope Award sponsored by the Arthur C. Cope Fund). Anion-binding catalysis. **E.N. Jacobsen**

### Section B

Pennsylvania Convention Center  
Terrace Ballroom III

### Young Academic Investigator Symposium

H. M. Davies, L. McElwee-White, *Organizers, Presiding*

**1:00 ORGN 372.** Marine natural product synthesis: A platform for chemical and biological discovery. **J.G. Pierce**

**1:30 ORGN 373.** Targeting gain-of-function redox events that safeguard metazoan health. **Y. Aye**

**2:00 ORGN 374.** Creating ribo-switch-based whole cell biosensors for small organic molecules. **J.M. Liu**

**2:30 ORGN 375.** Molecules that generate fingerprints: A new class of fluorescent probes for chemical biology and cryptography. **D. Margulies**

**3:00 ORGN 376.** Peptidoglycan and you, perfect together? **C.L. Grimes**

**3:30 ORGN 377.** Synthesis and utility of genetically-encoded libraries of peptide derivatives. **R. Derda**

**4:00 ORGN 378.** Dendritic polyelectrolytes as water-soluble supramolecular hosts. **M. Bonizzoni**

**4:30 ORGN 379.** Probing interfacial chemistry: Photocatalytic reductions and heterogeneous oxidations. **M.I. Guzman**

**5:00** Concluding Remarks.

### Section C

Pennsylvania Convention Center  
Terrace Ballroom II

### New Trends in Organometallic Chemistry Leading to Organic Synthesis

Cosponsored by CMA+ and INOR

R. Joseph, *Organizer, Presiding*

M. S. Jacobs, J. L. Sarquis, *Presiding*

**1:00** Introductory Remarks.

**1:05 ORGN 380.** Breaking amides using nickel catalysis. **N.K. Garg**

**1:35 ORGN 381.** Enantioselective Ni-catalyzed reductive cross-coupling reactions. **S.E. Reisman**

**2:05 ORGN 382.** Mechanism guided improvement of Ni and Pd precatalysts for cross-coupling. **N. Hazari**

**2:35 ORGN 383.** Generation of coordinatively unsaturated LPd(0) catalysts for 21st century organic synthesis. **T. Colacot**

**3:05 ORGN 384.** Synthesis strategies and methods inspired by complex natural products. **R. Sarpong**

**3:35 ORGN 385.** New methods using non-precious metal catalysis. **A.G. Doyle**

**4:05 ORGN 386.** Cross coupling chemistry of organoboranes for the synthesis of chiral products: Protecting group free iterative coupling and the development of novel electrophiles. **C.M. Crudden**

**4:35 ORGN 387.** Recent developments in metal catalyzed C-H functionalization. **M.S. Sanford**

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

**Section D**

Pennsylvania Convention Center  
Room 120B

**Metal-Mediated Reactions & Syntheses**

A. B. Smith, *Organizer*

T. Barker, *Presiding*

**1:00 ORGN 388.** One-pot palladium-catalyzed synthesis of allylic ureas from carbonates. T.J. Barker

**1:20 ORGN 389.** Mechanistic investigations of the Chan-Evans-Lam reaction: Overcoming the BPin problem. J.C. Vantourout, S. Sproules, A. Isidro-Lobet, A.J. Watson

**1:40 ORGN 390.** Sulfonyl azides as versatile entry points to <sup>13</sup>C-labelled sulfonyl carbamates-applications in molecular imaging of endogenous angiotensin receptors. M. Stevens, S. Chow

**2:00 ORGN 391.** New rapid late-stage nucleophilic introduction of fluorine for the synthesis of trifluoromethyl moieties. A. Bermejo Gómez, M. Cortés, M. Lübcke, M.J. Johansson, M. Schou, K. Szabo

**2:20 ORGN 392.** Chemoselective Suzuki-Miyaura cross-coupling via kinetic control. J. Fyfe, A.J. Watson

**2:40 ORGN 393.** Key mechanistic details of the Cu-catalyzed aryl C-H imidation with N-fluorobenzenesulfonimide (NFSI). B.E. Haines, T. Kawakami, K. Murakami, K. Itami, J. Musaeu

**3:00 ORGN 394.** Alkyl(biscatecholato) silicates: Powerful reagents for base-free photoredox/nickel dual catalytic cross-coupling. M. Jouffroy, G.A. Molander

**3:20 ORGN 395.** Intramolecular [4+2] coupling of cyclobutanones and alkynes via rhodium-catalyzed C-C activation. T. Tsukamoto, H. Ko, G. Dong

**3:40 ORGN 396.** Functionalization of nitrosoarenes-selective synthesis of nitrogen-substituted arenes. A. van der Werf, M. Hribersek, N. Selander

**4:00 ORGN 397.** Isomerization and tandem isomerization/electrophilic halogenation of allylic alcohols. Transition metal versus organic catalysts. B. Martin-Matute

**4:20 ORGN 398.** Suzuki coupling reactions of nitrogen-containing substrates: Observation of high yields under low pH conditions. J.S. Fisk, Z. Li, C. Gelbaum, A. Jaganathan, B. Holden, P. Pollet, C.L. Liotta

**Section E**

Pennsylvania Convention Center  
Room 120A

**New Reactions & Methodology**

M. C. McIntosh, *Organizer*

P. J. Walsh, *Presiding*

**1:00 ORGN 399.** Interrupting the formal homo-Nazarov cyclization: Access to densely functionalized cyclohexanones. C.W. Williams, R. Shenje, K. Francois, S.A. France

**1:20 ORGN 400.** Remote C-H oxidation of amines using simple iron catalyst. C. Mbofana, E. Chong, J. Lawniczak, M.S. Sanford

**1:40 ORGN 401.** Non-aldol approach towards the synthesis of the (-)-dolabriferol and (-)-dolabriferol B polypropionate moieties from a common epoxide precursor. J.A. Prieto, K. Morales

**2:00 ORGN 402.** Strain induced couplings mediated by visible light. K. Singh, J.D. Weaver

**2:20 ORGN 403.** Aerobic dehydrogenative approach for the synthesis of polycyclic (hetero)arenes. K. Esguerra, J. Lumb

**2:40 ORGN 404.** Nickel-catalyzed C-C bond forming reactions of amides. N.A. Weires, N.K. Garg

**3:00 ORGN 405.** Hydroaminomethylation of conjugated dienes using cobalt/photoredox catalysis. S. Thullen, T. Rovis

**3:20 ORGN 406.** Reactions of sulfenate anions: intermediates and catalysts. P.J. Walsh

**3:40 ORGN 407.** Enantioselective alkylation of  $\alpha$ -diaryl iminium ions. J. Liu, S. Dasgupta, C.A. Shoffler

**4:00 ORGN 408.** Diastereoselective alkylation of  $\alpha$ -bromo oxocarbenium ions. J. Liu, H.A. Kerchner, T. Haidzinskaya

**4:20 ORGN 409.** Stereospecific Miyaura borylation of amine-derived substrates: Preparation of enantioenriched benzylic boronates. C. Basch, K.M. Cobb, M.P. Watson

**4:40 ORGN 410.** Nickel-catalyzed cross-couplings of alkyl electrophiles via C-N and C-O bond activation. C. Basch

**Section F**

Pennsylvania Convention Center  
Room 119B

**Biologically-Related Molecules & Processes**

M. C. McIntosh, *Organizer*

T. P. Umile, *Presiding*

**1:30 ORGN 411.** Novel synthesis of PI(4)P and PI(5)P using a key enzymatic desymmetrisation step. A.M. Joffrin, H. Sanganev, V. Flemington, S.J. Conway

**1:50 ORGN 412.** Synthesis of potent GST inhibitors to overcome anti-cancer drug resistance. I. Janser, A. Zayed

**2:10 ORGN 413.** Biosynthetic pathways as a platform for new discoveries: N-oxidation of roquefortine C. C.M. Gober, S. Newmister, S. Romminger, F. Yu, A. Tripathi, R.M. Williams, R. Berlinck, M.M. Joulle, D.H. Sherman

**2:30 ORGN 414.** Withdrawn.

**2:50 ORGN 415.** Sialidase substrate specificity study using chemoenzymatically synthesized alpha2-8-linked sialosides. N. Tasnima, Y. Li, H. Yu, A. Santra, X. Chen

**3:10 ORGN 416.** Efficient chemoenzymatic synthesis of coenzyme A and its disulfide dimer. L.M. Mouterde, J.D. Stewart

**3:30 ORGN 417.** Copper(I)-catalyzed azide alkyne cycloaddition reactivity with functionalized lipid membranes and micelles. J.M. Beveridge, H.M. Chenot, M.M. Baksh, M. Finn

**3:50 ORGN 418.** Immunomodulatory metabolites produced by the fungal pathogen *Batrachochytrium dendrobatidis*. T.P. Umile, J. Fites, L.K. Reinert, A.R. Shiakolas, B. Ho, L.A. Rollins-Smith, K.P. Minbiolo

**4:10 ORGN 419.** MAP4K4 inhibitors: Synthesis for SAR exploration and scale up optimization. S.W. Bagley, M. Herr, S.Y. Lavergne, Q. Li, S.K. Bhattacharya, R.L. Dow

**4:30 ORGN 420.** Stereoselective synthesis of novel  $\alpha$ -indole hydroxylated *in vivo*-metabolites of a potent 5-oxo-ETE receptor antagonist. S. Chourey, C.N. Reddy, Q. Ye, R. Wang, S. Gravel, C. Cossette, I. Slobodchikova, D. Vuckovic, W.S. Powell, J. Rokach

**Section G**

Pennsylvania Convention Center  
Room 119A

**Molecular Recognition & Self-Assembly**

R. D. Broene, M. C. McIntosh, *Organizers*

J. W. Wackerty, *Presiding*

**1:30 ORGN 421.** Structural analysis of extremely confined gases inside a lipophilic cage molecule. G. El-Ayle, K.T. Holman

**1:50 ORGN 422.** Encapsulation of fatty acids and esters within confined nano-space. K. Wang, B.C. Gibb

**2:10 ORGN 423.** Protein-like nanoparticles based on orthogonal self-assembly of chimeric peptides. H. Dong, L. Jiang

**2:30 ORGN 424.** Synthesis and applications of oxazinonacyclophane macrocycle. J.W. Wackerty

**2:50 ORGN 425.** Fluorescent enzyme assay based on pseudorotaxane formation. W. Liu, C.F. Gómez-Durán, B.D. Smith

**3:10 ORGN 426.** Optimization and studies of reversible amine-thiol crosslinking via a conjugate acceptor. M. Meadows, K. Diehl, I. Kolesnichenko, E.V. Anslin

**3:30 ORGN 427.** Mechanisms for supramolecular helical polymerization into crystalline arrays of chiral columns. B.E. Partridge, C. Roche, H. Sun, P. Leowanawat, F. Araoka, D. Sahoo, M. Peterca, D.A. Wilson, M. Prendergast, X. Zeng, G. Ungar, P.A. Heiney, V. Percec

**3:50 ORGN 428.** Host-guest electrostatic interactions quantified by dielectric dependence of binding with hape-persistent macrocycles. Y. Liu, A. Sengupta, K. Raghavachari, A.H. Flood

**4:10 ORGN 429.** In-silico supramolecular chemistry with shape-persistent macrocycles. Y. Liu, A.H. Flood

**4:30 ORGN 430.** Withdrawn.

**Green Chemistry Innovations & Opportunities in Industry for Young Professionals**

*Sponsored by I&EC, Cosponsored by CATL, CEI, CHAS, ENFL, ENVR, ORGN, POLY, PROF and YCC*

**TUESDAY EVENING**

**Section A**

Pennsylvania Convention Center  
Hall D

**Biologically-Related Molecules & Processes**

R. D. Broene, *Organizer*

**8:00 - 10:00**

**ORGN 431.** Novel Alexa Fluor 488 5-amino derivative and its applications. A. Rukavishnikov

**ORGN 432.** Ligand-controlled photochemical generation of high-valent porphyrin-iron-oxo derivatives. J.P. Malone, T. Chen, K. Kwong, R. Zhang

**ORGN 433.** New chemo-enzymatic route for the synthesis of chiral glycidyl esters ((S)-ethyl and (S)-methyl-4,5-epoxypentanoates) from renewable resources. A. Peru, A. Flourat, A.J. Duncan, W. Raverty, B. Greatrex, F. Allais

**ORGN 434.** Process development and large scale synthesis of AMG 458. Y. Chen

**ORGN 435.** Development of a practical synthesis of ERK inhibitor GDC-0994. N. Wong, X. Linghu, S.G. Koenig, H. Zhang, V. Jost, S.M. Fantasia, F. Gosselin

**ORGN 436.** Regioselectivity of various hydride sources in the reduction of estrogen o-quinones. J. Robinson, D.E. Stack

**ORGN 437.** Could o-aminoquinones of estrogen metabolites serve as platforms for redox cycling? R.M. Eastman, D.E. Stack

**ORGN 438.** Commercial development of CP-759,970-01 a starting material for the preparation of tofacitinib. F.R. Busch, K.M. Doyle, T.M. Makowski, J. Jin

**ORGN 439.** Development of fluorescent sensors for microenvironmental change based on fluorescent compounds library. T. Hirano, T. Shiraishi, Y. Noji, D. Kato, H. Kagechika

**ORGN 440.** Pyrazole-fluostatins A-D, new benzo[b]fluorene isolated from marine-derived *Micromonospora rosaria* SCSIO N160. Z. Wenjun, Y. Chunfang, H. Chunshuai, Z. Liping, Z. Changsheng

**ORGN 441.** Determining the impact of a hypothesized  $n \rightarrow \pi^*$  interaction on hydrolysis rates of N-acyl homoserine lactones. M.A. Bertucci, D. Schmucker, S.R. Dunbar, J. Le

**ORGN 442.** Fluorescent two-photon caged probe for targeted electrophilic signaling in *Caenorhabditis elegans*. S. Chawla, Y. Aye, M.J. Long

**ORGN 443.** Design and synthesis of allosteric effectors of oxygen binding to hemoglobin. S.R. Goldstein, C. Liu, A. Nakagawa, W.M. Zapol, J.D. Winkler

**ORGN 444.** Progress towards the synthesis of biliatresone, a plant isoflavonoid that causes biliary atresia. M. Estrada, R.G. Wells, M. Pack, J.D. Winkler

**ORGN 445.** Structure activity relationship (SAR) of arylboronic acid-catalyzed hydrolysis of salicylaldehyde imines. S. Zakia, C.C. Clement, M. Philipp

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- ORGN 446.** Regulatory consideration for structural characterization of small molecule drug substances in type II drug master files (DMF) supporting abbreviated new drug applications (ANDAs). **J. Wang**, N. Takiar, H. Zhang, Z. Wang, Q. Shi, C. Senanayake, D. Skanchoy
- ORGN 447.** Development of 2-mercaptobenzamides as small molecule inhibitors of HIV maturation. **M. Saha**, M. Scerba, D. Appella
- ORGN 448.** Deuterium labeling and characterization of intermediates of loline biosynthesis. **M. Bhardwaj**, J. Pan, R.B. Grossman, C.L. Schardl
- ORGN 449.** Original chlorinated trienes as versatile precursors of bioactive sesquiterpenoid compounds. **C. Remeur**, S. Desrat, V. Gandon, F. Roussi
- ORGN 450.** Semi-synthesis of a novel library of alkaloids as potential selective analgesics. **B. Gallagher**, **N. Chang**, J. Lizza, L. Filardi, A. Anthony, B. Selover, G. Moura-Letts
- ORGN 451.** Highly tunable small-molecule fluorescent probes to study protein misfolding in living cells. **J.V. Jun**, D.M. Chenoweth, E.J. Petersson
- ORGN 452.** Synthesis of N7-(((1,1-dimethylethyl)dimethylsilyloxy)ethyl)-9-deaza-2-deoxyguanosine, N7-((2,3-bis(1,1-dimethylethyl)dimethylsilyloxy)propyl)-9-deaza-2-deoxyguanosine. **X. Gao**, H. Huang
- ORGN 453.** Development of novel fluorescent sensors based on fluorescent natural compounds. **H. Yokoo**, T. Hirano, A. Ohsaki, H. Kagechika
- ORGN 454.** Design and synthesis of all-carbon analogs of Tröger's base. **T.F. Higgins**, J.D. Winkler
- ORGN 455.** Development of isotope labeling strategies for the discovery of new biocatalyzed reactions. **J. Ludwig**, S. Bentz, C. Svetkowsky
- ORGN 456.** Design, synthesis, and biological testing of non-native modulators of the RhIR quorum sensing receptor in *Pseudomonas aeruginosa*: New tools to study bacterial communication and virulence in a common pathogen. **M.E. Boursier**, J. Moore, K. Heitman, L. Koenig, S. Shephardson, D. Shin, E.C. Brown, R. Nagarajan, H.E. Blackwell
- ORGN 457.** Development of intrinsically fluorescent unnatural amino acids for *in vivo* incorporation into proteins. **I. Sungwienwong**, E.J. Petersson
- ORGN 458.** Synthesis of novel Tröger's base derived helical scaffolds. **K. Crocker**, R. Cookson, J. Nagy, S. Chen, T. Gendrineau, J.D. Winkler
- ORGN 459.** Withdrawn.
- ORGN 460.** Isolation and synthesis of a new trail following pheromone from the larvae of *Cactoblastis cactorum*. **J. Posillico**, D. Cervasio, M. Smith, T. Fitzgerald, **F.M. Rossi**
- ORGN 461.** Synthesis and biological evaluation of dimeric small molecule lysosomal inhibitors with anticancer properties. **M. Nicastrì**, V. Rebecca, N. McLaughlin, C. Fennely, R. Amaravadi, J.D. Winkler
- ORGN 462.** IPA-3 analogs as small molecule probes for PAK1 inhibition. **J. Huang**, J. Guo, S. Berritt, D. Schultz, J. Field
- ORGN 463.** Synthesis of (3 $\beta$ ,5 $\alpha$ ,6 $\alpha$ )-cholestane-3,6-diol via hydroboration-oxidation of (3 $\beta$ )-cholest-5-en-3-ol. **D.E. Martyn**, C.R. Hayes, A.M. Moulion, Z.A. Rulon, K.J. Shoff

## Section B

Pennsylvania Convention Center  
Hall D

### Metal-Mediated Reactions & Syntheses

R. D. Broene, *Organizer*

8:00 - 10:00

- ORGN 464.** Chiral synthesis to a 1,4,5-trisubstituted-1,2,3-triazole involving a one-pot regioselective copper(I)-catalyzed [3+2]-azide-alkyne cycloaddition/allylation reaction. **J.T. Liang**, X. Deng, B.D. Allison, N.S. Mani
- ORGN 465.** Gold-catalyzed chemo- and stereo-selective *N*-sulfonyl enamionone synthesis from sulfonamides and ynones. **D. Lee**, S. Kim, H. Hirao, S. Hong
- ORGN 466.** New strategy for urea synthesis: utilization of methanol as the C1 source. **S. Kim**, S. Hong
- ORGN 467.** Sulfonyl azides as precursors in ligand-free palladium-catalyzed synthesis of sulfonyl carbamates and sulfonyl ureas and synthesis of sulfonamides. **S. Chow**, M. Stevens, L. Odell
- ORGN 468.** Ir catalyzed regioselective C-H borylation of arenes and the scale up. **X. Li**, J. Oppenheimer, H. Li, C. Jayasundara, R.E. Maleczka, M.R. Smith
- ORGN 469.** Csp<sup>2</sup>-Csp<sup>3</sup> bond formation using organosilicates *via* photoredox/Ni dual catalysis. **K. Lin**, M. Jouffroy, N. Patel, C.B. Kelly, G.A. Molander
- ORGN 470.** Silver-catalyzed rearrangement of propargylic esters for the synthesis hydroisoquinolines derivatives. **Y. Zhao**, B. Lee, J. Boyle, P.W. Chan
- ORGN 471.** Withdrawn.
- ORGN 472.** Pd-catalyzed direct arylation of nitroarenes. **R. Wander**, Z. Yi, R. Daley, D. Kalyani
- ORGN 473.** Probing the activity of [Cu(Me<sub>6</sub>TREN)Cl][Cl] (Me<sub>6</sub>TREN=tris[2-(dimethylamino)ethyl]amine) complex as a catalyst for ATRA (atom transfer radical addition) in the presence of a base. **G.J. Pros**, M.C. Wasson, T. Pintauer
- ORGN 474.** Carbon-carbon bond formation using nitriles. **N. Olson**, Y. Liu, M. Hanson, D. Kalyani
- ORGN 475.** Investigation of ligand effects on catalyst efficiency for Suzuki catalyst transfer polycondensation. **M.A. Baker**, K.J. Noonan
- ORGN 476.** Carbon-carbon bond formation using phenolic electrophiles. **B. Sadarananda**, D. Steinberg, D. Kalyani
- ORGN 477.** Synthesis of small functionalized molecules using copper catalyzed atom transfer radical addition (ATRA) and [3+2] azide-alkyne cycloaddition. **S.M. Fischer**, M.J. Baldwin, T. Pintauer
- ORGN 478.** Photoredox catalysis using europium. **M.E. Cross**, M.J. Allen
- ORGN 479.** Selective and serial cross-coupling reactions of (hetero)aromatic substrates with multiple electrophilic bonds. **J.M. Blackburn**, S. Laulhe, J. Roizen
- ORGN 480.** Ligating properties of the phthalic anhydride derivatives of amines and glycine. **U.B. Eke**, **K.B. Fawibe**
- ORGN 481.** 2-Aminophenyl-1*H*-pyrazole as a removable directing group for copper-mediated C-H amidation and sulfonamidation. **W. Lee**
- ORGN 482.** Two different pathways of Pd-catalyzed reactions of substituted iodoarenes with dibromomethane and dibromoethane: The direct synthesis of fluorenes and styrenes or 1,2-diarylethylenes. **G. Shi**
- ORGN 483.** Mechanistic investigations of the transition-metal-catalyzed cross-coupling of allylboronic acids with  $\alpha$ -diazoketones. **D. Wang**, M. Belhomme, K. Szabo
- ORGN 484.** Investigations of aromatic sulfonyl fluoride reactivity with O- and N- nucleophiles. **N.D. Ball**, **A. Tribby**, I. Rodriguez, E.A. Delorezo
- ORGN 485.** New palladium catalytic system for the one-pot selective synthesis of 2,3-dihydro-4*H*-furo[3,2-*c*]coumarins. **C. Uchiyama**, Y. Miyadera, M. Haramo, A. Taguchi, K. Takayama, Y. Hayashi, F. Yakushiji
- ORGN 486.** Expanding the scope of photoredox dual catalysis: Hypervalent silicates as radical precursors. **N. Patel**, C.B. Kelly, M. Jouffroy, G.A. Molander
- ORGN 487.** Non-precious-metal Cobalt-ter-pyridine system as new catalysts for the C-P bond formation through direct coupling of boronic acids with phosphonate diesters. **V. Datilus**, C. Sweet, **P. Kaur**
- ORGN 488.** Ni<sup>0</sup>Cl(1-naphthyl)(PCy<sub>3</sub>)<sub>2</sub> as an indefinitely air-stable precatalyst for quantitative Suzuki-Miyaura cross-coupling of unreactive aryl electrophiles. **J. Malineni**, R. Jezorek, N. Zhang, V. Percec
- ORGN 489.** New diastereoselective synthesis of (Z)-trisubstituted alkenes containing a trimethylgermyl and anisole moieties *via* organoboranes. **N.G. Bhat**
- ORGN 490.** New diastereoselective synthesis of (Z)-4-trimethylgermyl 1,4-dienes *via* organoboranes. **N.G. Bhat**
- ORGN 491.** Synthesis of 8-aminoquinolines by using carbamate reagents: Facile installation and deprotection of practical amidating groups. **D. Gwon**, S. Chang
- ORGN 492.** Cobalt [PCP] pincer complex catalyzed direct coupling of boronic acids with terminal alkynes without the use of additives. **R. Teriak**, H. Lim, P. Kaur
- ORGN 493.** Incorporation of boronic acids in cross-coupling reactions proceeding through C-C activation. **S. Dorn**, J.M. Dennis, C. Compagner, J.B. Johnson
- ORGN 494.** Carbon-carbon single bond activation used for coupling with Michael acceptors. **J.B. Johnson**, **K. Trentadue**, C. Gregerson, C. Otteman
- ORGN 495.** Elucidating the mechanism and expanding the scope of organometallic nucleophiles utilized in the nickel-mediated decarbonylative cross-coupling of substituted phthalimides. **K. DeGlopper**, M. Yoder, J.B. Johnson
- ORGN 496.** Palladium catalyzed alpha-arylation of non-symmetric ketones. **A.R. van Venrooy**, J.R. Schimk
- ORGN 497.** Strategic application and transformation of di-*ortho*-substituted aryl ketones for hydrogen borrowing catalysis. **C. Cheong**, J.R. Frost, W.M. Akhtar, T.J. Donohoe
- ORGN 498.** Synthesis, structural characterization, photophysical properties, theoretical calculations and catalytic studies of 2,9-di(aryl)-1,10-phenanthroline copper (I) complexes. **M.M. Cetin**, R.T. Hodson, R. Hart, D.B. Cordes, M. Findlater, D.J. Casadonte, A.F. Cozzolino, M.F. Mayer
- ORGN 499.** Diethyl zinc mediated metal-lamination and palladium catalysis: Development and application to the synthesis of functionalized pyrrolidines and piperidines. **T. Robinson**, B. Sundahl, K. Mickelsen, S. Zabawa, T. Livinghouse
- ORGN 500.** Dinuclear spiroligomer-Cu complex designed for phosphodiester traserestification. **C. Xu**, S. Vaddypally, Y. Fan, S. Zhao, Q. Zhao, C.E. Schafmeister, M. Zdzilla
- ORGN 501.** Application of non-precious metal catalysis in pharma. **S. Monfette**, J. Magano
- ORGN 502.** Withdrawn.
- ORGN 503.** Synthesis of  $\alpha$ ,  $\omega$ -difunctional compounds *via* cross-metathesis of methyl oleate and *cis*-2-butene-1,4-diol. **A.Y. Mudiyansele**, S. Viamajala, S. Varnasi, **K. Yamamoto**
- ORGN 504.** Iridium-catalyzed highly regioselective hydroboration and dihydroboration of internal thioalkynes. **Y. Wang**, S. Ding, J. Sun
- ORGN 505.** Cp\*Ir(III)-catalyzed mild and broad C-H arylation of arenes and alkenes with arylidiazonium salts leading to the external oxidant-free approach. **K. Shin**, S. Park, S. Chang
- ORGN 506.** Co(III)-catalyzed C-H bond functionalization. Strategies directed toward efficient access of heteroatom substituted products. **J. Hummel**

## Section C

Pennsylvania Convention Center  
Hall D

### Molecular Recognition & Self-Assembly

R. D. Broene, *Organizer*

8:00 - 10:00

- ORGN 507.** Thermodynamically controlled crystallization of self-organizing supramolecular assemblies. **B.E. Partridge**, P. Leowanawat, M. Ho, M. Peterca, H. Sun, D. Sahoo, Y. Wu, E. Aqad, M.R. Imam, R. Graf, H.W. Spiess, X. Zeng, G. Ungar, P.A. Heiney, V. Percec
- ORGN 508.** Deracemization of supramolecular assemblies in bulk crystal state. **C. Roche**, **B.E. Partridge**, H. Sun, P. Leowanawat, F. Araoka, M. Peterca, D.A. Wilson, M. Prendergast, X. Zeng, G. Ungar, P.A. Heiney, V. Percec

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- ORGN 509.** Effect of the resorcin[4]arene host on the catalytic epoxidation of Mn(III)-based resorcin[4]arene-metalloporphyrin conjugate. **T. Alazemi**
- ORGN 510.** Stimuli-controllable chloride transporters. **Y. Choi, K. Jeong**
- ORGN 511.** Towards the characterization of the redox properties of macrocycles. **J. Dobscha, H. Castillo, Y. Liu, J. Espinosa-Duran, D. Ashley, Y.V. Serada, S. Lee, B. Hirsch, M. Baik, P. Ortoleva, S.L. Tait, A.H. Flood**
- ORGN 512.** Nucleation-dependent fibrillar assembly of synthetic macrocycle. **Y. Song, J. Moore**
- ORGN 513.** Design, synthesis, and biological evaluation of helical spirooligomers targeting HIV-1 gp41. **J. Cheong, C.E. Schafmeister**
- ORGN 514.** Exploiting shape space of quasiaeramic molecular assemblies. **K.A. Wheeler, J.M. Spaniol**
- ORGN 515.** Biomimicking membranes from Janus glycodendrimers reveal sugar-lectin recognition. **Q. Xiao, S. Zhang, E. Wang, S.E. Sherman, R. Moussodia, M. Peterca, B.E. Partridge, A. Muncan, A.D. Ramos Vicente, D.R. Williams, D.A. Hammer, Y. Chen, D.J. Pochan, André, S. Vértesy, H. Gabius, M.L. Klein, V. Percec**
- ORGN 516.** Bio-catalytic self-assembly of peptide-porphyrin light harvesting nanostructures. **N. Wijerathne, A. Masurkar, I. Kymissis, R. Uljin**
- ORGN 517.** Colorimetric detection of residual level of copper (II) ion: Oxidative cyclization of *o*-(phenylazo)aniline to benzotriazole. **G. Slick, J. Jung**
- ORGN 518.** Investigating the binding selectivity of small molecules that target d(CTG) trinucleotide repeats. **L.D. Curet, J.F. Serrano, S.C. Zimmerman**
- ORGN 519.** Self-assembly of *n*-alkyl- and aryl-side chain ureas and their derivatives as evidenced by SEM and x-ray analysis. **O.V. Kulikov, D. Siriwardane, G. McCandless, C. Barnes, Y. Sevryugina, J.D. DeSousa, J. Wu, R. Sommer, B.M. Novak**
- ORGN 520.** Synthesis of fluorophore appended cyclodextrins and higher order architectures for improved sensing and understanding of molecular interactions. **S. Chaudhuri, M. Levine**
- ORGN 521.** Design, synthesis, and characterization of glycolipids based on D-glucosamine and triazoles. **A. Chen, H. Mangunuru, G. Wang**
- ORGN 522.** Synthesis, and characterization of glycosyl triazoles from D-glucose and D-glucosamine. **A. Chen, C. Garcia, G. Wang**
- ORGN 523.** Rapid detection of environmentally persistent pesticides via fluorescence enhancement of conjugated polymer nanoparticles and thin films. **D. Jones, M. Levine**
- ORGN 524.** Development of iron-binding spirooligomer catalysts. **M.A. Pham, C.E. Schafmeister**
- ORGN 525.** Development of bis-urea containing spirooligomer as pyrophosphate anion receptor. **Y. Fan, C. Xu, M.A. Pham, C.E. Schafmeister**
- ORGN 526.** Synthesis of new calixarenes bearing heterocycles for recognition of ions. **C. Saitz, H. Gomez-Machuca, C. Quiroga-Campano, C. Jullian**

**Section D**

Pennsylvania Convention Center  
Hall D

**Peptides, Proteins & Amino Acids**

R. D. Broene, *Organizer*

**8:00 - 10:00**

- ORGN 527.** Facile method for the hydrolysis of a nickel Schiff base complex useful for synthesis of side-chain protected unnatural amino acids. **C. Bontrager, T. Geibel, G. Lengyel**
- ORGN 528.** Bromoethylation of phenols. **W. Ma, A. Ma, D.Z. Fang**
- ORGN 529.** Impact of incorporation of  $\alpha$ -alkylated amino acids on  $\beta$ -hairpin peptide folded stability. **S. Schettler, M. Karnes, G. Lengyel**
- ORGN 530.** Removal of benzyl groups from cysteine and selenocysteine using 2,2'-dithiobis-5-nitropyridine and ascorbolyis. **E. Ste Marie, E.L. Ruggles, R.J. Hondal**
- ORGN 531.** Synthesis of a Tyr-Tyr peptide library and fluorescence of the stilbenyl derivatives. **S. Vasconcelos, A. Rodrigues, E.L. Bastos, H.A. Stefani**
- ORGN 532.** Fully-automated synthesis, cyclization, and stable-isotope incorporation of oxytocin. **E. Denton, J.R. Bickler, D. Menasco**
- ORGN 533.** Di-substituted maleamic acid as an ultra-sensitive, cleavable linker for reversing the cytotoxicity pH-profile of doxorubicin. **A. Zhang, M. An, L. Yao**
- ORGN 534.** pH low insertion peptide (pHLIP) as a drug carrier targeting acidic tumor microenvironments. **L. Klees, E. Lichter, C. Eng, X. Wang, C. Shi, A. Bodman, V. Nazarenko, M.M. Bell, I.G. Bandler, L. Yao, J. Luo, M. An**
- ORGN 535.** Folding of bovine pancreatic trypsin inhibitor (BPTI) faster using aromatic thiols and their corresponding disulfides. **R.P. Marahatta, W.J. Lees**
- ORGN 536.** Development of synthetic methodology of chloroalkene-type dipeptide isosteres for peptidomimetics. **T. Kobayakawa, H. Tamamura**
- ORGN 537.** PepSy: An open-source peptide synthesizer. **H. Gali**
- ORGN 538.** Broadening the utility scope of thioamides. **D. Szantai-Kis, E.J. Petersson**

**WEDNESDAY MORNING**

**Section A**

Pennsylvania Convention Center  
Terrace Ballroom IV

**Materials, Devices & Switches**

M. C. McIntosh, *Organizer*

G. Sauve, *Presiding*

- 8:30 ORGN 539.** Internal redox labeling of oligonucleotides: Towards point-of-care diagnostic devices. **S. Cabezas-Hayes, B.J. Marsh, C.G. Frost**
- 8:50 ORGN 540.** Novel class of photoswitch: Arylazopyrazoles and their applications. **C.E. Weston, R.D. Richardson, M.J. Fuchter**
- 9:10 ORGN 541.** Imidazole-peptide foldamers: Switching of the driving forces within the helix. **A. Adam, G. Haberhauer**

- 9:30 ORGN 542.** Co-crystallization of donor-acceptor-type molecules leads to high efficient ternary organic solar cells. **Q. Cui, F. Teng, L. Peng**
- 9:50 ORGN 543.** Novel oligo and polyacenes for intramolecular singlet fission devices. **A. Pun, L.M. Campos**
- 10:10 ORGN 544.** Modulating charge carriers in oxidized oligothio-phenes. **J. Low, B. Capozzi, J. Cui, L. Venkataraman, L.M. Campos**
- 10:30 ORGN 545.** Redox-active bistable molecular switch in a metal-organic framework. **Q. Chen, J. Sun, I. Hod, P. Li, J.T. Hupp, O.K. Farha, J.F. Stoddart**
- 10:50 ORGN 546.** Tuning the properties of core-substituted naphthalene diimides for opto-electronic applications. **G. Sauve, F.S. Etheridge, R. Fernando**
- 11:10 ORGN 547.** Electronic effects of photoswitchable moieties on pentant ligating group. **M.C. Andrews, A. Rajput, P. Peng, A.F. Cozzolino**
- 11:30 ORGN 548.** Organic bulk heterojunction photovoltaics with cyclopenteno[60]fullerene monoadducts as n-type materials display superior power conversion efficiency than with PC<sub>61</sub>BM. **S. Chuang, P. Tseng**

**Section B**

Pennsylvania Convention Center  
Terrace Ballroom III

**Peptides, Proteins & Amino Acids**

M. C. McIntosh, *Organizer*

T. Karabencheva-Christova, *Presiding*

- 8:00 ORGN 549.** Importance of linker region in matrix metalloproteinase-1 domain interactions. **W. Singh, G. Fields, C. Christov, T. Karabencheva-Christova**
- 8:20 ORGN 550.** pHLIP-biosensor of tumor acidity with a built-in mechanism for transmembrane, cytoplasmic drug delivery. **M. An, L. Klees, A. Zhang, J. Onyango, E.A. Gordon, E. Lichter, S. Winge-Barnes, M.M. Bell, C. Eng, V. Nazarenko, I.G. Bandler, A.K. Awad, R.A. Chandler, R.J. Lapid, L. Yao**
- 8:40 ORGN 551.** Miller experiments in atomistic computer simulations. **A. Saitta, F. Saija, F. Pietrucci, S. Laporte, F. Guyot**
- 9:00 ORGN 552.** Peptide amphiphile nanofibers for drug delivery applications. **H. Kara, M. Sardan, M.O. Guler**
- 9:20 ORGN 553.** Synthesis and conformational studies of hydrazinopeptides: Understanding of the global rules governing their self-organization. **E. Romero, S. Acherar, B. Jamart-Gregoire**
- 9:40 ORGN 554.** Stabilizing organic radicals with *de novo* designed metalloproteins. **G. Ulas, T. Lemmin, Y. Wu, G.T. Gassner, W.F. DeGrado**
- 10:00 ORGN 555.** Spirooligomer hybrids: A new set of functional macromolecules. **J. Northrup, C.R. Purcell, C.E. Schafmeister**
- 10:20 ORGN 556.** X-ray crystallographic structure of a double-walled peptide nanotube formed by a macrocyclic  $\beta$ -sheet containing  $\text{Al}_{16-22}$ . **K.H. Chen, K. Corro, S. Le, J.S. Nowick**
- 10:40 ORGN 557.** Synthesis of 9-silafluorenyl dichlorides and their application in peptide synthesis as chemically ligating coupling agents. **S.J. Aspin, S. Taillemaud, P. Cyr, A.B. Charette**

**Section C**

Pennsylvania Convention Center  
Terrace Ballroom II

**Technical Achievements in Organic Chemistry**

K. L. Lee, *Organizer*

S. W. Bagley, *Presiding*

**8:30** Introductory Remarks.

- 8:35 ORGN 558.** Synthetic challenges in the development of commercial manufacturing processes for two active pharmaceutical ingredients. **S.A. Savage, N. Domagalski, L.A. Hobson, S. Jones, B. Mack, Y. Qiu, A. Ramirez, R.E. Waltermire**
- 9:05 ORGN 559.** Small molecule inhibition of R132H mutant IDH for the treatment of cancer. **T.R. Caferro, J. Levell, Y. Cho, B. Firestone, P. Fortin, J. Giraldes, T. Gould, R. Kulathila, G. Liu, S. van der Plas, K. Slocum, T. Smith, B. Toure, X. Xie, T. Wagner, P. Piechon, M. Xu, F. Yang, R. Pagliarini**
- 9:35 ORGN 560.** Selectivity in process development. **N.J. Kallman**
- 10:05** Intermission.
- 10:20 ORGN 561.** [3+2] Cycloaddition reactions with a simple azomethine ylide to access unique fluorinated pyrrolidines. **M.B. Tran-Dube, I.J. McAlpine, F. Wang, S.A. Scales, J. Matthews, M.R. Collins, S.K. Nair, M. Nguyen**
- 10:50 ORGN 562.** Enabling high-throughput experimentation through high-throughput analysis. **W. Schafer**
- 11:20 ORGN 563.** One-pot CDI mediated coupling and cyclization to generate triazolopyridines. **K. Baucom**

**Section D**

Pennsylvania Convention Center  
Room 120B

**Metal-Mediated Reactions & Syntheses**

R. D. Broene, *Organizer*

C. Dockendorff, *Presiding*

- 8:00 ORGN 564.** C(sp<sup>3</sup>)-C(sp<sup>3</sup>) bond formation by transition-metal catalyzed cross-coupling of allylboronic acids with  $\alpha$ -diazoketones. **D. Wang, M. Belhomme, A. Das, K. Szabo**
- 8:20 ORGN 565.** Nickel-catalyzed direct difluoromethylation of aryl halides and triflates at room temperature. **L. Xu**
- 8:40 ORGN 566.** Versatile route to arylated fluoroalkyl bromide building blocks. **P.T. Kaplan, D.A. Vicio**
- 9:00 ORGN 567.** Accessing perfluoroalkyl nickel(II), (III), and (IV) complexes bearing a readily attached [C4F<sub>6</sub>] ligand. **S. Yu, D.A. Vicio**
- 9:20 ORGN 568.** Trifluoromethylation and trifluoromethylthiolation using trifluoroacetic acid/trifluoroacetate salts as the trifluoromethylating reagent. **G. Shi**
- 9:40 ORGN 569.** Development of new catalytic systems to control complex polymeric structures. **Q. Michaudel, B.P. Fors**
- 10:00 ORGN 570.** Synthesis of aryl ketones and  $\beta$ -keto phosphonates by palladium(II) catalyzed addition reactions to nitriles. **B.F. Skillinghaug**
- 10:20 ORGN 571.** Sulfamides from catalytic hydroamination/hindered amines and an ene-allene rearrangement. **M. Bebbington**

**10:40 ORGN 572.** Chemistry in water using micelles: Applications in the pharmaceutical industry. **W.M. Braje**

**11:00 ORGN 573.** Palladium-catalyzed carbonylative heck reaction affording 1,4-diketones. **H. Yin, D.U. Nielsen, T. Skrydstrup**

**11:20 ORGN 574.** Hybrid catalysts for carbon-carbon bond formation. **C. Dockendorff, D. Wiedenhoft, J. Porter, A. Benoit, E. Greve, Y. Wu**

**11:40 ORGN 575.** Earth-abundant cascade catalytic biomass processing: new entry to spiro-bisheterocycles. **J. Sweeney**

**Section E**

Pennsylvania Convention Center  
Room 120A

**New Reactions & Methodology**

M. C. McIntosh, *Organizer*

J. J. Kiddle, *Presiding*

**8:00 ORGN 576.** Ultimate process chemistry synthesis – the importance of mechanistic understanding for reaction optimization. **Z. Liu**

**8:20 ORGN 577.** Photoredox mediated C-H arylation of 2-bromoazoles. **A. Arora, J.D. Weaver**

**8:40 ORGN 578.** Improved precatalyst for silyl-Heck reactions. **S.B. Krause, D.A. Watson, J.R. McAtee**

**9:00 ORGN 579.** C-alkylation of nitroalkanes with unactivated alkyl iodides. **S. Rezaazadeh, D.A. Watson**

**9:20 ORGN 580.** Access to unsaturated lactams via transition metal catalysis: Development of an Aza-Heck reaction. **S. Shuler, G. Yin, C. Vesper, D.A. Watson**

**9:40 ORGN 581.** C-H borylation of methane and ethane. **S.D. Schimler, A. Cook-Sneathen, M.S. Sanford**

**10:00 ORGN 582.** Investigating the oxidative additions of O-H and N-H bonds to geometrically distorted phosphorus (III) compounds. **S.M. McCarthy, A.T. Radosevich**

**10:20 ORGN 583.** Metal free difluorination-hydroxylation of isoindolin-1-ones: Facile access to -CF<sub>2</sub>-containing heterocycles. **S.B. Munoz, T. Mathew, G.A. Olah, S.G. Prakash**

**10:40 ORGN 584.** Uphill catalysis for synthesis of small molecules. **K. Singh, W. Trinh, J.D. Weaver**

**11:00 ORGN 585.** Friedel-Crafts chemistry in HFIP. **R.H. Vekariya, H. Motiwala, S. Roy, M.T. Bovino, J. Aube**

**11:20 ORGN 586.** Asymmetric crossed-benzoin condensations utilizing N-heterocyclic carbenes in green solvents. **L.R. Barber, J.J. Kiddle**

**11:40 ORGN 587.** Immobilized thiourea organocatalyst for the stereospecific halogenation of alkene molecules. **C.E. Wright, L.R. Barber, J.J. Kiddle**

**Technical program information known at press time.**

The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

**Section F**

Pennsylvania Convention Center  
Room 119B

**Biologically-Related Molecules & Processes**

M. C. McIntosh, *Organizer*

P. Das, *Presiding*

**8:30 ORGN 588.** Nitrotribenzofuran (NDBF): a versatile thiol protecting group that can be used to probe cellular processes *ex vivo*. **M.D. Distefano, M. Mahmoodi**

**8:50 ORGN 589.** Identification and synthesis of the aggregation pheromone of *Homalinotus depressus* (Coleoptera: Curculionidae). **D.M. Vidal, P. Zarbin**

**9:10 ORGN 590.** Design and synthesis of inhibitors against aspartate-N-acetyl transferase (ANAT) – A novel approach to treat Canavan disease. **V. Mutthamsetty, B. Thangavelu, Q. Wang, R.E. Viola**

**9:30 ORGN 591.** Synthesis of bioorthogonally modified peptidoglycan substrates and glycoengineering applications to advance innate immunity. **K. DeMeester, H. Liang, M. Parent, J. Caplan, C.L. Grimes**

**9:50 ORGN 592.** Synthetic adventures with  $\alpha,\beta_5$  antagonists. **T. Barrett**

**10:10 ORGN 593.** Dynamic immobilization of proteins within hydrogels through reversible thiol-ene chemistry. **J.C. Grim, K.S. Anseth**

**10:30 ORGN 594.** 3-Nitro-2-pyridinesulfonyl resin-mediated solid-phase disulfide ligation for the synthesis of cyclic peptides. **A. Taguchi, K. Fukumoto, K. Hamada, K. Takayama, F. Yakushiji, Y. Hayashi**

**10:50 ORGN 595.** Structure-based design and biological evaluation of triphenyl scaffold-based compounds as modulators of a LuxR-type quorum sensing receptor. **M.C. O'Reilly, K. Karlen, R.S. Kumar, H.E. Blackwell**

**11:10 ORGN 596.** Economic syntheses of push-pull fluorene probes using air-stable Pd catalytic systems: Applications in imaging of lipid membranes, detection of oligonucleotides, and FRET. **J. Shaya, M. Collot, V. Guerinneau, Y. Mély, A. Klymchenko, B. Michel, A. Burger**

**11:30 ORGN 597.** Enantioselective synthesis of a chemical probe for KDM2a. **P. Gerken, M.D. Smith, P. Brennan**

**Section G**

Pennsylvania Convention Center  
Room 119A

**Molecular Recognition & Self-Assembly**

R. D. Broene, M. C. McIntosh, *Organizers*

B. Qiao, *Presiding*

**8:00 ORGN 598.** Non-covalent C<sub>60</sub>-polymer nanoformulations: a new approach. **J. Van Guyse, V. R. de la Rosa, R. Hoogenboom**

**8:20 ORGN 599.** Study of  $\pi$ - $\pi$  interactions in multiple systems derived from substituted benzenes. **J. Carey, C. Chen, B. Su, S. Snyder**

**8:40 ORGN 600.** Multiscale and hierarchical organic materials by design, synthesis, and self-assembly. **A.H. Flood, J. Dobscha, H. Castillo, Y. Liu, J. Espinosa-Duran, D. Ashley, B. Hirsch, Y. Sereda, M. Baik, P. Ortoleva, S.L. Tait**

**9:00 ORGN 601.** Tuning molecular self-association of a shape-persistent macrocycle through electronic and steric modifications. **J. Dobscha, H. Castillo, Y. Liu, J. Espinosa-Duran, D. Ashley, Y.V. Serada, S. Lee, B. Hirsch, M. Baik, P. Ortoleva, S.L. Tait, A.H. Flood**

**9:20 ORGN 602.** Synthesis and host-guest properties of spirooligomer-based macrocycles. **C.T. Pfeiffer, C.E. Schafmeister**

**9:40 ORGN 603.** From self-assembly to molecular recognition of spirooligomers. **J. Cheong, C.E. Schafmeister**

**10:00 ORGN 604.** Radical multivalency via Goldilocks size matching of a diradical host and guest. **M.C. Lipke, T. Cheng, Y. Wu, H. Arslan, M.R. Wasielewski, W.A. Goddard, J.F. Stoddart**

**10:20 ORGN 605.** Synthesis and characterization of UV-light responsive D-glucosamine based molecular gelators. **I.S. Okafor, G. Wang**

**10:40 ORGN 606.** Synthesis and study of pH-responsive monosaccharide based molecular gelators. **K. Bashaw, G. Wang**

**11:00 ORGN 607.** Recognition of large anions by cyanostar macrocycles and the role of specific solvation. **B. Qiao, J.R. Anderson, M. Pink, A.H. Flood**

**11:20 ORGN 608.** Pulling hydrogen bonds apart. Measurement of noncovalent interactions with optical tweezers. **T. Naranjo, B. Nieto, Á. Somoza, B. Ibarra, E.M. Perez**

**11:40 ORGN 609.** Deep-cavity cavitands for protein inhibition. **J.H. Jordan, B.C. Gibb**

**WEDNESDAY AFTERNOON**

**Section A**

Pennsylvania Convention Center  
Terrace Ballroom IV

**Materials, Devices & Switches**

M. C. McIntosh, *Organizer*

K. Mirica, *Presiding*

**1:30 ORGN 610.** Greening of army propellant demilitarization. **E. Cooke, P. Sanchez, K. Singer, S. Dorsey, P. Sheehan**

**1:50 ORGN 611.** Visualizing deeper into the body with a NIR-II small-molecule fluorophore. **X. Hong, Z. Cheng, H. Chen**

**2:10 ORGN 612.** Thermodynamic synthesis of fused-ring aromatic systems. **L. Fang, J. Lee, M. Al-Hashimi**

**2:30 ORGN 613.** Sublimable adhesives. **K. Mirica**

**2:50 ORGN 614.** Redox active single-molecule switches. **X. Yin, J. Cui, L. Venkataraman, L.M. Campos**

**3:10 ORGN 615.** Monitoring fast recovery of mechanochromic luminescent b-diketones with camera lifetime imaging. **T.P. Butler, A.S. Mathew, M. Sabat, C. Fraser**

**3:30 ORGN 616.** Chiral redox-active isosceles triangles for energy storage applications. **S. Nalluri, Z. Liu, Y. Wu, K.R. Hermann, A. Samanta, D. Kim, J.F. Stoddart**

**3:50 ORGN 617.** Self-assembly between anion-capture cyanostar and chromatic triangulenium cations. **B. Qiao, B. Hirsch, S. Lee, M. Rosenberg, C. Chen, B. Laursen, A.H. Flood**

**4:10 ORGN 618.** Synthesis, characterization, and solution studies of titanium(IV) Schiff base complexes: Exciting spectroscopic findings in non-aqueous solutions. **R. Gurung, A.K. Wells, J. Chhabra, D.T. Brown, A. Holder**

**Section C**

Pennsylvania Convention Center  
Terrace Ballroom II

**Technical Achievements in Organic Chemistry**

K. L. Lee, *Organizer*

C. Faler, *Presiding*

**1:30** Introductory Remarks.

**1:35 ORGN 619.** Discovery of MK-2461, a potent and selective inhibitor of c-Met kinase for the treatment of cancer. **J.P. Jewell**

**2:05 ORGN 620.** Manipulating selectivity through gatekeeper interactions: Inhibition of EGFR and its T790M mutant. **E.J. Hanan, M.C. Bryan, D. Burdick, B.K. Chan, Y. Chen, C. Eigenbrot, R. Heald, T.P. Heffron, H. La, H.E. Purkey, G. Schaefer, S. Schmidt, E. Seward, S. Sideris, S. Wang, C. Yu**

**2:35 ORGN 621.** Control of potentially genotoxic reaction intermediates. **B.J. Kotecki**

**3:05** Intermission.

**3:20 ORGN 622.** Sequential site-selective C-H activations of aromatic heterocycles through a pH dependent auxiliary. **M.H. Daniels, J. Armand, K.L. Tan**

**3:50 ORGN 623.** Development and manufacture of multi-kg quantities of API for a small molecule clinical candidate through Eli Lilly's Chorus organization. **B. Huckabee, D.S. Coffey**

**4:20 ORGN 624.** Commercial route development for Ibrance® (palbociclib). **B.P. Jones**

**4:50** Concluding Remarks.

**Section D**

Pennsylvania Convention Center  
Room 120B

**Metal-Mediated Reactions & Syntheses**

M. C. McIntosh, *Organizer*

M. Dai, *Presiding*

**1:00 ORGN 625.** Ruthenium catalyzed site selective olefinic C-H bond functionalization for chemo- and regioselective annulation reaction. **D. Kumar, S.R. Vemula, G.R. Cook**

**1:20 ORGN 626.** Synthesis of versatile synthetic intermediates through copper-catalyzed borylations. **M. Tortosa, A. Parra, M. Guisan-Ceinos, L. Amenós, A. Lopez, V. Martin-Heras**

**1:40 ORGN 627.** Stereoselective synthesis of highly substituted cyclopent[*c*]furans via an indium catalyzed multi-component reaction. **S.R. Pathi Pati, A. van der Werf, V. Singh, N. Selander**

**2:00 ORGN 628.** Development of stereoretentive olefin metathesis catalysts. **T.P. Montgomery, R.H. Grubbs**

**2:20 ORGN 629.** Aminoquinoline-assisted vinylic C-H arylation of unsubstituted acrylamide for the selective synthesis of Z olefins. **C. Jiang, F. Xue, X. Cheng, Y. Gao**

- 2:40 ORGN 630.** Cyclopropanol ring opening cross couplings. M. Dai
- 3:00 ORGN 631.** Mechanistic study on ligand-accelerated Cu(I)-catalyzed azide-alkyne cycloaddition. H. Chen, C. Cai
- 3:20 ORGN 632.** Palladium-catalyzed C-H arylation of  $\alpha$ , $\beta$ -unsaturated imines: Catalyst controlled synthesis of enamine and allylic amine derivatives. M. Li, P.J. Walsh
- 3:40 ORGN 633.** Redox-neutral coupling of sulfoxides and organometallic nucleophiles. K. Colas, R. Martín-Montero, A. Mendoza
- 4:00 ORGN 634.** Conjugated ladder polymers by a palladium catalyzed cyclopentannulation and post modification. S. Bheemireddy, M.P. Hautzinger, K.N. Plunkett
- 4:20 ORGN 635.** Tri(1-adamantyl)phosphine: Exceptional electronic properties, chemical stability, and effects in palladium catalysis. L. Chen, B.P. Carrow
- 4:40 ORGN 636.** Pd-catalyzed enantioselective arylation of ketimines and its application to the concise synthesis of MK-8931 (verubecestat). W. Chen

Section E

Pennsylvania Convention Center  
Room 120A

New Reactions & Methodology

M. C. McIntosh, *Organizer*

M. A. Walczak, *Presiding*

- 1:00 ORGN 637.** Carbon-carbon bond forming reactions with ruthenium and osmium catalyzed transfer hydrogenation. T. Luong, J. Mowat, E. Yamaguchi, B. Park, H. Sato, M.J. Krische
- 1:20 ORGN 638.** Photoredox mediated C-H functionalization: Access to 2-substituted azoles. A. Arora, J.D. Weaver
- 1:40 ORGN 639.** New methods and strategies in carbohydrate synthesis. M.A. Walczak
- 2:00 ORGN 640.** Photocatalytic hydrodefluorination: Route from perfluorinated to partially fluorinated arenes. S. Senaweera, A. Singh, J.D. Weaver
- 2:20 ORGN 641.** Photocatalytic dual C-F, C-H functionalization: access to multi-fluorinated biaryls. S. Senaweera, J.D. Weaver
- 2:40 ORGN 642.** Synthesis of chlorinated and brominated fluoroarenes by catalytic  $S_{\text{N}}\text{Ar}$  with polyfluoroarenes. S. Senaweera, J.D. Weaver
- 3:00 ORGN 643.** Ruthenium catalyzed diverse redox-triggered C-C coupling of alcohol to alkyne and 1,3-enyne via transfer hydrogenation. K.D. Nguyen, D. Herkommer, T. Liang, B. Park, M.J. Krische
- 3:20 ORGN 644.** Phosphine enabled palladium-catalyzed carbonylation of methylene C-H bonds in aliphatic amines: A novel route to access poly-substituted  $\beta$ -lactams. J.R. Cabrera-Pardo, A. Trowbridge, M. Nappi, K. Ozaki, M. Gaunt
- 3:40 ORGN 645.** C-H arylation of heterocyclic N-oxides through in-situ diazotisation of anilines without added promoters: Optimisation and mechanistic studies. A. Colleville, R.A. Horan, S. Olazabal, N.C. Tomkinson

- 4:00 ORGN 646.** Type II anion relay chemistry: Conformational constraints to achieve effective [1,5]-vinyl brook rearrangements. Q. Liu, A.B. Smith
- 4:20 ORGN 647.** Flow enabled peptide synthesis. Z.E. Wilson, S.V. Ley
- 4:40 ORGN 648.** Continuous processing using integrated design. R. Jones, P. Donnellan, B. Glennon

Section F

Pennsylvania Convention Center  
Room 119B

Biologically-Related Molecules & Processes

M. C. McIntosh, *Organizer*

E. L. Que, *Presiding*

- 1:30 ORGN 649.**  $^{19}\text{F}$  MRI contrast agents for reporting biological redox. E.L. Que
- 1:50 ORGN 650.** Fast click-slow release strategy towards the HPLC-free synthesis of RNA. M. Royzen, E. Agustin
- 2:10 ORGN 651.** Design, synthesis and biological evaluation of novel largazole analogues as anticancer agents. A. Al-Hamashi, J. Almaliti, A.T. Negmeldin, M.K. Pflum, L. Tillekeratne
- 2:30 ORGN 652.** Synthesis and evaluation of thioether-based  $\beta$ -(1 $\rightarrow$ 3)-glucan mimetics. P. Wen, D. Crich
- 2:50 ORGN 653.** Synthesis and photophysical studies of azetidiny l rhodamines tailored for biological imaging. A.K. Muthusamy, J. Grimm, L.D. Lavis
- 3:10 ORGN 654.** Process development of lorlatinib (PF-06463922). R.W. Dugger
- 3:30 ORGN 655.** Activatable probes for the detection of mobile zinc in biology. J.M. Goldberg, D. Zhang, S.J. Lippard
- 3:50 ORGN 656.** Ratiometric fluorescent probes for imaging phosphoinositides. S. Mondal, A. Rakshit, S. Pal, A. Datta
- 4:10 ORGN 657.** Lysine decarboxylase as a platform for mechanism-based PLP enzyme inhibitor development: Design, synthesis and enzyme kinetic/structural characterization. M.L. Beio, T.W. Moural, A.R. Green, C.D. McCune, C. Kang, D.B. Berkowitz
- 4:30 ORGN 658.** Withdrawn.
- 4:50 ORGN 659.** Radical chemistry of the Breslow intermediate. M.C. McIntosh

Section G

Pennsylvania Convention Center  
Room 119A

Molecular Recognition & Self-Assembly

R. D. Broene, M. C. McIntosh, *Organizers*

M. Levine, *Presiding*

- 2:00 ORGN 660.** Synthesis of glycal-based bolaamphiphile cobalt-Schiff base complexes for catalytic breakdown of lignin in whole biomass. W.T. Hartwig, J.J. Bozell
- 2:20 ORGN 661.** Studies of deep-cavity cavitands. J.H. Jordan
- 2:40 ORGN 662.** Post-assembly modification of tetrazine-edged supramolecular capsules. B.S. Pilgrim, D.A. Roberts, J.D. Cooper, T. Lohr, T. Ronson, J.R. Nitschke
- 3:00 ORGN 663.** Molecular lego based catalysts, receptors and therapeutics. C.E. Schafmeister

- 3:20 ORGN 664.** Double helices of opposite chiralities generated from diastereoisomeric conformations of configurationally enantiomeric macrocycles. A. Samanta
- 3:40 ORGN 665.** Toward precise molecular shape control. S.T. Schneebeli
- 4:00 ORGN 666.** New applications of cyclodextrin-promoted non-covalent interactions in complex systems. M. Levine, D.J. DiScenza, M. Verderame

WEDNESDAY EVENING

Section A

Pennsylvania Convention Center  
Hall E

Heterocycles & Aromatics

Cosponsored by MEDIC

R. D. Broene, *Organizer*

7:00 - 9:00

- ORGN 667.** Tandem synthesis of pyrroisoquinoline scaffold using photo-oxidative method catalyzed by methylene blue. A. Fujiya, M. Tanaka, E. Yamaguchi, N. Tada, A. Itoh
- ORGN 668.** Intermolecular cross-dehydrogenative aromatic C-H amination by aerobic photooxidation. T. Yamaguchi, E. Yamaguchi, A. Itoh
- ORGN 669.** Effect of anti and syn-conformation on optical properties, charge mobilities and photovoltaic performances of cyclopentadithiophene derivatives. S. Wanwong, S. Thayumanavan
- ORGN 670.** Research on a one-pot synthesis of a new hetero cage compound 2,4,9-tribenzylo-2,4,9-triazaadamantane. T. Hou, J. Luo
- ORGN 671.** Catalyst free, solvent free, multicomponent-tandem synthesis of isoindolinones: Green synthesis of 3-(phosphite-3-yl)isoindolin-1-one derivatives. J. Yu, C. Cai
- ORGN 672.** Access to the novel azabicyclic monomers from pyrroglutaminol derivatives through diastereoselective conjugate addition followed by intramolecular cyclization. C. Choi, P.M. Nuhant, J.J. Mousseau, C. Seungwon, X. Yang, B.P. Boscoe, S.E. Drozda, J. Tzruppek, B.S. Gerstenberger, J. Williams, S.W. Wright
- ORGN 673.** Microwave assisted one-pot three-component synthesis of imine-1,2,3-triazoles. F. Bernardes de Souza, H.A. Stefani
- ORGN 674.** Efficient synthesis of  $C_{60}$ -functionalized phthalides via a base-catalyzed trifluoromethylation/lactonization tandem reactions. T. Chen, C. Cai
- ORGN 675.** Palladium catalyzed regioselective hydrostannylation of 2-alkynyl-3,4,6-tri-O-acetyl-D-glucal and applications of the resulting glucal stannanes. A. Shamim, H.A. Stefani
- ORGN 676.** Mono- and dinuclear organoboron compounds bearing to Schiff bases ligand. I. Rodríguez Marisol, V. Jiménez Pérez, R. Dias, B. Muñoz Flores
- ORGN 677.** Synthesis of a novel oxabicyclo[6.2.1]undecene triol via a challenging ring-closing metathesis reaction. S.S. Rankin, J.J. Caldwell, N.B. Cronin, R. van Montfort, I. Collins
- ORGN 678.** Xanthene dyes as charge transfer donors. K.C. Lane, C.C. Woodroffe, R.E. Swenson
- ORGN 679.** Synthesis of squaraine dyes for use in OPV solar cells. A.M. Murphy Shaw, Z.T. Protich, R. Maker, P.M. Fanara, C. Zheng, C.J. Collison, J.A. Cody
- ORGN 680.** Sustainable synthesis of pyrido pyrimidinones. M.A. Alam, Z. Alsharif, H. Alkhatabi, D. Jones, H. Ramey
- ORGN 681.** Synthesis of 1,3,4-oxadiazole and 1,2,4-triazole-3-thione derivatives. N. Sarikahya, W. Paz-Orozco, Z. Kuvent, T. Sobiech, W. Schwab, F. Damkaci
- ORGN 682.** Synthesis of 2-acylindoles via chloromethoxylation of 2-amino chalcone. T. Maegawa, A. Nakamura, M. Yasuyoshi
- ORGN 683.** Simple computational tools to predict the regioselectivity of electrophilic aromatic substitution of aromatic heterocycles. M. Kruszyk, M. Jessing, J.L. Kristensen, M. Jorgenson
- ORGN 684.** Cu-catalyzed N-alkynylation of pyrrole: A study of the synthesis and reactivity of ynpyrroles. B.J. Reinus, S. Kerwin
- ORGN 685.** Tailoring the solid state emission of BODIPY dyes by alkyl substitution. J. Vaal, K. Cordell, P. Hewavitharane
- ORGN 686.** Synthesis of a library of 1H-pyrrolo[3,2-c]pyridines (5-azaindoles) for use in biological testing against Chagas' disease. M.N. Balfour, H.A. Stefani
- ORGN 687.** Synthesis of heteroaromatic compounds including carbazole, dibenzofuran and dibenzothio-phen derivatives. G. Roh, E. Cho
- ORGN 688.** Green and efficient synthesis of 2-(3,5-dimethyl-1H-pyrazol-1-yl)-N-phenylquinazolin-4-amines. C. Venkata Ramana Reddy
- ORGN 689.** Thio-click approach to carbohydrate heterocycles. A. Mauger, Z.J. Witzcak, R. Bielski, D.E. Mencer
- ORGN 690.** pH-dependent conformational alteration of N,N-diarylamides bearing pyridine and tropolone. A. Ito, M. Sato, H. Fujino, R. Yamasaki, I. Okamoto
- ORGN 691.** Process development of I late stage intermediate of AMG 700. R.D. Crockett
- ORGN 692.** Facile regio-selective  $S_{\text{N}}\text{Ar}$  with heteroaromatic amines. J. Li, L. McGinty, J. Zbieg, X. Wang
- ORGN 693.** Iron catalyzed oxidative  $\text{SP}^2$  C-H activation in the synthesis of phenanthridinones. S. Chen, A.B. Reitz, S. Garry
- ORGN 694.** Novel approach to 5-substituted 3-pyrrolidin-2-ones via photoredox catalysis. J. Yedoyan, O. Reiser
- ORGN 695.** Expansion of the scope of O-alkyl hydroxamates towards the synthesis of madangamine derivatives. V.R. Helan, D.J. Wardrop
- ORGN 696.** Electron initiated dimerization and trimerization of alkyl isothiocyanates. S.J. Peters
- ORGN 697.** Synthesis of bioactive 2-azetidines via [2+2] ketene-imine cycloaddition strategy. D. Bandyopadhyay, J.M. Rock, T.V. Guajardo, O. Espino, J. Garcia
- ORGN 698.** Green multicomponent synthesis of tetrahydro-spiro[indoline-3,1'-naphthalene] derivatives. D. Bandyopadhyay, R.C. Gonzales, E. Rodriguez, J.A. Rodriguez
- ORGN 699.** Applications of ROMP-derived oligomeric silica and Co/C-magnetic reagents for small molecule synthesis. P. Maity, S. Faisal, P.C. Kearney, O. Reiser, P.R. Hanson



- ORGN 700.** Key process developments towards the preparation of tenofovir. **A.R. Ehle, J. Verghese, D. Rivalti, F. Gupton**
- ORGN 701.** Novel rings in the synthetically accessible virtual inventory (SAVI). **Y. Pevzner, M.C. Nicklaus, W. Ihlenfeldt**
- ORGN 702.** Withdrawn.
- ORGN 703.** Synthesis of near-IR BODIPYs via functionalization of 3,5-diiodo--BODIPYs. **Q. Meng, F. Fronczek, G. Vicente**
- ORGN 704.** Synthesis and properties of molecularly stretchable benzothieno[3,2]benzothiophene block copolymer. **C. Jones**
- ORGN 705.** N-heterocycle synthesis by late transition metal-mediated C-H bond activation. **S. Acharya, R.S. Manan, P. Zhao**
- ORGN 706.** Partially saturated heteroaromatics as an  $sp^3$  enriched fragment collection. **S. Mitchell, D. Twigg, N. Kondo, D.R. Spring**
- ORGN 707.** Synthesis of diverse semi-saturated bicyclic heteroaromatics. **H. Stewart, D.R. Spring, T. Moss**
- ORGN 708.** Investigation of S-oxidation of *m*- and *p*-substituted 2-phenyl-3-aryl-1,3-thiazolidin-4-ones with oxone. **K.C. Cannon, M. Costa, M. Pepper, J. Toovy**
- Section B**  
 Pennsylvania Convention Center  
 Hall E  
**New Reactions & Methodology**  
*Cosponsored by MEDi*  
 R. D. Broene, *Organizer*  
**7:00 - 9:00**
- ORGN 709.** Establishment of rapid and practical reaction condition screening system: Advanced technology using a combination of high-throughput synthesis and automated analysis system. **R. Arai, N. Taya, C. Kushibe, K. Masuda, S. Sasaki, K. Miwa, I. Nomura**
- ORGN 710.** Stereoselective synthesis of  $sp^3$ -enriched bridged bicyclic systems. **R. Promontorio, J. Richard, C.M. Marson**
- ORGN 711.** Direct synthesis of glycosyl thiols from reducing sugars in water and their application in the thiol-ene click reaction. **S.R. Alexander, A. Fairbanks**
- ORGN 712.** Alkylsilicates as versatile radical precursors in photoredox catalysis. **C.B. Kelly, M. Jouffroy, N. Patel, G.A. Molander**
- ORGN 713.** Copper-catalyzed C-N and C-O bond formation between 2-pyridones and diaryliodonium salts at room temperature. **S. Jung, W. Kim**
- ORGN 714.** Polymerization and isomerization of olefins using sandwich diimine ligands. **A. Kocen, M. Brookhart, O. Daugulis**
- ORGN 715.** Oxammonium salts: Powerful yet practical reagents for oxidation and oxidative functionalization in chemistry. **J. Ovia, C.B. Kelly, T. Hamlin, K.M. Lambert, J. Loman, M.A. Mercadante, W.F. Bailey, L.J. Tilley, N.E. Leadbeater**
- ORGN 716.** Synthesis of thiophenol from the modified Mannich reaction. **H. Lee, J. Heo, C. Shin, J. Kim**
- ORGN 717.** Efficient synthesis of substituted  $\beta$ -naphthol,  $\beta$ -naphthylamine, and  $\beta$ -naphthylthiol derivatives via [4+2] cycloaddition of electron-rich alkynes with isobenzopyrylium ions. **A. Wu, W. Zhao, H. Qian, J. Sun**
- ORGN 718.** Facile sulfa-Michael reactions with sodium arylsulfonates in water: the promotion of water on the reaction. **G. Lu**
- ORGN 719.** Synthesis of  $\beta$ -hydroxysulfones from sulfonyl chlorides and alkenes utilizing visible light photocatalytic sequences. **S. Pagire, S. Paria, O. Reiser**
- ORGN 720.** Novel reaction of enantiomerically pure 4,5-bis(diphenylchloromethyl)-1,3,2-dioxathiolanes oxides. **X. Hu, Z. Shan**
- ORGN 721.** Synthesis of alkynyl sulfides with sodium arenesulfonates in water. **Y. Lin, W. Yi**
- ORGN 722.** Copper-catalyzed oxidative amidation of benzyl alcohols. **S.W. Krabbe, V.S. Chan, T. Franczyk, S. Shekhar**
- ORGN 723.** Iron-catalyzed decarboxylative trifluoromethylation for the synthesis of  $C_{\text{vinyl}}-CF_3$  compounds with togni (II) /DMF system. **J. Ma, W. Yi**
- ORGN 724.** Terminal allenes formation via alkoxide elimination of zirconacycle complexes and cyclization to construct 5-membered rings. **S. Ren, L. Li, Q. Guo, B. Shen**
- ORGN 725.** Heterocycle synthesis via boration methods. **F.B. Meany, S.A. Blum**
- ORGN 726.** Facile access to medium-sized heterocycles via oxidative rearrangement with (poly)cationic hypervalent iodine reagents. **B.T. Kelley, J.C. Walters, S.E. Wengryniuk**
- ORGN 727.** Borane-catalyzed reductive  $\alpha$ -silylation of conjugated esters and amides leaving carbonyl group intact. **Y. Kim, S. Chang**
- ORGN 728.** Catalytic dihalonitromethylation of aldehydes based on a bond cleavage-nitroaldol reaction-acyl transfer sequence. **R. Ding, C. Wolf**
- ORGN 729.** New frontiers in the functionalization of arylsilanes. **J. Morstein, C. Cheng, J.F. Hartwig**
- ORGN 730.** Novel regio- and chemoselective aminolysis of epoxides with primary amines under mild conditions. **J.R. Lizza, G. Moura-Letts**
- ORGN 731.** Purification of Synthetic oligodeoxynucleotides and peptides through catching by polymerization approach. **B. Halami, D. Pokharel, M. Zang, S. Fueangfung, S. Fang**
- ORGN 732.** Synthesis of 1,3,4,5-tetra-substituted pyrazoles from substituted hydrazines and  $\beta$ -ketoesters. **I. Bakanas, G. Moura-Letts**
- ORGN 733.** Bismuth trichloride mediated deprotection of methoxymethyl ethers. **O. Obaro-Best, A. Norfadillah, S. Mattson, R. Sunasee**
- ORGN 734.** Photo-redox catalyzed radical cascade reactions: Efficient methods to construct various heterocycles bearing  $CF_2H$ . **Z. Zhang, W.R. Dolbier**
- ORGN 735.** Exploring trichloroacetimide substitution reactions toward the synthesis of kapakahine C. **A.A. Adhikari, D. Wallach, K.A. Leets, J.D. Chisholm**
- ORGN 736.** Allenic Pauson-Khand route to 5,7-dienones. **J.E. Burchick, K.M. Brummond**
- ORGN 737.** New synthetic bacteri-chlorins with distinct substitution patterns. **Y. Liu, J.S. Lindsey**
- ORGN 738.** Intramolecular [4+4] photocycloadditions of 2-pyridone/silyl enolynes. **B.P. Derstine, S.M. Sieburth**
- ORGN 739.** Green synthesis of isoindolinone salts from 2-arylpyridines and alkenes via rhodium catalyzed C-H functionalization. **N. Upadhyay, C. Cheng**
- ORGN 740.** Inverse FLP approaches for catalytic metal-free hydrogenation of imines and carbonyl compounds. **S. Mummadi, C. Krempner**
- ORGN 741.** Oxidative route to *N,O*-acetals linked to the amide nitrogen of peptides. **S.M. Ibrahim, K.A. Slater, K. Banerjee, G. Obenaus, G. Friestad**
- ORGN 742.** Overcoming challenges in selective Wacker-type oxidation reactions. **C. Chu, D. Ziegler, B. Carr, Z.K. Wickens, R.H. Grubbs**
- ORGN 743.** Transition-metal catalyzed O to S alkyl migrations. **W. Mahy, S. Cabezas-Hayes, C.G. Frost**
- ORGN 744.** Synthesis of 1,2,4-triazoles from substituted hydrazines and imides using basic alumina. **W. Neuhaus, G. Moura-Letts**
- ORGN 745.** Transition metal-catalyzed bromination of terminal alkynes. **S. Ciccarelli, Y. Xing**
- ORGN 746.** Addition of potassium organotrifluoroboronates to *N,S* sulfonyl acetals to provide 1 substituted tetrahydro- $\beta$ -carboline. **J. Zbieg**
- ORGN 747.** One-pot three-component sulfonyl fluoride synthesis: exploiting the reactivity of ammonium sulfonates with NFSI. **J.M. Curto, A.T. Davies, S.W. Bagley, M.C. Willis**
- ORGN 748.** Nuances of aryne chemistry in the context of the triple aryne-tetrazine reaction. **S. Suh, D.M. Chenoweth**
- ORGN 749.** Expanding the combinatorial toolbox: *In situ enzymatic screening* (ISES) undertakings employing enzymes as reporting agents for reaction discovery and catalyst optimization. **R.A. Swyka, G. Malik, S.M. Ramos de Dios, D.B. Berkowitz**
- ORGN 750.** General method for synthesis of tetra-substituted alkenes using chalcogenide alkenes as platform molecules. **J. Chen, R. Qiu, Z. Tang, X. Xu**
- ORGN 751.** Synthesis of new photoactivatable (3-hydroxy-2-naphthyl)methyl (HNH)-protected nitroxyl (HNO) donors. **M.W. Campbell, A.J. Seed, P. Sampson**
- ORGN 752.** Directed C-H functionalization of phosphinic amides. **T. Nguyen, O. Daugulis**
- ORGN 753.** Palladium-catalyzed C-H ethoxycarbonyldifluoromethylation of electron-rich heteroarenes. **C. Shao, Y. Zhang**
- ORGN 754.** Synthesis and characterization of novel chiral ionic liquids. **R.N. Manchanayakage, A. Brown, J. Perry**
- ORGN 755.** Development and application of the domino Michael/Mannich/*N*-alkylation route to *Aspidosperma* alkaloids: asymmetric total syntheses of (-)-aspidospermidine, (-)-tabersonine, and (-)-vincadifformine. **S. Zhao, R.B. Andrade**
- ORGN 756.** Alternative synthesis of unsymmetrically *N*-substituted imidazolium salts. **A. Hinds**
- ORGN 757.** Fluoroalkylations of aromatics, heteroaromatics, and alkenes. **Y. Choi, C. Yu, E. Cho**
- ORGN 758.** Base mediated cyclopropanation reactions of ketone enolates. **D. Sun, M.E. Jung, T.A. Dwight**
- ORGN 759.** Synthesis of trisubstituted pyridines via regioselective Suzuki cross coupling reactions. **C. Park, I. Oh, W. Kim**
- ORGN 760.** Scalable synthesis of anomerically pure fully orthogonal protected Glc-N<sub>3</sub> and Gal-N<sub>3</sub> from inexpensive glucosamine. **E. Glibstrup, C.M. Pedersen**
- ORGN 761.** Direct Csp<sup>3</sup>-H cross coupling enabled by catalytic generation of halogen atoms. **B.J. Shields, A.G. Doyle**
- ORGN 762.** Novel method for the generation of synthetically useful protected phenols. **J. Lee**
- ORGN 763.** New reactions using the alkyamide functional group. **S.P. Mulcahy**
- ORGN 764.** Anhydrous tetramethylammonium fluoride for room-temperature S<sub>2</sub>Ar fluorination. **S.D. Schimler, S.J. Ryan, D.C. Bland, M.S. Sanford**
- ORGN 765.** Stereospecific and regioselective Suzuki-Miyaura arylation of allylic carboxylates to afford quaternary stereocenters. **M.P. Watson, J.M. Rabb-Lynch, K.M. Cobb**
- ORGN 766.** Novel approach for the direct synthesis of nitriles from aldehydes in ionic liquids. **D. Quinn, G. Haun, G. Moura-Letts**
- ORGN 767.** Intramolecular dehydro-Diels-Alder reaction as a complementary approach to the synthesis of indoles and dihydroindoles. **A. Bober, K.M. Brummond**
- ORGN 768.** Withdrawn.
- ORGN 769.** Methodology testing on complex substrate, estherone. **J. Lee, Y. Xing**
- ORGN 770.** Green expeditious synthesis of medicinally privileged chromene[4,3-*b*]chromen-6(7*H*)-ones. **D. Bandyopadhyay, V.M. Cano, I.M. Chapa**
- ORGN 771.** Fast and green one-pot multicomponent synthesis of substituted thiazolidin-4-ones. **D. Bandyopadhyay, S.S. Huerta, A. Pardo, B. Garza**
- ORGN 772.** Synthesis of pronucleotide 5'-phosphoramidate monoesters. **J. Leone, S. Silverman, B. Simmons, A. Klapars, Z. Liu**
- ORGN 773.** C-C bond formation using visible light: Photocycloadditions catalyzed by iridium and ruthenium polypyridyl complexes. **S. Shahid, A. Shrestha, E.C. McLaughlin**
- ORGN 774.** Intermolecular Lewis acid-catalyzed cycloaddition reactions of epoxides proceeding with C-O bond cleavage. **L.A. Combee, W.G. Shuler, I. Falk, M.K. Hillinski**
- ORGN 775.** Organocatalytic methods for site-selective aliphatic C-H bond hydroxylation. **W.G. Shuler, D. Wang, C. Pierce, M.K. Hillinski**
- ORGN 776.** Synthesis of borazines from 1, 2-aminoalcohol. **L. Santiago, M. De Jesus-Flores, J. Ramos, M. Ortiz-Marciales**
- ORGN 777.** Iron-catalyzed selective oxyfunctionalization of C-H bonds in amines. **C. Mbofana, E. Chong, J. Lawniczak, M.S. Sanford**
- ORGN 778.** Selective hydrogenolysis the (2-naphthyl)methyl ethers in the presence of sulfides and benzyl ethers. **P.O. Adero**

**ORGN 779.** Diastereoselective, site-selective, and enantiospecific synthesis of 1,3-amino alcohols via azaallyl anion ring-opening of epoxides. P. Daniel

**ORGN 780.** Intramolecular pyridone / benzene [4+3] meta photocyclization. C. Stockdale, S.M. Sieburth

**ORGN 781.** Organocatalytic chiral oxygenations: anti 1,2-diols from  $\alpha$ -oxaldehydes and  $\alpha,\beta,\gamma$ -trioxygenation of enals. G.A. Abeykoon, S. Chatterjee, J.S. Chen

**ORGN 782.** Functionalization of alkyl C-N bonds via nickel-catalyzed Suzuki-Miyaura cross-couplings. C. Basch, J. Plane, J. Liao

**ORGN 783.** Catalytic borylation of methane: A low barrier high throughput approach. S. Berritt, K.T. Smith, M. Gonzalez Moreiras, S. Ahn, M.R. Smith, M. Baik, D.J. Mindiola

**ORGN 784.** Z-selective cross metathesis with 3(E)-1,3-dienes. J. Cannon, S. Luo, K. Engle, B.L. Taylor, K.N. Houk, R.H. Grubbs

## PHYS

### Division of Physical Chemistry

G. Engel, Program Chair

#### OTHER SYMPOSIA OF INTEREST:

**Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine** (see ANYL, Tue, Wed)

**Vibrational Nanospectroscopy for Chemical & Biochemical Analysis** (see ANYL, Mon, Thu)

**Computational Study of Water** (see COMP, Wed)

**Elucidating the Molecular-Level Interactions between Biological Membranes & Engineered Nanomaterials** (see COLL, Tue, Wed, Thu)

**Nanostructured Interfaces: From Fundamentals of Sensing & Catalysis to Applications** (see COLL, Mon, Tue, Wed, Thu)

**Recent Advances in Modeling & Simulations of Synthetic Polymers & Biopolymers** (see PMSE, Wed, Thu)

## SUNDAY MORNING

### Section A

DoubleTree by Hilton Hotel Philadelphia Center City  
Ormandy East

#### Advanced Potential Energy Surfaces

#### Classical Simulation Models & Methods

Cosponsored by COMP

C. Skylaris, Organizer

T. L. Head-Gordon, Organizer, Presiding

**8:00 PHYS 8.** Beyond Born-Mayer: Improved models for short-range repulsion and atomic anisotropy in standard force field. J.R. Schmidt

**8:30 PHYS 9.** Calibration of the AMOEBA Force Field Against ab Initio EDA Methods. J. Rackers, J.W. Ponder

**9:00 PHYS 10.** Ongoing developments in the Drude polarizable force field for biomolecules. A.D. Mackerell

**9:30 PHYS 11.** Efficient solutions of classical polarization using hybrid extended Lagrangian/self-consistent methods. A. Albaugh, T.L. Head-Gordon, O. Demerdash

**9:50** Intermission.

**10:00 PHYS 12.** Many-body potential energy surfaces with chemical and spectroscopic accuracy. F. Paesani, P. Bajaj, M. Riera, S. Straight

**10:30 PHYS 13.** Polarizable multipole based nucleic acid force field. P. Ren, C. Zhang, C. Lv, J.W. Ponder

**11:00 PHYS 14.** Many-body expansion for energy and forces for classical polarization and its parallel implementation. O. Demerdash

### Section B

DoubleTree by Hilton Hotel Philadelphia Center City  
Aria A/B

#### Dynamics of Natural & Artificial Systems For Energy Conversion: Insights Gained from Spectroscopic Methods & Theory

#### Proton & Electron Transfer Reactions in Natural & Artificial Systems

Financially supported by Coherent

J. M. Anna, A. Nitzan, Organizers

M. R. Wasielewski, Organizer, Presiding

**8:00 PHYS 15.** How exciton-vibrational coherences control charge separation in the photosystem II reaction center. R. van Grondelle, V. Novoderezhkin, E. Romero, P. Maly

**8:35 PHYS 16.** Probing and exploiting vibronic coupling in charge transfer processes in metal chromophores. M. Delor, I. Sazanovich, S. Archer, T. Keane, P.A. Scattergood, A.W. Parker, A.J. Meijer, M. Towrie, J.A. Weinstein

**9:10 PHYS 17.** Role of frustration in electron transfer reactions confined within layered manganese dioxides. R. Remsing

**9:30** Intermission.

**9:50 PHYS 18.** Electrochemical and photoinduced proton-coupled electron transfer in energy conversion processes. S. Hammes-Schiffer

**10:25 PHYS 19.** Photobasicity: Thermodynamics, kinetics, and biological applications. J. Dawlaty, E. Driscoll

**11:00** Presentation by Sponsor - Coherent.

**11:10** Intermission.

**11:20 PHYS 20.** Multithermal currents in charge transfer reaction networks. G. Craven, A. Nitzan

**11:40 PHYS 21.** Photoinduced electron and energy transfer within supramolecular donor-acceptor peptide nanostructures under aqueous conditions. T.J. Magnanelli, A.M. Sanders, J.D. Tovar, A.E. Bragg

### Section C

DoubleTree by Hilton Hotel Philadelphia Center City  
Concerto A/B

#### Frontiers of Solar System Chemistry: Planets to Comets & Beyond

#### Missions, Observatories & Laboratory Needs

R. L. Hudson, S. N. Milam, Organizers, Presiding

**8:00** Introductory Remarks.

**8:05 PHYS 22.** Laboratory and theoretical work applied to the inference of the chemical composition of the atmospheres of Titan and of other icy moons. A. Coustenis

**8:40 PHYS 23.** Volatiles and isotopes, and the exploration of ancient and modern Martian habitability with the Curiosity rover. P.R. Mahaffy

**9:15 PHYS 24.** Development of an extraterrestrial organic analyzer (EOA) for highly sensitive organic detection on a European kinetic penetrator. A.M. Stockton, Z. Duca, T. Cantrell, G. Tan, M. Van Enige, M. Dorn, M. Cato, S. Foreman, J. Kim, P. Putman, A. Butterworth, P. Turin, R.A. Mathies

**9:35** Intermission.

**9:50 PHYS 25.** Exploration of Pluto and the Kuiper Belt by New Horizons. H. Weaver

**10:25 PHYS 26.** Recent advances in understanding the formation and distribution of complex organic material in the atmosphere of comets. A. Remijan, S.N. Milam, M. Cordiner

**11:00 PHYS 27.** Observations of Titan with the James Webb Space Telescope. C. Nixon, R. Achterberg, M. Adamkovic, B. Bezard, G. Bjoraker, T. Cornet, A. Hayes, E. Lellouch, M. Lemmon, M. Lopez-Puertas, S. Rodriguez, C. Sotin, N. Teanby, E. Turtle, R. West

### Section D

DoubleTree by Hilton Hotel Philadelphia Center City  
Assembly E

#### Intrinsically Disordered Proteins: Structure, Function & Interactions

J. Mittal, Organizer

N. Fawzi, Organizer, Presiding

**8:00** Introductory Remarks.

**8:05 PHYS 28.** Atomistic and coarse-grained modeling of histone cores and tails. G. Papoian

**8:35 PHYS 29.** Structural biophysics of intrinsically disordered proteins. S.A. Showalter, E.B. Gibbs

**9:05 PHYS 30.** Structural effects of phosphorylation and O-GlcNAcylation: phosphothreonine is a uniquely ordered amino acid, with a large disorder-to-order transition on threonine phosphorylation. N.J. Zondlo

**9:35** Intermission.

**9:55 PHYS 31.** Challenges of developing biomolecular force fields for the accurate simulation of both ordered and disordered states. S. Piana-Agostinetti, P. Robustelli, D. Tan, D.E. Shaw

**10:25 PHYS 32.** Characterization of A $\beta$  monomers with multiple force fields and high pressure NMR. C. Wang, D. Rosenman, N. Clemente, A.E. Garcia

**10:55 PHYS 33.** Dynamic and structural characterization of intrinsically disordered peptides via molecular simulations. G.H. Zerze, S.M. Vaiana, J. Mittal

**11:15 PHYS 34.** Elucidating the structure and dynamics of RNA polymerase II C-terminal domain in complex with cancer-linked FET protein assemblies. A. Janke, N. Fawzi

### Section E

DoubleTree by Hilton Hotel Philadelphia Center City  
Assembly F

#### Physical Chemistry Meets AMO

M. C. Heaven, Organizer

K. Brown, Organizer, Presiding

**8:00 PHYS 35.** Attosecond dynamics: A time resolved x-ray spectroscopic revolution. S.R. Leone

**8:45 PHYS 36.** Optical multidimensional coherent spectroscopy of atomic vapors and quantum dots. S. Cundiff, T. Suzuki, D. Almeida, H. Li

**9:30 PHYS 37.** Shape and Feshbach resonances of uracil. S. Matsika, M. Fennimore

**10:00** Intermission.

**10:15 PHYS 38.** Crossroads between chemical dynamics, molecular spectroscopy and condensed-matter physics. R. Krems

**11:00 PHYS 39.** Novel spectroscopic use for the velocity mapped ion imaging technique: Doppler-imaged state spectroscopy for visualization of broadening and splitting in metastable Kr transitions. D.W. Chandler, J. Guzman, J.D. Steill, L.M. Culbertson

### Section F

DoubleTree by Hilton Hotel Philadelphia Center City  
Maestro B

#### Physical Chemistry of Atmospheric Processes

#### Halogen & Aerosol Chemistry

E. C. Browne, P. Ziemann, Organizers, Presiding

**8:00 PHYS 40.** First kinetic study of the reactions of BrHg<sup>+</sup> with atmospherically abundant free radicals. Y. Jiao, T.S. Dibble

**8:20 PHYS 41.** Chemistry at interfaces over tropical oceans. R. Volkamer, T. Koening, Y. Miyazaki, B. Dix, E.C. Apel, R. Chiu, S. Wang, R. Sommariva, R. von Glasow

**8:55 PHYS 42.** Chlorine-initiated oxidation of isoprene: Observation of secondary hydroxyl radical chemistry by a high resolution time-of-flight chemical ionization mass spectrometer. D. Wang, L. Hildebrandt Ruiz

**9:15 PHYS 43.** Partitioning and activation of reactive chlorine during the WINTER C-130 aircraft campaign: implications for wintertime oxidant budgets. J.A. Thornton, F. Lopez-Hilfiker, B. Lee, J. Haskins, V. Shah, L. Jaegle, D.L. Fibiger, E. McDuffie, P. Veres, S.S. Brown, T. Sparks, C. Ebben, P. Wooldridge, R.C. Cohen, J. DiGangi, G.M. Wolfe, J. Dibb, J. Schroder, P. Campuzano-Jost, D.A. Day, J.L. Jimenez, A. Sullivan, H. Guo, R. Weber, A. Weinheimer, T. Campos

**9:50 PHYS 44.** Multiphase chlorine chemistry in biomass burning emissions. A. Ahern, L. Goldberger, L. Jahn, L. Jahl, J.A. Thornton, R.C. Sullivan

10:10 Intermission.

10:30 **PHYS 45.** Volatility means not having to say you're sticky. N.M. Donahue

11:05 **PHYS 46.** Atmospheric conditions governing aerosol particle phase organic reaction. M. Kalberer

11:40 **PHYS 47.** Processing of ambient aerosol upon transport to the indoor environment in Philadelphia winter. A. Johnson, M. Waring, P.F. DeCarlo

### Modeling Water & Solvation in Biochemistry: Developments & Applications

Sponsored by COMP, Cosponsored by PHYS

### Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation

Sponsored by COMP, Cosponsored by PHYS and POLY

### Quantum Mechanics

Sponsored by COMP, Cosponsored by PHYS

## SUNDAY AFTERNOON

### Section A

DoubleTree by Hilton Hotel Philadelphia Center City

Ormandy East

### Advanced Potential Energy Surfaces

#### Classical Simulation Methods & Software

Cosponsored by COMP

T. L. Head-Gordon, C. Skylaris, *Organizers*

A. MacKerel, *Presiding*

1:00 **PHYS 48.** Fast tree method for multipolar electrostatic interactions. H.A. Boateng

1:30 **PHYS 49.** Molecular dynamics calculations with very large time steps on advanced potential energy surfaces. M.E. Tuckerman

2:00 **PHYS 50.** Lessons learned in building polarizable and fixed-charge water models. L. Wang

2:30 **PHYS 51.** Improving free energy calculations with non-Boltzmann Bennett reweighting using QM and AMOEBA. F.C. Pickard, G. Koening, A.C. Simmonett, Y. Shao, B. Brooks

2:50 Intermission.

3:00 **PHYS 52.** Improving the accuracy of dispersion interactions through Lennard-Jones lattice summation. E.R. Lindahl

3:30 **PHYS 53.** Polarizable QM/MD simulations with the AMOEBA. J.A. Piquemal

4:00 **PHYS 54.** Multipolar electrostatics performance within domain decomposition. I. Todorov, H.A. Boateng

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

### Section B

DoubleTree by Hilton Hotel Philadelphia Center City

Ormandy West

### Advances in Biological Imaging

J. S. Biteen, L. J. Webb, *Organizers*

A. B. Hummon, *Organizer, Presiding*

1:00 **PHYS 55.** IR MALDES: A novel molecular microscopy tissue imaging strategy. D.C. Muddiman

1:40 **PHYS 56.** Advances in ambient ionization mass spectrometry for molecular imaging of biological tissues. L. Schiavinato Eberlin

2:20 **PHYS 57.** Cell-by-cell profiling of metabolic activity in the developing embryo. P. Nemes, R. Onjiko, E. Portero, S.A. Moody

3:00 Intermission.

3:20 **PHYS 58.** Illuminating tumor types: the road to precision medicine. R. Heeren

4:00 **PHYS 59.** Advancing our understanding of biology with imaging secondary ion mass spectrometry (SIMS). L. Gamble

4:40 **PHYS 60.** Characterization of theranostic nanoparticles by scanning transmission and energy filtered electron microscopies. M.A. Aronova, A.A. Sousa, R.D. Leapman

### Section C

DoubleTree by Hilton Hotel Philadelphia Center City

Aria A/B

### Dynamics of Natural & Artificial Systems for Energy Conversion: Insights Gained from Spectroscopic Methods & Theory

Financially supported by Coherent

J. M. Anna, A. Nitzan, M. R. Wasielewski, *Organizers*

S. T. Roberts, *Presiding*

1:00 **PHYS 61.** Capturing intermediates of molecular solar fuels catalysts by femto- and nanosecond mid-IR spectroscopy. L. Hammarstrom, R. Lomoth, S. Ott

1:35 **PHYS 62.** Ultrafast structural dynamics of transition metal complexes and oxides for solar energy conversion. L.X. Chen, D.K. Hayes, R. Hadt, J. Hong, M.L. Shelby, N. Jackson, M.S. Kelley

2:10 **PHYS 63.** Understanding electron dynamics in mixed metal oxide catalysts showing high selectivity for photo-electrochemical CO<sub>2</sub> reduction to acetate. L. Baker

2:30 Intermission.

2:45 **PHYS 64.** Carrier-specific dynamics in hybrid perovskite photovoltaics probed with transient XUV spectroscopy. J. Vura-Weis, M. Lin, M.A. Verkamp, E.S. Ryland, K. Benke

3:20 **PHYS 65.** Bulk carrier dynamics in organo-halide perovskites without growing bulk crystals through surface passivation. J.B. Asbury

3:55 Intermission.

4:05 **PHYS 66.** Accessing triplet states for exciton fission and fusion in organic semiconductors. C.J. Bardeen

4:40 **PHYS 67.** Controlling charge recombination in conjugated block-copolymer photovoltaics by chemical design of their covalent linkage. C. Grieco, M.P. Aplan, A. Rimshaw, Y. Lee, T. Le, E.D. Gomez, J.B. Asbury

### Section D

DoubleTree by Hilton Hotel Philadelphia Center City

Concerto A/B

### Frontiers of Solar System Chemistry: Planets to Comets & Beyond

#### Chemistry, Moons & Small Bodies: Ice & Rock

S. N. Milam, *Organizer*

R. L. Hudson, *Organizer, Presiding*

M. J. Loeffler, *Presiding*

1:00 **PHYS 68.** Chemical and isotopic diversity of cometary volatiles: A window on evolutionary processes from the interstellar medium to icy planetesimals. M.J. Mumma

1:35 **PHYS 69.** Chemical origin of the colors of objects in the outer solar system and the Kuiper belt object-Jupiter Trojan connection. M. Brown

2:10 **PHYS 70.** Implications of recent measurements of the photodissociation of N<sub>2</sub>, O<sub>2</sub>, CO, and CO<sub>2</sub> in the windowless region of the vacuum ultraviolet (VUV) on cometary, planetary, and interstellar chemistry. K. Liu, Y.C. Chang, C. Ng, W.M. Jackson

2:30 Intermission.

2:45 **PHYS 71.** Compositions in the Pluto system as Investigated by New Horizons. W. Grundy, D. Cruikshank, C. Olkin, S. Stern, K. Ennico-Smith, L. Young, H. Weaver

3:20 **PHYS 72.** PAHs, Dust and ice in the solar system. A.L. Mattioda, G. Cruz-Diaz

3:55 **PHYS 73.** Methanol photolysis in the production of organic matter during solar system formation. S.L. Widicus Weaver, M. McCabe, C. Powers, S. Zinga

### Section E

DoubleTree by Hilton Hotel Philadelphia Center City

Assembly E

### Intrinsically Disordered Proteins: Structure, Function & Interactions

N. Fawzi, J. Mittal, *Organizers*

S. A. Showalter, *Presiding*

1:00 **PHYS 74.** All-atom models for intrinsically disordered proteins: Structure, dynamics and experimental interpretation. W. Zheng, G. Zerze, A. Borgia, M. Borgia, H. Hofmann, B. Schuler, J. Mittal, R.B. Best

1:30 **PHYS 75.** Post-translational modifications and membrane composition influence the interaction of huntingtin with lipid membranes. J.A. Legleiter, M. Chaibva, X. Gao

2:00 **PHYS 76.** Characterizing the free energy landscape of intrinsically disordered proteins by metadynamics simulation and experiments. D. Granata, G. Zerze, J. Mittal, M. Vendruscolo, A. Laio

2:30 Intermission.

2:50 **PHYS 77.** Ramachandran map analysis of the monomeric Aβ1-40 and Aβ1-42 peptides by solution NMR reveals very similar random coil distributions. J. Roche, A. Bax

3:20 **PHYS 78.** Characterizing disorder to order transitions in proteins. C. Stultz

3:50 **PHYS 79.** Computational methods and models for intrinsically disordered peptides. T.L. Head-Gordon

### Section F

DoubleTree by Hilton Hotel Philadelphia Center City

Assembly F

### Physical Chemistry Meets AMO

K. Brown, M. C. Heaven, *Organizers*

B. Odom, *Presiding*

1:00 **PHYS 80.** Ultracold molecular assembler. K. Ni

1:45 **PHYS 81.** Ultracold molecules and chemistry. R. Cote

2:30 **PHYS 82.** Towards state-resolved ultracold chemical reactions with KRb molecules. Y. Liu, Y. Chen, M. Hu

3:00 Intermission.

3:15 **PHYS 83.** Towards quantum-state-resolved charged-neutral chemistry. E.R. Hudson

4:00 **PHYS 84.** AMO methods for precise studies of chemical reactions. S. Willitsch

### Section G

DoubleTree by Hilton Hotel Philadelphia Center City

Maestro A

### Physical Chemistry of Atmospheric Processes

#### Aerosol Chemistry

P. Ziemann, *Organizer*

E. C. Browne, *Organizer, Presiding*

J. Thornton, *Presiding*

1:00 **PHYS 85.** Organic photosensitizer chemistry in atmospheric aerosols: New insights from laboratory and modeling studies. V.F. McNeill, W.G. Tsui, Y. Rao

1:35 **PHYS 86.** Enrichment of organic matter and carbohydrates in nascent sea spray aerosol. T. Jayaratne, R. Cochran, C. Lee, C. Sultana, K. Moore, C. Cappa, T. Bertram, K.A. Prather, V.H. Grassian, E.A. Stone

2:10 **PHYS 87.** Marine atmospheric particle chemical composition in the Arctic. K.A. Pratt, R. Kirpes, M. Gunsch, A.P. Ault, B. Alexander, T. Barrett, R.J. Sheesley, A. Laskin, B. Wang, S. China

2:45 Intermission.

3:05 **PHYS 88.** Atmospheric processing and novel source identification of aerosols over Antarctica. M. Giordano, L. Kalnajs, A. Johnson, J.D. Goetz, S. Davis, T. Deshler, P.F. DeCarlo

3:40 **PHYS 89.** Sea spray aerosol – it's not just salt: Molecular characterization, hygroscopicity and heterogeneous reactivity of the organic and biological components. V.H. Grassian

4:15 **PHYS 90.** Constraining the importance of nocturnal chemistry to particle nitrate production in the San Joaquin Valley. C. Cappa, G. Prabhakar, X. Zhang, C. Parworth, Q. Zhang, D. Young, H. Kim, S. Pusede, R.C. Cohen, L. Ziemba, A. Beyersdorf, J.B. Nowak, T. Bertram



## Modeling Water & Solvation in Biochemistry: Developments & Applications

Sponsored by COMP, Cosponsored by PHYS

## Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation

Sponsored by COMP, Cosponsored by PHYS and POLY

## MONDAY MORNING

### Section A

DoubleTree by Hilton Hotel Philadelphia Center City

Ormandy East

### Advanced Potential Energy Surfaces

#### QM with MM

Cosponsored by COMP

T. L. Head-Gordon, C. Skylaris, *Organizers*

Y. Shao, *Presiding*

**8:00 PHYS 91.** Density functional theory for non-covalent interactions: Recent advances and implications for QM/MM. M.P. Head-Gordon

**8:30 PHYS 92.** BioEFP: polarizable embedding in biological systems. L.V. Slipchenko

**9:00 PHYS 93.** Modeling of electrostatics and polarization effects in embedded systems within quantum chemical approaches. B. Mennucci

**9:30 PHYS 94.** How do extended Lagrangian schemes perform for classical polarizable force fields and density functional theory? V. Vitale, A. Albaugh, J. Dziedzic, T.L. Head-Gordon, C. Skylaris

**9:50** Intermission.

**10:10 PHYS 95.** Implementation and assessment of the AMOEBA water model for fully polarizable QM/MM calculations. Y. Mao, Y. Shao, T.L. Head-Gordon, M.P. Head-Gordon

**10:30 PHYS 96.** DFTB3: recent developments. Q. Cui

**11:00 PHYS 97.** How carbohydrate-active enzymes work. Insights from QM/MM metadynamics simulations. L. Raich, J. Iglesias-Fernández, A. Ardèvol, C. Rovira Virgili

**11:30 PHYS 98.** Polarizable QM/MM based on the AMOEBA force field and linear-scaling DFT. J. Dziedzic, Y. Mao, Y. Shao, M.P. Head-Gordon, T.L. Head-Gordon, C. Skylaris

### Section B

DoubleTree by Hilton Hotel Philadelphia Center City

Ormandy West

### Advances in Biological Imaging

J. S. Biteen, A. B. Hummon, *Organizers*

L. J. Webb, *Organizer, Presiding*

**8:00 PHYS 99.** Nanoscience approaches to heterogeneity in biological systems. P.S. Weiss

**8:40 PHYS 100.** Plasmonic views of lipid membranes on gold nanorods. J.H. Hafner, J. Matthews, C. Payne, S. Demmers, G. Isakson, C. Shirazinejad

**9:20** Intermission.

**9:40 PHYS 101.** Terminal alkynes as Raman probes of  $\alpha$ -Synuclein amyloid formation. J.D. Flynn, J.C. Lee

**10:00 PHYS 102.** Label-free super-resolution microscopy. R.R. Frontiera

**10:40 PHYS 103.** Fast relaxation imaging of protein structure, stability, and folding in biomaterial environments with variable crowding. L. Kisley, P.V. Braun, M. Grubele, D.E. Leckband

### Section C

DoubleTree by Hilton Hotel Philadelphia Center City

Aria A/B

### Dynamics of Natural & Artificial Systems For Energy Conversion: Insights Gained from Spectroscopic Methods & Theory

Financially supported by Coherent

J. M. Anna, A. Nitzan, M. R. Wasielewski, *Organizers*

J. Vura-Weis, *Presiding*

**8:00 PHYS 104.** Designer nanocrystalline materials for photovoltaics. C.R. Kagan, D. Straus, E. Goodwin, E.A. Gaulding, S. Oh, C.B. Murray

**8:35 PHYS 105.** Two birds with one stone: Tailoring singlet fission for both triplet yield and exciton diffusion length. T. Zhu, Y. Wan, G. Zhi, J.C. Johnson, L. Huang

**8:55** Intermission.

**9:10 PHYS 106.** Enabling singlet fission by controlling intramolecular charge transfer in  $\pi$ -stacked covalent terrylenediimide dimers. M.R. Wasielewski, E. Margulies, C.E. Miller, Y. Wu, L. Ma, R. Young, G. Schatz

**9:45 PHYS 107.** Singlet Fission in isolated molecular dimers and in amorphous thin films. S.E. Bradforth

**10:20** Intermission.

**10:30 PHYS 108.** Dynamics at the donor/acceptor interface in organic solar cells. J.E. Bredas

**11:05 PHYS 109.** Utilizing singlet fission materials to repackaged solar energy. A.K. Le, J.A. Bender, R. Pandey, A.P. Moon, S.T. Roberts

**11:40 PHYS 110.** Withdrawn.

### Section D

DoubleTree by Hilton Hotel Philadelphia Center City

Assembly E

### Intrinsically Disordered Proteins: Structure, Function & Interactions

N. Fawzi, J. Mittal, *Organizers*

R. B. Best, *Presiding*

**8:00 PHYS 111.** Regulation of intrinsically disordered peptides. J.E. Shea

**8:30 PHYS 112.** Experimental assessment of the conformational distribution of a disordered peptide. F. Gai

**9:00 PHYS 113.** Sequence determinants of the phase behavior of intrinsically disordered proteins. R.V. Pappu

**9:30** Intermission.

**9:50 PHYS 114.** Liquid structure of elastin. R. Pomes

**10:20 PHYS 115.** Elastin and beyond: New peptide polymers that display aqueous coacervation behavior. A. Chilkoti

**10:50 PHYS 116.** Towards reliable atomistic simulation of disordered protein ensembles. J. Chen

### Section E

DoubleTree by Hilton Hotel Philadelphia Center City

Assembly F

### Physical Chemistry Meets AMO

K. Brown, M. C. Heaven, *Organizers*

E. R. Hudson, *Presiding*

**8:00 PHYS 117.** Probabilistic rotational state preparation of a single molecular ion through consecutive partial projection measurements. M. Drewsen

**8:45 PHYS 118.** Direct laser cooling and trapping of polar molecules. D. McCarron, M. Steinecker, Y. Zhu, E. Norrgard, D. DeMille

**9:30** Intermission.

**9:45 PHYS 119.** Adding trapped molecules to the quantum toolkit. B. Odom

**10:30 PHYS 120.** Effect of conical intersections on chemical reactivity of ultracold molecules in optical potential. S. Kotochigova

### Section F

DoubleTree by Hilton Hotel Philadelphia Center City

Maestro A

### Physical Chemistry of Atmospheric Processes

#### Characterization of Emissions

E. C. Browne, P. Ziemann, *Organizers*

C. Cappa, E. A. Stone, *Presiding*

**8:00 PHYS 121.** Mass spectral characterization of aerosol emissions from South Asian combustion sources. J.D. Goetz, M. Giordano, C. Stockwell, T. Christian, P. Bhave, P. Praveen, A. Panday, T. Jayaratne, E.A. Stone, R. Yokelson, P.F. DeCarlo

**8:20 PHYS 122.** Measurements of volatile organic compounds in the atmosphere using a novel  $H_2O^+$  time-of-flight chemical ionization mass spectrometry instrument. J. de Gouw, A. Koss, B. Yuan, M. Coggon, K. Sekimoto, P. Veres, J.M. Roberts, B. Lerner, J. Gilman, C. Warneke

**8:55 PHYS 123.** Following emissions from non-traditional oil and gas development through their impact on tropospheric ozone. E.V. Fischer, D. Farmer, I.B. Pollack, A. Abeleira, J. Lindaas, Z. Tzompa Sosa, J. Zaragoza, E. Emerson, F. Flocke, J.R. Roscioli, S.C. Herndon

**9:30 PHYS 124.** Sources of secondary organic aerosol in the Front Range of Colorado. R. Bahreini, K.K. Vu, J. Dingle, R. Ahmadov, S. McKeen, E.C. Apel, T.L. Campos, C. Cantrell, F. Flocke, A. Fried, J. Gilman, S.C. Herndon, A.H. Hills, R.S. Hornbrook, G. Huey, L. Kaser, B. Lerner, R. Mauldin, D.D. Montzka, J.B. Nowak, D. Richter, J. Roscioli, S. Shertz, M. Stell, D. Tanner, G.S. Tyndall, J. Walega, P. Weibring, A. Weinheimer

**10:05** Intermission.

**10:25 PHYS 125.** VOC emissions from gasoline vehicles: high time resolution VOC profiles and implications for future fleet emissions and pollutant formation. G. Drozd, Y. Zhao, B. Frodin, R. Saleh, G. Saliba, H. Maldonado, S. Sardar, A. Robinson, A. Goldstein

**10:45 PHYS 126.** Studies of the selective transfer of biological species from the ocean to the atmosphere. K.A. Prather

**11:20 PHYS 127.** Emission and chemical transformation of marine volatile organic compounds.. T.H. Bertram, M. Kim, M. Zoerb

### Section G

DoubleTree by Hilton Hotel Philadelphia Center City

Maestro B

### Metal & Semiconductor Nanoclusters with Atomic Precision: Fundamentals & Applications

M. Sfeir, G. Wang, J. Zheng, *Organizers*

R. Jin, *Organizer, Presiding*

**8:00 PHYS 128.** Magic-size semiconductor nanoclusters in the (II-VI)<sub>13</sub> and (II-VI)<sub>34</sub> families. Y. Zhou, Y. Wang, F. Wang, W.E. Buhro

**8:35 PHYS 129.** Nanoscale building blocks in solid-state chemistry. X. Roy

**9:10** Intermission.

**9:25 PHYS 130.** Periodicities in atomically precise gold nanoclusters. C. Zeng, R. Jin

**9:45 PHYS 131.** Atomically precise doping and size control of silver nanoclusters. O.M. Bakr

**10:20 PHYS 132.** Role of magic-sized clusters in the growth of InP quantum dots. B.M. Cossairt, D. Gary

**10:55 PHYS 133.** Gold nanoclusters for the highly chemoselective hydrogenation of nitrobenzaldehyde. G. Li

## Modeling Water & Solvation in Biochemistry: Developments & Applications

Sponsored by COMP, Cosponsored by PHYS

## Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation

Sponsored by COMP, Cosponsored by PHYS and POLY

## Pioneering Single Molecule Detection under Ambient, Aqueous Conditions: A Tribute to Richard Keller

Sponsored by ANYL, Cosponsored by PHYS

## Quantum Mechanics

Sponsored by COMP, Cosponsored by PHYS

## QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications

Sponsored by COMP, Cosponsored by PHYS

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## MONDAY AFTERNOON

## Section A

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Ormandy East

## Advanced Potential Energy Surfaces

Excited State Surfaces  
& Spectroscopy

Cosponsored by COMP

T. L. Head-Gordon, *Organizer*

C. Skylaris, *Organizer, Presiding*

1:00 **PHYS 134.** Fragment-based models for calculating accurate potential energy surfaces and spectroscopic properties of large molecules and nanoscale systems. K. Raghavachari

1:30 **PHYS 135.** Spin-flip time-dependent density functional theory for exploring excited-state potential energy surfaces. X. Zhang, J. Herbert

2:00 **PHYS 136.** Ground and excited state ab initio molecular dynamics using graphical processing units. T.J. Martinez

2:30 **PHYS 137.** Excited-state dynamics of mPlum fluorescent protein. S. Faraji, A. Krylov

2:50 Intermission.

3:10 **PHYS 138.** Smoothing out excited-state dynamics: Dynamically weighted multiconfigurational self-consistent field. W.J. Glover

3:30 **PHYS 139.** Autoionizing resonances as gateway states for electron-attachment induced chemistry. K.B. Bravaya

4:00 **PHYS 140.** Role of excited states in determining the electronic structure and reactivity of complex molecular systems. S. Xantheas

## Section B

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Ormandy West

## Advances in Biological Imaging

J. S. Biteen, L. J. Webb, *Organizers*

A. B. Hummon, *Organizer, Presiding*

1:00 **PHYS 141.** MALDI mass spectrometric imaging (MSI) of endogenous signaling molecules in biological systems. L. Li

1:40 **PHYS 142.** Is the site of influenza virus assembly and budding enriched with cholesterol and sphingolipids? M.L. Kraft, A.N. Yeager, P.K. Weber, J. Zimmerberg

2:20 **PHYS 143.** Spatial metabolomics: Molecular annotation, visualization, and interpretation. T. Alexandrov

3:00 Intermission.

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

3:20 **PHYS 144.** Tunable fluidic device for modeling the invasive tumor microenvironment in a colon carcinoma three dimensional tumor model. E. Weaver, A.B. Hummon, P. Zorlutuna

4:00 **PHYS 145.** Single-molecule fluorescence probes interaction between individual nanoparticles and proteins. D. Wang, D.K. Schwartz

## Section C

DoubleTree by Hilton Hotel Philadelphia  
Center City

Aria A/B

## Dynamics of Natural &amp; Artificial Systems For Energy Conversion: Insights Gained from Spectroscopic Methods &amp; Theory

Financially supported by Coherent

A. Nitzan, M. R. Wasielewski, *Organizers*

J. M. Anna, *Organizer, Presiding*

1:00 **PHYS 146.** Two-dimensional electronic spectroscopy of light-harvesting complexes. T.C. Jansen, R. Tempelaar

1:35 **PHYS 147.** Coarse-grained simulation of long range exciton dynamics in aggregates of light harvesting 2 (LH<sub>2</sub>) complexes of purple bacteria. S. Jang

2:10 **PHYS 148.** Chromophore specific spectral density of the Fenna-Matthews-Olson complex from dynamics simulations with first-principle quantum chemistry data. Y.M. Rhee, C.W. Kim

2:30 Intermission.

2:45 **PHYS 149.** Coherence in ultrafast chemistry. G.D. Scholes

3:20 **PHYS 150.** Electronic-Vibrational multidimensional spectroscopy to elucidate the origin of coherences in photosynthetic systems. E. Harel

3:55 Intermission.

4:05 **PHYS 151.** Elucidating the nanoscale dynamics of photo-induced phase separation in mixed halide hybrid perovskites. C.G. Bischak, D. Limmer, N.S. Ginsberg

4:40 **PHYS 152.** Probing dynamics of delocalization and energy transfer in Rhodospirillum rubrum using two-dimensional electronic spectroscopy. S.C. Massey, P.D. Dahlberg, P. Ting, S. Soltau, C. Hunter, G.S. Engel

## Section D

DoubleTree by Hilton Hotel Philadelphia  
Center City

Concerto A/B

## Frontiers of Solar System Chemistry: Planets to Comets &amp; Beyond Chemistry, Ices &amp; Icy Worlds

R. L. Hudson, S. N. Milam, *Organizers, Presiding*

1:00 **PHYS 153.** Radiation chemistry of cometary and planetary ices with in situ mass spectrometry. B.L. Henderson, M.S. Gudipati

1:35 **PHYS 154.** Radiation chemistry on the surfaces of ocean worlds of the outer solar system. K. Hand

2:10 **PHYS 155.** Radiation-induced production of near-surface volatiles on simulated Europa's surface. M.S. Gudipati, B.L. Henderson, B. Fleury, N. Rivas

2:30 **PHYS 156.** Application of tunable vacuum ultraviolet (VUV) light for the isomer-specific detection of complex organic molecules formed via interaction of ionizing radiation with simple and mixed astrophysical ice analogues. M. Abplanalp, R. Kaiser

2:50 Intermission.

3:05 **PHYS 157.** Space weathering effects on Europa and other Jovian satellites. C. Hibbitts, C. Paranicas

3:40 **PHYS 158.** New laboratory measurements of solid methanol at temperatures relevant to interstellar and outer solar system environments. P.A. Gerakines, T. Tway, R.F. Ferrante, R.L. Hudson

4:00 **PHYS 159.** Rotational spectroscopy of O(D) insertion reaction products for astrochemistry. B. Hays, M. McCabe, N. Wehres, S. Zinga, C. Powers, L. Zou, B.A. DePrince, J. Laas, S.L. Widicus Weaver

## Section E

DoubleTree by Hilton Hotel Philadelphia  
Center City

Assembly E

## Intrinsically Disordered Proteins: Structure, Function &amp; Interactions

N. Fawzi, J. Mittal, *Organizers*

R. V. Pappu, *Presiding*

1:00 **PHYS 160.** Chiral sum frequency generation spectroscopy for probing aggregation and orientation of amyloid proteins at lipid/water interface. E.C. Yan, L. Fu, V.S. Batista, D. Xiao

1:30 **PHYS 161.** IDPs on the brain: The role of disordered proteins and their interactions in brain function and dysfunction. D. Eliezer

2:00 **PHYS 162.** Illuminating the denatured state ensemble: Direct observation of chain compaction. D.P. Raleigh, I. Peran, J. Zou, Kathuria, C.L. Simmerling, C.R. Matthews, O. Bilse

2:30 Intermission.

2:50 **PHYS 163.** Triggers of alpha-synuclein aggregation and inhibition in Parkinson's disease. J. Baum, M. Janowska, M. Olson, T. Atieh, A. Nunes, G. Moriarty

3:20 **PHYS 164.** Fibril formation by intrinsically disordered peptides and proteins: Structural insights from solid state NMR. R. Tycko

3:50 **PHYS 165.** Unveiling dark matter in biology. D. Libich, V. Tugarinov, A. Ceccon, G.M. Clore

## Section F

DoubleTree by Hilton Hotel Philadelphia  
Center City

Assembly F

## Physical Chemistry Meets AMO

K. Brown, *Organizer*

M. C. Heaven, *Organizer, Presiding*

1:00 **PHYS 166.** Cold and controlled complex molecules for studies of chemical reactivities and dynamics. J. Küpper

1:45 **PHYS 167.** Cold controlled reactions between molecular ions and molecular radicals. H. Lewandowski

2:30 **PHYS 168.** Ion-atom hybrid trap within a Fabry-Perot cavity: Cold interaction studies. J. Saraladevi, T. Ray, S. Dutta, S. Rangwala

3:00 Intermission.

3:15 **PHYS 169.** Ion-molecule reactions below 1 K: The H<sub>2</sub><sup>+</sup>+H<sub>2</sub> = H<sub>3</sub><sup>+</sup>+H reaction at low temperature. F. Merkt, J. Deiglmayr, P. Allmendinger, O. Schullian, K. Hoeveler

4:00 **PHYS 170.** Characterizing cold ion-molecules reactions in Coulomb crystals. B. Heazlewood

## Section G

DoubleTree by Hilton Hotel Philadelphia  
Center City

Maestro A

## Physical Chemistry of Atmospheric Processes

## Fundamental Studies of Gas-Phase Processes

E. C. Browne, P. Ziemann, *Organizers*

N. M. Donahue, D. Heard, *Presiding*

1:00 **PHYS 171.** Gas phase reaction of CH<sub>2</sub>O<sub>2</sub> radicals with OH studied over the 292 – 526 K temperature range. C. Yan, S. Kocevskaja, L.N. Krasnoperov

1:20 **PHYS 172.** Using computation to clarify the atmospheric reactivity of the vinyl hydroperoxide. K.T. Kuwata

1:40 **PHYS 173.** Investigations on the formation of organic nitrates in alkene oxidation. G.S. Tyndall, J.D. Crouse, A. Teng, P. Wennberg, F.F. Østerstrøm, J.J. Orlando

2:15 **PHYS 174.** Low pressure yields of stabilized Criegee intermediates produced from ozonolysis of trans-2-butene and 2,3-dimethyl-2-butene. M. Campos-Pineda, J. Zhang

2:35 **PHYS 175.** Exploring uncharted regions of atmospheric reaction pathways. M.I. Lester

3:10 Intermission.

3:25 **PHYS 176.** Thermochemistry and kinetic modeling for OH addition to propene and O<sub>2</sub> association to the CH<sub>2</sub>(OH)C<sup>+</sup>HCH<sub>3</sub> adduct. J.W. Bozzelli, S. Snitsirawat

3:45 **PHYS 177.** Full-dimensional model of ozone forming reaction: Absolute value of recombination rate coefficient, its pressure and temperature dependencies. A. Teplukhin, D. Babikov

4:05 **PHYS 178.** Are spectroscopic arcanae relevant to geochemistry? R. Field, S. Ono, A. Hull

4:40 **PHYS 179.** Finding unexpected photolysis pathways in atmospheric chemistry. A.W. Hull, S. Ono, R. Field

## Section H

DoubleTree by Hilton Hotel Philadelphia  
Center City

Maestro B

## Metal &amp; Semiconductor Nanoclusters with Atomic Precision: Fundamentals &amp; Applications

R. Jin, M. Sfeir, G. Wang, *Organizers*

j. Zheng, *Organizer, Presiding*

1:00 **PHYS 180.** Spooling electrochemiluminescence spectroscopy for Au nanoclusters. Z. Ding, M. Hesari, M.S. Workentin

1:35 **PHYS 181.** Electrogenerated chemiluminescence from aqueous soluble Au nanoclusters under ambient conditions. G. Wang, T. Wang, D. Wang, J. Padelford, J. Jiang

**2:10 PHYS 182.** PbS Colloidal nanocrystal linewidths are strongly influenced by multiple emissive states. J.R. Caram, S. Bertram, H. Utzat, M.G. Bawendi

**2:30** Intermission.

**2:50 PHYS 183.** Ultrafast dynamics of thiolate-protected gold nanoclusters. M. Pettersson

**3:25 PHYS 184.** Molecular-like carrier dynamics in bulk-like Au<sub>38</sub> nanoclusters. M. Sfeir, M. Zhou, K. Appavoo, R. Jin

**4:00 PHYS 185.** Single atom doping alters the ultrafast electron dynamics of M<sub>2</sub>Au<sub>24</sub>(SR)<sub>18</sub> (M=Pt, Pd) nanoclusters. M. Zhou, H. Qian, M. Sfeir, K. Nobusada, R. Jin

### Modeling Water & Solvation in Biochemistry: Developments & Applications

Sponsored by COMP, Cosponsored by PHYS

### Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation

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### Pioneering Single Molecule Detection under Ambient, Aqueous Conditions: A Tribute to Richard Keller

Sponsored by ANYL, Cosponsored by PHYS

### QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications

Sponsored by COMP, Cosponsored by PHYS

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

G. S. Engel, *Organizer*

**8:00 - 10:00**

347-350, 360, 363, 367-370, 378-379, 381, 386, 391, 394, 396, 398, 400-401, 407-408, 410-411, 414, 416, 420-421, 423, 435-436, 441, 444, 447, 449, 457, 462, 466, 468-470, 477, 479-480, 483-485. See subsequent listings.

## TUESDAY MORNING

### Section A

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Ormandy East

### Advanced Potential Energy Surfaces

#### Ab initio Molecular Dynamics

Cosponsored by COMP

T. L. Head-Gordon, C. Skylaris, *Organizers*

A. Alexandrova, *Presiding*

**8:00 PHYS 186.** First principles molecular dynamics of heterogeneous materials. G.A. Galli

**8:30 PHYS 187.** Molecular simulations on neuronal G-protein coupled receptors. P. Carloni

**9:00 PHYS 188.** Optimization of an exchange-correlation density functional for water. M. Fernandez-Serra, M. Fritz, J.M. Soler

**9:30 PHYS 189.** Unified theoretical approach to chemical reactions in gas phase and in solution. F. Pietrucci, A. Saitta

**9:50** Intermission.

**10:00 PHYS 190.** First-principles and force field based simulations of organic/inorganic halide perovskites. U. Rothlisberger

**10:30 PHYS 191.** Confinement effects on ab-initio liquid water. L. Pestana, T.L. Head-Gordon

**11:00 PHYS 192.** Modeling black titania with first principles and reactive field molecular dynamics simulations. A. Selloni, S. Selcuk

**11:30 PHYS 193.** Dipole polarizability of a water molecule in liquid water. R.A. Distasio

### Section B

DoubleTree by Hilton Hotel Philadelphia  
Center City

Aria A/B

### Dynamics of Natural & Artificial Systems For Energy Conversion: Insights Gained from Spectroscopic Methods & Theory

Financially supported by Coherent

A. Nitzan, M. R. Wasielewski, *Organizers*

J. M. Anna, R. D. Pensack, *Presiding*

**8:00 PHYS 194.** Untangling ultrafast spectroscopy of earth abundant iron light harvesters using theory. L.A. Fredin

**8:35 PHYS 195.** Effects of aggregation on the photophysics and dynamics of a high performing conjugated organic polymer. T. Fauvell, L.X. Chen, L. Yu, N. Jackson

**8:55 PHYS 196.** Vibrational and electronic evolution of photoexcited porphyrin: Multidimensional pump-degenerate four-wave mixing spectra. B. Abraham, L. Gundlach

**9:15** Intermission.

**9:30 PHYS 197.** Photophysics and spectroscopy of carotenoid dimers. M.J. Tauber

**9:50 PHYS 198.** Multiscale model of light harvesting by photosystem II in plants. D. Bennett, K. Amarnath, A. Schneider, G.R. Fleming

**10:10 PHYS 199.** Catalytic cycle of water splitting in photosystem II: QM/MM characterization. K. Yang, V.S. Batista

**10:30** Intermission.

**10:40 PHYS 200.** Electronic structure and early-time dynamics of higher-lying excited states in light harvesting complex 1 from Rhodospirillum rubrum. P. Ting, P.D. Dahlberg, S.C. Massey, C. Hunter, G.S. Engel

**11:00 PHYS 201.** Charge recombination suppressed by destructive quantum interference in heterojunction materials. R. Tempelaar, J. Koster, R. Havenith, J. Knoester, T.C. Jansen

**11:35 PHYS 202.** Electronic transitions directed by quantum confinement for increased quantum efficiency in methylammonium lead iodide perovskite quantum dots. D. Vogel, A. Kryjevski, T.M. Inerbaev, D. Kili

### Section C

DoubleTree by Hilton Hotel Philadelphia  
Center City

Concerto A/B

### Frontiers of Solar System Chemistry: Planets to Comets & Beyond

#### Chemistry: Surfaces & Sub-Surfaces

S. N. Milam, *Organizer*

R. L. Hudson, *Organizer, Presiding*

M. S. Gudipati, *Presiding*

**8:00 PHYS 203.** Water on the Moon and Mercury: To be or not to be? T.M. Orlando

**8:35 PHYS 204.** Tholins as coloring agents on solar system bodies: New results from Pluto. D. Cruikshank, C. Materese, S.A. Sandford, H. Imanaka, M. Nuevo, S. Stern, H. Weaver, C. Olkin, L. Young, K. Ennico-Smith, N. COMP Team

**9:10 PHYS 205.** Carbonaceous coatings produced via surface-mediated reactions: Are they fluffy? F.T. Ferguson, N. Johnson, J. Nuth

**9:30** Intermission.

**9:45 PHYS 206.** Surface of the Moon and its interaction with the external environment. J. Keller

**10:20 PHYS 207.** Clathrates in the outer Solar System: occurrence and detection. D. Nna-Mvondo

**10:55 PHYS 208.** Capture of hyperthermal CO<sub>2</sub> by amorphous water ice via molecular embedding. G. Langlois, W. Li, K.D. Gibson, S.J. Sibener

### Section D

DoubleTree by Hilton Hotel Philadelphia  
Center City

Assembly E

### Intrinsically Disordered Proteins: Structure, Function & Interactions

N. Fawzi, J. Mittal, *Organizers*

S. M. Vaiana, *Presiding*

**8:00 PHYS 209.** Crowding effects on intrinsically disordered proteins. D. Thirumalai

**8:30 PHYS 210.** Macromolecular crowding effects on the intrinsically disordered proteins: A simple model reveals complex behavior. Y. Kim, C. Miller, J. Mittal

**9:00 PHYS 211.** Conformations and exchange dynamics of FlgM, an intrinsically disordered protein, in dilute and crowded conditions. P.E. Smith, A. Banks, H. Zhou

**9:30** Intermission.

**9:50 PHYS 212.** Disordered proteins and tardigrade survival. S. Piszkwicz, A. Mehta, B. Goldstein, T. Boothby, G.J. Pielak

**10:20 PHYS 213.** Intrinsically disordered proteins as physical drivers of membrane traffic. J.C. Stachowiak

**10:50 PHYS 214.** Selective diffusion in the nuclear pore. D. Cowburn, S. Sparks

### Section E

DoubleTree by Hilton Hotel Philadelphia  
Center City

Assembly F

### Physical Chemistry Meets AMO

K. Brown, M. C. Heaven, *Organizers*

B. Heazlewood, *Presiding*

**8:00 PHYS 215.** Vibrational energy relaxation of vibration-cavity polariton modes. A.D. Dunkelberger, K. Fears, B.T. Spann, B. Simpkins, J. Owrutsky

**8:30** Intermission.

**8:45 PHYS 216.** Probing the internal energy content of cold molecular ions. J.H. Bartlett, R.A. VanGundy, A.B. Dermer, M.L. Theis, K.J. Mascariolo, M.C. Heaven

**9:15 PHYS 217.** Supersonic flows meet lasers in the service of astrochemistry. I.R. Sims

### Section F

DoubleTree by Hilton Hotel Philadelphia  
Center City

Maestro A

### Physical Chemistry of Atmospheric Processes

#### Oxidants & Radicals

E. C. Browne, P. Ziemann, *Organizers*

J. D. Raff, K. R. Wilson, *Presiding*

**8:00 PHYS 218.** Some known unknowns in atmospheric oxidation chemistry. W. Brune, K.E. Christian, D.O. Miller, B.C. Baier, J. Mao

**8:35 PHYS 219.** Radical chemistry and ozone production in central London. D. Heard

**9:10 PHYS 220.** Wall loss rates of HO<sub>2</sub> and several organic peroxy radicals onto common sampling materials. E. Wood, S. Kundu, B. Deming, D. Rollings

**9:30 PHYS 221.** Identifying the major formation pathways of highly oxidized multifunctional (HOM) compounds from autooxidation of  $\alpha$ -pinene. M. Ehn, O. Peräkylä, C. Yan, L. Quéléver, M. Riva, M.P. Rissanen, D.R. Worsnop

**10:05** Intermission.

**10:25 PHYS 222.** Withdrawn.

**10:45 PHYS 223.** Temperature, NO<sub>x</sub> emissions and O<sub>3</sub>: Insights from observations in the southeast U.S. R.C. Cohen

**11:20 PHYS 224.** New insights into low-NO<sub>x</sub> isoprene oxidation chemistry. J. Rivera, E. Praske, R. Zhao, J.D. Crouse, A. Lee, K. Skog, K. Bates, J.P. Abbatt, J. Mao, G.S. Tyndall, P. Wennberg, F. Keutsch

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## Section G

DoubleTree by Hilton Hotel Philadelphia  
Center City

Maestro B

### Metal & Semiconductor Nanoclusters with Atomic Precision: Fundamentals & Applications

R. Jin, G. Wang, J. Zheng, *Organizers*  
M. Steir, *Organizer, Presiding*

**8:00 PHYS 225.** Ligand effects in the synthesis of metal nanoclusters and their catalysis. N. Zheng

**8:35 PHYS 226.** Atomically precise alloy nanocluster: synthesis, properties and application. M. Zhu

**9:10 PHYS 227.** Structure and properties of size-controlled alloy nanoclusters. P. Zhang

9:45 Intermission.

**10:00 PHYS 228.** Tailoring the properties of thiolate protected bimetallic clusters. A. Tlahuice-Flores

**10:35 PHYS 229.** Modeling the structure-dependent stability of thiolated metal nanoparticles. M. Taylor, G. Mpourmpakis

**10:55 PHYS 230.** Heavily doped Au<sub>25</sub>Ag<sub>x</sub>(SC<sub>6</sub>H<sub>11</sub>)<sub>16</sub> nanoclusters: silver goes from core to surface. Q. Li, S. Wang, R. Jin

**11:15 PHYS 231.** Templated synthesis of Alloy nanocluster with atomically precise: Metal exchange. S. Wang

### Modeling Water & Solvation in Biochemistry: Developments & Applications

*Sponsored by COMP, Cosponsored by PHYS*

### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

*Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS*

### Quantum Mechanics

*Sponsored by COMP, Cosponsored by PHYS*

### QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications

*Sponsored by COMP, Cosponsored by PHYS*

## TUESDAY AFTERNOON

## Section A

DoubleTree by Hilton Hotel Philadelphia  
Center City

Ormandy East

### PHYS Division Awards Symposium

G. S. Engel, *Organizer, Presiding*

**1:00 PHYS 232.** Single-molecule imaging reveals nanometer-scale fundamentals of cell biology and plasmonics. J.S. Biteen

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

**1:35 PHYS 233.** Attosecond pump-probe spectroscopy of electron correlation dynamics. W. Li

**2:10 PHYS 234.** Progress and applications of first-principles force fields from symmetry-adapted perturbation theory. J.R. Schmidt

2:45 Intermission.

**3:05 PHYS 235.** Single molecule dynamics at soft interfaces: from basic science to a \$100,000,000,000 problem. C.F. Landes

**3:40 PHYS 236.** Beam and single particle approaches to nanoparticle surface chemistry. S.L. Anderson

**4:15 PHYS 237.** Many-body molecular dynamics: Towards computer simulations with chemical and spectroscopic accuracy from the gas to the condensed phase. F. Paesani

**4:50 PHYS 238.** How do metal ions direct ribozyme folding? D. Thirumalai, N. Denesyuk

### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

*Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS*

### QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications

*Sponsored by COMP, Cosponsored by PHYS*

## WEDNESDAY MORNING

## Section A

DoubleTree by Hilton Hotel Philadelphia  
Center City

Ormandy East

### Accelerating Discovery: Citizen Science, Big Data & Machine Learning for Physical Chemistry

A. Aspuru-Guzik, J. Hachmann, *Organizers, Presiding*

8:00 Introductory Remarks.

**8:05 PHYS 239.** Accelerating scientific discovery through crowdsourced computing. J. Hinde, E. Pyzer-Knapp

**8:35 PHYS 240.** Open chemistry: Community tools for chemistry and materials science. M.D. Hanwell

**9:05 PHYS 241.** Bridging the theory-experiment gap: Cognitive calibration for high throughput simulation. E.O. Pyzer-Knapp, A. Aspuru-Guzik

9:35 Intermission.

**9:50 PHYS 242.** From structural analysis to fingerprints for molecular property predictions. M. Haghighatlar, J. Hachmann

**10:10 PHYS 243.** Learning data-driven molecular fingerprints with convolutional neural networks on graphs. D. Duvenaud, D. Maclaurin, J. Aguilera-Iparraguirre, R. Gomez-Bombarelli, T. Hirzel, A. Aspuru-Guzik, R.P. Adams

**10:40 PHYS 244.** Many-body representations for machine learning models of molecular properties. B. Huang, O. von Lilienfeld

11:00 Intermission.

**11:10 PHYS 245.** Data aggregation, curation and modeling approaches to deliver prediction models to support computational toxicology at the EPA. A.J. Williams, K. Mansouri, T. Martin, C. Grulke, J. Wambaugh, R. Judson, A. Richard, G. Patlewicz, I. Shah

**11:40 PHYS 246.** Learning from 50 million and counting: Efficient molecular optimization strategies. G. Hutchison

## Section B

DoubleTree by Hilton Hotel Philadelphia  
Center City

Assembly F

### Advanced Potential Energy Surfaces Applications of Advanced Potential Energy Models & Methods

*Cosponsored by COMP*

T. L. Head-Gordon, C. Skylaris, *Organizers*  
F. Paesani, *Presiding*

**8:00 PHYS 247.** Projector embedding approach for multiscale coupled-cluster calculations on enzyme-catalyzed reactions. A.J. Mulholland, S. Bennie, M. van der Kamp, R. Penniford, M. Stella, F.R. Manby

**8:30 PHYS 248.** Rapid dynamic simulations of metalloproteins for predictions of metal-dependent performance of metalloenzymes. A. Alexandrova

**9:00 PHYS 249.** How important is thermal expansion in modeling molecular crystals? Accurate electronic structure predictions beyond 0 K. G.J. Beran

**9:30 PHYS 250.** Describing correlation in the (TT) singlet fission intermediate. A. Chien, P.M. Zimmerman

9:50 Intermission.

**10:00 PHYS 251.** What can we learn about force-fields from the crystal structure prediction of pharmaceuticals? S.L. Price

**10:30 PHYS 252.** What has polarization ever done for us? R.T. Bradshaw, N.A. Mohamed, J.W. Essex

**11:00 PHYS 253.** Protein simulations in solution and in crystals using advanced force fields. D.A. Case

**11:30 PHYS 254.** Parallelization schemes for solving Poisson-Boltzmann equation via finite-difference method: Implementations in DelPhi and applications. E. Alexov

## Section C

DoubleTree by Hilton Hotel Philadelphia  
Center City

Ormandy West

### Advances in Biological Imaging

J. S. Biteen, A. B. Hummon, *Organizers*  
L. J. Webb, *Organizer, Presiding*

**8:00 PHYS 255.** Imaging proteins at the truly single molecule level. J. Longchamp, S. Rauschenbach, S. Abb, C. Escher, T. Latychevskaia, K. Kern, H. Fink

**8:40 PHYS 256.** Visualizing translation synthesis by Pol IV in Live E. coli cells at single-molecule resolution. E.S. Thrall, J. Kath, J. Loparo

**9:00 PHYS 257.** Single-molecule fluorescence microscopy reveals the localization and dynamics of starch-digesting proteins in the human gut bacterium *Bacteroides thetaiotaomicron*. H. Tuson, M. Foley, E. Martens, N. Koropatkin, J.S. Biteen

9:40 Intermission.

**10:00 PHYS 258.** Molecular structure of biomimetic surfaces based on scanning tunneling microscopy. A.F. Raigoza, L.J. Webb

**10:40 PHYS 259.** Nano-MRI: Achieving nanoscale magnetic resonance imaging of individual biological molecules and assemblies using mechanical detection and dynamic nuclear polarization. C.E. Issac, H. Nguyen, P.T. Nasr, E.A. Curley, M.C. Boucher, J.A. Marohn

**11:10 PHYS 260.** Two-photon absorption spectra of stilbene and phenanthrene. M. de Wergifosse, A.L. Houk, C.G. Elles, A. Krylov

## Section D

DoubleTree by Hilton Hotel Philadelphia  
Center City

Aria AV/B

### Dynamics of Natural & Artificial Systems For Energy Conversion: Insights Gained from Spectroscopic Methods & Theory

*Financially supported by Coherent*

A. Nitzan, M. R. Wasielewski, *Organizers*  
J. M. Anna, *Presiding*

**8:00 PHYS 261.** Unraveling interfacial aggregate properties and surface vibronic interactions via doubly-resonant sum frequency spectroscopy. S. Sengupta, L. Bromley, D. Elsenbeck, S. Das, L.A. Velarde

**8:35 PHYS 262.** Effect of morphology on singlet fission: Insight from theory. X. Feng, D. Casanova, A. Krylov

**8:55 PHYS 263.** Beyond Kasha's exciton model for molecular aggregates: H- to J-aggregate transformation in perylene-based  $\pi$ -stacks. N. Hestand, F.C. Spano

9:15 Intermission.

**9:30 PHYS 264.** Direct imaging of energy transport in solar energy harvesting systems by ultrafast nanoscopy. L. Huang

**10:05 PHYS 265.** Experimentally measuring and manipulating coherent energy transport in supramolecular excitonic nanowires through energetic disorder. J.R. Caram, S. Doria, M.G. Bawendi, S. Lloyd

**10:25 PHYS 266.** Probing the density of states at buried organic interfaces with electronic sum frequency generation spectroscopy. R. Pandey, A.P. Moon, J.A. Bender, S.T. Roberts

10:45 Intermission.

**11:00 PHYS 267.** Tracking exciton dynamics in diketopyrrolopyrrole-based low bandgap conjugated polymers using femtosecond stimulated Raman spectroscopy. J. Dasgupta

**11:20 PHYS 268.** Electronic and nuclear contributions to time-resolved optical and X-ray absorption spectra of hematite thin films and their relevance to photocatalysis. D. Hayes, R.G. Hadt, J. Emery, A.B. Martinson, X. Zhang, K.A. Fransted, M.L. Shelby, J. Hong, L.X. Chen

**11:40 PHYS 269.** Direct observation of two triplet pair intermediates in singlet exciton fission. R.D. Pensack, E. Ostroumov, A. Tilley, S. Mazza, C. Grieco, K. Thorley, J.B. Asbury, D.S. Seferos, J.E. Anthony, G.D. Scholes

## Section E

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Concerto A/B

### Frontiers of Solar System Chemistry: Planets to Comets & Beyond

#### Laboratory Investigations

R. L. Hudson, *Organizer*

S. N. Milam, *Organizer, Presiding*

A. L. Mattioda, *Presiding*

**8:00 PHYS 270.** RNA Oligomerization at high pressure using mineral catalysts and imidazole activated ribonucleotides. L.B. McGown, B. Burcar, K. Rogers, M. Ackerson, E. Garbenis, B. Watson

**8:35 PHYS 271.** MM/Submm spectroscopic studies of the gas-phase products of interstellar ice analogues. A. Mesko, S.L. Widicus Weaver, S.N. Milam

**8:55 PHYS 272.** Adsorption and processing of complex organic molecules on dust grains. W. Brown

**9:15** Intermission.

**9:30 PHYS 273.** Surface science investigations of physics and chemistry at icy interfaces. A. Rosu-Finsen, D. Marchione, A. Abdulgallil, J. Thrower, M. Collings, M.R. McCoustra

**10:05 PHYS 274.** Insights on Titan's organic aerosol formation from the laboratory. M.G. Trainer, T.J. Gautier, J. Sebree, C.M. Anderson, M.J. Loeffler, J. Stern, S.D. Domagal-Goldman, X. Li, V.T. Pinnick

**10:40 PHYS 275.** Kinetics and mechanisms of the acid-base reaction between  $\text{NH}_3$  and  $\text{HCOOH}$  in interstellar ice analogs. J. Bergner, K. Oberg

**11:00 PHYS 276.** Non-Norrish type production of HCN in the UV photolysis of asymmetric ketones. L. Digiacobbe, J.M. Smith, M.J. Wilhelm, H. Dai

## Section F

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Assembly E

### Intrinsically Disordered Proteins: Structure, Function & Interactions

N. Fawzi, J. Mittal, *Organizers*

T. Mittag, *Presiding*

**8:00 PHYS 277.** Sequence effects on hydrodynamic size for intrinsically disordered proteins described from experimental polyproline II propensities. S. Whitten

**8:30 PHYS 278.** Determination of statistical ensembles of intrinsically disordered proteins using NMR measurements. M. Vendruscolo

**9:00 PHYS 279.** Internal dynamics and chain expansion: the role of electrostatics in amyloid versus non-amyloid IDPs of the Ct family. S.M. Vaiana

**9:30** Intermission.

**9:50 PHYS 280.** Phase transitions and multiphase liquid coexistence in living cells. C. Brangwynne

**10:20 PHYS 281.** Biophysics of protein disorder: Single molecules to droplets. A.A. Deniz

**10:50 PHYS 282.** Liquid-liquid phase separation of the low complexity domain of hnRNPA2. V. Ryan, C. Chabata, N. Fawzi

**11:10 PHYS 283.** On the edge of disorder: Effects of oxidative damage on proteins and chaperone networks. A. de Graff, K. Dill

## Section G

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Maestro A

### Physical Chemistry of Atmospheric Processes

#### Chemistry at Interfaces

E. C. Browne, P. Ziemann, *Organizers*

M. Ehn, F. Keutsch, *Presiding*

**8:00 PHYS 284.** Interfacial oxidation of catechol. M.I. Guzman, E.A. Pillar-Little, R. Zhou

**8:20 PHYS 285.** Free radical reaction pathways and the evolution of organic aerosol. K.R. Wilson

**8:55 PHYS 286.** Heterogeneous reactivity of biogenic volatile organic compounds on mineral aerosol surfaces. R.Z. Hinrichs

**9:15 PHYS 287.** Effect of reaction environments on the atmospheric photochemistry of pyruvic acid and related oxoacids. V. Vaida, A. Reed Harris, R. Rapf

**9:50** Intermission.

**10:10 PHYS 288.** Nonlinear optical spectroscopy of aerosol surfaces. Y. Rao, Y. Wu, W. Li, B. Xu, X. Li, Y. Wu, Y. Qian, Y. Zeng, H. Wang, V.F. McNeill, H. Dai

**10:30 PHYS 289.** Chiral-Selective atmospheric reaction of limonene and  $\alpha$ -pinene probed by sub-wavenumber sum frequency generation vibrational spectroscopy at interfaces. L. Fu, H. Wang

**10:50 PHYS 290.** Probing fluxional dynamics of  $\alpha$ -pinene adsorption to solid surfaces. H. Chase, M. Upshur, J. Ho, B. Psciuk, B. Rudshstein, H. Wang, R.J. Thomson, V.S. Batista, F. Geiger

**11:10 PHYS 291.** Molecular-level insights into reactive nitrogen oxide chemistry on soil surfaces. J.D. Raff, M.A. Donaldson, N. Scharko

## Section H

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Maestro B

### Metal & Semiconductor Nanoclusters with Atomic Precision: Fundamentals & Applications

R. Jin, M. Sfeir, J. Zheng, *Organizers*

G. Wang, *Organizer, Presiding*

**8:00 PHYS 292.** Computational insights into catalysis by ligand-protected nanoclusters. D. Jiang

**8:35 PHYS 293.** Modeling TiO<sub>2</sub> aerogels from nanoparticles to networks. N.Q. Le, I. Schweigert

**8:55 PHYS 294.** Ultrasmall palladium nanoclusters as effective catalyst for oxygen reduction reaction. S. Zhao, H. Zhang, S. House, R. Jin, J. Yang, R. Jin

**9:15** Intermission.

**9:30 PHYS 295.** Ultrasmall luminescent gold nanoparticles for ratio-metric pH sensing. J. Zheng

**10:05 PHYS 296.** Metal oxide based heterostructure nanowire arrays for multi-mode chemical sensors at elevated temperature. P. Gao

**10:40 PHYS 297.** Structural changes in Au<sub>25</sub>(SR)<sub>18</sub> nanoparticles after photoexcitation. K.M. Weerawardene, C.M. Aikens

### Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine

*Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS*

### QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications

*Sponsored by COMP, Cosponsored by PHYS*

## WEDNESDAY AFTERNOON

## Section A

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Ormandy East

### Accelerating Discovery: Citizen Science, Big Data & Machine Learning for Physical Chemistry

A. Aspuru-Guzik, J. Hachmann, *Organizers, Presiding*

**1:00 PHYS 298.** Deductive and inductive modelling of electronic properties in the organic molecular design space. R. Ramakrishnan

**1:30 PHYS 299.** First principles evolution of emitters for organic light emitting diodes. B.G. Levine, Y. Shu

**2:00 PHYS 300.** Computational generation and screening of metal-organic frameworks for gas storage and separations. D.A. Gomez-Gualdrón, Y.J. Colón, Y.G. Chung, R. Snurr

**2:30** Intermission.

**2:45 PHYS 301.** Accelerating materials research through the effective use of data. T. Mueller

**3:15 PHYS 302.** Using machine-learning to create predictive material property models. C. Wolverton

**3:45** Intermission.

**4:00 PHYS 303.** Predicting the electronic structure and properties of inorganic materials with machine learning. O. Isayev

**4:30 PHYS 304.** Not-so-short chat on entropy in materials science. S. Curtarolo

## Section B

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Assembly F

### Advanced Potential Energy Surfaces MM from QM

*Cosponsored by COMP*

T. L. Head-Gordon, C. Skylaris, *Organizers*

L. V. Slipchenko, *Presiding*

**1:00 PHYS 305.** Developing model Hamiltonians for electron-molecule interactions. K.D. Jordan, T. Odbadrakh

**1:30 PHYS 306.** Charge transfer models for molecular simulation. S.W. Rick

**2:00 PHYS 307.** Multiple contributions to the exchange potential for semi-classical electrons. J. Herzfeld, S. Ekesan

**2:30** Intermission.

**2:45 PHYS 308.** Estimation of QM/MM polarization energy for small molecules using force-field approaches. Y. Shao

**3:15 PHYS 309.** Advancements in adaptive multiscale QM/MM approaches. R. Walker, A.W. Goetz

**3:45 PHYS 310.** MP2 hydration free energies of simple salts predicted through adaptive force matching. F. Wang, J. Li

**4:15 PHYS 311.** Self-adaptive Reactive Force Fields (SERFF): force matching for molecular dynamics simulation of reactive materials. N. Goldman

## Section C

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Ormandy West

### Advances in Biological Imaging

A. B. Hummon, L. J. Webb, *Organizers*

J. S. Biteen, *Organizer, Presiding*

**1:00 PHYS 312.** Biological imaging with vibrationally resonant sum-frequency generation microscopy. Y. Han, J. Hsu, V. Raghunathan, E. Potma, N. Ge

**1:40 PHYS 313.** Super-resolution molecular imaging with photostable nanoprobes. M.B. Prigozhin, P.C. Maurer, A.M. Courtis, X. Zheng, N. Liu, J. Collins, S. Aloni, F. Ogletree, R. Macfarlane, Y. Cui, J. Rao, P. Alivisatos, S. Chu

**2:00 PHYS 314.** Spatiotemporal Organization of the E. coli Cytoplasm. J.C. Weisshaar

**2:40 PHYS 315.** Electro-spray-ion beam deposition for high-resolution imaging of biomolecules by STM. S. Abb, G. Rinke, L. Harnau, R. Gutzler, S. Rauschenbach, K. Kern

**3:00** Intermission.

**3:20 PHYS 316.** Polymer mechanics in the initiation and robustness of bacterial biofilms. V. Gordon

**4:00 PHYS 317.** Single-molecule imaging neuronal receptor ion channel dynamics in living cells by a new combined single-molecule patch-clamp electric recording and FRET spectroscopic microscopy. H. Lu

**4:30 PHYS 318.** Organelle specific single molecule imaging of oligomeric protein structures. A.M. Loe, F. Moonschi, C.I. Richards

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**Section D**

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Aria A/B

**Dynamics of Natural & Artificial Systems For Energy Conversion: Insights Gained from Spectroscopic Methods & Theory**

*Financially supported by Coherent*

J. M. Anna, A. Nitzan, M. R. Wasielewski,  
*Organizers*

G. S. Engel, *Presiding*

**1:00 PHYS 319.** Enhancement of Resonance Energy transfer via evanescent field. X. Chen, A. Poudel, M.A. Ratner

**1:20 PHYS 320.** Spectroscopy and excited-state dynamics of a series of BODIPY-based A-D-A small-molecule organic solar cells acceptors. E.R. Young, S.J. Hendel, A. Krishnamurthy

**1:40 PHYS 321.** Fluorescent carbon nanotube defects feature substantial vibronic reorganization. M. Kim, L. Adamska, N.F. Hartmann, H. Kwon, J. Liu, K. Velizhanin, Y. Piao, L.R. Powell, B. Meany, S.K. Doorn, S. Tretiak, Y. Wang

**2:00** Intermission.

**2:20 PHYS 322.** Nanoscopic imaging of energy transfer from single plasmonic particles to semiconductor substrates via STEM/EELS. G. Li, C. Cherqui, N. Bigelow, G. Duscher, P. Straney, J. Millstone, D.J. Masiello, J.P. Camden

**2:40 PHYS 323.** Enhancing photocarrier generation through interlayer coupling in graphene-WS<sub>2</sub> heterostructures. L. Yuan, T. Chung, Y. Chen, L. Huang

**3:00 PHYS 324.** Ultrafast charge transfer in PbSe binary nanocrystal superlattices with well-controlled energy landscapes. S. Li, Y. Wu, N. Gogotsi, C.B. Murray, J.B. Baxter

**3:20 PHYS 325.** Multi-chromophore exciton down-conversion in acene and perylene aggregates through space-separated singlet fission. C.T. Chapman, G.C. Schatz

**Section E**

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Concerto A/B

**Frontiers of Solar System Chemistry: Planets to Comets & Beyond**

**Atmospheres & Gas-Phase Chemistry**

R. L. Hudson, *Organizer*

S. N. Milam, *Organizer, Presiding*

S. L. Widicus Weaver, *Presiding*

**1:00 PHYS 326.** Unveiling the chemical complexity of planetary atmospheres through ground and space-based observations. A. Moullet

**1:35 PHYS 327.** Spectroscopy and photochemistry of nitriles relevant to Titan's atmosphere. T.S. Zwiwer, K. Jawad, D. Mehta-Hurt, B.M. Hays

**2:10 PHYS 328.** Dimerization of methanimine and its charged species in the atmosphere of Titan and interstellar/cometary ice analogs. D. Skouteris, N. Balucani, V. Barone, S. Falcinelli, N. Fagnas Lago, M. Rosi

**2:30 PHYS 329.** Ammonium hydrosulfide and its role in coloring Jupiter's clouds. M.J. Loeffler, R.L. Hudson

**2:50** Intermission.

**3:05 PHYS 330.** Laboratory investigations into the complex organic chemistry of Titan. M.A. Smith

**3:40 PHYS 331.** Neutral gas-phase chemistry in upper planetary atmospheres. N. Balucani

**4:15 PHYS 332.** Photon induced aerosol formation in planetary atmospheres: Photochemical hydration of sulfur dioxide. J.A. Kroll, D.J. Donaldson, V. Vaida

**Section F**

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Assembly E

**Intrinsically Disordered Proteins: Structure, Function & Interactions**

N. Fawzi, J. Mittal, *Organizers*

C. Brangwynne, *Presiding*

**1:00 PHYS 333.** Artificial cytoplasm based on liquid-liquid phase coexistence: Towards responsive compartmentalization of biomolecules and reactions. C.D. Keating

**1:30 PHYS 334.** NPM1 facilitates nucleolar assembly through phase separation with ribosomal components. D.M. Mitrea, J.C. Hunter, C.S. Guy, D. Ban, P.R. Banerjee, C.B. Stanley, A.A. Deniz, R. Kriwacki

**2:00 PHYS 335.** Aberrant phase transition of stress granules triggered by misfolded proteins and prevented by chaperone function. S. Alberti

**2:30** Intermission.

**2:50 PHYS 336.** ALS mutations disrupt phase separation mediated by an  $\alpha$ -helical region of the TDP-43 low complexity C-terminal domain. A. Conicella, G. Zerze, J. Mittal, N. Fawzi

**3:10 PHYS 337.** Karyopherin beta2 rapidly disaggregates disease-linked RNA-binding proteins with intrinsically disordered, prion-like domains. J. Shorter

**3:40 PHYS 338.** Role of disordered regions in mediating liquid-liquid phase separation and compartmentalizing cells. T. Mittag

**4:10 PHYS 339.** Phosphorylation of the low complexity domain of FUS regulates assembly and inhibits aggregation. Z. Monahan, V. Ryan, K.A. Burke, N. Fawzi, F. Shewmaker

**Section G**

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Maestro B

**Metal & Semiconductor Nanoclusters with Atomic Precision: Fundamentals & Applications**

R. Jin, M. Sfeir, G. Wang, *Organizers*

J. Zheng, *Organizer, Presiding*

**1:00 PHYS 340.** Probing the catalytic activities of the core and shell of Au<sub>25</sub> nanoclusters. Z. Wu

**1:35 PHYS 341.** Atomically precise assemblies of fluorescent silver clusters on DNA scaffolds. E. Gwinn

**2:10 PHYS 342.** Clusters with a twist: DNA-stabilized fluorescent silver clusters. S. Swasey, N. Karimova, C.M. Aikens, O. Lopez-Acevedo, L. Espinosa Leal, E. Gwinn

**2:30** Intermission.

**2:50 PHYS 343.** Photoelectronic properties of nanostructures at hetero-interface regions. K. Nobusada

**3:25 PHYS 344.** Observing isomerism at the nanoscale and its implications: the case of Au<sub>28</sub>(SR)<sub>20</sub> nanoclusters. Y. Chen, R. Jin

**3:45 PHYS 345.** Controlling the atomic structure of Au<sub>30</sub> nanocluster by bulky ligand: 1-adamantanethiolate vs. tert-butylthiolate. T. Higaki, C. Liu, C. Zeng, R. Jin, Y. Chen, N.L. Rosi, R. Jin

**4:05 PHYS 346.** Closo-Si<sub>2</sub>C<sub>12</sub> molecule from cluster to crystal: Optical property predictions. X.F. Duan, L.W. Burggraf

**Impacts of Nanotechnology & Single Molecule Spectroscopy in Biology & Medicine**

*Sponsored by ANYL, Cosponsored by BIOL, COLL, MPPG and PHYS*

**QM/MM Simulation of Chemical & Biochemical Reaction Pathways: Recent Developments & Applications**

*Sponsored by COMP, Cosponsored by PHYS*

**WEDNESDAY EVENING****Section A**

Pennsylvania Convention Center  
Hall D

**PHYS Poster Session**

G. S. Engel, *Organizer*

**6:00 - 8:00**

**PHYS 347.** National Science Foundation initiatives for 2017. A. Wilson, C.A. Bessel, J. Lighty, K. Covert, T. Patten, S. Tam-Chang, L. He, T.D. Mitchell, D.A. Rockcliffe, E. Goldfield

**PHYS 348.** National Science Foundation (NSF) Division of Chemistry: Programmatic structure and funding opportunities. A. Wilson, M. Bushey, K. Cook, C. Foss, T. Li, M. Langell, S. Rychnovsky, C.A. Murillo, E. Goldfield

**PHYS 349.** National Science Foundation (NSF) Division of Chemistry: Broader impacts, broadening participation, education, outreach. A. Wilson, T. Higgins, G. Yancey, M. Hawkins, M. Jenkins, M. Wampamba, M. Stewart, E. Pfeiffer, I. Johnson, K. Noble

**PHYS 350.** NSF Graduate Research Fellowship Program for chemistry and chemical engineering students. T.B. Higgins, M. Bushey, T. Patten

**PHYS 351.** Synthesis and characterizations of MoS<sub>2</sub>Se<sub>2-x</sub> and WS<sub>2</sub>Se<sub>2-x</sub> solid solutions. M.T. Nguyen, A. Sen Gupta, J. Shervin, H. Akamatsu, A. Elias, M. Terrones, J. Zhu, V. Gopalan, T.E. Mallouk

**PHYS 352.** Effect of repeated hydration and dehydration cycles on water uptake into brown carbon thin films. A. Muentter Edwards

**PHYS 353.** Determination of rate constants for acetylperoxy/hydroperoxy self reactions and cross reaction via Infrared kinetic spectroscopy. F.J. Grieman, A. Hui, M. Okumura, S.P. Sander

**PHYS 354.** Peculiarities of the glycerol-water eutectic mixture. M. Debraine, P. Siemienski, R.A. Huttemann, B.H. Milosavljevic

**PHYS 355.** Ultrafast photoinduced dynamics in CdSe and CdSe/ZnS quantum dots using femtosecond time-resolved fluorescence upconversion spectroscopy. R.D. Rajapaksha

**PHYS 356.** Investigation of singlet fission structural dynamics with femtosecond stimulated Raman spectroscopy for organic photovoltaic applications. S.M. Hart, R.R. Frontiera

**PHYS 357.** CN vibrational relaxation dynamics of cyano-phenylalanine. J. Rodgers, W. Zhang, C. Bazewicz, J. Chen, S.H. Brewer, F. Gai

**PHYS 358.** Spatial coherence of holes in conjugated polymer films. R. Ghosh, C.M. Pochas, F.C. Spano

**PHYS 359.** Charge redistribution in excited state lumichrome. S.E. Meckel, V.A. Spata, D.T. Barnard, R.F. Pauszek, S. Matsika, R.J. Stanley

**PHYS 360.** Excited-state investigation of the ultrafast electrocyclization reaction for a molecular photochromic switch. C. Jones, V.A. Spata, S. Matsika

**PHYS 361.** Time-resolved surface-enhanced Raman spectroscopy. J.D. Schultz, N.C. Brandt, R.R. Frontiera

**PHYS 362.** Probing DNA-carbon nanotube complex formation by fluorescence spectroscopy. K. Wagner, C. Williams, L.M. Nebel

**PHYS 363.** Advancing the sensitivity and selectivity of 2D-IR spectroscopy. W. Zhang, B. Markiewicz, J. Chen, F. Gai

**PHYS 364.** Quantum control of nuclei. Q. Wang

**PHYS 365.** Integrated panchromatic light-harvesting antenna and charge-separation array: Excited-state photodynamics. H. Kang, G. Hu, D. Niedzwiedzki, C.R. Kirmaier, D.F. Bocian, J.S. Lindsey, D. Holtan

**PHYS 366.** Direct measurement of solvent-induced perturbations to the molecular geometry of N<sub>3</sub> on TiO<sub>2</sub> using heterodyne-detected vibrational SFG. C. Rich, A.T. Krummel

**PHYS 367.** Near-field scanning optical microscopy investigations of individual supramolecular light-harvesting nanotubes. K. Ng, S. Belh, A. Chowdhury, N. Yehya, M. Patel, G. Huffman, D.M. Eisele

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



- PHYS 368.** Spin resolved relaxation dynamics applied to aqueous cobalt doped anatase nanowire. S.J. Jensen, T.M. Inerbaev, D. Kilin
- PHYS 369.** Unraveling spectral fluctuations in surface-enhanced Raman spectroscopy. S. Lambeth, M.D. Sonntag
- PHYS 370.** Characterizing glassy materials with Raman spectroscopy. A. Lipshaw, T. Moseley, M.D. Sonntag
- PHYS 371.** Molecular diffusion and photothermal kinetics studied by second harmonic generation. R. Kumal, H. Nguyen, M. Abu-Laban, B.P. Kruger, D. Hayes, R.L. McCarty, L.H. Haber
- PHYS 372.** Nuclear magnetic resonance studies of polycarbonate films for high power thin film capacitors. S. Lai, D.A. Boyles, J. Fontanella, S. Greenbaum
- PHYS 373.** Measuring ultrafast dynamics of single ZnO nanostructures by ultraviolet femtosecond Kerr-gated wide-field fluorescence microscopy. J. Blake, J. Nieto-Pescador, Z. Li, L. Gundlach
- PHYS 374.** Saturated structured illumination microscopy of silk. B. Jones, S. Stranick
- PHYS 375.** Effects of fluctuating electronic environments on the OH vibrational frequency of water. K. Jeon, M. Yang
- PHYS 376.** EPR spectra of alkyne-bridged copper(II) porphyrin dimers in fluid solution: evaluation of exchange interaction modulated by conformational change. R. Wang, A. Brugh, M.J. Therien, M.D. Forbes
- PHYS 377.** Ultrafast charge transfer dynamics at interfaces. J. Nieto-Pescador, B. Abraham, L. Gundlach
- PHYS 378.** Time resolved infrared emission of highly excited acetylene derivatives with an indirect signature of elusive vinylidene species. V. Trunnikova, S. Rachmil-Etter, J.M. Smith, M.J. Wilhelm, H. Dai
- PHYS 379.** Ultrafast dynamics of drug-protein complex. S. Yamazaki, A.M. Scott
- PHYS 380.** Infrared matrix isolation studies of the reaction of trimethylaluminum with ozone. D.M. Sriyathne, B.S. Ault
- PHYS 381.** Spin-labeling electron paramagnetic resonance and Overhauser dynamic nuclear polarization characterizations of the folding of IA<sub>3</sub>, an intrinsically disordered protein. K. Dunleavy, Z. Sorrentino, E. Milshteyn, G.E. Fanucci
- PHYS 382.** Experimental investigations of the decomposition of ionic liquids. S.D. Chambreau, G.L. Vaghjani, D. Popolan-Vaida, S.R. Leone, T. Brown, J. Lee, R.N. Zare
- PHYS 383.** Characterization of hydrogen bonding in sulfonic acid-ionic liquid solutions. J. Tomlin, O.C. Fiebig, A. Miller, D.J. Walczyk, L. Yu, T.D. Vaden
- PHYS 384.** Fingerprinting n-propyl cyanide for the Cologne Database for Molecular Spectroscopy. O. Wilkins, N. Wehres, H. Mueller, F. Lewen, S. Schlemmer, A. Walters, R. Vicente, D. Liu, R. Garrod, A. Belloche, K. Menten
- PHYS 385.** Investigation of thermochromic behavior of triphenylmethane dye Acid Blue 90 in low molecular weight polyethylene glycol and its mixtures with 1-dodecanol. N. Barashkov, I. Irgibaeva, A. Mantel, A. Aldongarov, T. Sakhno
- PHYS 386.** Progress towards directly detecting ultracold chemical reactions between trapped KRb molecules. M. Hu, Y. Liu, Y. Chen, K. Ni
- PHYS 387.** Aggregation of N-methylacetamide at aqueous surfaces. Y. Wu, Y. Wu, B. Xu, H. Dai, J. Liu, Y. Rao
- PHYS 388.** Method for performing in-trap photoionization in a miniature ion trap mass spectrometer. C.N. Stedwell, J.D. DeBord, M. Spencer, D. Rafferty
- PHYS 389.** Laboratory measurements of carbon dioxide self-quenching rates. K.J. Castle, C. Flynn
- PHYS 390.** Measuring the electron scattering cross-section of water vapor using lab-based ambient pressure VAP. Y. Khalifa, A. Broderick, J.T. Newberg
- PHYS 391.** Scattering-type scanning near-field optical microscopy with reconstruction of vertical interaction. L. Wang, X. Xu
- PHYS 392.** Molecular road map to tuning ground state absorption and excited state dynamics of near-infrared chromophores. Y. Bai, O. Jean-Hubert, H. Yoo, M.J. Therien
- PHYS 393.** Investigation of FTIR spectra of gamma-irradiated polytetrafluoroethylene. T. Sakhno, S. Sychkova, Y. Sakhno, N. Barashkov
- PHYS 394.** Novel fluorophore-quencher pair for short distance measurements. M. Hilaire, T. Troxler, F. Gai
- PHYS 395.** Molecular level understanding of photo-bleaching and oxidative-redding via electron transfer in fluorescent proteins. A. Acharya, A. Kolomeisky, A. Krylov
- PHYS 396.** Simple method to introduce an ester vibrational probe into proteins. I. Ahmed, F. Gai
- PHYS 397.** Study on the compatibility of Azo-Tetrazolate based high energy materials using DSC. M. Yousef, K. Hudson, B.C. Berry
- PHYS 398.** Photo-induced excited state dynamics: water-splitting in titanium-doped microporous silica. W. Sapp, R.T. Koodali, D. Kilin
- PHYS 399.** Novel structure for a gas-phase bimolecular heterodimer formed between a protic acid and a haloethylene: The microwave spectrum and molecular structure of hydrogen chloride-(Z)-1-Chloro-2-fluoroethylene. M.D. Marshall, H.O. Leung, H.K. Tandon
- PHYS 400.** Quantum confinement controlled photo-induced charge-transfer excitons in carbon nanotube and semiconducting nanostructure interfaces. A.R. Erck, D. Kilin
- PHYS 401.** Electronic structure properties of graphene binding with low-concentration fluorine. Y. Duan, C.C. Stinespring, B. Chorpeneing
- PHYS 402.** Ideal and real gas heat capacity of cesium atoms at high temperatures. L. Biolsi
- PHYS 403.** Molecular dynamics of laser assisted decomposition of unstable molecules at the surface of carbon nanotubes. B. Disrud, D. Kilin
- PHYS 404.** Thermodynamics of mixed electrolyte solutions: A new look at an old topic. R. Wigent, M. Siddiq, D. Henriques
- PHYS 405.** Computing couplings with QM/MMpol models using Q-Chem/CHARMM interface. Q. Zeng, W. Liang
- PHYS 406.** Total and differential cross sections of open-shell and excited-state species from equation-of-motion coupled-cluster Dyson orbitals. S. Gozem, A. Krylov
- PHYS 407.** Application of a many-body decomposition scheme to the local mode vibrations of (H<sub>2</sub>O)<sub>n</sub> water clusters (n=6, 21). J. Heindel, D.P. Schofield
- PHYS 408.** Cis-Trans isomerization mechanisms of muconic acid. A. Zaczek, T.M. Korter
- PHYS 409.** Enzyme design: Identifying mutations to alter important dynamics in complex systems. I. Zoi, S.D. Schwartz
- PHYS 410.** Proton transfer mechanisms in aminonaphthols. H.E. Rudel, M.S. Groves, K. Takematsu
- PHYS 411.** Theoretical investigation of the effect of substitution on the fluorescence properties of anthracene. S. Abou-Hatab, S. Matsika
- PHYS 412.** Trend-based feature selection in molecular descriptor space. M. Haghghatari, J. Hachmann
- PHYS 413.** GW versus wavefunction approaches. Q. Ou, J.E. Subotnik
- PHYS 414.** IR-UV double resonance spectroscopy of a cold protonated fibril-forming peptide: NNQQNY+H<sup>+</sup>. A.F. DeBlase, C.P. Harral, P.S. Walsh, S.A. Mcluckey, T.S. Zwier
- PHYS 415.** Potential energy surfaces and dynamics of N<sub>2</sub> + O → NO + N reaction. W. Lin, D.G. Truhlar
- PHYS 416.** Nuclear quantum effects and classical potential energy surfaces: Two classical quasiparticles per quantum particle. A. Sinitskiy, G.A. Voth
- PHYS 417.** MD simulations of coumarin 153 solvation in [Im<sub>41</sub>][BF<sub>4</sub>]/dipolar cosolvent mixtures. B. Conway, M. Liang, X. Zhang, M. Maroncelli
- PHYS 418.** Tool for screening possible MOF/TiO<sub>2</sub> interface linker species. J. Domenico, M.E. Foster, K.W. Sohlberg
- PHYS 419.** Integration of the probability density of the hydrogen 2p orbital within isosurfaces. I. Rhile
- PHYS 420.** Bridging the gap between continuous and atomistic models in heat transfer. J.M. Espinosa Duran, Y. Sereda, A. Abi Mansour, P. Ortoleva
- PHYS 421.** Theoretical evaluation of center-substituted zwitterionic polymethines for all-optical switching applications. S.B. Shirring, R. Gieseeking, A.K. Jen, S.H. Jang, J.E. Bredas
- PHYS 422.** Computation of the force generated by a single surface-mounted switchable rotaxane. G. Bazargan, K.W. Sohlberg
- PHYS 423.** Experimental and theoretical investigation of 1-butanol pyrolysis. N. Balucani, D. Stranges, D. Skouteris, L. Pacifici, S. Falcinelli, M. Rosi
- PHYS 424.** Estimating the entropy and quantifying the impurity of a swarm of surface-hopping trajectories: A new perspective on decoherence. W. Ouyang, J.E. Subotnik
- PHYS 425.** Rate constants and surface hopping. A. Jain, J.E. Subotnik
- PHYS 426.** Crystal simulations of small ligand molecules: Challenges for current force fields. M. Huang, D.M. York
- PHYS 427.** Mixed semi-classical approaches to nonadiabatic dynamics: Capturing detailed balance. N. Bellonzi, A. Jain, J.E. Subotnik
- PHYS 428.** Mathematical modeling of gas desorption from a metal organic super container cavity. W. Sapp, Z. Wang, D. Kilin
- PHYS 429.** Effect of high refractive index nanoparticles on charge-transfer state lifetime. J.C. Mohammed, M. Ziffer, D.S. Ginger
- PHYS 430.** Structural and electronic properties of CuO<sub>n</sub> (n = 1 - 6) clusters and their water reaction effect using ab initio Monte Carlo simulations. G. Bae
- PHYS 431.** Photophysical characterization of an enzymatically-synthesized dually fluorescent FAD cofactor. K. Jacoby, R.J. Stanley, D.M. Yarsley
- PHYS 432.** Photoluminescence of gold nanorods. E. Sung, S. Link
- PHYS 433.** Interfacial charge transfer dynamics of organic/inorganic heterojunction probed by ultrafast transient electronic sum frequency generation. B. Xu, Y. Wu, D. Sun, C. He, H. Dai, Y. Rao
- PHYS 434.** Role of inorganic acidity on templated vanadate composition and dimensionality. A. Nourmahad, M.B. Wenny, J. Schrier, A.J. Norquist
- PHYS 435.** Electrochemical and photophysical characterization of BODIPY-based A-D-A and D-A small molecule acceptors for use in organic solar cells. S.J. Hendel, A. Krishnamurthy, E.R. Young
- PHYS 436.** Replicating prebiotic astrochemistry through the use of a silicate grain surface analog. A.N. Carey, M.C. Foster
- PHYS 437.** Charge accommodation in n-doped ethynyl-bridged π-conjugated porphyrin arrays. I. Goodenough, J. Rawson, P. Angiolillo, M.J. Therien
- PHYS 438.** Modeling protocols for ORR and OER catalysts in solar water splitting. Y. Pal, G. Wu, J. Hachmann
- PHYS 439.** Pinpointing recombination pathways in copper zinc tin sulfide quantum dots. G.S. Doucette, J.B. Asbury, R.J. Stewart
- PHYS 440.** Characterization of the chemical interaction between singlewalled carbon nanotubes and titanium dioxide nanoparticles. K.C. Silva, P. Corio, J.J. Santos
- PHYS 441.** Charge recombination of organic-inorganic halide perovskite single crystals. C. He, H. Yin, L. Jin, A.J. Lewis, X. Li, B. Xu, H. Dai, B.B. Wayland, Y. Rao

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- PHYS 442.** Deposition of coiled silver nanowire ring by spraying method. B. Seong, H. Park, I. Chae, X. Wang, H. Lee, H. Jang, L. Lin, D. Byun
- PHYS 443.** Solvent-mediated surface binding and population of molecules onto TiO<sub>2</sub> particles. H. Fang, B. Xu, B.G. DeLacy, H. Dai, Y. Rao
- PHYS 444.** Interactions between positrons and chiral quartz crystals. F. Wu, Y. Jean, D. Vanhorn
- PHYS 445.** Direct observation of diffusional dynamics of nanoparticles on solid substrates by using liquid phase TEM. J. Park, S. Choi, D. Weitz
- PHYS 446.** AuBr<sub>3</sub> for microscopic-photochemical-laser-traced-electrodeposition ( $\mu$ PLATE) aqueous electrochemical and photochemical studies. C.N. Lafratta, P. Lawrence, E. Will, C. Sirkoch
- PHYS 447.** Tunable luminescence and exciton dynamics from 2D organic-inorganic hybrid perovskite single crystals [(C<sub>10</sub>H<sub>21</sub>NH<sub>3</sub>)<sub>2</sub>PbX<sub>4</sub> (X=I, Br, Cl)] for optoelectronic applications. H. Yin, L. Jin, C. He, X. Li, D. Kaan, B. Xu, D. Wozniak, Y. Wu, Y. Wu, A.J. Lewis, G. Dobreiner, H. Dai, B.B. Wayland, Y. Rao
- PHYS 448.** Bio-inspired super thin and high conductive silver thin film patterning by EHD jet printing method. H. Jang, B. Seong, J. Bae, D. Byun, L. Lin
- PHYS 449.** Influence of surface chemistry on electronic structure in organo-halide perovskites investigated by surface passivation. K.T. Munson, J.B. Asbury
- PHYS 450.** Friction near metal surfaces. W. Dou, A. Nitzan, J.E. Subotnik
- PHYS 451.** Can surface-enhanced Raman scattering identify the drug mechanism of platinum-based anticancer drugs? S. Khan, N. Mirsaleh-Kohan
- PHYS 452.** Pyrene luminescence quenching by iodide anion in poly(vinyl alcohol) solutions. R.L. Cohn, B.H. Milosavljevic
- PHYS 453.** Real time observation of unimolecular decay of Criegee intermediates to OH radical products. Y. Fang, F. Liu, V.P. Barber, M.I. Lester
- PHYS 454.** Unimolecular decay dynamics of vibrationally activated Criegee intermediates to OH products. H. Li, N.M. Kidwell, M.I. Lester
- PHYS 455.** UV + VUV double-resonance studies of autoionizing Rydberg states of the hydroxyl radical. A.M. Green, F. Liu, M.I. Lester
- PHYS 456.** Extremophile photolyases: a comparative study of temperature-dependent DNA repair. D.T. Barnard, R.A. McBride, K. Jacoby, R.J. Stanley
- PHYS 457.** Role of APOBEC3B and APOBEC3A in oncogenesis. N. Agarwal, E. Schutsky, R.M. Kohli
- PHYS 458.** Effects of evolution on reaction dynamics in apicomplexa lactate dehydrogenases. M. Varga, M.W. Dzierlenga, S.D. Schwartz
- PHYS 459.** Conformational transition of histone-complexed DNA molecules in a dense array of nanoposts: a computational study. H. Joo, Y. Kang, J. Kim
- PHYS 460.** Conformation and cohesion factors stabilizing crystalline GABA polymorphs. S.J. Dampf, T.M. Korter
- PHYS 461.** Evaluation and comparison of sorbitol cocrystal stabilities. T. Dierks, T.M. Korter

- PHYS 462.** Suppressing A $\beta$ 42 toxicity with potentiated Hsp104 variants in a yeast model of Alzheimer's disease. S. Sudesh, J. Stillman, K. Mack, J. Shorter
- PHYS 463.** Effects of aqueous ionic liquids on the structures and unfolding kinetics of myoglobin and BSA proteins. K.G. DeFrates, S. Hanna, O.C. Fiebig, T.D. Vaden
- PHYS 464.** Influence of water on protein folding and unfolding. N. Steinke, R.J. Gillams, C.D. Lorenz, S.E. McLain
- PHYS 465.** Structural studies of cis and trans peptide conformers of caprylactam and perlagolactam: subjects for predictions of <sup>13</sup>C NMR deuterium isotope shifts. E. Kleist, B.S. Hudson
- PHYS 466.** All-atom models for unfolded state structure and dynamics. W. Zheng, R.B. Best
- PHYS 467.** Specific and nonspecific interactions between tetrapropylammonium ions and aromatic side chains. B. Ding, D. Mukherjee, J. Chen, F. Gai
- PHYS 468.** Assembly mechanism of nanostructured whey protein filaments. A. Kamada, N. Mittal, D. Söderberg, C. Lendel, F. Lundell
- PHYS 469.** Kinetics and mechanism of light-induced disulfide cleavage in a protein environment. R.M. Abaskharon, F. Gai
- PHYS 470.** 5-Cyanotryptophan as a novel site-specific CD probe of protein structures. D. Mukherjee, F. Gai
- PHYS 471.** Rational design, synthesis, and NMR characterization of beta-cyclodextrin derivatives with high affinities for fentanyl. D. Kennedy, C.A. Valdez, E.Y. Lau, B.P. Mayer
- PHYS 472.** Effects of nucleotide changes in single strands of RNA, and their applications to engineering microRNA biosensors. B. Lydon, S. Ranganathan, A.A. Chen
- PHYS 473.** Computational study of the combustion and atmospheric decomposition of 1,3-pentadiene and 1,4-pentadiene. S.D. Mondal, A.C. Davis
- PHYS 474.** Coexistence of different electron transfer mechanisms in the DNA repair process by photolyase. W. Lee, G. Kodali, R.J. Stanley, S. Matsika
- PHYS 475.** Cardiolipin membranes as photoreduction inhibitors in ferricytochrome C: A resonance Raman study. D. Malyskha, R. Schweitzer-Stenner
- PHYS 476.** Estimating biological productivity with triple oxygen isotopes in the Arctic Ocean. A. Zhou, R.H. Stanley, B. Ji, Z.O. Sandwith, W.J. Williams
- PHYS 477.** Pseudo-phosphorylation of the tau protein and its implication for aggregation. D. Prokopovich, L. Larini
- PHYS 478.** Biofilm hydrology: label-free characterization of the hydration behavior of native biofilms. R.T. McDonough, H. Zheng, M. Alila, J. Goodisman, J. Chaiken
- PHYS 479.** Examination of the potential posttranslational modification of Hsp104. J. Lin, J. Shorter
- PHYS 480.** Designing novel peptides to regulate enzyme activity. A. Cooper, L. Larini
- PHYS 481.** Lipid-bound conformations of alpha-synuclein revealed by site-specific SCN groups. K. Fiore, D. Konstantinovskiy, C.H. Londergan

- PHYS 482.** Exploring oxidation state dependent conformational changes of cytochrome C on cardiolipin containing liposomes. B. Milorey, L. Serpas, L. Pandiscia, R. Schweitzer-Stenner
- PHYS 483.** Cationic conjugated polymers for discrimination of microbial pathogens. H. Yuan
- PHYS 484.** Catalytic nitrogen-containing heterocycles studied by gas phase fluorescence spectroscopy in a purpose-built ion trap mass spectrometer. A.L. Ferzoco, V. Rajagopal
- PHYS 485.** In-Situ observations of surface properties of aerosols. Y. Wu, W. Li, B. Xu, X. Li, Y. Wu, Y. Qian, Y. Zeng, H. Wang, V.F. McNeill, H. Dai, Y. Rao
- PHYS 486.** Understanding the physical changes in atmospheric aerosols due to humidification: application of an ambient pressure, variable humidity transmission electron microscope. M. Giordano, W. Harlow, M. Taheri, P.F. DeCarlo
- PHYS 487.** Thermochemistry and kinetic analysis on the oxiranil radical unimolecular dissociation and association with O<sub>2</sub>: A theoretical study. J.W. Bozzelli, H. Wang
- PHYS 488.** Minimum energy conical intersection characterization using active space configuration interaction methods. B. Fales, B. Levine
- PHYS 489.** Approaching the basis set limit for DFT calculations using an environment-adapted minimal basis with perturbation theory: Formulation, proof of concept and a pilot implementation. Y. Mao, P. Horn, M.P. Head-Gordon

## THURSDAY MORNING

### Section A

DoubleTree by Hilton Hotel Philadelphia Center City  
Ormandy East

#### Accelerating Discovery: Citizen Science, Big Data & Machine Learning for Physical Chemistry

A. Aspuru-Guzik, J. Hachmann, *Organizers, Presiding*

- 8:00** **PHYS 490.** Data mining and machine learning in colloidal self assembly. S.C. Glotzer
- 8:30** **PHYS 491.** Sorting out a process-structure-property relationship in polymer organic electronics. N. Persson, M. McBride, J. Lu, E. Reichmanis, M. Grover
- 9:00** **PHYS 492.** Accelerating discovery of new processing paths of heterogeneous materials for desired properties. O. Wodo
- 9:30** Intermission.
- 9:45** **PHYS 493.** Statistical learning for discovering chemical pathways. K. Rajan
- 10:15** **PHYS 494.** Applying Bayesian optimization to catalyst discovery. S.F. Carr, R.M. Garnett, C. Lo
- 10:45** Intermission.
- 11:00** **PHYS 495.** Dark Reactions Project: Machine learning-assisted materials discovery using failed experiments. J. Schrier
- 11:30** **PHYS 496.** Accelerating the discovery of reaction mechanisms with an ab initio nanoreactor. L. Wang

### Section B

DoubleTree by Hilton Hotel Philadelphia Center City  
Ormandy West

#### Advances in Biological Imaging

A. B. Hummon, L. J. Webb, *Organizers*  
J. S. Biteen, *Organizer, Presiding*

- 8:00** **PHYS 497.** Gigapixel super-resolution cellular imaging by optimized photoblinking and epi-illumination. S. Manley, K. Douglass, C. Sieben, A. Archetti, A. Lambert
- 8:40** **PHYS 498.** Expansion microscopy with conventional antibodies and fluorescent proteins. J.C. Vaughan, A.R. Halpern, T. Chozinski, H. Okawa, H. Kim, G.J. Treml, R.O. Wong
- 9:20** Intermission.
- 9:40** **PHYS 499.** Brillouin imaging to measure elastic properties of marine biomaterials. K.J. Koski
- 10:00** **PHYS 500.** Single-Particle tracking multiplex Raman imaging of targeting-peptide attached Au-nanobridged nanogap particles moving inside a single live cell. Y. Suh
- 10:30** **PHYS 501.** Towards a 'universal' fluorescent tag: unravelling the ultrafast photodynamics of maleimides. M. Staniforth, W. Quan, T. Karslii, R.K. O'Reilly, V. Stavros

### Section C

DoubleTree by Hilton Hotel Philadelphia Center City  
Aria A/B

#### Dynamics of Natural & Artificial Systems For Energy Conversion: Insights Gained from Spectroscopic Methods & Theory

*Financially supported by Coherent*

J. M. Anna, A. Nitzan, M. R. Wasielewski, *Organizers*  
S. C. Massey, *Presiding*

- 8:00** **PHYS 502.** Random-phase approximation model for excited-state spectroscopy. M.A. Mosquera, M.A. Ratner, G. Schatz
- 8:25** **PHYS 503.** Coupled wavepackets for non-adiabatic molecular dynamics: A generalization of Gaussian wavepacket dynamics to multiple potential energy surfaces. A. White, S. Tretiak, D. Mozyrsky
- 8:50** **PHYS 504.** Semi-classical Path-Integral Dynamics for understanding energy transfer and charge separation processes in light harvesting systems. P. Huo
- 9:15** Intermission.
- 9:40** **PHYS 505.** Ultrafast spectroscopy of photosynthetic light harvesting systems. G.S. Engel
- 10:15** **PHYS 506.** Nature of dynamic disorder in lead-halide perovskite photovoltaics: a combined molecular dynamics and density functional theory study. L. Tan, D.A. Egger, F. Zheng, L. Kronik, A.M. Rappe
- 10:40** **PHYS 507.** Recent advances and application of efficient nonadiabatic excited-state MD for modeling interchromophoric energy transfer in extended  $\pi$ -conjugated molecules. T. Nelson, L. Alfonso Hernandez, S. Fernandez-Alberti, S. Tretiak

## Section D

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Concerto A/B

### Frontiers of Solar System Chemistry: Planets to Comets & Beyond

**Chemistry: Theory, Models & Methods**  
S. N. Milam, *Organizer*

R. L. Hudson, *Organizer, Presiding*

R. C. Fortenberry, *Presiding*

**8:00 PHYS 508.** Theoretical studies of venus atmospheric chemistry involving compounds of sulfur and chlorine. D.E. Woon

**8:35 PHYS 509.** Computing highly accurate spectroscopic line lists for characterization of planetary atmospheres: CO<sub>2</sub> and SO<sub>2</sub> line lists needed for modeling Venus. T.J. Lee, X. Huang, D. Schwenke

**9:10 PHYS 510.** Spectra of novel trace gasses in planetary atmospheres. R.C. Fortenberry

**9:30** Intermission.

**9:45 PHYS 511.** Sulfur photochemistry in planetary atmospheres. M. Kumar, J.S. Francisco

**10:20 PHYS 512.** Mechanisms for the abiotic synthesis of adenine, guanine, uracil and thymine via UV-induced oxidation of purine and pyrimidine in astrophysical ices. P.P. Bera, M. Nuevo, C.K. Materese, S.A. Sandford, T.J. Lee

**10:40 PHYS 513.** Calculating photoionization and photodetachment spectra from correlated wave functions. S. Gozem, A. Krylov

## Section E

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Assembly E

### Intrinsically Disordered Proteins: Structure, Function & Interactions

N. Fawzi, *Organizer*

J. Mittal, *Organizer, Presiding*

**8:00 PHYS 1.** IDPs as critical regulators of the cell cycle. W. Peti

**8:30 PHYS 2.** Dueling activation and repression in intrinsic disorder-mediated allostery. J. Li, J.T. White, H.N. Mottagh, E.B. Thompson, V.J. Hilser

**9:00 PHYS 3.** Exploring protein-protein interactions involving intrinsically disordered regions by using carbon-detected NMR techniques. H. Roder, R. Fazlieva, E.A. Golemis, K.S. Campbell, H. Cheng

**9:30** Intermission.

**9:50 PHYS 4.** Role of intrinsically disordered coat protein loops in phage P22 capsid assembly. A.T. Alexandrescu, A. Rizzo, L. Fraser, T. Tripler, N. D'Lima, M. Suhanovsky, K. Parent, C. Teschke

**10:20 PHYS 5.** Small molecule binding to the intrinsically disordered protein c-Myc: Specificity and inhibition. S.J. Metallo

**10:50 PHYS 6.** Investigating the role of N-terminal acetylation on alpha-synuclein structure and function. E. Rhoades

**11:20 PHYS 7.** Intrinsically disordered regions of proteins in signaling and disease. S. Gnanakaran

## Section F

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Maestro A

### Physical Chemistry of Atmospheric Processes

**Acids & Bases in the Atmosphere**

E. C. Browne, P. Ziemann, *Organizers*

M. Freedman, G. D. Smith, *Presiding*

**8:00 PHYS 514.** Studying aerosol formation and growth with the world's cleanest can. J. Smith, M. Lawler, D. Draper

**8:35 PHYS 515.** Unexpected behavior of fine particle acidity. R. Weber, H. Guo, T. Russell, A. Nenes

**9:10 PHYS 516.** Nanoparticle organic chemistry relevant to new particle formation. M.V. Johnston

**9:45** Intermission.

**10:05 PHYS 517.** Thermodynamics of small clusters of H<sub>2</sub>SO<sub>4</sub>, H<sub>2</sub>O, and dimethylamine. D. Hanson, P.H. McMurry, C.N. Jen

**10:40 PHYS 518.** How acidic is carbonic acid? D. Pines, P. Kiefer, S. Daschakraborty, Y. Motro, Y. Miller, J.T. Hynes, E. Pines

**11:00 PHYS 519.** Absorption of near uv light by HNO<sub>3</sub>/NO<sub>3</sub> on sapphire surfaces. L. Zhu

## Section G

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Maestro B

### Metal & Semiconductor Nanoclusters with Atomic Precision: Fundamentals & Applications

M. Sfeir, G. Wang, J. Zheng, *Organizers*

R. Jin, *Organizer, Presiding*

**8:00 PHYS 520.** Mapping of defects in individual silicon nanocrystals using real-space spectroscopy. D.A. Kisilitsyn, V. Kocovski, J.M. Mills, S. Chiu, C. Gervasi, B. Taber, A.E. Rosenfield, O. Eriksson, J. Ruzs, A. Goforth, G. Nazin

**8:20 PHYS 521.** Direct observation of individual colloidal nanocrystals by using graphene liquid cell TEM. J. Park, S. Choi, D. Weitz, P. Alivisatos

**8:40 PHYS 522.** Withdrawn.

**9:00** Intermission.

**9:20 PHYS 523.** New chemistry that directly tailors excitons in semiconducting carbon nanotubes. H. Kwon, A. Furmanchuk, M. Kim, B. Meany, Y. Guo, G. Schatz, Y. Wang

**9:40 PHYS 524.** Energy transfer between nanoplasmons mediated by a molecular system. M.A. Ochoa, A. Nitzan

**10:00 PHYS 525.** Multi-photon lithography of 3D micro-structures in Ge-doped AsSe chalcogenide glasses. C.M. Schwarz, C. Grabill, B. Gleason, R. Sapia, J. Barker, C. Rivero-Baleine, K. Richardson, A. Pogrebnjakov, T.S. Mayer, S.M. Kuebler

**10:20 PHYS 526.** Photophysics of composite metal/dielectric nanostructures and implications for energetic electron transfer. J.J. Foley

### Vibrational Nanospectroscopy for Chemical & Biochemical Analysis

*Sponsored by ANYL, Cosponsored by PHYS*

## THURSDAY AFTERNOON

## Section A

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Ormandy East

### Accelerating Discovery: Citizen Science, Big Data & Machine Learning for Physical Chemistry

A. Aspuru-Guzik, J. Hachmann, *Organizers, Presiding*

**1:00 PHYS 527.** Exploration of data driven force field development for industrial application. W.C. Swope, M. Johnston, E.O. Pyzer-Knapp, R. Anderson, D. Bray, L. Wang

**1:30 PHYS 528.** Folding@home dares schizophrenia, or molecular dynamics simulations of not-molecular-dynamics-accessible (NMDA) receptors. A. Sinitskiy, N. Stanley, V.S. Pande

**2:00** Intermission.

**2:15 PHYS 529.** Nonlinear reconstruction of macromolecular folding funnels from univariate time series. A. Ferguson

**2:45 PHYS 530.** Computer assisted identification of metabolite mass spectra: How can machine learning and quantum mechanics help? E. Cauet, I. Laponogov, J. McKenzie, K.A. Veselkov, Z. Takats

## Section B

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Ormandy West

### Advances in Biological Imaging

A. B. Hummon, L. J. Webb, *Organizers*

J. S. Biteen, *Organizer, Presiding*

**1:00 PHYS 531.** Ultra-high resolution three dimensional imaging throughout whole cells. F. Huang

**1:40 PHYS 532.** Towards 3-D snapshot volumetric imaging: Novel methods of microscopy and image reconstruction to achieve 3-D volumes with single snapshot exposures. M.K. Daddysman, A. Selewa, X. Huang, T. Huynh, J. Jureller, N.J. Ferrier, M. Hereld, N.F. Scherer

**2:00 PHYS 533.** Molecular binding mechanisms for probing amyloid peptide structures revealed by using scanning tunneling microscopy. C. Wang

**2:40** Intermission.

**3:00 PHYS 534.** Using sub-diffraction Raman imaging to investigate the functional role of the transmembrane bacteriorhodopsin lattice. C.T. Graefe, W.R. Silva, R.R. Frontiera

**3:20 PHYS 535.** Measuring single-cell respiration rates using a phosphorescence-based imaging approach. K. Ojha, J. Ertle, M. Konopka

**3:40 PHYS 536.** Removal of single-molecule localization bias using a metasurface polarization filter. M.P. Backlund, A. Arbabi, P. Petrov, E. Arbabi, S. Saurabh, A. Faraon, W.E. Moerner

**4:20 PHYS 537.** Visualizing microbial population dynamics in the larval zebrafish gut. R. Parthasarathy

**5:00 PHYS 538.** 3D Multi-resolution Microscopy: Advances in contextualized and target-locked microscopy in live cells. S. Hou, K. Welscher

## Section C

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Concerto A/B

### Frontiers of Solar System Chemistry: Planets to Comets & Beyond

**Chemistry & Planetary Astrobiology**

S. N. Milam, *Organizer*

R. L. Hudson, *Organizer, Presiding*

M. J. Mumma, *Presiding*

**1:00 PHYS 539.** From interplanetary chemistry to planetary biology. S.A. Benner, H. Kim, E. Biondi

**1:35 PHYS 540.** DNA Photolyase runs hot and cold: How nature adapts to extreme conditions. R.J. Stanley, S. Munshi, D.T. Barnard, R.A. McBride

**2:10 PHYS 541.** Life's first handshake-Interstellar detection of the chiral molecule propylene oxide. B. McGuire, P.B. Carroll, R. Loomis, I. Finneran, P. Jewell, A. Remijan, G.A. Blake

**2:30 PHYS 542.** Analytical methods for the study of soluble organic compounds in meteorites. J.C. Aponte, H.L. McLain, H.V. Graham, J.E. Elsila, D.P. Glavin, J.P. Dworkin

**2:50** Intermission.

**3:05 PHYS 543.** RNA and Protein: A Match made in the Hadean. L.D. Williams

**3:40 PHYS 544.** Self-assembly of prebiotic materials from impact events of amino acid mixtures. N. Goldman

## Section D

DoubleTree by Hilton Hotel Philadelphia  
Center City  
Assembly E

### Intrinsically Disordered Proteins: Structure, Function & Interactions

J. Mittal, *Organizer*

N. Fawzi, *Organizer, Presiding*

**1:00 PHYS 545.** Using site-specific vibrational probe groups to document changes in the dynamic conformational distribution of disordered proteins when binding to lipids or to other proteins. C.H. Londergan, K. Fiore, D. Konstantinovsky

**1:30 PHYS 546.** Site-specific vibrational probe pairs for 2D IR studies of biomolecular conformational dynamics. M.J. Tucker

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- 1:50 PHYS 547.** Structural trends in intrinsically disordered proteins due to increased protein length: A course-grained free energy approach. F.X. Vazquez, R. Zhou
- 2:10 PHYS 548.** Phosphorylation and oligomerization of the microtubule associated protein tau. L. Larini
- 2:30** Intermission.
- 2:50 PHYS 549.** Investigating HIV Vif interactions with host proteins. K. Ball, M.P. Jacobson, J.D. Gross
- 3:10 PHYS 550.** Understanding MDM2-p53 binding through Markov state model approaches. G. Zhou, G.A. Pantelopulos, S. Mukherjee, V.A. Voelz
- 3:30 PHYS 551.** Formation of amyloid fibril on two-dimensional surface. Y. Lin, E.J. Petersson, Z. Fakhraai

### Section E

DoubleTree by Hilton Hotel Philadelphia Center City

Maestro A

#### Physical Chemistry of Atmospheric Processes

##### Aerosols: Water, Phase & Optics

E. C. Browne, P. Ziemann, *Organizers*

D. Hanson, J. Smith, *Presiding*

- 1:00 PHYS 552.** Impact of relative humidity on the optical properties of clay aerosols. J. Morang, T. Galpin, M.E. Greenslade
- 1:20 PHYS 553.** Listening to what ambient aerosols have to say: Measuring UV-visible absorption spectra using photoacoustic spectroscopy. D.A. Fischer, S. Phillips, G.D. Smith
- 1:55 PHYS 554.** Probing the morphology, diffusivity, and volatility of secondary organic matter using aerosol optical tweezers. K. Gorkowski, H. Beydoun, M.J. Polien, N.M. Donahue, R.C. Sullivan
- 2:15 PHYS 555.** Measurements of particle phase transitions using synthesized nanoparticles. M. Petters, N. Rothfuss, S. Petters, D. Pagonis, M.S. Clafin, L.B. Algrim, Z. Finewax, P. Ziemann, E. Levin, S. Kreidenweis
- 2:50** Intermission.
- 3:05 PHYS 556.** Role of nucleation mechanism on the size dependent morphology of organic aerosol. M.B. Altaf, A. Zuend, M. Freedman
- 3:25 PHYS 557.** pH Dependence of liquid-liquid phase separation in mixed organic-inorganic particles. D.J. Losey, M. Freedman
- 3:45 PHYS 558.** Liquid-liquid phase separation in organic aerosol. M. Freedman
- 4:20 PHYS 559.** How will particle mixing states modify CCN activity? D. Vu, S. Gao, A. Asa-Awuku
- 4:40 PHYS 560.** Characterizing ice nucleation activity of carbon nanotubes. V. Alstadt, J.N. Dawson, M. Freedman

### Section F

DoubleTree by Hilton Hotel Philadelphia Center City

Maestro B

#### Metal & Semiconductor Nanoclusters with Atomic Precision: Fundamentals & Applications

R. Jin, M. Sfeir, j. Zheng, *Organizers*

G. Wang, *Organizer, Presiding*

- 1:00 PHYS 561.** Towards accurate description of transition-metal clusters and bioinorganic systems: A time-dependent formulation of perturbation theory for strong electron correlation. A. Sokolov, G. Chan
- 1:30 PHYS 562.** Doping of sub-nano oxide-deposited Pt cluster catalysts for selective dehydrogenation. A. Alexandrova
- 2:00 PHYS 563.** Controlling gold nanoclusters with atomic precision. R. Jin

### Section H

DoubleTree by Hilton Hotel Philadelphia Center City

Aria A/B

#### Dynamics of Natural & Artificial Systems For Energy Conversion: Insights Gained from Spectroscopic Methods & Theory

*Financially supported by Coherent*

J. M. Anna, A. Nitzan, M. R. Wasielewski, *Organizers*

G. S. Engel, *Presiding*

- 1:00 PHYS 564.** Chirality-selective functionalization of semiconducting carbon nanotubes with a conformation switchable molecule. L.R. Powell, Y. Wang
- 1:20 PHYS 565.** Regulating long-wavelength absorptivity and photophysical lengths of oligo(porphinato)metal(II) chromophores through variation of electronically excited state proquinooidal character. Y. Bai, J. Rawson, O. Jean-Hubert, P. Zhang, M.J. Therien
- 1:40 PHYS 566.** Cation-dependent interfacial electron transfer kinetics at dye-sensitized TiO<sub>2</sub> interfaces. T.J. Barr, R. Sampaio, B.N. DiMarco, G.J. Meyer
- 2:00** Intermission.
- 2:20 PHYS 567.** Tracking photoinitiated and equilibrium dynamics of Photosystem I and model systems. J.M. Anna
- 2:55 PHYS 568.** Employing J-aggregates as efficient FRET acceptor to extract excitons in PbS quantum dots. C. Wang
- 3:15 PHYS 569.** Short-range dispersion interactions stabilize non-cavity solvation of the hydrated electron. W.J. Glover, B.J. Schwartz

#### Vibrational Nanospectroscopy for Chemical & Biochemical Analysis

*Sponsored by ANYL, Cosponsored by PHYS*

## POLY

### Division of Polymer Chemistry

M. Jeffries-El, T. White and C. Lipscomb, *Program Chairs*

#### OTHER SYMPOSIA OF INTEREST:

**Bioderived & Bioinspired Polymers** (see *PMSE*, Sun, Mon, Tue, Wed)

**Materials, Devices & Switches** (see *ORGN*, Sun, Wed)

#### SOCIAL EVENTS:

**Reception**, 6:00 PM: Tue

**Reception**, 5:30 PM: Wed

**Breakfast**, 7:30 AM: Tue

**Luncheon**, 12:00 PM: Sun, Mon, Tue

#### BUSINESS MEETINGS:

**Business Meeting**, 5:00 PM: Sun

## SUNDAY MORNING

### Section A

Sheraton Philadelphia Downtown Hotel Salon 10

#### Advanced Functional Biopolymers & Biomaterials

*Cosponsored by PMSE*

E. B. Berda, *Organizer*

L. F. Deravi, J. Foster, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05 POLY 1.** Heparin-mimicking polymers with anticoagulant and enzyme stabilization properties. N. Ayres, Y. Huang, Q. Chai

**8:35 POLY 2.** Toward fibrous biomaterial scaffolds: Manufacturing and functionalization strategies. L. Korley, A.M. Jordan, N. Wanasekara

**9:05 POLY 3.** Biomaterials for tissue engineering: Mimicking nature from the macroscopic to the molecular scale. S. Camarero-Espinosa, J. Cooper-White, B. Rothen-Rutishauser, C. Weder, J. Foster

**9:35 POLY 4.** Peptide functionalized poly(ester urea)s for regenerative medicine. M. Becker

**10:05** Intermission.

**10:20 POLY 5.** Dynamic bio-inspired materials by buckling of polymer films and multilayers. R.C. Hayward

**10:50 POLY 6.** Pro-angiogenic biodegradable elastomer for the in situ tissue regeneration. S. Lee, J. Gao, K. Lee, Y. Wang

**11:20 POLY 7.** Supramolecular biomaterials: Making use of dynamic interactions. E.W. Meijer

**11:50 POLY 8.** Isocyanate-free polyurethanes from cyclic carbonate functionalized fatty esters. K. Zhang, S.J. Talley, A.M. Nelson, M. Chen, A. Hudson, E. Margareta, R.B. Moore, T.E. Long

### Section C

Sheraton Philadelphia Downtown Hotel Parlor B

#### General Topics: New Synthesis & Characterization of Polymers

B. Barkakaty, D. Garcia, *Organizers*

A. Chen, M. Petr, *Presiding*

**8:00 POLY 9.** Synthesis of donor-acceptor type polymers by click chemistry of cycloaddition/retro-electrocyclization. W. Huang

**8:20 POLY 10.** Synthesis and characterization of novel pyrimidine donor-acceptor polymers. V. Karmegam, S.S. Gunathilake, M.C. Biewer, M.C. Stefan

**8:40 POLY 11.** Alignment of conjugated polymer nanowires for electronic and optoelectronic applications. E. Egap, M. Chang

**9:00 POLY 12.** Withdrawn.

**9:20 POLY 13.** Structure-property relationships for polyelectrolytes: thermal stability, film morphology and supramolecular assembly with conjugated polyelectrolytes. X. Yang, M. Bedford, W. Wan, C. Conrad, E. Colter, E. Freeman, L. Hu, G. Chumanov, R. Smith

**9:40 POLY 14.** Preparation of resonance stabilized phosphonium polyelectrolytes by RAFT polymerization. T. Womble, K.J. Noonan

**10:00 POLY 15.** pH on the Photophysical Studies of Metallopolymer Phosphorus Sensors containing tmeda-PPETE/Cu<sup>2+</sup>. A. Chen, W. Wu, Z. Qing, A. Niyongabo, W.E. Bernier, W.E. Jones

**10:20 POLY 16.** Chromonic liquid crystal hydrogels. R. Kularatne, V.S. Godakhindi, T.H. Ware

**10:40 POLY 17.** Another step to zero band gap plastics: a soluble, low band gap bishiadiazole based electrochromic polymer. M. Icli Ozkut

**11:00 POLY 18.** Oligothioetheramides: A novel strategy for the assembly of sequence-defined macromolecules. M. Porel, C.A. Alabi

**11:20 POLY 19.** Synthesis of a siloxane thermoplastic elastomer with a functionalizable backbone and its use as a rapid photoactuator. M. Petr, B. Katzman, W. DiNatale, P.T. Hammond

### Section D

Sheraton Philadelphia Downtown Hotel Independence Ballroom B

#### 3rd Symposium on Poly(2-Oxazolines) & Polypeptoids

*Financially supported by Serina Therapeutics, GATT Technologies, Polymer Chemistry Innovations, Sigma Aldrich, CEM*

H. Schlaad, *Organizer*

R. Hoogenboom, R. N. Zuckermann, *Organizers, Presiding*

**8:25** Introductory Remarks.

**8:30 POLY 20.** Design of polypeptide and poly(2-oxazoline) based copolymer biomaterials. S. Lecommandoux, D. Taton, E. Garanger, C. Drappier, C. Legros

**9:00 POLY 21.** Polypeptoid polymers: Development of new chemistry and functional materials. D. Zhang

**9:30 POLY 22.** Poly(2-oxazoline)s as versatile polymers for biomedical applications. U.S. Schubert

**10:00** Intermission.

**10:15 POLY 23.** Solvent-free synthesis approach for poly(2-oxazolines). N. Ayres, K. Leahy, Y. Huang, J. Mack

**10:45 POLY 24.** Peptoid-peptide hybrids: The best of both worlds? T. Craven, K. Kirshenbaum

**11:15 POLY 25.** Bioinspired peptoid-based block copolymers. J. Sun, N.P. Balsara, R.N. Zuckermann

**11:45 POLY 26.** Design, synthesis, assembly and engineering of peptoid nanostructures. R.N. Zuckermann

## Section E

Sheraton Philadelphia Downtown Hotel

Freedom Ballroom E

### Materials Genome Approach to Structure & Function

#### Complex Supramolecular Structures & Systems by Merging Self-Assembling Block Copolymers & Dendrimers

M. L. Klein, V. Percec, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 POLY 27.** Cornucopia of nanoscale ordered phases in sphere forming block polymers. F.S. Bates, S. Chanpuriya, K. Kim, J. Zhang, S. Lee, A. Arora, K.D. Dorfman, K.T. Delaney, G.H. Fredrickson, T. Gillard

**9:10 POLY 28.** Aqueous lyotropic liquid crystalline Frank-Kasper phases. S. Kim, K. Jeong, A. Yethiraj, M.K. Mahanthappa

**9:45 POLY 29.** Giant tetrahedra and giant surfactants based on precisely functionalized nano-atoms: Tuning from crystals to Frank-Kasper phases and quasicrystals. S.Z. Cheng

**10:20** Intermission.

**10:40 POLY 30.** Materials genome approach to discover and predict hierarchical structures. V. Percec, B.M. Rosen, M. Peterca, P. Leowanawat, M.R. Imam, B.E. Partridge, X. Zeng, G. Ungar, P.A. Heiney

**11:15 POLY 31.** Complex ordered phases of multiblock copolymers. A. Shi

## Section F

Sheraton Philadelphia Downtown Hotel

Freedom Ballroom F

### Functional Renewable Polymers

*Cosponsored by CEI*

R. T. Mathers, *Organizer*

E. C. Hagberg, T. Kaneko, *Organizers, Presiding*

**8:00 POLY 32.** High performance sustainable pressure sensitive adhesives for use in recyclable applications. C. Lipscomb, K. Lewandowski

**8:30 POLY 33.** Plant oil derived polyethers by the GaBr<sub>3</sub>-catalyzed reduction of carboxylic acid esters. P. Dannecker, U. Biermann, J.O. Metzger, M. Meier

**8:50 POLY 34.** Renewable rosin containing tri- and pentablock copolymers for tough renewable thermoplastic application. M. Rahman, M.S. Ganewatta, L. Yuan, C. Tang

**9:10** Intermission.

**9:20 POLY 35.** Highly active neodymium catalyst for polymerization of myrcene and limonene. M.C. Stefan, R.N. Kularatne, Y. Ren, M.C. Biewer

**9:50 POLY 36.** Next-generation plant oil-derived polymers: Emerging chemistry and bio-elastomer applications. L. Yuan, Z. Wang, C. Tang

**10:10** Intermission.

**10:20 POLY 37.** Renewable materials in oil and gas – perspectives on use, application, challenges, and future technology in upstream applications. D.S. Germack

**10:50 POLY 38.** Polymerized and functionalized triglycerides. H.N. Cheng, A. Biswas

## Section G

Sheraton Philadelphia Downtown Hotel

Freedom Ballroom G

### Polymers & the National Nanotechnology Initiative (NNI)

*Cosponsored by ANYL and SCHB†*

A. Rahman, D. G. Schmidt, *Organizers*

M. A. Meador, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:05 POLY 39.** Polymer and nanoparticle synergism. R.C. Advincula

**8:35 POLY 40.**  $\beta$ -sheet nanocrystal-reinforced supramolecular elastomers. L. Jia

**8:55 POLY 41.** Upconverting photons with hybrid thin films. M.L. Tang

**9:15** Intermission.

**9:30 POLY 42.** Integration of polyaniline in carbide derived carbon supercapacitors via oxidative chemical vapor deposition. Y.Y. Smolin, K.L. Van Aken, M. Boota, M. Soroush, Y. Gogotsi, K.K. Lau

**9:50 POLY 43.** Hairy nanoparticles: a colloidal template approach to growing mesoporous oxides and carbons. B. Liu, S.L. Suib, J. He

**10:10 POLY 44.** Synthesis and characterization of PXS based polymers for improved nanoparticle drug delivery. I.B. Kelly, N. Arnett

**10:30 POLY 45.** Terahertz sub-surface imaging applications for 2D and 3D nanomaterials. A. Rahman

## Porous Polymers

### Microporosity

*Sponsored by PMSE, Cosponsored by POLY*

### WCC Merck Research Award Symposium

*Sponsored by WCC, Cosponsored by ANYL, BIOL, COMP, MEDI, MPPG, ORGN, POLY and PROF*

### Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation

*Sponsored by COMP, Cosponsored by PHYS and POLY*

## SUNDAY AFTERNOON

### Section A

Sheraton Philadelphia Downtown Hotel  
Salon 10

### Advanced Functional Biopolymers & Biomaterials

*Cosponsored by PMSE*

E. B. Berda, J. Foster, *Organizers*

L. F. Deravi, *Organizer, Presiding*

R. Kieleyka, *Presiding*

**1:00** Introductory Remarks.

**1:05 POLY 46.** Balancing structure and function in low molecular weight gelator materials prepared under catalytic control. R. Kieleyka

**1:35 POLY 47.** Designing synthetic mimics of protein transduction domains: new, effective carries for hard to transfect cell types. G.N. Tew

**2:05 POLY 48.** Biopolymer-based multilayer nanocoatings that exhibit high gas barrier and flame retardant behavior. J.C. Grunlan

**2:35 POLY 49.** Withdrawn.

**3:05** Intermission.

**3:20 POLY 50.** Dynamic bio(in) organic supramolecular polymers in water. P. Besenius

**3:50 POLY 51.** Quantitative analysis of cell adhesion to biomaterials using lateral microscopy. C. Mace, J. Walz, D. Wilson, I. Lui

**4:20 POLY 52.** End-functionalization of cellulose derivatives: design, synthesis, properties, and functions.

H. Kamitakahara, R. Suhara, M. Yamagami, H. Kawano, K. Miki, R. Okanishi, T. Asahi, A. Yoshinaga, T. Takano

**4:50 POLY 53.** Synthesis, functionalization, and immobilization of single-enzyme nanogels. A. Beloqui, G. Delaittre

## Section B

Sheraton Philadelphia Downtown Hotel

Salon 3/4

### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

*Cosponsored by CHED and PMSE*

H. S. Bui, W. Gao, D. N. Haase, S. Percec, S. C. Rukes, P. Schipper, L. Zhai, *Organizers*

D. Garcia, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:40 POLY 54.** Something to smile about: Control of oral biofilms through antimicrobial peptide-mimetic polymers. H. Takahashi, E.T. Nadres, K. Kuroda

**2:10 POLY 55.** Bioactive-based, biodegradable polymers for hyperpigmentation treatment via sustained skin lightener delivery. J. Faig, A.E. Moretti, M. Nova, K.E. Uhrich

**2:40 POLY 56.** Bio-based biodegradable polymers for film formation and skin moisturization. J.D. Hackenberg, N.D. Stebbins, K.E. Uhrich

**3:10** Intermission.

**3:25 POLY 57.** Preparation of breathable cotton fabric with superhydrophobic performance. M. Yu, Z. Wang, H. Ma, B. Zhang, J. Li

**3:55 POLY 58.** Developing epoxies for art conservation: Reworkable and fluorescent adhesives. P.D. McFadden, R. Bagge, K. Frederick, E. Canosa, D.A. Loy, N. Odegaard, P. Vandiver

**4:25 POLY 59.** Manufacturing affordable, high performance composites using solid epoxy resins. H.A. Maples, A. Bismarck, T. James

## Section C

Sheraton Philadelphia Downtown Hotel

Parlor B

### General Topics: New Synthesis & Characterization of Polymers

B. Barkakaty, D. Garcia, *Organizers*

R. Gray, D. Patil, *Presiding*

**1:30 POLY 60.** Co-polymers of poly(2-oxazoline) and substituted poly(urea) as an easy access to hydrogen-bond stabilized nanostructures. M.N. Leiske, M. Hartlieb, F.H. Sobotta, R.M. Paulus, U.S. Schubert

**1:50 POLY 61.** RAFT copolymerization towards cross-linked nanoporous polymers. M. Seo

**2:10 POLY 62.** Near infrared circularly polarized light triggered enantioselective photo-polymerization using upconversion nanophosphors. G. Zou

**2:30 POLY 63.** Enhancing gelation of doubly thermosensitive hydrophilic ABC triblock copolymer in water by thermoresponsive hairy nanoparticles. B. Hu, B. Zhao

**2:50 POLY 64.** Star-like copolymer stabilized noble-metal nanoparticle powders. Y. Yan, P. Cao, J.D. Mangadiao, L. Rong, R.C. Advincula

**3:10 POLY 65.** Preparation of pH-responsive microgel particles based on 2-aminoethyl methacrylate hydrochloride via one step reaction. S. Thaiboonrod, W. Sajomsang, C. Ratanatawanate, P. Gonil

**3:30 POLY 66.** On-demand dissolution of a dendritic hydrogel-based dressing for second-degree burn wounds via thiol-thioester exchange reaction. M. Konieczynska, J.C. Villa-Camacho, C. Ghobril, M. Perez-Viloria, A. Nazarian, E. Rodriguez, M.W. Grinstaff

**3:50 POLY 67.** Synthesis and characterization of poly(mannitol sebacate) (PMS) blends for use as scaffolds in tissue engineering. R. Gray

**4:10 POLY 68.** Hydrolysis of Poly(2-propyloxazoline)s as basis for DNA condensation. M.A. Mees, E. Haladjova, D. Momekova, S. Rangelov, R. Hoogenboom

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**4:30 POLY 69.** Structure and biomechanical properties of cartilage.  
F. Horkay, E.K. Dimitriadis, P.J. Basser

### Section D

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom B

#### 3rd Symposium on Poly(2-Oxazolines) & Polypeptoids

Financially supported by *Serina Therapeutics, GATT Technologies, Polymer Chemistry Innovations, Sigma Aldrich, CEM*

R. Hoogenboom, H. Schlaad, R. N. Zuckermann, *Organizers*

D. D'hooge, K. Kempe, *Presiding*

**1:30 POLY 70.** Supercritical-assisted POxylation: Designing new materials using carbon dioxide. V.G. Correia, V. Bonifacio, A. Aguiar-Ricardo

**2:00 POLY 71.** Model-based design of the microstructure of individual copoly(2-oxazoline) chains. P.H. Van Steenberge, B. Verbraeken, M. Reyniers, R. Hoogenboom, D. D'hooge

**2:30 POLY 72.** Commercial and specialty poly oxazolines at polymer chemistry innovations. B. Gordon, L.M. Stratton

**3:00** Intermission.

**3:15 POLY 73.** Brush/comb poly(2-oxazolines) for the fabrication of smart microcapsules. K. Kempe

**3:45 POLY 74.** Soft nanoparticles from graft copolymers based on poly(2-oxazoline) and poly(D,L-lactide). G. Volet, G. Le Fer, C. Le Coeur, C. Amiel

**4:15 POLY 75.** Uniform block copoly(2-oxazoline)s. B. Monnery, R. Hoogenboom

**4:35 POLY 76.** Photoresists based on coconut and castor oil. K.P. Luef, C. Petit, B. Grassl, F. Stelzer, S. Reynaud, F. Wiesbrock

**4:55 POLY 77.** Use of rather exceptional solvents to optimize and/or rather speed up the polymerization of 2-oxazolines. M. Vergaelen, B. Verbraeken, B. Monnery, R. Hoogenboom

### Section E

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom E

#### Materials Genome Approach to Structure & Function

#### Complex Supramolecular Structures & Systems by Merging Self-Assembling Block Copolymers & Dendrimers

M. L. Klein, V. Percec, *Organizers*

D. J. Pochan, D. A. Wilson, *Presiding*

**1:30 POLY 78.** Synthesis of polymers for self assembly. R.H. Grubbs

**2:05 POLY 79.** 4Synthetic motile systems with adaptive behaviour. D.A. Wilson

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

†Cooperative Cosponsorship

**2:40 POLY 80.** Mendeleev-Like nanoperic tables for predicting supramolecular structures of amphiphilic dendrons, dendrimers and proteins. D.A. Tomalia

**3:15** Intermission.

**3:35 POLY 81.** Modeling complex phases in block polymers by self-consistent field theory. K.D. Dorfman, A. Arora, S. Chanpuriya, J. Qin, D.C. Morse, K.T. Delaney, G.H. Fredrickson, F. Bates

**4:10 POLY 82.** Biomimetic polymersomes from controlled self-assembly of block copolymers. S. Lecommandoux

**4:45 POLY 83.** Responsive hierarchical assemblies: From nanoparticles to block copolymers. T.P. Russell

### Section F

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom F

#### Functional Renewable Polymers

*Cosponsored by CEI*

E. C. Hagberg, T. Kaneko, *Organizers*

R. T. Mathers, *Organizer, Presiding*

W. Gramlich, *Presiding*

**1:30 POLY 84.** Drying-induced self-organization of megamolecular polysaccharides and the macro-space division. K. Okeyoshi, M. Okajima, T. Kaneko

**2:00 POLY 85.** Chitosan-Cu(II) complex for ammonia removal in micro-polluted drinking water of the Dahufang Reservoir in winter season of China. Y. Gao, M. Sun, S. Liu, Z. Zong, J. Fu

**2:20 POLY 86.** Tunable and reversible thermo-responsiveness of sugar-based block copolymers. S. Wang, J. He, M.B. Foston, T.H. Epps

**2:40** Intermission.

**2:50 POLY 87.** Microwave assisted transformation of polysaccharides from renewable sources to surface-active polymers. Z. Mohd Aris, M.G. Pelletier, P. Gaines, R. Nagarajan

**3:10 POLY 88.** High ionic conductivity and mechanically strong ion gels made from renewable polymer, methyl cellulose/PYR14TFSI. P.R. Chinnam, R. Mantravadi, S.L. Wunder

**3:30 POLY 89.** Polymers from exotic amino acids: Their renewable and physicochemical properties as bioplastics. T. Kaneko, S. Tateyama, H. Shin, M. Okajima, N. Takaya

**4:00** Intermission.

**4:10 POLY 90.** Lignin-based functional polymers. H. Chung, H. Liu

**4:30 POLY 91.** Renewable poly(2-oxazoline)s as functional materials. R. Hoogenboom

**4:50 POLY 92.** Environmentally degradable bio-based polyamide from renewable itaconic acid and their composites with montmorillonite. M. Ali, N. Tandon, S. Tateyama, T. Kaneko

**5:10 POLY 93.** Furan based block copolymers for electronic applications. J. Du, M.C. Stefan, M.C. Biewer

### Section G

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom G

#### Polymers & the National Nanotechnology Initiative (NNI)

*Cosponsored by ANYL and SCHB†*

A. Rahman, D. G. Schmidt, *Organizers*

M. A. Meador, *Organizer, Presiding*

**1:30 POLY 94.** Studies into the isolation and use of cellulose nanocrystal. S.J. Rowan

**2:00 POLY 95.** Pharmacokinetic properties of nanoparticles applied to the skin with terahertz techniques. A. Rahman, A. Rahman, B. Michniak-Kohn

**2:20 POLY 96.** Novel protein nanoparticles with green and red autofluorescence for cell imaging and in vivo biodegradation imaging and modeling. X. Ma, J. Chen, Y. Lei

**2:40** Concluding Remarks.

### Porous Polymers

#### PolyHIPES

*Sponsored by PMSE, Cosponsored by POLY*

#### Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation

*Sponsored by COMP, Cosponsored by PHYS and POLY*

#### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

#### Novel & Precise Polyolefin Structures

*Sponsored by PMSE, Cosponsored by POLY*

## SUNDAY EVENING

### Radiopharmaceutical Chemistry

*Sponsored by FLUO, Cosponsored by INOR, MEDI, NUCL and POLY*

## MONDAY MORNING

### Section A

Sheraton Philadelphia Downtown Hotel  
Salon 10

#### Advanced Functional Biopolymers & Biomaterials

*Cosponsored by PMSE*

E. B. Berda, L. F. Deravi, J. Foster, *Organizers*

W. Gramlich, E. Palermo, *Presiding*

**8:00** Introductory Remarks.

**8:05 POLY 97.** Polymer surface modification for use in enhanced electrochemical biosensors. J.M. Halpern, G. Thompson, M. Arral, E. Mohamadi

**8:35 POLY 98.** Synthesis and functionalization of self-immolative polymers with biological activity. C. Ergene, E. Palermo

**9:05 POLY 99.** Towards controlled degradation of medical materials. S.T. Phillips

**9:35 POLY 100.** Molecular organization, mechanical properties, and ion transport in hierarchically structured repeat-protein materials. T. Zarkovic Grove

**10:05** Intermission.

**10:20 POLY 101.** Smart materials based nanocomposite: Cellulose nanocrystals as a versatile filler. J. Foster

**10:50 POLY 102.** Lignin as a building block in advanced materials. A. Imel, N. Henry, D. Ratnaweera, M.D. Dadmun

**11:20 POLY 103.** Green methods to functionalize cellulose derivatives to create robust hydrogels. W. Gramlich

**11:50 POLY 104.** Synthesis and application of hyperstar polymers as unimolecular containers for bioapplication. H. Gao

### Section B

Sheraton Philadelphia Downtown Hotel  
Salon 3/4

#### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

#### K-12 Workshop

*Cosponsored by CHED and PMSE*

H. S. Bui, W. Gao, D. Garcia, S. Percec, P. Schipper, L. Zhai, *Organizers*

D. N. Haase, S. C. Rukes, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:40 POLY 105.** Formulating polymer products to beautify your world. D.N. Haase

**9:00 POLY 106.** Basics of emulsion science. A. Shah

**9:20 POLY 107.** Lotions, potions, and scrubs: Polymer science in cosmetics. S.C. Rukes

**10:10** Intermission.

**10:25 POLY 108.** Elium®: An easy route to continuous fiber reinforced thermoplastic composites. D.L. Swan

**10:55 POLY 109.** Polymers and elastomers in sports. S.C. Rukes

### Section C

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom D

#### Industrial Polymer Science Award in honor of Joel Oxman

M. Jeffries-El, *Organizer*

C. Bowman, *Organizer, Presiding*

**8:30 POLY 110.** Photopolymerization and the generation of micro/nano structured surfaces at 3M. O. Benson

**8:50 POLY 111.** Dense (meth)acrylate networks from photocured formulations with little or no monomer. G. Gao, K. Simboski, S. Lewis, B. Powell, T. Zhong, J.W. Stansbury

**9:10 POLY 112.** UV Curing - It's all about the process. R.E. Wright

**9:30 POLY 113.** Cationic photopolymerization of systems pigmented with carbon black nanoparticles. A. Scranton, C. Hoppe, B. Fieck, H. Eom

**9:50 POLY 114.** Advances in 3D manufacturing. J.M. Desimone

**10:15** Intermission.

**10:30 POLY 115.** High-throughput multi-photon lithography. R.J. Devoe

**10:50 POLY 116.** Photoresponsive smart materials. C. Bowman

**11:10 POLY 117.** Responsive hydrogel matrices through photochemistry. K.S. Anseth, I. Marozas, T. Brown, J. Grim

**11:35** Award Presentation.



**11:40 POLY 118.** Visible solutions: Triggering smarter, faster, more versatile polymer systems. J. Oxman

## Section D

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom C

### 3rd Symposium on Poly(2-Oxazolines) & Polypeptides

Financially supported by Serina Therapeutics, GATT Technologies, Polymer Chemistry Innovations, Sigma Aldrich, CEM

R. Hoogenboom, R. N. Zuckermann, *Organizers*

H. Schlaad, *Organizer, Presiding*

S. M. Grayson, *Presiding*

**8:30 POLY 119.** New synthetic strategies for nonionic water-soluble poly(amino acid)s. J. Ling, X. Tao, Z. Yang

**9:00 POLY 120.** Polypept(o)ides: From well-defined polymers to functional nanoparticles and materials. M. Barz

**9:30** Intermission.

**9:45 POLY 121.** Synthesis of non-linear polyoxazolines and poly(ethylene imine)s using click chemistry. S.M. Grayson, M. Cortez, K.A. Kosakowska, M. Payne

**10:15 POLY 122.** Understanding the partial hydrolysis of poly(2-oxazoline)s: Is it random or block like? M.A. Mees, D. Buyst, J.C. Martins, R. Hoogenboom

**10:35 POLY 123.** Living anionic polymerization of aziridines. P. Ruper

**10:55 POLY 124.** N-acetylguanidine functionalized poly-2-oxazolines as a reactive handle for post-polymerization modification. J. Van Guyse, B. Verbraeken, R. Hoogenboom

**11:15 POLY 125.** Poly(2-Methyl-2-Oxazoline) based copolymers for gene delivery applications. B. Razolonjatovo, C. Huin, H. Cheradame, B. Pitard, P. Midoux, V. Bennevaut, P. Guegan

## Section E

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom E

### Materials Genome Approach to Structure & Function

### Complex Supramolecular Structures & Systems by Other Methods

M. L. Klein, V. Percec, *Organizers*

A. D. Asandei, J. S. Moore, *Presiding*

**8:30 POLY 126.** Digital alchemy for the design of complex colloidal assemblies. S.C. Glotzer, G. Van Anders

**9:05 POLY 127.** Elucidating the nanomaterial genome with scanning probe block co-polymer lithography. C.A. Mirkin

**9:40 POLY 128.** From light empowered to self oscillating hydrogel objects - on the rate and directionality control of microscopic morphing. M. Moller

**10:15** Intermission.

**10:35 POLY 129.** Materials genome approach For developing new electrochemical energy storage materials. J.S. Moore

**11:10 POLY 130.** Relating structure to function in block copolymer-based materials. R.B. Grubbs

**11:45 POLY 131.** Block copolymer vesicles for controlled encapsulation and release. W. Meier

## Section F

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom F

### Functional Renewable Polymers

*Cosponsored by CEI*

T. Kaneko, *Organizer*

E. C. Hagberg, R. T. Mathers, *Organizers, Presiding*

**8:00 POLY 132.** Poly(1,2-glycerol carbonate)s synthesized from CO<sub>2</sub> and glycidyl ether. M.W. Grinstaff

**8:30 POLY 133.** Synthesis of functionalized PLA using 2-bromo-3-hydroxypropionic acid. C.R. Pugh, C. Wright, X. Yan, A. Banerjee

**9:00 POLY 134.** Syringaresinol: a new bio-based bisphenolic building-block for polymers synthesis. M. Janvier, L. Hollande, A. Jaufurally, P. Ducrot, F. Allais

**9:20** Intermission.

**9:30 POLY 135.** Chemurgy: Progress in renewable chemicals. S.J. Howard, E.C. Hagberg, P. Bloom

**10:00 POLY 136.** Efficient polymerization of levulinic acid via Ugi multicomponent reaction. M. Hartweg, C. Becer

**10:20 POLY 137.** Renewable unsaturated polyesters. N. Rorser, J.R. Dorgan, D. Vardon, G. Beckham

**10:40** Intermission.

**10:50 POLY 138.** Catalyst development for the alternating copolymerization of epoxides and anhydrides: Access to well-defined, functionalizable, partially renewable aliphatic polyesters. M.J. Sanford, N.J. Van Zee, G.W. Coates

**11:10 POLY 139.** Complete recyclable glycopolymer-The depolymerization and repolymerization of sugar poly(orthoester). L. Li, N.A. Thompson, I. Milligan, W. Du

## Section G

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom B

### Biomacromolecules/Macromolecules Young Investigator Award

M. Jeffries-El, P. Majumder, *Organizers*

A. Albertsson, T. P. Lodge, *Organizers, Presiding*

**8:00 POLY 140.** Photo-growth of polymer gels using living iniferter polymerization. M. Chen, Y. Gu, J.A. Johnson

**8:30 POLY 141.** Facile construction and in situ fluorescent quantification of coupling and release efficiency of functional protein/antibody conjugates. G. Liu, S. Liu

**9:00 POLY 142.** Polymer matrices for synergistic delivery applications. E. Harth

**9:30 POLY 143.** Design of polymeric nanoparticles for the delivery of carbon monoxide and/or nitric oxide for the treatment of bacterial biofilm. C. Boyer

**10:00 POLY 144.** Shape-guided stimuli-responsiveness and cellular uptake of hydrogel microparticles. E.P. Kharlampieva

**10:30 POLY 145.** Interconvertible controlled/living radical and cationic polymerization via RAFT terminal. K. Satoh, M. Kamigaito

**11:00 POLY 146.** Self-sorted supramolecular polymer gels. E. Draper, R. Schweins, D. Adams

**11:30 POLY 147.** Thiol-yne additions for the synthesis of advanced materials. A.P. Dove

### International Drug Discovery & Development Collaborations

*Sponsored by SCHB, Cosponsored by MEDI, ORGN, POLY and PROF*

### Porous Polymers

### Microporosity, Mesoporosity & Block Copolymers

*Sponsored by PMSE, Cosponsored by POLY*

### Radiopharmaceutical Chemistry

*Sponsored by FLUO, Cosponsored by INOR, MEDI, NUCL and POLY*

### Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation

*Sponsored by COMP, Cosponsored by PHYS and POLY*

### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

### Block Copolymers

*Sponsored by PMSE, Cosponsored by POLY*

## MONDAY AFTERNOON

### Section A

Sheraton Philadelphia Downtown Hotel  
Salon 10

### Advanced Functional Biopolymers & Biomaterials

*Cosponsored by PMSE*

E. B. Berda, J. Foster, *Organizers*

L. F. Deravi, *Organizer, Presiding*

M. A. Daniele, *Presiding*

**1:00** Introductory Remarks.

**1:05 POLY 148.** Novel modifications of poly(ethylene imine). U.S. Schubert, C. Englert

**1:35 POLY 149.** Design and fabrication of bio-hybrid materials using inkjet printing. A.G. Maddaus, P.B. Curley, M. Grissold, L.F. Deravi

**2:05 POLY 150.** Engineered injectable supramolecular hydrogels for myocardial applications. C.B. Rodell, J.A. Burdick

**2:35 POLY 151.** Catechol-Bearing Polymer Networks: Biomaterials-based electrochemical storage to ultracompliant electronic devices. C. Bettinger

**3:05** Intermission.

**3:20 POLY 152.** Architected biopolymers: Unconventional networks give unprecedented properties. X. Zhao

**3:50 POLY 153.** Self-folding polymer thin films for biomedical and robotic applications. D.H. Gracias

**4:20 POLY 154.** Dynamic materials: From cephalopods to shape-shifters. A.A. Gorodetsky

**4:50 POLY 155.** Biomaterial and bio-nanocomposite thin-films for printed bioelectronics. M.A. Daniele, V. Lavelle, M.D. Wilkins

### Section B

Sheraton Philadelphia Downtown Hotel  
Salon 3/4

### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

*Cosponsored by CHED and PMSE*

H. S. Bui, D. Garcia, D. N. Haase, S. Percec, S. C. Rukes, P. Schipper, L. Zhai, *Organizers*

W. Gao, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:40 POLY 156.** Microcapsules for personal care products. X. Lu

**2:10 POLY 157.** Microbead-free waters act: A new reality for polymers in consumer goods? R.Y. Lochhead

**2:40 POLY 158.** Smart polymers - enablers of performance in home and personal care products. N. Shah

**3:10** Intermission.

**3:25 POLY 159.** Use of thermoplastic elastomer in cosmetic products. H.S. Bui

**3:55 POLY 160.** Use of latex in mascara. C. Pang, M. Kanji, H.S. Bui

**4:25 POLY 161.** Cooking with vinyl: From soup to nuts. P. Schipper

### Section C

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom D

### Industrial Innovations in Polymer Chemistry: The Interface Between Inorganic Chemistry & Polymer Science

*Cosponsored by BMGT and INOR*

S. A. Eastman, J. D. Goff, *Organizers, Presiding*

**1:30 POLY 162.** Dawn of engineering thermoplastic composites. B. Arkles

**2:00 POLY 163.** Industrial applications of fiber-reinforced hydrophobic silica aerogel composites. G. Gould, O. Evans

**2:30 POLY 164.** Introducing a new material to the market: There is no elevator to success, one must take the stairs. J. Lens, M.A. Lebel

**3:00 POLY 165.** Polymer-derived ceramic materials: Opportunities at united technologies corporation. W.R. Schmidt

**3:30** Intermission.

**3:45 POLY 166.** Functional materials for 3D manufacturing. J.P. Rolland

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**4:15 POLY 167.** Structure-property relationships of silicone encapsulants for electronic applications. K. Chano, J. Fregoso, M. Poliske

**4:45 POLY 168.** Impact of TiO<sub>2</sub>-polymer composites on gloss retention. M. Belowich, C. Valente, J. Tanzer, J. Reffner, M. Clark, K. Henderson, R. Auld, J. Ngunjiri, M. Koback

### Section D

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom C

#### 3rd Symposium on Poly(2-Oxazolines) & Polypeptides

Financially supported by Serina Therapeutics, GATT Technologies, Polymer Chemistry Innovations, Sigma Aldrich, CEM

R. Hoogenboom, H. Schlaad,  
R. N. Zuckermann, *Organizers*

W. Jang, R. Luxenhofer, *Presiding*

**1:30 POLY 169.** Self-assembly of polypeptides: Worms, vesicles and more. C. Fetsch, J. Gaitzsch, L. Messager, G. Battaglia, R. Luxenhofer

**2:00 POLY 170.** Effect of ions on structure and side-chain interactions in peptoids: A simulation study. M.D. Baer, S. Roy, C. Chen

**2:20 POLY 171.** Dynamic covalent assembly of peptoid-based ladder oligomers and its registry mechanism. T. Wei, J.C. Furgal, J. Jung, T.F. Scott

**2:40 POLY 172.** Journey in the world of nanostructures formed in water by self-assembly of AB diblock copolymers containing a 2-isopropyl-2-oxazoline block. F.M. Winnik

**3:10** Intermission.

**3:25 POLY 173.** Poly(2-isopropyl oxazoline)-based multi-modal stimuli-responsive functional materials. W. Jang, J. Kim, Y. Jung

**3:55 POLY 174.** Smart polymers based on N-isopropylacrylamide and 2-oxazolines. J.C. Rueda, S. Zschoche, H. Komber, D. Schmaljohann, M. Binner, A. Janke, K. Arndt, S. Lehmann, B. Voit

**4:25 POLY 175.** Self-assembly of diblock-like peptoids into nanotubes, hydrogels and membrane-mimetic 2D materials. C. Chen

**4:55 POLY 176.** Using molecular dynamics to explore the thermosensitive properties of Poly-(2-oxazolines) for applications in drug delivery. L. Felberg, T.L. Head-Gordon, J.E. Rice, W.C. Swope

### Section E

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom E

#### Materials Genome Approach to Structure & Function

#### Complex Supramolecular Structures & Systems by Other Methods

M. L. Klein, V. Percec, *Organizers*

R. B. Grubbs, M. Moller, *Presiding*

**1:30 POLY 177.** Making sliding-ring polymers using a dual molecular pump. J.F. Stoddart, C. Cheng, C. Pezzato

**2:05 POLY 178.** Polyelectrolytes in multivalent ionic media: New physics and new materials. M.V. Tirrell

**2:40 POLY 179.** Covalent-supramolecular hybrid polymers: Muscle-inspired and self-repairing material. S.J. Stupp

**3:15** Intermission.

**3:35 POLY 180.** Formation of well-defined, functional nanotubes via osmotically induced shape transformation of biodegradable polymersomes. J. van Hest, L. Abdelmohsen, D. Williams, D.A. Wilson

**4:10 POLY 181.** Putting patterns on spheres. R. Kamien

**4:45 POLY 182.** Controlled radical polymerization of vinylidene fluoride and synthesis of PVDF block copolymers: Writing and mapping the fluoromaterials genome. A.D. Asandei

### Section F

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom F

#### Functional Renewable Polymers

*Cosponsored by CEI*

R. T. Mathers, *Organizer*

E. C. Hagberg, T. Kaneko, *Organizers, Presiding*

**1:30 POLY 183.** Assessing hydrophobicity changes of renewable based polymers during post polymer modification. R.T. Mathers

**2:00 POLY 184.** New fully biobased epoxy thermosets from ferulic acid with tunable properties. R. Ménard, S. Caillol, F. Allais

**2:20 POLY 185.** New biobased epoxy materials and foams from microalgal oil. C. Negrel, A. Cornille, S. Caillol

**2:40** Intermission.

**2:55 POLY 186.** Effect of methoxy substituents on the kinetics and thermo-mechanical properties of photocured lignin-derived polymer networks. K. Reno, S. Dasgupta, C.J. Kloxin, T.H. Epps

**3:15 POLY 187.** Recyclable cross-linked polymer networks via one-step controlled radical polymerization. K. Jin, L. Li, J.M. Torkelson

**3:35** Intermission.

**3:50 POLY 188.** Artificial noses from biopolymers or supramolecular assembly based on cyclodextrins for the detection of lung cancer VOC biomarkers. L. Duarte, S. Sag, M. Castro, V. Bennevault, J. Feller, P. Guegan

**4:20 POLY 189.** Crosslinked poly(2-oxazolines) derived from renewable resources: Green alternatives for polyamides as insulators in electronic applications. F. Wiesbrock, M. Fimberger, I. Tsekmes, R. Kochetov, J.J. Smit

**4:40 POLY 190.** Quercetin-based derivatives as bisphenol A replacements in linear polycarbonates and epoxy cross-linked networks. S.L. Kristufek, K.A. Pollack, G. Yang, L. Link, B.J. Rohde, T. Gustafson, A. Noel, A. Jahnke, J.E. Raymond, M.L. Robertson, K.L. Wooley

### Section G

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom B

#### Sequence-Controlled Polymers

#### Synthesis: Periodic & Iterative Methods

J. Lutz, M. Ouchi, *Organizers*

T. Y. Meyer, *Organizer, Presiding*

**1:00** Introductory Remarks.

**1:05 POLY 191.** Kinetic theory and thermodynamics of living copolymerization. P. Gaspard

**1:35 POLY 192.** Thiol-click chemistries for the generation of polymers with defined periodic sequence. W. Xi, S. Pattanayak, B. Fairbanks, C. Bowman

**2:00 POLY 193.** One-pot sequential multicomponent reaction and multicomponent polymerization method for the synthesis of sequence-controlled polymers. Z. Zhang, L. Wang, Y. You

**2:25 POLY 194.** Cu-catalyzed multicomponent polymerization to give well-defined macromolecular structures. T. Choi

**2:50** Intermission.

**3:00 POLY 195.** Sequence-coded polymers: A platform to control molecular information. J. Lutz

**3:30 POLY 196.** Sequence-defined oligoTEAs: Assembly, characterization and applications. C.A. Alabi

**3:55 POLY 197.** IEG+: new methods and polymer properties. J.A. Johnson

**4:20 POLY 198.** Peptide mimetic precision polymers. P. Wilke, S. Wiczorek, E. Maron, H. Boerner

**4:35 POLY 199.** Sequence-defined macromolecules via multicomponent reactions. S. Solleder, K. Wetzel, M. Meier

#### International Drug Discovery & Development Collaborations

*Sponsored by SCHB, Cosponsored by MEDI, ORGN, POLY and PROF*

#### Porous Polymers

#### PolyHIPEs & Bio-Related

*Sponsored by PMSE, Cosponsored by POLY*

#### Radiopharmaceutical Chemistry

*Sponsored by FLUO, Cosponsored by INDR, MEDI, NUCL and POLY*

#### Designing Functional Biomaterials: Connecting Experiment with Theory & Simulation

*Sponsored by COMP, Cosponsored by PHYS and POLY*

#### Chemistry Explained by Teachers for Teachers: The Chemistry behind Everyday Things

*Sponsored by CHED, Cosponsored by PMSE, POLY and RUBB*

#### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

#### Oligomers & Functional Fluids

*Sponsored by PMSE, Cosponsored by POLY*

#### Analytical Chemistry to Support Industrial Polymer Development

*Sponsored by ANYL, Cosponsored by POLY*

#### Undergraduate Research Posters

#### Polymer Chemistry

*Sponsored by CHED, Cosponsored by PMSE, POLY and SOCED*

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

M. Jeffries-El, *Organizer*

**8:00 - 10:00**

318, 327, 329, 333-344, 347-348, 369-370, 372, 376, 410, 415. See subsequent listings.

## TUESDAY MORNING

### Section A

Sheraton Philadelphia Downtown Hotel  
Salon 10

#### Advanced Functional Biopolymers & Biomaterials

*Cosponsored by PMSE*

E. B. Berda, L. F. Deravi, J. Foster, *Organizers*

E. B. Garanger, J. S. Katz, *Presiding*

**8:00** Introductory Remarks.

**8:05 POLY 200.** Withdrawn.

**8:25 POLY 201.** Poly-amido-saccharides: New highly functionalized biopolymers. M.W. Grinstaff

**8:45 POLY 202.** Synthesis and application of chitosan based nano-particles. W. Sajomsang, P. Gonil, S. Thaiboonrod, C. Ratanatawanate

**9:05 POLY 203.** Biofunctional block copolymers for the design of bioactive self-assembled nanomaterials. E.B. Garanger, C. Drappier, S. Macewan, A. Chilkoti, S. Lecommandoux

**9:25 POLY 204.** Withdrawn.

**9:45** Intermission.

**10:00 POLY 205.** Tough vinyl ester photopolymers for biomedical applications. A. Mautner, R. Liska

**10:20 POLY 206.** Hydrogel microfibers synthesized via interfacial tetrazine ligation. S. Liu, A. Zerdoum, A. Moore, H. Zhang, D. Burris, J. Fox, X. Jia

**10:40 POLY 207.** Directed neurite growth using photopolymerized topographical features and chemical cues. B. Tuft, B. Leigh, M. Hansen, A. Guymon

**11:00 POLY 208.** Novel excipients for liquid stabilization of protein pharmaceuticals. J.S. Katz, L. Yao, Y. Tan, K. Kuppannan, D.J. Brennan, Y. Song, S.L. Jordan

**11:20 POLY 209.** Surface modification of scaffolds made from melt electrospinning writing. T. Lorson, M. Komma, G. Hochleitner, P.D. Dalton, R. Luxenhofer

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## Section B

Sheraton Philadelphia Downtown Hotel  
Salon 3/4

### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

*Cosponsored by CHED and PMSE*

W. Gao, D. Garcia, D. N. Haase, S. Percec, S. C. Rukes, P. Schipper, *Organizers*

H. S. Bui, L. Zhai, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:40 POLY 210.** Rheological and application properties of non-drip paints. S.M. Vuong

**9:10 POLY 211.** Search of hair's touch delicacy by conditioning charged polymers. G.S. Luengo

**9:40 POLY 212.** Molecular structure of the human skin barrier and its response to external agents. C.M. MacDermaid, M.L. Klein, G. Fiorin

**10:10** Intermission.

**10:25 POLY 213.** UV Gel nail polish. X. Zhou

**10:55 POLY 214.** Polymer technologies in sunscreens. F. Zeng, C. Schwartz

**11:25 POLY 215.** Intelligently designed UV-cleavable polymers for preventing sun-induced skin damage. M. Lee, E. Gungor, M. Siron, A.M. Armani

## Section C

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom F

### Polymeric Materials as Imaging Agents & Theranostics

#### Drug Delivery

*Cosponsored by FLUO, INOR, MEDI and NUCL*

A. Almutairi, C. J. Anderson, J. Lux, *Organizers, Presiding*

**8:30** Introductory Remarks.

**8:35 POLY 216.** Enzyme-directed assembly of nanoparticles in tumors: A new paradigm in tissue targeting for the delivery of cytotoxins and immunotherapeutics. N.C. Gianneschi

**9:05 POLY 217.** Acid-disintegratable polymersomes for intracellular drug delivery. G. Zhang, L. Wang, G. Liu

**9:25 POLY 218.** Design and formulation of nanoemulsion drug delivery systems with multimodal (NIR, MRI and PET) imaging properties. M. Herneisey, M.Z. Abadjian, C.J. Anderson, J.M. Janjic

**9:40 POLY 219.** Withdrawn.

**10:00** Intermission.

**10:15 POLY 220.** Non-invasive imaging of prognostic nanoparticle drug therapy success using a nanoreporter system. T. Reiner

**10:45 POLY 221.** Multi-component therapeutic dendrimer nanoparticles (DNPs) capable of gene delivery and turn on activation in tumors. D.J. Siegwart

**11:15 POLY 222.** Engineering perfluoropolyether colloids for multimodal (<sup>19</sup>F MR/PET/NIR) imaging supported drug delivery. J.M. Janjic

**11:45 POLY 223.** Functionalized polymers as building blocks for nanocarriers with superior theragnostic potential. U.S. Schubert, A. Traeger

**12:05 POLY 224.** Ultrasound guided multilayer polymer capsules for drug delivery. A. Alford, J. Chen, S. Ratnayaka, V.A. Kozlovskaya, F. Liu, B. Xue, K. Hoyt, E.P. Khariampieva

## Section D

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom C

### 3rd Symposium on Poly(2-Oxazoline)s & Polypeptides

*Financially supported by Serina Therapeutics, GATT Technologies, Polymer Chemistry Innovations, Sigma Aldrich, CEM*

R. Hoogenboom, H. Schlaad, R. N. Zuckermann, *Organizers*

S. K. Filippov, W. Meier, *Presiding*

**8:30 POLY 225.** Functional polymers based on unsaturated 2-oxazolines: from thermosensitive polymers to hydrogels. J. Kronek, P. Šramková, Z. Kroneková, A. Zahoranová, N. Petren iková, A. Kleinová, M. Mrlik, J. Mosnacek

**9:00 POLY 226.** Printable, biocompatible and thermogelling polymers based on pseudo-polypeptides. T. Lorson, S. Jaksch, T. Lühmann, R. Luxenhofer

**9:20 POLY 227.** Cation- $\pi$  and steric/inductive interactions for tailoring spontaneous gradient formation in poly(2-oxazolines). B. Verbraeken, J. Raymakers, R. Hoogenboom

**9:40 POLY 228.** Block and gradient copoly(2-oxazoline) micelles: Strikingly different on the inside. S.K. Filippov, B. Verbraeken, P.V. Konarev, D.I. Svergun, C.M. Papadakis, N. Vishnevskaya, A. Radulescu, S. Rogers, P. Stepanek, M. Hruby, R. Hoogenboom

**10:10** Intermission.

**10:25 POLY 229.** Amphiphilic polymers with hydrophobic PMOXA-blocks. W. Meier

**10:55 POLY 230.** Hydrogen-bonded self-assembly of poly(2-alkyl-2-oxazolines). A.L. Demirel

**11:25 POLY 231.** Insights into pseudo-polypeptide degradation: Investigations on oxidative and hydrolytic pathways. J. Ulbricht, M. Krebs, R. Luxenhofer

**11:45 POLY 232.** Effect of ionizing irradiation on biocompatible polymers. M. Hruby, O. Sedlacek, J. Kucka, M. Vetric, B. Monnery, R. Hoogenboom

## Section E

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom E

### Materials Genome Approach to Structure & Function

#### Homochirality: Origins, Transfer, Amplification & Functions

M. L. Klein, V. Percec, *Organizers*

T. Aida, J. G. Rudick, *Presiding*

**8:30 POLY 233.** Stimuli-responsive polymer materials fabricated under thermodynamically non-equilibrated conditions. T. Aida

**9:05 POLY 234.** Pathway complexity in supramolecular aggregates: Chirality as a muse. E.W. Meijer

**9:40 POLY 235.** Translating protein design rules for hybrid biomaterials. J.G. Rudick

**10:15** Intermission.

**10:35 POLY 236.** Why are biological systems homochiral? V. Percec, B.M. Rosen, C. Roche, B.E. Partridge, H. Sun, P. Leowanawat, M. Peterca, F. Araoka, X. Zeng, G. Ungar, P.A. Heiney

**11:10 POLY 237.** Double-stranded helical foldamers as unique chiral materials. E. Yashima

**11:45 POLY 238.** Functional self-assembled materials based on peptides and proteins. R. Nolte

## Section G

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom B

### Sequence-Controlled Polymers

#### Synthesis: Radical Polymerization

T. Y. Meyer, M. Ouchi, *Organizers*

J. Lutz, *Organizer, Presiding*

**8:00 POLY 239.** RAFT single unit monomer insertion (SUMI) and monomer sequence control. G. Moad, M. Danial, J. Haven, M. Hendrikk, A. Postma

**8:30 POLY 240.** Sequence-defined acrylate oligomers: Synthesis optimization and upscaling. T. Junkers

**8:55 POLY 241.** Sequence-controlled vinyl polymers by transition metal-catalyzed radical addition. K. Satoh, M. Kamigaito

**9:20** Intermission.

**9:30 POLY 242.** Strategic molecular design to construct sequence-controlled vinyl polymers. M. Ouchi

**10:00 POLY 243.** RAFT polymerization to design sequence-controlled polymers. S. Perrier

**10:25 POLY 244.** Sequence-controlled radical copolymerization in MOFs. T. Uemura

**10:50 POLY 245.** High-throughput sequence-controlled polymerizations for the synthesis of novel gradient copolymer. U.S. Schubert, C. Guerrero-Sanchez, S. Harrison, M. Destarac

**11:15 POLY 246.** Sequence-defined oligomers based on a thiolactone strategy: From manual to automated approach. S. Martens, F.E. Du Prez

### Porous Polymers

#### Mesoporosity & Block Copolymers

*Sponsored by PMSE, Cosponsored by POLY*

#### GSSPC: From Bench-to-Bench & Beyond: Engaging People with High Impact Chemistry

*Sponsored by CHED, Cosponsored by INOR and POLY*

#### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

#### Sequence Control, Microstructure & Topology

*Sponsored by PMSE, Cosponsored by POLY*

#### Henkel Award for Outstanding Graduate Research in Polymer Chemistry: Symposium in honor of Maxwell Robb

*Sponsored by PMSE, Cosponsored by POLY*

## TUESDAY AFTERNOON

## Section A

Sheraton Philadelphia Downtown Hotel  
Salon 10

### Advanced Functional Biopolymers & Biomaterials

*Cosponsored by PMSE*

E. B. Berda, L. F. Deravi, J. Foster, *Organizers*

D. Konkolewicz, M. Skinner, *Presiding*

**1:00** Introductory Remarks.

**1:05 POLY 247.** Membrane-active biomimetic polymers with antimicrobial activity: membrane disruption, pore formation, and fusion. M. Tsukamoto, K. Yasuhara, K. Kuroda

**1:25 POLY 248.** Tuning the enzymatic activity and Stability through polymer modification. D. Konkolewicz, M. Lucius, R. Falatach, R.C. Page, J. Berberich, C. Williams, A. Danielson, K. Makaroff, C. McGlone

**1:45 POLY 249.** Covalently modified acrylates as medical adhesives with tunable therapeutic delivery. Z. Wright, B. Holt, S.A. Sydlik

**2:05 POLY 250.** Zwitterionic polysiloxanes as functional amphiphiles. M. Skinner, T. Emrick

**2:25 POLY 251.** Advanced poly(2-oxazoline) nanostructures with tunable properties for imaging and drug delivery applications. V. R. de la Rosa, Z. Zhang, S. Tempelaar, L.M. Mespouille, B. De Geest, R. Hoogenboom

**2:45** Intermission.

**3:00 POLY 252.** Active networks prepared via degradable thiol-ene acetal photopolymerization. D. Amato, D. Amato, O.V. Mavrodi, W. Martin, S. Swilley, D. Mavrodi, D.L. Patton

**3:20 POLY 253.** Injectable and cytocompatible tough double network hydrogels through tandem supramolecular and covalent crosslinking. C.B. Rodell, N.N. Dusat, C.B. Highley, J.A. Burdick

**3:40 POLY 254.** Injectable guest-host modified polyethyleneimine-polyethylene glycol hydrogels for myocardial siRNA delivery. L.L. Wang, J.N. Sloand, A.C. Gaffey, C.M. Venkataraman, A. Trubelja, P. Atluri, J.A. Burdick

**4:00 POLY 255.** Molecular contributions to coloration in cephalopod chromatophores. T. Williams, C.W. DiBona, L.F. Deravi

**4:20 POLY 256.** Thiol-mediated miniemulsion polymerizations: A new route to antimicrobial nanoparticle. D. Amato, D.V. Amato, O.V. Mavrodi, D. Braasch, S. Walley, J. Douglas, D. Mavrodi, D.L. Patton

## Section B

Sheraton Philadelphia Downtown Hotel  
Salon 3/4

### Polymer Science at the Interface of Industry, Government & Academics

#### National Laboratory Directions

*Cosponsored by COLL, PMSE and SCHB*

M. J. Fevola, B. S. Lokitz, S. York, *Organizers*

S. E. Morgan, *Organizer, Presiding*

**1:00 POLY 257.** Polymer science for the next-generation warfighter. D.E. Poree



- 1:30 POLY 258.** Polymer activities in the Air Force Materials and Manufacturing Directorate. T.J. Bunning
- 2:00 POLY 259.** Why NIST is an important and unique federal laboratory in polymer and complex fluid science: Deep expertise and strategic partnerships. K. Beers
- 2:30 POLY 260.** Development of new theoretical and practical approaches to controlling ice adhesion. J.M. Mabry, K. Golovin, A. Tuteja, A.J. Meuler, R.E. Cohen, G.H. McKinley, A.J. Guenther
- 3:00** Intermission.
- 3:15 POLY 261.** Precision synthesis and characterization at the Center for Nanophase Materials Sciences. B.S. Lokitz
- 3:45 POLY 262.** Cooperative research of liquid crystalline materials: Enabling applications beyond displays. T.J. White, T.J. Bunning
- 4:15 POLY 263.** Development of a data infrastructure for progressive modeling of polymers and soft materials at multiple levels of granularity. F.R. Phelan, T. Rosch, C. Jeong, H. Sun

### Section C

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom F

#### Polymeric Materials as Imaging Agents & Theranostics

##### Medical Imaging

Cosponsored by FLUO, INOR, MEDI and NUCL

A. Almutairi, C. J. Anderson, J. Lux, *Organizers, Presiding*

##### 1:30

- 1:35 POLY 264.** Zirconium-89 radio-labeled antibodies for the epidermal growth factor receptor (EGFR). M.C. Parrott, D.R. Beckford-Vera

- 2:05 POLY 265.** In vivo MRI and PET imaging of cancer with nanogels incorporating metal-chelating cross-linkers. J. Lux, M. Chan, A.G. White, C.J. Anderson, A. Almutairi

- 2:25 POLY 266.** Chemokine receptors targeted polymeric nanoparticles imaging atherosclerosis. H. Luehmann, E.D. Pressly, L. Detering, D. Sultan, A. McGrath, P. Woodard, G. Randolph, R. Gropler, C.J. Hawker, Y. Liu

- 2:55 POLY 267.** In vivo behavior of <sup>89</sup>Zr-labeled poly(2-ethyl-2-oxazoline) and poly(ethylene glycol). L. Wyffels, T. Verbruggen, B. Monner, M. Glassner, S. Stroobants, R. Hoogenboom, S. Staelens

- 3:15 POLY 268.** Synthesis of chelator-fatty acid derived surfactants for nanoemulsion formulation of multimodality positron emission tomography (PET) and MR imaging drug delivery systems. M.Z. Abadian, M. Herneisey, J.M. Janjic, C.J. Anderson

##### 3:30

- Intermission.
- 3:45 POLY 269.** Ultra-pH sensitive nanotransistor advances cancer imaging and surgery. T. Zhao, G. Huang, S. Yang, Z. Lin, Y. Li, J. Thibodeaux, B. Sumer, J. Gao

- 4:05 POLY 270.** Intrinsically manganese-chelated polydopamine nanoparticles as a biocompatible theranostic platform for cancer diagnosis and therapy. Z. Miao, L. Zhen, C. Xu

##### 4:25 POLY 271.

- Withdrawn.
- 4:45 POLY 272.** Fizzy approach to PEI processing yielding a fluorescent biomaterial. M.A. Mees, C. Toft, T. McAllister, S. Curia, S.M. Howdle, R. Hoogenboom

- 5:05 POLY 273.** Raman-active polymer nanoparticles for cell imaging. S. Brucks, F. Hu, W. Min, L.M. Campos

##### 5:20

Concluding Remarks.

### Section D

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom C

#### 3rd Symposium on Poly(2-Oxazolines) & Polypeptides

Financially supported by Serina Therapeutics, GATT Technologies, Polymer Chemistry Innovations, Sigma Aldrich, CEM

R. Hoogenboom, H. Schlaad, R. N. Zuckermann, *Organizers*

E. Benetti, V. V. Khutoryanskiy, *Presiding*

- 1:30 POLY 274.** Poly(2-oxazoline)-decorated nanomaterials: Synthesis, characterization and mucus penetration. V.V. Khutoryanskiy, E. Mansfield, A.C. Williams

- 2:00 POLY 275.** Development of GATT-Patch, a poly(2-oxazoline) based hemostatic agent. M. Boerman, J. Bender, S.C. Leeuwenburgh, J.A. Jansen, J. van Hest

- 2:20 POLY 276.** Lab in a tube: Purification, amplification, and detection of DNA using poly(2-oxazoline) multilayers. M.N. Leiske, M. Hartlieb, C. Paulenz, M. Hentschel, C. Englert, M. Gottschaldt, U.S. Schubert

- 2:40 POLY 277.** SER-214: A once weekly POZ-polymer therapeutic for the treatment of Parkinson's disease. R. Moredith

##### 3:10

Intermission.

- 3:25 POLY 278.** Polyplex micelles with double-protective compartments of hydrophilic shell and thermo-switchable palisade of poly(oxazoline)-based block copolymers for promoted gene transfection. K. Osada, S. Osawa, K. Kataoka

- 3:55 POLY 279.** Tumor inhibition of poly(2-oxazoline)-paclitaxel formulations in advanced tumor models evaluated against clinical paclitaxel formulations. R. Luxenhofer, Z. He, A. Schulz, X. Wan, R. Jordan, A. Kabanov

- 4:25 POLY 280.** Tissue-reactive poly-methylloxazoline-based graft-copolymers as promising biolubricants for articular cartilage. G. Morgese, M. Zenobi-Wong, E. Benetti

- 4:55 POLY 281.** Novel PEG-b-PCL-b-PMOXA amphiphilic triblock copolymers: towards polymersomes with asymmetric membrane. E. Konischeva, W. Meier

### Section E

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom E

#### Materials Genome Approach to Structure & Function

##### Glycobiology, Glycopolymers, Glycoproteins & Glycodendrimers

M. L. Klein, V. Percec, *Organizers*

T. J. Deming, S. Lecommandoux, *Presiding*

- 1:30 POLY 282.** Precision glyco-calyx editing as a strategy for cancer immunotherapy. C.R. Bertozzi

- 2:05 POLY 283.** Glycopolymer probes of immunity. L.L. Kiessling

- 2:40 POLY 284.** Diverse functional polypeptides via switchable side-chain groups. T.J. Deming

##### 3:15

- Intermission.
- 3:35 POLY 285.** Programming biological membrane mimics and their glycan with self-assembling Janus glycodendrimersomes. V. Percec, Q. Xiao, S. Zhang, P. Leowanawat, S.S. Yadavalli, M. Goulian, D.A. Hammer, D.J. Pochan, H. Gabius, M.L. Klein

- 4:10 POLY 286.** Multivalent 1D, 2D and 3D polymers as potent inhibitors for pathogens. R. Haag, B. Ziem, S. Bhatia

- 4:45 POLY 287.** Star-shaped glycopolymers with ability to manipulate cytokine secretion in human dendritic cells. D.M. Haddleton, C. Becer, D.E. Mitchell, Q. Zhang

### Section F

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom D

#### Advances in Functional Polymers with Sophisticated Branched Structures

C. Cheng, H. Gao, R. Nicolay, *Organizers*

E. B. Berda, N. V. Tsarevsky, *Presiding*

##### 1:00

- Introductory Remarks.
- 1:05 POLY 288.** Branched (co)polymers by ATRP. K. Matyjaszewski

- 1:35 POLY 289.** Knitting nanostructures via polymerizable pendants. E.B. Berda, C. Lyon, J. Cole, J. Lessard

- 2:05 POLY 290.** Precision sulfone chemistry raises the melting point of polyethylene. K.B. Wagener

- 2:35 POLY 291.** Oxime cross-linkable, dopamine containing brush polymers via ROMP for biomedical adhesive applications. R. Slegers, H. Chung

##### 2:55

- Intermission.
- 3:10 POLY 292.** Synthesis of brush-like polymers via integrated ring-opening metathesis polymerization and polymerization of amino acid N-carboxyanhydrides. R. Baumgartner, J. Cheng

- 3:40 POLY 293.** Methodologies for the synthesis of highly branched polymers involving transfer and exchange reactions. N.V. Tsarevsky

- 4:10 POLY 294.** Tuning of branched polyglycidol network densities to prepare optimized materials for drug delivery and tissue engineering. D. Beezer, E. Harth

- 4:30 POLY 295.** Comparative study of physical and chemical properties for a variety of bis-MPA polymers architectures. J.A. Giesen, J.L. Marple, F.M. Haque, S.M. Grayson

### Section G

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom B

#### Sequence-Controlled Polymers

##### Synthesis: Other Methods

J. Lutz, T. Y. Meyer, *Organizers*

M. Ouchi, *Organizer, Presiding*

- 1:00 POLY 296.** Sequence controlled multiblock copolymers via a biomimetic segregation approach: Application of emulsion polymerization. D.M. Haddleton, A. Anastasaki, N. Engelis, G. Nurumbetov, V. Nikolaou

- 1:30 POLY 297.** Monomer sequence control via living anionic polymerization. L.R. Hutchings

- 1:55 POLY 298.** Sequence-specific polymers by living anionic polymerization of template monomers. J. He, Y. Yu, C. Qu

- 2:20 POLY 299.** Precision synthesis of alternating, block, star, or random copolymers via living/controlled cationic polymerization. S. Aoshima, A. Kanazawa, S. Kanaoka

##### 2:45

Intermission.

- 2:50 POLY 300.** Polymerization of heterocycles: A simple approach to sequence control in polymer synthesis. C.M. Thomas, C. Robert

- 3:15 POLY 301.** Alternating copolymers via ROMP of 1-substituted cyclobutenes. N.S. Sampson

- 3:40 POLY 302.** Living alternating ring-opening metathesis polymerization using cyclopropenes. B. Elling, Y. Xia

- 4:05 POLY 303.** Synthesis of polymers with controlled sequence by Pd-catalyzed isomerization polymerization. D. Takeuchi, K. Osakada

- 4:30 POLY 304.** Precision, tactic polyolefins. K.B. Wagener, C. Few, H. Martinez, G.W. Coates, B.J. Tiegs

### Porous Polymers

#### Aerogels & Foams

Sponsored by PMSE, Cosponsored by POLY

#### Green Chemistry Innovations & Opportunities in Industry for Young Professionals

Sponsored by I&EC, Cosponsored by CATL, CEI, CHAS, ENFL, ENVR, ORGIN, POLY, PROF and YCC

#### GSSPC: From Bench-to-Bench & Beyond: Engaging People with High Impact Chemistry

Sponsored by GHED, Cosponsored by INOR and POLY

#### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

##### Polymeric Materials

Sponsored by PMSE, Cosponsored by POLY

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## TUESDAY EVENING

## Section A

Pennsylvania Convention Center  
Hall G

## 3rd Symposium on Poly(2-Oxazolines) &amp; Polypeptides

R. Hoogenboom, H. Schlaad, R. N. Zuckermann, *Organizers*

6:00 - 8:00

**POLY 305.** Poly(2-oxazolines) triblock copolymers with mutually immiscible hydrophilic, hydrophobic and fluorophilic blocks. L.I. Kaberov, B. Verbräeken, S.K. Filippov, M. Hruby, A. Riabtseva, L. Kovacic, P. Stepanek, R. Hoogenboom

**POLY 306.** Microwave-assisted rapid one-step synthesis of poly(2-oxazoline)-based block copolymers using a dual initiator for CROP and RAFT polymerization. M. Kang, H. Shin, Y. Yu, J. Youk

**POLY 307.** Parameters determining the hydrolysis rates of poly(2-oxazoline)s. K.P. Luef, F. Wiesbrock

**POLY 308.** Heterotelechelic polyoxazolines for immobilization of biomolecules. G. Gil Alvarado, G. Delaittre

**POLY 309.** Fast and accurate partial hydrolysis of poly(2-ethyl-2-oxazoline) into tailored polyethyleneimine copolymers. V. R. de la Rosa, E. Bauwens, B. Monnery, B. De Geest, R. Hoogenboom

**POLY 310.** Elucidation of poly(2-oxazoline) termination phenomena via targeted end group modification and MALDI-ToF MS characterization. K.A. Kosakowska, P. Dimitrov, S.M. Grayson

**POLY 311.** Enzyme-poly(2-oxazoline) conjugates as highly selective artificial metallo-enzymes. M. Leurs, S. Konieczny, J.C. Tiller

**POLY 312.** Synthesis of polypeptides bearing oligomeric ethylene glycol side chains. S. Xuan, D. Zhang

## Section A

Pennsylvania Convention Center  
Hall G

## Advanced Functional Biopolymers &amp; Biomaterials

E. B. Berda, L. F. Deravi, J. Foster, *Organizers*

6:00 - 8:00

**POLY 313.** Facile fabrication of poly(acrylic acid) coated chitosan nanoparticles with improved blood compatibility. Y. Zhi, C. Jing, W. Yukun, W. Wang

**POLY 314.** pH-Modulated hierarchical self-assembly of a bolaamphiphilic collagen-like peptide. M. He, L. Wang, J. Xiao, Z. Zhang

**POLY 315.** Chondroitin sulfate-modified cationic polymers as a potential gene delivery vector. L. Wang

**POLY 316.** Reactive oxygen species self-scavenging nanomicelles for highly efficient gene transfection. L. Wang, Y. You

**POLY 317.** Utilization of biomass as filler in elastomer industry. S.H. Egboh

**POLY 318.** Converting natural biomass to amphiphilic antimicrobial polymers in solution and on surfaces. M.S. Ganewatta, P. Mehrpouya-Bahrami, M. Rahman, L.N. Mercado, Y.P. Chen, M. Nagarkatti, P. Nagarkatti, A.W. Decho, C. Tang

**POLY 319.** Designing highly selective antimicrobial polymers for the treatment of biofilm infections. A. Gupta, R. Landis, M. Schnurr, Y. Lee, V.M. Rotello

**POLY 320.** Heat transfer property of nanocomposites using nanocellulose skeleton. K. Uetani, T. Okada, H. Oyama

**POLY 321.** Antifouling spherical poly(N-hydroxyethyl acrylamide) brushes. Q. Xue, K. Chen, L. Li, X. Guo

**POLY 322.** Drug-based supramolecular nanotubes as effective drug carriers. Y. Wang, P. Zhang, R. Lin, H. Cui

**POLY 323.** Layer-by-layer coating of temperature-responsive micelles on nanofibers for a novel skin graft with dual-agent releasing capacity. V. Albright, M. Stack, H. Wang, S.A. Sukhishvili

**POLY 324.** ATP and pH dual-responsive degradable nanogels for intracellular methotrexate delivery. X. Zhang, Q. Zhao, S. Zhang

**POLY 325.** pH Controlled multivalent interactions between NIPAm-based nanoparticles and proteins. S. Onogi, S. Lee, K.J. Shea

**POLY 326.** Hybrid multiblock peptide-polymer fibers for tissue engineering applications. O.J. George, S. Liu, H. Zhang, J. Fox, X. Jia

**POLY 327.** Dual drug delivery: Generation of nanosponges and precise nanohydrogels via liposome master templates. J. Lockhart, E. Harth

**POLY 328.** Oral drug delivery systems for enhanced solubility and bioavailability of anti-HIV drug combinations. H. Arca, K.J. Edgar

**POLY 329.** Nonswellable injectable hydrogels with shear-thinning and self-healing properties. T. Becher, D.L. Bertuzzi, C. Ornelas

**POLY 330.** Bioactive cell-like hybrids coassembled from (glyco)dendrimersomes with bacterial membranes. Q. Xiao, S.S. Yadavalli, S. Zhang, S.E. Sherman, E. Fiorin, L.C. Da Silva, D.A. Wilson, D.A. Hammer, S. André, H. Gabius, M.L. Klein, M. Goulian, V. Percec

**POLY 331.** Probing the surface properties of biologically inspired materials. C. Crain, D. Paradiso, J.Z. Larese

**POLY 332.** Dynamic whole blood study of silicone modified with PEO-silane amphiphiles. M.E. Barry, M.A. Rufin, M. Grunlan

**POLY 333.** Antimicrobial activities of eumelanin-inspired conjugated oligomers and polymers. S. Adhikari, E. Lutter, T.L. Nelson

**POLY 334.** Amphiphilic glycopeptide assemblies as drug and protein carriers. J. Jan

**POLY 335.** Formulation development of PFPE nanoemulsions for HIFU-triggered drug delivery. E. Lambert, D. Ye, H. Chen, J.M. Janjic

**POLY 336.** Bioinspired antimicrobial polyurethanes: A new tool for combating bacterial infections. S.G. Mankoci, R.L. Kaiser, H. Barton, N. Sahai, A. Joy

**POLY 337.** Addition of antimicrobial properties in multiple nitrogen containing copolymers. K.L. Denson, B.L. Batchelor, K. Yang, W. Voit, D. Yang

## Section A

Pennsylvania Convention Center  
Hall G

## Advances in Functional Polymers with Sophisticated Branched Structures

C. Cheng, H. Gao, R. Nicolay, *Organizers*

6:00 - 8:00

**POLY 338.** Increase the molecular weight of hyperbranched polymers in RAFT polymerization of polymerizable transfer agent. X. Wang, Y. Shi, R.W. Graff, X. Cao, H. Gao

**POLY 339.** Regulating the synthesis of nanostructured polymers by atom transfer radical polymerization in microemulsion. R.W. Graff, X. Wang, Y. Shi, H. Gao

**POLY 340.** Preparation of polymeric janus particles with an efficient strategy and their controllable emulsifiabilities. R. Wang

**POLY 341.** Chain-growth CuAAC click polymerization of AB<sub>2</sub> monomers for the formation of hyperbranched polymer with low polydispersity and high degree of branching in a one-pot process. Y. Shi, X. Cao, R.W. Graff, X. Wang, H. Gao

**POLY 342.** Utilizing 1-chloro-1,2-benziodoxol-3(1H)-one in the preparation of branched polymers. R. Kumar, N.V. Tsarevsky

**POLY 343.** Well-defined multifunctional dendrimers for nanomedicine applications. D.L. Bertuzzi, T. Becher, C. Ornelas

**POLY 344.** Divergent synthesis of four generations of aliphatic polyamide dendrimers. Y. Timsina, D. Jishkariani, S. Grama, C.M. MacDermaid, S.S. Gillani, M. Divar, R. Moussodia, P. Leowanawat, A.M. Berrios Camacho, M.L. Klein, V. Percec

**POLY 345.** Divergent-convergent strategy for the synthesis of aliphatic polyamide dendrimers. S. Grama, Y. Timsina, D. Jishkariani, C.M. MacDermaid, S.S. Gillani, M. Divar, R. Moussodia, P. Leowanawat, A.M. Berrios Camacho, M.L. Klein, V. Percec

**POLY 346.** Conformation of the backbone of bottlebrush polymers. J. Kim, J.A. Kornfield

## Section A

Pennsylvania Convention Center  
Hall G

## Functional Renewable Polymers

*Cosponsored by CEI*

E. C. Hagberg, T. Kaneko, R. T. Mathers, *Organizers*

6:00 - 8:00

**POLY 347.** ADMET polymerization of biobased monomers deriving from syringaresinol. L. Hollande, A. Jaufurally, P. Ducrot, F. Allais

**POLY 348.** Thermoplastic elastomers from renewable feedstocks using a chain walking strategy. K. O'Connor, A. Watts, T. Vaidya, G.W. Coates, M.A. Hillmyer

**POLY 349.** Megamolecular rods: Efficient renewability from cyanobacterial activity and anomalous gel functionality. M. Okajima, K. Okeyoshi, T. Kaneko

**POLY 350.** Living radical polymerization of renewable styrene derivatives from natural resources. H. Takeshima, K. Satoh, M. Kamigaito

**POLY 351.** Syntheses of polypyrrolidone for itaconic acid and bioconjugates with amino acid. M. Ali, S. Tateyama, T. Kaneko

**POLY 352.** Solvent-free, photocurable mussel-inspired polyester adhesive for underwater adhesion. A. Narayanan, Q. Liu, Y. Xu, A. Joy

## Section A

Pennsylvania Convention Center  
Hall G

## General Topics: New Synthesis &amp; Characterization of Polymers

D. Garcia, *Organizer*

6:00 - 8:00

**POLY 353.** Mechanical properties of poly(ethylene glycol) reinforced by abaca nanocrystals and 3D printed via SLA. N. Palaganas, J.D. Manganalao, A.C. de Leon, K. Pangilinan, J. Palaganas, R.C. Advincula

**POLY 354.** Improved mechanical and aging properties of RTV nanocomposite polysiloxane foam materials. T.W. Robison

**POLY 355.** New development in non-BPA technology. K.B. Sawant

**POLY 356.** Synthesis and characterization of polyimides having a rigid ring system. D. Patil

**POLY 357.** Random L-lactide/bioaromatics copolymerizations for increasing the glass transition temperature of PLA. H. Nguyen, G. Short, S.A. Miller

**POLY 358.** Macroscopic photoinduced bending of polymeric nanofibrous mats. J. Shin, M.Y. Livshits, A. Razgoniaev, A. Ostrowski, J. Rack

**POLY 359.** Dithiol oxidation to produce disulfide crosslinked nanogels. S. Elkassih, D.J. Siegwart

**POLY 360.** Facile generation of nanoporous organic framework via simultaneous phase separation and gelation of covalent network/polymer mixture. W. Oh, J. Bae, J. Park

**POLY 361.** RAFT polymerization of isoprene from nanoparticle surfaces. M.M. Mohammadkhani, B.C. Benicewicz

**POLY 362.** Cooperative catalytic activity of cyclodextrin and gold nanoparticles immobilized on cationic spherical polyelectrolyte brushes. Z. Qiu, J. Wang, Z. Yuan, M. Wang, L. Li, X. Guo

**POLY 363.** Optimization of dendrimer-based mass spectrometry calibrants for protein analysis. J.A. Giesen, B. Myers, F.M. Haque, M. Ejaz, S.M. Grayson

**POLY 364.** Fluorescent dendritic microhydrogels: Synthesis, analysis and use in single-cell detection. L.M. Christadore, H. Paroline, S. Schaus, M.W. Grinstaff

**POLY 365.** Degradation and release profiles of uniform PLGA microparticles containing small molecule drugs. C. Anderson, P. Dollings, A. Greenfield, M. Pinto, S. Shimschock, M.W. Wagaman

**POLY 366.** In situ wide/small angle X-ray scattering study on structural evolution of PLLA/PHB blends during deformation. J. Wang, L. Li, C. Yang, F. Bian, X. Guo

**POLY 367.** Investigating the self-assembly of Yavir reagents using circular dichroism spectroscopy. B. Leeber, D. Caianiello, H. Khun, R. Lusi, A. Basu

**POLY 368.** Solid/liquid interfacial synthesis of high conductivity polyaniline. C. Kim, W. Oh, E. Jeon, J. Park

- POLY 369.** Designing light harvesting materials from fulvenes. N.P. Godman, K.M. Hellwig, S. Budy, G.J. Balaich, S.T. Iacono
- POLY 370.** Semiconducting elastomeric block copolymers containing poly(3-hexylthiophene). C. Niermann, A. Haring, T. Elashy, B. Johnson, M.C. Stefan
- POLY 371.** Acid/ base doped/ dedoped low band gap polymer. B. Karabay, G. Gokce, A. Cihaner, M. Icli Ozkut
- POLY 372.** Cationic conjugated polyelectrolytes with branched polyamine side chains: Synthesis, photophysics, and applications. Z. Li, S. Wang, K.S. Schanze
- POLY 373.** Clickable Nucleic Acids: Sequence controlled synthesis of nucleobase containing thioether polymers. S. Dasgupta, B. Sutherland, J. Paloni, C.J. Kloxin
- POLY 374.** Use of polymer pigment composites for coatings with improved eco-footprint. P. Luo, M. Wills, J. Stracke, D. Kelly, D. Fradkin Shaw, M. Heffner, A. Shaffer, M.H. Keefe, J. Bohling
- POLY 375.** Removal of heavy metal ions by a polymer matrix containing ditiocarbamate as a chelating group. F. Damkaci, H. Sarikahya, R. Scalzo, V. Niri
- POLY 376.** New strategies for the synthesis of innovative recyclable polymers from raw materials. A.R. Hlil, R. Tuba, M. Al-Hashimi, H.S. Bazzi, R.H. Grubbs
- POLY 377.** Environmentally friendly one-pot synthesis of hairy nanoparticles by thiol-yne miniemulsion photopolymerization and ATRP. W. Martin, D. Amato, D. Amato, D.L. Patton
- POLY 378.** Coalescence of activity and control in H-bond mediated organocatalysis. K. Fastnacht, M.K. Kiesewetter
- POLY 379.** Alkylamine bases in organocatalytic ring-opening polymerization of cyclic ester. O.I. Kazakov, M.K. Kiesewetter
- POLY 380.** New difunctional perfluoropyridine-based cfor advanced polymer applications. C.A. Corley, S.T. Iacono, A.M. Schoffstall
- POLY 381.** Unprecedented activity and control in organocatalysis: Multi-H-bond donors. K. Fastnacht, S. Spink, P. Datta, E. Kiesewetter, M.K. Kiesewetter
- POLY 382.** Withdrawn.
- POLY 383.** Synthesis of novel CO<sub>2</sub>/epoxide derived poly (glycerol carbonates). A. Beharaj, M.W. Grinstaff
- POLY 384.**  $\alpha,\omega$ -Heterotelechelic polymers by tandem atom transfer radical polymerization and asymmetric atom radical trapping. R.J. Mancini, T. Strayer
- POLY 385.** Solution polymerization of polybenzimidazole. K. Fishel, A. Gullledge, A.T. Pingitore, W.P. Steckle, B.C. Benicewicz
- POLY 386.** Test tube approach to SET-LRP of hydrophobic acrylates in multi-phase systems. M. Enayati, R. Jezerek, M. Monteiro, V. Percec
- POLY 387.** Development of high throughput research solution and emulsion polymerization workflows. A. Singh
- POLY 388.** Consequences of low- $\chi$  block copolymer design. A. Chang, C. Bates, M. Matsen, R.H. Grubbs
- POLY 389.** One pot synthesis and characterization of novel poly(ether ester) alternative multiblock copolymers. W. Huang, Y. Tu
- POLY 390.** Synthesis of grafted polymer brushes from polymerised high internal phase emulsions for bioconjugation of lectins. S. Kimmins, B. O'Connor, A. Heise
- POLY 391.** Preparation of high purity cyclic polymers to demonstrate structure-property relationships. F.M. Haque, K.A. Kosakowska, R. Elupula, S.M. Grayson
- POLY 392.** Mesoporous silica spheres prepared by POSS-based block copolymer and anion anionic surfactant as dual-templates. Y. Xu, X. Sun, J. Huang, P. Hou, C. Li, L. Dai
- POLY 393.** Direct synthesis of thiol-functionalized branched poly( $\epsilon$ -caprolactone) catalyzed by yttrium trisphenolates. N. Zhu, X. Hu, W. Feng, K. Guo
- POLY 394.** Novel living cationic polymerization via degenerative chain-transfer mechanism. M. Uchiyama, K. Satoh, M. Kamigaito
- POLY 395.** Ring-expansion living cationic polymerization: A powerful tool to construct well-defined ring-based polymers. H. Kammiyada, M. Ouchi, M. Sawamoto
- POLY 396.** Novel copolymers of Styrene with some ring-disubstituted butyl 2-cyano-3-phenyl-2-propenoates. G.B. Kharas, H. Feng, I.S. Shouib, C. Tong, A. Tsang, D. Velazquez, A.M. Zekic, A.C. Williamson, E.B. Yokana
- POLY 397.** One-pot method of simultaneous RAFT polymerization and thioacyl group transfer polymerization to synthesize functional block copolymers. Z. Zhang, Y. You
- POLY 398.** Polymer-supported lewis acids. H. Lin, F. Jaekle, R. Lalancette
- POLY 399.** Visible light induced polymerization of alkenes under solvent free conditions. A. Iyer, J. Sivaguru
- POLY 400.** New approaches to hydrophobic polyphosphazene elastomers and IPN's. H.R. Allcock, T. Modzelewski, Z. Tian, Z. Li, C. Chen, E. Wilts
- POLY 401.** Ultrarobust transparent cellulose nanocrystal-graphene membranes with high electrical conductivity. R. Xiong, K. Hu, V.V. Tsukruk
- POLY 402.** Substrate-triggered exosite binding leading to specific, tight-binding to target protein. J. Chen
- POLY 403.** Investigating the origins of super-elasticity in novel silicones with <sup>1</sup>H multiple quantum and 29Si solution state NMR. C. Fox, J.P. Lewicki, J. Goff
- POLY 404.** Additive manufacture of high performance carbon fiber composites with optimized mesostructures. J.P. Lewicki
- POLY 405.** Withdrawn.
- POLY 406.** Withdrawn.
- POLY 407.** Biodegradable and conductive polyurethane elastomers. X. Gu, Z. Mao, S. Roy, W. Wagner
- POLY 408.** Anisotropic actuation in gels of aligned supramolecular-covalent hybrids. S. Chin, C. Synatschke, S.I. Stupp

## Section A

Pennsylvania Convention Center  
Hall G

**Polymer Science at the Interface of Industry, Government & Academics**

*Cosponsored by SCHB*

M. J. Fevola, B. S. Lokitz, S. E. Morgan, S. York, *Organizers*

6:00 - 8:00

**POLY 409.** Effect of compatibilizers on morphology and mechanical properties of polyketone/polycarbonate blends. I. Jeon, M. Lee, J. Jho

**POLY 410.** Development of self-healing polymer for stereolithography 3D printing. J. Palaganas, A.C. de Leon, K. Pangilinan, R.C. Advincula

**POLY 411.** Enhanced mechanical and thermal properties of polypropylene/graphene oxide composites with maleic anhydride grafted polypropylene. M. Lee, I. Jeon, J. Jho

**POLY 412.** Surface modification of commercial sulfone polymers through covalent attachment of fluorinated POSS. A.N. Bristol, K.M. Knauer, A.R. Jennings, S.T. Iacono, S.E. Morgan

**POLY 413.** Ring-opening polymerization of  $\epsilon$ -thionocaprolactone. P. Datta, M.K. Kiesewetter

## Section A

Pennsylvania Convention Center  
Hall G

**Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure**

*Cosponsored by CHED and PMSE*

H. S. Bui, W. Gao, D. Garcia, D. N. Haase, S. Percec, S. C. Rukes, P. Schipper, L. Zhai, *Organizers*

6:00 - 8:00

**POLY 414.** Human skin inspired stretchable shape memory polymer using humidity sensitive hydrogel for smart clothing. G. Kim, C. Gardner, Y. Kim, S. Jin, R. Chen

**POLY 415.** Chemistry and art: What lies beneath (and within) the painted surface. A. Nielsen

**POLY 416.** Synthesis, functionalization, and characterization of porous cross-linked elastomers for the dry cleaning of artwork. A. Flach, W. Hom, M. Alexander, N. Gallagher, S. Digney-Peer, J. Arslanoglu, R.B. Grubbs

## Section A

Pennsylvania Convention Center  
Hall G

**Sequence-Controlled Polymers**

J. Lutz, T. Y. Meyer, M. Ouchi, *Organizers*

6:00 - 8:00

**POLY 417.** Precise control of primary structure for poly(methyl methacrylate) brush using surface initiated living anionic polymerization in the presence of Lewis acid. T. Hirai, M. Sato, A. Takahara

**POLY 418.** Sequence defined zipping of molecular ladders based on  $\beta$ -peptoids. J.C. Furgal, T. Wei, T.F. Scott

**POLY 419.** Pentablock core-first star shaped polymers in less than 90 minutes via aqueous SET-LRP. R. Aksakal, M. Resmini, C. Becer

**POLY 420.** Merrifield meets Ugi: Synthesis of sequentially functionalised peptide-peptoid hybrid macromolecules. M. Hartweg, C. Becer

**POLY 421.** Sequence effects in organic semiconductors comprising benzothiadiazole and phenylene vinylene monomers. S. Zhang, I.Y. Kanal, N. Bauer, W. You, G. Hutchison, T.Y. Meyer

**POLY 422.** One-Pot in-situ formation of polysulfane-bearing block copolymer nanoparticles with tunable size and refractive index. Y. Cho, J. Lim, E. Kang, S. Yang, J. Pyun, T. Choi, K. Char

**POLY 423.** Impact of monomer sequence and stereochemistry on the physico-chemical properties of biodegradable devices composed of poly(lactic-co-glycolic acid). M.A. Washington, D.J. Swiner, M.V. Fedorchak, S.R. Little, S.C. Watkins, T.Y. Meyer

**POLY 424.** Using entropy-driven ring-opening metathesis polymerization to prepare precisely sequenced poly(lactic-co-glycolic acids)s for bioengineering applications. J.A. Nowalk, R.M. Weiss, A.L. Short, T.Y. Meyer

**POLY 425.** Towards precisely controlled hierarchical heterogeneities of polymer-nanoparticle conjugates based on nanoatom building blocks. W. Zhang, G. Mu, X. Lu, W. Zhang, Y. Li, S.Z. Cheng

**Joint PMSE/POLY Poster Session**

*Sponsored by PMSE, Cosponsored by POLY $\ddagger$*

**WEDNESDAY MORNING**

**Section A**

Sheraton Philadelphia Downtown Hotel  
Salon 10

**Advanced Functional Polymers & Biomaterials**

*Cosponsored by PMSE*

E. B. Berda, L. F. Deravi, J. Foster, *Organizers*  
C. E. Callmann, R. Merzel, *Presiding*

8:00 Introductory Remarks.

8:05 **POLY 426.** Efficient synthesis of water-soluble copolymers from commercial cellulose esters. S. Liu, K.J. Edgar

8:25 **POLY 427.** Interactions of folate- and antifolate-polymer conjugates with folate binding protein: Implications for drug delivery employing a natural nanotechnology. R. Merzel, C. Frey, J. Chen, B.G. Orr, M.M. Banaszak Holl

8:45 **POLY 428.** Engineering hydrogels with dynamic viscoelastic properties for 3D cell culture. A. Rosales, C.B. Rodell, J.A. Burdick, K.S. Anseth

9:05 **POLY 429.** Novel cellulose ether derivatives for amorphous solid dispersion prepared by olefin cross-metathesis and thiol-Michael addition. Y. Dong, L.I. Mosquera-Giraldo, L. Taylor, K.J. Edgar

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

$\ddagger$ Cooperative Cosponsorship



9:25 **POLY 430.** Biodegradable water-soluble polyphosphazenes with modulated pH-responsive membrane disruptive activity. A. Martinez, A.K. Andrianov, A. Marin

9:45 Intermission.

10:00 **POLY 431.** Anisotropic triple shape memory composites. M.I. Lawton, P.T. Mather

10:20 **POLY 432.** Peptide-polymer amphiphiles for the in vivo delivery of therapeutic cargo. C.E. Callmann, N.C. Gianneschi

10:40 **POLY 433.** Biomimetic design of antimicrobial calixarene derivatives and their action to membrane. K. Yasuhara, T. Nakano, H. Kibata, J. Kikuchi

11:00 **POLY 434.** Design and synthesis of eumelanin-inspired poly(4,7-indole)s. T.L. Nelson, K. Sachinthan

11:20 **POLY 435.** Photoreactivity of sulfobetaine copolymers containing benzophenone and its derivatives. F. Torok, M. Bouchard, J. Li, Z. Zhang

## Section B

Sheraton Philadelphia Downtown Hotel  
Salon 3/4

### Polymer Science at the Interface of Industry, Government & Academics National Lab/Industry/ University Collaborations

Cosponsored by COLLEGE, PMSE and SCHB

M. J. Fevola, S. E. Morgan, S. York, *Organizers*  
B. S. Lokitz, *Organizer, Presiding*

8:00 **POLY 436.** Lessons learned from quarter of a century at the academic/industrial/government triple interface. R.Y. Lochhead, S.E. Morgan, D.L. Patton

8:30 **POLY 437.** Composition and alignment in layer-by-layer polyamide thin films. M.A. Hickner, T. Zimudzi, C.M. Stafford, E. Chan, A. Roy, J. Sturmfeld

9:00 **POLY 438.** Advancing polymer science research at the US Air Force Academy through applied partnerships. A.R. Jennings, C.A. Corley, S.M. Budy, N.P. Godman, S.C. Kettwich, J. McCollum, G.J. Balaich, S.T. Iacono

9:30 Intermission.

9:45 **POLY 439.** Spatial molecular layer deposition of model polyamide membranes: Growth and characterization. D.J. Higgs, Y. Wang, E. Chan, H. Wang, S.M. George, C.M. Stafford

10:15 **POLY 440.** New methods for liquid-liquid extraction based on surface-selective membranes. A.J. Guenther, K.T. Greeson, N.D. Redeker, E.R. Post, A. Tuteja, A.S. Vam, H.E. Smith, J.M. Mabry

10:45 **POLY 441.** ORMOCALCs: Organically modified chalcogenide high-refractive index polymers. D.A. Boyd, C.C. Baker, J.D. Myers, V.Q. Nguyen, G.A. Drake, S.R. Bowman, W. Kim, J.S. Sanghera

## Section C

Sheraton Philadelphia Downtown Hotel  
Seminar A

### General Topics: New Synthesis & Characterization of Polymers

B. Barkakaty, D. Garcia, *Organizers*  
S. Percec, N. J. Van Zee, *Presiding*

8:00 **POLY 442.** Head to tail depolymerizable polymers as de-bondable adhesives. H. Kim, S.T. Phillips

8:20 **POLY 443.** Polycarbonates from a D-glucopyranoside derivative: The development of versatile biocompatible polymeric materials. S. Felder, A. Noel, S. Lim, K.L. Wooley

8:40 **POLY 444.** Biodegradable polyisobutylene: Synthesis and characterization. S. Sen, J.E. Puskas

9:00 **POLY 445.** Polymerizations and depolymerizations by borane catalysts. J. Kim

9:20 **POLY 446.** CHMA as a potential styrene replacement. K.B. Sawant

9:40 **POLY 447.** One-step synthesis of assemblies via cyclodextrin-mediated aqueous dispersion polymerization. X. Chen, M. Huo, A. Feng, J. Yuan

10:00 **POLY 448.** Investigation and quantification of lysine-functionalized polymers as detoxification agents of dichlorovos. E.F. Durán-Lara, J.A. Giesen, Y. Feng, J.L. Marple, J.H. Jordan, A. Marican, L.S. Santos, W.T. Godbey, S.M. Grayson

10:20 **POLY 449.** Ru-catalyzed mechanochemical olefin metathesis polymerization: A solvent-free approach to ROMP and ADMET. L. Do, T. Friscic

10:40 **POLY 450.** Towards telechelic polyisobutylenes: Constructive degradation of isobutylene copolymers. C.G. Campbell, J. McNeese, S. Ummadisetty, R.F. Storey

11:00 **POLY 451.** Synthesis of opioid agonists initiators for ATRP and ROMP polymerization of bio-degradable opioid-polymer biohybrids. S. Li, D. Cohen-Karni, D. Whiting, S. Averick

11:20 **POLY 452.** Molecular evolution of single chain polymer nanoparticles: Polymer sequence optimization via tandem transesterification and self-assembly chemistries. N.J. Van Zee, E.W. Meijer

## Section D

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom C

### 3rd Symposium on Poly(2-Oxazolines) & Polypeptides

Financially supported by Serina Therapeutics, GATT Technologies, Polymer Chemistry Innovations, Sigma Aldrich, CEM

R. Hoogenboom, H. Schlaad, R. N. Zuckermann, *Organizers*  
J. C. Tiller, Y. Wang, *Presiding*

8:30 **POLY 453.** Poly(2-oxazoline)s: From synthesis to applications. R. Hoogenboom

9:00 **POLY 454.** Structure-property relationships of the formulation of extremely hydrophobic drugs using amphiphilic pseudo-polypeptide block copolymers. A. Schulz, M. Luebtow, Y. Seo, R. Jordan, A. Kabanov, R. Luxenhofer

9:20 **POLY 455.** Activation of enzymes within electrospun polymer fibers for biocatalysis in organic solvents. R. Plothe, I. Sittko, J.C. Tiller

9:40 **POLY 456.** Antifouling properties of coating formed by PMOXA with different architecture. Y. Wang, C. Zhang, S. Liu, C. Pan

10:10 Intermission.

10:25 **POLY 457.** Antimicrobial poly(2-oxazoline) telomers. C. Krumm, C. Fik, C. Waschinski, J.C. Tiller

10:55 **POLY 458.** Long-lasting antimicrobial equipment of surfaces: Partially hydrolyzed poly(2-oxazolines) and poly(2-oxazines) as biocidal additives in commodity materials. K.P. Luef, A. Kelly, M. Fimberger, F. Wiesbrock

11:25 **POLY 459.** Peptidomimetic polyesters: A modular biomaterials platform with diverse applications. A. Joy, J.P. Swanson, M.A. Cruz

11:45 **POLY 460.** Biophysical killing and selectivity mechanisms of self-assembling peptoid mimics of host defense peptides (HDPs). A.E. Barron

12:15 Concluding Remarks.

## Section E

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom E

### Materials Genome Approach to Structure & Function

#### Proteins, Peptides, Peptoids & Nucleic Acids

M. L. Klein, V. Percec, *Organizers*

D. A. Hammer, J. van Hest, *Presiding*

8:30 **POLY 461.** Genetic programming of molecular, cellular and materials assembly. D.A. Tirrell

9:05 **POLY 462.** New nanomaterials at the intersection of polymer science and structural biology. R.N. Zuckermann

9:40 **POLY 463.** Polypeptoids: Materials between the worlds of polymers and small molecules, uniform or non-uniform. Introducing an approach to assess the contribution of dispersity. J. Terfrüchte, N. Gangloff, R. Luxenhofer

10:15 Intermission.

10:35 **POLY 464.** Super molecular assemblies using recombinant oleosin. D.A. Hammer, K. Vargo, C. Gao, E. Reed, B. Schuster, E. Wang, R. Parthasarathy

11:10 **POLY 465.** One-pot orthogonal copper-catalyzed synthesis and self-assembly of L-lysine decorated polymeric dendrimers. M. Monteiro

11:45 **POLY 466.** Coupling of lipid membrane shape with peripheral proteins and colloidal particles. T. Baumgart

## Section F

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom D

### Advances in Functional Polymers with Sophisticated Branched Structures

C. Cheng, H. Gao, *Organizers*

R. Nicolay, *Organizer, Presiding*

K. Zhang, *Presiding*

8:00 **POLY 467.** Drug delivery based on ROMP-derived brush-arm star polymers (BASPs). J.A. Johnson

8:30 **POLY 468.** Functional branched polymers by radical polymerization and thiol chemistry. M. Le Neindre, C. Teulère, R. Nicolay, L. Leibler

9:00 **POLY 469.** Comb and graft copolymers with poly(2-oxazoline) side chains. U.S. Schubert, C. Weber, I. Yildirim

9:30 **POLY 470.** Supramolecular polyethyleneimine-cored carbazole dendritic polymer with dual applications. L. Rong, P. Cao, A. de Leon, R.C. Advincula

9:50 Intermission.

10:05 **POLY 471.** New polymerization reactions for alkyne monomers. B. Tang

10:35 **POLY 472.** Utilizing the brush architecture for nanomedicine and materials self-assembly. K. Zhang

11:05 **POLY 473.** Tuning the self-assembly of amphiphilic star polymers for carrier-mediated transdermal drug delivery by tailoring core-vs-peripheral branching. K.A. Kosakowska, B.K. Casey, L.B. Lawson, S.M. Grayson

11:25 **POLY 474.** Recyclable poly(lactic acid)/cellulose nanocomposite films processed by reactive extrusion approach. P. Dhar, A. Kumar, V. Katiyar

## Section G

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom B

### Sequence-Controlled Polymers Self-Assembly & Folding

J. Lutz, T. Y. Meyer, M. Ouchi, *Organizers*  
H. Boerner, *Presiding*

8:00 **POLY 475.** Functional folded single-chain polymer nanoparticles: A need for sequence control. E.W. Meijer

8:30 **POLY 476.** Precision polymers with biological activity. S. Lecommandoux, E. Garanger

8:55 **POLY 477.** Sequence-controlled functional polymers: From modular synthesis to precision self-assembly and functions. T. Terashima, M. Sawamoto

9:20 **POLY 478.** Sequence-defined Janus glycodendrimers self-assembled into unilamellar or onion-like glycodendrimersomes. V. Percec, Q. Xiao

9:45 Intermission.

9:55 **POLY 479.** Tapered block polymers: manipulating block sequence to tune nanoscale self-assembly and materials properties. T.H. Epps

10:20 **POLY 480.** Sequence controlled glycopolymers and their interactions with lectins. R. Becer

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**10:45 POLY 481.** Controlling monomer sequence by preorganization of monomers. N. ten Brummelhuis

**11:10 POLY 482.** Sequence effects on multi-block polymer morphology. M.R. Radlauer, C. Sinturel, Y. Asai, M.E. Matta, J. Van Benschoten, M.A. Hillmyer

**11:25 POLY 483.** Supramolecular assembly with peptoid polymers of defined length and sequence. R.N. Zuckermann

## Porous Polymers

### Applications

Sponsored by PMSE, Cosponsored by POLY

### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

### Block Copolymers

Sponsored by PMSE, Cosponsored by POLY

## WEDNESDAY AFTERNOON

### Section A

Sheraton Philadelphia Downtown Hotel  
Salon 10

### Advanced Functional Biopolymers & Biomaterials

Cosponsored by PMSE

E. B. Berda, J. Foster, *Organizers*

L. F. Deravi, *Organizer, Presiding*

E. A. Garcia, *Presiding*

**1:00** Introductory Remarks.

**1:05 POLY 484.** Novel polymer drug against the pathogenic bacterium responsible for facial acne, *Propionibacterium acnes*. S. Nair, O.Z. Zolotarskaya, M. Beckwith, D.E. Ohman, K.J. Wynne

**1:25 POLY 485.** Tuning mechanical properties and photochemistry of metallopolymer materials. A. Razgoniaev, E.V. Butaeva, T.C. Green, A. Ostrowski

**1:45 POLY 486.** Acid degradable polyacetal with extraordinary temperature responsive properties. P. Leophairatana, S. Samanta, C. De Silva, J.T. Koberstein

**2:05 POLY 487.** Antimicrobial metallopolymer materials against multidrug-resistant bacteria. P. Yang, Y. Chen, J. Zhang, P. Pageni, M. Bam, M. Nagarkatti, A.W. Decho, C. Tang

**2:25 POLY 488.** Developing a biodegradable photoluminescent hydrogel. X. Xu

**2:45** Intermission.

**3:00 POLY 489.** Generating complex wrinkle patterns for active cell culture via shape memory polymers. S. Buffington, J. Henderson, P.T. Mather

**3:20 POLY 490.** Hybrid supramolecular-covalent polymers as neural scaffold materials. C. Synatschke, S. Chin, Z. Alvarez-Pinto, S.I. Stupp

**3:40 POLY 491.** Interpenetrating networks containing microbial cellulose for tissue scaffolds. E. Marrow, S. Walper, M.A. Daniele

**4:00 POLY 492.** Phenyl-boronic acid-installed functional polycarbonate nanoparticles as oxidation responsive delivery vehicles. E.A. Garcia, M. Herrera-Alonso

**4:20 POLY 493.** Rose Bengal and poly(2-alkyl-2-oxazoline)s: The pink panther. M.A. Mees, N. De Laet, N. Vandamme, A. Madder, R. Hoogenboom, G. Berx

### Section B

Sheraton Philadelphia Downtown Hotel  
Salon 3/4

### Polymer Science at the Interface of Industry, Government & Academics

### Industry/University Collaborations

Cosponsored by COLL, PMSE and SCHB

M. J. Fevola, B. S. Lokitz, S. E. Morgan, *Organizers*

S. York, *Organizer, Presiding*

**1:00 POLY 494.** Industry-university collaboration to develop low-temperature cured, high Tg epoxy thermosets using a uniform microwave field. D. Tyler, R.L. Hubbard, S.M. Strain

**1:30 POLY 495.** Kinetics of hydrolytic degradation for cocured cyanate ester networks. N.D. Redeker, G.R. Palmese, A.J. Guenther

**2:00 POLY 496.** Electrospun blends of biodegradable polymers. P.T. Mather, J. Tumbic, M. Boden

**2:30 POLY 497.** Industry-university collaboration: surface property control through chain-end modification. S.E. Morgan, K.M. Knauer, J. Pollino, J. Schwartz, L. Moore

**3:00** Intermission.

**3:15 POLY 498.** Heating up: Unlocking the power of ceramic matrix composites. R. Cook

**3:40 POLY 499.** Observation of interfacial damage in a silk-epoxy composite using hyperspectral and fluorescence lifetime imaging of mechanoresponsive fluorescent probe. R. Beams, J.W. Woodcock, C.S. Davis, N. Chen, S.J. Stranick, D.U. Shah, F. Vollrath, J.W. Gilman

**4:05 POLY 500.** Surface grafted amide-functionalized PGMA-*b*-PVDMA polymer thin film for reversible CO<sub>2</sub> capture and release. B. Barkakaty, B.S. Lokitz, R. Kumar, B. Sumpter, J. Browning, J. Duggar, I. Ivanov, B.M. Aden, M. Kilbey

**4:30 POLY 501.** Establishing the crystallization kinetics of poly(ether ether ketone) as a function of shear and cooling rate for applications in flow simulation. A.M. Rhoades, B. Nazari, R.H. Colby, J. Williams, R.P. Schaaek

### Section C

Sheraton Philadelphia Downtown Hotel  
Seminar A

### General Topics: New Synthesis & Characterization of Polymers

B. Barkakaty, D. Garcia, *Organizers*

J. M. Dennis, B. E. Partridge, *Presiding*

**1:30 POLY 502.** Synthesis and characterization of disulfonated poly(arylene ether sulfone-2-chloro-1,3,5-triazine) hybrid copolymers with applications in fuel cells. E. Zlibut, N. Arnett

**1:50 POLY 503.** High T<sub>g</sub> polyesters as potential BPA-polycarbonate replacements. J.M. Dennis, J.S. Enokida, N. Fazekas, T.E. Long

**2:10 POLY 504.** Poly-amido-saccharides (PASs): Structural characterization of novel synthetic carbohydrate polymers using molecular dynamics stimulations in conjunction with experimental studies. S. Chin, Q. Lu, C. McKnight, J.E. Straub, M.W. Grinstaff

**2:30 POLY 505.** Electrochemical Characterization Studies of Electroactive Polymers in Tetrahydrofurfuryl-based ether and sulfide. J.D. Stenger-Smith

**2:50 POLY 506.** Thermoreversible gelation of poly(ether ether ketone). S.J. Talley, R.B. Moore

**3:10 POLY 507.** Structure property relationships of anion exchange membrane. S. Park, W. Lee, D. Shin, C. Bae

**3:30 POLY 508.** Incorporating dynamic bonds for responsive, healable polymer networks. M. Gordon, J.M. French, N.J. Wagner, C.J. Kloxin

**3:50 POLY 509.** Novel diffusion NMR experiment for effective study of macromolecules. M. Chai, D. Holycross

**4:10 POLY 510.** Applications of coupled rheology: FT-IR to polymer analyses. D. Garcia, S. Reynaud, Z. Cherian, M. Lavach, C. Crabb, R. Barsotti, F. Mehlmann, F. De Vito, F. Meyer

**4:30 POLY 511.** Properties of zwitterionic polymers in aqueous solutions. J. Delgado, J.B. Schlenoff

**4:50 POLY 512.** Understanding the effect of ultra-high speed twin screw extrusion on the thermo-mechanical properties of polymers. A. Farahanchi, M.J. Sobkowicz

### Section D

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom C

### General Topics: New Synthesis & Characterization of Polymers

B. Barkakaty, D. Garcia, *Organizers*

M. Enayati, R. Jezorek, *Presiding*

**1:30 POLY 513.** Thiolactone chemistry: Paving the way to functional polymer. S. Mommer, H. Keul, M. Moller

**1:50 POLY 514.** Poly( $\beta$ -thioesters) derived from the Thiol Michael 'click' reaction for advanced materials. N.G. Moon, T.E. Long, F. Mazzini

**2:10 POLY 515.** Light-induced polymerization of N-carboxyanhydrides (NCA). T. Stukenkemper, A.A. Dias, J.F. Jansen, D. Brougham, A. Heise

**2:30 POLY 516.** Thio-bromo click approach toward polymer modifications. C.E. Hobbs

**2:50 POLY 517.** Not your typical network: dynamic crosslinks through dynamic thia-Michael addition. K.M. Greenman, J. Romulus, J. Onorato, E. Foster, S.J. Rowan

**3:10 POLY 518.** Poly(L-lactide)-N-heterocyclic functionalised drug conjugates as drug carrier-systems: Synthesis, mechanistic and kinetics study. V. Katiyar, M. Mili, A. Gupta

**3:30 POLY 519.** Utilizing host guest inclusion crystals for photopolymerization of monomers resulting in C-C bond formation towards creation of insulated and isolated polymers. P. McLaughlin, B.S. Hudson

**3:50 POLY 520.** Poly(1-vinyl-1,2,4-triazolium) poly(ionic liquid)s: Synthesis and the unique behavior in loading metal ion. W. Zhang, J. Yuan

**4:10 POLY 521.** Making the best of it: Nitroxide-mediated polymerization of methacrylates in the presence of a small amount of functional styrenics. H. Turgut, A.C. Schmidt, G. Delaittre

**4:30 POLY 522.** Convenient route to tetraarylophosphonium polyelectrolytes via metal-catalysed P-C coupling polymerisation of aryl dihalides and diphenylphosphine. W. Wan, R. Smith

**4:50 POLY 523.** Thiol-ene polymer networks containing an imidazolium group: Thermal, mechanical and conductive properties. K.M. Miller

### Section E

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom E

### Materials Genome Approach to Structure & Function

### Proteins, Peptides, Peptoids & Nucleic Acids

M. L. Klein, V. Percec, *Organizers*

T. Baumgart, M. Monteiro, *Presiding*

**1:30 POLY 524.** Using DNA to control the structure of matter. N.C. Seeman

**2:05 POLY 525.** Well-defined (co)polypeptides bearing pendant alkyne groups. W. Zhao, Y. Gnanou, N. Hadjichristidis

**2:40 POLY 526.** Cooperative motion in helicity switching of DNA and synthetic coat assembly. M. Lee

**3:15** Intermission.

**3:35 POLY 527.** Peptide design and solution assembly: computational definition of new molecules for new materials. D.J. Pochan

**4:10 POLY 528.** Advanced magnetic resonance studies of nanostructured functional materials. H.W. Spiess

**4:45 POLY 529.** Glycosaminoglycan mimetics by glycopolymer. Y. Miura

**5:20** Concluding Remarks.

### Section F

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom D

### Advances in Functional Polymers with Sophisticated Branched Structures

H. Gao, R. Nicolay, *Organizers*

C. Cheng, *Organizer, Presiding*

T. Terashima, *Presiding*

**1:00 POLY 530.** Synthesis of well-defined functionalized polyethylene-based 3-miktoarm star copolymers and terpolymers. Z. Zhang, M. Altaher, H. Zhang, D. Wang, N. Hadjichristidis

**1:30 POLY 531.** Brush polymer-drug conjugates for the delivery of anticancer drugs. Y. Yu, J. Zou, H. Sun, C. Cheng

**2:00 POLY 532.** Synthesis of well-defined branched polymers, and their characterization using mass spectrometry. S.M. Grayson, B. Zhang, A.M. Alb

**2:30 POLY 533.** Maximizing the chlorosilane coupling efficiency of living anionic polymers and limiting degradation during subsequent hydrogenation. A.B. Burns, R.A. Register

**2:50** Intermission.

**3:05 POLY 534.** Hyperbranched self-immolative polymers for programmed payload delivery and ultrasensitive detection. G. Liu, S. Liu

**3:35 POLY 535.** Compartmentalized functional polymers via living radical polymerization: Design of primary/branched structures to nanospaces and functions. T. Terashima, M. Sawamoto

**4:05 POLY 536.** Crystallization-driven ordering and self-assembly in bottlebrush polymers. J. Kim, N. Hadjichristidis, J.A. Kornfeld

**4:25 POLY 537.** Unimolecular micelles from amphiphilic brush copolymer. H. Luo, M. Herrera-Alonso

## Section G

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom B

### Sequence-Controlled Polymers

#### Properties, Engineering & Sequencing

J. Lutz, T. Y. Meyer, M. Ouchi, *Organizers*

C. A. Alabi, *Presiding*

**1:00 POLY 538.** Effect of sequence on properties in poly(lactic-co-glycolic acid)s. T.Y. Meyer, M.A. Washington, D.A. Swiner, R.M. Weiss, A.L. Short, M.V. Fedorchak, S.R. Little, S.C. Watkins

**1:30 POLY 539.** Intramolecular cyclization leads to controlled degradation of polyesters. Z. Li

**1:55 POLY 540.** Conjugated polymers with repeating sequences of group 16 heterocycles prepared using catalyst-transfer polycondensation. K.J. Noonan

**2:20 POLY 541.** Optoelectronic sequence effects in conjugated polymers: Are there multiple needles? G. Hutchison, I.Y. Kanak

**2:45** Intermission.

**2:50 POLY 542.** MS/MS digital readout: Analysis of binary information encoded in sequence-controlled synthetic polymers. L. Charles, J. Lutz

**3:15 POLY 543.** Withdrawn.

**3:40 POLY 544.** Flow-IEG: Scalable synthesis of sequence and architecturally defined, unimolecular macromolecules. F.A. Leibfarth, J.A. Johnson, T.F. Jamison

**4:05 POLY 545.** Amino acids as building blocks of well-defined macromolecules. D. Chan-Seng

**4:30 POLY 546.** Post-modifications of recombinant elastin-like polypeptides. E.B. Garanger, R. Petitdemange, B. Garbay, T.J. Deming, S. Lecommandoux

**4:45 POLY 547.** Photochemically driven synthesis of sequence-defined macromolecules. N. Zydziak, W. Konrad, F. Feist, C. Barner-Kowollik

## Porous Polymers

### Hydrogels, Applications

*Sponsored by PMSE, Cosponsored by POLY*

### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

### Networks, Composites & Supramolecular Order

*Sponsored by PMSE, Cosponsored by POLY*

## WEDNESDAY EVENING

### Section A

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom C/D

### POLY/PMSE Awards Symposium & Reception

M. Jeffries-El, T. J. White, *Organizers*

K. Haider, *Presiding*

**6:00 POLY 548.** Smart polymer materials by design: Creating and implementing smart polymers with latent chemical functionality. C. Bowman

**6:45** Award Presentation.

## THURSDAY MORNING

### Section A

Sheraton Philadelphia Downtown Hotel  
Salon 10

### Advanced Functional Biopolymers & Biomaterials

*Cosponsored by PMSE*

E. B. Berda, L. F. Deravi, J. Foster, *Organizers*

L. Klosterman, K. T. Wacker, *Presiding*

**8:00** Introductory Remarks.

**8:05 POLY 549.** Renewable neolignan thermosets with tunable thermo-mechanical characteristics towards biomedical applications. K.T. Wacker, A.C. Weems, D.J. Maitland, K.L. Wooley

**8:25 POLY 550.** Development of thermosensitive poly(N-vinylcaprolactam) as an injectable biomaterial. R. Sala, M. Kwon, E. Camargo, J.A. Burdick

**8:45 POLY 551.** Hydrolytic mechanism of polycationic toxicity: Implications for polymeric transfection. B. Monnery, M. Thanou, R. Hoogenboom

**9:05 POLY 552.** Synthesis of hyperbranched glycopolymers using an alternative brominimer approach. C. Lopez-Gonzalez, H. Chen, W. Horn, C. Scherger, C.R. Pugh

**9:25 POLY 553.** Comparison of star-like and linear amphiphilic  $\gamma$ -substituted  $\epsilon$ -caprolactone block copolymers for drug delivery applications. K.E. Washington, R.N. Kularatne, M.J. Gillings, C. Geng, M.C. Biewer, M.C. Stefan

**9:45** Intermission.

**10:00 POLY 554.** Crosslinked cationic polyester films for prevention of P. Aeruginosa colonization and biofilm formation. E. Chamsaz, S. Mankoci, H. Barton, A. Joy

**10:20 POLY 555.** Peptide hydrogels for three-dimensional cell culture and high throughput drug screening. P. Worthington, A. Napper, S. Langhans, D.J. Pochan

**10:40 POLY 556.** In vivo degradation tracking and modeling of three sizes configuration of autofluorescent protein hydrogels. X. Ma, J. Chen, Y. Lei

**11:00 POLY 557.** Self-healing protein hydrogels. J. Chen, X. Ma, Y. Lei

**11:20 POLY 558.** Reversible redox cycling and cation adsorption in melanin films. L. Klosterman, C. Bettinger

### Section B

Sheraton Philadelphia Downtown Hotel  
Logans 2

### Polymer Science at the Interface of Industry, Government & Academics

#### Industry/University Collaborations

*Cosponsored by COLL, PMSE and SCHB*

B. S. Lokitz, S. E. Morgan, S. York, *Organizers*

M. J. Fevola, *Organizer, Presiding*

**8:00 POLY 559.** Tackling drug solubility challenges with a novel soluplus® polymer. K.M. Knauer, S. Ali

**8:25 POLY 560.** Coil coating: Technology and application. X.K. Singer

**8:50 POLY 561.** Synthetic approaches for addressing discoloration in industrially-relevant polymers. D.N. Haase

**9:15 POLY 562.** Tracing plastic deformation of battery separator using recovery force. G. Kim, Y. Jung

**9:40** Intermission.

**9:55 POLY 563.** Imidazole-containing block copolymers: Towards understanding the effect of morphology on electromechanical response. M. Chen, B.S. Lokitz, R. Kumar, T.E. Long

**10:15 POLY 564.** Role of chemical structure on the alkaline hydrolysis of industrially-relevant copolyester model compounds. E. Yildirim, B.P. Abolins, A. Detwiler, C. Clevon, H.S. Freeman, A. El Shafei, M.A. Pasquinelli

**10:40 POLY 565.** Polypeptides: Bioderived templates for thermoreversible semiconducting gels. C. Rosu, P. Chu, E. Reichmanis, P. Russo

**11:05 POLY 566.** Degradation mechanisms of high performance polymers in extreme environments. J.H. Baker, J. Bluemel

### Section C

Sheraton Philadelphia Downtown Hotel  
Seminar A

### General Topics: New Synthesis & Characterization of Polymers

B. Bakkatay, D. Garcia, *Organizers*

S. Grama, B. S. Lokitz, *Presiding*

**8:30 POLY 567.** Synthesis of gradient copolymers via reversible addition fragmentation chain transfer in emulsion polymerization. I. Alshehri, D.A. Shipp

**8:50 POLY 568.**  $t$ -Bu<sub>3</sub>P-Coordinated 2-phenylaniline-based palladacycle complex as the precatalyst for the Suzuki cross-coupling polymerization of AA/BB- and AB-type monomers. J. Dong, H. Zhang, W. Peng, Q. Hu

**9:10 POLY 569.** Ring-expansion metathesis polymerization of cycloolefins to highly pure cyclic polymers. J.P. Edwards, H. Zhang, N. Hadjichristidis, H. Pasch, D. Vlassopoulos, R.H. Grubbs

**9:30 POLY 570.** Synthesis of main chain purine-based copolymers and effects of monomer design on thermal and optical properties. G.S. Collier, L. Brown, E.S. Boone, B.K. Long, M. Kilbey

**9:50 POLY 571.** Effects of monomer concentration, solvent and olefin chain length on maleic anhydride- $\alpha$ -olefin copolymerization in dual solvent systems. H. Kim, C. Tabasko, J. Arroyave, R. Sharma

**10:10 POLY 572.** Synthesis and characterization of polycyclobutanes (PCBs). Q.R. Chu

**10:30 POLY 573.** ROMP by spatially-confined Ru catalysts: Opening low-strain rings. V.O. Rodionov

**10:50 POLY 574.** Hybrid strategies for evolutionary design of glass-forming polymers. K.A. Cavicchi, J. Hung, J. Lee, V. Meenakshisundaram, T. Patra, X. Zhang, A. Karim, D. Simmons

**11:10 POLY 575.** Ethylene carbonate as a source for functional PEG based building blocks. G. Kapiti, H. Keul, M. Moller

### Section F

Sheraton Philadelphia Downtown Hotel  
Salon 3/4

### Advances in Functional Polymers with Sophisticated Branched Structures

C. Cheng, R. Nicolay, *Organizers*

H. Gao, *Organizer, Presiding*

J. Rzyayev, *Presiding*

**8:00 POLY 576.** Comb-like PEG-based vinyl copolymers for biomedical applications. J. Nicolas

**8:30 POLY 577.** One-pot synthesis of functional hyperbranched polymers with well-defined nanostructures. H. Gao

**9:00 POLY 578.** Innovative biomaterials for drug delivery applications based on well-defined multifunctional dendrimers and biodegradable hydrogels. C. Ornelas, D. Bertuzzi, T. Becher

**9:20** Intermission.

**9:35 POLY 579.** Synthesis of star-brush and network architectures from end-reactive molecular bottlebrushes. E. Altay, J. Rzyayev

**10:05 POLY 580.** Hyperbranched polymers: dendronization and functionalization for studying conformation, segmental distribution and interaction properties. A. Lederer

**10:35 POLY 581.** Rational synthesis of hyperbranched poly(ester)s. T. Zhang, B.A. Howell, P.B. Smith

**10:55** Concluding Remarks.

The use of any device to capture images (e.g., cameras and camera phones) or sound (e.g., tape and digital recorders) or to stream, upload or rebroadcast speakers or presentations is strictly prohibited at all official ACS meetings and events without express written consent from ACS.



## THURSDAY AFTERNOON

## Section A

Sheraton Philadelphia Downtown Hotel  
Salon 10

**Advanced Functional  
Biopolymers & Biomaterials**

*Cosponsored by PMSE*

E. B. Berda, L. F. Deravi, J. Foster, *Organizers*  
M. Ecker, T. L. Rapp, *Presiding*

1:00 Introductory Remarks.

1:05 **POLY 582.** Noninvasively refilling drug-releasing depots deep in the body. Y. Brudno, D.J. Mooney, M. Aizenberg, R. Desai

1:25 **POLY 583.** Influence of the chemical structure of ferulic acid derivatives on the mechanical properties of biocomposites materials by confocal Raman imaging. A. Gallos, J. Beaugrand, G. Paes, F. Allais

1:45 **POLY 584.** Use of poly(2-oxazoline)s as matrix excipient for solid dispersions. M. Vergaelen, G. Verstraete, B. Monnery, B. Claeys, C. Vervae, T. De Beer, J. Remon, B. De Geest, R. Hoogenboom

2:05 **POLY 585.** Capsules bearing pH-responsive nanochannels from miktoarm star copolymers. H. Hu, G. Liu

2:25 **POLY 586.** Ruthenium-crosslinked hyaluronic acid hydrogels for rapid cargo release under visible light irradiation. T.L. Rapp, C.B. Highley, J.A. Burdick, I.J. Dmochowski

2:45 **POLY 587.** Novel in-situ forming biodegradable nanogels for ocular drug delivery. L.L. Osorno, M. George-Weinstein, M.E. Byrne

3:05 Intermission.

3:20 **POLY 588.** Reversible calcium ion contraction and ATP-induced re-expansion of poly(acrylic acid) gels. Y. Wang, G.E. Wnek

3:40 **POLY 589.** Photochemistry of Fe(III)-carboxylates in polysaccharide-based materials with tunable mechanical properties. G. Giammanco, A. Ostrowski

4:00 **POLY 590.** UV-triggered polymerization and deposition of plant polyphenols. F. Behboodi Sadabad, P. Levkin

4:20 **POLY 591.** Understanding the material properties of implantable shape memory polymers with tunable degree of softening. M. Ecker, V. Danda, A. Joshi-Imre, J. Pancrazio, W. Voit

4:40 **POLY 592.** Opioid derived polymers as surface modifiers for patterned neuronal culture. D. Cohen-Karni, S. Li, D. Whiting, T. Cohen-Karni, S. Averick

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## PMSE

**Division of Polymeric  
Materials Science and  
Engineering**

A. Tsou, B. Olsen, X. Jia, C. Stafford and  
M. Grunlan, *Program Chairs*

**OTHER SYMPOSIA OF INTEREST:**

**3rd Symposium on Poly(2-Oxazolines) & Polypeptides**  
(see POLY, Sun, Mon, Tue, Wed)

**Advanced Functional Biopolymers & Biomaterials** (see POLY, Sun, Mon, Tue, Wed, Thu)

**Advances in Functional Polymers with Sophisticated Branched Structures**  
(see POLY, Tue, Wed, Thu)

**Functional Renewable Polymers**  
(see POLY, Sun, Mon, Tue)

**Chemistry of Fullerenes, Carbon Nanotubes & Graphene**  
(see ORGN, Sun, Tue)

**Nanomaterials** (see ORGN, Sun)

**SOCIAL EVENTS:**

**Social Hour, 6:00 PM:** Tue

**Reception, 5:30 PM:** Wed

**BUSINESS MEETINGS:**

**Business Meeting, 5:00 PM:** Mon

## SUNDAY MORNING

## Section A

Sheraton Philadelphia Downtown Hotel  
Philadelphia Ballroom South

**Porous Polymers**
**Microporosity**

*Cosponsored by POLY*

*Financially supported by 3M,  
Polymer-Elsevier, Wiley*

N. R. Cameron, M. A. Hillmyer, D. A. Schiraldi, M. S. Silverstein, *Organizers*

N. B. McKeown, H. Zhou, *Presiding*

8:00 Introductory Remarks.

8:05 **PMSE 1.** Rigid polymers of intrinsic microporosity for use as molecular sieve membranes. N.B. McKeown, M. Carta, C. Bezzu, I. Rose, R. Malpass-Evans, K. Msayib

8:35 **PMSE 2.** Design and synthesis of amine-functionalized porous polymer networks (PPNs) for carbon capture. H. Zhou

9:05 **PMSE 3.** Conjugated microporous polymers for photocatalytic hydrogen evolution. R.S. Sprick, B. Bonillo, P. Guignon, M. Zwiijnenburg, D. Adams, A.I. Cooper

9:25 **PMSE 4.** Microporous polymers for efficient CO<sub>2</sub> capture and conversion. A. Coskun

9:45 Intermission.

10:00 **PMSE 5.** Conjugated nanoporous polymers for visible light photocatalysis: a metal-free alternative. K. Zhang, Z. Wang, S. Ghasimi, B.C. Ma, R. Li

10:20 **PMSE 6.** In silico design to catalyze materials breakthroughs. C.M. Colina

10:50 **PMSE 7.** Developing capacitance based volatile organic compound sensors using polymers of intrinsic microporosity. M.S. Wendland, S. Gryaska, M. Kang, M. Palazzotto

11:20 **PMSE 8.** Microporous ladder polymers from catalytic arene-norbornene annulative ladderation (CANAL). Y. Xia

11:40 **PMSE 9.** Bottom-up design, synthesis and study of hierarchical nanostructured porous materials. W. Zhang, Y. Zhu, H. Yang, Y. Du, Y. Jin

## Section B

Sheraton Philadelphia Downtown Hotel  
Philadelphia Ballroom North

**Bioderived & Bioinspired Polymers**
**Tailored Macromolecules:  
Celebrating 50 Years of the  
Polymer Program at UConn**

M. Nieh, L. Sun, *Organizers*

R. Kasi, Y. Lin, *Organizers, Presiding*

8:00 **PMSE 10.** Mechanism of polymerization of  $\alpha$ -amino acid-NCAs. J. Ling, Z. Yang, J. Liu

8:30 **PMSE 11.** Helical polypeptides mediated non-viral gene delivery and antimicrobial applications. J. Cheng

9:00 **PMSE 12.** Mimicking nature's delivery and repair systems with polymer encapsulants. T. Enrick

9:30 **PMSE 13.** Assembly and structural evolution of micelleplexes: Controlled assemblies of amphiphilic block polymers and DNA. Y. Jiang, D. Sprouse, J. Laaser, T.P. Lodge, T.M. Reineke

10:00 Intermission.

10:15 **PMSE 14.** Biodegradable thermal and oxidation responsive polypeptide materials. Z. Li

10:45 **PMSE 15.** Collagen mimetic peptides for delivery of growth factor gene delivery with tissue repair. M.A. Urello, K.L. Kick, M.O. Sullivan

11:05 **PMSE 16.** Equilibrium and non-equilibrium responses in polymer assemblies. S. Thayumanavan

## Section C

Sheraton Philadelphia Downtown Hotel  
Salon 5

**General Papers/New Concepts  
in Polymeric Materials**

M. Grunlan, *Organizer*

S. Hawkins, X. Hu, *Presiding*

8:00 **PMSE 17.** Withdrawn.

8:20 **PMSE 18.** Graphene nanoribbon frameworks with tunable functionality for gas capture and storage. Y. Byun, A. Coskun

8:40 **PMSE 19.** Multifunctional green silk graphene nanocomposite materials. X. Hu, F. Wang, J. Aravind, H. Wu, J. Forys, V. Venkataraman, K.V. Ramanujachary

9:00 **PMSE 20.** Effects of graphene oxide, silane-grafted graphene oxide, and thermally reduced graphene oxide on the volume shrinkage and mechanical properties of cured vinyl ester resins. Y. Huang, Y. Wang, Y. Chung, Y. Lin, C. Wu

9:20 **PMSE 21.** Effect of dispersion of graphene on thermal stability and dynamic mechanical properties of melt processed PLA. V. Katiyar

9:40 **PMSE 22.** Highly conductive reduced graphene oxide (rGO) heterostructures. M. Savchak, R. Burtovyy, N. Borodinov, K. Hu, R. Ma, V.V. Tsukruk, I.A. Luzinov

10:00 Intermission.

10:20 **PMSE 23.** Use of laser light scattering to follow the thermoreversible gelation of regioregular poly(3-hexylthiophene) in o-dichlorobenzene. J.W. Gilmer, M.D. Dadmun, B. Morgan, C. Todt

10:40 **PMSE 24.** Self-templated synthesis of microporous polymeric hollow nanocapsules. L. Tan, B. Tan

11:00 **PMSE 25.** New method for preparing polymer/pristine graphene multilayer thin films with unprecedented modulus improvement and high transparency. F. Xiang, J.C. Grunlan

11:20 **PMSE 26.** Hybrid epoxy nanocomposite thin films containing well-exfoliated zinc oxide/multi-walled carbon nanotubes for aerospace applications. S. Hawkins, H. Yao, H. Wang, H. Sue

## Section D

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom H

**General Papers/New Concepts  
in Polymeric Materials**

M. Grunlan, *Organizer*

A. Tibbitts, J. Townsend, *Presiding*

8:00 **PMSE 27.** Design considerations for the fabrication of poly(ionic liquid) thiol-ene networks. A. Tibbitts, Y. Yan, C.J. Kloxin

8:20 **PMSE 28.** Polymerization-induced shrinkage stress in thiol-ene photopolymerizations. H.L. van der Laan, J. Jung, J. Li, B.H. Clarkson, T.F. Scott

8:40 **PMSE 29.** Poly(2-cyloalkyl-2-oxazolines): high melting temperature polymers solely based on Debye and Keesom van der Waals interactions. V. Jerca, K. Lava, B. Verbraeken, R. Hoogenboom

9:00 **PMSE 30.** Effects of symmetry of copper-catalyzed azide-alkyne cycloaddition reaction on surface grafting density of polymer. T.M. Vi

9:20 **PMSE 31.** Synthesis, processing and mechanical properties of monodisperse oligo( $\beta$ -alanine) grafted poly(isobutylene-co-isoprene) thermoplastic elastomer. X. Yan, L. Jia

9:40 **PMSE 32.** Effect of interfacial interactions of functionalized carbon nanotubes (CNTs) in epoxy-CNT composites. S. Roy, R. Petrova, S. Mitra

10:00 Intermission.

10:20 **PMSE 33.** Bio-based epoxy/carbon nanotubes systems: Effect of dispersion on curing kinetics and thermo-mechanical properties. A.A. Patel, A. Maiorana, L. Yue, R.A. Gross, I. Manas-Zloczower

10:40 **PMSE 34.** Dynamic mechanical properties of polyimide and polyimide nanocomposites. W. Marashdeh

11:00 **PMSE 35.** Effects of multifunctional silicon carbide whiskers on epoxy nanocomposite materials. J. Townsend, R. Burtovyy, P. Aprelev, K. Kornev, I.A. Luzinov

11:20 **PMSE 36.** Molecular cages and macrocycles as building blocks for new generation nanoporous polymers. O. Buyukcakir, Y. Seo, A. Coskun

## Section E

Sheraton Philadelphia Downtown Hotel Seminar A

## General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

E. A. Garcia, J. Liu, *Presiding*

**8:30 PMSE 37.** Metalized nanocellulose-based composites as reactive layers for thin-film forward osmosis membranes: Physical characterization studies and water reclamation performance. **P.E. Cruz Tato**, L. Santiago-Martoral, K. Vega, D. Bracho, C. Gonzalez, E. Ortiz, M. Flynn, E. Nicolau

**8:50 PMSE 38.** DNA-grafted polymer microparticles encoded with QR codes. **L. Ramirez**, M. He, S. Mailloux, J. George, J. Wang

**9:10 PMSE 39.** Nanocarriers with multivalent ligand presentation for targeted delivery. **E.A. Garcia**, M. Herrera-Alonso, H. Luo, T. Palacios Hernández

**9:30 PMSE 40.** Biomimetic self-assembled peptide nanostructures. **M.O. Guler**

9:50 Intermission.

**10:10 PMSE 41.** Water vapor-induced iridescent color change of nanocoatings. **J. Liu**, S. Zeng, T.D. D'auria, A. Smith, A. Choudry, T.M. Vieira, L. Sun

**10:30 PMSE 42.** Clustering manipulation of high aspect ratio nanopillars. **H. Yoon**

**10:50 PMSE 43.** Electrospun nanofibrous polymeric adsorbents for water purification. **B. Zhang**, Y. Ma, J. Li, H. Ma, M. Yu

**11:10 PMSE 44.** Ionothermal synthesis of two-dimensional microporous carbonaceous polymer nanosheets and its application as high-performance CO<sub>2</sub> capture sorbent. **M. Zhang**, L. Liu, T. He, G. Wu, P. Chen

**11:30 PMSE 45.** Directed assembly of nanoparticles filled polymer thin films. **R. Zhang**, A. Karim, B. Lee, M.R. Bockstaller, C.M. Stafford, J. Douglas

## Section F

Sheraton Philadelphia Downtown Hotel Seminar B

## General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

K. Golovin, K. Price, *Presiding*

**8:00 PMSE 46.** Tuning dynamics of moisture responsive wrinkling surfaces. **S. Zeng**, D. Zhang, W. Huang, A. Smith, S.G. Freire, V.M. Garbellotto, H. Nguon, L. Sun

**8:20 PMSE 47.** Clear durable amphiphobic NanoGLIDE coatings. **H. Hu**, G. Liu, M. Rabnawaz

**8:40 PMSE 48.** Surface imprinted polymeric materials for selective recognition of synthetic hormones. **A. Mujahid**, T. Hussain, K. Nazir, S. Ashraf, H. Raza, S. Bajwa

**9:00 PMSE 49.** Relationships between mechanical properties of clear-coats and scratch performance. **K. Price**, M.N. Wen, J. Lin

**9:20 PMSE 50.** Chain intermixing and dynamics in nonlinear layer-by-layer films. **V. Selin**, J. Ankner, S.A. Sukhishvili

**9:40 PMSE 51.** Sticky or slippery wetting: network formation conditions can provide a one-way street for water flow on poly(dimethylsiloxane). **C. Wang**, S. Nair, T. Shrestha, P. Moseh, K.J. Wynne

10:00 Intermission.

**10:20 PMSE 52.** Superhydrophobic composites for stretch-induced protein and drug delivery. **J. Wang**, J. Kaplan, Y. Colson, M.W. Grinstaff

**10:40 PMSE 53.** Stable water-dispersible air nanobubbles encapsulated with ABC triblock copolymer bearing fluorinated block with super-low surface energy. **Y. Wang**, G. Liu, H. Hu, Y. Li, A. Johri, X. Li, J. Wang

**11:00 PMSE 54.** Bio-inspired design of highly sensitive and reversible mechanochromisms via surface engineering. **S. Zeng**, D. Zhang, W. Huang, Z. Wang, S.G. Freire, X. Yu, A. Smith, E. Huang, H. Nguon, L. Sun

**11:20 PMSE 55.** Understanding ice-phobic polymers, elastomers and monolayers. **K. Golovin**, A. Tuteja

## Section G

Sheraton Philadelphia Downtown Hotel Parlor A

## General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

J. Bertram, M. R. Langille, *Presiding*

**8:00 PMSE 56.** TiO<sub>2</sub> embedded in PDMS beads - A microstructured, buoyant photocatalyst. **J. Bertram**, M.J. Nee

**8:20 PMSE 57.** Latent catalyst in naphthoxazines: Synthesis and effects on curing behavior. **W. Zhang**, H. Ishida

**8:40 PMSE 58.** Entrapment of metal complexes into PEDOT via vapor phase complexation. **S. Acharya**, L. Spiccia, A. Ohlin, B. Winther-Jensen

**9:00 PMSE 59.** Biomimetic dynamic heat-stiffening polymer nanocomposites. **E. Cudjoe**, A. Way, S.J. Rowan

**9:20 PMSE 60.** Homochiral self-assembly of [2.2]paracyclophane promoted by transannular hydrogen bonding. **D.E. Fagnani**, M. Meese, K. Abboud, R.K. Castellano

**9:40 PMSE 61.** Reversible, photocurable epoxy based resins. **K. Frederick**, N. Odegaard, P. Vandiver, D.A. Loy

10:00 Intermission.

**10:20 PMSE 62.** Study of the intramolecular and intermolecular hydrogen-bonded amide-containing benzoxazines. **L. Han**, P. Froimowicz, K. Zhang, H. Ishida

**10:40 PMSE 63.** Inorganic polymers made directly from minerals. **M. Kazancioglu**, Z. Lin, R. Lehman, M. Hara

**11:00 PMSE 64.** Slow/fast. Multiple dynamic bonds for improved dynamic and self-healing materials. **D. Konkolewicz**, B. Zhang, Z. Digby, E. Foster, J. Flum, J. Sparks

**11:20 PMSE 65.** Dispersant technologies for more durable economy paints. **M.R. Langille**, D. Saucy, A. Van Dyk, J. Gu, M. Bender, J. Reffner, C. Wolf, M.L. Pacholski

## Advanced Functional Biopolymers &amp; Biomaterials

Sponsored by POLY, Cosponsored by PMSE

## SUNDAY AFTERNOON

## Section A

Sheraton Philadelphia Downtown Hotel Philadelphia Ballroom South

## Porous Polymers

## PolyHIPEs

Cosponsored by POLY

Financially supported by 3M, Polymer-Elsevier, Wiley

N. R. Cameron, M. A. Hillmyer, D. A. Schiraldi, M. S. Silverstein, *Organizers*

A. Bismarck, P. Krajnc, *Presiding*

**1:00 PMSE 66.** Synthesis of macroporous polymer beads: Don't waste your time with microfluidics! **J. Ferrer**, A. Menner, **A. Bismarck**

**1:30 PMSE 67.** Combining emulsion templating with various methods of macro structuring for multiple-level porous materials preparation. **P. Krajnc**, M. Paljevack, I. Pulko

**2:00 PMSE 68.** High-internal phase emulsion foams with surface-grafted poly(4-vinyl pyridine) for plutonium sorption. **J. Pribyl**, B. Fletcher, W.P. Steckle, K.M. Taylor-Pashow, T.C. Shehee, B.C. Benicewicz

**2:20 PMSE 69.** Salt solution-filled elastomeric monoliths through templating within Pickering emulsions: Release and degradation. **K. Kapilov-Buchman**, D. Canfi, E. Kaufman, E. Barak, R. Frim, R. Effenberger, M.S. Silverstein

**2:40 PMSE 70.** Nanocomposite foams based on high internal phase emulsions with cellulose nanocrystals. **V. Karimkhani**, D. Feke, I. Manas-Zloczower, S.J. Rowan

3:00 Intermission.

**3:15 PMSE 71.** Responsive, high porosity hydrogels through emulsion templating. **M. Ovidia**, I. Shreiber Livne, S. Kovacic, **M.S. Silverstein**

**3:45 PMSE 72.** Preparation and characterization of ordered porous polymer monoliths for analytical applications. **E. Hilder**, R. Arrua, A. Khodabandeh, C. Desire, S. Thickett, S. Bon

**4:15 PMSE 73.** Multifunctional hierarchically porous hybrids for new application opportunities. **M. Mazaj**, N. Zabukovec Logar, E. Zagar, **S. Kovacic**

**4:45 PMSE 74.** Poly(high internal phase emulsions) as supersorbent hydrogels. **R. Zowada**, **R. Foudazi**

## Section B

Sheraton Philadelphia Downtown Hotel Philadelphia Ballroom North

## Bioderived &amp; Bioinspired Polymers

## Celebrating 50 Years of the Polymer Program at UConn

Y. Lin, M. Nieh, L. Sun, *Organizers*

R. Kasi, *Organizer, Presiding*

T. A. Seery, *Presiding*

**1:00 PMSE 75.** Suppression of ice crystallization by a supramolecular hydrogel. **C.G. Wiener**, B.D. Vogt, M. Tyagi, Y. Liu, **R.A. Weiss**

**1:30 PMSE 76.** Precisely functionalized molecular nanoparticles are unique elements for macromolecular science: From nanoatoms to giant molecules. **S.Z. Cheng**

**2:00 PMSE 77.** Breakthrough water filtration membrane technology based on nanofibers. **B.S. Hsiao**

**2:30 PMSE 78.** New insights into the thermoreversible gelation of methylcellulose and hydroxypropyl methylcellulose. **T.P. Lodge**, A. Maxwell, P. Schmidt, F. Bates

3:00 Intermission.

**3:15 PMSE 79.** Cluster luminescence from non-conjugated polymers. **B. Tang**

**3:45 PMSE 80.** Teaching helical self-assemblies to epitaxially recognize the chiral lattice of carbon nanotubes. **F. Papadimitrakopoulos**

**4:15 PMSE 81.** How is neuron-degenerative Huntington protein oligomerized? **C. Wu**

**4:45 PMSE 82.** Polymer grafted nanoparticles as tunable hybrid materials. **B.C. Benicewicz**

## Section C

Sheraton Philadelphia Downtown Hotel Liberty Ballroom A

## Journal of Polymer Science Award: Symposium in honor of Cyrille Boyer

Financially supported by Wiley

J. Mahoney, *Organizer*

C. J. Hawker, *Organizer, Presiding*

**1:00 PMSE 83.** New materials by ATRP enabled by new synthetic techniques with ppm amounts of catalysts. **K. Matyjaszewski**

**1:30 PMSE 84.** Networks on demand: Methods for the assembly of polymeric structures in the nano- and microscale. **E. Harth**

**2:00 PMSE 85.** Engineering intracellular delivery nanocarriers and nanoreactors from oxidation-responsive polymersomes via synchronized bilayer crosslinking and permeabilization inside live cells. **Z. Deng**, **S. Liu**

**2:30 PMSE 86.** Precision tailoring of macromolecules by controlled polymerizations. **B.P. Fors**, B.S. Sumerlin

**3:00 PMSE 87.** Photocontrolled cargo release from dual cross-linked polymer particles. **G.G. Qiao**

**3:30 PMSE 88.** Aqueous copper(II) photoinduced polymerization of acrylates: Low copper concentration and the importance of sodium halide salts. **D.M. Haddleton**, G. Jones, A. Anastasaki, R. Whitfield

**4:00 PMSE 89.** Approaches to RAFT synthesis of multifunctional, multi-armed polymers. **G. Moad**, A. Postma, S. Thang

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**4:30 PMSE 90.** Photocatalysts; An efficient tool for the control of the polymer architecture. C. Boyer

### Section D

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom H

#### Organomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

#### Novel & Precise Polyolefin Structures

Cosponsored by POLY

Financially supported by ExxonMobil Corporation

L. S. Baugh, *Organizer*

A. Patil, *Organizer, Presiding*

B. Carrow, *Presiding*

**1:00 PMSE 91.** Controlled synthesis of simple hydrocarbon oligomers and polymers with precisely designed microstructures. K.J. Shea, R. Zhao

**1:30 PMSE 92.** Boron-catalyzed C3-polymerization of  $\omega$ -2-methyl allylarsonium ylide and its C3/C1 copolymers with dimethylsulfoxonium methyllide. D. Wang, Z. Zhang, N. Hadjichristidis

**2:00 PMSE 93.** Direct comparisons of experiments and atomistic molecular dynamics of precise polyethylenes. K.I. Winey

**2:30 PMSE 94.** Tensile strengthening effects through precision placement of H-bonding side groups in polyethylenes. L.R. Middleton, E. Trigg, K.B. Wagener, K.I. Winey

**3:00** Intermission.

**3:15 PMSE 95.** Zwitterionic polyolefins. T. Emrick

**3:45 PMSE 96.** Precision long-chain branched polyethylene via acyclic diene metathesis (ADMET) polymerization. H. Li, G. Rojas, K.B. Wagener

**4:15 PMSE 97.** Stereo- and regioselective cross metathesis of 3-substituted cyclooctenes. M.R. Radlauer, M.E. Matta, M.A. Hillmyer

### Section E

Sheraton Philadelphia Downtown Hotel  
Seminar A

#### General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

X. Gu, L. Zhai, *Presiding*

**1:00 PMSE 98.** Biodegradable polyurethane elastomers as coatings for magnesium-based cardiovascular stents. X. Gu, Z. Mao, S. Ye, Y. Koo, Y. Yun, V. Shanov, W. Wagner

**1:20 PMSE 99.** Tribological properties of PBI and PEEK polymers on steel. A. Jean-Fulcrand, J. Wong, M. Masen, T. Bremner

**1:40 PMSE 100.** Crystalline silk nanodisc-based polylactide bionanocomposite. R. Patwa, A. Kumar, V. Katiyar

**2:00 PMSE 101.** Electrospinning of polyisobutylene-based thermoplastic elastomer for implant applications. A. Jindal, A.C. Charif, A.T. McClain, B. Paiva, M. Camassola, J.E. Puskas

**2:20 PMSE 102.** Influence of lactic acid-grafted-chitosan on poly (lactic acid) films: Non-isothermal degradation kinetics. A.K. Pal, V. Katiyar

**2:40** Intermission.

**3:00 PMSE 103.** Polymer coated cerium oxide nanoparticles and their antibacterial activity. U. Utkoor

**3:20 PMSE 104.** Compatibility, crystallization kinetics and memory effect of binary blends of different types of polyethylene. X. Yao, C. Zheng, M. Ren, Y. Tang, Y. Ren, L. Liu

**3:40 PMSE 105.** Dual functional blood compatible surface fabricated through sequential immobilization of biomolecules. W. Zhan, T. Wei, Q. Yu, H. Chen

**4:00 PMSE 106.** Bioinspired metal ion coordinated polyelectrolyte nano-reactors with predictable design rules. L. Zhai, A. Malhotra

**4:20 PMSE 107.** Structure and properties of biodegradable poly(butylene succinate-co-butylene terephthalate) (PBST). C. Zheng, G. Zhu, W. Zhang, L. Han, L. Liu

### Section F

Sheraton Philadelphia Downtown Hotel  
Seminar B

#### General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

S. Ragunath, B. B. Tiu, *Presiding*

**1:00 PMSE 108.** Structure and properties of co-polyimide fibers by dry-spinning process containing benzimidazole units. Z. Li, W. Tan, J. Dong, Q. Zhang

**1:20 PMSE 109.** Creating superhydrophobic fabrics from twisted yarns of electrospun composite nanofibers. W. Panatdasirisuk, S. Yang

**1:40 PMSE 110.** Selective hydrophilization of the permeate surface to enhance flux in membrane distillation. S. Ragunath, S. Roy, S. Mitra

**2:00 PMSE 111.** Pre-programmed folding of 2D nematic liquid crystal elastomer sheets into arbitrary 3D structures. Y. Xia, S. Yang, H. Aharoni, R. Kamien

**2:20 PMSE 112.** Ion-induced morphology change of diblock copolymer micelles in non-polar solvents via polymerization-induced self-assembly. G.N. Smith, S.P. Armes

**2:40** Intermission.

**3:00 PMSE 113.** Synthesis of phosphonated hybrid monomers for use as additives in proton exchange membrane polymers for fuel cell applications. T.N. Thompson, K. Reid, M.C. Boyer, J. Smith, N.Y. Arnett

**3:20 PMSE 114.** Electrochemically polymerized and molecularly imprinted polymer thin film sensors. B.B. Tiu, R.C. Advincula

**3:40 PMSE 115.** Carbon nanotube immobilized membrane (CNIM): Novel membrane for air and water purification. S. Ragunath, S. Roy, S. Mitra

**4:00 PMSE 116.** Study of a novel bifunctional naphthoxazine and its polymer: Synthesis and characterization. J. Liu, C.R. Arza, P. Froimowicz, H. Ishida

### Section G

Sheraton Philadelphia Downtown Hotel  
Parlor A

#### General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

B. McCulloch, X. Tang, *Presiding*

**1:00 PMSE 117.** Clay-based multi-functional films. J. Liu, S. Lin, A. Havasov, W.C. Masinda, L. Kovacs, B.A. Bendel, K. Wells, E. Dall, O. Tempo, L. Sun

**1:20 PMSE 118.** Encapsulation and triggered release of hydrophilic actives. X. Lu, J.S. Katz, K. Harris, J.S. Moore

**1:40 PMSE 119.** Cooperative interactions between cholesteric and smectic liquid crystalline mesogens in side-chain liquid crystalline random terpolymers. L.H. Mahajan, D. Ndaya, P. Deshmukh, R. Kasi

**2:00 PMSE 120.** Diodic flow surface rectification with low surface energy fluids. J.E. Mates, R. Campos, J.R. Alston, J.M. Mabry, A.J. Guenther

**2:20 PMSE 121.** Characterization of aqueous phase oligomers formed during emulsion polymerization. B. McCulloch, T. Zhang, W. Gao, R. Even

**2:40** Intermission.

**3:00 PMSE 122.** Melt-miscibility in polyethylene-hydrogenated polynorbornene block copolymers. W. Mulhearn, R.A. Register

**3:20 PMSE 123.** Higher-order structure formation process of strongly segregated crystalline diblock copolymers in isothermal crystallization. S. Nojima, Y. Higaki, K. Kojio, A. Takahara

**3:40 PMSE 124.** Effects of network formation in impact modified epoxies. M. Pawar, I. Gorman, A. Lesser

**4:00 PMSE 125.** Corrosion prevention using reversible Diels-Alder based self-healing coatings. S. Santos, G.R. Palmese

**4:20 PMSE 126.** Self-assembled catechol conjugated triblock copolymer hydrogels with adhesive and tunable mechanic. X. Tang, H. Ding

#### Advanced Functional Biopolymers & Biomaterials

Sponsored by POLY, Cosponsored by PMSE

#### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

Sponsored by POLY, Cosponsored by CHED and PMSE

## MONDAY MORNING

### Section A

Sheraton Philadelphia Downtown Hotel  
Philadelphia Ballroom South

#### Porous Polymers

#### Microporosity, Mesoporosity & Block Copolymers

Cosponsored by POLY

Financially supported by 3M, Polymer-Elsevier, Wiley

N. R. Cameron, M. A. Hillmyer, D. A. Schiraldi, M. S. Silverstein, *Organizers*

V. Abetz, C. M. Colina, *Presiding*

**8:00 PMSE 127.** Materials with controlled porosity by ATRP. K. Matyjaszewski, D. Wu

**8:30 PMSE 128.** Covalent organic frameworks comprising cobalt porphyrins for the electrocatalytic reduction of CO<sub>2</sub> in water. C. Diercks, S. Lin, Y. Zhang, C.J. Chang, O.M. Yaghi

**8:50 PMSE 129.** Azine-linked tetraphenylmethane (TPM) based 3D covalent organic framework (COF) for gas storage applications. S.B. Alahakoon, R. Smaldone

**9:10 PMSE 130.** Iptycene-containing polymers with ultrafine and tailorable micro-porosity for gas separation membranes: Synthesis and transport properties. R. Guo, S. Luo, A. Kushwaha, J. Wiegand

**9:30 PMSE 131.** Tough nanoporous polymers via polymerization-induced microphase separation. S. Saba, D.J. Loomis, M.A. Hillmyer

**9:50** Intermission.

**10:05 PMSE 132.** Structure formation of integral asymmetric isoporous block copolymer membranes. M. Radjabian, C. Stegelmeier, J. Perlich, S. Roth, C. Abetz, S. Foerster, B. Fischer, V. Abetz

**10:35 PMSE 133.** Nanoporous materials from randomly end-linked copolymer networks. R.C. Hayward

**10:55 PMSE 134.** Functional nanoporous polymers designed from diblock copolymers bearing cleavable junctions: From synthesis to application in supported catalysis. D. Grande, R. Poupart, B. Le Droumaguet

**11:15 PMSE 135.** Porous polyimide films created by block copolymer self-assembly. T. Hayakawa, K. Okuhara, T. Komamura, L. Gao, Y. Kushima, K. Azuma, R. Maeda

**11:35 PMSE 136.** Switchable structural colors from mesoporous polystyrene films. M. Krishnan, H. Chen, R.M. Ho

**11:55** Intermission.

### Section B

Sheraton Philadelphia Downtown Hotel  
Philadelphia Ballroom North

#### Bio-derived & Bioinspired Polymers

#### Structures, Architectures & Self-Assemblies: Celebrating 50 Years of the Polymer Program at UConn

R. Kasi, L. Sun, *Organizers*

Y. Lin, M. Nieh, *Organizers, Presiding*

**8:00 PMSE 137.** Metal-chelating polymers and lanthanide nanoparticles as reagents for mass cytometry. M. Winnik

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

[www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)



**8:30 PMSE 138.** Engineered oleosin as an interfacial surfactant. **D.A. Hammer,** D. Lee, K. Vargo, W. Jang, A. Tsorkas, F. Angile, C. Sehgal, Y. Jang, C. Gao, T.S. Ship, J. Crocker, R. Parthasarathy

**9:00 PMSE 139.** Bioinspired polymer hybrid materials. **U.B. Wiesner**

**9:30 PMSE 140.** Self-assembly dynamics of linear virus-like particles: Theory and experiment. **M. Punter, A. Hernandez-Garcia,** D.J. Kraft, R. de Vries, **P. van der Schoot**

**10:00** Intermission.

**10:15 PMSE 141.** Nanoporous ultra-thin membranes formed via self-assembly of protein-polymer-conjugates. **A. Böker**

**10:45 PMSE 142.** Stimuli-responsive biodegradable polymer nanoparticles for theranostic applications. **C. Wang**

**11:15 PMSE 143.** Drugs as bioinspired supramolecular materials. **H. Cui**

## Section C

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom G

### Fire & Polymers

#### Layer-by-Layer Technology

*Financially supported by Ashland, Corning, ICL (Israeli Chemical Limited), Schneller, Nabaltec*

A. B. Morgan, G. L. Nelson, *Organizers*

C. A. Wilkie, *Organizer, Presiding*

**8:00** Introductory Remarks.

**8:10 PMSE 144.** Flame retardant polyelectrolyte multilayer nanocoatings: A brief history and some recent breakthroughs. **J.C. Grunlan**

**8:35 PMSE 145.** Materials engineering for surface-confined flame retardancy. **J. Alongi, F. Carosio**

**9:00 PMSE 146.** Nanocellulose/clay thin films and foams: Biobased nanocomposites with superior flame retardant properties. **F. Carosio, J. Kochumalayil Jose,** F. Cuttica, L. Medina, G. Camino, L. Berglund

**9:25 PMSE 147.** Heat release of fabric and foam assemblies with and without layer-by-layer flame retardant coatings. **A.B. Morgan, J.C. Grunlan, K. Holder**

**9:50** Intermission.

**10:05 PMSE 148.** Water-soluble polyelectrolyte complex nanocoating for flame retardant nylon-cotton fabric. **M. Haile, M. Leistner, J.C. Grunlan**

**10:30 PMSE 149.** Pyrene-modified polyelectrolytes/MWCNT multilayer thin films extinguish flames on polyurethane foam. **K. Holder, A. Cain, M. Plummer, B. Stevens, P. Odenborg, A.B. Morgan, J.C. Grunlan**

**10:55 PMSE 150.** Intumescent flame retardant nanocoatings for foam. **D. Zhang, B.J. Lofink, V.H. Santos, J. Liu, X. Peng, L. Sun**

**11:20 PMSE 151.** Intumescent flame retardant nanocoatings for cotton fabric. **D. Zhang, B.J. Lofink, V.H. Santos, X. Peng, L. Sun**

## Section D

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom H

### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

#### Block Copolymers

*Cosponsored by POLY*

*Financially supported by ExxonMobil Corporation*

L. S. Baugh, A. Patil, *Organizers*

C. A. Alabi, D. N. Schulz, *Presiding*

**8:00 PMSE 152.** Branched and amphiphilic block copolymers by a combination of high vacuum and azeotropic methods. **G.M. Kraft, A.P. Martinez, J. Bento, T.A. Seery, D.H. Adamson**

**8:30 PMSE 153.** Self-assembly behavior of block polymer bottlebrushes. **F.W. Speetjens, M.K. Mahanthappa**

**9:00 PMSE 154.** Tuning physical properties of block copolymers containing fatty acid-derived long-chain polyacrylates. **S. Wang, S. Vajjala Kesava, R. Xie, E. Gomez, E.W. Cochran, M.L. Robertson**

**9:30 PMSE 155.** Nonlinear block copolymers with precisely controlled dimensions, compositions and architectures: from synthesis to formation of nanoparticles and nanorods. **Z. Lin**

**10:00** Intermission.

**10:15 PMSE 156.** Telechelic polymers for thiolene initiated co-networks and multi-block copolymers. **G.N. Tew**

**10:45 PMSE 157.** Controlling the phase behavior and mechanical properties of thermoplastic elastomers via combined crystallization and vitrification. **A.B. Burns, R.A. Register**

**11:15 PMSE 158.** Elastomeric conducting polyaniline templated with star block copolymers. **H. Ding, M. Zhong, H. Wu, S. Park, J. Mohin, L. Klosterman, Z. Yang, H. Yang, K. Matyjaszewski, C. Bettinger**

## Section E

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom A

### Polymers Designed for 3D Printing Applications: Evaluation of the Fundamental & Applied Aspects of the Field

#### Next Generation

*Financially supported by General Electric (GE)*

J. Choi, P. Singh, *Organizers*

A. Joy, A. Natarajan, *Organizers, Presiding*

**8:00** Introductory Remarks.

**8:05** Panel Discussion.

**8:50 PMSE 159.** Instead of 2D-printing over and over again: Continuous liquid interface production of 3D objects. **J.M. Desimone**

**9:20 PMSE 160.** Additive manufacturing of high performance thermosetting polymers. **H. Koerner**

**9:50** Intermission.

**10:00 PMSE 161.** Commercialization of UV curing polymer for the manufacturing of ultrasonic transducers. **M. Krohn**

**10:30 PMSE 162.** 3D printing of micro-patterned anion exchange membranes. **M.A. Hickner**

**11:00 PMSE 163.** Additive manufacturing and architected materials. **C. Spadaccini**

**11:30 PMSE 164.** 3D printed stretchable tactile sensors. **J. Choi, M. Emon, F. Alkadi, J. Lee, M. Vatani**

## Section F

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom A

### Polymer & Polymer Hybrid Electronics & Biosensors

#### Novel Polymers & Organic Materials

*Financially supported by Aldrich, 1-Material Inc.*

X. Gong, F. Huang, S. Wang, *Organizers*

W. Chan, D. Zhang, *Presiding*

**8:30 PMSE 165.** Significant improvement of the semiconducting performance for the DPP-quaterthiophene conjugated polymer through side-chain engineering via hydrogen-bonding. **D. Zhang**

**8:55 PMSE 166.** Enhancing electron mobilities through conjugated block copolymer architectures. **E. Gomez, B. Smith, T. Le**

**9:20 PMSE 167.** Polymeric and supramolecular electronic materials based on peryleneimide and naphthalene-dimide. **D. Zhao, Y. Guo, J. Xie, K. Cai**

**9:45 PMSE 168.** Synthesis of a long-chain alkyl acrylate monomer and its polymer for ultra-sensitive temperature sensor fabrication. **F. Daigle, K. Yang, J. Reeder, M. Abbas, W. Voit**

**10:05** Intermission.

**10:20 PMSE 169.** Synthesis and properties of conjugated polymers incorporated with electron deficient polyheterocyclic units. **W. Chan, K. Lo, T. Chan, P. Ho, K. Hau**

**10:45 PMSE 170.** Blue light-emitting polymers containing dibenzothiophene-S,S-dioxide based derivatives. **W. Yang**

**11:10 PMSE 171.** Synthesis and solution processing of conjugated ladder polymers. **L. Fang, Z. Guo, Y. Zou**

**11:35 PMSE 172.** White polymer light-emitting diodes based on exciplex electroluminescence. **S. Zhao, J. Liang, X. Jiang, L. Ying, F. Huang, W. Yang, Y. Cao**

## Section G

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom B

### Roy W. Tess Award: Symposium in honor of Mark Soucek

J. Baghdachi, *Organizer*

D. C. Webster, *Presiding*

**9:00 PMSE 173.** Smart and functional polymeric materials. **J. Baghdachi**

**9:30 PMSE 174.** Vanishing polymers: Triggered decomposition of polycarbonate nanocomposites. **K. Camera, Y. Zhang, C.K. Ober**

**10:00** Intermission.

**10:30 PMSE 175.** Development of 1-functionalized benzocyclobutene-based monomers with controlled curing temperatures. **C.R. Pugh, W.K. Storms, A.R. Amrutkar, I. Ono, J.S. Baker**

**11:00 PMSE 176.** Amphiphilic silicone coatings to control marine biofouling. **M. Grunlan, M.L. Hawkins, M.A. Rufin, S. Stafslien, I. Linossier**

## Advanced Functional Biopolymers & Biomaterials

*Sponsored by POLY, Cosponsored by PMSE*

### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

#### K-12 Workshop

*Sponsored by POLY, Cosponsored by CHED and PMSE*

## MONDAY AFTERNOON

### Section A

Sheraton Philadelphia Downtown Hotel  
Philadelphia Ballroom South

#### Porous Polymers

##### PolyHIPEs & Bio-Related

*Cosponsored by POLY*

*Financially supported by 3M, Polymer-Elsevier, Wiley*

N. R. Cameron, M. A. Hillmyer, D. A. Schiraldi, M. S. Silverstein, *Organizers*

E. Cosgriff-Hernandez, M. Grunlan, *Presiding*

**1:00 PMSE 177.** Emulsion inks for 3D printing bone grafts. **E. Cosgriff-Hernandez, N. Sears, P. Dhavallikar**

**1:30 PMSE 178.** Tissue engineering scaffolds by emulsion templating. **N.R. Cameron**

**2:00 PMSE 179.** PolyHIPE materials for treatment of severe limb trauma and controlled drug delivery. **B. Streifel, J.H. Wynne, J. Lundin, C.L. McGann**

**2:20 PMSE 180.** Multifunctional polymeric HIPE foams as wound dressing materials for treatment of severe limb trauma. **C.L. McGann, B.C. Streifel, G.C. Daniels, J. Lundin, J.H. Wynne**

**2:40 PMSE 181.** Tough hydrogel materials using click chemistry. **A.P. Dove**

**3:00** Intermission.

**3:15 PMSE 182.** Porous polymer scaffolds as a platform technology for tissue engineering. **J.B. Kohn**

**3:45 PMSE 183.** Bioactive self-fitting shape memory polymer (SMP) scaffold to treat craniomaxillofacial (CMF) bone defects. **M. Grunlan, D. Zhang, M. Hahn, J. Erndt-Marino, A.C. Jimenez-Vergara**

**4:15 PMSE 184.** Polymer brush decorated macroporous polymer monoliths for bioclogging. **F. Audouin, B. O'Connor, S. Kimmins, A. Heise**

### Section B

Sheraton Philadelphia Downtown Hotel  
Philadelphia Ballroom North

#### Bio-derived & Bioinspired Polymers

##### Physical Properties & Applications of Bioinspired & Hybrid Materials: Celebrating 50 Years of the Polymer Program at UConn

R. Kasi, Y. Lin, *Organizers*

M. Nieh, L. Sun, *Organizers, Presiding*

**1:00 PMSE 185.** Cellulose nanocrystals and responsive nanocomposites. **S.J. Rowan**

**1:30 PMSE 186.** Polymer brush growth inspired by nature: a grafting-through approach. **R. Mohammadi Sejoudari, A.P. Martinez, Y. Kutes, Z. Wang, A.V. Dobrynin, D.H. Adamson**

**2:00 PMSE 187.** Functionalized 3D graphene structure as biointerfacing materials. **Z. Luo, M. Zhuang**

**2:30** Intermission.

**2:45 PMSE 188.** Super gas barrier and fire suppression from hybrid materials prepared using naturally occurring polyelectrolytes and clay. **J.C. Grunlan**

**3:15 PMSE 189.** Poly lactide: Novelty as the key towards novel applications of an old polymer. **U.S. Schubert, C. Weber, I. Ilknur**

**3:45 PMSE 190.** Hydration of polyethylene oxide in nanostructures. **E. Dormidontova**

**4:15 PMSE 191.** Main-chain liquid crystalline networks as shape changing materials. **Y. Wang, K.A. Burke**

## Section C

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom G

### Fire & Polymers

#### Testing Methodology

Financially supported by Ashland, Corning, ICL (Israeli Chemical Limited), Schneller, Nabaltec

G. L. Nelson, C. A. Wilkie, *Organizers*

A. B. Morgan, *Organizer, Presiding*

**1:00 PMSE 192.** Tailored bench-scale fire testing in research and development. **B. Schartel**

**1:25 PMSE 193.** Ignition temperatures of polymers. **R.E. Lyon, N. Safronava**

**1:50 PMSE 194.** Combustion of flame retardant compounds and polymers in the microscale combustion calorimeter. **N. Safronava, R.E. Lyon, R. Walters**

**2:15 PMSE 195.** Combustion products of polymers at constant fuel/oxygen ratio in the microscale combustion calorimeter. **L.C. Speitel, R. Walters, R.E. Lyon**

**2:40** Intermission.

**2:55 PMSE 196.** Numerical modeling of EVA/ATH cable sheathing and simulation at reduced scale. **S. Bourbigot, B. Girardin, G. Fontaine, M. Forsth, S. Duquesne**

**3:20 PMSE 197.** Flexible polyurethane foams: full scale versus bench scale fire performance. **G.L. Nelson, J. Damon**

**3:45 PMSE 198.** Halogen-free back-coating for smoldering and open-flame resistant upholstered furniture. **M. Zammarano, V. Cazzetta, S. Nazaré, J. Shields, A. Maffezzoli, R.D. Davis**

**4:10 PMSE 199.** Design of a material flammability property database. **M. Bruns**

**4:35 PMSE 200.** Elucidating relations between material composition and flammability. **M. McKinnon, G.E. Martin, S. Stoliarov**

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## Section D

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom H

### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

#### Oligomers & Functional Films

Cosponsored by POLY

Financially supported by ExxonMobil Corporation

L. S. Baugh, A. Patil, *Organizers*

D. Cherney, M. L. Robertson, *Presiding*

**1:00 PMSE 201.** Sequence-defined macrocyclic oligoTEAs. **C.A. Alabi**

**1:30 PMSE 202.** Living polyaliphatic (PAO) with built-in polar ether functionalized high performing synthetic fluids based on polyvinyl ethers. **A. Patil, R. Tripathy, S. Bodge**

**2:00 PMSE 203.** Precisely designed vinyl polymers and oligomers of ring-based and sequence-controlled architectures. **M. Ouchi**

**2:30 PMSE 204.** Sequence and microstructure effects in conjugated organoborane oligomers and polymers. **F. Guo, P. Chen, F. Cheng, N. Baser-Kirazli, F. Jaekle**

**3:00** Intermission.

**3:15 PMSE 205.** General strategy to precision oligomers ( $PDI = 1.0$ ). **J. Lawrence, A. Abdilla, M. Nothing, S. Lee, J. Ren, Y. Li, B.D. Oschmann, A. Knight, D.J. Lunn, B.V. Schmidt, A. McGrath, P.G. Clark, C.J. Hawker**

**3:45 PMSE 206.** Micelle-forming polyolefin-polymethacrylate diblock copolymer: A designed viscosity modifier. **Y. Yang, A.H. Tsou, M. Webster, D.J. Crowther, J. Soulages**

**4:15 PMSE 207.** Functional additives derived from structurally well-defined poly(olefins): Structure – function relationships. **S. Sivaram**

## Section E

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom A

### Polymers Designed for 3D Printing Applications: Evaluation of the Fundamental & Applied Aspects of the Field

#### New Chemistries

Financially supported by General Electric (GE)

A. Joy, A. Natarajan, P. Singh, *Organizers*

J. Choi, *Organizer, Presiding*

C. Spadaccini, *Presiding*

**1:30 PMSE 208.** Expanding the polymer toolbox for 3D printing: Functional objects using microstereolithography. **J.M. Sirmine, A. Schultz, P.M. Lambert, C.B. Williams, T.E. Long**

**2:00 PMSE 209.** Correlating covalent bond formation to the complex thermal history of 3-D printed polymers. **E. Duranty, M. Stark, M.D. Dadmun**

**2:30 PMSE 210.** 3D printing of nanocomposite materials and challenges in properties. **R.C. Advincula**

**3:00** Intermission.

**3:10 PMSE 211.** New chemistries for tough, isotropic additive manufacturing. **G. Elson, K. Yang, B.R. Lund, W. Voit**

**3:35 PMSE 212.** Renewable lignin biopolymers for 3D printing applications. **T. Bova, R. Boy, C. Tran, A.K. Naskar**

**4:00 PMSE 213.** Additive manufacturing materials for rapid composite tooling. **T.H. Osborn, B. Czapor, B. Rice**

## Section F

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom A

### Polymer & Polymer Hybrid Electronics & Biosensors

#### Physics, Chemistry & Engineering of Polymer Electronics

Financially supported by Aldrich, 1-Material Inc.

F. Huang, *Organizer*

X. Gong, S. Wang, *Organizers, Presiding*

**1:00 PMSE 214.** Electronic structure of semiconducting polymer field effect transistors with mobility in excess of  $100 \text{ cm}^2/\text{V}\cdot\text{s}$ . **A.J. Heeger**

**1:30 PMSE 215.** Progress and challenges in polymer OPV solar cells. **L. Yu**

**2:00 PMSE 216.** Electronic structure of quasi-one-dimensional and two-dimensional pi-conjugated polymers with small carrier effective masses. **J.E. Bredas**

**2:30 PMSE 217.** Super-wettability based fabrication of organic functional materials. **L. Jiang**

**3:00** Intermission.

**3:15 PMSE 218.** AIE-active functional polymers. **B. Tang**

**3:45 PMSE 219.** Synthesis and doping of materials for organic electronics and opto-electronic. **S.R. Marder**

**4:15 PMSE 220.** Semiconducting polymers for high performance field-effect transistors and circuits. **Y. Liu**

**4:45 PMSE 221.** Synthesizing elastomeric electronic materials. **Q. Pei**

## Section G

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom B

### Roy W. Tess Award: Symposium in honor of Mark Soucek

J. Baghdachi, *Organizer, Presiding*

**1:30 PMSE 222.** Soft surface science and engineering: Influence of thermodynamics on serendipitous discoveries and targeted design. **K.J. Wynne**

**2:00 PMSE 223.** Impact of reactive group functionality on the properties of thermosets derived from vegetable oils. **D.C. Webster, X. Pan, A.Z. Yu, A. Paramarta**

**2:30** Intermission.

**3:00 PMSE 224.** Overcoming confinement limited swelling in hydrogel thin films using supramolecular interactions. **R.A. Weiss, C.G. Wiener, B.D. Vogt**

**3:30 PMSE 225.** Cure-on-command technologies for coatings. **M.D. Soucek**

### Advanced Functional Biopolymers & Biomaterials

Sponsored by POLY, Cosponsored by PMSE

#### Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?

Sponsored by ANYL, Cosponsored by BIOL, BMGT, CHED, CINF, MEDI, PMSE and SCHB

### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

Sponsored by POLY, Cosponsored by CHED and PMSE

#### Chemistry Explained by Teachers for Teachers: The Chemistry behind Everyday Things

Sponsored by CHED, Cosponsored by PMSE, POLY and RUBB

### Undergraduate Research Posters

#### Polymer Chemistry

Sponsored by CHED, Cosponsored by PMSE, POLY and SOCED

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

M. Grunlan, *Organizer*

**8:00 - 10:00**

23, 37, 39, 58-59, 61, 90, 128-129, 152, 168, 171, 177, 186, 212, 228. See previous listings.

242, 246, 254, 257-258, 274, 278, 281, 299, 301, 306, 324-325, 353-354, 356-358, 360, 363-368, 371, 373, 379-380, 383, 387, 496-497, 547-548, 559, 576, 581-582, 588, 590, 598, 611, 618, 626, 628-629, 688, 693, 698. See subsequent listings.

### Section C

Sheraton Philadelphia Downtown Hotel  
Liberty Blrm C

### Fire & Polymers

Financially supported by Ashland, Corning, ICL (Israeli Chemical Limited), Schneller, Nabaltec

A. B. Morgan, G. L. Nelson, C. A. Wilkie, *Organizers*

**6:30 - 8:30**

**PMSE 226.** Innovative layer-by-layer processing for flame retardant behavior of cotton fabric. **S. Chang, B.D. Condon, J. Smith**

**PMSE 227.** Properties and characterization of two flame retardant polybutylene terephthalate compounds. **K. DeGracia, D.A. Schiraldi**

**PMSE 228.** Bio-based flame retardant systems for polyolefins. **T. Deans, Y. Li, J. Makara, J. Larson, D.A. Schiraldi**

**PMSE 229.** Wash-durable polyelectrolyte complex that extinguishes flame on polyester-cotton fabric. **M. Haile, J.C. Grunlan**

**PMSE 230.** Stacking clay-based and intumescent multilayer thin films to completely stop fire on highly flammable polyurethane foam. **K. Holder, M. Huff, M. Cosio, J.C. Grunlan**

**PMSE 231.** Solubility-based rheological characterization of liquid crystalline poly(2-cyano-p-phenylene terephthalamide) solutions. **D. Jung, Y. Eom, D. Chae, B. Kim**

**PMSE 232.** Synthesis of phosphorus based flame retardants via microwave synthesis. **R.K. Mahaffey, D.J. Patterson**

**PMSE 233.** Modifications to layer-by-layer FR coatings on Nyco for improved launderability. **M. Roth, P. Yip, R. Nagarajan**

PMSE 234. Withdrawn.

## TUESDAY MORNING

### Section A

Sheraton Philadelphia Downtown Hotel  
Philadelphia Ballroom South

#### Porous Polymers

##### Mesoporosity & Block Copolymers

Cosponsored by POLY

Financially supported by 3M,  
Polymer-Elsevier, Wiley

N. R. Cameron, M. A. Hillmyer, D. A. Schiraldi,  
M. S. Silverstein, *Organizers*

R. M. Ho, U. B. Wiesner, *Presiding*

**8:00 PMSE 235.** Block copolymer based porous materials. U.B. Wiesner

**8:30 PMSE 236.** Nondestructive method to fabricate mesoporous polymers using block copolymer template and their thermal conductivity. H. Yokoyama

**9:00 PMSE 237.** Using compositional asymmetry and solvent swelling to generate high porosity in block copolymers. B.D. Vogt, C. Ye

**9:20 PMSE 238.** Triblock terpolymer derived isoporous ultrafiltration membranes. Y. Li, Q. Zhang, Y. Gu, R. Dorin, K. Tan, D. Smilgies, U.B. Wiesner

**9:40 PMSE 239.** Nanoporous membranes from ultrahigh molecular weight block copolymers. J.K. Mapas, J. Rzyayev

10:00 Intermission.

**10:15 PMSE 240.** Nanonetworks from chiral block copolymer templates and their applications. R.M. Ho

**10:45 PMSE 241.** New block copolymers and blends for membrane fabrication. S. Nunes, K. Peinemann, H. Yu, X. Qiu, N. Moreno, Y. Xie, B. Sautisna

**11:15 PMSE 242.** Block copolymer self-assembly-derived synthesis of mesoporous gyroidal superconductors. P. Beaucage, S. Robbins, J. Sethna, F.J. DiSalvo, R. Van Dover, S.M. Gruner, U.B. Wiesner

**11:35 PMSE 243.** Highly permeable membranes with nanofibrous composite barrier layer for reverse osmosis and nanofiltration. B.S. Hsiao, K. Liu, B.T. Chu

### Section B

Sheraton Philadelphia Downtown Hotel  
Philadelphia Ballroom North

#### Bioderived & Bioinspired Polymers

##### New Developments

R. Kasi, Y. Lin, M. Nieh, *Organizers*

L. Sun, *Organizer, Presiding*

K. Burke, *Presiding*

**8:00 PMSE 244.** Environment-dependent single-chain mechanics of biomacromolecules and its implications to prebiotic chemical evolution. S. Cui

**8:30 PMSE 245.** Natural polyamine-mimetic motifs for antimicrobial polymers effective against drug-resistant bacteria. H. Takahashi, E. Madsen, B. Boles, K. Kuroda

**9:00 PMSE 246.** Deducing the structural framework of a plant-based polymeric assembly. S. Chatterjee, O. Serra, B. Iitin, M. Figueras, M. Molinas, R.E. Stark

**9:30 PMSE 247.** Osteomimetic graphene oxide-polyphosphate composites as scaffolds for bone regeneration. A. Arnold, B. Holt, S.A. Sydlík

10:00 Intermission.

**10:15 PMSE 248.** Polypeptides for light harvesting applications. J.P. Seeley, J.T. Welch

**10:45 PMSE 249.** Bioinspired ECM-like hydrogels for controlled growth factor release. Y. Wang

**11:15 PMSE 250.** Zeptomolar detection of bacterial protein efflux using fluorescent single walled carbon nanotube sensor arrays. M. Landry, H. Ando, A. Chen, V. Kottadiel, L. Chio, D. Yang, T. Lu, M. Strano

### Section C

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom G

#### Fire & Polymers

##### Nanoparticle Technology

Financially supported by Ashland, Corning, ICL (Israeli Chemical Limited), Schneller, Nabaltec

A. B. Morgan, C. A. Wilkie, *Organizers*

G. L. Nelson, *Organizer, Presiding*

**8:00 PMSE 251.** Flame retardant mechanism of polymer nanocomposites and further FR enhancement. T. Kashiwagi

**8:25 PMSE 252.** Functionalized graphene for improving fire safety of polymers. Y. Hu, X. Feng, B. Yuan, L. Song

**8:50 PMSE 253.** Polymer aerogels with tunable flammability by incorporating inorganic nanoparticles. H. Sun, D.A. Schiraldi

**9:15 PMSE 254.** Char-enhancing heterogeneous attachment of silica nanoparticles flame-retarding materials. D.J. Brannum, D. Villamil, N. Driscoll, M. Leslie, J. Farkas, K. Hemmendinger, G.E. Wnek

9:40 Intermission.

**9:55 PMSE 255.** Synthesis of a novel  $\alpha$ -zirconium phosphate/graphene oxide hybrid and its application in phenolic foams. Z. Wang, X. Li

**10:20 PMSE 256.** Mechanically strong and fire-retardant nanocomposite aerogels based on cellulose nanofibers and montmorillonite clay. L. Medina, F. Carosio, L. Berglund

**10:45 PMSE 257.** Building multicomponent flame retardants: Al<sub>13</sub>-Keggin pillared clay as a model compound. A. Edenharter, M. Schöttle, J. Breu

**11:10 PMSE 258.** Fullerene: a potential synergistic agent for aluminum hydroxide flame retardant polyethylene. Z. Fang

**11:35 PMSE 259.** Structural studies of thermally-stable surfactant-poly(methyl methacrylate) composites. G.N. Smith, J.E. Hallett, T. Zhang, S.P. Armes, F.D. Blum, J. Eastoe

### Section D

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom H

#### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

##### Sequence Control, Microstructure & Topology

Cosponsored by POLY

Financially supported by ExxonMobil Corporation

A. Patil, *Organizer*

L. S. Baugh, *Organizer, Presiding*

A. Tonelli, *Presiding*

**8:00 PMSE 260.** Topologically knotty polymers and copolymers. R.C. Advincula

**8:30 PMSE 261.** Group 10-metal mediated copolymerization of propylene with polar monomers. K. Nozaki

**9:00 PMSE 262.** Can the overall molecular architectures of polymers with precisely designed microstructures be characterized? R. Gurarslan, A.E. Tonelli

**9:30 PMSE 263.** Linear copolymers of ethylene and polar alkenes generated by cationic group 10 metal catalysts. W. Zhang, M.A. Tiedemann, C.E. Padilla, J. Mei, B.P. Carrow

10:00 Intermission.

**10:15 PMSE 264.** Structure of multi-layered crystallites in precise acid-containing polyethylenes synthesized via ADMET polymerization: Atomistic molecular dynamics and comparisons with experimental characterization. E. Trigg, M.J. Stevens, K.I. Winey

**10:45 PMSE 265.** Synthesis and properties of complex microstructures—Beyond alternation. T.Y. Meyer, R.M. Weiss, A.L. Short, J.A. Nowalk

**11:15 PMSE 266.** Controlling polymer backbones in ROMP using cyclobutene derivatives. N.S. Sampson

### Section E

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom A

#### Polymers Designed for 3D Printing Applications: Evaluation of the Fundamental & Applied Aspects of the Field

##### Biomedical Applications

Financially supported by General Electric (GE)

J. Choi, A. Natarajan, P. Singh, *Organizers*

A. Joy, *Organizer, Presiding*

**8:30 PMSE 267.** 3D printed bionic nanomaterials. M.C. McAlpine

9:00 PMSE 268. Withdrawn.

**9:30 PMSE 269.** Adhesion changes due to viscoelastic transitions play a role in extrusion-based 3D printability of low-modulus polymer melts. S.R. Govindarajan, T. Jain, J. Choi, A. Joy, I. Isayeva, K. Vorvolakos

9:50 Intermission.

**10:05 PMSE 270.** Printing architected materials. J.A. Lewis

**10:35 PMSE 271.** Biomaterial ink synthesis platform for 3D printing customizable, cell-laden hydrogels. R. Shah, A. Rutz

**11:05 PMSE 272.** Additive manufacturing of polymer based medical devices: Regulatory science perspective and research. I. Isayeva, K. Vorvolakos

**11:35 PMSE 273.** Low modulus multi-functional polyester platform for room temperature 3D printing. T. Jain, S.R. Govindarajan, Y. Xu, J.P. Swanson, Y. Lu, J. Choi, I. Isayeva, A. Joy

### Section F

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom A

#### Polymer & Polymer Hybrid Electronics & Biosensors

##### Organic Solar Cells

Financially supported by Aldrich, 1-Material Inc.

X. Gong, S. Wang, *Organizers*

F. Huang, *Organizer, Presiding*

W. You, *Presiding*

**8:00 PMSE 274.** All small molecule based tandem solar cells with >12% PCEs. Y. Chen

**8:25 PMSE 275.** New strategies for simplifying the device architecture of organic solar cells. B. Kippelen

**8:50 PMSE 276.** n-Type water/alcohol-soluble naphthalene diimide-based conjugated polymers for high-performance polymer solar cells and perovskite solar cells. F. Huang

**9:15 PMSE 277.** Utilizing intermixing of conjugated polymer and fullerene from sequential solution processing for efficient bilayer polymer solar cells. Y. Zhang, C. Lang

**9:35 PMSE 278.** Fully conjugated donor-acceptor block copolymers as model systems for studies of energy and charge transfer. M.P. Aplan, E.D. Gomez

9:55 Intermission.

**10:10 PMSE 279.** Further understanding of the effect of fluorination on conjugated polymers for solar cells. Q. Zhang, M.A. Kelly, L. Yan, W. You

**10:35 PMSE 280.** Highly efficient, stable and printable polymer solar cell modules. K. Lee

**11:00 PMSE 281.** Interfacial engineering for highly efficient polymer solar cells. Z. Ge

**11:25 PMSE 282.** Low bandgap conjugated polymers with very high hole mobility for highly efficient thick-film polymer solar cells. J. Chen

### Section G

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom B

#### Henkel Award for Outstanding Graduate Research in Polymer Chemistry: Symposium in honor of Maxwell Robb

Cosponsored by POLY

Financially supported by Henkel Corporation

W. T. Ford, *Organizer, Presiding*

**8:00 PMSE 283.** Noncovalent functionalization of graphene oxide. C. Sun, D. Wakefield, D. Holowka, B. Baird, W. Dichtel

**8:30 PMSE 284.** Precise control of polymer molecular weight distribution. B.P. Fors, D. Gentekos, V. Kottisch



- 9:00 PMSE 285.** Block copolymers designed for anion exchange membranes. D.M. Knauss
- 9:30 PMSE 286.** Self-functions for polymer lifecycle control. J.S. Moore
- 10:00** Intermission.
- 10:15 PMSE 287.** Off-centered monomers for off-centered polymers. L.M. Campos
- 10:45 PMSE 288.** Novel strategies for the synthesis of discrete, functional materials. C.J. Hawker
- 11:15** Award Presentation.
- 11:20 PMSE 289.** Developing functional materials from dendrimers to mechano-phores. M.J. Robb, C.J. Hawker, J.S. Moore

### Advanced Functional Biopolymers & Biomaterials

Sponsored by POLY, Cosponsored by PMSE

### Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

Sponsored by POLY, Cosponsored by CHED and PMSE

### Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel

Sponsored by ORGN, Cosponsored by BMGT, CHED, CINF, HIST, MEDI, MPPG, INOR, PMSE and SCHB

## TUESDAY AFTERNOON

### Section A

Sheraton Philadelphia Downtown Hotel Philadelphia Ballroom South

#### Porous Polymers

#### Aerogels & Foams

Cosponsored by POLY

Financially supported by 3M, Polymer-Elsevier, Wiley

N. R. Cameron, M. A. Hillmyer, D. A. Schiraldi, M. S. Silverstein, *Organizers*

S. C. Jana, C. Stubenrauch, *Presiding*

- 1:00 PMSE 290.** Bee a chemist and be a physicist to build honeycomb-like structures! C. Stubenrauch
- 1:30 PMSE 291.** Design of mesoporous solid networks in polymer-derived aerogels monoliths and microparticles. S.C. Jana, S. Gu, C. Zhai, H. Liu, T. Liu
- 2:00 PMSE 292.** Aerogels from poly(ether ether ketone). R.B. Moore, S.J. Talley
- 2:20 PMSE 293.** Surface modification of sulfonated syndiotactic polystyrene aerogels. K.A. Cavicchi, L. Cai, S.C. Jana
- 2:40 PMSE 294.** Nanocellulose aerogels. K.R. Carter, Y. Li
- 3:00** Intermission.

- 3:15 PMSE 295.** Recent developments in polymer aerogels for aerospace applications. M. Meador
- 3:45 PMSE 296.** Dozen years of polymer aerogels; what did we learn? D.A. Schiraldi
- 4:15 PMSE 297.** Tuning the pore wall thickness of monodisperse polymer foams. A. Quell, C. Stubenrauch, W. Drenckhan
- 4:35 PMSE 298.** Open cell aerogel foams. S. Gu, S.C. Jana

### Section B

Sheraton Philadelphia Downtown Hotel Philadelphia Ballroom North

### Bioderived & Bioinspired Polymers New Developments

R. Kasi, Y. Lin, M. Nieh, L. Sun, *Organizers*

K. Burke, T. Seery, *Presiding*

- 1:00 PMSE 299.** Synthesis of functional and controllable polymeric adhesive. H. Chung, R. Slegeris, T. Harper, C.R. Gomez, I. Pramudya
- 1:30 PMSE 300.** Effect of crosslinking on biomimic PEI/PAADopa multilayer. W. Wang, Y. Xu, A. Li, T. Li, X. Wang, L. Li, X. Guo
- 2:00 PMSE 301.** Mussel-inspired catecholic coupling agents as a replacement of silane coupling agents. K. Ahn
- 2:20 PMSE 302.** Aqueous liquid-liquid phase separation of resilin-like polypeptide/polyethylene glycol solutions for formation of microstructured hydrogels. H. Lau, L. Li, I. Sidhu, K.L. Kluck

**2:40** Intermission.

**2:55 PMSE 303.** Morphological and structural analysis on natural melanin from various species. M. Xiao, M. Shawkey, A.N. Dhinojwala

**3:15 PMSE 304.** Environmentally triggered crosslinking in hybrid composites. B.M. Mosby, S. Shah, J.S. Moore, S. White, N.R. Sottos, P.V. Braun

**3:35 PMSE 305.** Effect of *ortho* and *para* constituents on the chemical and mechanical properties of lignin-based polymer films. J.A. Emerson, E.M. Furst, T.H. Epps

**3:55 PMSE 306.** Using nucleic acid polymer amphiphile assemblies (NAPAAs) to regulate mRNA expression in cancer cells. S. Barnhill, D. Nelles, N.C. Gianneschi

**4:15 PMSE 307.** Synthesis and characterization of thermosetting furan-based vinyl ester resin. F. Hu, X. Meng, S. Yadav, G.R. Palmese

**4:35 PMSE 308.** Lithocholic acid-based amphiphilic macromolecules: Reduction of lipid-loading and inflammation in atherosclerosis. A.E. Moretti, Q. Li, P. Moghe, K.E. Uhrich

### Section C

Sheraton Philadelphia Downtown Hotel Freedom Ballroom G

### Fire & Polymers

#### Flame-Retardant Chemistry

Financially supported by Ashland, Corning, ICL (Israeli Chemical Limited), Schneller, Nabaltec

A. B. Morgan, G. L. Nelson, C. A. Wilkie, *Organizers*

S. Bourbigot, *Presiding*

**1:00 PMSE 309.** More than thirty-five years of fire retardancy at Marquette University. C.A. Wilkie

**1:25 PMSE 310.** Development of new flame retardants: application to polyurethane and polybutylene terephthalate. G. Fontaine, H. Desmarchelier, R. Dupretz, A. Naik, S. Bellayer, S. Duquesne, S. Bourbigot

**1:50 PMSE 311.** Novel highly-efficient polyamide charring agent for intumescent flame-retardant EVA system. Y. Wang

**2:15 PMSE 312.** New developments in flame-retardant polystyrene foam. M. Doering

**2:40** Intermission.

**2:55 PMSE 313.** Preparation and studies of new phosphorus-containing diols as potential flame retardants. K. Wang, A.B. Morgan, V.A. Benin

**3:20 PMSE 314.** Synthesis, application, flame retardant behavior and toxicity of bis-organophosphorus compounds. S. Gaan, A. Przystas, L. Ferry, C. Hirsch, K. Salmeia

**3:45 PMSE 315.** Novel polymeric, non-halogenated flame retardants with broad applicability in multiple industries. J. Lens

**4:10 PMSE 316.** Deoxybenzoin-based polymers as low flammable materials. T. Emrick

**4:35 PMSE 317.** New developments in flame retardant copolyester plastics. R. Young

### Section D

Sheraton Philadelphia Downtown Hotel Freedom Ballroom H

### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

#### Polymeric Materials

Cosponsored by POLY

Financially supported by ExxonMobil Corporation

L. S. Baugh, A. Patil, *Organizers*

C. Curry, M. R. Radlauer, *Presiding*

**1:00 PMSE 318.** Polymer antennas: Tuning the energy transfer within copolymer systems. U.S. Schubert, M.D. Hager, A. Winter

**1:30 PMSE 319.** Self-assembly of atactic poly( $\alpha$ -olefin)-sugar hybrid conjugates for the fabrication of sub-10 nm nanostructures. S. Nowak, L.R. Sita

**2:00 PMSE 320.** Acrylic impact modifiers with even crosslink density for increased ductility in poly(vinyl chloride). M. Petr, M. Kubik, N. Fusco, M. Price, M. Swain, C.A. Cruz-Ramos

**2:30 PMSE 321.** Structurally tailored & engineered macromolecular (STEM) gels. A. Beziau, R. Natal, L. Fu, A. Simakova, H. He, T. Kowalewski, K. Matyjaszewski

**3:00** Intermission.

**3:15 PMSE 322.** Crosslinked disulfonated polysulfone oligomers with superior performance in reverse osmosis water purification. B.J. Sundell, E. Jang, J. Cook, B.D. Freeman, J.S. Riffle, J.E. McGrath

**3:45 PMSE 323.** Polymer clickabLLs: Clickable cyclopropenium ionic liquids and polymeric cyclopropenium as cellular transfection agents. J. Freyer

**4:15 PMSE 324.** Epoxy resin modified with functionalized carbon nanotubes. W. Gan, W. Li, Y. Ling, A. Li

### Section E

Sheraton Philadelphia Downtown Hotel Liberty Ballroom A

### Polymers Designed for 3D Printing Applications: Evaluation of the Fundamental & Applied Aspects of the Field

#### Biomedical Applications

Financially supported by General Electric (GE)

M. Guvendiren, *Organizer*

J. Miller, *Organizer, Presiding*

**1:30 PMSE 325.** Application of 3D printing in bone tissue engineering. S. Bose

**2:00 PMSE 326.** Post-printing functionalization of 3D scaffolds for regenerative medicine. M. Becker

**2:30 PMSE 327.** Extrusion-based 3D printing of biodegradable hydrogels for biomedical applications. C.B. Highley, L. Ouyang, C.B. Rodell, J.A. Burdick

**3:00 PMSE 328.** Fabrication of 3D tissue with perfusable vascular networks. J. Miller

**3:30** Intermission.

**3:45 PMSE 329.** Designing novel 3D printable polymers with user-defined and tunable bioactivity. M. Guvendiren, K. Dube, J. Molde, J.B. Kohn

**4:10 PMSE 330.** Novel 3D printed tissue-simulated prostate model using designed lab-synthesized polymeric inks based on human prostate tissue characterization data. K. Qiu, M.C. McAlpine

### Section F

Sheraton Philadelphia Downtown Hotel Independence Ballroom A

### Polymer & Polymer Hybrid Electronics & Biosensors

#### Thin-Film Transistors & Other Organic Devices

Financially supported by Aldrich, 1-Material Inc.

X. Gong, F. Huang, S. Wang, *Organizers*

L. Wang, L. Zhu, *Presiding*

**1:30 PMSE 331.** Lactone-fused electron-deficient building blocks for n-type polymer field-effect transistors: Synthesis, properties, and impact of alkyl substitution positions. J. Pei

**1:55 PMSE 332.** Exploring strategies for high dielectric constant and low loss polymer dielectrics. L. Zhu

**2:20 PMSE 333.** Temperature dependent  $\chi$  and its relation to polymer solar cell morphology, performance and processing strategies. H.W. Ade

**2:45 PMSE 334.** Synthesis and characterization of single-ion conducting diblock terpolymers for lithium-ion batteries. M.A. Morris, T.H. Epps

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

3:05 Intermission.

3:20 **PMSE 335.** Electroluminescent polymers for solution-processed PLEDs. L. Wang

3:45 **PMSE 336.** Tuning the ambipolar charge transport properties of N-heteropentacenes for organic logic circuits. H. Zhang

4:10 **PMSE 337.** Printable, polymer-based, secondary batteries. U.S. Schubert, A. Wild

4:30 **PMSE 338.** Polymer supercapacitors: A superb energy solution. Y. Kim, W. Abousamra, D. Yang, O.T. Melton, J. Jung, S. Besic, M. Birschnbach, V. Ebron, R. Mercado, P.J. Kinlen, H. Nguyen

## Section G

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom B

### Eastman Chemical Student Award in Applied Polymer Science

Financially supported by Eastman Chemical Company

J. C. Jenkins, *Organizer*

J. W. Gilmer, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 **PMSE 339.** Photoredox mediators for metal-free ring-opening metathesis polymerization. L.M. Murphy, D.G. Dunford, A. Goetz, K.A. Ogawa, Y. Ashikari, A.J. Boydston

2:05 **PMSE 340.** Why every atom counts: Fundamental impact of a minimal structural change in conjugated polymers for organic photovoltaics. C. Lo, I. Constantinou, R.M. Wolfe, S.D. Oosterhout, Z. Zheng, V. Coropceanu, M. Toney, F. So, J.R. Reynolds

2:35 **PMSE 341.** Ultrasmall polymer-inorganic hybrid silica nanomaterials for cancer theranostics. K. Ma, U.B. Wiesner

3:05 Intermission.

3:20 **PMSE 342.** Enhanced alignment in semiconducting polymers using cellulose nanocrystals as a liquid crystal template. B. Risteen, C. Rosu, E. Reichmanis, P. Russo

3:50 **PMSE 343.** Thermodynamic synthesis of ladder polymers. J. Lee, B. Rajeeva, T. Yuan, Z. Guo, Y. Lin, M. Al-Hashimi, Y. Zheng, L. Fang

4:20 **PMSE 344.** Extending the versatility of thermoplastic elastomers: From physical blending to chemical functionalization. K.P. Mineart, R.J. Spontak

### Advanced Functional Biopolymers & Biomaterials

Sponsored by POLY, Cosponsored by PMSE

### Polymer Science at the Interface of Industry, Government & Academics

### National Laboratory Directions

Sponsored by POLY, Cosponsored by COLL, PMSE and SCHB

## TUESDAY EVENING

### Section A

Pennsylvania Convention Center  
Hall G

### Joint PMSE/POLY Poster Session

Cosponsored by POLY†

M. Grunlan, *Organizer*

6:00 - 8:00

### Bioderived & Bioinspired Polymers.

**PMSE 345.** Modeling depolymerization of cellulose thin films catalyzed by processive or non-processive cellulases. H. Fu, Y. Lin

**PMSE 346.** Analysis of morphology transitions with increasing shear rate and interfacial reaction in extrusion of bio-based polyester/polyamide blends. J. Gug, M.J. Sobkowitz, J. Barrington, M. Downie, J. Soule

**PMSE 347.** Biopolymer based superhydrophobic surface assisted by electrostatic deposition. N. S, V. Katiyar

**PMSE 348.** Fabrication and characterization of poly (lactic acid)/hydroxyapatite biofilms for bone graft harvest site fixations. A. Prasad, M. Sankar, V. Katiyar

**PMSE 349.** Activating polymer production with spinach leaves. S. Shanmugam, C. Boyer

**PMSE 350.** Molecular design of biopolymeric injectable hydrogel. W. Tachaboonyakiat, S. Hunsawek, K. Saekhor

**PMSE 351.** Effects of carboxymethyl-cellulose and amine terminated PEG functionalized Au-nanoparticles enhance mucus dispersion. R. Wijayapala, M. Abbaszadeh, S. Kundu, K.B. Walters

**PMSE 352.** Macromolecular memory for the development of novel silicone hydrogel contact lenses with controlled and extended release for glaucoma treatment. L. Wuchte, F. Tahir, K. Carlin, R. Mosely, M.E. Byrne

General Posters/New Concepts in Polymeric Materials.

**PMSE 353.** Effect of selenium substitution on intersystem crossing in donor-acceptor copolymers. R. Acharya, K.S. Schanze

**PMSE 354.** Self-healing design paradigm utilizing reversible Diels-Alder reactions to enhance mechanical properties of 3D printed materials. G. Adikari Appuhamillage, J.R. Davidson, C. Thompson, W. Voit, R. Smaldone

**PMSE 355.** Antioxidant multilayer capsules of metalloporphyrin-functionalized poly(N-vinylpyrrolidone) and tannic acid. A. Alford, V.A. Kozlovskaya, N. Gupta, W.T. Higgins, E.P. Kharlampieva

**PMSE 356.** Ultrasound-mediated injectable adhesive hydrogel for tissue damage repair by PEGDMA networks. F. Ali, C. Bettinger

**PMSE 357.** Cyclodextrin polymer on cotton fabrics as a gas filtering material. D.M. Alzate Sanchez, W. Dichtel, J.P. Hinestroza, B.J. Smith, A. Alsaibae

**PMSE 358.** Enhancing the efficiency of polymer-based solar cells through interfacial doping and hybrid tandem configuration. S. Ananthkrishnan, S. Sahare, H.P. Rathnayake

**PMSE 359.** Perfluorinated block-copolymers for proton exchange fuel cell membranes. A.D. Argall, C. Hager, A. Mueller

**PMSE 360.** Tuning the mechanical properties of multilayered structures using electroadhesive ionomers. J.T. Auletta, C.D. Ladd, E.Z. George, C.R. Arguero, W.W. Clark, T.Y. Meyer

**PMSE 361.** Bacterial imprinted polymer: challenging in polymeric imprinting using complex bacterial morphology. S. Aungwerojanawit, A. Sereemaspan, K. Patarakul, W. Tachaboonyakiat

**PMSE 362.** Silk fibroin protein sponge dressing incorporating herbal extract. M. Bai, M. Chen, W. Yu, J. Lin

**PMSE 363.** Mechanochemistry for stress sensing in PDMS elastomers. M.H. Barbee, G.R. Gossweiler, J. Deng, S. Craig

**PMSE 364.** Degradable epoxy networks from bisphenol A diglycidyl ether and degradable amine curing agents. Z.S. Bassampour, S.M. Budy, D.Y. Son

**PMSE 365.** Two-dimensional polymer gradient films for unattended sensing. N. Borodinov, A.E. Soliani, J.M. Giammarco, C.B. Tysinger, Y.D. Galabura, B.V. Zdyrko, S. Novak, K. Richardson, V. Singh, Q. Du, A. Agarwal, L. Kimerling, J. Hu, I.A. Luzinov

**PMSE 366.** Assembly and surface activity of Janus particles at oil-water interfaces. L. Bradley, K.J. Stebe, D. Lee

**PMSE 367.** Novel comonomers for highly branched LDPE. H.A. Brown, M. Demirors, C. Eddy, S. Ewart, S. Munjal, J. Osby

**PMSE 368.** Characterization of novel poly(propylene carbonate) and poly(oxyethylene) blends. B. Calderon, M.J. Sobkowitz

**PMSE 369.** Synthesis of organotin polyesters containing dipicolinic acid and group V-containing polyesters containing camphoric acid. C.E. Carraher, F. Mosca, P. Slawek, M. Roner

**PMSE 370.** Synthesis of titanocene polyethers through reaction with poly(ethylene oxide) units. C.E. Carraher, M. Roner, L. Reckleben, K. Black, J. Frank, R. Crichton, F. Russell, L. Chen

**PMSE 371.** In situ monitoring of polysulfides at the electrode surface within sodium-MoS<sub>2</sub> batteries. M. Carter, F. Shen, L. Hu, Z. Nie

**PMSE 372.** Supramolecular nanofiber hydrogels formed by self-assembly of drug amphiphiles. R.W. Chakroun, R. Lin, H. Su, H. Cui

**PMSE 373.** Paste extrusion printing of thermoplastic polyurethane/graphene oxide for tissue engineering. Q. Chen, R.C. Advincula

**PMSE 374.** Crosslinked LbL membranes of sPPO/PAH based on Nafion for fuel cell applications. C.G. Cho, A. Heo, H. Ryu

**PMSE 375.** Surfactant-assisted processing for producing water-borne colloids of polymeric semiconductors following high charge carrier mobility. J. Cho, S. Yu, K. Sim, W. Cho, D. Chung

**PMSE 376.** Photodiode with an inverted structure with a zirconia incorporated zinc oxide buffer layer for achieving low dark current and high detectivity. W. Cho, S. Yu, J. Cho, K. Sim, D. Chung

**PMSE 377.** Hypoxia-sensitive self-immolative dendrimer for fluorescent imaging. I. Chung, J. Lee, K. Kim, I.C. Kwon, C. Ahn

**PMSE 378.** Molecular simulation studies of phase transitions in diblock polymer conjugates of elastin-like peptides and collagen mimicking peptide triple helices. J. Condon, T. Martin, A. Jayaraman

**PMSE 379.** Responsive properties of mosaic polymer brushes. O. Davydovich, E. Chu, P.B. Moore, A. Sidorenko

**PMSE 380.** Hyaluronic acid-based hydrogels with 3D patterns for the evaluation of cancer cell invasion. K.T. Dicker, Y. Li, Q. Chen, J. Fox, X. Xia

**PMSE 381.** Layer-by-layer assembly onto gold nanoparticles for improved cytotoxicity. T.A. Dobbins, D. Banker

**PMSE 382.** Structure tuning of porous polycarbazoles for CO<sub>2</sub> capture. C. Do-Thanh, X. Zhu, S. Dai

**PMSE 383.** Investigation into femtosecond laser irradiated metallized polyimides – single and mixed noble metal systems. F. Faulkner, B. Koplitz

**PMSE 384.** Biohybrid matrices of comprising elastomeric proteins and polysaccharides. D. Ferguson, H. Lau, L. Li, K.T. Dicker, X. Xia, K.L. Kiick

**PMSE 385.** Carbon nanotube functionalized silica via sol-gel route. B.P. Chauhan, A. Gadia, J. Pulgarin, S. Matthews, A. Patel, Q.R. Johnson

**PMSE 386.** Well-ordered nanostructure formation of aromatic poly(amic acid)s in spin-casted thin films. L. Gao, K. Azuma, Y. Kushima, T. Hayakawa

**PMSE 387.** Fibers from single and mixed waste streams using melt centrifugal spinning. M. Gillan, N. Zander, D. Sweetser

**PMSE 388.** Bone-mimicking hierarchical nanostructures and controlled drug release. S. Gleeson, X. Chen, H. Qi, C. Li

**PMSE 389.** Preparation of multifunctional polymer particles by flash nanoprecipitation. J. Ma, L. Li, X. Guo

**PMSE 390.** Effect of molecular weight on the stability of polysaccharide drug-carrier nanoparticles prepared by flash nanoprecipitation. M. Wang, J. Ma, C. Guo, Z. Yuan, J. Wang, Y. Xu, L. Li, X. Guo

**PMSE 391.** Photo thermal effect of PEDOT films for cell sheet harvesting. M. Han, B. Kim, J. Na, E. Kim

**PMSE 392.** Detection, quantification and click scavenging of impurities in cyclic poly(glycidyl phenyl ether) obtained by zwitterionic ring-opening polymerization. F.M. Haque, A. Alegria, F. Barroso, S.M. Grayson

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- PMSE 393.** Novel antioxidant polymers as components of anticorrosion coatings. **H. Hlushko**, R. Hlushko, Y. Cubides, H. Castaneda, S.A. Sukhishvili
- PMSE 394.** Novel bio-inspired antioxidant polymers. **R. Hlushko**, H. Hlushko, S.A. Sukhishvili
- PMSE 395.** Cyclometalated platinum polymers for organic solar cells. **E. Holt**, S. Goswami, R.W. Winkel, K.S. Schanze
- PMSE 396.** Controlling the morphology of a two-phase polymer film by tuning latex particle morphology. **A.D. Hughes**, G. Cardoan, R. Even, I. Drake, X. Yu, T. Zhang, J. Refner, C. Wolf, A.I. Nakatani, L. Rhodes, K. Magni
- PMSE 397.** Quantitative study on removal of mercury from various type of water samples using synthesized polypyrrol/MWCNT composites. **T. Hussain**, A. Mujahid, H. Raza, K. Shehzaad
- PMSE 398.** Multifunctional silk-zein protein composite materials. **D. Jao**, Y. Xue, J. Forsy, J. Buchicchio, X. Hu
- PMSE 399.** Controlling polymer-chromophore architecture to optimize triplet-triplet annihilation in solid-state materials. **A.K. Jentsch**, B.J. Davis, J. Lott
- PMSE 400.** Formation of x-ray opaque biodegradable polymeric beads for transarterial chemoembolization. **S. Jeon**, M. Lee, Y. Kim, H. Jae, C. Ahn
- PMSE 401.** Modification of ethylene-propylene-diene terpolymer (EPDM) with polar polymer for improved oil resistance. **J. Jo**, S. Hong
- PMSE 402.** Cationic pore-filled ion-exchange membranes for alkaline direct liquid fuel cells. **D. Kim**, J. Park, **M. Kang**
- PMSE 403.** Electrochemical characterization of nanoparticle-nanofibrous composites and potential application in wearable sensors. **N. Kang**, J.P. Lombardi, F. Lin, S. Yan, J. Kim, M. Alimhdar, Y. Xu, B. Burg, J. Luo, B.S. Hsiao, M.D. Poliks, C. Zhong
- PMSE 404.** Thermoreversible polyvinyl alcohol hydrogel as a matrix for salt hydrate thermal energy storage materials. **P. Kariminehglani**, E. Emmons, P. Shamberger, S.A. Sukhishvili
- PMSE 405.** Development of bio-based membranes derived from cinnamic acid and oxygen gas barrier properties in gas and liquid phase. **S. Kato**, T. Honda, K. Nagai
- PMSE 406.** Development of dual release drug delivery platforms. **L. Kendrick**, K. Gilmore, M.W. Lampley, E. Harth
- PMSE 407.** Relations between selectivity of ionic liquid and nanostructures of block copolymer mixture. **E. Kim**, T. Kim, Y. Han
- PMSE 408.** Creation of periodic nanostructure based on crosslinked polyimide by soft-template method. **T. Komamura**, K. Okuhara, R. Kikuchi, T. Hayakawa
- PMSE 409.** (Carboxymethyl) trimethylammonium chitin nanoparticle introducing for an effective antibacterial property. **N. Kumpanead**
- PMSE 410.** Redox-dependent underwater adhesion in ultracompliant hydrogel substrates. **I. Kwon**, W. Huang, C. Bettinger
- PMSE 411.** Using PFG NMR to determine diffusion coefficients of ions through polymer matrices. **N. LaFemina**
- PMSE 412.** Internally hydrophobic quaternary ammonium polymers possessing high therapeutic indices for the treatment of bacterial biofilms. **R. Landis**, A. Gupta, Y. Lee, M. Schurr, M. Yazdani, L. Wang, V.M. Rotello
- PMSE 413.** Direct cytosolic delivery of functional proteins and enzymes using polymer-stabilized nanocapsules. **R. Landis**, Y. Lee, M. Ray, R. Tang, V.M. Rotello
- PMSE 414.** Facile preparation and enhanced capacitance of the aminoanthraquinone modified biopolymer-based porous carbon nanosheets. **H. Peng**, G. Ma, **Z. Lei**
- PMSE 415.** Improving the isotropy of 3D printed polymeric systems through improved inter-filament adhesion. **N. Levenhagen**, E. Duranty, M.D. Dadmun
- PMSE 416.** Mechanical properties of biobased films prepared from collagen solutions derived from bovine hides. **C. Liu**, N. Latona, M.M. Taylor
- PMSE 417.** Self-assembled stable radical polymers incorporated on helical polypeptides for charge transport. **Z. Liu**, G. Fuchs, C.K. Ober
- PMSE 418.** Electrochromic devices based on different types of polyselenophene and PEDOT. **B. Lu**, H. Gu, J. Xu
- PMSE 419.** Electrospun polyurethane hydrogel thermosets for wound contact dressing applications. **J. Lundin**, G.C. Daniels, B. Streifel, C.L. McGann, J.H. Wynne
- PMSE 420.** Utilization of hyaluronic acid-based hydrogels for neural stem cell engineering. **W. Ma**, W.H. Suh
- PMSE 421.** Post-synthetic polymerization of porous organic materials for gas-separation membranes. **X. Ma**, J. Jung, T.F. Scott
- PMSE 422.** Reversible covalent recognition pendant groups on achiral poly(isocyanates) and poly(carbodiimides) to induce single-handed helicity for chiral sensing. **N.R. Mammoottil**, J.F. Reuther, E.V. Ansllyn, B.M. Novak
- PMSE 423.** Graphene oxide nanocomposite fabrication using stereolithography. **J. Manapat**, J.D. Mangadlaio, R.C. Advincula
- PMSE 424.** Polyurea-peptide hybrids: molecular design for mechanical tunability. **L.E. Matolyak**, L. Korley
- PMSE 425.** Silicon photonic microring resonators for chemical agent detection. **K.A. Miller**, A.L. Stanton, N.W. Reed, P.V. Braun, R.C. Bailey
- PMSE 426.** Elucidation of the fouling mechanism of poly(1-trimethylsilyl-1-propyne) membrane in water. **T. Motoo**, K. Nagai
- PMSE 427.** Poly(carboxybetaine methacrylate)-based zwitterionic hydrogel coatings for managing local inflammation in cortical brain machine interfaces. **C. Mou**, H. Ding, D.J. Hohn, C. Bettinger
- PMSE 428.** It takes three to tango: Effect of architecture and topology on the phase transition and self-assembly of triblock protein polymers. **D. Mozhdghi**, A. Chilkoti
- PMSE 429.** In silico reaction and catalyst design for enhanced reactivity and tailored eno-, regio-, and stereo-selectivity. **T.J. Mustard**, A. Bochevarov, L.D. Jacobson, T.F. Hughes, S. Kwak, M. Hall
- PMSE 430.** Synthesis of organic molecular networks with hierarchical pore and its high efficiency adsorption of carbon dioxide. **J. Nam**, S. Moon, E. Jeon, J. Park
- PMSE 431.** Novel biodegradable liquid crystalline block copolymers as nano-carriers for drug delivery. **D. Ndaya**, L.H. Mahajan, L. Gonzalez-Fajardo, C. Nguyen, T. Tran, X. Lu, R. Kasi
- PMSE 432.** Development of SHINAYAKA polymer with supramolecular network. **K. Nomura**, N. Morioka, S. Kobayashi
- PMSE 433.** Palladium ion-imprinted silane polymer. **M. Nozari**, M. Monier, A.W. Addison
- PMSE 434.** 3D printing of shear-thinning hyaluronic acid hydrogels with secondary crosslinking. **L. Ouyang**, C.B. Highley, C.B. Rodell, W. Sun, J.A. Burdick
- PMSE 435.** Comparative study of binding strength of cobaltocenium-containing polymers with anionic polymers. **P. Pageni**, M. Kabir, C. Tang
- PMSE 436.** Characterization of alanine-rich peptide-PEG conjugates as models for protein aggregation and macromolecular assembly. **B. Paik**, C. Calero Rubio, X. Jia, C.J. Roberts, K.L. Kick
- PMSE 437.** Exploring atomic force microscopy nanoindentation technique as an alternative measurement method for organic selective preservative (OSP) coating thickness on integrated circuit substrate. **J. Palaganas**, A.C. de Leon, N. Palaganas, R.C. Advincula
- PMSE 438.** Synthesis and mechanism of sulfur-rich polymer nanoparticles. **J. Lim**, J. Park, U. Jung, J. Pyun, K. Char
- PMSE 439.** Ion-conducting dispersions for the electrodes of energy conversion devices. **G. Oh**, M. Shin, M. Kang, **J. Park**
- PMSE 440.** Biomimetic membrane containing aquaporin proteins for water purification. **X. Qi**, P. Zheng, T. Pellenberg, D. Groski, C. Saquing, J. Croft, G.D. Jaycox, H. Gommeren, B.A. Diner, D. O'Keefe, A. Howard, J. Kellis, K. Collier, A. Poulouse, S. Percec, J. Li, P. Cotts, C. Chan, B.A. Wood
- PMSE 441.** Magnetic and temperature responsive poly(vinyl alcohol) with bound iron oxide nanoparticles. **S. Qiu**, S. Jin, N. Yang
- PMSE 442.** Influence of multi-walled carbon nanotubes dispersion on the electrical conductivity of ternary polymer blends involving liquid crystalline polymers. **V. Ramachandran**, G. Simon, A.R. Bhattacharyya
- PMSE 443.** Effect of confinement on 1-butyl-1-methylpyrrolidinium bis(trifluoromethanesulfonyl)imide ionic liquid in thermoreversible sPS ionogels. **P. Raut**, S. Yuan, T. Miyoshi, S.C. Jana
- PMSE 444.** Antibacterial functionalization of nanofibrous biodegradable polymer membranes with quaternized N-halamine via electron beam irradiation. **X. Ren**, X. Fan, T. Huang
- PMSE 445.** Influence of various electron donors on the glass transition temperatures of polymers bearing electron accepting TCAQ motifs. **Y. Ren**, S. Lee, K. Yang, J. Moore
- PMSE 446.** Photo-controllable reversible water valve based on spiropyran polymer brush. **L. Rong**, P. Cao, R.C. Advincula
- PMSE 447.** Permeation property of ethanol solution by pervaporation through surface modified poly(1-trimethylsilyl-1-propyne) membrane. **K. Saito**, K. Nagai
- PMSE 448.** Synthesis of water soluble chitosan-protein conjugate. **N. Sangkapong**, A. Sereemasun, K. Patarakul, W. Tachaboonyakiat
- PMSE 449.** Synthesis and water vapor permeation properties of ABA-type triblock copolymers derived from polyimide with HEMA. **Y. Sasago**, K. Nagai
- PMSE 450.** Withdrawn.
- PMSE 451.** Ultra-microporous polymers for carbon dioxide capture and separation applications. **A. Sekizkardes**, J. Culp, D. Hopkinson
- PMSE 452.** Design and preparation of biocompatible materials for stereolithographic 3D printing. **H. Seo**, S. Heo, H. Yoon
- PMSE 453.** Towards high performance n-type thermoelectric materials by rational modification of BDPPV backbones. **K. Shi**, J. Pei
- PMSE 454.** Microencapsulation of fragrance oil via interfacial thiol-ene polymerization. **Z. Liao**, D. Xue, H. Li, **L. Shi**
- PMSE 455.** High sulfur content particles from the dispersion polycondensation of sodium polysulfides. **H. Shin**, J. Lim, K. Char
- PMSE 456.** High detectivity photodetector using surfactant capped MoO<sub>3</sub> nanoparticle. **K. Sim**, J. Cho, W. Cho, S. Yu, D. Chung
- PMSE 457.** Effect of side chain substitution on crystal structure of comb-like polymers. **K. Song**, S. Kim, J. Jung
- PMSE 458.** Development of complex 3D-printed microchannels within hydrogels. **K. Song**, C.B. Highley, J.A. Burdick
- PMSE 459.** Structure property relationships of carbohydrates-protein biomaterials. **J. Stanton**, P. Pandher, X. Hu, D. Salas-de la Cruz
- PMSE 460.** Gas separation properties of VUV irradiated polyimide membrane. **T. Suizu**, K. Nagai
- PMSE 461.** Surface hydrophilic modification of poly(ether ether ketone) and immobilization of collagen. **H. Sun**, B. Yang, G. Xu
- PMSE 462.** Sensitive, selective and rapid fluorescence detection of picric acid in aqueous media using biopolymer protein. **X. Sun**, Y. Lei
- PMSE 463.** Hydrogels and aerogels from poly(ether ether ketone). **S.J. Talley**, R.B. Moore
- PMSE 464.** Synthesis and gas permeability of ABA-type triblock copolymers derived from fluorine-containing polyimide with POSS by atom transfer radical polymerization. **N. Taniguchi**, K. Nagai
- PMSE 465.** Micropatterned and molecularly-imprinted polythiophene films for aspartame detection. **B.B. Tiu**, R. Pernites, S. Tiu, R.C. Advincula
- PMSE 466.** Highly ordered magnetically responsive silicon carbide whiskers for thin film nanocomposite materials. **J. Townsend**, R. Burtovyv, P. Aprelev, K. Kornev, I.A. Luzinov
- PMSE 467.** Rational co-design of organotin polyester blends and copolymers for dielectric applications. **G.M. Treich**, S. Nasreen, A. Mannodi Kanakkithodi, R. Ma, M. Tefferi, J. Flynn, Y. Cao, R. Ramprasad, G.A. Stozing



- PMSE 468.** Shaped thermo-responsive multilayer hydrogels of poly(N-vinylcaprolactam). **M.C. Trentle**, V.A. Kozlovskaya, W.T. Higgins, B. Xue, F. Liu, E.P. Khrlampieva
- PMSE 469.** Importance of annealing conditions for poly( $\epsilon$ -caprolactone)/dimethylformamide thermogels. **I.N. VonRue**, J. Conway, D. Kline
- PMSE 470.** Comparative study of ultrasound induced and naturally gelled silk fibroin-wool keratin hydrogel biomaterials. **P. Vu**, Y. Xue, X. Hu
- PMSE 471.** Desorption-mediated anomalous diffusion at solid/liquid interfaces. **D. Wang**, M. Skaug, D.K. Schwartz
- PMSE 472.** Incorporation of polycyclic azaborine compounds into polythiophene-type conjugated polymers for organic field-effect transistors. **J. Wang**, J. Pei
- PMSE 473.** Flourinated organomercurial as a novel additive material in polymer solar cells. **J. Wang**, Y. Zhao, K.S. Schanze
- PMSE 474.** Supramolecular assembly of camptothecin and capcitabine hybrid drug amphiphiles. **Y. Wang**, W. Zhang, H. Su, W. Ma, H. Cui
- PMSE 475.** Effect of time dependent structure change of lacquer membrane on gas permeability. **K. Watanabe**, T. Honda, K. Nagai
- PMSE 476.** Preparation and properties of asymmetric Ni/PEI film with controlled structure: application as a high-performance EMI shielding material. **B. Wen**, Y. Zhang, M. Qiu, J. Lin
- PMSE 477.** Buckling into single-handed chiral structures from pH-sensitive hydrogel membrane. **G. Wu**, B. Cao, Y. Xia, S. Yang
- PMSE 478.** In situ study of diffusion of ABE-water solution in polysiloxane membrane using FTIR-ATR. **Y. Xia**, X. Zhan, W. Cai, L. Yu, J. Li
- PMSE 479.** Comparative study of flexible water-insoluble Mori, Thai, Eri, Muga and Tussah silk films. **Y. Xue**, F. Wang, M. Torulas, E. Schmidt, C. Itode, X. Hu
- PMSE 480.** Water vapor separation properties of surface modified fluorine-containing polyimide by VUV irradiation. **H. Yamaji**, K. Nagai
- PMSE 481.** Single crystal on precise acid- and ion-containing polyethylenes. **L. Yan**, K.B. Wagener, K.I. Winey
- PMSE 482.** Multi-stimuli adhesive hydrogel based on pH, thermo and light responsive polymers. **Y. Yan**, P. Cao, R.C. Advincula
- PMSE 483.** Superhydrophilic modification of polyethylene via grafting ultrathin layers of poly(phosphobetaine). **B. Yang**, X. Duan, J. Huang
- PMSE 484.** Hybrid and solution processable conducting polymer and carbon materials electrodes: Energy solution. **D. Yang**, Y. Kim, O.T. Melton, R. Mercado, P.J. Kinlen, H. Nguyen
- PMSE 485.** Diketopyrrolopyrrole-based oligophenyleneethylenes with latent hydrogen bonding for solution-processed organic field-effect transistors. **K. Yang**, Y. Zhu
- PMSE 486.** Withdrawn.
- PMSE 487.** Well-defined linear polymer made by reversible addition-fragmentation chain transfer polymerization via flow chemistry. **P. Ye**, Z. Su, P. Cao, R.C. Advincula
- PMSE 488.** Carbon dots immobilized microgels for glucose sensing at physiological pH. **J. Yi**, H. Wang, S. Zhou
- PMSE 489.** Effect of chemical structure on water vapor sorption properties in polyimide membranes. **N. Yonemaru**, K. Nagai
- PMSE 490.** Water vapor transport properties in ABA-type triblock copolymer membranes composed of polyimide and polyhedral oligomeric silsesquioxane. **A. Yoshida**, K. Nagai
- PMSE 491.** Morphology control for high-performance polymer field-effect transistor based ammonia gas sensor. **S. Yu**, J. Cho, K. Sim, W. Cho, D. Chung
- PMSE 492.** Novel and robust omniphobic surface with excellent liquid repellency. **C. Zhang**
- PMSE 493.** Thermo-physical property and energy transfer performance of polymeric-SiO<sub>2</sub>-PCM applied in air conditioning system. **W. Zhang**, J. Zhang, J. Liang
- PMSE 494.** Self-assembled conjugated polymers with stable radical substituents. **Y. Zhang**, G. Fuchs, C.K. Ober
- PMSE 495.** Rational design and preparation of thiophene polymers for dielectrics. **T. Zhu**, H. Li, Y. Qiao, X. Yin, C. Tang
- Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications.**
- PMSE 496.** Understanding the origins of efficient triplet formation in poly 3-hexylthiophene aggregate nanostructure. **B. Datko**, A. Thomas, Z. Fei, M.J. Heeney, J.K. Grey
- PMSE 497.** Synthesis and characterization of polyimides containing heterocyclic ring and symmetrical chain segments. **F. Gan**, D. Zhang, W. Tan, X. Zhao, J. Dong, Z. Li, Q. Zhang
- PMSE 498.** Designed formation of Co<sub>3</sub>O<sub>4</sub> nanoparticles/N-doped porous carbon dodecahedrons with enhanced lithium storage and electrocatalytic properties. **Y. Hou**, Z. Wen, S. Cui, J. Chen
- PMSE 499.** Highly engineered pyrrole micro-loop arrays for high-capacitance supercapacitor. **J. Lee**, H. Jeong, A. Busnaina, Y. Jung, H. Lee
- PMSE 500.** Nanoparticle fabrication by self-assembly of amphiphilic brush polymers: Influence of backbone length and solvent quality. **T.D. Palacios-Hernandez**, H. Luo, M. Herrera-Alonso
- PMSE 501.** Synthesis of organo-soluble copolyimide and preparation of fibers by dry-spinning process. **W. Tan**, Z. Li, D. Zhang, F. Gan, J. Dong, X. Zhao, Q. Zhang
- PMSE 502.** Preparation and application of novel cyclotriphosphazene structures flame retardant. **D. Wang**
- PMSE 503.** Using nucleic acid aptamers as targeting and drug delivery vehicles with modulation capability for personalized cancer treatment. **R. Whitener**, J. Wower, M.E. Byrne
- PMSE 504.** Click chemistry for peptide nanomaterials. **D. Wu**, H. Zhang, K.L. Kiick, J.G. Saven, C.J. Kloxin, D.J. Pochan
- PMSE 505.** Well-ordered materials with sub-5nm periodicities via self-assembly of monodisperse oligodimethylsiloxanes. **R.H. Zha**, B. de Waal, M. Lutz, R. Gosens, J. Berrocal, E.W. Meijer

## Polymer Science for Everyday Things: Polymers for Beauty, Sports & Leisure

Sponsored by POLY, Cosponsored by CHED and PMSE

## WEDNESDAY MORNING

### Section A

Sheraton Philadelphia Downtown Hotel Philadelphia Ballroom South

### Porous Polymers

#### Applications

Cosponsored by POLY

Financially supported by 3M, Polymer-Elsevier, Wiley

N. R. Cameron, M. A. Hillmyer, D. A. Schiraldi, M. S. Silverstein, *Organizers*

W. Dichtel, D. M. Lynn, *Presiding*

**8:00 PMSE 506.** Porous cyclodextrin polymers for the rapid removal of organic pollutants from water. **W. Dichtel**

**8:30 PMSE 507.** Nanoporous multilayer coatings fabricated from azlactone-functionalized polymers. **D.M. Lynn**

**9:00 PMSE 508.** Pore size modification of nanoporous, ionic lyotropic liquid crystal polymer membranes via post-polymerization counterion exchange. **D.L. Gin**, S. Dischinger, R.D. Noble

**9:20 PMSE 509.** Fabrication of membranes with hierarchical pores via photofluidization for oil/water separation. **H. Kang**, W. Panatdasirisuk, S. Yang

**9:40 PMSE 510.** REWOD energy harvesters: How to print macroporous polymer springs. **A. Menner**, Q. Jiang, A. Bismarck

**10:00** Intermission.

**10:15 PMSE 511.** Fabrication of porous polymers via vapor phase deposition. **M. Gupta**, S. Seidel, G. Dianat

**10:45 PMSE 512.** Conjugated microporous polymer nanoparticles: Design, synthesis and enhanced visible light-driven photocatalytic activity in aqueous medium. **B. Ma**, K. Landfester, K. Zhang

**11:05 PMSE 513.** Ideal porous polymeric supports to design ultrathin film composite membranes. **H. Lin**, L. Zhu, W. Jia, E. Furlani

**11:25 PMSE 514.** Gradient films from shape memory nanofoams for waveguide coating. **N. Borodinov**, A.E. Soliani, J.M. Giammarco, C.B. Tysinger, Y.D. Galabura, B.V. Zdyrko, S. Novak, K. Richardson, V. Singh, Q. Du, A. Agarwal, L. Kimerling, J. Hu, I.A. Luzinov

### Section B

Sheraton Philadelphia Downtown Hotel Philadelphia Ballroom North

### Bioderived & Bioinspired Polymers

#### New Developments

R. Kasi, Y. Lin, M. Nieh, L. Sun, *Organizers*

K. Burke, H. Fu, *Presiding*

**8:00 PMSE 515.** Solute induced single-chain nanoparticles formation from amphiphilic brush copolymers. **H. Luo**, M. Herrera-Alonso

**8:20 PMSE 516.** Click conjugation and release of small neuroscience-relevant molecules from photodegradable hydrogels. **S. Deshayes**, A. Melkonian, A.M. Kasko

**8:40 PMSE 517.** Grafted epoxidized soybean oil bio rubber tougheners for thermosetting epoxy resins. **S. Yadav**, F. Hu, G.R. Palmese

**9:00 PMSE 518.** Controlling the inverse temperature transition and self-assembly of elastin-b-collagen-like peptide bioconjugates via noncovalent interactions. **T. Luo**, K.L. Kiick

**9:20 PMSE 519.** Hyaluronic acid-based permissive and instructive hydrogels for the assembly of salivary gland spheroids. **E.W. Fowler**, T. Ozdemir, D.A. Harrington, R.L. Witt, M.C. Farach-Carson, S. Pradhan-Bhatt, X. Jia

**9:40** Intermission.

**9:55 PMSE 520.** Directed crystallization of amphiphilic block copolymer at curved liquid/liquid interface. **H. Qi**, T. Zhou, H. Zhou, C. Li

**10:15 PMSE 521.** Incorporating polymeric cell-adhesive peptide in hyaluronic acid hydrogels to promote the 3D assembly of prostate cancer tumoroids. **Y. Hao**, A. Zerdoum, A. Stuffer, X. Jia

**10:35 PMSE 522.** Electrochemical purification of lithium using bio-inspired redox active melanin membranes. **Y. Kim**, H. Park, I. Kwon, L. Klosterman, C. Bettinger

**10:55 PMSE 523.** Cephalopod-inspired design of electro-mechano-chemically responsive elastomers. **X. Zhao**

**11:25 PMSE 524.** Pseudopeptide-polymer bioconjugates as additives for CO<sub>2</sub> separation membranes. **X. Solimando**, C. Lherbier, J. Babin, C. Arnal-Herauld, E. Romero, S. Acherar, B. Jamart-Grégoire, D. Barth, D. Roizard, A. Jonquères

### Section C

Sheraton Philadelphia Downtown Hotel Freedom Ballroom G

### Fire & Polymers

#### Flame-Retardant Chemistry

Financially supported by Ashland, Corning, ICL (Israeli Chemical Limited), Schneller, Nabaltec

A. B. Morgan, G. L. Nelson, C. A. Wilkie, *Organizers*

G. Fontaine, *Presiding*

**8:00 PMSE 525.** Development of structural vinyl ester resins with improved flame-retardant properties for marine applications. **B. Kandola**

**8:25 PMSE 526.** Using nature to flame retard polyolefins. **D.A. Schiraldi**

**8:50 PMSE 527.** Thermal and calorimetric investigations on the efficacy of carbohydrate-based formulations as passive fire protection agents for wood. **P. Joseph**, S. Tretsiakova-McNally, J. Silvester

**9:15 PMSE 528.** Flame retardant coatings based on natural materials. **D. Fox**, N. Kaufman, M. Colorado Escobar, L. Brody, E. Knowlton, K. Hoffman, R.D. Davis

**9:40** Intermission.

**9:55 PMSE 529.** Novel analytical method for quantitative evaluation of the blooming of brominated flame retardants from plastic surface. **M. Wenger**

**10:20 PMSE 530.** Impact of bromine- and phosphorous-based flame retardants on flame stability and heat feedback from laminar wall flames. **I. Leventon**, R.H. Kraemer, S. Stoliarov

**10:45 PMSE 531.** Phosphorus flame retardants derived from biobased isosorbide. **B.A. Howell, Y. Daniel**

**11:10 PMSE 532.** Bio-derived phytic acid complex as a char forming additive for polypropylene. **W. Kiratitanavit, Z. Xia, S. Yu, P. Facendola, R. Ramanathan, R. Mosurkal, R. Nagarajan**

**11:35 PMSE 533.** Use of a simple dip test to estimate the flammability of polymeric materials. **T. Deans, Y. Li, L. Jefferson, J. Makara, D.A. Schiraldi**

## Section D

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom H

### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

#### Block Copolymers

Cosponsored by POLY

Financially supported by ExxonMobil Corporation

L. S. Baugh, A. Patil, *Organizers*

D. Adamson, A. B. Burns, *Presiding*

**8:00 PMSE 534.** Electrophoresis of ion-containing poly(stearyl methacrylate)-poly(benzyl methacrylate) (PSMA-PBzMA) diblock copolymers in non-polar solvents. **G.N. Smith, S.P. Armes**

**8:30 PMSE 535.** Precise synthesis of fluorine- and silicon-containing block copolymers and perpendicular orientation control of lamellae in thin films. **R. Nakatani, H. Takano, Y. Tanaka, R. Maeda, R. Kikuchi, N. Kihara, S. Minegishi, K. Miyagi, Y. Kasahara, H. Sato, Y. Seino, T. Azuma, T. Hayakawa**

**9:00 PMSE 536.** Fine tuning the morphology and conductivity of phosphonated block copolymers by ionic liquid addition. **M. Park, H. Jung**

**9:30 PMSE 537.** Facile process for rapid self-assembly of rod-coil block copolymer. **C. Chen, T. Kao, S. Lin, C. Ho, W. Su**

**10:00** Intermission.

**10:15 PMSE 538.** Thin-film self-assembly and phase behavior of cyclopropenium diblock copolyelectrolyte. **S. Russell, L.M. Campos, S. Kumar**

**10:45 PMSE 539.** Microphase separation in ternary polymer brushes. **D. Huber, C.K. Simocko, A.L. Frischknecht**

**11:15 PMSE 540.** High fidelity transfers of block copolymer thin films via soft nanostencil lithography. **H. Tran, H. Bergman, A. van der Zande, L.M. Campos**

## Section E

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom A

### Polymers Designed for 3D Printing Applications: Evaluation of the Fundamental & Applied Aspects of the Field

#### Emerging 3D Printing Applications

Financially supported by General Electric (GE)

J. Choi, A. Joy, P. Singh, *Organizers*

A. Natarajan, *Organizer, Presiding*

**8:30 PMSE 541.** Successful high performance additive manufacturing (HPAM™) and the collapsing value chain. **S. DeFelice**

**9:00 PMSE 542.** Journey towards a crystalline 3D printing resin: how to work on a shoestring budget without tripping in the (now laceless) shoes. **C.D. Kellough**

**9:30 PMSE 543.** 3D printing all-aromatic high-performance polyimides using  $\mu$ SLA: Processing the non-processable. **M. Hegde, D.C. Aduba Jr., N.A. Chartrain, C.B. Williams, T.E. Long**

**9:50** Intermission.

**10:05 PMSE 544.** New polymers for expanding the additive manufacturing applications: Challenges and new opportunities. **K. Moussa**

**10:25 PMSE 545.** Multifunctional additively manufactured bio-based composites. **J.N. Rodriguez, C. Zhu, E.B. Duoss, T.S. Wilson, C. Spadaccini, J.P. Lewicki**

**10:45 PMSE 546.** Polymer matrix nanocomposite powders for selective laser sintering. **Y. Wang, B. Patel, C. DiNapoli, R.A. Pearson**

**11:05 PMSE 547.** 3D Printing of conductive complex structures with in situ generation of silver nanoparticles. **E. Fantino, A. Chiappone, I. Roppolo**

## Section F

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom A

### Polymer & Polymer Hybrid Electronics & Biosensors

#### Organic & Perovskite Hybrid Solar Cells

Financially supported by Aldrich, 1-Material Inc.

X. Gong, F. Huang, S. Wang, *Organizers*

H. Chen, J. Huang, *Presiding*

**8:00 PMSE 548.** Morphology-insensitive performance facilitates transition from spin-coating to roll-to-roll coating for high-performance, solution-processed solar cells. **D. DeLongchamp**

**8:25 PMSE 549.** Highly efficient polymer solar cells by using non-fullerene acceptors and gradient transparent electrode. **H. Chen**

**8:50 PMSE 550.** Efficient perovskite hybrid photovoltaics via alcohol-vapor annealing treatment. **C. Liu**

**9:10 PMSE 551.** Effect of halogenation in isoindigo-based polymers on the phase separation and molecular orientation of bulk heterojunction solar cells. **Y. Zheng, J. Wang, J. Pei**

**9:30 PMSE 552.** Processing and properties of field effect transistors from poly(3-hexylthiophene)/insulating polymer blends. **B. Tan, M.J. Sobkowicz**

**9:50** Intermission.

**10:05 PMSE 553.** Advance in the development of efficient and stable perovskite solar cells. **J. Huang**

**10:30 PMSE 554.** Control of conjugated polymer blends morphology and the molecular orientations at the interface: Insight into the phase separation mechanism. **Y. Han**

**10:55 PMSE 555.** Efficient perovskite hybrid solar cells via ionomer interfacial engineering. **K. Wang**

**11:15 PMSE 556.** Poly(3-hexylthiophene)-polyisoprene block copolymers: precise syntheses, morphology manipulation and solvent-free processing. **C. Chao, H. Lim, C. Huang, W. Su**

## Section G

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom B

### Recent Advances in Modeling & Simulations of Synthetic Polymers & Biopolymers

#### Copolymers & Composites

A. Patel, R. Riggelman, *Organizers*

A. Jayaraman, *Organizer, Presiding*

**8:30 PMSE 557.** Process-directed self-assembly of copolymer materials. **M. Mueller**

**8:50 PMSE 558.** Modeling the percolation behavior of bulk and porous systems incorporating carbon nanofillers. **O. Maxian, D. Pedrazzoli, I. Manas-Zloczower**

**9:10 PMSE 559.** Interfacial effects on nanoscale wrinkling in gold-covered polystyrene. **C.T. Chapman, G.C. Schatz**

**9:30 PMSE 560.** Atomistic modeling of polybenzoxazine composite materials to predict thermal and mechanical properties. **J. Sanders, T.J. Mustard, A. Goldberg, D.J. Giesen, M. Halls**

**9:50** Intermission.

**10:00 PMSE 561.** Engineering enthalpic and entropic interactions to target desirable network microstructures and properties via block copolymers. **F. Escobedo**

**10:30 PMSE 562.** Origin and features of the major peak cluster spacing in the mass spectra of copolymers explained by a simple model. **M. Petr, E.P. Kharlampeva, D. Cropek, S. Grimme**

**10:50 PMSE 563.** Stimuli-responsive behavior of composites integrating thermo-responsive gels with photo-responsive fibers. **O. Kuksenok, A.C. Balazs**

### Advanced Functional Biopolymers & Biomaterials

Sponsored by POLY, Cosponsored by PMSE

### Polymer Science at the Interface of Industry, Government & Academics

#### National Lab/Industry/University Collaborations

Sponsored by POLY, Cosponsored by COLL, PMSE and SCHB

## WEDNESDAY AFTERNOON

### Section A

Sheraton Philadelphia Downtown Hotel  
Philadelphia Ballroom South

### Porous Polymers

#### Hydrogels, Applications

Cosponsored by POLY

Financially supported by 3M, Polymer-Elsevier, Wiley

N. R. Cameron, M. A. Hillmyer, D. A. Schiraldi, M. S. Silverstein, *Organizers*

B. S. Hsiao, M. Ulbricht, *Presiding*

**1:00 PMSE 564.** Withdrawn.

**1:30 PMSE 565.** Microfluidic-assisted generation of monodisperse, highly ordered and biobased porous polymers. **S.P. Andrieux, W. Drenckhan, C. Stubenrauch**

**1:50 PMSE 566.** Functional nanoporous hydrogels formed using photopolymerization in lyotropic liquid crystal templates. **A. Guymon, J. McLaughlin, B.S. Forney**

**2:10 PMSE 567.** Evolution of hierarchical porous structure in supramolecular hydrogels. **C.B. Rodell, C.B. Highley, N.N. Dusat, M.H. Chen, J.A. Burdick**

**2:30 PMSE 568.** Porous membranes built up from hydrophilic poly(ionic liquid)s. **K. Taeuber, J. Yuan**

**2:50** Intermission.

**3:05 PMSE 569.** Improving performance and functionality of ultrafiltration membranes made via phase separation from standard polymers by tailored macromolecular or nanoparticulate additives. **M. Ulbricht, X. Lin, J. Meyer**

**3:35 PMSE 570.** Non-CVD synthesis of N-doped carbon nanotubes and their application as efficient electrocatalysts in oxygen reduction. **X. Zhu, H. Liu, S. Dai**

**3:55 PMSE 571.** Smart oil and water separations with nanostructured polymers. **R.C. Advincula**

**4:15 PMSE 572.** Degradation of shape memory polyurethanes: Examination of highly porous, thermoset smart polyurethanes. **A. Weems, K.T. Wacker, K.L. Wooley, D.J. Maitland**

**4:35** Concluding Remarks.

## Section B

Sheraton Philadelphia Downtown Hotel  
Philadelphia Ballroom North

### Bioderived & Bioinspired Polymers

#### New Developments

R. Kasi, Y. Lin, M. Nieh, L. Sun, *Organizers*

J. Liu, L. H. Mahajan, *Presiding*

**1:00 PMSE 573.** Designed peptides for solution assembly of predetermined nanostructures. **M. Haider, H. Zhang, K.L. Kick, J.G. Saven, D.J. Pochan**

**1:20 PMSE 574.** pH-modulated on/off switching of protein adsorption with NIPAm-based polymer nanoparticles. **S. Onogi, S. Lee, K.J. Shea**

**1:40 PMSE 575.** New sustainably sourced epoxy resin thermosets derived from trehalose and  $\beta$ -cyclodextrin. **Q. Zhang, M. Molenda, T.M. Reineke**

**2:00 PMSE 576.** Sustainably polyurethane-like protein copolymers. **W. Chan, B.D. Olsen**

**2:20 PMSE 577.** Polydopamine melanin as a stimulation electrode material in brain-machine interface. **I. Kwon, Y. Kim, L. Klosterman, M. Forssell, C. Bettinger**

**2:40** Intermission.

**2:55 PMSE 578.** Segmented molecular architecture of self-healing protein materials. **A. Pena-Francesch, V. Sariola, H. Jung, M. Çetinkaya, C.N. Pacheco, M. Sitti, M.C. Demirel**

**3:15 PMSE 579.** Curing kinetics of bio-based epoxies for tailored applications. **A.A. Patel, A. Maiorana, L. Yue, R.A. Gross, I. Manas-Zloczower**

**3:35 PMSE 580.** Engineering the protein corona for broad-spectrum venom sequestration. **J. O'Brien, K.J. Shea**

**3:55 PMSE 581.** Insights into nano-composite materials using superresolution structured illumination microscopy (SIM). **J. Breffke, J.W. Woodcock, J.W. Gilman, G.W. Bryant, S.J. Stranick**

**4:15 PMSE 582.** Design, synthesis, physico chemical and biological evaluation of self-assembling biomaterials. **M.M. Conda-Sheridan, M.B. Samad, V.R. Udumula**

**4:35 PMSE 583.** Synthesis, characterization, and water uptake studies of renewable fully furan based epoxy/amine thermosetting materials. **J. Vergara, Y. Tian, S. Yadav, J.M. Sadler, J.J. La Scala, G.R. Palmese**

## Section C

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom G

### Fire & Polymers

#### Flame-Retardant Chemistry

Financially supported by Ashland, Corning, ICL (Israeli Chemical Limited), Schneller, Nabaltec

A. B. Morgan, G. L. Nelson, C. A. Wilkie, *Organizers*

D. A. Schiraldi, *Presiding*

**1:00 PMSE 584.** Metal hydrate flame retardance - Exploring common myths. **J. Innes, A. Innes**

**1:25 PMSE 585.** Superior performance and delivery of flame retardants with their crystalline inclusion compounds. **N. Zhang, J. Shen, M.A. Pasquonelli, D. Hinks, A.E. Tonelli**

**1:50 PMSE 586.** Effects of natural weathering on intumescent fire retardant coatings. **B. Bahrani, A. Zhou, S.L. Quarles**

**2:15 PMSE 587.** Modified tannic acid - a bioinspired fire resistant char forming additive for polyamide. **Z. Xia, W. Kiraitanavit, S. Yu, P. Facendola, S. Thota, J. Kumar, R. Mosurkal, R. Nagarajan**

**2:40** Intermission.

**2:55 PMSE 588.** Kinetics and thermodynamics of thermal decomposition for polymers containing reactive flame retardants: Application to poly(lactic acid) blended with melamine and ammonium polyphosphate. **Y. Ding, M. McKinnon, S. Stollarov, G. Fontaine, S. Bourbigot**

**3:20 PMSE 589.** Natural fire-defense of raw white and brown cotton fibers evidenced by suppressed unzipping depolymerization. **S. Nam, B.D. Condon, D.J. Hincliffe**

**3:45** Concluding Remarks.

## Section D

Sheraton Philadelphia Downtown Hotel  
Freedom Ballroom H

### Oligomers & Polymers with Precisely Designed Microstructures: Synthesis, Properties & Applications

#### Networks, Composites & Supramolecular Order

Cosponsored by POLY

Financially supported by ExxonMobil Corporation

L. S. Baugh, A. Patil, *Organizers*

M. Petr, J. M. Szarko, *Presiding*

**1:00 PMSE 590.** Side-chain polynorbornenes containing mono-, di- and tri-calamic mesogenic pendant groups, synthesis and mesomorphic properties. **X. Chen, S. Ma, Y. Tu**

**1:30 PMSE 591.** Effects of alkyl side chain oligomers on the microcrystallite growth in perylene diimide derivatives. **J.M. Szarko, X. Zhu, A. Austin**

**2:00 PMSE 592.** Shedding light on polymer wrinkling. **S. Ma, N.J. Wagner, C.J. Kloxin**

**2:30 PMSE 593.** Withdrawn.

**3:00** Intermission.

**3:15 PMSE 594.** Conjugated polymer-based giant molecules: From precise molecular synthesis to sub-10-nm ordered heterojunction structures. **Z. Lin, S.Z. Cheng**

**3:45 PMSE 595.** Weaving as a strategy to make covalent organic frameworks. **Y. Liu, O.M. Yaghi**

**4:15 PMSE 596.** Lactic acid-grafted-chitosan dispersed poly (lactic acid) films: A potential candidate for packaging applications. **A.K. Pal, V. Katiyar**

## Section E

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom A

### Polymers Designed for 3D Printing Applications: Evaluation of the Fundamental & Applied Aspects of the Field

#### Emerging 3D Printing Applications

Financially supported by General Electric (GE)

J. Choi, A. Natarajan, P. Singh, *Organizers*

A. Joy, *Organizer, Presiding*

**1:30 PMSE 597.** Acrylate-modified poly(glycerol sebacate) as a photocurable ink to form 3D biodegradable and elastomeric structures. **C.B. Highley, Y. Yeh, L. Ouyang, J.A. Burdick**

**1:50 PMSE 598.** New approach for the DLP-3D printing of functional materials. **A. Chiappone, E. Fantino, I. Roppolo**

**2:10 PMSE 599.** Photopolymerized acrylate-based superelastomers using the CLIP 3D printing technique. **K. Misichronis, J.W. Mays, T. Saito**

**2:30 PMSE 600.** Novel thermosetting polymers for fused filament fabrication 3D printing. **K. Yang, V. Ranson, W. Archer, B.R. Lund, W. Voit**

## Section F

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom A

### Polymer & Polymer Hybrid Electronics & Biosensors

#### Thin Film Processing

Financially supported by Aldrich, 1-Material Inc.

F. Huang, S. Wang, *Organizers*

X. Gong, *Organizer, Presiding*

A. Karim, *Presiding*

**1:30 PMSE 601.** Directed self-assembly of block copolymers for high energy density polymer film capacitors. **A. Karim, S. Samant, C. Grabowski, K. Kisslinger, K.G. Yager, G. Yuan, S. Satija, D. Raghavan, M. Durstock**

**1:55 PMSE 602.** Thermo-responsive toughening with crack bifurcation in phase-separated hydrogels under isochoric conditions. **H. Guo**

**2:15 PMSE 603.** Permeation barrier properties of multilayered polymer composite films for flexible organic photovoltaic device. **M. Sun, S. Zhu, C. Zhang, D.A. Schiraldi**

**2:35 PMSE 604.** Dielectric properties and loss mechanism in polypropylene/aluminum nanocomposites. **G. Zhang, L. Zhu**

**2:55** Intermission.

**3:10 PMSE 605.** Iridium-based photosensitizers with ultralong triplet lifetimes as high-sensitivity oxygen sensors. **Y. Ma**

**3:35 PMSE 606.** Uncooled ultrasensitive solution-processed broadband photodetector. **X. Gong**

**4:00 PMSE 607.** Thiol-isocyanate substrates for durable, softening neural electronics. **G. Elson, Y. Qattan, T. Blair, W. Voit**

**4:20 PMSE 608.** Arranging silver nanowire arrays by microcontact printing for solar cells application. **C. Lin, W. Sun, S. Liu, L. Liu, C. Cheng, F. Ko**

**4:40 PMSE 609.** Vapor phase polymerized poly(3,4-ethylenedioxythiophene) (PEDOT) on TiO<sub>2</sub> sub-micron fibers as electrode material for supercapacitor. **L. Tong, J. Liu, S.M. Boyer, L.A. Sonnenberg, M.T. Fox, W.E. Bernier, W.E. Jones**

## Section G

Sheraton Philadelphia Downtown Hotel  
Independence Ballroom B

### Recent Advances in Modeling & Simulations of Synthetic Polymers & Biopolymers

#### Charged Systems

A. Jayaraman, A. Patel, *Organizers*

R. Riggelman, *Organizer, Presiding*

**1:30 PMSE 610.** Simple model for liquid-like polyelectrolyte complex. **J. Qin**

**2:00 PMSE 611.** DFT and force field study on the effect of ions on structure and side-chain interactions in peptoids. **M.D. Baer, C. Chen, C.J. Mundy**

**2:20 PMSE 612.** Design of tailored amphiphilic unimolecular polymeric micelles via molecular dynamics simulations. **A. Sharma**

**2:40 PMSE 613.** Multi-scale molecular simulations for polymer behavior and properties at different interfaces. **G. Kacar, G. de With**

**3:00** Intermission.

**3:10 PMSE 614.** Molecular and sequence effects in electrostatically-driven self assembly. **M. Radhakrishna, T. Lytle, C.E. Sing**

**3:40 PMSE 615.** Theory and simulation of polymer flows. **J.R. Dorgan**

**4:00 PMSE 616.** Simulation studies of pH responsive polymers. **S.W. Rick**

### Advanced Functional Biopolymers & Biomaterials

Sponsored by POLY, Cosponsored by PMSE

### Polymer Science at the Interface of Industry, Government & Academics

#### Industry/University Collaborations

Sponsored by POLY, Cosponsored by COLL, PMSE and SCHB

## THURSDAY MORNING

### Section A

Sheraton Philadelphia Downtown Hotel  
Salon 9

### General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

L. Anderson, E. Mansfield, *Presiding*

**8:30 PMSE 617.** Facile and accessible method for patterning surfaces with functional polymers via initiated chemical vapor deposition. **C. Hsieh, S. Janakiraman, A. Angotti, K.K. Lau**

**8:50 PMSE 618.** Latent, long-lived reactive species in covalently cross-linked gels. **D. Ahn, S.R. Zavada, T.F. Scott**

**9:10 PMSE 619.** Antibacterial efficacy of self-defensive layer-by-layer hydrogels: Homopolymer versus copolymer films. **V. Albright, H.C. van der Mei, S.A. Sukhishvili**

**9:30 PMSE 620.** Non-random sulfonation of poly(ether ether ketone) via post polymerization functionalization of thermoreversible gels. **L. Anderson, X. Yuan, R.B. Moore**

**9:50** Intermission.

**10:10 PMSE 621.** Patterned, tubular scaffolds mimic longitudinal and radial mechanics of the neonatal trachea. **E. Mansfield, V. Greene, D. Auguste**

**10:30 PMSE 622.** Melt-fabricated photo-reactive block copolymer micelles as modular building blocks for tunable elastomeric hydrogels. **N. Huq, T.S. Bailey**

**10:50 PMSE 623.** Withdrawn.

**11:10 PMSE 624.** Incorporation of vinyl methacrylate co-monomer increases HEMA hydrogel toughness. **E. Mansfield, V. Greene, D. Auguste**

**11:30 PMSE 625.** Investigation of self-assembly, thermal, and mechanical properties of thermoreversible triblock copolymer gels. **M. Zabet, S. Mishra, K.B. Walters, S. Kundu**

## Section B

Sheraton Philadelphia Downtown Hotel  
Seminar B

### General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

V. Beachley, B. Koo, *Presiding*

**8:30 PMSE 626.** Post-stretching electrospun polymer nanofibers to enhance macromolecular orientation and mechanical properties. **D. Brennan, D. Jao, X. Hu, V. Beachley**

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**8:50 PMSE 627.** Mapping PVDF crystalline morphology. **G. Burks**, H. Qi, S. Gleeson, S. Mei, A. Connor, C. Li

**9:10 PMSE 628.** Local measurements of the glass transition temperature in fluorescently labeled n-alkyl methacrylate diblock copolymers. **D. Christie**, R.A. Register, R.D. Priestley

**9:30 PMSE 629.** Measuring the length scale of glassy dynamics in thin polymer and organic glass films. **Z. Fakhraai**, Y. Zhang, E. Glor, G. Angrand

**9:50** Intermission.

**10:10 PMSE 630.** Catalyst free synthesis of porous graphene networks as efficient sorbents for CO<sub>2</sub> and H<sub>2</sub>. **K. Song**, A. Coskun

**10:30 PMSE 631.** Quantitative nanomechanical AFM characterization of polymers using fast and versatile AM-FM mode. **M. Kocun**, A. Labuda, W. Meinhold, R. Proksch

**10:50 PMSE 632.** Towards the realistic modeling of fluoropolymer mechanical properties with crystallinity-consistent coarse-grained models. **B. Koo**

**11:10 PMSE 633.** Measurement of polymerization stress in acrylic bone cements using a cantilever beam instrument. **F.A. Landis**, S.V. Palagummi, M. Chiang

**11:30 PMSE 634.** Analysis of local rheological properties of crystal regions in isotactic polypropylene by using microbeam wide-angle x-ray diffraction technique. **S. Nozaki**, K. Kojo, A. Takahara

### Section C

Sheraton Philadelphia Downtown Hotel Salon 5

#### General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

A. Erlichman, V. Solouki Bonab, *Presiding*

**8:30 PMSE 635.** Withdrawn.

**8:50 PMSE 636.** Synthesis of thiazole functional benzoxazine and characterization of its polymer. **S. Ohashi**, A. Erlichman, H. Ishida

**9:10 PMSE 637.** Development of benzoxazine resins for the protection of astronauts from ultra-high energy galactic cosmic rays. **C. Rodríguez Arza**, G. Abarro, M. Fonseca, P. Froimowicz, H. Ishida

**9:30 PMSE 638.** Synthesis of well-defined functional copolymers via living vinyl addition polymerization for biobutanol pervaporation membranes. **B. Kang**, A. Bell, R.A. Register

**9:50** Intermission.

**10:10 PMSE 639.** Novel synthesis of benzothiazine and studies on its thermal polymerization. **S. Ohashi**, A. Erlichman, S. Baxley, A. Zhou, H. Ishida

**10:30 PMSE 640.** Quantitative studies of substituent effect on benzoxazine structure in its polymerization. **S. Ohashi**, D. Hopkins, V. Bostwick, B. Garner-Prouty, A. Mael, H. Ishida

**10:50 PMSE 641.** Revisiting thermoplastic polyurethane (TPU), from composition to morphology and properties. **V. Solouki Bonab**, I. Manas-Zloczower

**11:10 PMSE 642.** Materials from polysaccharides—New tricks from old dogs. **D. Reishofer**, M. Kaschowitz, G. Trimmel, T. Griesser, S. Freunberger, H. Plank, **S. Spirk**

**11:30 PMSE 643.** Synthesis of cyanate ester functional benzoxazine/naphthoxazine and their characteristic polymer properties. **S. Ohashi**, T. Heyl, H. Ishida

### Section D

Sheraton Philadelphia Downtown Hotel Salon 6

#### General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

Y. Wang, *Presiding*

**8:00 PMSE 644.** Polymorphic cellulose nanocrystals based bionanocomposites with tunable mechanical, barrier and thermal properties. **P. Dhar**, A. Kumar, V. Katiyar

**8:20 PMSE 645.** Fabrication of biodegradable foams with unique hydrophobic/hydrophilic characteristics using cellulose nanocrystal fillers in poly (lactic acid) matrix. **V. Katiyar**, S.S. Borkotoky

**8:40 PMSE 646.** Thermal degradation kinetics of different acid derived cellulose nanocrystals/poly(lactic acid) based nanocomposites. **V. Katiyar**, P. Dhar, M. Monika

**9:00 PMSE 647.** Construction of organic and inorganic hybrid nanoparticles by coassembly of polymeric micelles and functionalized gold nanoparticles directed by tetrazine ligation. **Z. Chen**, H. Zhang, K.L. Wooley, J. Fox, D.J. Pochan

**9:20 PMSE 648.** Crosslinked polymeric-stabilized nanocomposites for the treatment of multidrug-resistant biofilms. **R. Landis**, A. Gupta, Y. Lee, L. Wang, V.M. Rotello

**9:40 PMSE 649.** Polysulfide polymer nanoparticles from dispersion polymerization of aqueous sodium polysulfides. **J. Lim**, H. Shin, K. Char

**10:00** Intermission.

**10:20 PMSE 650.** Spontaneous assembly of hydrogen-bonded polymer nanocapsules and nanoparticles. **Y. Wang**, S.A. Sukhishvili

**10:40 PMSE 651.** When nanoparticles meet poly(ionic liquids): Chemoresistive CO<sub>2</sub> sensing at room temperature. **C. Willa**, D. Koziej, J. Yuan

**11:00 PMSE 652.** Preparation of light-responsive polymer grafted silica nanoparticles and their properties. **Y. Zheng**, D. Huebner, P. Vana, B.C. Benicewicz

**11:20 PMSE 653.** Polymer coated silver nanoparticles. **Y. Reddy**

### Section E

Sheraton Philadelphia Downtown Hotel Logans 1

#### General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

W. Huang, *Presiding*

**8:00 PMSE 654.** Biporous polymeric materials with controlled pore size and connectivity. **D. Grande**, S. Mezhoud, H. Ly, B. Le Droumaguet, V. Monchiet, M. Bornert

**8:20 PMSE 655.** Bioinspired porous surface for enhancing hydrophobicity of polyolefin films. **W. Huang**, S.J. Gluck, A. Johnson

**8:40 PMSE 656.** Elemental sulfur mediated porous polymer synthesis for natural gas sweetening. **S. Je**, O. Buyukcikir, K. Daek, A. Coskun

**9:00 PMSE 657.** Robust and highly interconnected polyurethane diacrylate based macroporous polymers. **Q. Jiang**, A. Menner, A. Bismarck

**9:20 PMSE 658.** Nanostructured mixed matrix membranes from PISA-prepared polymer particles and inorganic iron nanoparticles. **L. Upadhyaya**, M. Semsarilar, R. Fernandez-Pacheco, G. Martinez, R. Mallada, C.A. Portugal, I.M. Coelho, J. Crespo, A. Deratani, D. Quemener

**9:40 PMSE 659.** Withdrawn.

**10:00** Intermission.

**10:20 PMSE 660.** Novel silicone hydrogels exploiting macromolecular memory for controlled and extended release of multiple therapeutics. **S.A. DiPasquale**, M.C. DiCerbo, B. Uricoli, M.E. Byrne

**10:40 PMSE 661.** Withdrawn.

**11:00 PMSE 662.** Emulsion electrospun sustainable porous matrices and their application. **J. Pal**, R.K. Srivastava

**11:20 PMSE 663.** Hierarchically porous carbon foams from pickering high internal phase emulsions. **R. Woodward**, F. Markoulidis, D. Fam, M. Shaffer, A. Bismarck

### Section F

Sheraton Philadelphia Downtown Hotel Philadelphia Ballroom South

#### Polymer & Polymer Hybrid Electronics & Biosensors

##### Novel Properties of Polymeric & Organic Materials

Financially supported by Aldrich, 1-Material Inc.

X. Gong, F. Huang, S. Wang, *Organizers*

C. Yi, Y. Zhao, *Presiding*

**8:30 PMSE 664.** Organic nanophotonic materials and devices. **Y. Zhao**

**8:55 PMSE 665.** Methyl and phenyl modified hybrid glasses for anticorrosive protection. **I. Levy**, G. Rodriguez, M. Aparicio, J. Mosa, K. Al-Marzoki, L.C. Klein, A. Jitianu

**9:15 PMSE 666.** Ingestible primary battery composed of biodegradable polymers and benign metals for medical applications. **H. Park**, Y. Kim, A. Guertin, C. Bettinger

**9:35 PMSE 667.** High performance perovskite hybrid solar cells with e-beam-processed TiO<sub>x</sub> electron extraction layer. **T. Meng**, C. Liu, K. Wang, T. He, Y. Zhu, A. Al-Enizi, A. Elzatory, X. Gong

**9:55** Intermission.

**10:10 PMSE 668.** Enhanced ferroelectricity in nylon copolymers. **Z. Zhang**, L. Zhu, M. Litt

**10:30 PMSE 669.** Highly conductive polyethylenedioxythiophene thin films via increased polaron-state for thermoelectric applications. **C. Yi**, L. Zhang, R. Hu, X. Zhang, S.S. Chuang, A. Karim, J. Zheng, X. Gong

**10:55 PMSE 670.** Ultra-compliant neural microelectrodes fabricated by hydrogel-mediated transfer printing. **W. Huang**, J. Zhao, H. Wu, X. Ong, C. Bettinger

**11:15 PMSE 671.** Effect of surfactant on coefficient of thermal expansion in synthetic clay reinforced epoxy nanocomposite. **T. Hirata**, P. Li, F. Lei, S. Hawkins, H. Sue

**11:35 PMSE 672.** Polarized soft x-ray scattering of block copolymers reveals lamellar interface morphology. **J. Litofsky**, E. Gomez, T. Le

### Section G

Sheraton Philadelphia Downtown Hotel Philadelphia Ballroom North

#### Recent Advances in Modeling & Simulations of Synthetic Polymers & Biopolymers

##### Biopolymer Systems

A. Jayaraman, R. Riggelman, *Organizers*  
A. Patel, *Organizer, Presiding*

**8:30 PMSE 673.** Determining conformational statistics of proteins via replica-exchange on-the-fly free-energy parameterization. **S.A. Paz**, C.F. Abrams

**9:00 PMSE 674.** Mechanical activation of Leuco dyes – Insight using density functional theory for polymer metrology. **K.S. Khare**, F.R. Phelan

**9:20 PMSE 675.** Bayesian calibration of multiple properties for transferable coarse-grained force fields. **T. Rosch**, P. Patrone, F.R. Phelan

**9:40 PMSE 676.** Molecular dynamics of water-absorbent nanoscale materials based on chitosan. **C.H. Borca**, C.A. Arango

**10:00** Intermission.

**10:10 PMSE 677.** Succession of alkane conformational motifs bound within hydrophobic nano-capsule assemblies. **H. Ashbaugh**

**10:40 PMSE 678.** Molecular dynamics simulations of cholesterol-rich membranes using a coarse-grained force field for cyclic alkanes. **C.M. MacDermaid**, M.L. Klein, G. Fiorin

**11:00 PMSE 679.** Understanding physical aging of thin film perfluoropolymers using an integrated experimental and modeling approach. **H. Lin**, M. Yavari, S. Maruf, Y. Ding

#### Advanced Functional Biopolymers & Biomaterials

Sponsored by POLY, Cosponsored by PMSE

#### Polymer Science at the Interface of Industry, Government & Academic Industry/University Collaborations

Sponsored by POLY, Cosponsored by COLL, PMSE and SCHB

## THURSDAY AFTERNOON

### Section F

Sheraton Philadelphia Downtown Hotel Philadelphia Ballroom South

#### Polymer & Polymer Hybrid Electronics & Biosensors

##### Polymeric & Organic Materials for Bioapplications

Financially supported by Aldrich, 1-Material Inc.

X. Gong, F. Huang, S. Wang, *Organizers*

M. Wang, Q. Xu, *Presiding*

**1:30 PMSE 680.** Conjugated polymer based nanoparticles for applications in two-photon excitation imaging and photodynamic therapy. **Q. Xu**

**1:55 PMSE 681.** Organic semiconductors for sensing and therapy. I. Samuel, A. Bansal, S. Hou, O. Kulyk, A. McNeill, E. Bowman, J. Ferguson

**2:20 PMSE 682.** Hydrogel sensors with dual-mode optical readout. Y. You, A. Biswas, M. McShane

**2:40 PMSE 683.** Withdrawn.

**3:00 PMSE 684.** Design of amplifying fluorescent conjugated polymer sensors based on higher energy gap control concept. C. Chiang, E.E. Nesterov

**3:20** Intermission.

**3:35 PMSE 685.** Highly fluorescent pi-conjugated molecules and polymers tethered with biopolymers: From material design, synthesis to biomedical applications. M. Wang

**4:00 PMSE 686.** Polydiacetylenes based sensors and their anti-bacterial activity. J. Yoon

**4:20 PMSE 687.** Conjugated polymer-based hybrid materials for detection and functional regulation of calmodulin. C. Xing, Y. Fan, H. Yuan, J. Qi, Y. Zhan

**4:40 PMSE 688.** Ratiometric singlet oxygen detection in water using acene doped polymeric materials. F. Frausto, S.W. Thomas

**5:00 PMSE 689.** Tunable diffusion control in microcapsule based nanocomposite devices. A. Biswas, A. Nagaraja, Y. You, L. Bornhoeft, M. McShane

## Section G

Sheraton Philadelphia Downtown Hotel  
Philadelphia Ballroom North

### General Papers/New Concepts in Polymeric Materials

M. Grunlan, *Organizer*

I. D. Hosein, A. Tiwari, *Presiding*

**1:00 PMSE 690.** Continuum model for decontamination of chemical warfare agent from a rubbery polymer using the Maxwell-Stefan formulation. M.J. Varady, T.P. Pearl, S.M. Stevenson, B.A. Mantooth

**1:20 PMSE 691.** In situ electrolyte filled polyHIPEs as printable separators for rechargeable batteries. W. Paschinger, H. Nguyen Thu, A. Bismarck

**1:40 PMSE 692.** Model-guided design and optimization of polymer-electrolyte dye sensitized solar cells. Y.Y. Smolin, A.G. Kuba, K.K. Lau, M. Soroush

**2:00 PMSE 693.** Preparation and characterization of Al<sub>2</sub>O<sub>3</sub>/polyamide imide – based composite separators for lithium ion batteries. H. Choi, S. Yang, B. Jung, S. Han

**2:20 PMSE 694.** Controlling polymer morphology using white-light. S. Biria, K.E. Judge, P. Malley, T. Kahan, I.D. Hosein

**2:40 PMSE 695.** Real-time measurement of chemical species composition resulting from extraction of chemical warfare simulants from polymers. T.P. Pearl, N. Hawbaker, J. Myers, R. Lambeth, S.A. Bringuier, M.J. Varady, B.A. Mantooth

**3:00** Intermission.

**3:20 PMSE 696.** Role of hydrogen bonding in chemical species transport dynamics in polyurethane-based thin films measured with FTIR spectroscopy and quartz crystal microbalance gravimetry. T.P. Pearl, N.S. Sapienza, J.H. Eikenberg, R. Lambeth, S.A. Bringuier, M.J. Varady, B.A. Mantooth

**3:40 PMSE 697.** Fabrication of thermo-responsive polymeric membranes using excimer laser for regulated transport of solutes. A. Tiwari, E. Sancaktar

**4:00 PMSE 698.** Fabrication and characterization of polymer and semiconducting oxide nanofibers from novel gas jet fiber spinning process. M. Ghosh, S.C. Jana

**4:20 PMSE 699.** Reversible photo-patterning of soft conductive materials via spatially-defined supramolecular assembly. X. He, J. Fan, J. Zou, K.L. Wooley

### Advanced Functional Biopolymers & Biomaterials

*Sponsored by POLY, Cosponsored by PMSE*

## PROF

### Division of Professional Relations

R. D. Libby, *Program Chair*

#### BUSINESS MEETINGS:

Business Meeting, 3:00 PM: Tue

## SUNDAY MORNING

### WCC Merck Research Award Symposium

*Sponsored by WCC, Cosponsored by ANYL, BIOL, COMP, MEDI, MPPG, ORGN, POLY and PROF*

## SUNDAY AFTERNOON

### Section A

Hilton Garden Inn Philadelphia Center City  
Garden Room

#### Chemical Angel Network: Chemists Investing in Chemical Companies

*Cosponsored by SCHB‡*

*Financially supported by CIEC*

J. L. Bryant, M. Vreeke, *Organizers*

S. S. White, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:35 PROF 1.** News and updates from the Chemical Angel Network (CaN) and its 4th year of operation. M. Vreeke, S.S. White, J.C. Giordan

**2:00** Company Presentations.

**3:00** Investment Discussion.

**3:30** Open Forum.

**4:00** Concluding Remarks.

#### Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation

*Sponsored by PRES, Cosponsored by CEPA, IAC‡, MPPG and PROF*

#### Regional Small Chemical Businesses: Case Histories & Lessons Learned

*Sponsored by SCHB, Cosponsored by MEDI, ORGN and PROF*

#### Getting Your First Industrial Job

*Sponsored by YCC, Cosponsored by PROF*

## MONDAY MORNING

### Section A

Hilton Garden Inn Philadelphia Center City  
Garden Room

#### Building Opportunities in the Chemical Profession: Exploiting the Power of Diversity & Inclusion

*Cosponsored by CMA and CWD*

C. A. Supalo, *Organizer*

L. W. Hoffman, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 PROF 2.** Shedding light on the dark confusion of including blind and visually impaired students in the chemistry classroom. A.E. Neybert

**8:55 PROF 3.** From disability to enabling ability: A chemist's journey. J. Schiller

**9:15 PROF 4.** Deaf and hard-of-hearing professionals as valued members of your chemistry team. T.E. Pagano, A.D. Ross

**9:35** Intermission.

**9:45 PROF 5.** Building opportunities on the path to faculty careers in higher education for Native Americans in STEM. K.M. DeerInWater, S. EchoHawk, M.J. Ondrechen

**10:05 PROF 6.** Creating a more welcoming environment for underrepresented students in chemistry departments at predominantly white institutions (PWIs) to foster student success in STEM majors, using Knox College as a case study. M. Crawford, E.M. Marzluff

**10:25 PROF 7.** Hands-on chemistry teaching for special education, including low vision and blind. L.A. Rankel

**10:45** Intermission.

**10:55 PROF 8.** Preparing students with disabilities for the challenges of graduate school. Outcomes and perspectives from a REU program. K.S. Booksh, S. Rozovsky, J.P. Smith

**11:15 PROF 9.** Building opportunities from the ground up. C. Hamann

**11:35 PROF 10.** Nature of an inclusive STEM workforce in the fourth industrial revolution. C.A. Supalo

**11:55** Concluding Remarks.

#### International Drug Discovery & Development Collaborations

*Sponsored by SCHB, Cosponsored by MEDI, ORGN, POLY and PROF*

#### All the People, All the Paths in the Chemical Sciences

*Sponsored by WCC, Cosponsored by CMA, MPPG, PROF‡ and YCC*

#### Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation

*Sponsored by PRES, Cosponsored by CEPA, IAC‡, MPPG and PROF*

## MONDAY AFTERNOON

### Section A

Hilton Garden Inn Philadelphia Center City  
Garden Room

#### Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community

*Cosponsored by CHED, CMA, D&I, LSAC, SCHB and YCC*

M. Crawford, *Organizer*

B. C. Chan, *Organizer, Presiding*

**1:00** Introductory Remarks.

**1:05 PROF 11.** Safe Zone Workshop Level 1. B.C. Chan, S. Farrell, M. Cathell, D. Conner

**2:55** Intermission.

**3:05 PROF 12.** Safe Zone Workshop Level 2. B.C. Chan, S. Farrell, M. Cathell, D. Conner

**4:55** Concluding Remarks.

#### Chemistry of the City of Brotherly Love

*Sponsored by YCC, Cosponsored by PROF*

#### International Drug Discovery & Development Collaborations

*Sponsored by SCHB, Cosponsored by MEDI, ORGN, POLY and PROF*

#### Social & Chemical Science of Diversity Equity

*Sponsored by CMA, Cosponsored by CHED and PROF*

#### Broadening Participation in Global Chemistry Experiences: Why Engaging Diverse Chemistry Communities in Global Research is Critical

*Sponsored by PRES, Cosponsored by IAC and PROF*

## MONDAY EVENING

### Section A

Pennsylvania Convention Center  
Halls D/E

#### Sci-Mix

R. Libby, *Organizer*

**8:00 - 10:00**

**PROF 13.** Professional development of younger chemists. M. Grandbois, N.A. LaFranzo

**PROF 14.** Spreading the word about professionalism (professional ethics): Reconnecting with the ethics subdivision of the division of professional relations (PROF). C.P. McClure, C.D. Jensen, G. Ferrence

**PROF 15.** Interactive creation of ethics and professional culture for chemists. S.M. Schelble, K.M. Elkins, B.E. Moriarty

**PROF 16.** Division of professional relations women chemists' subdivision: Working to enhance and highlight the impact of women in STEM worldwide. J.H. Cohen, J.L. Bryant, T.D. Matos

**PROF 17.** Making LGBTQ+ chemists more visible in the ACS: Activities of the gay and transgender chemists and allies subdivision. M. Crawford, B. Belmont

**PROF 18.** PROF minority affairs subdivision. M. Kanipes-Spinks

PROF **19.** New ACS service to chemistry educators: Legal liability insurance. J. Tirado, H.N. Cheng

PROF **20.** Elements of insurance: Planning today for tomorrow. J. Tirado, H.N. Cheng

PROF **21.** African synchrotron light source (AflS). T.A. Dobbins, H. Winick, S. Mtingwa, A. Wague, S. Connell, B. Masara, T. Ntsoane, K. Evans-Lutterodt, T. Hussein, K. McLaughlin, L. Norris, E. du Plessis, R. Murenzi, K. Reed, F. Sette, S. Werin, J. Dorfan, M. Yousef, P. Oladijo, F. Maresha

## TUESDAY AFTERNOON

### Section A

Hilton Garden Inn Philadelphia Center City Rittenhouse 1/2

#### Women in Innovation: Science Policy & Government

Cosponsored by BMGT, SCHB† and WCC

Financially supported by CIEC

J. L. Bryant, *Organizer*

J. C. Giordan, *Organizer, Presiding*

**1:30 PROF 22.** Innovating women: Science policy and government - Opening overview. J.C. Giordan, J.L. Bryant

**1:45 PROF 23.** Innovating women: Science policy and government - Moderated panel presentations and questions and answers. J.C. Giordan, J.L. Bryant

**2:45** Facilitated Q&A.

**3:15** Concluding Remarks and Networking.

#### Green Chemistry Innovations & Opportunities in Industry for Young Professionals

Sponsored by I&EC, Cosponsored by CATL, CEI, CHAS, ENFL, ENVR, ORGN, POLY, PROF and YCC

#### Global Careers in Chemistry

Sponsored by YCC, Cosponsored by PROF

## RUBB

### Rubber Division

L. Goss, *Program Chair*

## MONDAY AFTERNOON

#### Chemistry Explained by Teachers for Teachers: The Chemistry behind Everyday Things

Sponsored by CHED, Cosponsored by PMSE, POLY and RUBB

Technical program information known at press time. The official technical program for the 252nd ACS National Meeting is available at: [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016)

## SCHB

### Division of Small Chemical Businesses

J. Sabol, *Program Chair*

#### OTHER SYMPOSIA OF INTEREST:

**IP Considerations & Pitfalls in Collaborative Research & Licensing Agreements** (see CHAL, Mon)

**Chemical Safety in Public Policy** (see CHAS, Wed)

**Chemistry of the People, by the People, for the People** (see CHED, Mon, Tue)

**Using New Media to Communicate Chemistry to the Public** (see CINF, Mon)

**Green Chemistry Innovations & Opportunities in Industry for Young Professionals** (see I&EC, Tue)

**Chemists & the Public: What Research Shows about Engagement & Communication** (see MPPG, Tue)

#### SOCIAL EVENTS:

**Social Hour**, 5:00 PM: Mon

**Reception**, 5:00 PM: Mon

**Member's Breakfast**, 7:00 AM: Sun

**Luncheon**, 12:00 PM: Sun, Mon, Tue

**Coffee**, 8:00 AM: Mon, Tue

#### BUSINESS MEETINGS:

**Executive Committee Meeting**, 8:00 AM: Sun

## SUNDAY MORNING

### Section A

Hilton Garden Inn Philadelphia Center City Rittenhouse 1/2

#### Entrepreneurs' Poster Session

G. W. Ruger, *Organizer*

**10:00 - 12:00**

**SCHB 1.** Small Chemical Businesses Division of the American Chemical Society: benefits of membership.

**A. Rahman**, P.C. Lauro, M. Chorghade, A. Kantak, D.J. Deutsch, J.E. Sabol, J.L. Maclachlan, C.A. Burton, E.L. Oltermann, N.A. Vaidya, R. Chorghade, G.W. Ruger

**SCHB 2.** Chemical Angel Network: chemical professionals investing in chemistry enabled businesses.

**S.S. White**, M. Vreeke, J.C. Giordan

**SCHB 3.** Cassava fibrous waste as a sustainable feedstock for fermentable sugars: Characterization and energy analysis. **K. Gali**, V. Katiyar, S. Sivaprakasam

**SCHB 4.** Emerging opportunities for chemists in the cannabis industry.

**E.L. Oltermann**, J. Marcu, E.M. Pryor

#### Polymers & the National Nanotechnology Initiative (NNI)

Sponsored by POLY, Cosponsored by ANYL and SCHB†

## SUNDAY AFTERNOON

### Section A

Hilton Garden Inn Philadelphia Center City Rittenhouse 1/2

#### Regional Small Chemical Businesses: Case Histories & Lessons Learned

Cosponsored by MEDI, ORGN and PROF

A. B. Reitz, *Organizer*

J. Wrobel, *Organizer, Presiding*

**1:20** Introductory Remarks.

**1:30 SCHB 5.** In search of a cure: A scientist-entrepreneur's journey in biotech. **M.J. Sofia**

**2:00 SCHB 6.** Non-traditional drug discovery in a non-traditional environment. **G.R. Smith**

**2:30 SCHB 7.** Efforts of start-ups between academia and small businesses. **J.M. Salvino**

**3:00** Intermission.

**3:20 SCHB 8.** Ben Franklin Partnership and chem/pharma start-ups in the Lehigh Valley: Case histories and lessons learned. **N.D. Heindel**, C.D. Guillon

**3:50 SCHB 9.** Commercialization of science: Challenges and opportunities. The Moulder Center experience. **M. Abou-Gharbia**

**4:20 SCHB 10.** SAR development in the start-up and small business environment. **A.B. Reitz**

#### Chemical Angel Network: Chemists Investing in Chemical Companies

Sponsored by PROF, Cosponsored by SCHB†

#### Polymers & the National Nanotechnology Initiative (NNI)

Sponsored by POLY, Cosponsored by ANYL and SCHB†

## MONDAY MORNING

### Section A

Hilton Garden Inn Philadelphia Center City Rittenhouse 1/2

#### International Drug Discovery & Development Collaborations

Cosponsored by MEDI, ORGN, POLY and PROF

M. Chorghade, *Organizer, Presiding*

**8:30** Introductory Remarks.

**8:35 SCHB 11.** Challenges and opportunities: Moving from chemistry to healthcare, from academia to industry. **M.N. Liebman**

**9:00 SCHB 12.** Translating molecular biology and clinical concepts into useful therapeutic agents within an academic-based drug discovery and development center: Importance of practical business considerations and extramural collaborations as well as meritorious technologies. **P.W. Erhardt**

**9:25 SCHB 13.** When preparation meets and creates opportunities: Scientist to CEO journey. **R. Barbhaiya**

**9:50** Intermission.

**10:10 SCHB 14.** Global entrepreneurship and discovery collaborations through STEM outreach. **C.B. Monroe**

**10:35 SCHB 15.** Creating the quantified skin category - an entrepreneur's journey. **R. Mehendale**

**11:00 SCHB 16.** Fundamental science to commercial adventures. **R.H. Grubbs**

**11:25 SCHB 17.** Withdrawn.

## MONDAY AFTERNOON

### Section A

Hilton Garden Inn Philadelphia Center City Rittenhouse 1/2

#### International Drug Discovery & Development Collaborations

Cosponsored by MEDI, ORGN, POLY and PROF

M. Chorghade, *Organizer, Presiding*

**1:30** Introductory Remarks.

**1:35 SCHB 18.** Medicinal chemistry in an academic drug discovery setting: There is life after big pharma. **W.E. Childers**

**2:00 SCHB 19.** Discovery of MCAT-53 for C-H activated C-C coupling in water (green chemistry). **A. Mehta**

**2:25 SCHB 20.** Exploring new frontiers in chemistry through advanced manufacturing technologies. **M.M. Bio**

**2:50** Intermission.

**3:10 SCHB 21.** Natural products for treatment of cocaine addiction. **D.Y. Lee**

**3:35 SCHB 22.** When, how, and why to start a chemical business and how to take the advantages and avoid the pitfalls. **N. Vaidya**, N.A. Vaidya

**4:00 SCHB 23.** Zero-waste approaches: good for sustainability and great for business. **R. Riman**

**4:25 SCHB 24.** Building international drug discovery and development businesses based on integration of basic and applied research: Value creation and new opportunities. **M. Chorghade**, R. Chorghade

#### Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community

Sponsored by PROF, Cosponsored by CHED, CMA, D&I, LSAC, SCHB and YCC

#### Kavli Symposium on Chemical Neurotransmission: What Are We Thinking?

Sponsored by ANYL, Cosponsored by BIOL, BMGT, CHED, CINF, MEDI, PMSE and SCHB

## MONDAY EVENING

### Section A

Pennsylvania Convention Center Halls D/E

#### Sci-Mix

G. W. Ruger, *Organizer*

**8:00 - 10:00**

1-4. See previous listings.

## TUESDAY MORNING

#### Chemical Business of the People, by the People, for the People

Sponsored by PRES, Cosponsored by HIST, MPPG and SCHB†

†Cooperative Cosponsorship



**Safety & Ethics in our Chemical Community**

Sponsored by CHAS, Cosponsored by CCS, CHAL, CHED, CORP, ETHC and SCHB

**Connectivity & the Global Reach of Chemistry: Honoring the Life & Scientific Contributions of Ernest L. Eliel**

Sponsored by ORGN, Cosponsored by BMGT, CHED, CINF, HIST, INOR, MEDI, MPPG, PMSE and SCHB

**TUESDAY AFTERNOON****Chemical Business of the People, by the People, for the People**

Sponsored by PRES, Cosponsored by HIST, MPPG and SCHB‡

**Women in Innovation: Science Policy & Government**

Sponsored by PROF, Cosponsored by BMGT, SCHB‡ and WCC

**Polymer Science at the Interface of Industry, Government & Academics****National Laboratory Directions**

Sponsored by POLY, Cosponsored by COLL, PMSE and SCHB

**TUESDAY EVENING****Polymer Science at the Interface of Industry, Government & Academics**

Sponsored by POLY, Cosponsored by SCHB

**WEDNESDAY MORNING****Polymer Science at the Interface of Industry, Government & Academics****National Lab/Industry/University Collaborations**

Sponsored by POLY, Cosponsored by COLL, PMSE and SCHB

**WEDNESDAY AFTERNOON****Biochemistry of Cannabis**

Sponsored by CHAS, Cosponsored by CCS and SCHB

**Polymer Science at the Interface of Industry, Government & Academics****Industry/University Collaborations**

Sponsored by POLY, Cosponsored by COLL, PMSE and SCHB

**THURSDAY MORNING****Polymer Science at the Interface of Industry, Government & Academics****Industry/University Collaborations**

Sponsored by POLY, Cosponsored by COLL, PMSE and SCHB

**CCS****Committee on Chemical Safety**

E. Howson, Program Chair

**SUNDAY AFTERNOON****Division of Chemical Health & Safety Awards**

Sponsored by CHAS, Cosponsored by CCS and CHED

**MONDAY AFTERNOON****Americans with Disabilities Act & Accommodations in the Laboratory**

Sponsored by CHAS, Cosponsored by CCS and CWD

**TUESDAY MORNING****Ask Dr. Safety: Chemical Security in Research Institutions**

Sponsored by CHAS, Cosponsored by CCS and I&EC

**Safety & Ethics in our Chemical Community**

Sponsored by CHAS, Cosponsored by CCS, CHAL, CHED, CORP, ETHC and SCHB

**TUESDAY AFTERNOON****Chemical Safety in the K-12 Classroom**

Sponsored by CHAS, Cosponsored by CCS and CHED

**WEDNESDAY MORNING****Chemical Safety in Public Policy**

Sponsored by CHAS, Cosponsored by CCS

**WEDNESDAY AFTERNOON****Biochemistry of Cannabis**

Sponsored by CHAS, Cosponsored by CCS and SCHB

**CWD****Committee on Chemists with Disabilities**

J. Johnston, Program Chair

**MONDAY MORNING****Building Opportunities in the Chemical Profession: Exploiting the Power of Diversity & Inclusion**

Sponsored by PROF, Cosponsored by CMA and CWD

**MONDAY AFTERNOON****Americans with Disabilities Act & Accommodations in the Laboratory**

Sponsored by CHAS, Cosponsored by CCS and CWD

**CORP****Committee on Corporation Associates**

D. Grob Schmidt, Program Chair

**TUESDAY MORNING****Safety & Ethics in our Chemical Community**

Sponsored by CHAS, Cosponsored by CCS, CHAL, CHED, CORP, ETHC and SCHBCEPA

**CEPA****Committee on Economic and Professional Affairs**

R. Ewing, Program Chair

**SUNDAY AFTERNOON****Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation**

Sponsored by PRES, Cosponsored by CEPA, COMSCI, IAC‡, MPPG and PROF

**MONDAY MORNING****Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation**

Sponsored by PRES, Cosponsored by CEPA, COMSCI, IAC‡, MPPG and PROF

**CEI****Committee on Environmental Improvement**

C. Middlecamp, Program Chair

**SUNDAY MORNING****Nanotechnology for Sustainable Agriculture & Food Systems**

Sponsored by ENVR, Cosponsored by AGRO and CEI

**Green Chemistry Education: By the People & for the People**

Sponsored by CHED, Cosponsored by CEI

**Innovative Materials & Technologies for Environmental Sustainability****Approaches for Sustainable Metal Recovery & Removal**

Sponsored by ENVR, Cosponsored by CEI

**Functional Renewable Polymers**

Sponsored by POLY, Cosponsored by CEI

**SUNDAY AFTERNOON****Green Chemistry Education: By the People & for the People**

Sponsored by CHED, Cosponsored by CEI

**Innovative Materials & Technologies for Environmental Sustainability****Approaches for Sustainable Metal Recovery & Removal**

Sponsored by ENVR, Cosponsored by CEI

**Functional Renewable Polymers**

Sponsored by POLY, Cosponsored by CEI

**MONDAY MORNING****Chemistry of the People, by the People, for the People**

Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG

**Innovative Materials & Technologies for Environmental Sustainability****Approaches for Water Disinfection & Removal of Emerging Contaminants**

Sponsored by ENVR, Cosponsored by CEI

**Advances & Challenges in Food-Energy-Water Nexus**

Sponsored by ENVR, Cosponsored by AGRO and CEI

**Functional Renewable Polymers**

Sponsored by POLY, Cosponsored by CEI

**Synthetic Biology & Genetically Modified Organisms****Evolution or Revolution? Policy Challenges & Opportunities in the Biotechnology Golden Age**

Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI‡ and COMSCI

**MONDAY AFTERNOON****Chemistry of the People, by the People, for the People**

Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG

**Innovative Materials & Technologies for Environmental Sustainability****Approaches for Water Disinfection & Removal of Emerging Contaminants**

Sponsored by ENVR, Cosponsored by CEI

**Advances & Challenges in Food-Energy-Water Nexus**

Sponsored by ENVR, Cosponsored by AGRO and CEI

**Functional Renewable Polymers***Sponsored by POLY, Cosponsored by CEI***Synthetic Biology & Genetically Modified Organisms****The Debate: What Role Should We Play in the Biotechnology Era?***Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI‡ and COMSCI***TUESDAY MORNING****Chemistry of the People, by the People, for the People***Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG***Chemistry, Safety & Technology of GMO Foods***Sponsored by AGFD, Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡***Innovative Materials & Technologies for Environmental Sustainability****Approaches for Renewable Energy & Water Resources***Sponsored by ENVR, Cosponsored by CEI***Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications***Sponsored by ENVR, Cosponsored by CEI, HIST and NOM***Water Purification Systems***Sponsored by ENVR, Cosponsored by CEI***TUESDAY AFTERNOON****Chemistry of the People, by the People, for the People***Sponsored by CHED, Cosponsored by ANYL, CEI and MPPG***Green Chemistry Innovations & Opportunities in Industry for Young Professionals***Sponsored by I&EC, Cosponsored by CATL, CEI, CHAS, ENFL, ENVR, ORGN, POLY, PROF and YCC***Chemistry, Safety & Technology of GMO Foods***Sponsored by AGFD, Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡***Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications***Sponsored by ENVR, Cosponsored by CEI, HIST and NOM***Water Purification Systems***Sponsored by ENVR, Cosponsored by CEI***TUESDAY EVENING****Functional Renewable Polymers***Sponsored by POLY, Cosponsored by CEI***WEDNESDAY MORNING****Chemistry, Safety & Technology of GMO Foods***Sponsored by AGFD, Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡***Citizens First! Using Real-World Contexts for Engaging Students in Learning Chemistry***Sponsored by CHED, Cosponsored by CEI and MPPG***WEDNESDAY AFTERNOON****Chemistry, Safety & Technology of GMO Foods***Sponsored by AGFD, Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡***Citizens First! Using Real-World Contexts for Engaging Students in Learning Chemistry***Sponsored by CHED, Cosponsored by CEI and MPPG***WEDNESDAY EVENING****Advances & Challenges in Food-Energy-Water Nexus***Sponsored by ENVR, Cosponsored by AGRO and CEI***Innovative Materials & Technologies for Environmental Sustainability***Sponsored by ENVR, Cosponsored by CEI***Nanotechnology for Sustainable Agriculture & Food Systems***Sponsored by ENVR, Cosponsored by AGRO and CEI***Water Purification Systems***Sponsored by ENVR, Cosponsored by CEI***ETHC****Committee on Ethics***K.. Vitense, Program Chair***TUESDAY MORNING****Safety & Ethics in our Chemical Community***Sponsored by CHAS, Cosponsored by CCS, CHAL, CHED, CORP, ETHC and SCHB***WEDNESDAY MORNING****Who Should Regulate Pesticides in Our Food?***Sponsored by AGRO, Cosponsored by AGFD and ETHC***WEDNESDAY AFTERNOON****Who Should Regulate Pesticides in Our Food?***Sponsored by AGRO, Cosponsored by AGFD and ETHC***THURSDAY MORNING****Who Should Regulate Pesticides in Our Food?***Sponsored by AGRO, Cosponsored by AGFD and ETHC***THURSDAY AFTERNOON****Who Should Regulate Pesticides in Our Food?***Sponsored by AGRO, Cosponsored by AGFD and ETHC***IAC****International Activities Committee***E. Contis, Program Chair***SUNDAY MORNING****Chemical Sciences & Human Rights***Sponsored by PRES, Cosponsored by IAC‡***SUNDAY AFTERNOON****Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation***Sponsored by PRES, Cosponsored by CEPA, COMSCI, IAC‡, MPPG and PROF***Building International Communities***Sponsored by PRES, Cosponsored by IAC‡***MONDAY MORNING****Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation***Sponsored by PRES, Cosponsored by CEPA, COMSCI, IAC‡, MPPG and PROF***MONDAY AFTERNOON****Broadening Participation in Global Chemistry Experiences: Why Engaging Diverse Chemistry Communities in Global Research is Critical***Sponsored by PRES, Cosponsored by IAC and PROF***LSAC****Committee on Local Section Activities***M. Rudd, Program Chair***MONDAY AFTERNOON****Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community***Sponsored by PROF, Cosponsored by CHED, CMA, D&I, LSAC, SCHB and YCC***CMA****Committee on Minority Affairs***J. Sarquis, Program Chair***OTHER SYMPOSIA OF INTEREST:****New Trends in Organometallic Chemistry Leading to Organic Synthesis** (see ORGN, Mon)**All the People, All the Paths in the Chemical Sciences** (see WCC, Mon)**Diversity and Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community** (see PROF, Mon)**SOCIAL EVENTS:****Reception, 5:00 PM:** Sun**Luncheon, 11:30 AM:** Mon**MONDAY MORNING****Building Opportunities in the Chemical Profession: Exploiting the Power of Diversity & Inclusion***Sponsored by PROF, Cosponsored by CMA and CWD***All the People, All the Paths in the Chemical Sciences***Sponsored by WCC, Cosponsored by CMA, MPPG, PROF‡ and YCC***MONDAY AFTERNOON****Section A**Philadelphia Marriott Downtown  
Franklin 6**Social & Chemical Science of Diversity Equity***Cosponsored by CHED and PROF**R. Hernandez, Organizer**S. Iyer, D. Stallings, Organizers, Presiding***1:15 CMA 1.** Inclusive education at Stony Brook University. *N.S. Sampson***1:35 CMA 2.** Enabling diversity conversations with department chairs through OXIDE. *S. Iyer, D. Stallings, R. Hernandez***1:55 CMA 3.** Getting to Lake Wobegon: The role of departments in diversifying PhD chemistry graduates. *S.L. Laursen***2:15 CMA 4.** Unconscious bias against women in STEM. *K.G. Fleming***2:35** Intermission.**2:50 CMA 5.** Learning from OXIDE: Experiences of a department chair. *W.B. Tolman***3:10 CMA 6.** Diversity matters. *S. Prince***3:30 CMA 7.** Model(ing) chemistry departments: A computational exploration of diversity & discovery. *M.M. Franci***3:50 CMA 8.** Pipeline for students with disabilities in post-secondary education. Where are the doctorates? *K.S. Booksh, S. Rozovsky, J. Smith***Diversity & Inclusion in STEM: LGBTQ + Safe Zone Training for the Chemistry Community***Sponsored by PROF, Cosponsored by CHED, CMA, D&I, LSAC, SCHB and YCC**‡Cooperative Cosponsorship*

**TUESDAY AFTERNOON****New Trends in Organometallic Chemistry Leading to Organic Synthesis**

Sponsored by ORGN, Cosponsored by CMA† and INOR

**NTS****Committee on Nomenclature, Terminology & Symbols**

M. Mosher, Program Chair

**TUESDAY MORNING****Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications**

Sponsored by ENVR, Cosponsored by CEI, HIST and NOM

**TUESDAY AFTERNOON****Elements Old & New: Discoveries, Developments, Challenges & Environmental Implications**

Sponsored by ENVR, Cosponsored by CEI, HIST and NOM

**COMSCI****Committee on Science**

A. Meyers, Program Chair

**SUNDAY AFTERNOON****Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation**

Sponsored by PRES, Cosponsored by CEPA, COMSCI, IAC‡, MPPG and PROF

**MONDAY MORNING****Section A**

Pennsylvania Convention Center  
Room 111B

**Forensics: The Crossroads of Science, Policy & Justice**

Cosponsored by ANYL, MPPG and PRES

8:30 Introductory Remarks. A. Meyers

8:45 **NOM 1.** Forensic science reform policy. J. Butler

9:10 **NOM 2.** Forensic science education. S. Bell

9:35 **NOM 3.** Forensic anthropology. D.W. Steadman

10:00 Intermission.

10:15 **NOM 4.** Forensic entomology. T. Stamper

10:40 **NOM 5.** Forensic microscopy. D. Purcell

11:05 **NOM 6.** The future of forensic science. P. DeForest

11:30 Panel Discussion.

**Chemistry in the U.S. & China: Current & Future States of Shared Scientific Interests & Opportunities for Cooperation**

Sponsored by PRES, Cosponsored by CEPA, COMSCI, IAC‡, MPPG and PROF

**Synthetic Biology & Genetically Modified Organisms****Evolution or Revolution? Policy Challenges & Opportunities in the Biotechnology Golden Age**

Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI‡ and COMSCI

**MONDAY AFTERNOON****Synthetic Biology & Genetically Modified Organisms****The Debate: What Role Should We Play in the Biotechnology Era?**

Sponsored by ENVR, Cosponsored by AGFD, AGRO, CEI‡ and COMSCI

**TUESDAY MORNING****Chemistry, Safety & Technology of GMO Foods**

Sponsored by AGFD, Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡

**TUESDAY AFTERNOON****Chemistry, Safety & Technology of GMO Foods**

Sponsored by AGFD, Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡

**WEDNESDAY MORNING****Chemistry, Safety & Technology of GMO Foods**

Sponsored by AGFD, Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡

**WEDNESDAY AFTERNOON****Chemistry, Safety & Technology of GMO Foods**

Sponsored by AGFD, Cosponsored by AGRO, CEI‡, COMSCI and ENVR‡

**D&I****Diversity & Inclusion Advisory Board**

K. Booksh, Program Chair

**MONDAY AFTERNOON****Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community**

Sponsored by PROF, Cosponsored by CHED, CMA, D&I, LSAC, SCHB and YCC

**SOCED****Society Committee on Education**

M. Boucher, Program Chair

**OTHER SYMPOSIA OF INTEREST:**

**Undergraduate Research Posters** (see CHED Mon)

**SOCIAL EVENTS:**

**Networking Basics for Students**, 9:00 AM: Sun

**Graduate School Reality Check, Part One—Getting In**, 10:30 AM: Sun

**Graduate School Reality Check, Part Two — You're In, Now What?** 12:00 PM: Sun

**Networking Social with Graduate School Recruiters**, 2:00 PM: Sun

**The Science Behind Pixar**, 6:00 PM: Sun

**Chemists are Everywhere! The Spectrum of Careers in Chemistry**, 9:00 AM: Mon

**What it Means to be "We the Chemists" Today**, 10:15 AM: Mon

**Eminent Scientist Luncheon**, 11:30 AM: Mon

**Student Speed Networking with Chemistry Professionals**, 4:15 PM: Mon

**SUNDAY MORNING****High School Program**

Sponsored by CHED, Cosponsored by SOCED

**Undergraduate Research Papers**

Sponsored by CHED, Cosponsored by SOCED

**SUNDAY AFTERNOON****High School Program**

Sponsored by CHED, Cosponsored by SOCED

**Undergraduate Research Papers**

Sponsored by CHED, Cosponsored by SOCED

**MONDAY MORNING****Section A**

Sheraton Philadelphia Downtown Hotel  
Liberty Ballroom D

**Eminent Scientist Lecture**

Cosponsored by INOR

11:30 **SOCED 1.** How to make plastic transistors & solar cells. T.J. Marks

**MONDAY AFTERNOON****Undergraduate Research Posters****Agricultural & Food Chemistry**

Sponsored by CHED, Cosponsored by AGFD and SOCED

**Undergraduate Research Posters****Analytical Chemistry**

Sponsored by ANYL, Cosponsored by SOCED

**Undergraduate Research Posters****Biochemistry**

Sponsored by CHED, Cosponsored by BIOL and SOCED

**Undergraduate Research Posters****Chemical Education**

Sponsored by CHED, Cosponsored by SOCED

**Undergraduate Research Posters****Computational Chemistry**

Sponsored by CHED, Cosponsored by COMP and SOCED

**Undergraduate Research Posters****Environmental Chemistry**

Sponsored by CHED, Cosponsored by ENVR and SOCED

**Undergraduate Research Posters****Green Chemistry & Sustainability**

Sponsored by CHED, Cosponsored by SOCED

**Undergraduate Research Posters****Inorganic Chemistry**

Sponsored by CHED, Cosponsored by INOR and SOCED

**Undergraduate Research Posters****Medicinal Chemistry**

Sponsored by CHED, Cosponsored by MEDI and SOCED

**Undergraduate Research Posters****Nanochemistry**

Sponsored by CHED, Cosponsored by SOCED

**Undergraduate Research Posters****Organic Chemistry**

Sponsored by CHED, Cosponsored by SOCED

**Undergraduate Research Posters****Physical Chemistry**

Sponsored by CHED, Cosponsored by SOCED

**Undergraduate Research Posters****Polymer Chemistry**

Sponsored by CHED, Cosponsored by PMSE, POLY and SOCED

**MONDAY EVENING****Successful Student Chapters**

Sponsored by CHED, Cosponsored by SOCED



## WCC

## Women Chemists Committee

K. Wozniak, Program Chair

## OTHER SYMPOSIA OF INTEREST:

**Chemical Angel Network: Chemists Investing in Chemical Companies** (see PROF, Sun)

**Building Opportunities in the Chemical Profession: Exploiting the Power of Diversity & Inclusion** (see PROF, Mon)

**Diversity & Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community** (see PROF, Mon)

## SOCIAL EVENTS:

**Women in Chemical Enterprise Breakfast**, 7:30 AM: Mon

**Increasing Successful Awards Nominations from Underrepresented Groups Breakfast**, 9:15 AM: Tue

**Eli Lilly Travel Award Poster Session**, 11:00 AM: Tue

**Luncheon**, 12:00 PM: Tue

**Just Cocktails Reception**, 4:00 PM: Tue

## SUNDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 120C

## WCC Merck Research Award Symposium

*Cosponsored by ANYL, BIOL, COMP, MEDI, MPPG, ORGN, POLY and PROF*

K. M. George, Organizer

A. M. Baijia, Organizer, Presiding

R. Ruck, Presiding

8:25 Introductory Remarks.

8:30 WCC 1. Two-dimensional electronic spectroscopy reveals ultrafast dynamics in photosynthetic bacteria. S.C. Massey, P.D. Dahlberg, P. Ting, C. Hunter, G.S. Engel

8:50 WCC 2. Resurfaced polycyclic nanobodies: A potentially general scaffold for intracellularly targeted protein discovery. V.J. Bruce, B. McNaughton, M. Lopez-Islas

9:10 WCC 3. Reaction-based strategies for imaging biological iron. A. Aron, M.C. Heffern, M.N. Vander Wal, C.J. Chang

9:30 WCC 4. Elucidating the melting of DNA in the presence of high local oligonucleotide density on the surface of DNA-functionalized nanoparticles. L. Fong, K.L. Kohlstedt, C.A. Mirkin, G.C. Schatz

9:50 WCC 5. Self-assembly of brush block copolymers to nanostructured materials. A. Chang, C. Bates, M. Matsen, R.H. Grubbs

10:10 Intermission.

10:20 WCC 6. Arresting AIDS and curing Hepatitis C: A career in computer-aided drug design (CADD). M. Holloway

11:00 WCC 7. Streamlined synthesis of complex cyclopeptides. S.M. Batiste, J.N. Johnston

11:20 WCC 8. Nickel-catalyzed activation of Amide C–N bonds. E.L. Baker, N.K. Garg

11:40 WCC 9. Strategies toward remote C(sp<sup>3</sup>)-H oxidation of aliphatic amines. M. Lee, M.S. Sanford

12:00 Concluding Remarks.

## MONDAY MORNING

## Section A

Pennsylvania Convention Center  
Room 120C

## All the People, All the Paths in the Chemical Sciences

*Cosponsored by CMA, MPPG, PROF and YCC*

M. J. Shultz, Organizer, Presiding

L. S. Sremaniak, Presiding

9:30 Introductory Remarks.

9:35 WCC 10. Art of the unknown: Chemistry in a museum environment. C.M. Schmidt Patterson

9:47 WCC 11. From academia to automated parallel reaction discovery and optimization. K. Tran

9:59 WCC 12. Navigating change throughout your career. M. Johnson

10:11 WCC 13. Regulatory: An alternate career path in the chemical enterprise. M.M. Rogers

10:23 Panel Discussion.

10:40 Intermission.

10:55 Introductory Remarks.

11:00 WCC 14. Finding your identity as a scientist in the real world. M.C. Thurnauer

11:12 WCC 15. Down and almost out: An unexpected path to the presidency! C.T. Hunt

11:24 WCC 16. My life and career design & experiment. M. Williams

11:36 WCC 17. Enjoying the journey on a road less traveled. S.B. Butts

11:48 Panel Discussion.

12:05 Concluding Remarks.

## TUESDAY AFTERNOON

## Women in Innovation: Science Policy &amp; Government

*Sponsored by PROF, Cosponsored by BMGT, SCHB and WCC*

## YCC

## Younger Chemists Committee

D. Williams, Program Chair

## SOCIAL EVENTS:

**Social Hour**, 5:00 PM: Mon

## BUSINESS MEETINGS:

**Business Meeting**, 8:00 AM: Sat

**Business Meeting**, 8:00 AM: Sun

## SUNDAY AFTERNOON

## Section A

Philadelphia Marriott Downtown  
Franklin 7

## Getting Your First Industrial Job

*Cosponsored by PROF*

M. Grandbois, D. Williams, Organizers

2:00 Introductory Remarks.

2:05 YCC 1. My career path at The Dow Chemical Co. D. Williams

2:15 YCC 2. Development chemist at International Flavors and Fragrance, Inc. I. Sasimovich

2:25 YCC 3. Account manager at Aerotek Scientific. A. Griffin

2:35 YCC 4. University recruitment specialist & program manager at BASF. J. Cerasani

2:45 YCC 5. Project development at Novartis. S.M. Canham

2:55 YCC 6. Panel Discussion. M. Grandbois

3:55 Concluding Remarks.

## MONDAY MORNING

## All the People, All the Paths in the Chemical Sciences

*Sponsored by WCC, Cosponsored by CMA, MPPG, PROF and YCC*

## MONDAY AFTERNOON

## Section A

Philadelphia Marriott Downtown  
Franklin 7

## Chemistry of the City of Brotherly Love

*Cosponsored by PROF*

P. Wangtrakuldee, D. Williams, Organizers

1:00 Introductory Remarks.

1:05 YCC 7. Philadelphia, the history of chemistry, & the Chemical Heritage Foundation. R.S. Brashear

1:25 YCC 8. Collaborations in cultural heritage science. A.F. Lagalante

1:45 YCC 9. From textiles to metals: Manufacturing in Philadelphia. S. Zublick

2:05 YCC 10. Art conservation through Dow. M.H. Keefe

2:25 Intermission.

2:35 YCC 11. Watching paint age. M. Linsen, M.H. Keefe, M. Clark, J. Calderaio, J. Reffner

2:55 YCC 12. Engaging employees for impact in STEM education throughout greater Philadelphia. J. Maglaty

3:15 YCC 13. Moulder Center for Drug Discovery Research: A fully integrated drug discovery center in the heart of Philadelphia. B.E. Blass

3:35 YCC 14. Chemistry of Philadelphia's fine spirits. R. Cassell

3:55 Concluding Remarks.

## Diversity &amp; Inclusion in STEM: LGBTQ+ Safe Zone Training for the Chemistry Community

*Sponsored by PROF, Cosponsored by CHED, CMA, D&I, LSAC, SCHB and YCC*

## TUESDAY AFTERNOON

## Section A

Philadelphia Marriott Downtown  
Franklin 7

## Global Careers in Chemistry

*Cosponsored by PROF*

P. Wangtrakuldee, D. Williams, Organizers

2:00 Introductory Remarks.

2:05 YCC 15. Pathways to success: Greencards & work visas for young chemists. W.A. Stock

2:25 YCC 16. Leap from grad student/postdoc to an academic faculty position. J. Stec

2:45 YCC 17. Reflections on a meaningful industrial career in chemistry. Y. Du

3:05 Panel Discussion.

3:50 Intermission.

3:55 YCC 18. Journey across the Atlantic: From an international student to an industrial chemist. D.N. Haase

4:15 YCC 19. Chemistry and kimchi: My Korean research experience. M. Grandbois

4:35 YCC 20. International career opportunity for US and German chemists through research in Germany. M. Behnke

5:05 YCC 21. International presence in the Younger Chemists Committee: Building networks & cultivating opportunities. C. Dunne

5:25 Concluding Remarks.

## Green Chemistry Innovations &amp; Opportunities in Industry for Young Professionals

*Sponsored by I&EC, Cosponsored by CATL, CEI, CHAS, ENFL, ENVR, ORGN, POLY, PROF and YCC*

Technical program information known at press time.

The official technical program for the 252nd ACS National Meeting is available at:

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# EXPOSITION HIGHLIGHTS

## SEE WHAT'S NEW INSIDE THE

**EXPOSITION.** Visit the ACS National Exposition at the PACC, Halls A/B, from Sunday, August 21, through Tuesday, August 23. The show hours will be Sunday, 6:00 to 8:30 PM, and Monday and Tuesday, 9:00 AM to 5:00 PM.

Companies will showcase services, instruments, books, computer hardware, scientific software, and an array of chromatographic, lab, and safety equipment. Technical personnel will give demonstrations, answer questions, and discuss your needs and interests. You can also visit the ACS Career Fair Recruiters Row inside the exposition, where employers will showcase their products and services. Also, join us at the ACS Booth in the middle of the exposition floor, where ACS staff members will present the many benefits, services, products, and merchandise offered by ACS.

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Access the Online Exposition at [www.acs.org/Philadelphia2016](http://www.acs.org/Philadelphia2016) to learn more about exhibiting companies and to download product information that meets your needs.

**Free Exhibitor Workshops.** Free workshops will be hosted by exhibitors on the exposition floor and in private rooms inside the PACC. These workshops will introduce new products and services, build skills with specific tools and techniques, and highlight innovative applications that may improve your productivity.

**Presentations, Prizes & Special Events.** Don't forget to join us on Sunday from 6:00 to 8:30 PM for the Attendee Welcome Reception. Have an afternoon break while meeting the ACS president-elect candidates inside the exposition on Monday from 1:00 to 3:00 PM. Watch for tweets to visit the exposition for special prizes from Monday through Tuesday. Take another afternoon break on Tuesday from 3:00 to 5:00 PM and visit the exhibitors before the exposition closes.

Visit the Town Center from Sunday through Tuesday to connect with your colleagues. On Sunday, stop by the Town Center for the Division of Colloid (COLL) poster session from 6:00 to 8:00 PM and on Monday, the Division of Energy & Fuels (ENFL) poster session from 2:00 to 4:00 PM.

**Internet & Technology.** Use free Internet access, and leave messages for one another at the Meeting Mail terminals located throughout the exposition and PACC. Also, enjoy free Wi-Fi service inside the PACC.

**Admission Requirements & Expo-Only Registration.** Exposition admission is complimentary for all national meeting registrants; however, you are required to wear your badge. Individuals who want to visit the exhibits without registering for the technical component of the national meeting can obtain an expo-only badge for \$50. Students with school identification can obtain an expo-only badge for \$25. Registration can be handled online or in person at ACS Attendee Registration at the Pennsylvania Convention Center, Grand Hall.



ACS Exposition



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6TS, United Kingdom, 44 1284 728659, fax: 44 1284 728352, e-mail: [duncan.guthrie@vapourtec.com](mailto:duncan.guthrie@vapourtec.com), Internet: <http://www.vapourtec.com> Vapourtec manufacture two series of flow chemistry systems: · E-Series; an easy to use entry level system, capable of pumping organometallics, strong acids and slurries. · R-Series; a highly specified modular system with different pump options, capable of integration with other equipment to provide versatile automated flow chemistry. **1015**

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Spartan Student version 7  
Odyssey Instructor & Student version 5  
iSpartan  
Spartan Spectra & Properties Database

**Workrite Uniform Company**  
**Booth # 1308**  
Flame Resistant/Chem Splash Protection Lab  
Coat

**Wyatt Technology Corp.**  
**Booth # 1406**  
 $\mu$ DAWN  
DynaPro Plate Reader II  
DAWN HELEOS II  
Eclipse DualTec  
Mobius

**Xenocs SA**  
**Booth # 1229**  
Nano-inXider  
Xeuss 2.0

**Yamazen Science, Inc.**  
**Booth # 1233**  
TLC Reader  
AKROS Smart Flash  
WPrep Smart Flash  
ELSD for Flash Chromatography  
High resolution columns



## COMPANIES LISTED BY BROAD CATEGORIES

A more detailed product listing can be found by visiting the Virtual National Exposition at <http://www.acs.org/Philadelphia2016>. In addition to Meeting Mail stations in the convention center, product categories, along with companies supplying the products, can be searched using this free service.

## Academic & Educational Services

101	230
AAAPS (Amer Assoc. of Pharm Sci.)	402
ACS Career Navigator™	827
ACS Committee on Chemical Health & Safety	727
ACS Division of Small Chemical Businesses (SCHB)	333
ACS Education	827
Active Spectrum Inc.	436
Aldlab Chemicals, LLC	334
Axion Analytical Laboratories, Inc.	1739
B&W Tek	401
Barbakam Carbonless Lab Notebooks	636
Bio-Rad, Informatics Division	513
BioChromato	1102
Cambridge Crystallographic Data Ctr.	1120
CONFLEX Corp.	1116
Cresset	1927
Elsevier	632
Erlab, Inc.	1201
Extrel CMS	818
Frontiers	415
Galbraith Laboratories Inc.	1206
Gaussian	618
Geek Chic Designs	738
Getson & Schatz, P.C.	820
InfoChem GmbH	1019
Inte:Ligand GmbH	1616
IOP Publishing	236
Komplx Engineering, LLC	1339
Maruzen Co., Ltd.	814
MDPI AG Molecules	411
MicroLAB, Inc.	1321
Nananalysis Corp.	1300
Nanjing University	1836
National Nanotechnology Coordination Office	539
NIST	1119
Ocean Optics, Inc.	1427
Oxford University Press	901
PerkinElmer Informatics, Inc.	1020
Pine Research Instrumentation	418
Pittcon 2017	1436
Research In Germany	514
Research Square/American Journal Experts	517
Rigaku Americas Corp.	527
Royal Society of Chemistry	701
Scion Instruments	1603
Semichem	616
Showa Denko America Inc.	729
Specac, Ltd.	1336
Springer	501
Temple University School of Pharmacy	235
The Chemical Society of Japan	812
Top Hat	407
Vacuubrand, Inc.	1000
Vapourtec Ltd.	1015
Vernier Software & Technology	1001
W.W. Norton	808
Waters Corp.	726
Wavefunction, Inc.	508
Wiley	600
World Scientific Publishing	506

## Accessible Products

AdValue Technology	1517
Ansys Instruments Corp.	1605
Galbraith Laboratories Inc.	1206
Nananalysis Corp.	1300

Piercan USA Inc.	515
Rigaku Americas Corp.	527
W.W. Norton	808

## Analytical Research

Aldlab Chemicals, LLC	334
Ansys Instruments Corp.	1605
Applied Research & Photonics, Inc.	734
Asylum Research, an Oxford Instruments Company	1215
Axion Analytical Laboratories, Inc.	1739
B&W Tek	401
Bio-Logic USA, LLC	1527
Bio-Rad, Informatics Division	513
BioChromato	1102
Biolin Scientific	1010
Biosensing Instrument	537
Biotage	1519
Bruker	1313
BUCHI Corporation	326
CDS Analytical, LLC	1430
ChemHub, Inc.	638
CONFLEX Corp.	1116
Czitek	1204
Galbraith Laboratories Inc.	1206
Galchimia S.A.	535
Gaussian	618
Glas-Col	417
GVK Biosciences	532
Hidden Analytical Inc.	904
Hielscher Ultrasonics	1311
Hypha Discovery LTD	536
Journal of Biological Chemistry (ASBMB)	504
JRF Global	832
Komplx Engineering, LLC	1339
M. BRAUN, Inc.	1509
Macherey-Nagel Inc.	308
Magritek Inc.	1414
Malvern Instruments, Inc.	1600
Metrohm USA, Inc.	1218
Monsanto	405
Nananalysis Corp.	1300
NASA	1537
Netzsch Instruments North America, LLC	1611
New Era Enterprises	1106
NIST	1119
Ocean Optics, Inc.	1427
OriginLab Corp.	400
Park Systems, Inc.	809
Parr Instrument Co.	1101
Particle Sizing Systems	1302
PerkinElmer Informatics, Inc.	1020
PharmAgra Labs, Inc.	434
PIKE Technologies	1111
Pine Research Instrumentation	418
Postnova Analytics	1610
PROTO Manufacturing	327
PSS USA, Inc.	238
Rigaku Americas Corp.	527
Robertson Microlit Laboratories, Inc	1017
SciAps, Inc.	1434
Scion Instruments	1603
Semichem	616
Showa Denko America Inc.	729
Specac, Ltd.	1336
Teledyne Isco - Chromatography	719
Thermo Scientific	1327,1326
U.S. Army Research Laboratory	227
Vacuubrand, Inc.	1000
Waters Corp.	726
Wavefunction, Inc.	508
Wiley	600
WuXi AppTec (Shanghai) Co. Ltd.	628
Wyatt Technology Corp.	1406

## Business Management & Services

ACS Committee on Chemical Health & Safety	727
Century Associates	739

Frontier Scientific, Inc.	1013
Galbraith Laboratories Inc.	1206

## Career Development & Training

AAAPS (Amer Assoc. of Pharm Sci.)	402
ACS Career Navigator™	827
ACS Committee on Chemical Health & Safety	727
Axion Analytical Laboratories, Inc.	1739
Century Associates	739
Galbraith Laboratories Inc.	1206
Getson & Schatz, P.C.	820
Nanjing University	1836
National Nanotechnology Coordination Office	539
Pittcon 2017	1436
Research In Germany	514
Temple University School of Pharmacy	235

## Chemical Health & Safety

ACS Committee on Chemical Health & Safety	727
ACS Division of Small Chemical Businesses (SCHB)	333
Flow Sciences	1608
JRF Global	832
LABCONCO, Corp.	1305
National Nanotechnology Coordination Office	539
Polymer Advantage LLC	1438
SciAps, Inc.	1434
Scion Instruments	1603
Thermo Fisher Scientific	1335
Tyndale Company, Inc.	1429
Workrite Uniform Company	1308

## Chemicals / Reagents / Raw Materials

1-Material Inc.	232
Advanced ChemBlocks Inc.	519
Advanced Polymer Materials Inc.	336
AK Scientific, Inc.	339
Aldlab Chemicals, LLC	334
Apeiron Synthesis	316
Ark Pharm, Inc.	907
B&W Tek	401
Bellen Chemistry Co., Ltd.	1212
CEM Corp.	1418
ChemBridge Corp.	919
ChemHub, Inc.	638
CombiPhos Catalysts, Inc.	807
Defense Threat Reduction Agency	737
Frontier Scientific, Inc.	1013
Galbraith Laboratories Inc.	1206
Galchimia S.A.	535
Geek Chic Designs	738
HepatoChem Inc.	338
Hybrid Plastics	1737
Hypha Discovery LTD	536
Interchim Inc.	427
Johnson Matthey	320
JRF Global	832
Komplx Engineering, LLC	1339
Liverpool ChiroChem Ltd.	337
LKT Laboratories, Inc.	437
Metrohm USA, Inc.	1218
MilliporeSigma	900
Monsanto	405
MPD Chemicals	529
Oakwood Products Inc.	301
Oxchem Corporation	509
Particle Sizing Systems	1302
Thermo Fisher Scientific	1335
Pharma Resources (Shanghai) Co., Ltd.	1931
Richman Chemical Inc.	1332
Rigaku Americas Corp.	527
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Spectrum Chemical Mfg Corp.	811
SpiroChem AG	730
Strem Chemicals	908
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Synthonix	1433
U.S. Army Research Laboratory	227
Waters Corp.	726
WuXi AppTec (Shanghai) Co. Ltd.	628

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AGI USA Inc.	1115
Agilent Technologies	311
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Anasys Instruments Corp.	1605
Anton Paar USA	1627
Applied Research & Photonics, Inc.	734
Asahi Spectra Co., Ltd.	533
Asylum Research, an Oxford Instruments Company	1215
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BioChromato	1102
Biolin Scientific	1010
Biotage	1519
BrandTech Scientific	815
Bruker	1313
BUCHI Corporation	326
Camag Scientific, Inc.	1726
CDS Analytical, LLC	1430
CEM Corp.	1418
Chemglass Life Sciences	1501
Chemurx Inc.	432
CONFLEX Corp.	1116
Cresset	1927
Czitek	1204
Edinburgh Instruments	626
Erlab, Inc.	1201
Extrel CMS	818
Flow Sciences	1608
Formulation USA	1604
Galbraith Laboratories Inc.	1206
Gallagher Fluid Seals Inc.	731
Gamry Instruments	801
GERSTEL Inc.	314
Glas-Col	417
Harvard Apparatus	1211
Heidolph North America	526
HepatoChem Inc.	338
Hidden Analytical Inc.	904
Hielscher Ultrasonics	1311
IKA Works, Inc.	1301
Interchim Inc.	427
J-KEM Scientific	914
Japan Analytical Industry Co. Ltd.	239
JASCO	1004
JULABO	1615,1614
Kimble Chase LLC	1112
Kinesis	805
KNF Neuberger	1626
LABCONCO, Corp.	1305
M. BRAUN, Inc.	1509
Magritek Inc.	1414
Malvern Instruments, Inc.	1600
Manta Instruments Inc.	1607
Maruzen Co., Ltd.	814
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MicroLAB, Inc.	1321
MilliporeSigma	900
Nanalysis Corp.	1300
National Nanotechnology Coordination Office	539
Netszch Instruments North America, LLC	1611
New Era Enterprises	1106
OLIS, Inc.	1107
OPOTEK Inc.	1618
Park Systems, Inc.	809
Parr Instrument Co.	1101

Particle Sizing Systems	1302
PASCO scientific	1202
Pfeiffer Vacuum Inc.	1307
Piercan USA Inc.	515
Pine Research Instrumentation	418
Polymer Advantage LLC	1438
Postnova Analytics	1610
PROTO Manufacturing	327
Proton OnSite	1007
PSS USA, Inc.	238
Quantachrome Corp.	1214
Rigaku Americas Corp.	527
Robertson Microлит Laboratories, Inc	1017
RT Instruments, Inc.	1601
Scion Instruments	1603
Shimadzu Scientific Instruments Inc.	709
Showa Denko America Inc.	729
Sorbent Technologies	521
Specac, Ltd.	1336
StellarNet Inc.	426
Supercritical Fluid Technologies	1404
Surface Measurement Systems	317
TA Instruments	1515
Teledyne Isco - Chromatography	719
ThalesNano Nanotechnology Inc.	1426
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Thinky USA Inc.	1014
Vacuubrand, Inc.	1000
Vacuum Atmospheres Co.	1314
Vacuum Technology Inc.	1400
Vapourtec Ltd.	1015
Vermier Software & Technology	1001
Waters Corp.	726
Workrite Uniform Company	1308
Wyatt Technology Corp.	1406
Xenocs SA	1229
Yamazen Science, Inc.	1233

## Other

AAAS/Science & Technology Policy Fellowship	335
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ACS Division of Small Chemical Businesses (SCHB)	333
ACS Green Chemistry Institute®	826
ACS Meetings & Expositions	827
ACS Member Insurance Program	827
ACS Membership	827
ACS Publications	827
ACS Web Strategy & Operations	827
Advanced Polymer Materials Inc.	336
AIP Publishing – The Journal of Chemical Physics	1231
Applied Research & Photonics, Inc.	734
Bentham Sciences Publishers Ltd.	431
Bio-Rad, Informatics Division	513
Cresset	1927
Galbraith Laboratories Inc.	1206
Geek Chic Designs	738
Getson & Schatz, P.C.	820
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JRF Global	832
Kudos	403
LabX Media Group	1304
Nat'l Academies Of Sciences Engineering and Medicine	905
National Nanotechnology Coordination Office	539
Nature Publishing Group	505
NIST	1119
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Polar King International Inc.	300
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Robertson Microлит Laboratories, Inc	1017
SCIENCE/AAAS	1306
Sorbent Technologies	521
Springer	501
Taylor & Francis Group	500
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1-Material Inc.	232
Ace Glass, Inc.	1727
Advanced ChemBlocks Inc.	519
Advanced Polymer Materials Inc.	336
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Scion Instruments	1603
Semichem	616
Showa Denko America Inc.	729
Software for Chemistry & Materials	627
Sorbent Technologies	521
SpiroChem AG	730
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Suven Discovery	1237
Suven Life Sciences Limited	307
Syrris Ltd.	1526
Temple University School of Pharmacy	235
UCT	306
Wilmad-LabGlass	629
WuXi AppTec (Shanghai) Co. Ltd.	628

## Scientific Computer & Data Management

Bio-Rad, Informatics Division	513
CAS	827
Chemical Computing Group	1719
CONFLEX Corp.	1116
Galbraith Laboratories Inc.	1206
Gaussian	618
InfoChem GmbH	1019
Inte:Ligand GmbH	1616
J-KEM Scientific	914
Molecular Knowledge Systems	438
OriginLab Corp.	400
PerkinElmer Informatics, Inc.	1020

Rigaku Americas Corp.	527
Schrodinger, Inc.	1410
Scion Instruments	1603
Semichem	616
SNKV Services, Inc.	736
Waters Corp.	726
Wavefunction, Inc.	508

### Technical Literature / Websites / Databases

Bio-Rad, Informatics Division	513
Galbraith Laboratories Inc.	1206
ICE Publishing	1933
InfoChem GmbH	1019
Inte:Ligand GmbH	1616
IOP Publishing	236
MDPI AG Molecules	411
National Nanotechnology Coordination Office	539
NIST	1119
Royal Society of Chemistry	701
Springer	501
Waters Corp.	726
Wiley	600
Wilmad-LabGlass	629
World Scientific Publishing	506

### Testing & Measurement Instrumentation

Advion	612
Agilent Technologies	311
Anton Paar USA	1627
Asahi Spectra Co., Ltd.	533
Bio-Logic USA, LLC	1527
Biosensing Instrument	537
Brookhaven Instruments Corp.	1018
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CEM Corp.	1418
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Galbraith Laboratories Inc.	1206
Gamry Instruments	801
Hidden Analytical Inc.	904
Hielscher Ultrasonics	1311
J-KEM Scientific	914
JEOL USA, Inc.	911
JULABO	1615,1614
Keysight Technologies (formerly Agilent)	803
Komplx Engineering, LLC	1339
Kudos	403
Magritek Inc.	1414
Malvern Instruments, Inc.	1600
Manta Instruments Inc.	1607

Metrohm USA, Inc.	1218
MicroLAB, Inc.	1321
Micromeritics Instrument Corp.	921
MilliporeSigma	900
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OptiGrate Corp.	1939
Park Systems, Inc.	809
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Particle Sizing Systems	1302
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PSS USA, Inc.	238
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RT Instruments, Inc.	1601
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Shimadzu Scientific Instruments Inc.	709
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StellarNet Inc.	426
TA Instruments	1515
Teledyne Isco - Chromatography	719
Thermo Scientific	1327,1326
Vermier Software & Technology	1001
Wyatt Technology Corp.	1406
Xenocs SA	1229





# Philadelphia

Interdivisional  
Poster Session  
& Mixer

# 2016

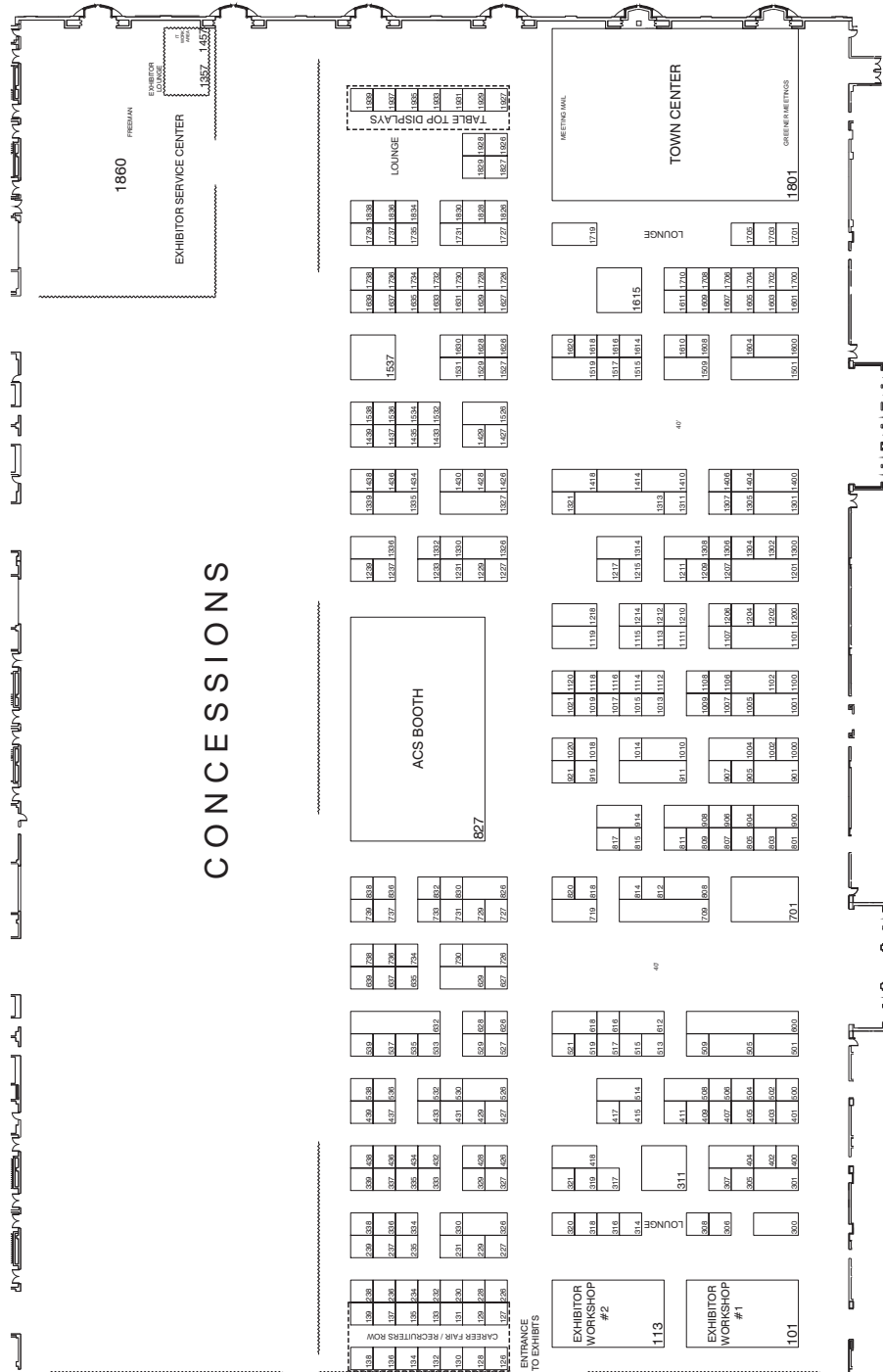
Monday, August 22nd  
Pennsylvania Convention Center  
Halls D & E from 8PM – 10PM

# SCI-MIX

Sci-Mix is a national meeting wide social event with colleagues meeting each other in a relaxed atmosphere combined with serious scientific poster discussions. Speak informally with presenters as they represent the best of what their division has to offer in terms of science and presentation. You can now access the Sci-Mix sessions on the free meeting mobile app. Download it today! It is free and all attendees are welcomed.

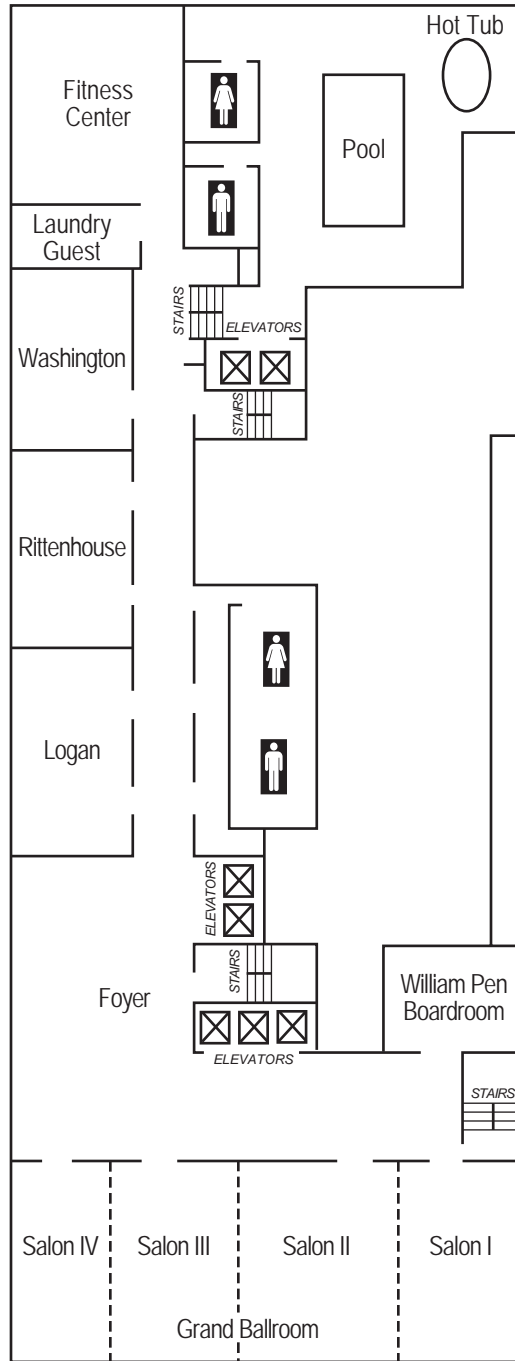
For more photo fun, prizes, and educational content, the Greener Meetings Team will be inside Sci-Mix. Join the fun...#ACSGreenerMeetings

252nd American Chemical Society National Exposition  
 Meeting - August 21 - 25, 2016  
 Exposition - August 21 - 23, 2016  
 Pennsylvania Convention Center - Halls A&B  
 Philadelphia, PA



# COURTYARD BY MARRIOTT

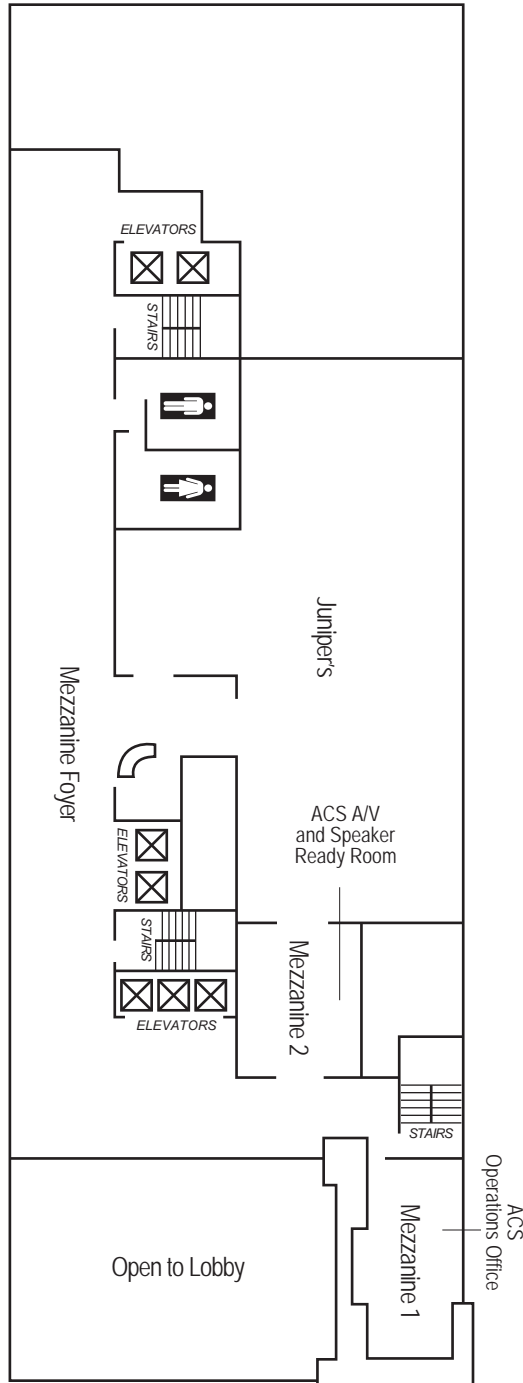
## First Floor





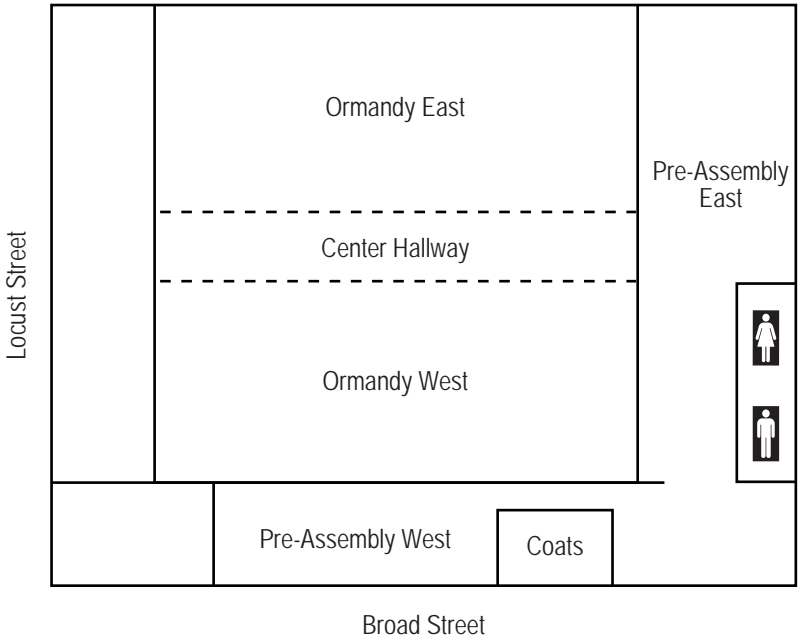
# COURTYARD BY MARRIOTT

## Mezzanine Level

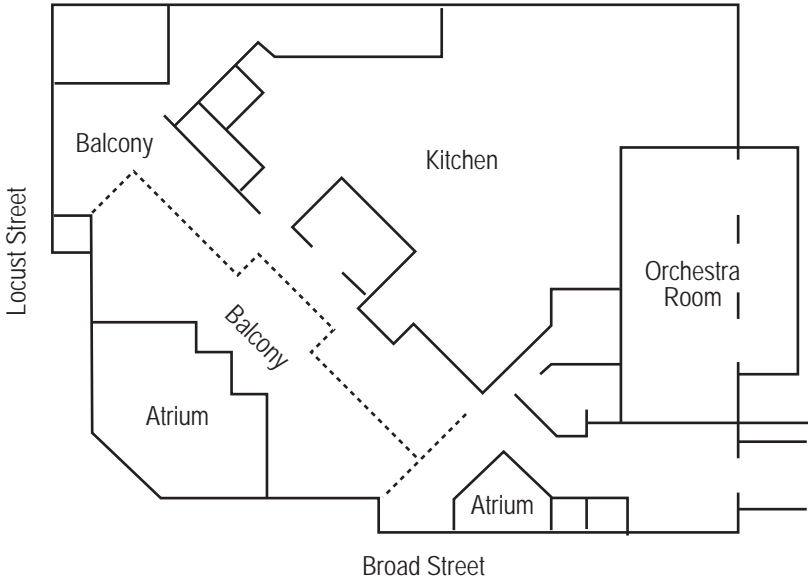


# DOUBLETREE HOTEL PHILADELPHIA

## Lobby Level

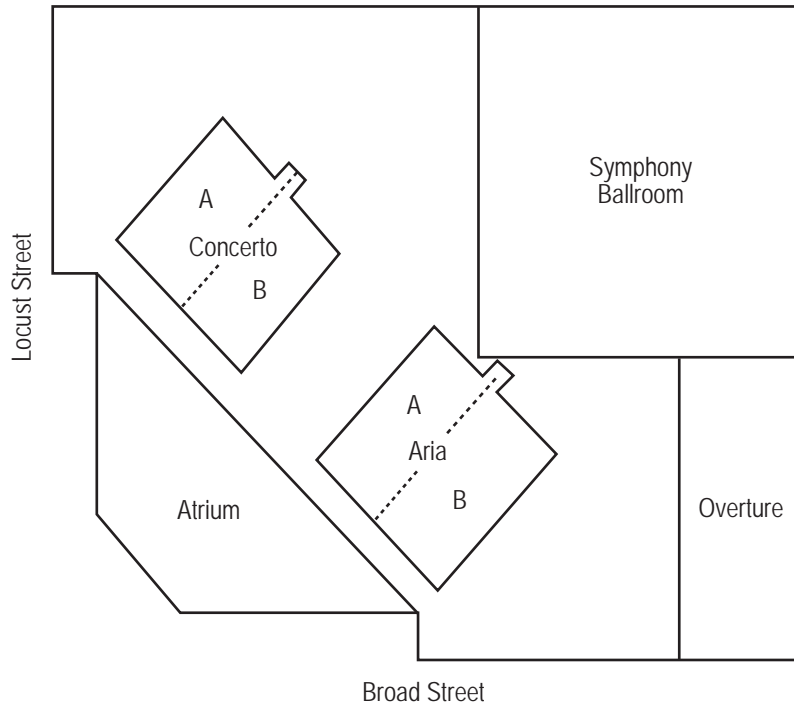


## Restaurant Level Second Floor

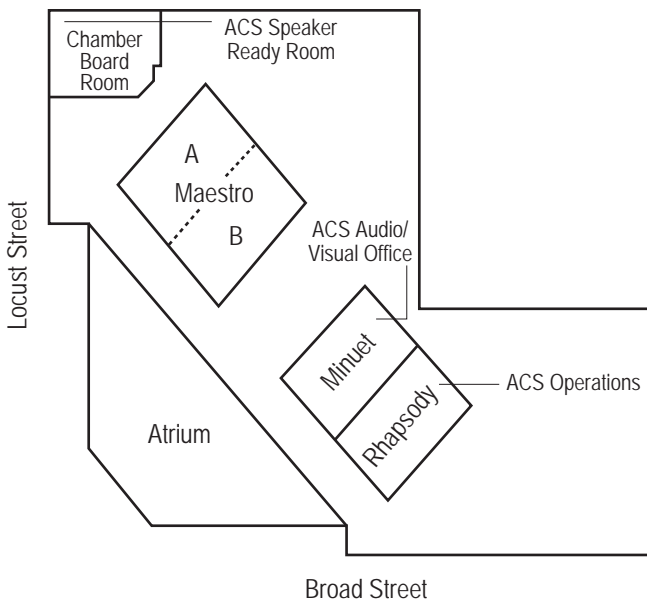


# DOUBLETREE HOTEL PHILADELPHIA

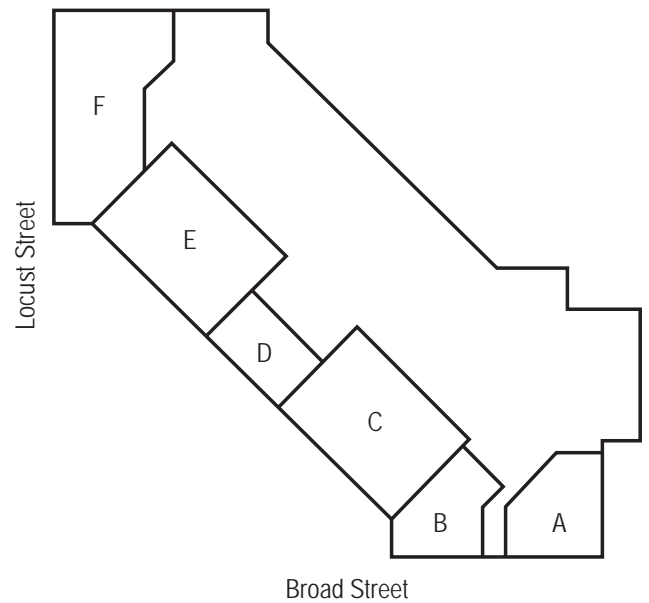
## Third Floor



## Fourth Floor

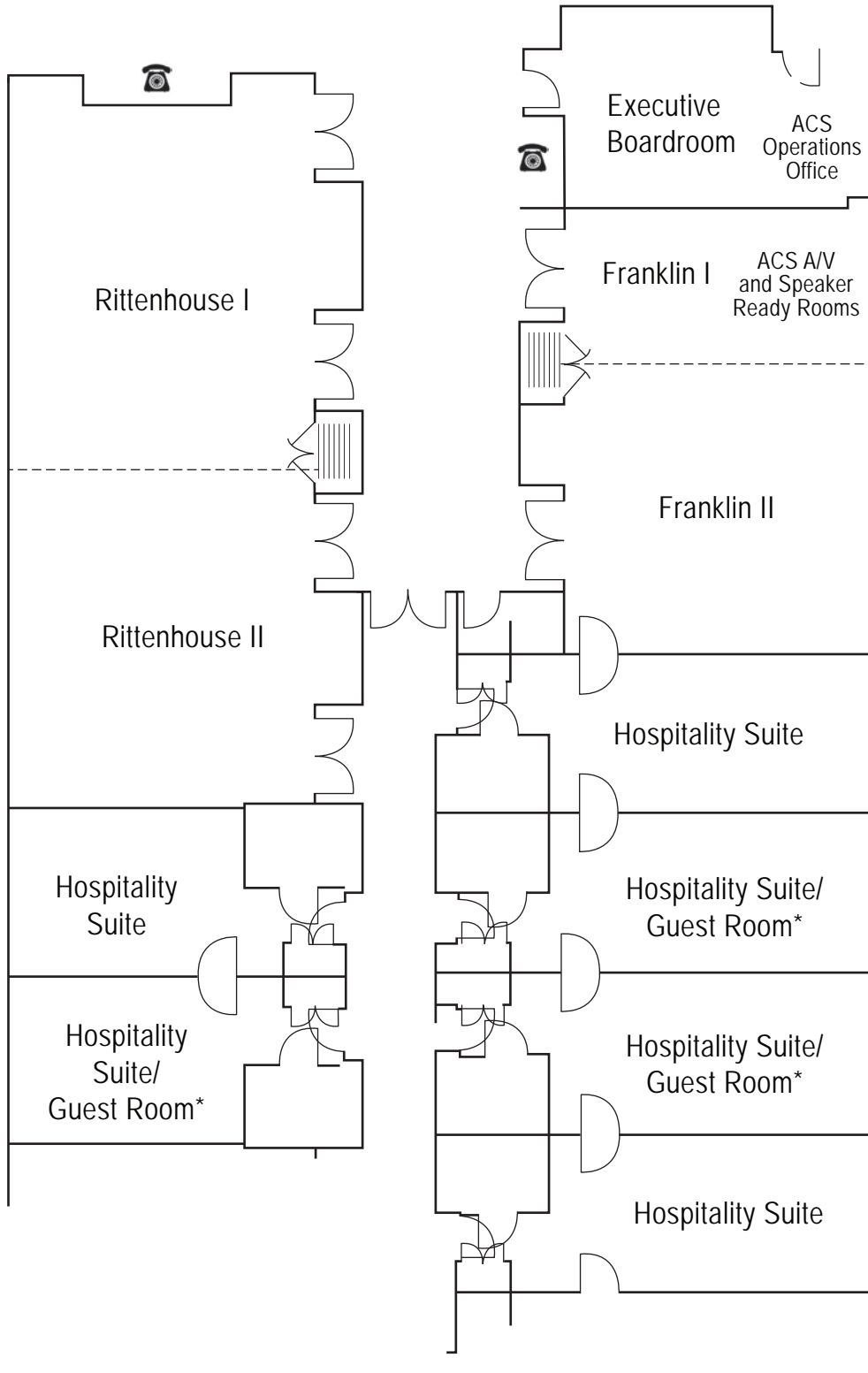


## Fifth Floor Assembly on Five

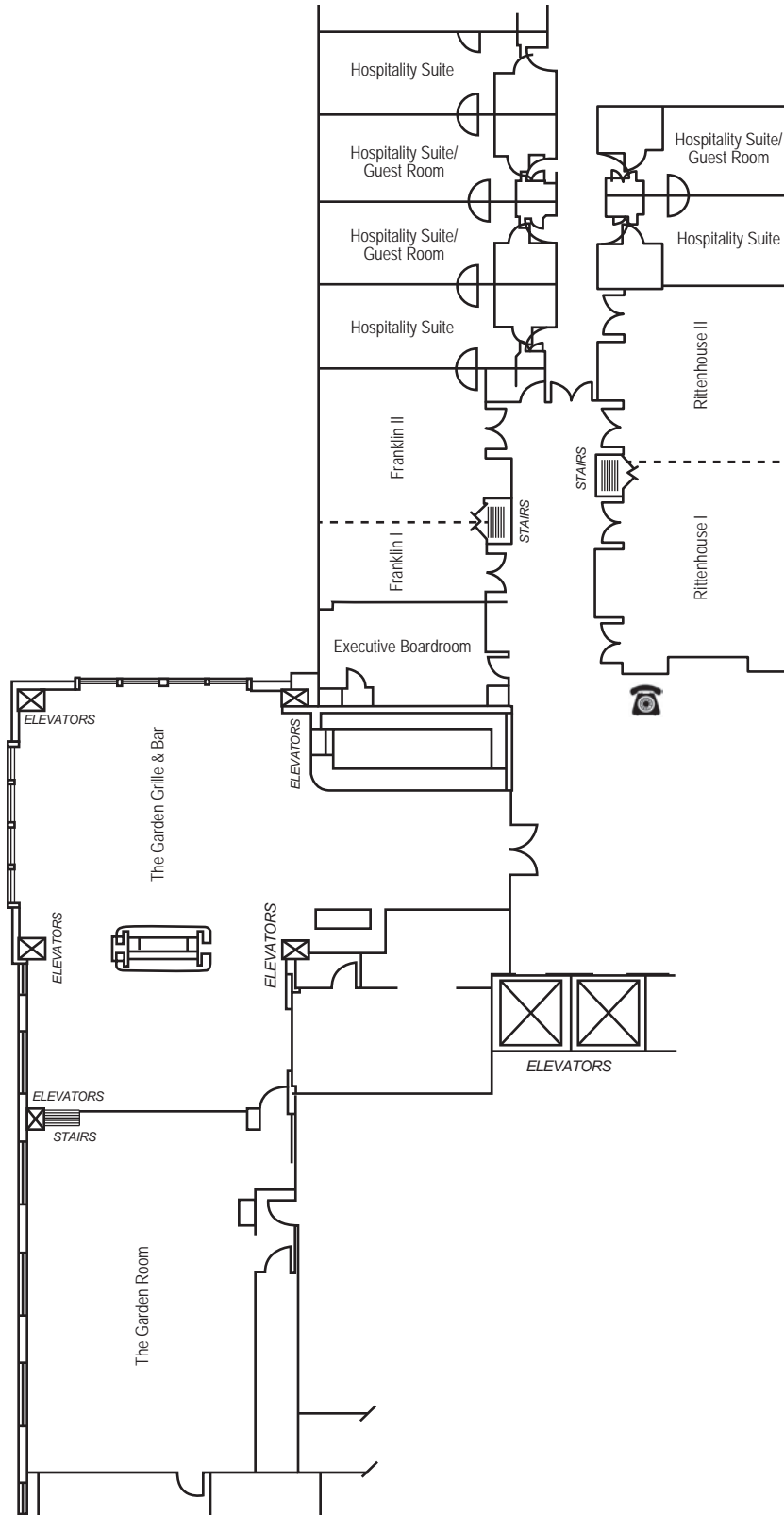




# HILTON GARDEN INN

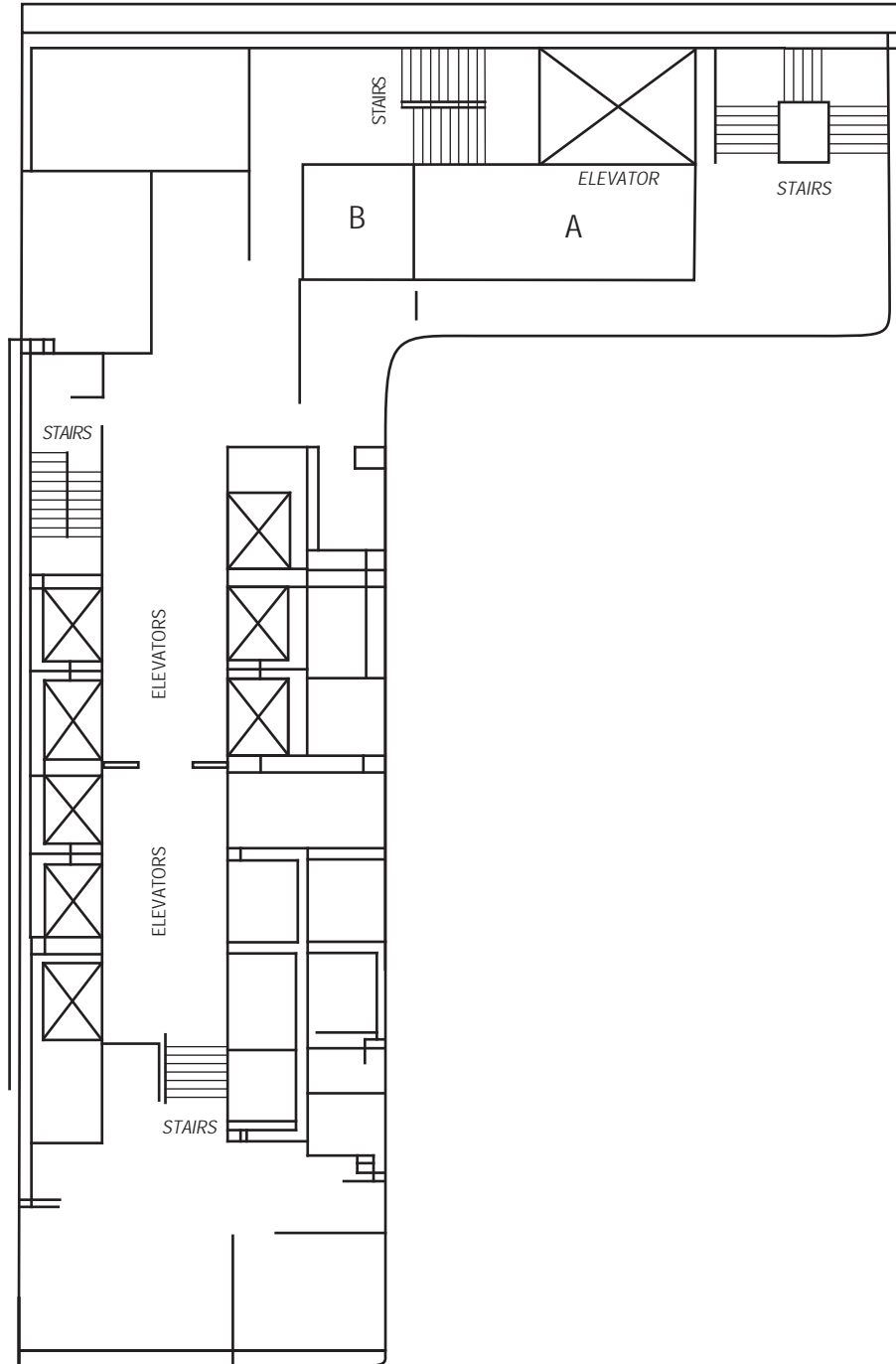


# HILTON GARDEN INN



# LOEWS HOTEL

## First Floor Mezzanine

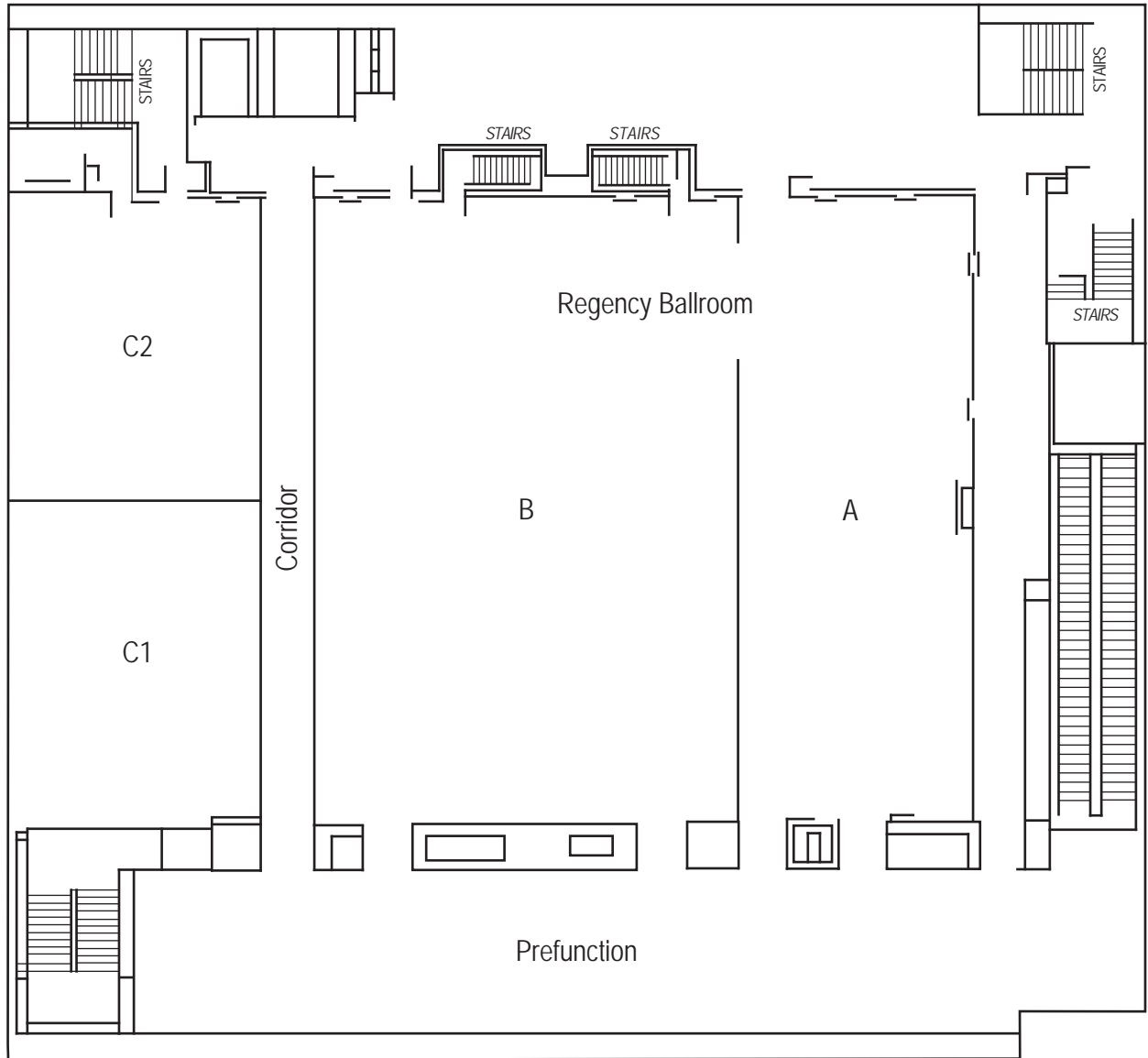






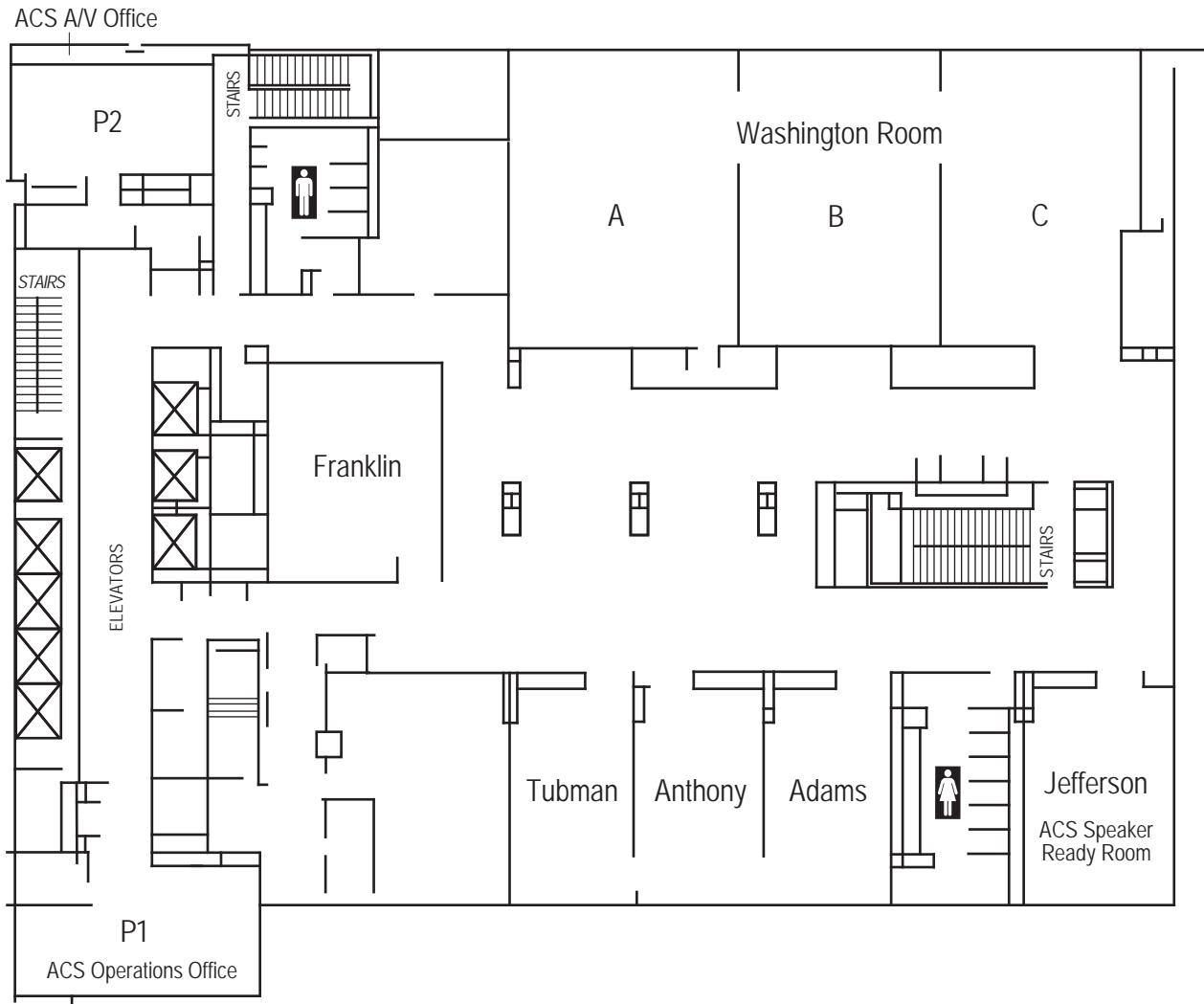
# LOEWS HOTEL

## Second Floor Mezzanine



# LOEWS HOTEL

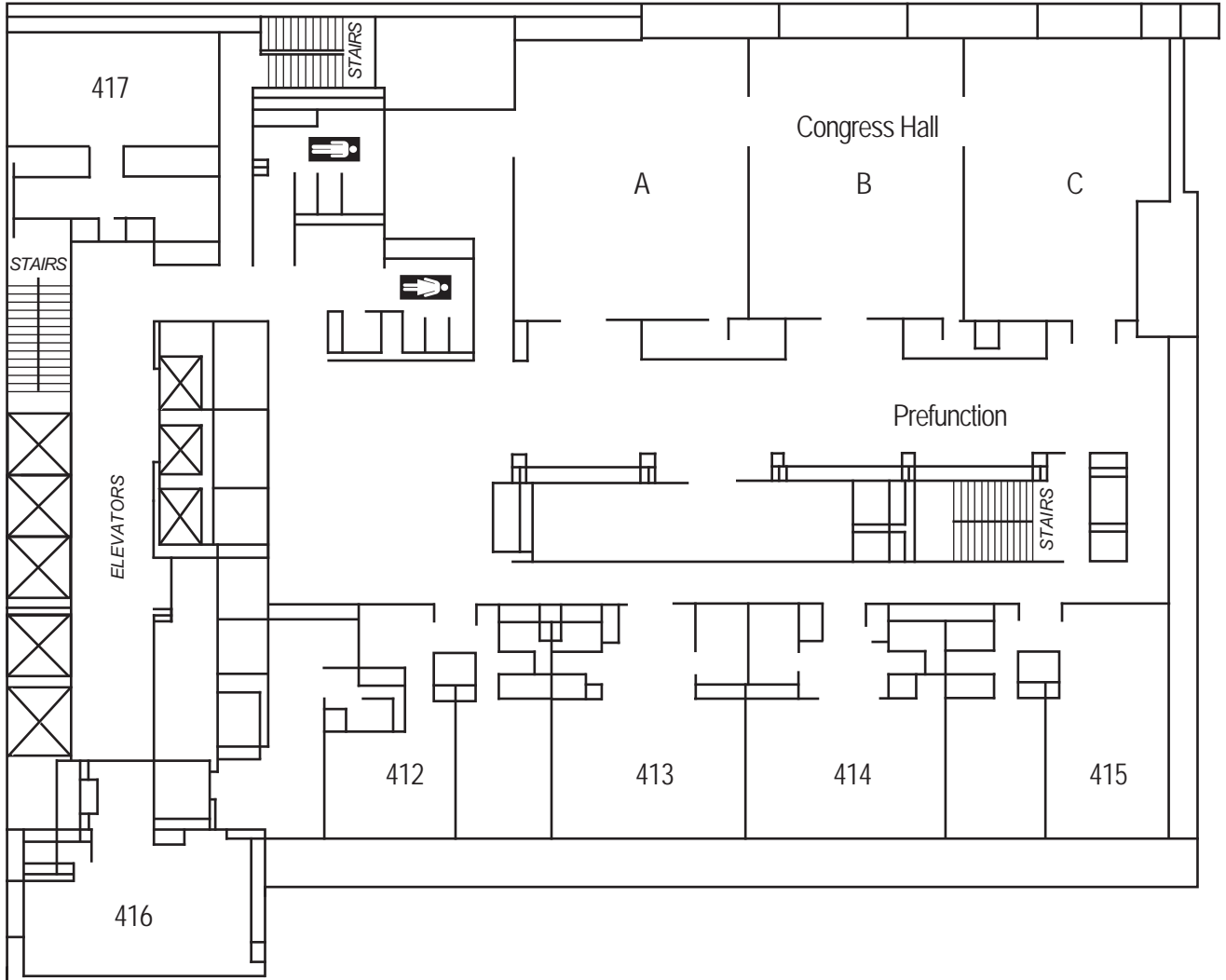
## Third Floor





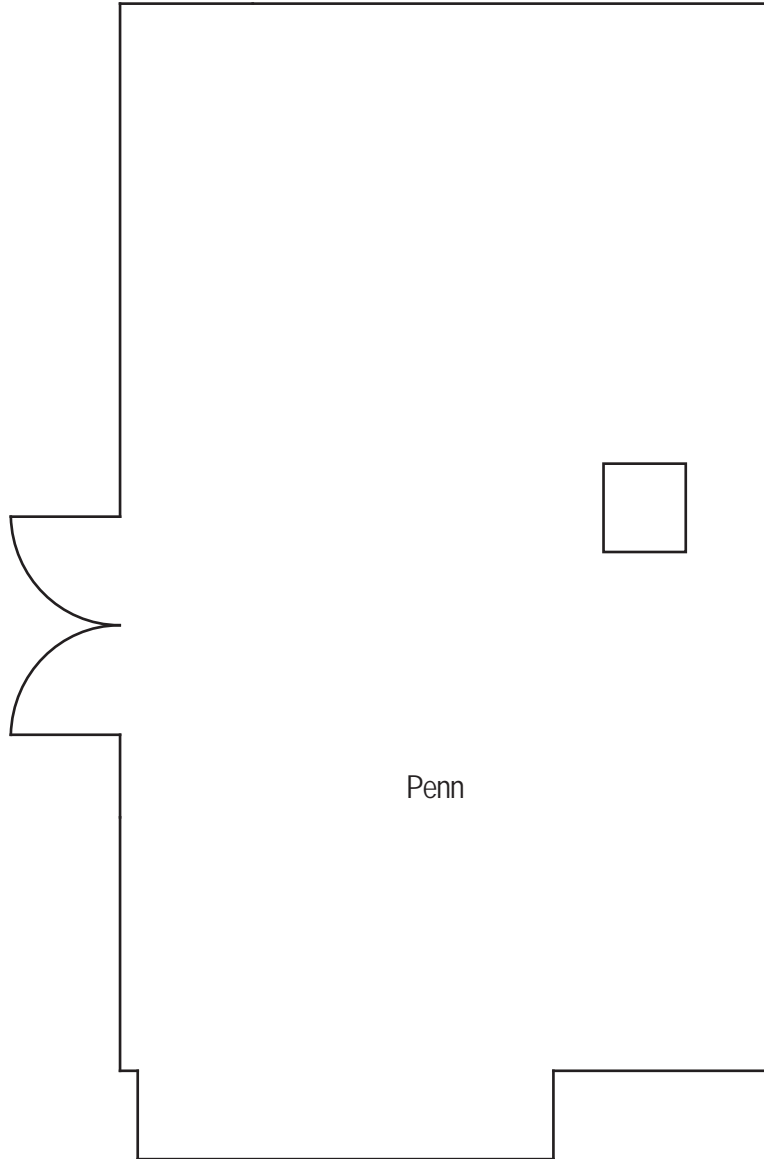
# LOEWS HOTEL

## Fourth Floor



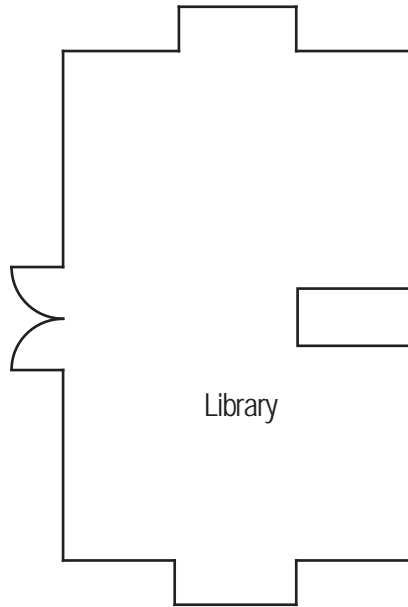
# LOEWS HOTEL

## Fifth Floor

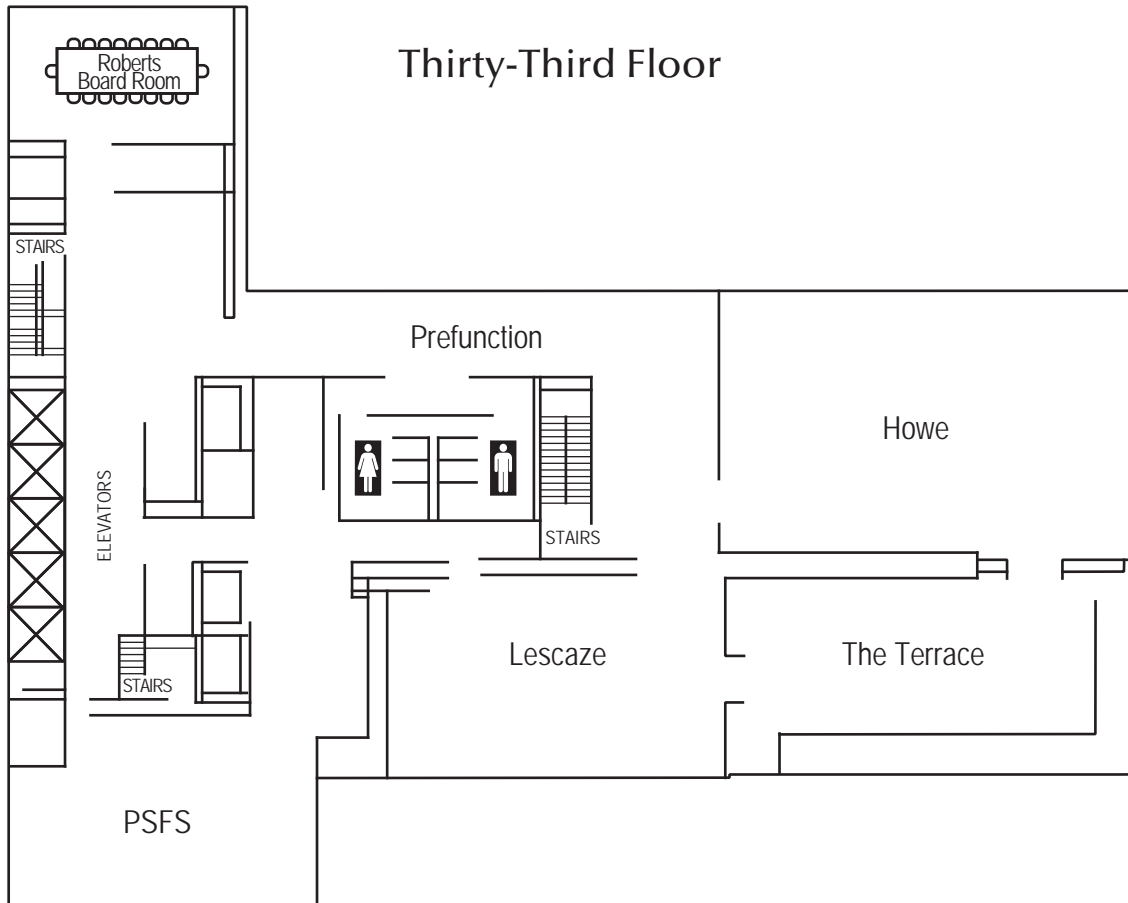


# LOEWS HOTEL

## Thirty-First Floor



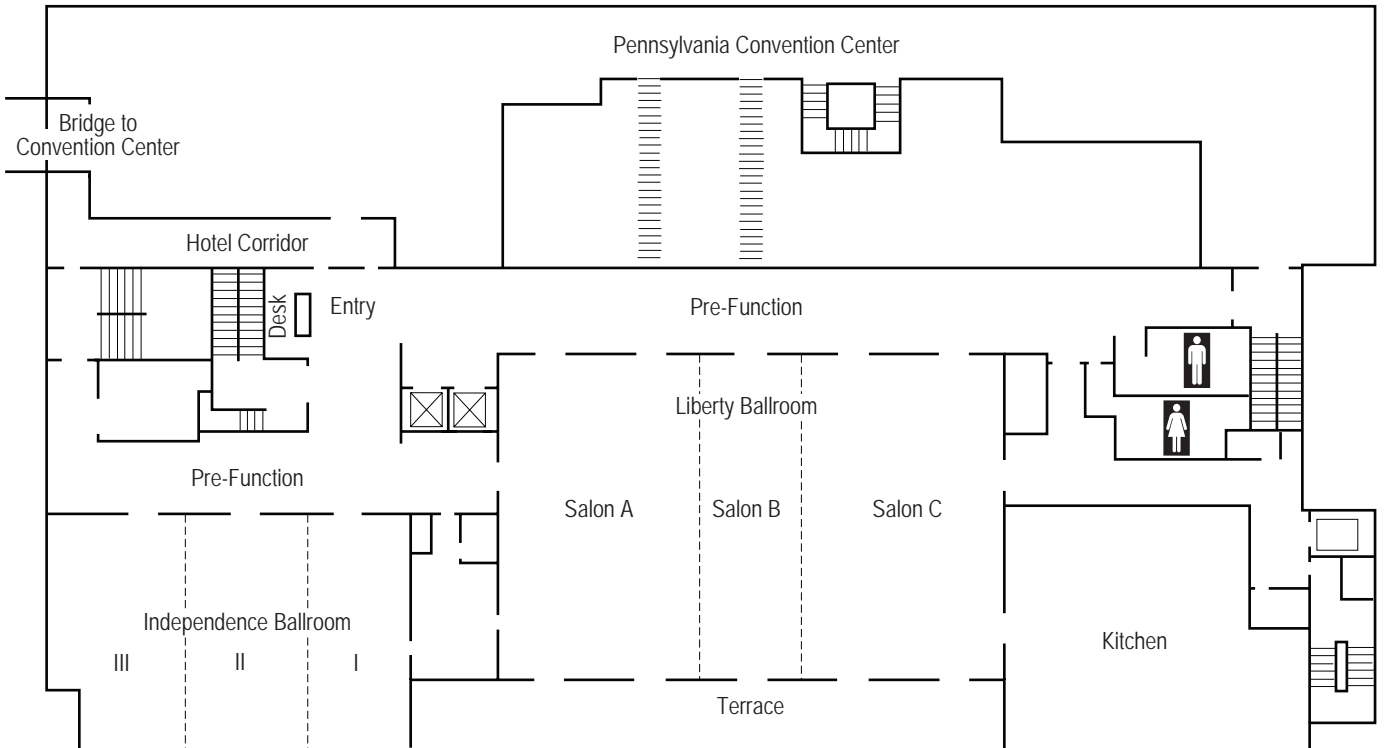
## Thirty-Third Floor





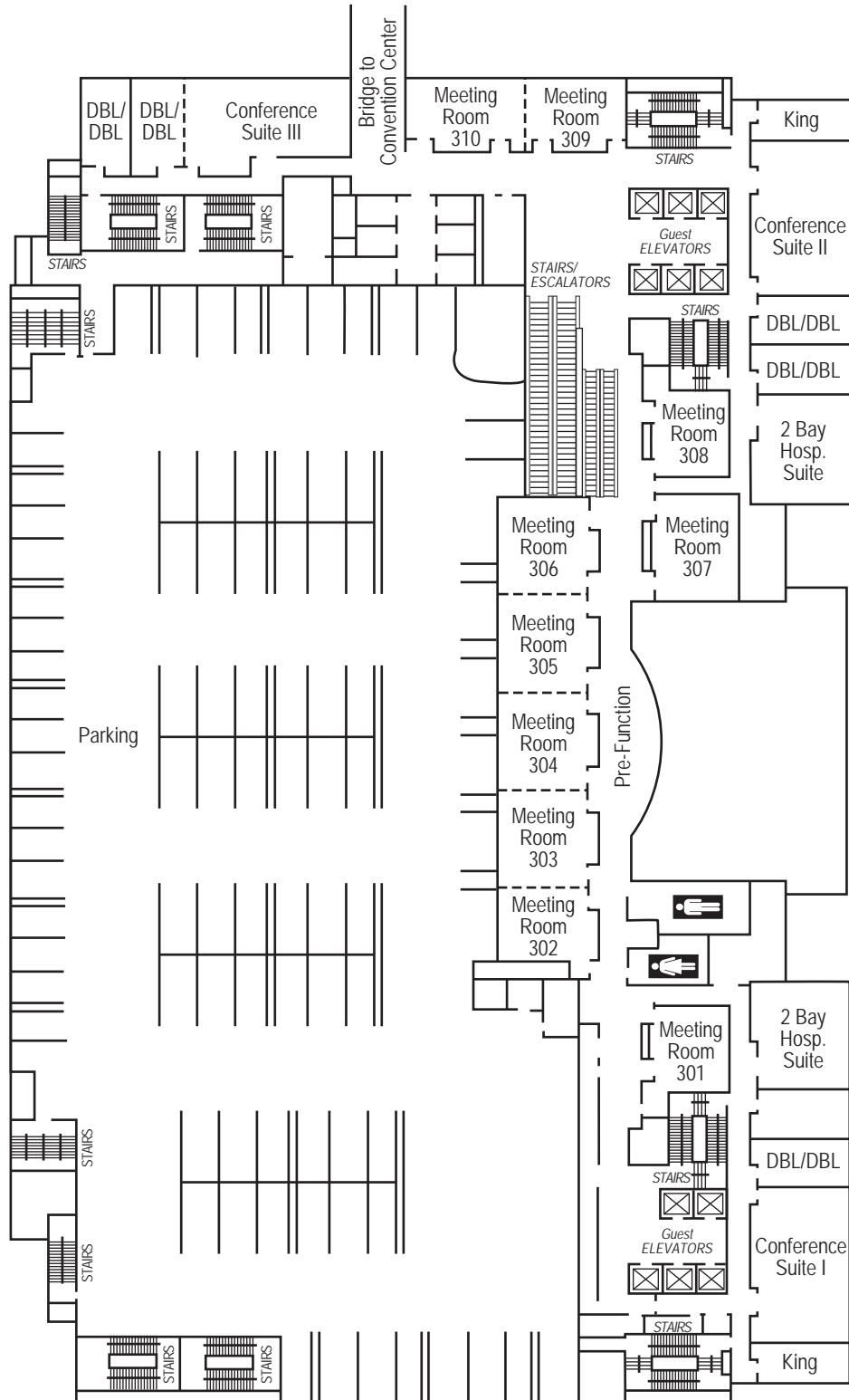
# MARRIOTT DOWNTOWN

## Third Floor — Ballroom



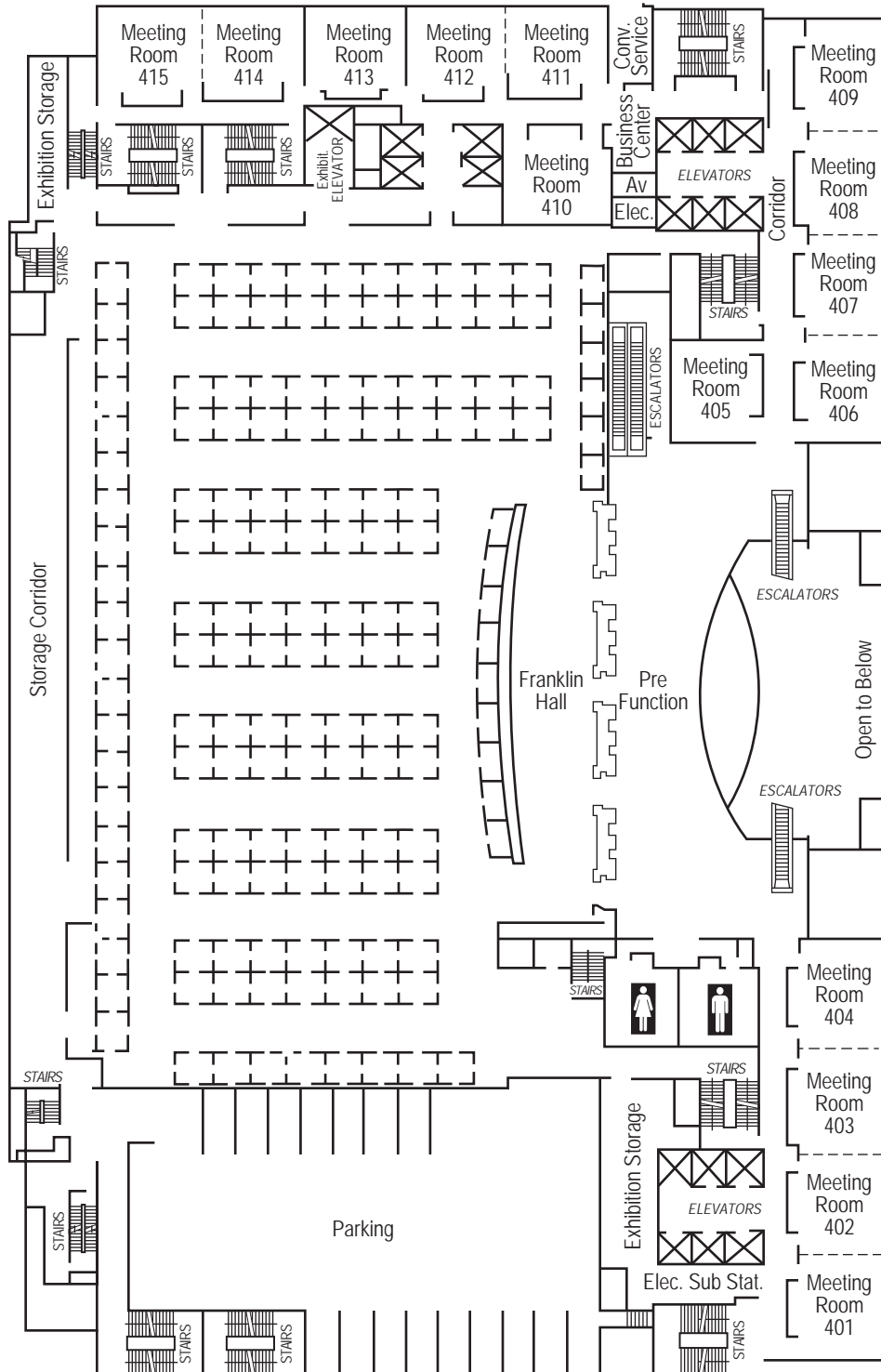
# MARRIOTT DOWNTOWN

## Third Floor - Meeting Rooms and Conference Suites



# MARRIOTT DOWNTOWN

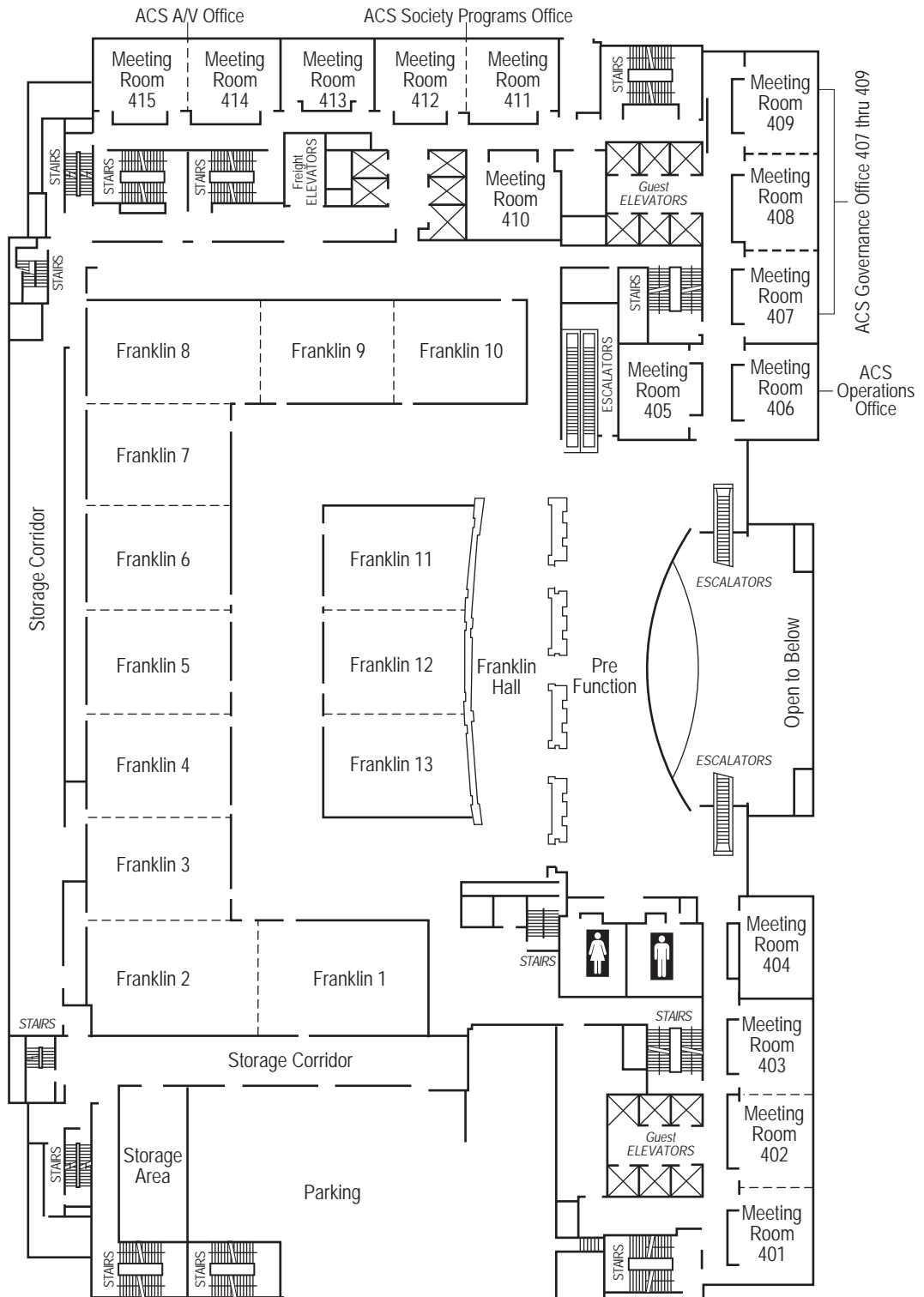
## Level Four Franklin Hall





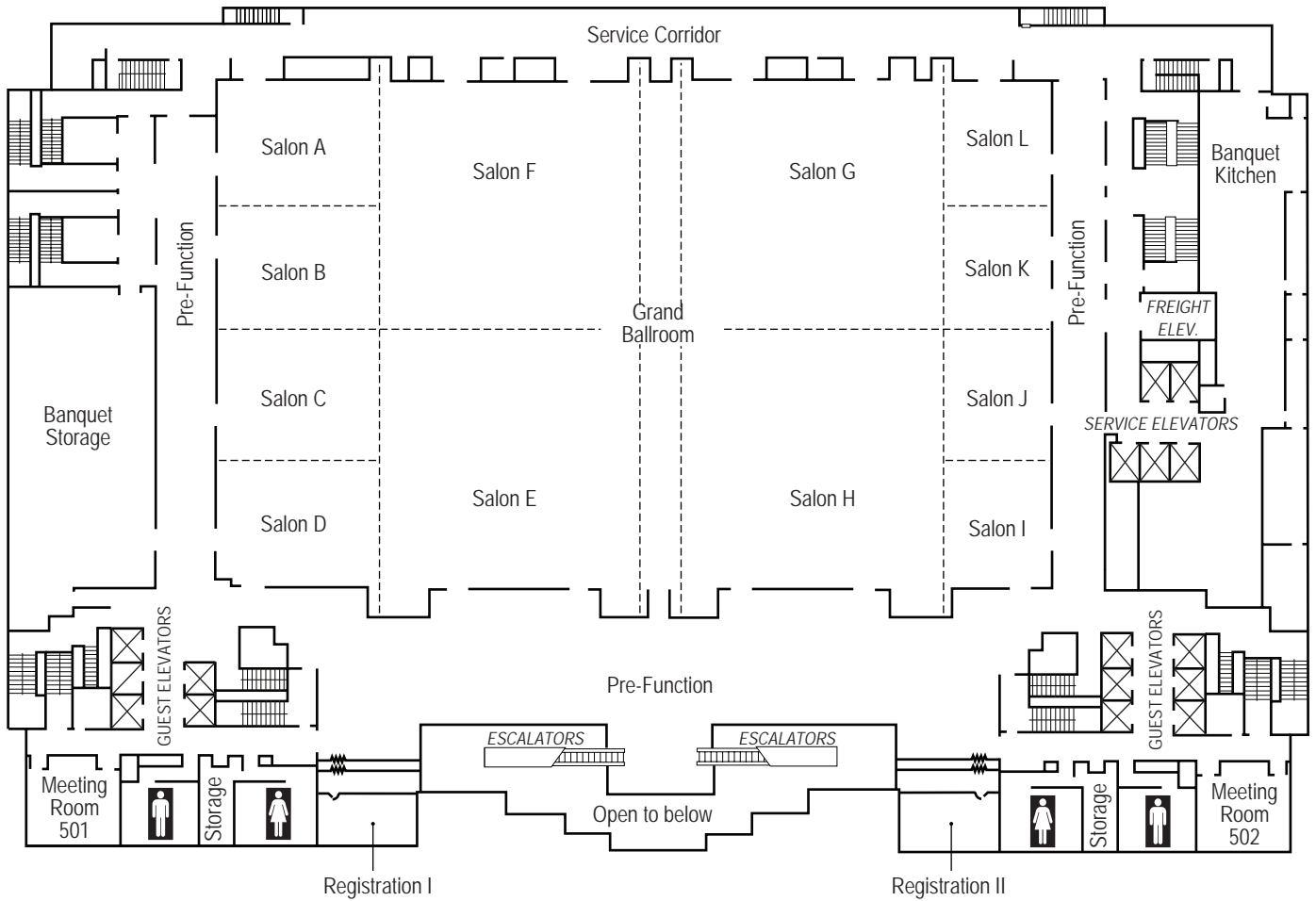
# MARRIOTT DOWNTOWN

## Fourth Floor - Franklin Hall-Meeting Space

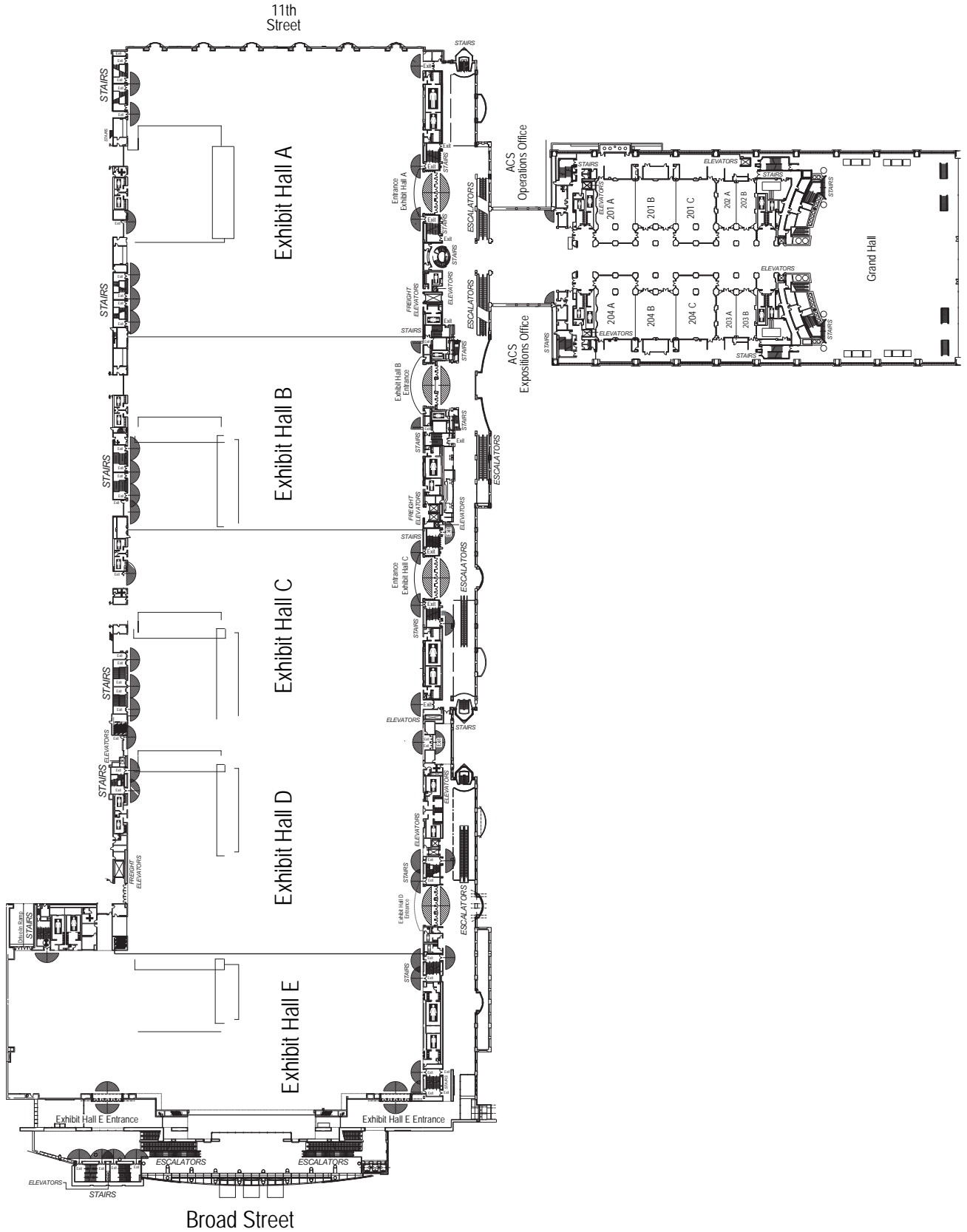


# MARRIOTT DOWNTOWN

## Fifth Floor—Grand Ballroom

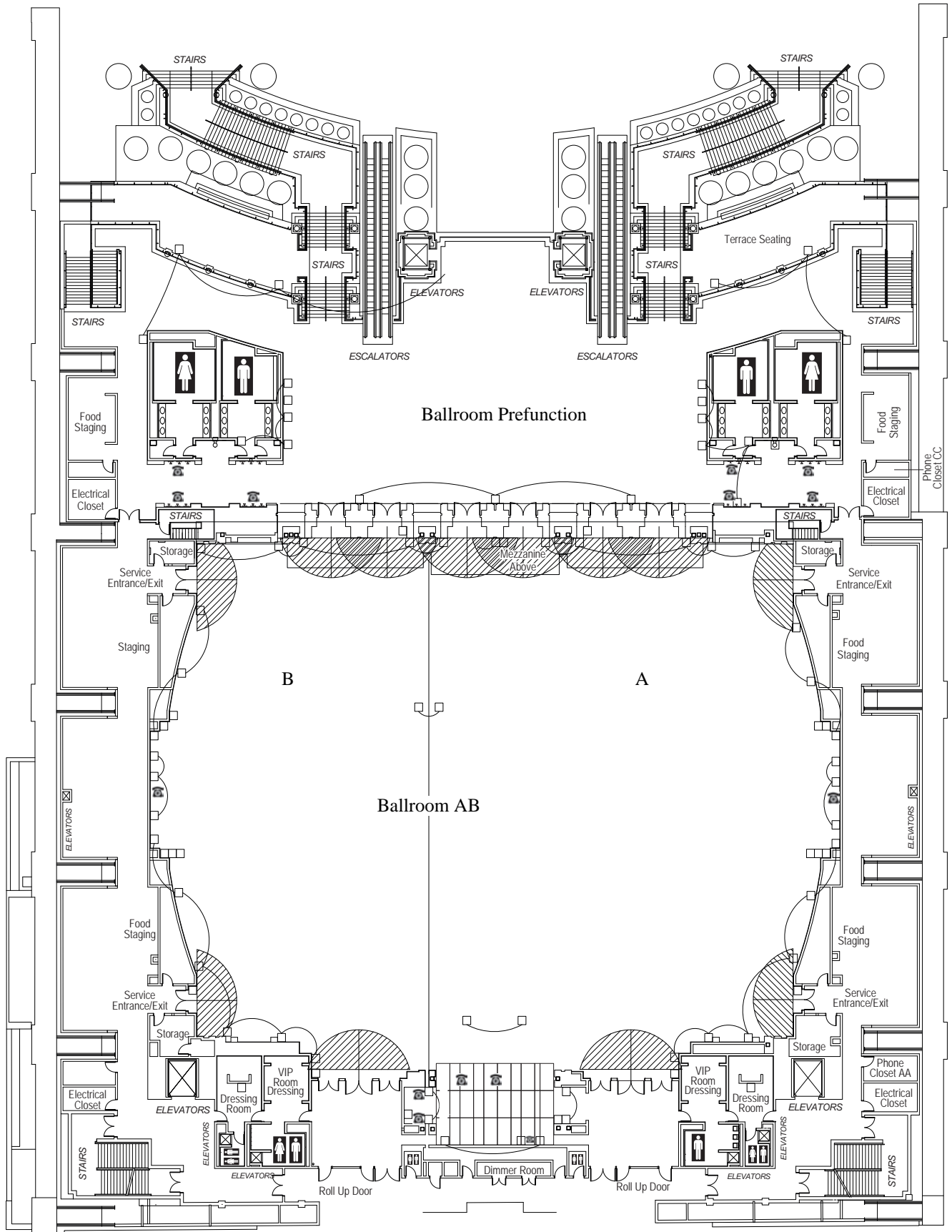


# PENNSYLVANIA CC - BALLROOM A&B

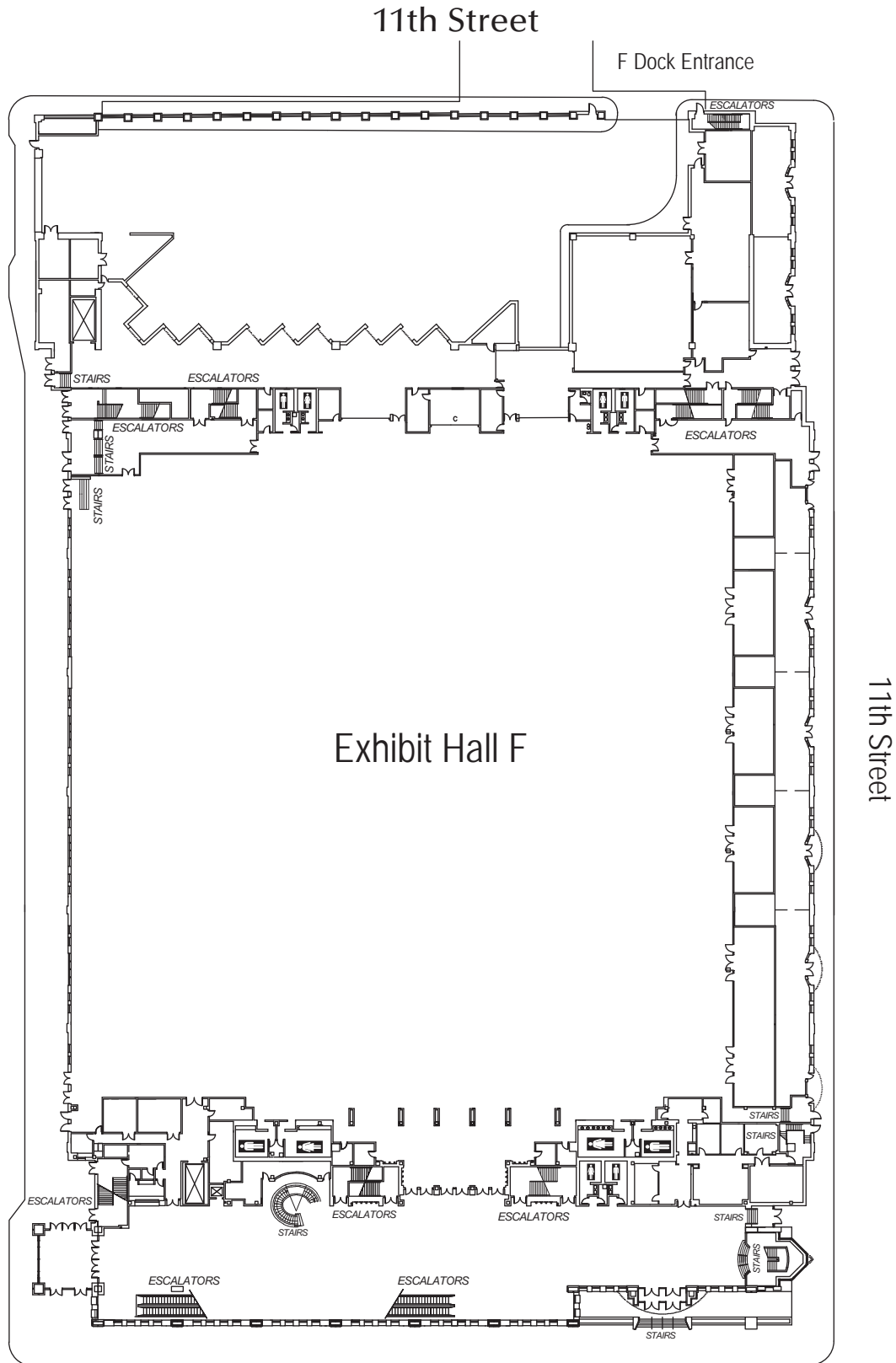




# PENNSYLVANIA CC - BALLROOM A&B



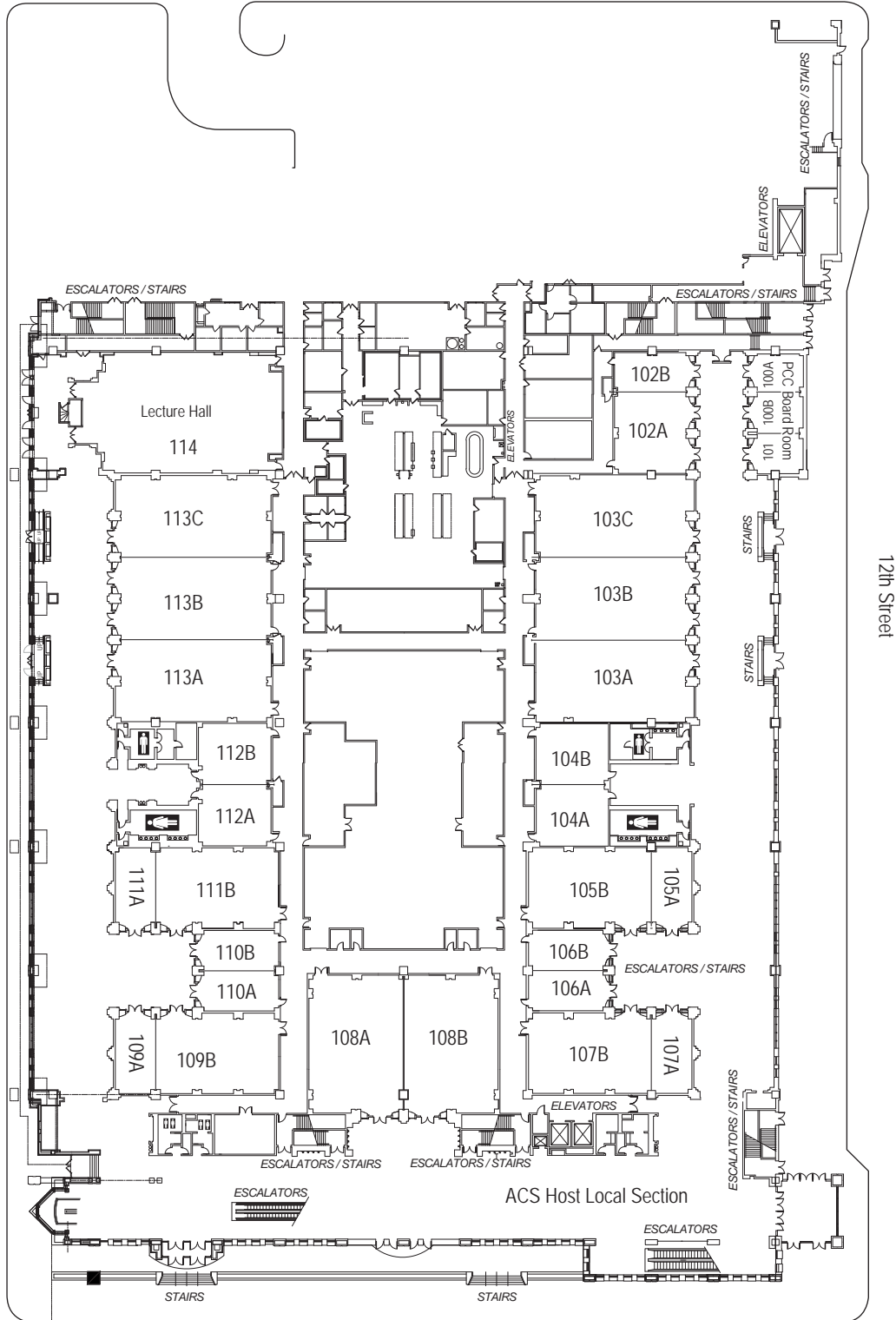
# PENNSYLVANIA CC - STREET LEVEL



# PENNSYLVANIA CC - STREET LEVEL

12th Street

Race Street



12th Street

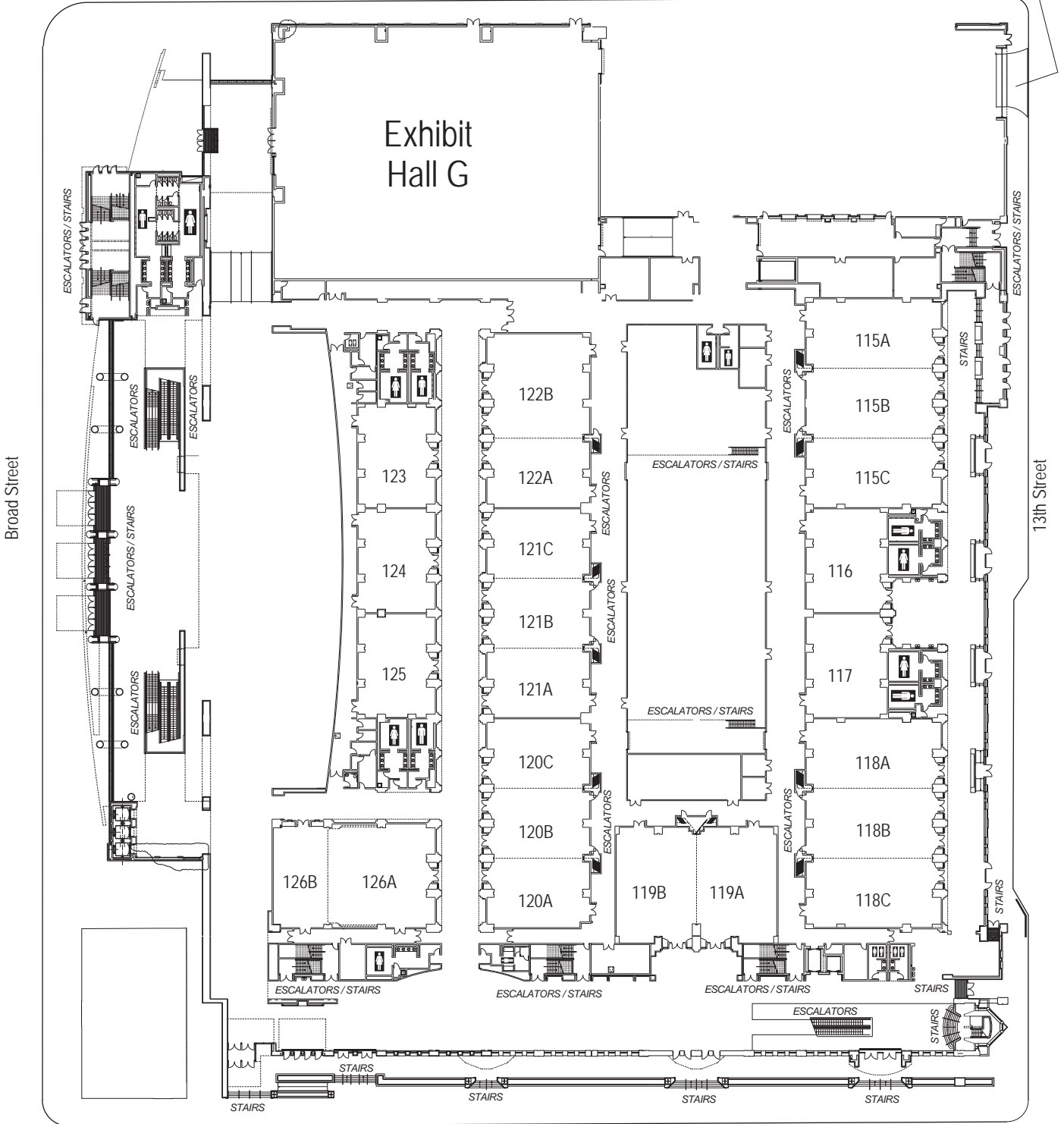
Arch Street



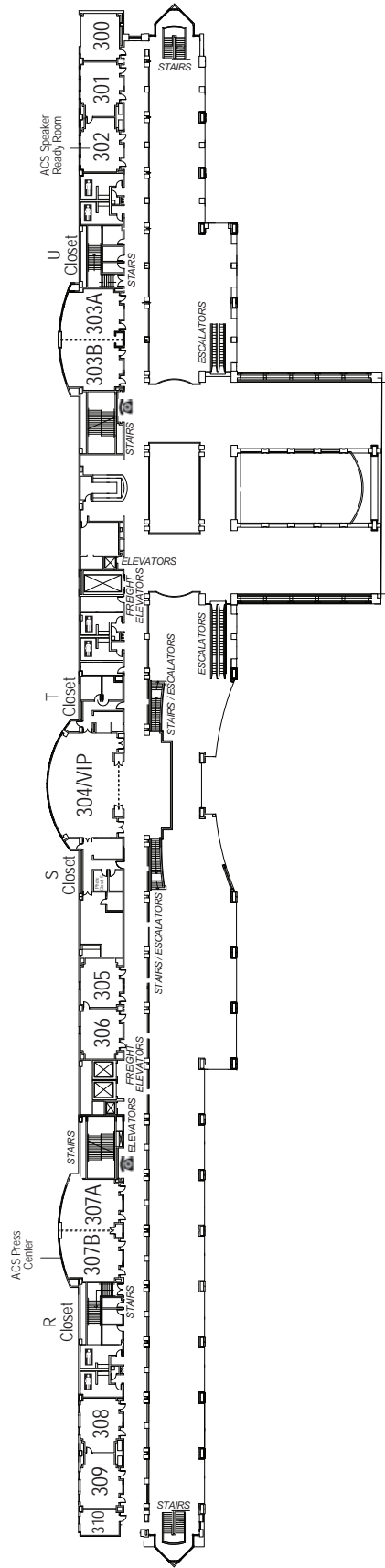
# PENNSYLVANIA CC - STREET LEVEL

13th Street

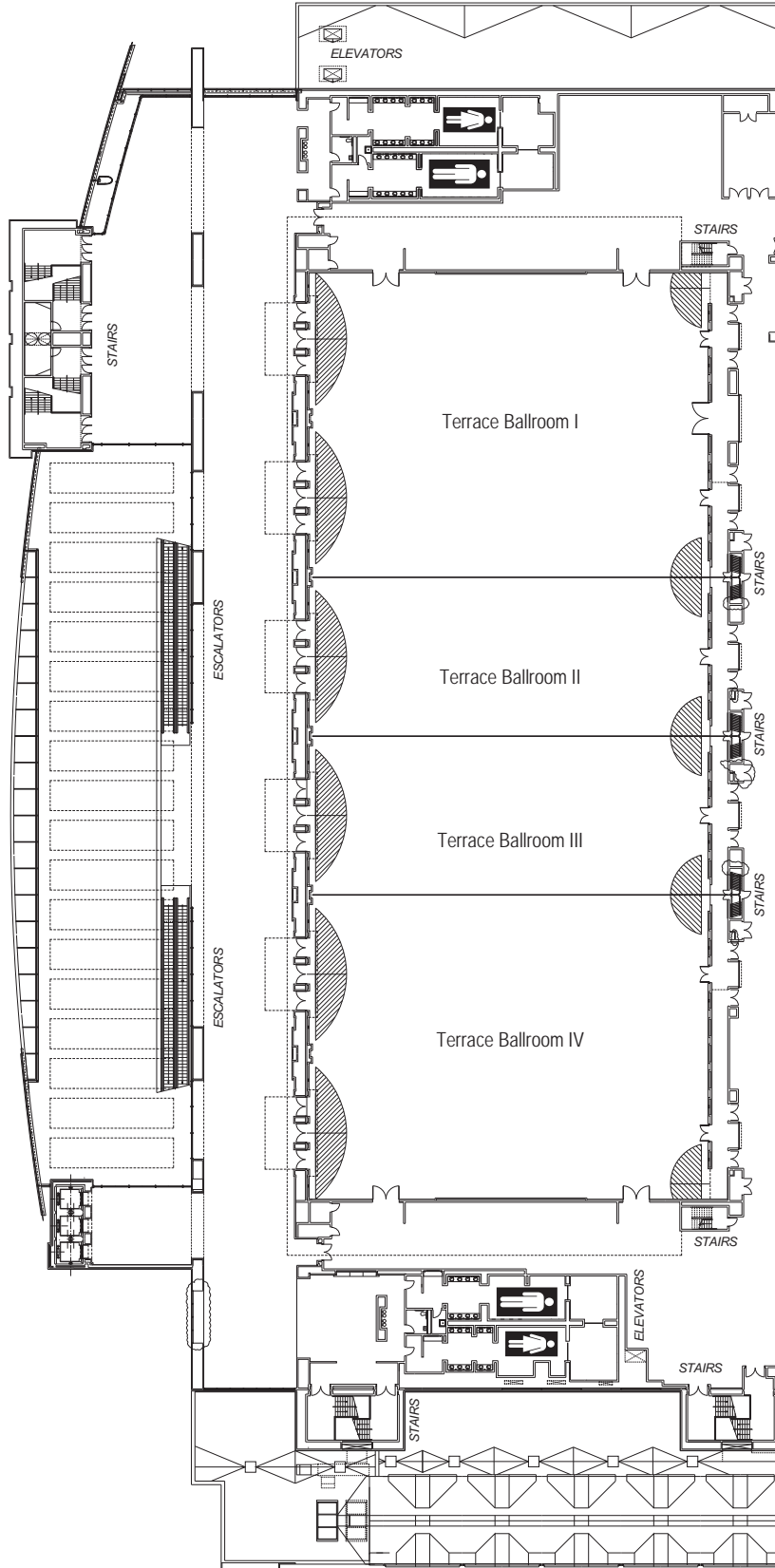
G Dock Entrance



# PENNSYLVANIA CC - THIRD FLOOR

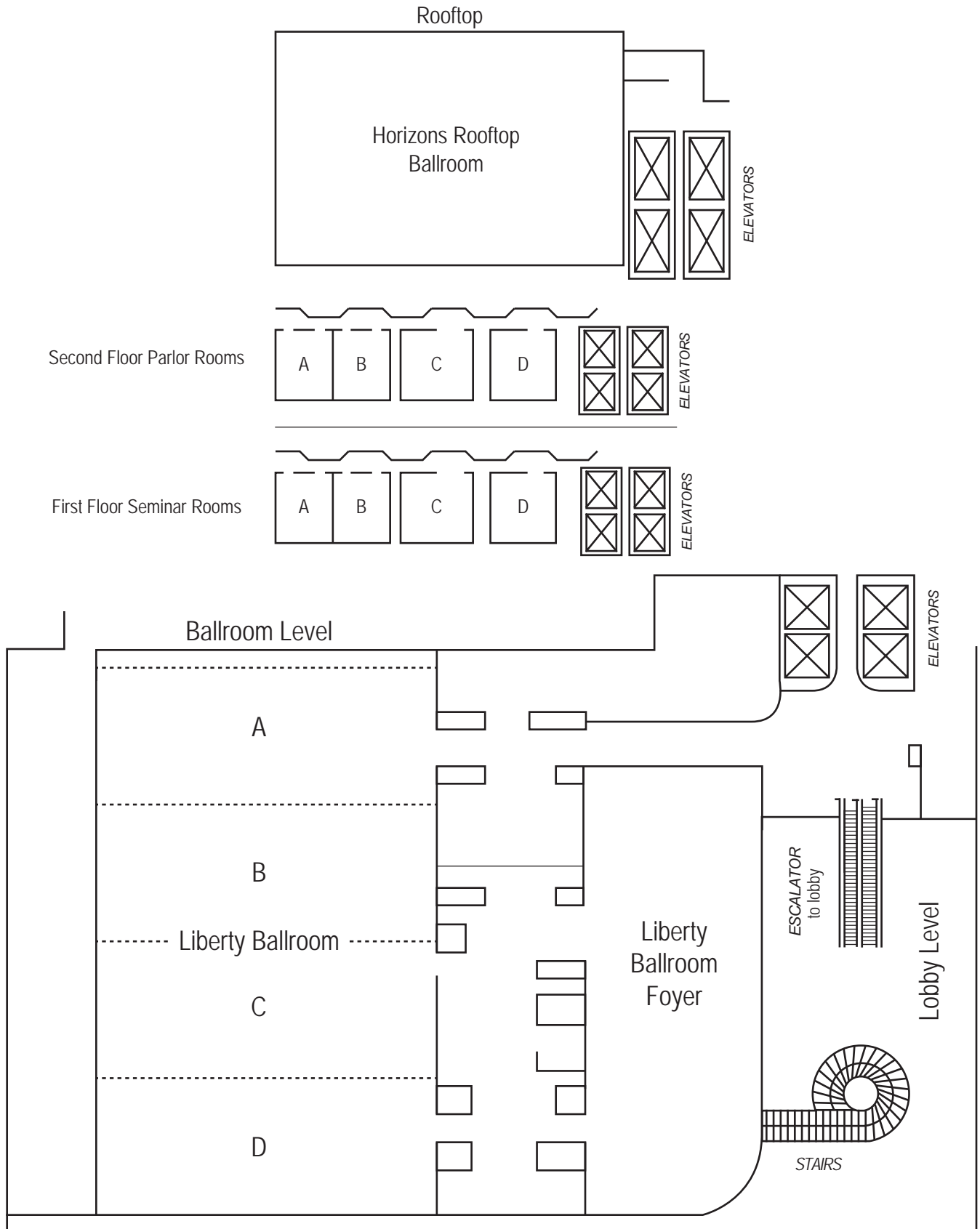


# PENNSYLVANIA CC



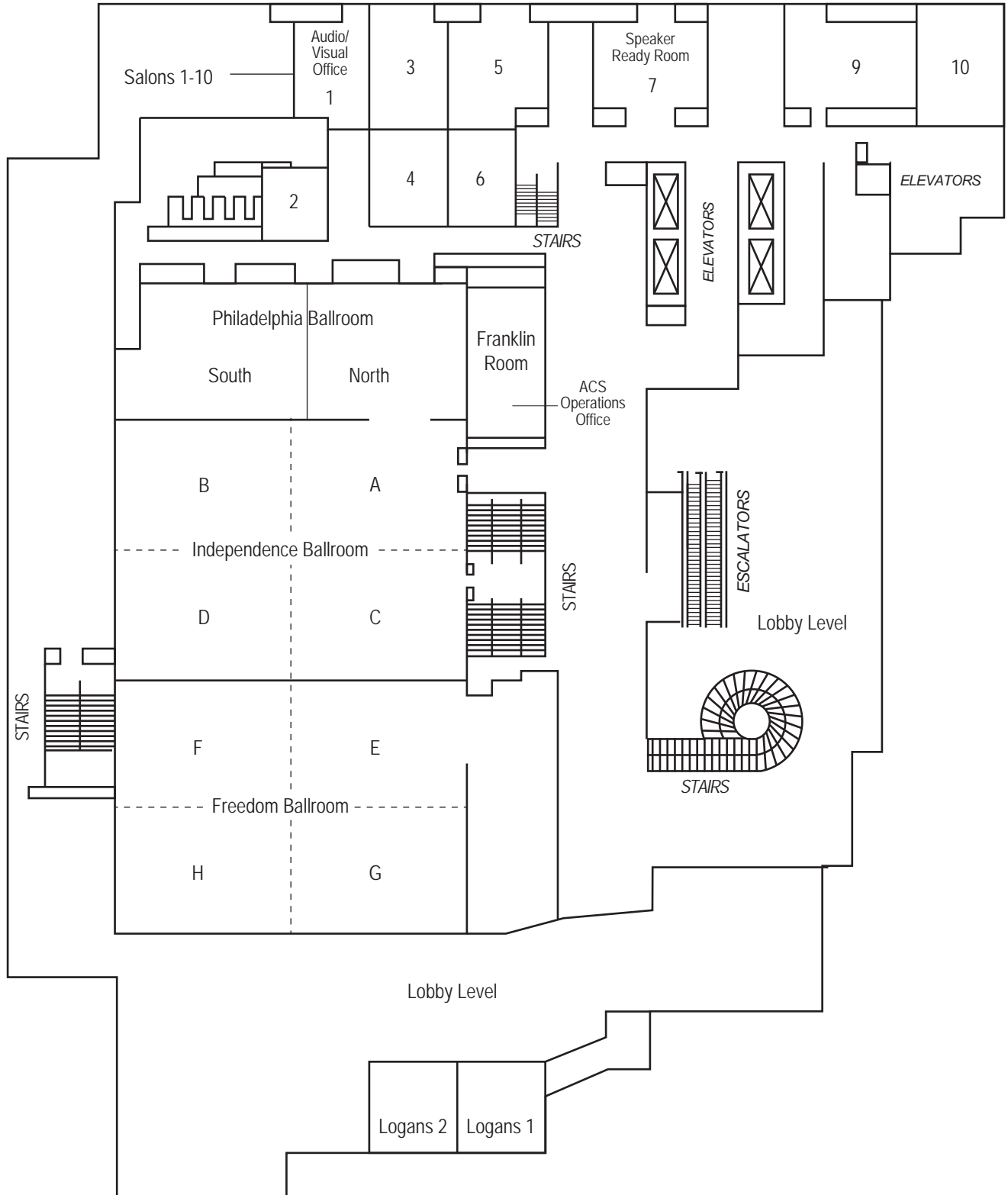


# SHERATON PHILADELPHIA DOWNTOWN

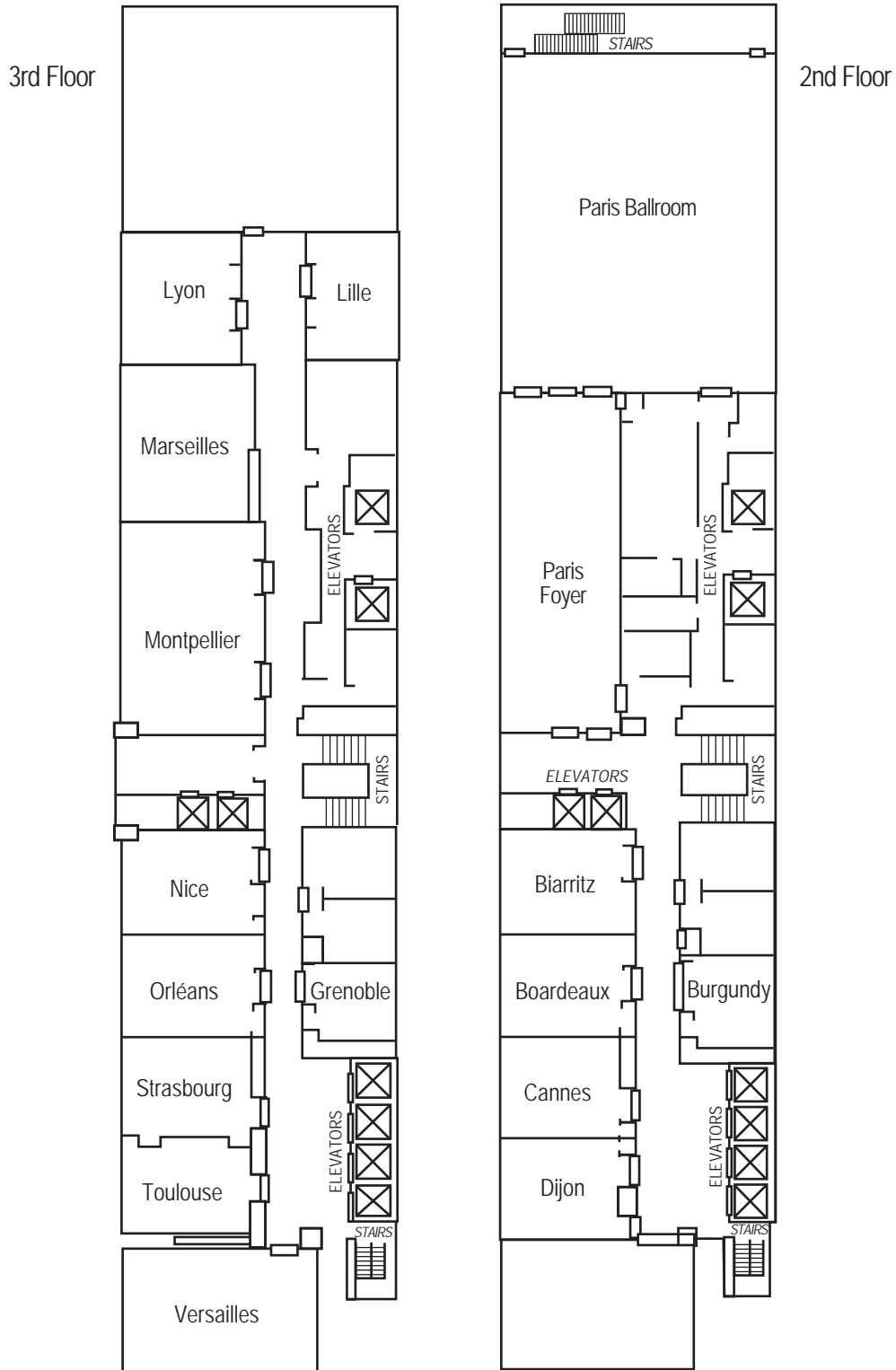


# SHERATON PHILADELPHIA DOWNTOWN

## Mezzanine Level



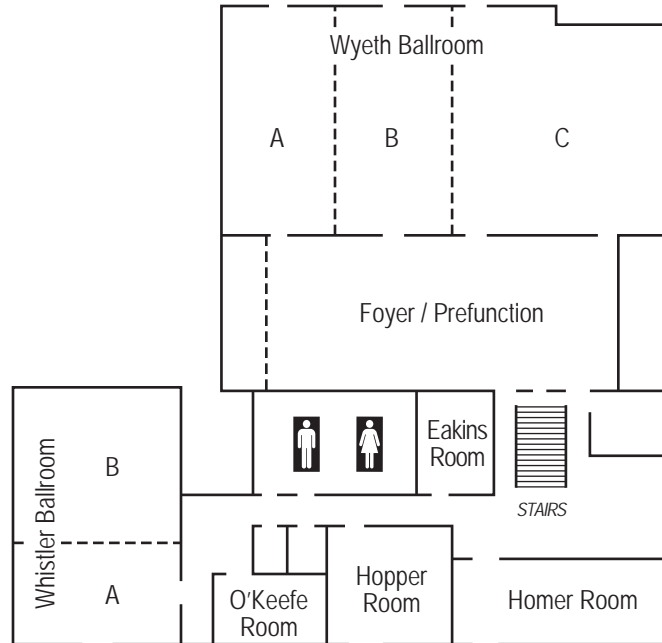
# SOFITEL



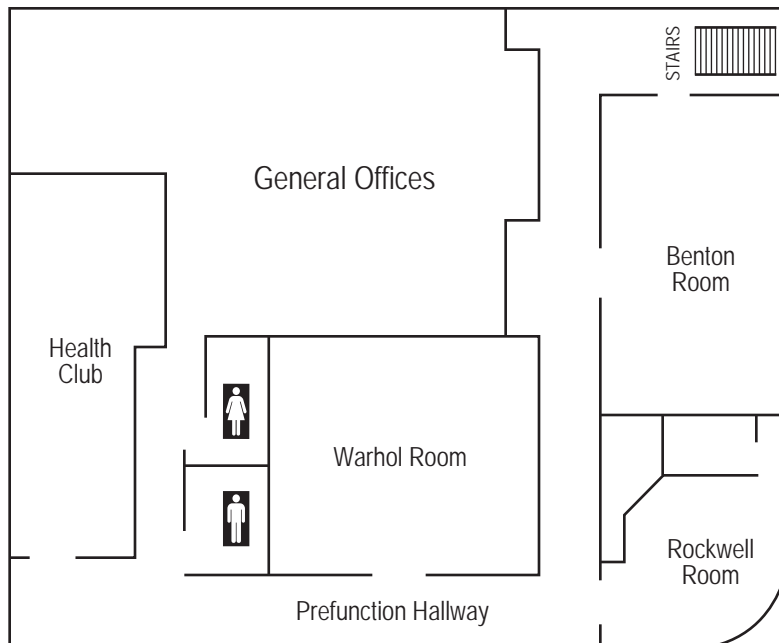


# SONESTA

## Meeting Room - Level Two



## Meeting Room - Level Eight

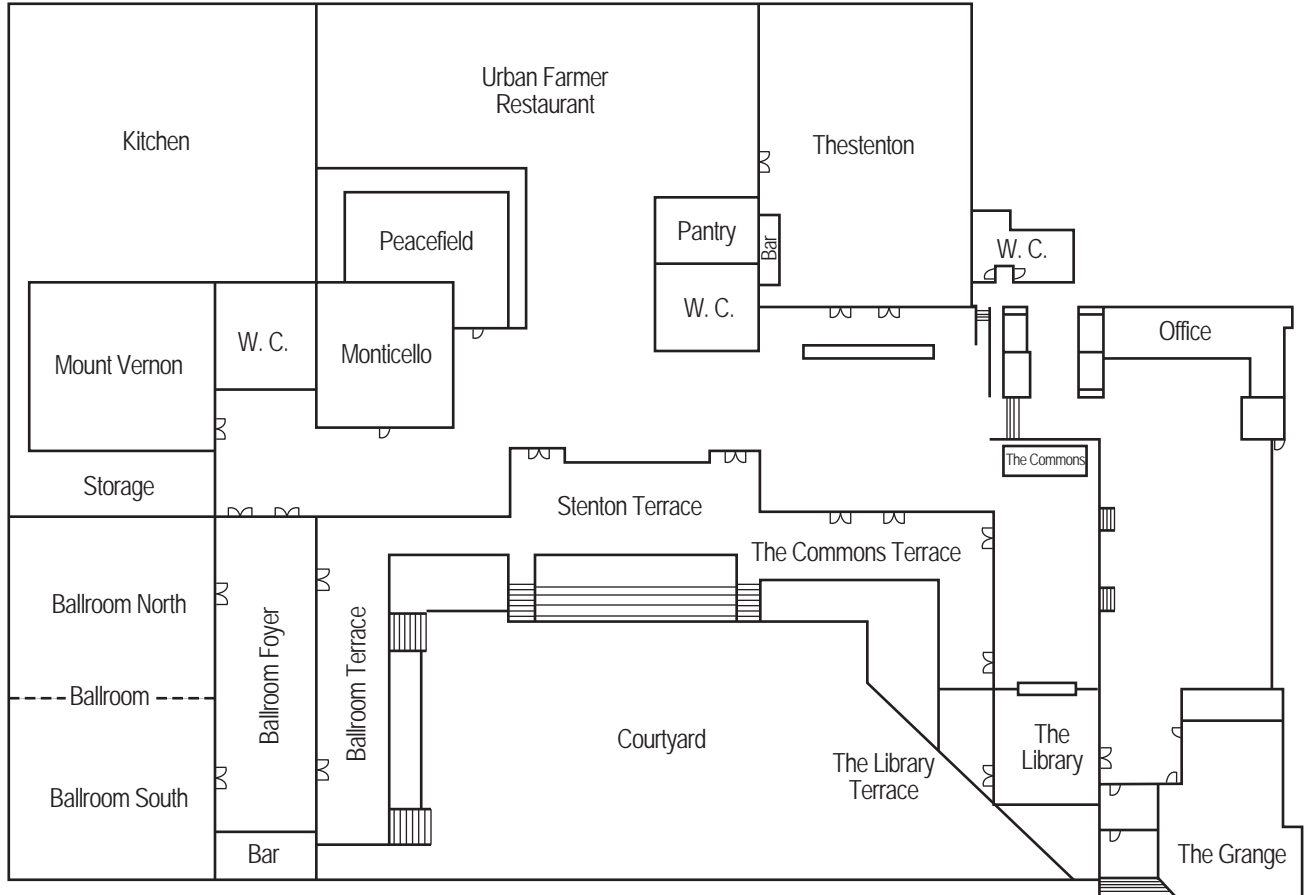


- \* Pollack Room
- \* Cassatt Room
- \* Calder Room

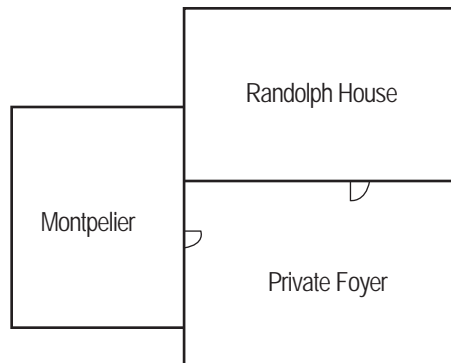
\* Not pictured on floor plan.

# THE LOGAN

## Lobby Level

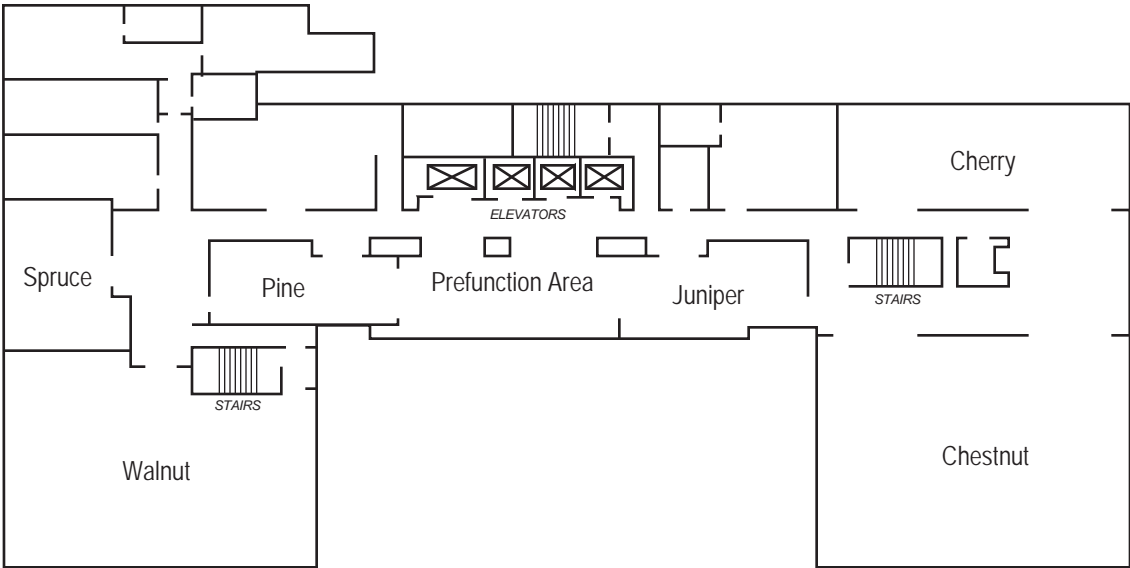


## Lower Level

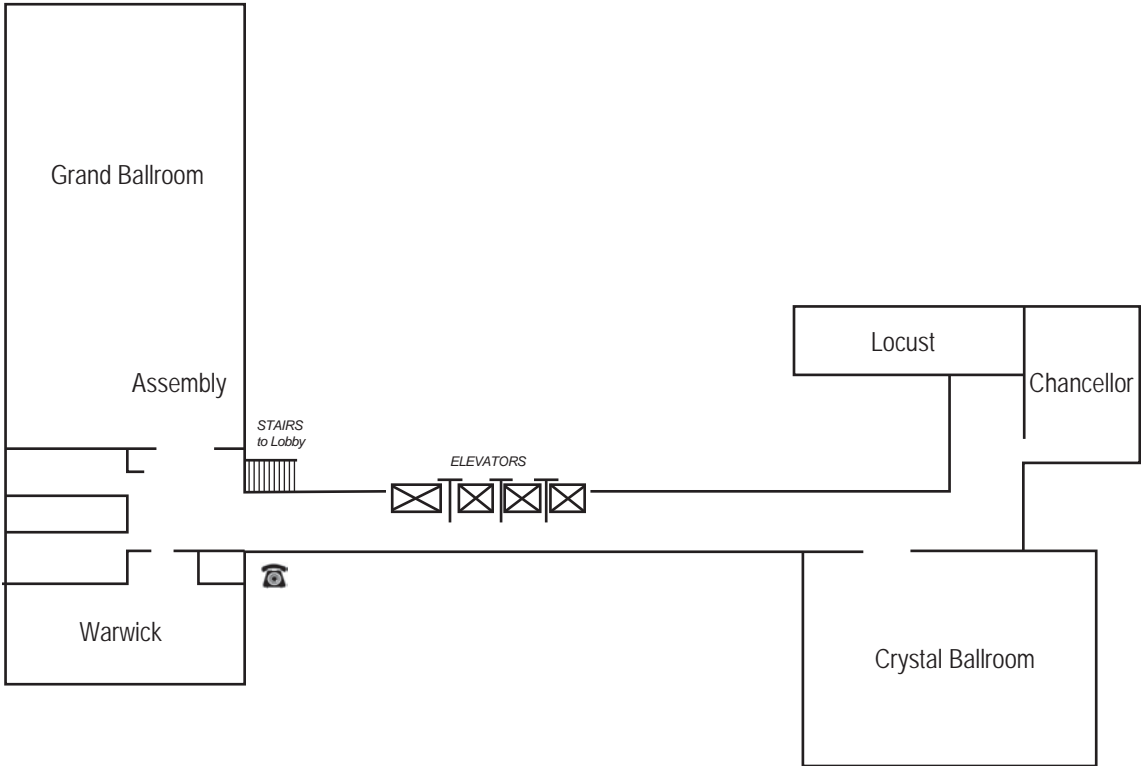


# WARWICK HOTEL RITTENHOUSE SQUARE

## Third Floor Level



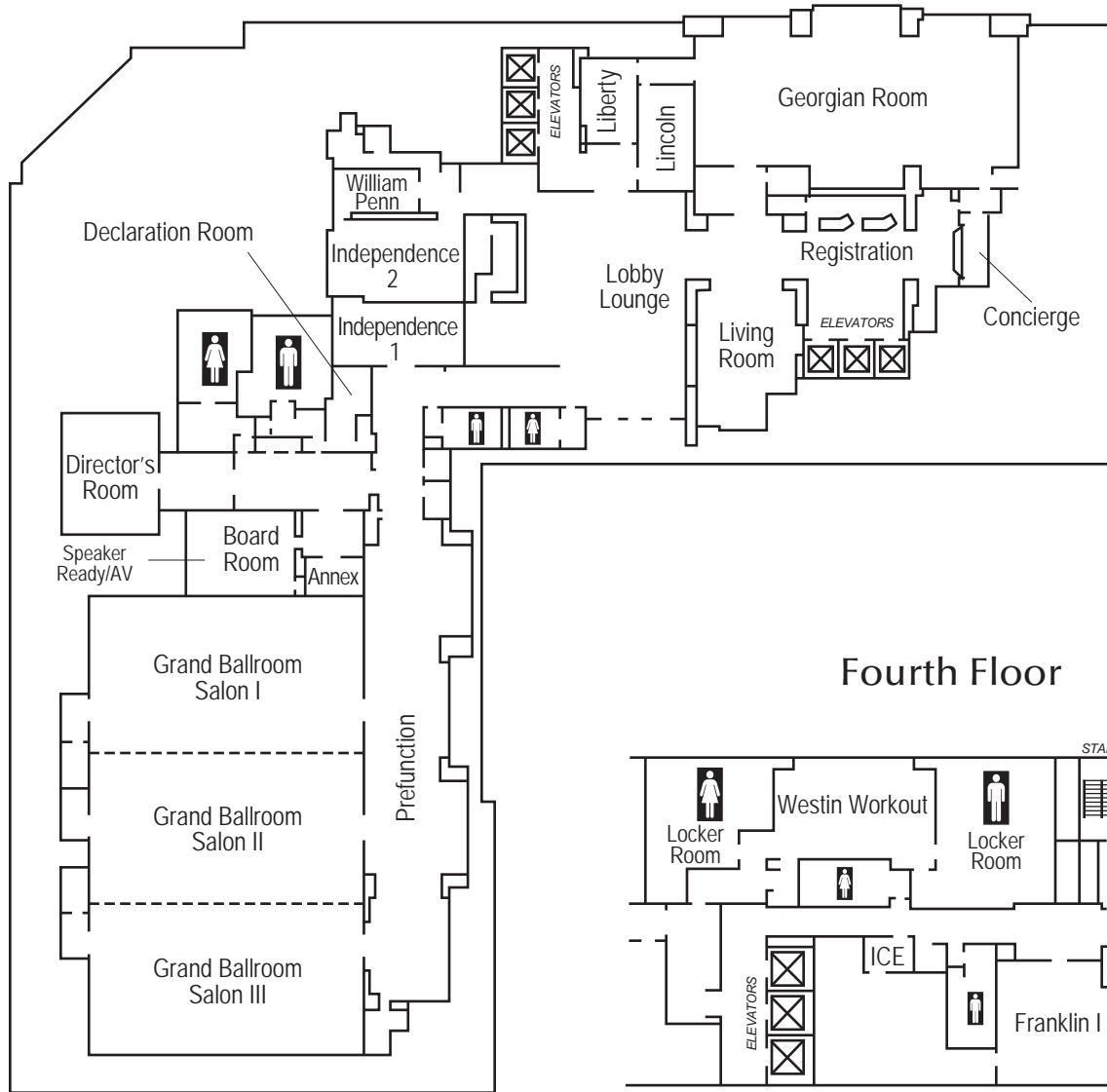
## Mezzanine Level





# THE WESTIN PHILADELPHIA

## Lobby Level Third Floor



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Abada, E.	INOR	681	Abou-Gharbia, M.	ORGN	163	Adams, D.	POLY	146
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Abadjian, M.Z.	POLY	268	Abou-Hamad, E.	CATL	153	adams, p.	ANYL	95
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Abb, S.	PHYS	315	Abplanalp, M.	PHYS	156	Adar, F.	CATL	99
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Abell, L.	MEDI	89	Acherar, S.	PMSE	524	Adhikari, A.A.	ORGN	735
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Advincula, R.C.	PMSE	446	Ahn, C.	PMSE	400	Aktas, N.	ENVR	618
Advincula, R.C.	PMSE	465	Ahn, D.	PMSE	618	Akten, E.D.	COMP	256
Advincula, R.C.	PMSE	482	Ahn, J.	COLL	332	Akula, R.	CATL	193
Advincula, R.C.	PMSE	487	Ahn, J.	ENVR	421	Al Anazi, A.	ENVR	416
Advincula, R.C.	PMSE	571	Ahn, J.	MEDI	321	Al Fahham, Y.	CHED	213
Advincula, R.C.	POLY	353	Ahn, J.	ORGN	159	Al Qaradawi, S.Y.	CATL	239
Advincula, R.C.	POLY	39	Ahn, J.	ORGN	160	Al, S.	BIOL	221
Advincula, R.C.	POLY	410	Ahn, J.	ORGN	161	Al-Abd, A.M.	MEDI	303
Advincula, R.C.	POLY	470	Ahn, K.	AGRO	145	Alabdullah, B.	MEDI	373
Advincula, R.C.	POLY	64	Ahn, K.	COLL	90	Al-Abed, S.R.	ENVR	27
Afosah, D.	COMP	301	Ahn, K.	MEDI	299	Al-Abed, S.R.	ENVR	327
Afosah, D.	MEDI	88	Ahn, K.	PMSE	301	Alabed, Y.	MEDI	98
Afsari, S.	COLL	156	Ahn, K.	PRES	44	Al-Abed, Y.	MEDI	110
Afzal, J.	AGRO	17	Ahn, S.	INOR	547	Al-Abed, Y.	MEDI	356
Afzal, M.	COMP	24	Ahn, S.	ORGN	783	Al-Abed, Y.	MEDI	99
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Agapie, T.	INOR	228	Aida, T.	POLY	233	Alam, M.A.	ORGN	680
Agapie, T.	INOR	325	Aihara, Y.	ENFL	126	Alam, M.R.	COLL	143
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Agarwal, A.	PMSE	365	Aikens, C.M.	COMP	285	Alam, M.S.	INOR	515
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Aggarwal, S.	ENVR	76	Ajamian, A.	COMP	209	Alb, A.M.	POLY	532
Aggarwal, S.	ENVR	82	Ajamian, A.	MEDI	339	Albaugh, A.	PHYS	11
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Agrawal, A.	COLL	478	Ajibade, P.A.	INOR	122	Albelda, S.	TOXI	29
Agrawal, K.V.	INOR	39	Ajibade, P.A.	INOR	415	Alberding, B.G.	COLL	563
Agrawal, M.	MEDI	8	Ajibola, A.A.	INOR	258	Albert Carmo Braga, A.	COMP	245
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Agrawal, R.	ENFL	150	Ajo Franklin, C.M.	COLL	460	Albert, D.H.	MEDI	286
Agrawal, S.	MEDI	276	Akahoshi, A.	MEDI	158	Albert, J.N.	CHED	320
Agresta, S.	MEDI	268	Akama, Y.	ENFL	244	Alberti, S.	PHYS	335
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Aguilera-Iparraguirre, j.	PHYS	243	Akbulut, M.	COLL	451	Albrecht, K.O.	CATL	176
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Ahmad, F.	COLL	197	Akhtar, J.	ENFL	492	Alcantar, N.	ENVR	322
Ahmad, K.	COLL	197	Akhtar, W.M.	ORGN	497	Alden, D.F.	ENVR	238
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Ahmed, I.	AEI	41	Akiyama, D.	MEDI	336	Aldrich, K.	INOR	507
Ahmed, I.	INOR	443	Akiyama, T.	ORGN	312	Aldworth, J.	AGRO	113
Ahmed, I.	PHYS	396	Akkawi, M.M.	CHED	374	Aldworth, J.	AGRO	114
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Alexander, W.A.	COLL	431	Allen, E.	MEDI	367	Alvarez Chavez, C.R.	CHAS	24
Alexander-Katz, A.	COLL	322	Allen, H.E.	ENVR	148	Alvarez Chavez, C.R.	CHAS	25
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Alexandrova, A.	PHYS	562	Allen, M.J.	ORGN	478	Alvarez, R.	MEDI	317
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Alford, A.	PMSE	355	Allen, R.	AGRO	20	Alvarez-Puebla, R.A.	COLL	346
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Alford, J.	ORGN	116	Allen, R.	AGRO	39	Alvaro, E.	CHED	353
Alfurayj, I.A.	INOR	255	Allen, R.	AGRO	52	Alvarez, C.	MEDI	62
Algburi, A.	COLL	122	Allen, R.	AGRO	91	Alvarez, C.	MEDI	63
Algrim, L.B.	PHYS	555	Allen, R.	CHED	260	Alvarez, C.	MEDI	65
Alhabeb, M.	ORGN	149	Allen, S.A.	ANYL	242	Alwaheeb, D.A.	INOR	412
Alhabeb, M.	ORGN	17	Allen, T.	AGRO	33	Aly Hassan, A.	ENVR	64
Alhabeb, M.H.	ENVR	61	Allen, W.J.	COMP	216	Aly, Y.	ENVR	106
Al-Hamashi, A.	ORGN	651	Allen, W.J.	COMP	250	Alzate Sanchez, D.M.	PMSE	357
Al-Hammadi, S.	CATL	15	Allison, B.D.	ORGN	464	am Ende, C.	ORGN	269
Alharbi, A.A.	CHED	11	Allison, D.	MEDI	126	am Ende, C.	ORGN	338
Al-Hashimi, M.	ORGN	612	Allmendinger, P.	PHYS	169	Amamiya, k.	GEOC	76
Al-Hashimi, M.	PMSE	343	Allred, C.	AGFD	147	Amano, N.	MEDI	386
Al-Hashimi, M.	POLY	376	Almaliti, J.	ORGN	651	Amaral, D.	GEOC	45
Alhassan, A.	MEDI	346	Al-Marzoki, K.	PMSE	665	Amarante, D.	CHED	246
Alhooshani, K.R.	ENFL	299	almeida, d.	PHYS	36	Amarante, D.	CHED	294
Alhthlol, L.	INOR	477	Almeida, L.	AGRO	221	Amarasekara, H.C.	ORGN	188
Ali Abdelrahman, O.A.	ENFL	94	Almer, J.	NUCL	26	Amaravadi, R.	ORGN	461
Ali, A.	COLL	555	Almihdhar, M.	PMSE	403	Amarnath, K.	PHYS	198
Ali, A.	ENVR	352	Almond-Thynne, J.	ORGN	217	Amaro, R.E.	COMP	109
Ali, A.	MEDI	14	Almotawa, R.M.	INOR	243	Amaro, R.E.	COMP	260
Ali, A.	MEDI	183	Almutairi, A.	POLY	265	Amato, D.	POLY	252
Ali, A.	MEDI	84	Almutairy, R.f.	CHED	266	Amato, D.	POLY	252
Ali, F.	COLL	87	Alnahdi, K.	COLL	446	Amato, D.	POLY	256
Ali, F.	PMSE	356	Alnasser, F.	COLL	527	Amato, D.	POLY	377
Ali, G.	ENFL	278	Alnavmasi, J.S.	CATL	254	Amato, D.	POLY	377
Ali, H.	MEDI	49	Alnuaimi, A.	CHED	270	Amato, D.V.	POLY	256
Ali, M.	POLY	351	Alongi, J.	PMSE	145	Amato, N.J.	TOXI	22
Ali, M.	POLY	92	Aloni, S.	PHYS	313	Amaya, T.	INOR	632
Ali, S.	POLY	559	Alotaibi, F.S.	MEDI	308	Ambler, C.M.	MEDI	226
Ali, T.F.	MEDI	289	Alothman, A.A.	INOR	129	Ambrocio, R.	ENVR	172
Alibabaei, L.	INOR	314	Alpaslan, D.	ENVR	617	Ambrosio, R.C.	ENFL	223
Alibabaei, L.	INOR	452	Alpaslan, D.	ENVR	618	Ambrósio, S.R.	MEDI	120
Alibabaei, L.	INOR	519	Alperen Ayhan, I.	ENFL	439	Ameen, N.	COLL	197
Alibay, I.	COMP	191	Alqurafi, M.	MEDI	127	Ameer, B.	CHED	415
Alibeik, S.	CHED	72	Al-Saadi, A.A.	COLL	126	Ameer, B.	CHED	46
Alila, M.	PHYS	478	Alsayari, A.	AGFD	59	Amegadzie, A.K.	MEDI	388
Alisaraie, L.	MEDI	335	Alsaygh, A.A.	COLL	73	Amenós, L.	ORGN	626
Alivisatos, P.	COLL	405	Alsaiee, A.	PMSE	357	Amiel, C.	POLY	74
Alivisatos, P.	PHYS	313	Alsegiani, A.	ANYL	120	Amirkulova, D.B.	COMP	269
Alivisatos, P.	PHYS	521	Alshafei, F.	INOR	40	Amos, J.	AGRO	262
Al-Johani, A.	CHED	266	Al-Shalalfeh, M.	COLL	126	Amour, A.	MEDI	113
Alkadi, F.	PMSE	164	Alsharif, Z.	MEDI	365	Amrutkar, A.R.	PMSE	175
Alkan, B.	AGFD	278	Alsharif, Z.	ORGN	680	An, H.	CATL	127
Al-Khalifa, S.	MEDI	413	Alshawabkeh, A.	ENVR	726	An, J.	ORGN	459
Alkhatabi, H.	MEDI	365	Alshehri, I.	POLY	567	An, M.	ORGN	533
Alkhatabi, H.	ORGN	680	alsolmi, M.	CHED	266	An, M.	ORGN	534
Allais, F.	CATL	267	Alstadt, V.	PHYS	560	An, M.	ORGN	550
Allais, F.	ORGN	433	Alston, J.R.	PMSE	120	An, T.	AGFD	121
Allais, F.	POLY	134	Altaf, A.	BIOL	84	An, W.	INOR	87
Allais, F.	POLY	184	Altaf, A.	I&EC	48	An, Z.	CATL	318
Allais, F.	POLY	347	Altaf, A.	MEDI	291	An, Z.	CATL	322
Allais, F.	POLY	583	Altaf, M.B.	PHYS	556	Ana, P.	INOR	370
Allam, N.	CATL	239	Altaher, M.	POLY	530	Anagnostopoulos, V.	AEI	24
Allan, J.	AGRO	244	Altay, E.	POLY	579	Anagnostopoulos, V.	CHED	434
Allan, J.	AGRO	359	Altay, F.	AGFD	278	Anagnostopoulos, V.	GEOC	36
Allan, K.	ORGN	207	Altiti, A.	MEDI	98	Anand, K.	ORGN	365
Allard, T.	COLL	284	Altiti, A.	ORGN	86	Anand, R.	MEDI	14
Allard-Vannier, E.	BIOL	225	Altman, A.B.	INOR	166	Anand, R.	MEDI	346

Anandkrishnan, R.	COMP	332	Andres, J.	MEDI	178	Ara, I.	INOR	624
Anandan, A.	ENVR	246	Andresen, J.L.	AGFD	62	Arachchi, R.W.	INOR	114
Anandharaj, A.	TOXI	81	Andrew, D.	MEDI	350	Arachchi, R.W.	INOR	436
Ananikov, V.	ORGN	201	Andrews, A.	BIOL	174	Arachchige, I.U.	COLL	123
Ananthkrishnan, S.	PMSE	358	Andrews, A.M.	ANYL	201	Arachchige, I.U.	COLL	147
Anasori, B.	ENFL	180	Andrews, D.	AGRO	117	Arachchige, I.U.	COLL	159
Anastasaki, A.	PMSE	88	Andrews, K.	MEDI	388	Arachchige, I.U.	COLL	163
Anastasaki, A.	POLY	296	Andrews, L.	MEDI	278	Arachchige, I.U.	INOR	339
Anastasi, V.	MEDI	366	Andrews, M.C.	ORGN	547	Arachchige, I.U.	INOR	609
Anastasio, N.C.	MEDI	16	Andrianov, A.K.	POLY	430	Arachchige, I.U.	INOR	614
Andalari, G.	ENVR	538	Andrieux, S.P.	PMSE	565	Arai, R.	ORGN	709
Andaluri, G.	ENVR	55	Androphy, E.	MEDI	55	Araneda, J.	CHED	407
Andaluri, G.	ENVR	60	Aneja, R.	MEDI	372	Arango, C.A.	PMSE	676
Andersen, A.	CATL	47	Aneksampant, A.	ENVR	570	Aranibar, N.	MEDI	272
Andersen, A.	GEOC	54	Angeles Boza, A.M.	INOR	2	Araoka, F.	ORGN	427
Andersen, C.	ENFL	154	Angile, F.	PMSE	138	Araoka, F.	ORGN	508
Andersen, N.H.	COMP	218	Angiolillo, P.	PHYS	437	Araoka, F.	POLY	236
Anderson, B.	BIOL	91	Angles, G.	COMP	182	Arasteh, S.	BIOL	86
Anderson, B.	NUCL	24	Angotti, A.	PMSE	617	Araud, E.	ENVR	243
Anderson, C.	POLY	365	Angrand, G.	PMSE	629	Aravapalli, S.	MEDI	9
Anderson, C.A.	AGRO	45	Angulo, A.	ENVR	214	aravapalli, s.	MEDI	90
Anderson, C.J.	AGRO	245	Angus, V.	CHED	270	Aravind, J.	PMSE	19
Anderson, C.J.	POLY	218	Anker, J.N.	ANYL	318	Arbabi, A.	PHYS	536
Anderson, C.J.	POLY	265	Ankner, J.	PMSE	50	Arbabi, E.	PHYS	536
Anderson, C.J.	POLY	268	Anna, J.M.	PHYS	567	Arble, C.	COLL	268
Anderson, C.M.	BIOL	182	Annamalai, T.	MEDI	229	Arbor, S.C.	COMP	195
Anderson, C.M.	INOR	10	Ansari, A.	TOXI	10	Arbuckle-Keil, G.	ANYL	367
Anderson, C.M.	INOR	690	Ansell, K.	MEDI	374	Arca, H.	POLY	328
Anderson, C.M.	PHYS	274	Ansell, K.	MEDI	375	Arce Corrales, M.	CHAS	21
Anderson, G.	MEDI	275	Anseth, K.S.	ORGN	314	Arce-Corrales, M.	CHAS	24
Anderson, J.B.	COMP	135	Anseth, K.S.	ORGN	593	Arce-Sarria, A.	ENVR	648
Anderson, J.L.	ANYL	378	Anseth, K.S.	POLY	117	Archer, J.J.	ANYL	125
Anderson, J.P.	CHED	111	Anseth, K.S.	POLY	428	Archer, J.J.	ANYL	45
Anderson, J.P.	CHED	369	Anslyn, E.V.	ORGN	426	Archer, L.A.	ENFL	391
Anderson, J.R.	ORGN	607	Anslyn, E.V.	PMSE	422	Archer, S.	PHYS	16
Anderson, K.	CHED	1	Anspaugh, D.	AGRO	74	Archer, W.	PMSE	600
Anderson, K.	CHED	409	Anterola, A.M.	AGRO	219	Archetti, A.	PHYS	497
Anderson, K.	CHED	411	Anthony, A.	ORGN	450	Archev, D.	ENVR	313
Anderson, K.	COLL	350	Anthony, J.E.	PHYS	269	Archibald, S.J.	FLUO	17
Anderson, K.	MEDI	262	Anthony, T.	COLL	171	Arcidiacono, S.	AGFD	174
Anderson, K.A.	AGFD	291	Antonio, M.R.	INOR	65	Arciniegas, M.P.	COLL	494
Anderson, L.	PMSE	620	Antonio, M.R.	NUCL	57	Arciva, S.	ENVR	386
Anderson, M.	AGRO	212	Antuono, G.	BIOL	38	Arcoria, P.	CHED	217
Anderson, M.P.	BIOL	67	Antwi, J.	MEDI	357	Ardakani, A.	COMP	262
Anderson, N.	INOR	75	Anumol, T.	AGRO	86	Ardakani, A.	COMP	274
Anderson, R.	ENVR	58	Anumol, T.	ENVR	777	Ardèvol, A.	PHYS	97
Anderson, R.	PHYS	527	Anwander, R.	INOR	444	Arfanis, M.	ENVR	416
Anderson, R.	PRES	8	Anyaeibu, O.	ENVR	650	Argall, A.D.	PMSE	359
Anderson, S.	ANYL	311	Anzalone, N.	MEDI	278	Argikar, U.A.	MEDI	262
Anderson, S.	COLL	350	Aoki, M.	COMP	30	Arguero, C.R.	PMSE	360
Anderson, S.	INOR	259	Aono, M.	CINF	96	Argun, A.	PMSE	564
Anderson, S.L.	CATL	336	Aoshima, S.	POLY	299	Arias, C.J.	COLL	511
Anderson, S.L.	PHYS	236	Aparicio, M.	PMSE	665	Arias, C.J.	COLL	568
Anderson, T.D.	AGRO	104	Apaydin, D.	COLL	69	Arias, R.N.	INOR	346
Anderson, T.D.	AGRO	149	Apblett, A.W.	COLL	340	Arienti, P.	ENVR	476
Anderson, T.D.	AGRO	150	Apblett, A.W.	COLL	341	Arif, A.	INOR	424
Anderson, T.D.	AGRO	158	Apblett, A.W.	COLL	392	Arima, R.	MEDI	336
Anderson, T.D.	AGRO	209	Apblett, A.W.	ENVR	186	Arimitsu, K.	ORGN	246
Anderson, T.J.	INOR	571	Apblett, A.W.	INOR	129	Arishiro, T.	ENVR	582
Anderson, T.J.	INOR	79	Apel, E.C.	PHYS	124	Arkin, M.	MEDI	216
Anderson, W.	ENFL	41	Apel, E.C.	PHYS	41	Arkin, M.	MEDI	62
Andersson, T.	ANYL	192	Aplan, M.P.	PHYS	67	Arkin, M.	MEDI	63
Ando, H.	PMSE	250	Aplan, M.P.	PMSE	278	Arkin, M.	MEDI	64
Andrade, C.R.	MEDI	155	Apodaca, S.	ENVR	697	Arkin, M.	MEDI	65
Andrade, G.	INOR	586	Apon, A.	COMP	184	Arkles, B.	INOR	305
Andrade, N.A.	ENVR	647	Aponick, A.	ORGN	79	Arkles, B.	POLY	162
Andrade, R.B.	MEDI	131	Aponte, J.C.	PHYS	542	Armacost, K.	COMP	255
Andrade, R.B.	MEDI	355	Appavoo, K.	PHYS	110	Armacost, K.	COMP	293
Andrade, R.B.	ORGN	304	Appavoo, K.	PHYS	184	Armand, J.	ORGN	622
Andrade, R.B.	ORGN	358	Appel, A.M.	INOR	280	Armani, A.M.	POLY	215
Andrade, R.B.	ORGN	360	Appell, M.	CHED	352	Armbrust, K.L.	AGRO	139
Andrade, R.B.	ORGN	362	Appella, D.	ORGN	447	Armbrust, K.L.	AGRO	266
Andrade, R.B.	ORGN	755	Applegate, G.A.	BIOL	71	Armbrust, K.L.	AGRO	296
André, S.	ORGN	515	Applegate, G.A.	ORGN	291	Armbrust, K.L.	CHED	118
André, S.	POLY	330	Applin, S.	COLL	407	Armendariz Jr., R.	ENVR	694
Andreassi, J.L.	AGRO	195	Aprelev, P.	PMSE	35	Armes, S.P.	PMSE	112
Andrescu, S.	AGFD	199	Aprelev, P.	PMSE	466	Armes, S.P.	PMSE	259
Andrescu, S.	COLL	331	Apul, O.G.	ENVR	417	Armes, S.P.	PMSE	534
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Armstrong, M.	CHAL	3	Ashley, D.	COLL	591	Autrey, T.	CATL	32
Armstrong, M.	CHAL	5	Ashley, D.	ORGN	511	Autrey, T.	ENFL	116
Arnal-Herault, C.	PMSE	524	Ashley, D.	ORGN	600	Auxier II, J.	NUCL	1
Arnarez, C.	COMP	222	Ashley, D.	ORGN	601	Auxier, J.D.	NUCL	14
Arnarez, C.	COMP	300	Ashour, S.	CHED	281	Auxier, J.D.	NUCL	37
Arndt, K.	POLY	174	Ashraf, M.	CATL	204	Avadhani, A.S.	ORGN	48
Arndtsen, B.	CATL	66	Ashraf, S.	ENFL	492	Avantaggiati, M.	MEDI	77
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Arnett, N.	POLY	44	Ashraf, Z.	MEDI	183	Averick, S.	POLY	592
Arnett, N.	POLY	502	Ashworth, H.W.	CHED	132	Aversa, R.	ORGN	208
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Arnold, A.	PMSE	247	Aslanian, R.G.	CHED	42	Avila, P.	CATL	35
Arnold, J.	AGRO	174	Aslanian, R.G.	MEDI	14	Avitia-Domínguez, C.	MEDI	152
Arnold, J.	INOR	166	Asleud, K.	MEDI	318	Avitia-Domínguez, C.	MEDI	379
Arnold, J.	INOR	591	Asmussen, M.	GEOC	16	Avitia-Domínguez, C.I.	MEDI	132
Arnold, J.	INOR	620	Aspin, S.J.	ORGN	557	Avitia-Domínguez, C.I.	MEDI	133
Arnold, W.	ENVR	209	Aspuru-Guzik, A.	PHYS	241	Awad, A.K.	ORGN	550
Arnold, W.	ENVR	395	Aspuru-Guzik, A.	PHYS	243	Awika, J.	AGFD	147
Arnold, W.	ENVR	530	Asselin, J.	COLL	371	Axe, L.B.	ENVR	294
Arnold, W.	ENVR	744	Asselin, J.	COLL	372	Axe, L.B.	ENVR	774
Arnold, W.	ENVR	791	Asselin, J.	COLL	545	Axnanda, S.	COLL	386
Arnst, K.	MEDI	290	Assenberg, R.	MEDI	250	Axson, J.L.	ENVR	625
Arnstein, S.	COMP	344	Asthagiri, A.R.	ENFL	59	Axt, S.	ORGN	207
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Aronov, A.M.	COMP	140	Atanasov, M.	INOR	200	Aye, Y.	BIOL	180
Aronova, M.A.	PHYS	60	Ates-Alagoz, Z.	MEDI	324	Aye, Y.	ORGN	373
Arora, A.	ORGN	577	Atesin, T.	INOR	595	Aye, Y.	ORGN	442
Arora, A.	ORGN	638	Atesin, T.	INOR	596	Aye, Y.	TOXI	4
Arora, A.	POLY	27	Atherton, J.	MEDI	20	Aye, Y.	TOXI	5
Arora, A.	POLY	81	Atieh, E.L.	CHED	68	Aye, Y.	TOXI	6
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Arroyave, J.	POLY	571	Atieh, T.	PHYS	163	Ayoub, A.	AEI	4
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Arroyo, N.	ANYL	387	Atilla-Gokcumen, G.	AGRO	227	Ayoub, M.E.	ORGN	258
Arroyo-Ramirez, L.	CATL	265	Atilla-Gokcumen, G.	AGRO	233	Ayres, N.	POLY	1
Arrua, R.	PMSE	72	Atilla-Gokcumen, G.	BIOL	177	Ayres, N.	POLY	23
Arslan, H.	AEI	45	Atilla-Gokcumen, G.	BIOL	81	Ayscue, R.L.	INOR	329
Arslan, H.	ORGN	604	Atisha, A.	COLL	499	Aytenfis, A.	COMP	242
Arslanoglu, J.	POLY	416	Atkins, A.	COLL	286	Ayub, M.	I&EC	48
Artiga, D.	COLL	247	Atkins, P.	MPPG	19	Ayyappan, S.	AGRO	247
Artikis, E.	COMP	203	Atkinson, D.	ANYL	148	Ayyaswamy, P.	COLL	358
Artin, E.	MEDI	268	Atkinson, F.	AGRO	277	Ayyaswamy, P.	COMP	291
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Arturo, S.G.	COMP	154	Atta, S.	COLL	86	Azemati, S.	INOR	117
Arturo, S.G.	I&EC	6	Attanayake, N.H.	CATL	21	Azevedo, I.	ENVR	247
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Arumugam, S.	I&EC	50	Aube, J.	ORGN	585	Azizian, M.	ENVR	525
Arvedson, T.	MEDI	266	Auchampach, J.	MEDI	165	Azizian, M.F.	ENVR	329
Aryan, A.	AGRO	212	Aucoin, M.	ENVR	38	Azlein, S.	ANYL	149
Arza, C.R.	PMSE	116	Audagnotto, M.	COMP	159	Azuma, K.	PMSE	135
Asa-Awuku, A.	PHYS	559	Audat, S.A.	TOXI	71	Azuma, K.	PMSE	386
Asahi, T.	POLY	52	Audet, J.	COLL	474	Azuma, T.	PMSE	535
Asai, Y.	POLY	482	Audie, J.	COMP	342	Azzarelli, N.J.	INOR	257
Asandei, A.D.	POLY	182	Audie, J.	COMP	57	Azzolino, V.	INOR	443
Asante-Appiah, E.	MEDI	276	Audouin, F.	PMSE	184	Baade, B.	ANYL	152
Asante-Dartey, J.	AGFD	90	Auguste, D.	PMSE	621	Baade, B.	COLL	382
Asbury, J.B.	PHYS	269	Auguste, D.	PMSE	624	Baalousha, M.	ENVR	661
Asbury, J.B.	PHYS	439	Augustin, P.	AGFD	121	Bababrik, R.	ENFL	100
Asbury, J.B.	PHYS	449	Augustine, R.L.	CATL	11	Babamale, F.H.	MEDI	368
Asbury, J.B.	PHYS	65	Augusto, P.A.	ENVR	251	Babaoglu, K.	COMP	28
Asbury, J.B.	PHYS	67	Augusto, P.A.	ENVR	531	Babaoglu, K.	FLUO	19
Asfaha, T.Y.	BIOL	200	Aulakh, D.	INOR	34	Babb, D.	ORGN	275
Asfour, H.	MEDI	138	Aulakh, D.	INOR	87	Babikov, D.	PHYS	177
Asghar, F.	COMP	282	Auld, R.	POLY	168	Babin, J.	PMSE	524
Ash, J.	COMP	179	Auletta, J.T.	PMSE	360	Babu, S.	BIOL	145
Ashbaugh, H.	PMSE	677	Aulin, Y.V.	COLL	181	Bach Knudsen, K.	AGFD	124
Ashbolt, N.	ENVR	575	Ault, A.P.	ENVR	625	Bachmann, B.O.	AGFD	218
Ashby, J.	BIOL	91	Ault, A.P.	PHYS	87	Bachofer, S.J.	COLL	100
Ashby, R.	AGFD	267	Ault, B.S.	ORGN	195	Backer, B.	MEDI	172
Ashcroft, C.	COLL	363	Ault, B.S.	PHYS	380	Backlund, M.P.	PHYS	536
Ashford, D.L.	INOR	462	Aungwerjanawit, S.	PMSE	361	Backvall, J.E.	CATL	334
Ashikari, Y.	PMSE	339	Austin, A.	PMSE	591	Bacon, E.	ORGN	206
Ashley, B.	COLL	129	Austin, M.F.	CHED	221	Bacon, S.	ENVR	289



Bacsa, J.	INOR	494	Bailey, R.C.	PMSE	425	Balkus, K.J.	ENFL	88
Baddorf, A.	PHYS	522	Bailey, T.S.	PMSE	622	Balkus, K.J.	INOR	362
Baddour, F.	INOR	42	Bailey, W.F.	ORGN	324	Ball, K.	PHYS	549
Baddour, F.G.	CATL	300	Bailey, W.F.	ORGN	715	Ball, N.D.	INOR	553
Baddour, F.G.	INOR	41	Baio, J.	COLL	272	Ball, N.D.	ORGN	484
Bader, M.	AGFD	123	Bair, N.	BIOL	139	Ball, W.P.	ENVR	262
Bader, S.	MEDI	299	Baird, B.	PMSE	283	Ballauff, M.M.	COLL	11
Badilla Wargniez, A.	CHED	42	Baird, D.	COLL	75	Ballesteros, F.	ENVR	600
Badireddy, R.	ENVR	75	Baird, N.	COLL	208	Balnius, K.	CHED	206
Badoga, S.	ENFL	67	Baird, N.J.	BIOL	244	Balow, R.B.	COLL	242
Badshah, A.	COMP	282	Bajaj, A.	ENVR	403	Balsara, N.P.	POLY	25
Badshah, A.	I&EC	48	Bajaj, P.	PHYS	12	Balsells, J.	FLUO	19
Badshah, A.	MEDI	291	Bajammal, A.K.	CHED	11	Baltrusaitis, J.	ENFL	152
Baduell, E.	INOR	315	Bajdich, M.	COLL	389	Balu, A.M.	ENVR	253
Badziai, A.	ORGN	250	Bajorath, J.	CINF	88	Balucani, N.	PHYS	328
Bae, B.	AGRO	237	Bajorath, J.	CINF	89	Balucani, N.	PHYS	331
Bae, C.	POLY	507	Bajorath, J.	COMP	150	Balucani, N.	PHYS	423
Bae, G.	PHYS	430	Bajorath, J.	COMP	151	Bam, M.	POLY	487
Bae, J.	PHYS	448	Bajorath, J.	MEDI	210	Bamane, F.	MEDI	138
Bae, J.	POLY	360	Bajorath, J.	MEDI	93	Bamigboye, M.O.	INOR	258
Bae, S.	ANYL	124	Bajwa, S.	PMSE	48	Bamonte, s.	CATL	215
Bae, S.	ANYL	69	Bakanas, I.	ORGN	732	Ban, C.	BIOL	190
Bae, S.	ENVR	577	Bakare, O.	MEDI	325	Ban, C.	BIOL	191
Baek, D.	MEDI	101	Baker, C.	ANYL	309	Ban, C.	BIOL	219
Baek, J.	I&EC	43	Baker, C.	BIOL	208	Ban, C.	CATL	297
Baek, J.	ORGN	352	Baker, C.C.	POLY	441	Ban, D.	PHYS	334
Baek, J.	ORGN	356	Baker, D.	MEDI	374	Ban, L.	AGFD	98
Baek, Y.	INOR	592	Baker, D.	MEDI	375	Banares, M.A.	CATL	100
Baer, M.D.	COMP	153	Baker, E.L.	WCC	8	Banares, M.A.	CATL	35
Baer, M.D.	PMSE	611	Baker, J.H.	CATL	330	Banares, M.A.	CATL	90
Baer, M.D.	POLY	170	Baker, J.H.	POLY	566	Banares, M.A.	COLL	262
Bagal, S.K.	COMP	106	Baker, J.S.	PMSE	175	Banares, M.A.	ENFL	26
Bagchi, P.	AEI	3	Baker, K.	MEDI	162	Banaszak Holl, M.M.	POLY	427
Bagchi, P.	INOR	494	Baker, K.	MEDI	395	Bandarian, V.	BIOL	130
Bagge, R.	POLY	58	Baker, L.	PHYS	63	Bandarian, V.	BIOL	5
Baghaie, S.	ENVR	536	Baker, L.A.	ANYL	112	Bandason, E.	AGRO	282
Baghbanzadeh, M.	ORGN	96	Baker, L.A.	ANYL	137	Bandeled, O.J.	AGFD	100
Baghdachi, J.	PMSE	173	Baker, L.A.	ANYL	360	Bandler, I.G.	ORGN	534
Bagheri, M.	BIOL	86	Baker, L.A.	ANYL	37	Bandler, I.G.	ORGN	550
Bagley, M.	CHED	219	Baker, M.A.	ORGN	475	Bandong, B.	NUCL	17
Bagley, S.W.	MEDI	17	Baker, M.J.	ANYL	366	Bandyopadhyay, B.	COMP	304
Bagley, S.W.	ORGN	419	Baker, N.A.	COMP	5	Bandyopadhyay, D.	ORGN	697
Bagley, S.W.	ORGN	747	Baker, T.	AGFD	40	Bandyopadhyay, D.	ORGN	698
Bagot, P.	CATL	46	Bakh, N.	ANYL	320	Bandyopadhyay, D.	ORGN	770
Bagus, P.S.	INOR	539	Bakhmitov, V.	INOR	364	Bandyopadhyay, D.	ORGN	771
Bagusetty, A.	ENFL	336	Bakhranov, N.	ENFL	263	Banerjee, A.	POLY	133
Bahauddin, S.	ENVR	360	Bakhshi, T.	COLL	246	Banerjee, D.	BIOL	74
Bahceci Sertkol, S.	ENFL	445	Bakke, M.	AGFD	118	Banerjee, K.	ORGN	741
Bahl, S.	MEDI	294	Bakr, O.M.	PHYS	131	Banerjee, P.R.	PHYS	334
Bahnson, B.J.	BIOL	100	Bakrania, S.	CHED	102	Banerjee, U.	COLL	469
Bahr, G.	AGRO	82	Baksh, M.M.	ORGN	417	Baneyx, F.	INOR	269
Bahrani, B.	PMSE	586	Balaa, G.	CHED	325	Bang, J.	INOR	162
Bahreini, R.	PHYS	124	Balaich, G.J.	POLY	369	Banik, G.M.	ANYL	375
Bahten, K.	ANYL	299	Balaich, G.J.	POLY	438	Bank, T.	ENVR	26
Bai, C.	COMP	395	Balacrishna, M.	CATL	175	Bank, T.	GEOC	92
Bai, H.	AGRO	75	Balasubramanian, R.	MEDI	103	Bank, T.	GEOC	93
Bai, J.	AGFD	64	Balati, A.	ENVR	356	Banker, D.	PMSE	381
Bai, J.	BIOL	231	Balazs, A.C.	COMP	98	Banker, M.	MEDI	271
Bai, L.	AGFD	50	Balazs, A.C.	PMSE	563	Banks, A.	PHYS	211
Bai, L.	ANYL	230	Balbo, S.	TOXI	64	Banks, A.J.	CHED	387
Bai, L.	MEDI	229	Balboni, E.	NUCL	10	Banks, H.	ORGN	43
Bai, M.	PMSE	362	Balboni, E.	NUCL	6	Bannister, T.D.	MEDI	207
Bai, Y.	ENVR	157	Balboni, E.	NUCL	8	Bansal, A.	PMSE	681
Bai, Y.	PHYS	392	Balcells Garcia, S.	ORGN	155	Bansil, A.	COLL	146
Bai, Y.	PHYS	565	Balcer, J.	AGRO	29	Banting, L.	COMP	244
Baiamonte, A.N.	CHED	320	Balcer, J.	ANYL	17	Bao, J.	ENVR	512
Baidoo, K.	ORGN	52	Balcioglu, M.	COLL	420	Bao, L.	AGRO	170
Baier, B.C.	PHYS	218	Balcioglu, M.	ENVR	490	Bao, X.	PRES	28
Baik, M.	COLL	486	Balciunaitis, A.	ENFL	208	Barak, E.	PMSE	69
Baik, M.	COLL	590	Balciunaitis, A.	ENFL	242	Baraldo, L.	INOR	470
Baik, M.	COLL	591	Baldwin, E.	AGFD	64	Baran, P.S.	ORGN	80
Baik, M.	INOR	547	Baldwin, E.	BIOL	231	Barannikova, E.	ENFL	440
Baik, M.	ORGN	511	Baldwin, L.	INOR	106	Barannikova, E.	ENFL	443
Baik, M.	ORGN	600	Baldwin, M.J.	ORGN	477	Barasa, L.	MEDI	316
Baik, M.	ORGN	601	Baldwin, S.W.	CHAS	3	Barashkov, N.	ENVR	679
Baik, M.	ORGN	783	Balfour, M.N.	ORGN	686	Barashkov, N.	PHYS	385
Bailey, A.B.	AGFD	100	Balgooyen, S.J.	COLL	287	Barashkov, N.	PHYS	393
Bailey, A.B.	AGFD	29	Balgooyen, S.J.	ENVR	341	Barasoain, I.	COMP	138
Bailey, M.D.	INOR	440	Baliya, A.	CHED	321	Baratta, L.	ENVR	73
Bailey, R.C.	ANYL	220	Baljinnyam, B.	BIOL	69	Barazesh, J.M.	ENVR	270

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Barba, A.	CINF	46	Barrish, J.C.	MEDI	380	Basu, A.K.	TOXI	12
Barbacci, D.C.	ANYL	46	Barron, A.E.	POLY	460	Basu, S.	AGRO	212
Barbee, M.H.	PMSE	363	Barroo, C.	CATL	48	Bata, Z.	BIOL	132
Barber, L.R.	ORGN	586	Barros, S.	BIOL	261	Batchelor, B.L.	POLY	337
Barber, L.R.	ORGN	587	Barroso, F.	PMSE	392	Bateman, K.	ANYL	183
Barber, P.S.	AEI	27	Barroux, H.	INOR	371	Bates, C.	POLY	388
Barber, V.P.	PHYS	453	Barry, J.	INOR	249	Bates, C.	WCC	5
Barbhaiya, R.	SCHB	13	Barry, J.	INOR	425	Bates, F.	PMSE	78
Barbiellini, B.	COLL	146	Barry, J.D.	AGRO	156	Bates, F.	POLY	81
Barbieri, K.	MEDI	328	Barry, M.E.	POLY	332	Bates, F.S.	POLY	27
Barbieri, K.P.	MEDI	329	Barsanti, P.A.	ORGN	208	Bates, J.E.	AEI	49
Barbosa, D.	ENVR	251	Barsotti, R.	POLY	510	Bates, J.E.	COMP	15
Barbosa, D.	ENVR	531	Barsoum, M.	INOR	607	Bates, K.	PHYS	224
Barcelo, D.	ENVR	422	Barsoum, M.W.	ENFL	180	Bathe, M.	COMP	64
Barcelo, D.	ENVR	770	Barsoum, M.W.	ENFL	276	Bathula, Y.	AGFD	188
Barcena, H.S.	CHED	202	Barsoum, M.W.	ENFL	281	Batista, V.S.	BIOL	227
Barcena, H.S.	CHED	203	Barsoum, M.W.	ENFL	287	Batista, V.S.	COMP	112
Barcena, H.S.	CHED	229	Barsoum, M.W.	ENFL	441	Batista, V.S.	COMP	164
Barcena, H.S.	CHED	296	Barsoum, M.W.	ENFL	504	Batista, V.S.	COMP	306
Barcena, H.S.	CHED	297	Bart, S.C.	INOR	334	Batista, V.S.	COMP	382
Barcena, H.S.	ORGN	70	Bart, S.C.	INOR	75	Batista, V.S.	ENFL	447
Barchi, J.J.	COMP	242	Bartberger, M.D.	MEDI	266	Batista, V.S.	PHYS	160
Bardeen, C.J.	ORGN	45	Bartee, D.	BIOL	105	Batista, V.S.	PHYS	199
Bardeen, C.J.	PHYS	66	Bartee, D.	BIOL	60	Batista, V.S.	PHYS	290
Bare, S.R.	CATL	34	Bartels, M.	AGRO	342	Batiste, S.M.	WCC	7
Barefoot, A.C.	AGRO	331	Bartelt-Hunt, S.	ENVR	743	Batmanghelich, F.	ENVR	79
Barefoot, A.C.	AGRO	77	Bartelt-Hunt, S.	ENVR	787	Batool, M.	ENFL	307
Barefoot, A.C.	ENVR	206	Barter, M.	CATL	255	Batool, S.	COLL	269
Barg, F.	TOXI	27	Barter, M.	CATL	256	Batool, S.	MEDI	69
Bargar, J.R.	COLL	20	Barth, D.	PMSE	524	Battaglia, G.	POLY	169
Bargar, J.R.	GEOC	13	Barth, R.	AGFD	205	Bau, H.	ANYL	313
Bargar, J.R.	GEOC	17	Barth, R.	ENVR	307	Baucom, K.	ORGN	563
Barger, C.	CATL	324	Barthel, J.	GEOC	65	Bauer, N.	POLY	421
Baricci, A.	ENFL	61	Bartholomay, L.	AGRO	160	Baughman, R.	INOR	612
Barile, C.J.	ENFL	497	Bartholomew, A.K.	INOR	505	Baum, J.	CHAS	7
Barkakaty, B.	POLY	500	Bartholomew, T.	ENFL	145	Baum, J.	PHYS	163
Barkalow, T.W.	AGRO	6	Bartholomew, T.V.	ENVR	184	Bauman, M.N.	CHED	289
Barker, J.	PHYS	525	Bartlett, A.	COMP	68	Baumann, S.A.	AGRO	32
Barker, T.J.	ORGN	388	Bartlett, J.H.	PHYS	216	Baumgart, T.	POLY	466
Barkholtz, H.	ENFL	247	Bartlett, R.J.	COMP	14	Baumgartner, R.	POLY	292
Barman, T.K.	MEDI	137	Bartlett, R.J.	COMP	71	Bauwens, E.	POLY	309
Barnard, D.T.	PHYS	359	Barton, D.G.	CATL	268	Bawendi, M.G.	PHYS	182
Barnard, D.T.	PHYS	456	Barton, H.	POLY	336	Bawendi, M.G.	PHYS	265
Barnard, D.T.	PHYS	540	Barton, H.	POLY	554	Bax, A.	BIOL	24
Barnard, J.	ENVR	69	Barton, J.K.	INOR	4	Bax, A.	PHYS	77
Barnekow, J.A.	AGRO	35	Barton, N.	MEDI	113	Baxley, S.	PMSE	639
Barner-Kowollik, C.	POLY	547	Bartucci, M.	COLL	94	Baxter, J.B.	COLL	311
Barnes, B.C.	COMP	412	Bartucci, M.A.	COLL	202	Baxter, J.B.	ENFL	253
Barnes, C.	ORGN	519	Bartynski, R.A.	INOR	466	Baxter, J.B.	INOR	47
Barnes, E.	COMP	77	Baruch, M.F.	INOR	560	Baxter, J.B.	INOR	48
Barnes, E.	ENVR	405	BARYEH, K.	ANYL	72	Baxter, J.B.	INOR	527
Barnett, H.	ENFL	77	Barz, M.	POLY	120	Baxter, J.B.	INOR	528
Barnhill, S.	PMSE	306	Basal, L.A.	INOR	440	Baxter, J.B.	PHYS	324
Barone, V.	ENFL	339	Basch, C.	ORGN	409	Baxter, N.	ENFL	460
Barone, V.	ENFL	474	Basch, C.	ORGN	410	Baxter, N.	ENFL	77
Barone, V.	PHYS	328	Basch, C.	ORGN	782	Bayden, A.S.	COMP	231
Barr, S.	COMP	397	Basdogan, Y.	CATL	109	Bayden, A.S.	COMP	342
Barr, T.J.	PHYS	566	Baser-Kirazli, N.	INOR	172	Bayden, A.S.	COMP	57
Barres, A.	COLL	186	Baser-Kirazli, N.	PMSE	204	Bayden, A.S.	MEDI	157
Barrett, A.G.	ORGN	217	Bashaw, K.	ORGN	606	Bayesteh, A.	ORGN	53
Barrett, B.	INOR	390	Basom, E.J.	ANYL	218	Baylon, R.	ENFL	24
Barrett, I.	COMP	171	Basom, E.J.	ANYL	219	Bayne, K.	CHED	31
Barrett, J.	CATL	262	Bassampour, Z.S.	INOR	206	Bays, N.	MEDI	346
Barrett, J.	MEDI	341	Bassampour, Z.S.	PMSE	364	Baysal, M.	AGFD	278
Barrett, J.	MEDI	344	Bassell, G.	BIOL	95	Bayse, C.A.	CHED	402
Barrett, K.	ENVR	549	Basser, P.J.	BIOL	159	Bazan, G.C.	COLL	460
Barrett, K.	ENVR	706	Basser, P.J.	POLY	69	Bazan, G.C.	COLL	577
Barrett, M.	AGRO	326	Basset, J.M.	CATL	153	Bazant, M.Z.	COLL	554
Barrett, T.	ORGN	592	Basset, J.M.	CATL	270	Bazante, A.	COMP	71
Barrett, T.	PHYS	87	Basset, J.M.	CATL	319	Bazargan, G.	PHYS	422
Barrett, T.M.	BIOL	164	Basset, J.M.	CATL	327	Bazer, F.	ENVR	282
Barrie, M.	CHED	203	Bassett, A.W.	CHED	228	Bazewicz, C.	PHYS	357
Barrington, J.	PMSE	346	Bassetto, M.	MEDI	81	Bazin, P.	CATL	100
Barrio, L.	CATL	57	Basso, M.	MEDI	265	Bazin, P.	ENFL	25
Barrios, A.	ENVR	660	Basso, M.	MEDI	377	Bazyleva, A.	I&E	7
Barrios, A.	ENVR	694	Basso, M.	MEDI	89	Bazzi, H.S.	POLY	376
Barrios, A.C.	ENVR	470	Bastarrachea, L.J.	AGFD	176	Be, N.	COLL	56
Barrios, A.C.	ENVR	739	Bastin, L.	CHED	231	Beachley, V.	PMSE	626
Barrish, J.C.	MEDI	18	Bastos, E.L.	ORGN	531	Beaman, K.	MEDI	332
Barrish, J.C.	MEDI	267	Basu, A.	POLY	367	Beamon, J.A.	INOR	254

Beams, R.	ENFL	503	Belford, R.E.	CINF	12	Bennett, J.T.	CHAS	51
Beams, R.	POLY	499	Belford, R.E.	CINF	9	Bennett, J.W.	AGRO	58
Beard, M.C.	INOR	86	Belh, S.	PHYS	367	Bennett, J.W.	INOR	373
Bearden, M.E.	ENFL	141	Belh, S.J.	ANYL	117	Bennevault, V.	POLY	125
Beasley, J.R.	MEDI	381	Belhomme, M.	ORGN	483	Bennevault, V.	POLY	188
Beasley, J.R.	MEDI	382	Belhomme, M.	ORGN	564	Bennie, S.	PHYS	247
Beaucage, P.	PMSE	242	Belikova, N.	ANYL	196	Beno, B.R.	MEDI	22
Beaugrand, J.	POLY	583	Belkina, V.	INOR	652	Benoit, A.	ORGN	574
Beaumier, E.	INOR	21	Bell, A.	PMSE	638	Benoit, A.	PRES	35
Beauvilliers, E.E.	INOR	536	Bell, A.T.	CATL	102	Benson, O.	POLY	110
Beaver, M.	ORGN	203	Bell, D.C.	CATL	48	Bento, J.	PMSE	152
Beavers, W.N.	TOXI	1	Bell, D.S.	ANYL	245	Bentz, S.	ORGN	455
Bebbington, M.	AEI	42	Bell, J.Q.	ORGN	123	Benvenuti, S.	AGFD	251
Bebbington, M.	ORGN	571	Bell, K.	ORGN	272	Benvenuti, S.	AGFD	266
Bec, K.	COMP	241	Bell, K.A.	CHED	190	Benvenuto, M.A.	ENVR	313
Becca, B.	CHED	204	Bell, M.M.	ORGN	534	Benvenuto, M.A.	ENVR	379
Becer, C.	POLY	136	Bell, M.M.	ORGN	550	Benvenuto, M.A.	ENVR	536
Becer, C.	POLY	287	Bell, S.	AGRO	346	Benza, D.	ANYL	318
Becer, C.	POLY	419	Bell, S.	COMSCI	2	Bera, M.	ORGN	14
Becer, C.	POLY	420	Bellayer, S.	PMSE	310	Bera, P.P.	PHYS	512
Becer, R.	POLY	480	Bellinger Buckley, S.	ORGN	184	Beran, G.J.	COMP	47
Becher, T.	POLY	329	Bellinger Buckley, S.	ORGN	186	Beran, G.J.	PHYS	249
Becher, T.	POLY	343	Bellinger Buckley, S.	ORGN	98	Beratan, D.N.	COMP	51
Becher, T.	POLY	578	Bellis, L.	COMP	80	Berberich, J.	POLY	248
Becica, J.	INOR	184	Belloche, A.	PHYS	384	Berda, E.B.	INOR	489
Beck, A.G.	CHED	304	Bellomo, A.	ORGN	297	Berda, E.B.	POLY	289
Beck, J.J.	AGRO	61	Bellona, C.	ENVR	107	Berdini, V.	MEDI	15
Beck, J.J.	AGRO	64	Bellona, C.	ENVR	239	Berdini, V.	MEDI	9
Beck, S.W.	ENVR	742	Bellona, C.	ENVR	59	Berenbaum, M.R.	AGFD	177
Becker, D.P.	MEDI	135	Bellonzi, N.	PHYS	427	Berenguer, R.	CATL	5
Becker, D.P.	MEDI	288	Bellows, S.M.	INOR	304	Beresini, M.H.	MEDI	25
Becker, M.	ENVR	412	Bell-Taylor, A.	INOR	51	Bereznak, J.F.	AGRO	194
Becker, M.	PMSE	326	Beloqui, A.	POLY	53	Bereznak, J.F.	AGRO	195
Becker, M.	POLY	4	Belosludov, R.	ENFL	90	Berg, D.	ENFL	84
Becker, R.	COMP	412	Belowich, M.	POLY	168	Berg, J.M.	INOR	331
Becker, U.	GEOC	63	Belvin, M.	ORGN	263	Bergbreiter, D.E.	CATL	310
Becker, U.	GEOC	74	Ben, Y.	ENVR	560	Bergeman, L.	ANYL	95
Beckford-Vera, D.R.	POLY	264	Benade, V.	MEDI	168	Bergeron, P.	MEDI	25
Beckham, G.	CATL	300	Benatrehina, P.	AGFD	53	Bergeson, L.L.	ENVR	200
Beckham, G.	ENFL	145	Bench, G.	ANYL	130	Berglund, L.	PMSE	146
Beckham, G.	POLY	137	Bench, G.	ANYL	64	Berglund, L.	PMSE	256
Beckwith, M.	POLY	484	Benchafia, E.	ENFL	103	Bergman, E.	ENVR	245
Becnel, J.J.	AGRO	316	Bendel, B.A.	PMSE	117	Bergman, H.	PMSE	540
Bedford, B.	AGFD	118	Bendelsmith, C.	ANYL	140	Bergman, R.G.	INOR	591
Bedford, J.	CHED	184	Bender, A.	COMP	171	Bergner, J.	PHYS	275
Bedford, M.	POLY	13	Bender, A.	MEDI	200	Bergo, C.H.	ANYL	304
Bedics, M.A.	COLL	87	Bender, D.	ENFL	446	Bergo, C.H.	CHED	16
Bednar, A.J.	ENVR	405	Bender, J.	POLY	275	Bergonzo, C.	COMP	407
Bedzyk, M.J.	CATL	329	Bender, J.A.	PHYS	109	Bergquist, A.	ENVR	428
Beebe, T.T.	ANYL	152	Bender, J.A.	PHYS	266	Bergquist, B.	CHED	299
Beebe, T.T.	COLL	333	Bender, M.	PMSE	65	Berhane, L.	ENFL	462
Beebe, T.T.	COLL	382	Bender, W.M.	GEOC	63	Berhane, T.	ENVR	547
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Beekley, B.	INOR	439	Bendjeriou-Sedjerari, A.	CATL	327	Berkowitz, D.	BIOL	78
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Beeton, R.P.	CHED	61	Benedict, J.B.	INOR	416	Berkowitz, D.B.	BIOL	71
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Begum, M.	ENFL	472	Benicewicz, B.C.	PMSE	652	Berlinck, R.	ORGN	413
Begum, S.	ANYL	4	Benicewicz, B.C.	PMSE	68	Berman, M.	GEOC	80
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Behnia, K.	MEDI	380	Benke, K.	INOR	538	Bernal, M.	ORGN	8
Behnia, K.	MEDI	89	Benke, K.	PHYS	64	Bernales, V.	INOR	26
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Beis, S.H.	CATL	175	Benner, S.A.	ORGN	6	Bernier, U.R.	AGRO	316
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Betley, T.	INOR	505	Bhyrapuneni, G.	MEDI	168	Bishai, W.R.	MEDI	144
Betley, T.	INOR	592	Bhyrapuneni, G.	MEDI	169	Bishoff, J.	CHED	29
Betley, T.	INOR	693	Bhyrapuneni, G.	MEDI	170	Bisker, G.	ANYL	320
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Biteen, J.S.	ANYL	177	Block, E.	COMP	382	Boffi, J.C.	MEDI	163
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Blackwell, H.E.	ORGN	595	Blum, D.	CHED	362	Böker, A.	PMSE	141
Blackwell, S.	CHED	133	Blum, F.D.	CHED	354	Bolduc, K.L.	MEDI	82
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Booksh, K.S.	ANYL	90	Bosquesi, P.L.	MEDI	102	Boyce, G.R.	AGFD	291
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Boone, E.S.	POLY	570	Botre, F.	ANYL	346	Boyd, S.A.	ENVR	545
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Boota, M.	ENFL	180	Bottalico, L.	TOXI	18	Boydston, A.J.	PMSE	339
Boota, M.	ENFL	441	Böttger, E.	MEDI	136	Boyer, C.	PMSE	349
Boota, M.	POLY	42	Bottofor, L.	INOR	254	Boyer, C.	PMSE	90
Boote, B.	ANYL	11	Botts, D.A.	AGRO	304	Boyer, C.	POLY	143
Booth, C.	NUCL	20	Botyanszki, Z.	BIOL	252	Boyer, I.J.	TOXI	50
Boothby, T.	PHYS	212	Bouchard, D.C.	ENVR	737	Boyer, I.S.	ENVR	738
Boothello, R.S.	MEDI	88	Bouchard, M.	POLY	435	Boyer, M.C.	PMSE	113
Bopp, C.	MEDI	84	Boucher, M.C.	PHYS	259	Boyer, S.	CINF	71
Boppart, S.	ENVR	78	Boucher, R.J.	CINF	39	Boyer, S.M.	AEI	28
Boppella, R.	ENVR	689	Boudjouk, P.R.	COMP	227	Boyer, S.M.	AEI	63
Boralugodage, N.	INOR	273	Boudjouk, P.R.	COMP	389	Boyer, S.M.	INOR	141
Borazjani, A.	TOXI	44	Boudjouk, P.R.	COMP	50	Boyer, S.M.	INOR	46
Borbulevych, O.	COMP	400	Boudreau, D.	COLL	371	Boyer, S.M.	PMSE	609
Borca, C.H.	COMP	13	Boudreau, D.	COLL	372	Boykin, B.	COMP	99
Borca, C.H.	COMP	290	Boudreau, D.	COLL	545	Boyko, W.	ORGN	46
Borca, C.H.	COMP	390	Bougie, F.	CATL	192	Boyle, A.J.	INOR	270
Borca, C.H.	PMSE	676	Bouilly, D.	COLL	234	Boyle, J.	ORGN	470
Borchardt, K.	CINF	14	Boulac, N.	MEDI	374	Boyles, D.A.	PHYS	372
Borchardt, R.	CINF	24	Boulac, N.	MEDI	375	Boyne, D.A.	INOR	84
Borchers, J.A.	INOR	583	Boundy-Mills, K.L.	AGRO	59	Bozarth, J.	MEDI	345
Bordoloi, B.K.	MEDI	96	Bour, J.R.	INOR	688	Bozarth, J.	MEDI	91
Bordon, C.	MEDI	48	Bour, J.R.	INOR	94	Bozarth, J.	MEDI	94
Boresch, S.	COMP	127	Bourassa, D.	ANYL	38	Bozell, J.J.	ORGN	660
Boresch, S.	COMP	177	Bourassa, D.	INOR	494	Bozich, J.	COLL	264
Boresch, S.	COMP	363	Bourassa, D.	INOR	506	Bozich, J.	ENVR	731
Borg, R.E.	ORGN	186	Bourbigot, S.	PMSE	196	Bozzelli, J.W.	ENVR	219
Borg, R.E.	ORGN	98	Bourbigot, S.	PMSE	310	Bozzelli, J.W.	ENVR	720
Borges, G.	CHED	33	Bourbigot, S.	PMSE	588	Bozzelli, J.W.	PHYS	176
Borgia, A.	PHYS	74	Bourg, I.C.	COLL	76	Bozzelli, J.W.	PHYS	487
Borgia, M.	PHYS	74	Bourg, I.C.	GEOC	4	Braasch, D.	POLY	256
Borguet, E.	CATL	21	Bourg, I.C.	GEOC	69	Bracco, J.	GEOC	66
Borguet, E.	COLL	146	Bourg, I.C.	GEOC	70	Brachet, G.	BIOL	225
Borguet, E.	COLL	156	Bourg, I.C.	GEOC	72	Brachet-Botineau, M.	MEDI	92
Borguet, E.	COLL	173	Bourgeois, J.	MEDI	92	Bracho, D.	PMSE	37
Borguet, E.	COLL	181	Bourgeois, M.	TOXI	89	Bracke, M.E.	MEDI	42
Borguet, E.	ENFL	102	Bourin, C.	MEDI	162	Bracke, M.E.	ORGN	299
Borguet, E.	GEOC	49	Bourin, C.	MEDI	395	Bradforth, S.E.	PHYS	107
Borhan, B.	ORGN	153	Bourne, G.	MEDI	229	Bradley, A.S.	GEOC	42
Borkotoky, S.S.	PMSE	645	Boursier, M.E.	CHED	341	Bradley, C.A.	CHED	235
Borkova, L.	MEDI	292	Boursier, M.E.	ORGN	456	Bradley, C.A.	CHED	249
Borkova, L.	MEDI	411	Boustany, R.	MEDI	387	Bradley, C.A.	INOR	387
Borkum, M.I.	CINF	81	Boutaleb, S.	ENVR	658	Bradley, J.	ANYL	156
Bormans, G.M.	FLUO	19	Boutin, A.	INOR	246	Bradley, L.	PMSE	366
Bormans, G.M.	MEDI	178	Bouwer, E.J.	ENVR	2	Bradley, R.	AGFD	199
Bornert, M.	PMSE	654	Bouwer, E.J.	ENVR	738	Bradley, R.	COLL	401
Bornhoeft, L.	PMSE	689	Bova, T.	PMSE	212	Bradshaw, G.A.	ORGN	82
Borodina, Y.	CINF	72	Boval, J.	CHAS	10	Bradshaw, R.T.	PHYS	252
Borodinov, N.	COLL	252	Boval, J.	CHAS	11	Brady, K.	ANYL	54
Borodinov, N.	PMSE	22	Bovino, M.T.	ORGN	585	Brady, K.	ANYL	56
Borodinov, N.	PMSE	365	Bowden, M.	HIST	5	Brady, M.V.	ENVR	155
Borodinov, N.	PMSE	514	Bowden, M.E.	CATL	47	Brady, P.	ENVR	389
Borole, A.	ENVR	511	Bowden, M.E.	ENVR	458	Bragg, A.E.	PHYS	21
Boros, E.E.	MEDI	15	Bowden, M.E.	INOR	167	Braje, W.M.	ORGN	572
Borovik, A.	INOR	226	Bower, J.	ORGN	318	Bralej, J.	NUCL	58
Borovik, A.	INOR	229	Bowers, G.M.	GEOC	9	Brame, J.	ENVR	405
Borowski, T.	INOR	424	Bowers, L.	AGRO	126	Brancale, A.	MEDI	366
Borre, M.	AGFD	132	Bowes, E.	INOR	76	Brancale, A.	MEDI	48
Borrell, K.L.	BIOL	173	Bowler, B.E.	BIOL	153	Brancale, A.	MEDI	81
Borrelli, K.	COMP	376	Bowles, I.	CHED	186	Brand, S.K.	CATL	111
Borrmann, A.	COLL	61	Bowling, J.J.	COMP	52	Brandenburg, J.G.	COMP	15
Borsje, E.	ANYL	232	Bowman, C.	POLY	116	Brandes, A.R.	ENVR	653
Borski, J.	CHED	270	Bowman, C.	POLY	192	Brandish, P.	MEDI	346
Bortolato, A.	MEDI	30	Bowman, C.	POLY	548	Brandt, A.	CATL	122
Boruwa, J.	MEDI	383	Bowman, E.	PMSE	681	Brandt, F.	GEOC	65
Borycz, J.D.	INOR	370	Bowman, K.	MEDI	25	Brandt, N.C.	PHYS	361



Brandy, N.	MEDI	325	Brine, C.J.	CHED	352	Brown, J.M.	MEDI	162
Brangwynne, C.	PHYS	280	Bringuier, S.A.	COMP	386	Brown, J.T.	AGRO	127
Brann, M.	ANYL	148	Bringuier, S.A.	COMP	387	Brown, K.	ENVR	653
Brannum, D.J.	PMSE	254	Bringuier, S.A.	PMSE	695	Brown, K.R.	ORGN	304
Brantley, M.	ENVR	645	Bringuier, S.A.	PMSE	696	Brown, L.	POLY	570
Brar, S.	ENVR	351	Brisbois, E.J.	ANYL	167	Brown, L.	PRES	4
Brar, S.	ENVR	359	Brison, C.	BIOL	109	Brown, L.	PRES	5
Brasch, N.E.	ORGN	222	Bristol, A.N.	POLY	412	Brown, L.	PRES	8
Brash, A.R.	COMP	270	Bristow, L.	MEDI	162	Brown, L.	PRES	9
Brashear, R.S.	HIST	27	Bristow, L.	MEDI	395	Brown, M.	PHYS	69
Brashear, R.S.	YCC	7	Brito-Silva, A.M.	COLL	293	Brown, M.F.	MEDI	271
Braun, P.V.	PHYS	103	Britt, P.F.	ENFL	172	Brown, N.	CINF	87
Braun, P.V.	PMSE	304	Britt, R.	ORGN	31	Brown, N.	COMP	141
Braun, P.V.	PMSE	425	Brocius, N.	CHED	247	Brown, N.	MEDI	233
Bravaya, K.B.	PHYS	139	Brockgreitens, J.	ANYL	91	Brown, N.	MEDI	395
Bravo-Suarez, J.J.	CATL	124	Brockgreitens, J.	ENVR	704	Brown, R.C.	CATL	142
Bravo-Suarez, J.J.	CATL	299	Brockman, J.D.	ANYL	354	Brown, R.P.	COLL	309
Bravo-Suarez, J.J.	ENFL	486	Brockman, J.D.	NUCL	4	Brown, R.P.	COLL	413
Brawley, K.K.	ORGN	113	Brockmeyer, F.	MEDI	148	Brown, S.	ANYL	347
Bray, D.	PHYS	527	Broderick, A.	CATL	156	Brown, S.	CHED	191
Brayden, B.	AGRO	108	Broderick, A.	CHED	313	Brown, S.	ENFL	205
Brayden, B.	AGRO	109	Broderick, A.	ENVR	581	Brown, S.	ENVR	99
Braymer, J.J.	BIOL	1	Broderick, A.	PHYS	390	Brown, S.	TOXI	86
Brazdil, L.C.	CHED	206	Broderick, A.	INOR	541	Brown, S.D.	ANYL	242
Brazil, S.	CHED	148	Brody, L.	PMSE	528	Brown, S.P.	ORGN	202
Brechbiel, M.W.	ORGN	52	Brody, S.I.	MEDI	82	Brown, S.S.	PHYS	43
Bredas, J.E.	PHYS	108	Broedlow, A.	MEDI	116	Brown, T.	PHYS	382
Bredas, J.E.	PHYS	421	Brolo, A.	COLL	293	Brown, T.	POLY	117
Bredas, J.E.	PMSE	216	Bromley, L.	COLL	87	Brown, W.	PHYS	272
Breffke, J.	PMSE	581	Bromley, L.	PHYS	261	Brown, Z.	COLL	357
Brehm, L.	CATL	268	Bronson, J.J.	MEDI	162	Brownawell, B.J.	ENVR	399
Brehm-Stecher, B.	AGFD	209	Bronson, J.J.	MEDI	395	Browning, J.	POLY	500
Breidt, F.	AGFD	235	Bronstein, L.	COLL	177	Brown-Johnson, A.	BIOL	79
Breitenstein, M.	ENVR	653	Bronstein, L.	COLL	208	Brownmiller, C.	AGFD	203
Breitzman, T.	COMP	397	Broo, A.	ANYL	192	Broyde, S.	TOXI	51
Brekxa, A.P.	AGFD	144	Brookes, D.	COMP	317	Broyde, S.	TOXI	52
Bremner, T.	PMSE	99	Brookhart, M.	ORGN	714	Broyde, S.	TOXI	55
Brennaman, M.	INOR	312	Brooks, A.D.	ANYL	58	Broyde, S.	TOXI	9
Brennaman, M.	INOR	452	Brooks, A.F.	FLUO	6	Brozek, C.	INOR	73
Brennaman, M.K.	INOR	314	Brooks, B.	COMP	379	Brubaker, W.	ANYL	66
Brennan, D.	PMSE	626	Brooks, B.	COMP	60	Bruce, C.D.	CHED	214
Brennan, D.J.	POLY	208	Brooks, B.	COMP	84	Bruce, C.D.	CHED	215
Brennan, J.	CHED	33	Brooks, B.	PHYS	51	Bruce, C.D.	COMP	225
Brennan, J.K.	COMP	412	Brooks, C.L.	COMP	203	Bruce, N.J.	COMP	191
Brennan, P.	ORGN	597	Brooks, C.L.	COMP	293	Bruce, R.C.	INOR	209
Brenner, A.	ENVR	167	Brooks, C.L.	COMP	59	Bruce, V.J.	BIOL	214
Brenner, A.	ENVR	295	Brooks, J.	MEDI	111	Bruce, V.J.	WCC	2
Brenner, S.	ENVR	400	Brooks, J.	MEDI	261	Bruce, V.J.	POLY	273
Brennessel, W.W.	CATL	321	Brooks, S.	ENVR	158	Brudno, Y.	POLY	582
Brennessel, W.W.	INOR	605	Brooks, S.	ENVR	624	Brudvig, G.W.	INOR	230
Brennessel, W.W.	INOR	618	Brooks, S.	ENVR	628	Bruender, N.A.	BIOL	5
Breton, K.R.	INOR	529	Brookshear, D.	CATL	161	Bruening, M.	ANYL	382
Breshears, M.	BIOL	182	Brosnahan, A.	INOR	288	Brugarolas, P.	FLUO	12
Breslin, J.	ORGN	10	Brosse, N.	ENFL	464	Brugh, A.	PHYS	376
Breslow, R.	CHED	122	Brougham, D.	POLY	515	Bruist, M.F.	COMP	205
Bresnahan, M.	ANYL	65	Brouillard, B.	ENVR	451	Brummond, K.M.	ORGN	119
Breternitz, J.	CATL	254	Brown, A.	AGRO	289	Brummond, K.M.	ORGN	736
Breton, R.	AGRO	49	Brown, A.	AGRO	33	Brummond, K.M.	ORGN	767
Breu, J.	PMSE	257	Brown, A.	ORGN	754	Brune, W.	ENVR	17
Breuer, U.	GEOC	65	Brown, A.C.	BIOL	211	Brune, W.	PHYS	218
Brewer, L.	AGRO	216	Brown, A.C.	INOR	166	Brune, W.	PHYS	222
Brewer, N.T.	NUCL	34	Brown, B.	CHED	214	Brunelle, E.K.	ANYL	55
Brewer, S.H.	PHYS	357	Brown, B.	COMP	225	Brunelle, E.K.	ANYL	87
Brewin, S.	AGRO	51	Brown, C.	ORGN	335	Brunelle, E.K.	ANYL	88
Brewster, C.C.	AGRO	150	Brown, D.T.	CHED	243	Brunelle, E.K.	CHAL	23
Brgoch, J.	INOR	378	Brown, D.T.	CHED	244	Brunelle, L.D.	ANYL	127
Briand, L.E.	CATL	97	Brown, D.T.	ORGN	618	Brunelli, N.A.	ENFL	99
Brier, R.A.	MEDI	180	Brown, E.	CHED	10	Brunker, T.J.	INOR	575
Brier, R.A.	MEDI	277	Brown, E.	INOR	3	Brunker, T.J.	INOR	647
Brier, R.A.	MEDI	385	Brown, E.C.	ORGN	456	Brunning, A.	CINF	62
Brigance, R.	MEDI	18	Brown, E.M.	AGFD	113	Bruno, I.	CINF	2
Brigance, R.	MEDI	267	Brown, F.	INOR	303	Bruno, I.	CINF	44
Brigance, R.	MEDI	380	Brown, G.	COLL	193	Bruno, I.	CINF	57
Brigandi, P.	ANYL	225	Brown, G.	ENVR	51	Bruno, I.	CINF	58
Briggs, L.	INOR	684	Brown, G.E.	GEOC	13	Brunold, T.C.	INOR	409
Brighenti, V.	AGFD	251	Brown, G.E.	GEOC	57	Brunold, T.C.	INOR	410
Brill, J.	AGRO	318	Brown, G.W.	INOR	261	Bruns, M.	PMSE	199
Briñas, R.	AGFD	29	Brown, H.A.	PMSE	367	Bruton, T.	ENVR	527
Brindle, C.	ORGN	78	Brown, J.	ENVR	282	Bruzas, I.	ANYL	370
Brindle, P.A.	AGRO	275	Brown, J.	MEDI	395	Bruzas, I.	COLL	347

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Bruzas, I.	COLL	600	Bullock, M.	CATL	163	Burrows, C.J.	BIOL	91
Bruzzesi, G.	AGFD	266	Bullock, R.	INOR	280	Burrows, C.J.	TOXI	16
Bryan, K.	AGRO	289	Bunama, R.	CATL	214	Burrows, N.	ENVR	401
Bryan, M.C.	ORGN	620	Bunch, S.	INOR	39	Burrows, N.	ENVR	472
Bryant, G.W.	PMSE	581	Bunnage, M.	MEDI	215	Burrows, N.L.	CHED	112
Bryant, J.L.	PROF	22	Bunning, T.J.	POLY	258	Burrows, S.P.	CATL	91
Bryant, J.L.	PROF	23	Bunning, T.J.	POLY	262	Burt, H.	AGRO	341
Bryant, S.	CINF	1	Buonomo, J.	ORGN	183	Burton, C.	ANYL	100
Bryant, S.	CINF	47	Burcar, B.	PHYS	270	Burton, C.A.	PRES	42
Bryant, S.	CINF	80	Burch, J.	BIOL	106	Burton, C.A.	SCHB	1
Bryant, S.	CINF	95	Burch, J.A.	CHED	198	Burton, S.	GEOC	5
Bryant-Friedrich, A.C.	CHED	268	Burchick, J.E.	ORGN	736	Burton, S.	GEOC	9
Bryant-Friedrich, A.C.	CHED	333	Burdette, S.C.	ENVR	309	Burton-Freeman, B.	AGFD	160
Bryant-Friedrich, A.C.	MEDI	373	Burdge, H.	CHED	7	Burtovvy, R.	COLL	252
Bryant-Friedrich, A.C.	TOXI	14	Burdick, D.A.	ORGN	620	Burtovvy, R.	PMSE	22
Bryant-Friedrich, A.C.	TOXI	71	Burdick, J.	ENVR	236	Burtovvy, R.	PMSE	35
Bryce, D.	ANYL	67	Burdick, J.	ENVR	37	Burtovvy, R.	PMSE	466
Bryce, R.A.	COMP	191	Burdick, J.	ENVR	39	Burusco, K.K.	COMP	191
Bryce, R.A.	COMP	404	Burdick, J.A.	COLL	566	Burzynski, E.A.	AGFD	80
Bryks, W.	COLL	480	Burdick, J.A.	PMSE	327	Busacca, C.A.	ORGN	19
Brzezicki, J.	AGRO	218	Burdick, J.A.	PMSE	434	Busch, F.R.	ORGN	438
Brzozowski, R.S.	ORGN	167	Burdick, J.A.	PMSE	458	Busch, M.	MEDI	44
Brzozowski, R.S.	ORGN	305	Burdick, J.A.	PMSE	567	Buschle-Diller, G.	PMSE	234
Bu, L.	CATL	138	Burdick, J.A.	PMSE	597	Buser, M.D.	AGRO	135
Bu, Q.	ENVR	676	Burdick, J.A.	POLY	150	Bush, J.T.	MEDI	264
Bu, X.	ANYL	251	Burdick, J.A.	POLY	253	Bush, M.F.	ANYL	16
Bu, X.	ENFL	316	Burdick, J.A.	POLY	254	Bush, M.F.	ANYL	248
Bu, X.	I&EC	12	Burdick, J.A.	POLY	428	Bushey, M.	PHYS	348
Bu, X.	INOR	131	Burdick, J.A.	POLY	550	Bushey, M.	PHYS	350
Bu, Y.	CATL	121	Burdick, J.A.	POLY	586	Bushey, M.	PRES	38
Bucaro, M.	INOR	404	Burdick, M.	MEDI	107	Busnaina, A.	BIOL	253
Buccella, D.	BIOL	19	Burdick, M.	MEDI	283	Busnaina, A.	PMSE	499
Buccella, D.	BIOL	257	Burg, B.	PMSE	403	Bussiere, D.	MEDI	256
Buccella, D.	INOR	120	Burg, J.M.	BIOL	62	Bustamante, C.J.	BIOL	188
Buccella, D.	INOR	124	Burger, A.	ORGN	596	Butaeva, E.V.	POLY	485
Buchanan III, A.	ENFL	120	Burgess, I.	COLL	399	Butchy, M.	BIOL	54
Buchanan III, A.	ENFL	172	Burggraf, L.W.	PHYS	346	Butler, E.	MEDI	114
Buchete, N.	COMP	158	Burghardt, R.	ENVR	282	Butler, E.	MEDI	115
Buchicchio, J.	PMSE	398	Burgos, W.D.	CHED	329	Butler, I.S.	COMP	282
Buchwald, J.R.	COMP	283	Burgos, W.D.	ENVR	114	Butler, J.	COMSCI	1
Buck, M.	COMP	347	Burgos, W.D.	ENVR	48	Butler, J.	MEDI	280
Buckbinder, L.	MEDI	17	Burgos, W.D.	GEOC	29	Butler, P.	COLL	587
Buckley, D.	AEI	40	Burk, L.	PMSE	17	Butler, P.	INOR	583
Buckley, D.	MEDI	244	Burk, L.	PMSE	450	Butler, S.	MEDI	20
Buckley, J.L.	NUCL	59	Burkard, M.	ORGN	263	Butler, T.	ORGN	338
Budd, R.	AGRO	355	Burke, B.	FLUO	17	Butler, T.P.	INOR	171
Budgeon Jr, A.D.	AGRO	50	Burke, J.R.	MEDI	272	Butler, T.P.	ORGN	615
Budreski, K.	AGRO	49	Burke, K.A.	BIOL	90	Butler, W.	AGFD	13
Budy, S.	POLY	369	Burke, K.A.	PHYS	339	Butryn, D.M.	AGRO	226
Budy, S.M.	INOR	206	Burke, K.A.	PMSE	191	Buttar, D.	COMP	322
Budy, S.M.	PMSE	364	Burke, L.M.	PRES	49	Butterworth, A.	PHYS	24
Budy, S.M.	POLY	438	Burke, M.D.	CHED	363	Buttice, A.	ENVR	322
Bueche, K.	COMP	182	Burke, M.D.	PRES	27	Butts, S.B.	WCC	17
Buechel, G.E.	INOR	6	Burke, M.G.	CATL	45	Buxbaum, A.	CHED	207
Buenaventura, J.	BIOL	155	Burke, N.L.	AEI	51	Buyco, D.	CHED	263
Bueters, T.	COMP	340	Burke, S.	MEDI	130	Buynak, J.D.	MEDI	127
Buettner, C.J.	COMP	39	Burke, S.J.	MEDI	154	Buyst, D.	POLY	122
Buffington, S.	POLY	489	Burkhard, J.	ORGN	115	Buyukcakir, O.	PMSE	36
Bugert, J.	MEDI	366	Burkholder, T.P.	ORGN	204	Buyukcakir, O.	PMSE	656
Buhlmann, P.	COLL	519	Burks, D.	INOR	385	Buzas, V.	CATL	233
Buhro, W.E.	PHYS	128	Burks, D.B.	INOR	278	Buzrukov, B.	ORGN	118
Bui, H.S.	POLY	159	Burks, G.	PMSE	627	Byers, J.	INOR	562
Bui, H.S.	POLY	160	Burks, H.	MEDI	4	Byers, J.A.	INOR	204
Bui, M.H.	MEDI	254	Burks, R.	CINF	63	Byers, J.A.	INOR	207
Bui, M.H.	MEDI	286	Burley, S.	CHED	195	Byeung Kon, S.	AGFD	77
Bui, P.P.	ENFL	268	Burley, S.	COMP	260	Bylaska, E.J.	ENVR	204
Bui, T.	AGRO	345	Burnett, B.	NUCL	62	Byles, B.W.	ENFL	357
Bujoli, B.	CATL	200	Burnett, J.C.	MEDI	61	Byrd, A.L.	ENFL	138
Bukalov, S.	COLL	177	Burns, A.B.	PMSE	157	Byrne, M.E.	MEDI	414
Bukhovko, M.P.	INOR	40	Burns, A.B.	POLY	533	Byrne, M.E.	PMSE	352
Bukhtiyarov, Y.	MEDI	100	BURNS, D.H.	ORGN	166	Byrne, M.E.	PMSE	503
Bukhtiyarov, Y.	MEDI	95	Burns, P.C.	INOR	64	Byrne, M.E.	PMSE	660
Bulach, C.	ANYL	93	Burns, P.C.	NUCL	10	Byrne, M.E.	POLY	587
Bulfer, S.	MEDI	62	Burns, P.C.	NUCL	6	Byrnes, D.	AGFD	91
Bulfer, S.	MEDI	63	Burns, P.C.	NUCL	8	Byun, D.	PHYS	442
Bulfer, S.	MEDI	65	Burns, P.J.	INOR	252	Byun, D.	PHYS	448
Bull, J.A.	ORGN	18	Burns-Lynch, C.E.	ORGN	162	Byun, Y.	PMSE	18
Bullock, J.P.	CHED	22	Burris, D.	POLY	206	C.Nagaiah, T.	INOR	50
Bullock, J.P.	CHED	24	Burris, S.D.	MEDI	275	Cabalo, J.B.	COMP	386
Bullock, M.	AEI	54	Burrows, C.J.	BIOL	238	Cabalo, J.B.	COMP	387

Cabezas-Hayes, S.	ORGN	539	Camarillo, J.	TOXI	1	Cantu, D.C.	CATL	8
Cabezas-Hayes, S.	ORGN	743	Camarillo, M.	PRES	19	Cantu, D.C.	ENFL	143
Cabral, A.	ANYL	107	Camasso, N.	INOR	689	Cantu, D.C.	ENFL	192
Cabral, S.	MEDI	299	Camasso, N.	INOR	95	Cantu, D.C.	ENFL	194
Cabrera, C.R.	ANYL	391	Camassola, M.	PMSE	101	Cantwell, J.	MEDI	256
Cabrera-Pardo, J.R.	ORGN	644	Cambeiro, X.C.	ORGN	295	Cao, B.	PMSE	477
Cabrinha, C.L.	BIOL	103	Camden, J.P.	PHYS	322	Cao, D.	ENFL	89
Caceres, B.	COMP	99	Camera, K.	PMSE	174	Cao, G.	ENFL	304
Caddarao, P.	ENVR	600	Camerino, E.	ORGN	180	Cao, J.	ENVR	619
Cadieux, J.	MEDI	263	Camerino, E.	ORGN	192	Cao, J.	ENVR	620
Cadranel, A.	INOR	470	Cameron, K.O.	MEDI	12	Cao, J.	MEDI	349
Cadwallader, K.R.	AGFD	18	Cameron, K.O.	MEDI	226	Cao, L.	ENFL	246
Cady, N.	ENVR	92	Cameron, K.O.	MEDI	228	Cao, M.	ENVR	520
Cafarro, T.R.	ORGN	559	Cameron, N.R.	PMSE	178	Cao, P.	COLL	312
Cai, A.	TOXI	43	Camgoz, E.	AGRO	226	Cao, P.	COLL	326
Cai, A.	TOXI	54	Camille Simon, O.	INOR	666	Cao, P.	PMSE	446
Cai, C.	COLL	471	Camino, G.	PMSE	146	Cao, P.	PMSE	482
Cai, C.	ENVR	766	Cammarota, R.	INOR	26	Cao, P.	PMSE	487
Cai, C.	ORGN	631	Camp, C.H.	ANYL	9	Cao, P.	POLY	470
Cai, C.	ORGN	671	Camp, D.	ORGN	285	Cao, P.	POLY	64
Cai, C.	ORGN	674	Campana, D.	AGRO	253	Cao, Q.	COMP	171
Cai, H.	BIOL	21	Campana, M.	BIOL	140	Cao, S.	ANYL	295
Cai, H.	ORGN	224	Campbell, A.N.	ORGN	270	Cao, X.	AGFD	194
Cai, J.	MEDI	346	Campbell, C.	TOXI	107	Cao, X.	POLY	338
Cai, K.	PMSE	167	Campbell, C.	TOXI	23	Cao, X.	POLY	341
Cai, L.	INOR	344	Campbell, C.G.	POLY	450	Cao, Y.	COMP	356
Cai, L.	PMSE	293	Campbell, C.T.	ENFL	367	Cao, Y.	PMSE	172
Cai, M.	ENVR	275	Campbell, C.T.	INOR	669	Cao, Y.	PMSE	467
Cai, N.	ENVR	31	Campbell, J.	INOR	369	Cap, M.	MEDI	18
Cai, Q.	CATL	176	Campbell, J.A.	NUCL	21	Capdevila, D.	BIOL	1
Cai, Q.	ENFL	111	Campbell, K.	AGRO	361	Capel-Sanchez, M.	CATL	294
Cai, Q.	ENFL	350	Campbell, K.S.	PHYS	3	Capiro, N.	ENVR	459
Cai, W.	COLL	375	Campbell, M.W.	ORGN	751	Caplan, J.	BIOL	124
Cai, W.	PMSE	478	Campbell, R.	INOR	353	Caplan, J.	ORGN	591
Cai, X.	COMP	61	Campbell, V.	ORGN	96	Capo, R.C.	GEOC	27
Cai, Y.	COLL	571	Campen, S.	COLL	364	Capo, S.	INOR	369
Cai, Y.	ENVR	675	Campos, L.M.	COLL	592	Capomolla, S.	ORGN	219
Cai, Y.	INOR	676	Campos, L.M.	INOR	570	Caponigro, J.	CHED	282
Cai, Y.	TOXI	51	Campos, L.M.	ORGN	309	Caporuscio, C.	MEDI	377
Cai, Y.	TOXI	52	Campos, L.M.	ORGN	543	Caporuscio, C.	MEDI	89
Cai, Z.	ENVR	346	Campos, L.M.	ORGN	544	Capozzi, B.	ORGN	544
Caianiello, D.	POLY	367	Campos, L.M.	ORGN	614	Cappa, C.	PHYS	86
Caicedo-Rosero, C.L.	ENVR	648	Campos, L.M.	ORGN	94	Cappa, C.	PHYS	90
Caillol, S.	POLY	184	Campos, L.M.	PHYS	110	Capponi, S.	COMP	349
Caillol, S.	POLY	185	Campos, L.M.	PMSE	287	Caputo, G.A.	BIOL	173
Cain, A.	PMSE	149	Campos, L.M.	PMSE	538	Caputo, G.A.	BIOL	27
Cairney, J.	CATL	43	Campos, L.M.	PMSE	540	Caputo, G.A.	BIOL	28
Calas, G.	COLL	284	Campos, L.M.	POLY	273	Caputo, G.A.	BIOL	30
Calatayud, M.	CATL	35	Campos, R.	PMSE	120	Capuzzi, S.	COMP	170
Calatayud, M.	CATL	95	Campos, S.A.	MEDI	264	Caram, J.R.	PHYS	182
Calderaio, J.	YCC	11	Campos, T.	PHYS	43	Caram, J.R.	PHYS	265
Calderini, M.	MEDI	44	Campos, T.L.	PHYS	124	Caranto, J.D.	INOR	199
Calderon Molina, A.D.	BIOL	233	Campos-Martin, J.	CATL	114	Caranto, J.D.	INOR	530
Calderon Romo, F.	MEDI	212	Campos-Martin, J.	CATL	294	Caranto, J.D.	INOR	660
Calderon, B.	PMSE	368	Campos-Pineda, M.	PHYS	174	Caratzoulas, S.	CATL	111
Caldwell, D.J.	ENVR	772	Campos-Seijo, B.	MPPG	4	Caratzoulas, S.	CATL	79
Caldwell, J.	MEDI	227	Campuzano-Jost, P.	PHYS	43	Caratzoulas, S.	CATL	82
Caldwell, J.J.	ORGN	677	Canaff, C.	ENFL	505	Carballeira, N.M.	MEDI	147
Caldwell, K.M.	CHAL	22	Canagaratna, M.R.	ENVR	17	Carberry, S.L.	CHED	326
Caldwell, R.	MEDI	200	Canagaratna, M.R.	ENVR	278	Carberry, S.L.	CHED	393
Calero Rubio, C.	PMSE	436	Canagaratna, M.R.	PHYS	222	Carbognani, L.A.	ENFL	511
Caliari, S.R.	COLL	566	Candelora, C.	BIOL	41	Carbonari, C.A.	AGRO	70
Calkins, T.L.	AGRO	210	Canfi, D.	PMSE	69	Carbonaro, N.J.	COMP	257
Call, D.F.	ENVR	331	Cang, Y.	COLL	219	Carbonaro, R.F.	ENVR	338
Call, D.F.	ENVR	506	Canham, S.M.	YCC	5	Cardenas, A.J.	INOR	280
Call, Z.	CHED	235	Canlas, C.	ENFL	267	Cardoen, G.	PMSE	396
Callear, S.K.	BIOL	99	Cannatelli, M.D.	ORGN	227	Cardona, R.	CHED	399
Callear, S.K.	COMP	339	Canney, D.J.	MEDI	112	Carey, A.	AGFD	161
Callesas, J.F.	INOR	671	Canney, D.J.	MEDI	400	Carey, A.N.	PHYS	436
Callman, E.	AGRO	110	Cannon, A.S.	CHED	15	Carey, J.	ANYL	247
Callmann, C.E.	POLY	432	Cannon, A.S.	MPPG	12	Carey, J.	INOR	490
Callura, J.C.	ENVR	97	Cannon, J.	ORGN	784	Carey, J.	ORGN	599
Calvinho, K.U.	CATL	203	Cannon, K.C.	ORGN	708	Carey, M.	INOR	471
Camac, D.	MEDI	395	Cano, V.M.	ORGN	770	Cargill, J.G.	GEOC	44
Camac, D.M.	MEDI	162	Canosa, E.	POLY	58	Cargnello, M.	ENFL	4
Camacho-Bunquin, J.	CATL	180	Cantalupo, S.	INOR	402	Cargnello, M.	INOR	293
Camacho-Dávila, A.	ORGN	129	Cantrell, C.	PHYS	124	Cargnello, M.	INOR	335
Camarero-Espinosa, S.	POLY	3	Cantrell, T.	PHYS	24	Cargnello, M.	ORGN	7
Camargo, E.	POLY	550	Cantrill, S.	CHED	360	Carioni, V.	ANYL	354
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Carlier, P.R.	AGRO	317	Carrow, B.P.	ORGN	635	Castro, M.	POLY	188
Carlier, P.R.	MEDI	358	Carrow, B.P.	PMSE	263	Cata, B.	ANYL	364
Carlier, P.R.	MEDI	6	Carry, E.	AGFD	89	Catacoli, R.	CHED	399
Carlin, K.	PMSE	352	Carson, A.	COLL	38	Catalano, B.	COMP	266
Carlo, A.A.	MEDI	17	Carson, C.	COLL	427	Catalano, J.	MEDI	419
Carlioni, P.	PHYS	187	Carta, M.	PMSE	1	Catalano, J.G.	GEOC	20
Carlos, I.Z.	MEDI	329	Cartaya, A.	CHED	280	Catalano, J.G.	GEOC	42
Carlson, E.	TOXI	66	Carter, K.	ENVR	347	Catalano, M.J.	TOXI	78
Carlson, E.S.	TOXI	67	Carter, K.R.	PMSE	294	Cataluna, R.	AGFD	32
Carlson, M.	BIOL	108	Carter, M.	PMSE	371	Catania, C.	COLL	460
Carlton, A.	ENVR	25	Carter, P.H.	MEDI	201	Cathell, M.	PROF	11
Carman, J.	MEDI	201	Carter, P.H.	MEDI	272	Cathell, M.	PROF	12
Carmella, S.	TOXI	35	Carter, R.	ENFL	188	Cato, M.	PHYS	24
Carnevale, D.	INOR	340	Carter, R.	NUCL	16	Catsoulis, P.	INOR	463
Carnevale, D.	INOR	343	Carter, R.	NUCL	3	Cattalani, M.	CHED	283
Carnevale, V.	BIOL	102	Carthers, J.	INOR	151	Cattley, R.	INOR	7
Carnevale, V.	BIOL	184	Caruthers, J.	INOR	24	Cauble, D.F.	CHAL	17
Carnevale, V.	COMP	297	Casa, D.M.	INOR	541	Cauble, D.F.	CHAL	19
Carnevale, V.	COMP	348	Casadonte, D.J.	ORGN	498	Cauet, E.	PHYS	530
Carney, B.	INOR	6	Casalegno, A.	ENFL	61	Cauley, A.N.	ORGN	148
Carney, J.M.	CHED	301	Casanova, D.	PHYS	262	Caulton, K.G.	COLL	442
Carney, J.M.	CHED	302	Casares, N.	MEDI	257	Cava, R.J.	INOR	559
Carney, J.M.	CHED	304	Casco, S.	MEDI	127	Cava, R.J.	INOR	560
Carol, F.	COLL	209	Case, D.A.	COMP	1	Cava, R.J.	INOR	563
Carol, F.	COLL	438	Case, D.A.	COMP	49	Cavalcanti-Adam, E.	COLL	403
Carol, F.	ENFL	260	Case, D.A.	PHYS	253	Cavalli, A.	COMP	26
Carosio, F.	PMSE	145	Case, T.	AGRO	11	Cavanaugh, C.	ORGN	233
Carosio, F.	PMSE	146	Cases-Thomas, M.J.	ORGN	18	Cavanaugh, J.	MEDI	34
Carosio, F.	PMSE	256	Casey, B.K.	ANYL	19	Cavanaugh, J.	MEDI	67
Carpenter, A.	COLL	101	Casey, B.K.	POLY	473	Cave, J.	MEDI	75
Carpenter, C.M.	ENVR	118	Casey, K.C.	CHED	254	Cavicchi, K.A.	PMSE	293
Carpenter, M.	ENVR	400	Casey, W.	AGRO	346	Cavicchi, K.A.	POLY	574
Carpenter, R.	CHED	208	Casler, M.	AGFD	226	Cavinato, A.G.	ANYL	97
Carpenter, S.	COLL	35	Casper, B.	ENVR	462	Cawthorne, C.	FLUO	17
Carpenter, S.	INOR	153	Casper, B.	ENVR	463	Cazzetta, V.	PMSE	198
Carpenter, T.	CINF	22	Casper, B.	TOXI	25	Cazzolaro, A.	COLL	15
Carpenter, T.S.	CHED	325	Cassano, A.G.	BIOL	179	Cease, M.	AGFD	67
Carpenter, T.S.	CHED	69	Cassel, M.	MEDI	258	Cebeci, F.C.	AGFD	278
Carper, B.	AGRO	114	Cassell, R.	YCC	14	Ceccon, A.	PHYS	165
Carpino, P.A.	MEDI	299	Cassera, M.B.	MEDI	370	Cecen, F.	ENVR	700
Carr, A.	ENFL	69	Cassera, M.B.	MEDI	6	Cecen, F.	ENVR	701
Carr, A.C.	COMP	94	Cassidy, P.	AGRO	361	Cee, V.	MEDI	266
Carr, B.	ORGN	742	Cassidy, P.	ENFL	324	Celebi-Olcum, N.	COMP	265
Carr, C.M.	BIOL	12	Cassutt, P.	NUCL	26	Celen, S.	FLUO	19
Carr, D.	MEDI	276	Castaldi, M.J.	CHED	197	Celestine, M.J.	CHED	243
Carr, M.	CINF	60	Castaldi, M.J.	CHED	289	Celestine, M.J.	CHED	244
Carr, S.F.	PHYS	494	Castaneda, C.A.	BIOL	103	Celestine, M.J.	CHED	250
Carraher, C.E.	PMSE	369	Castaneda, C.A.	BIOL	195	Celik, F.E.	CATL	226
Carraher, C.E.	PMSE	370	Castaneda, C.M.	ORGN	278	Celik, F.E.	CATL	315
Carraher, J.	CATL	112	Castaneda, H.	PMSE	393	Celik, F.E.	INOR	549
Carraher, J.	ENFL	97	Castanedo, G.	MEDI	202	Celik, G.	ENFL	115
Carraro, M.	COLL	15	Castelar, E.	COLL	247	Celikay, R.	ANYL	66
Carraway, E.	ENVR	182	Castellano, F.N.	INOR	357	Celino, H.	MEDI	229
Carreira, E.M.	MEDI	234	Castellano, F.N.	ORGN	95	Celis-Salazar, P.	INOR	244
Carreon, M.A.	ENFL	86	Castellano, G.	MEDI	257	Celly, C.	MEDI	349
Carreras, C.	MEDI	227	Castellano, L.	BIOL	17	Cen, J.	CATL	229
Carrero, C.A.	CATL	40	Castellano, R.K.	PMSE	60	Cen, J.	CATL	290
Carrero, C.A.	ENFL	484	castellanos, m.	MEDI	56	Cen, J.	ENVR	565
Carrillo-Zuniga, G.	ENVR	284	Castelli, A.	COLL	494	Cenizal, T.	AGRO	195
Carrillo-Zuniga, G.	ENVR	643	Castelo-Grande, T.	ENVR	251	Cenizal, T.	AGRO	260
Carrington, S.	INOR	119	Castelo-Grande, T.	ENVR	531	Centinari, M.	AGFD	228
Carrington, S.	INOR	121	Castetter, S.	AGRO	287	Cerasani, J.	YCC	4
Carroll, C.	ANYL	56	Castillo Meza, L.E.	ENVR	114	Cerda, J.	CHED	180
Carroll, K.S.	BIOL	131	Castillo, H.	CHED	312	Cerda, J.	CHED	314
Carroll, P.	ENVR	377	Castillo, H.	COLL	590	Cerdan, A.	COMP	371
Carroll, P.	INOR	22	Castillo, H.	ORGN	511	Cerdem, U.	ENVR	456
Carroll, P.	INOR	332	Castillo, H.	ORGN	600	Cerkez, E.	CATL	21
Carroll, P.	INOR	381	Castillo, H.	ORGN	601	Cerkez, E.	COLL	336
Carroll, P.	INOR	432	Castillo, H.D.	COLL	192	Cerkez, E.	GEOC	56
Carroll, P.	INOR	445	Castillo, H.D.	COLL	486	Cerny, J.	NUCL	46
Carroll, P.	INOR	603	Castillo, H.D.	COLL	591	Cervantes, M.	CHED	416
Carroll, P.	INOR	604	Castillo, J.	ENFL	446	Cervasio, D.	ORGN	460
Carroll, P.B.	PHYS	541	Castillo, J.	ENVR	385	Cesa, I.G.	CHAS	37
Carroll, S.A.	GEOC	12	Castillo, M.	CHED	271	Cesar, T.B.	AGFD	11
Carroll, S.A.	GEOC	7	Castillo-Bocanegra, R.	MEDI	379	Cesar, T.B.	AGFD	48
Carroll, T.	INOR	654	Castle, K.J.	CHED	392	Cesar, T.B.	AGFD	64
Carroll, T.G.	INOR	57	Castle, K.J.	PHYS	389	Çetin, M.M.	ORGN	498
Carroll, W.	ENVR	50	Castner, T.	COLL	363	Çetinkaya, M.	PMSE	578

Cha, J.K.	COMP	270	Chandler, D.W.	PHYS	39	Charkoudian, L.K.	ORGN	67
Chabata, C.	PHYS	282	Chandler, R.A.	ORGN	550	Charlebois, A.	CHED	291
Chace, J.	AGFD	57	Chandra, T.	CHAS	19	Charlebois, J.	CHED	222
Chae, D.	PMSE	231	Chandran, D.	MEDI	405	Charles, L.	POLY	542
Chae, I.	PHYS	442	Chandran, K.	ENFL	8	Charlton, R.R.	AGRO	110
Chae, S.	COLL	238	Chang, A.	POLY	388	Charpentier, T.	AGFD	28
Chae, S.	ENVR	244	Chang, A.	WCC	5	Chartrain, N.A.	PMSE	543
Chae, S.	ENVR	693	Chang, C.	ENFL	319	Chase, B.	ANYL	340
Chaffee, A.	ENFL	324	Chang, C.	ENVR	603	Chase, H.	PHYS	290
Chahal, N.	MEDI	263	Chang, C.	MEDI	18	Chase, H.M.	ENVR	156
Chai, B.	AGFD	85	Chang, C.	MEDI	267	Chatare, V.K.	ENFL	354
Chai, C.	BIOL	212	Chang, C.	MEDI	297	Chatare, V.K.	ORGN	362
Chai, H.	AGFD	53	Chang, C.	MEDI	380	Chatterjee, M.	CHED	105
Chai, M.	ANYL	161	Chang, C.H.	ENVR	694	Chatterjee, S.	CHED	40
Chai, M.	ANYL	162	Chang, C.J.	ENVR	423	Chatterjee, S.	ORGN	781
Chai, M.	ANYL	163	Chang, C.J.	PMSE	128	Chatterjee, S.	ORGN	93
Chai, M.	POLY	509	Chang, C.J.	WCC	3	Chatterjee, S.	PMSE	246
Chai, Q.	POLY	1	Chang, D.	COLL	125	Chatterjee, T.	ORGN	221
Chai, R.	ANYL	96	Chang, E.	COLL	175	Chatterley, A.J.	MEDI	64
Chai, S.	AGRO	237	Chang, F.	CATL	216	Chatterley, A.J.	MEDI	65
Chai, W.	MEDI	127	Chang, F.	CATL	217	Chaturvedi, P.	TOXI	90
Chaibva, M.	PHYS	75	Chang, F.	CATL	259	Chatzidimitriou, A.	CATL	87
Chaiken, I.	MEDI	372	Chang, F.	COLL	164	Chau, S.T.	ORGN	34
Chaiken, J.	PHYS	478	Chang, J.	ENFL	497	Chaudary, A.	ORGN	102
Chaira, T.	MEDI	137	Chang, L.	ENFL	179	Chaudhari, M.	COLL	104
Chaka, A.M.	COLL	20	Chang, L.	ENVR	563	Chaudhary, U.	CATL	298
Chaka, A.M.	GEOC	17	Chang, L.	ENVR	707	Chaudhry, S.	COLL	249
Chakrabarti, A.	AGFD	52	Chang, L.	I&EC	31	Chaudhuri, A.R.	CHED	205
Chakrabarti, A.	CATL	68	Chang, M.	AGFD	68	Chaudhuri, A.R.	CHED	220
Chakrabarti, A.	TOXI	85	Chang, M.	AGRO	237	Chaudhuri, S.	ORGN	520
Chakrabarty, S.	ORGN	30	Chang, M.	BIOL	136	Chauhan, B.P.	COLL	148
Chakraborty, A.	ORGN	95	Chang, M.	POLY	11	Chauhan, B.P.	COLL	247
Chakraborty, H.	COMP	410	Chang, N.	ORGN	450	Chauhan, B.P.	COLL	249
Chakraborty, I.	INOR	119	Chang, P.	ENVR	792	Chauhan, B.P.	COLL	68
Chakraborty, I.	INOR	121	Chang, Q.	BIOL	168	Chauhan, B.P.	COLL	70
Chakraborty, J.	ORGN	170	Chang, Q.	BIOL	169	Chauhan, B.P.	ORGN	150
Chakraborty, K.	COMP	292	Chang, S.	AGFD	61	Chauhan, B.P.	PMSE	385
Chakraborty, K.	COMP	383	Chang, S.	COLL	79	Chauhan, K.R.	AGRO	282
Chakraborty, S.	ENFL	92	Chang, S.	ENVR	303	Chauhan, M.	COLL	148
Chakraborty, S.	PMSE	372	Chang, S.	ORGN	491	Chauhan, P.	AGFD	79
Chalk, S.J.	CINF	57	Chang, S.	ORGN	505	Chavasiri, W.	AGFD	10
Chalk, S.J.	CINF	81	Chang, S.	ORGN	727	Chavasiri, W.	BIOL	232
Challita, E.	COMP	258	Chang, S.	PMSE	226	Chavez Soria, N.G.	AGRO	227
Chaloux, B.L.	INOR	296	Chang, S.K.	AGFD	106	Chavez, A.	ENVR	195
Chamberlain, B.M.	CHED	403	Chang, S.K.	AGFD	69	Chávez, J.L.	COLL	266
Chambers, L.G.	GEOC	42	Chang, S.K.	AGFD	70	Chávez, M.R.	TOXI	49
Chambers, M.	INOR	212	Chang, S.K.	AGFD	72	Chavez-Gil, T.	INOR	428
Chambers, N.	INOR	385	Chang, X.	AGRO	346	Chavez-Gil, T.	INOR	429
Chambreau, S.D.	PHYS	382	Chang, X.	ENVR	737	Chavez-Gil, T.	INOR	430
Champagne, P.	ENVR	290	Chang, Y.	COLL	96	Chawla, S.	ORGN	442
Champion, M.	ANYL	30	Chang, Y.	ENVR	598	Chawner, S.	ORGN	18
Champness, E.	COMP	251	Chang, Y.C.	PHYS	70	Chciuk, T.V.	ORGN	44
Champness, E.	COMP	399	Changamu, E.O.	PRES	17	Cheah, S.	CATL	136
Chamsaz, E.	POLY	554	Changsheng, Z.	ORGN	440	Cheatham, T.E.	COMP	103
Chan, A.	ENVR	592	Chano, K.	POLY	167	Cheatham, T.E.	COMP	407
Chan, B.C.	PROF	11	Chanpuriya, S.	POLY	27	Cheeseman, E.N.	CHAL	20
Chan, B.C.	PROF	12	Chanpuriya, S.	POLY	81	Cheeseright, T.	MEDI	343
Chan, B.K.	ORGN	620	Chan-Seng, D.	POLY	545	Chefetz, B.	ENVR	151
Chan, c.	PMSE	440	Chantarojsiri, T.	INOR	276	Chegaev, K.	MEDI	146
Chan, E.	POLY	437	Chanthad, C.	ENFL	439	Chejne, F.	CATL	141
Chan, E.	POLY	439	Chanthamath, S.	ORGN	92	Chellam, S.	COLL	552
Chan, G.	AGRO	214	Chao, C.	PMSE	556	Chellam, S.	ENVR	116
Chan, G.	PHYS	561	Chao, L.	CATL	226	Chelucci, R.C.	MEDI	102
Chan, J.	ORGN	263	Chapa, I.M.	ORGN	770	Chemler, J.A.	ORGN	365
Chan, L.H.	TOXI	32	Chaplin, B.P.	ENVR	753	Chen, A.	ANYL	388
Chan, M.	POLY	265	Chaplin, V.D.	BIOL	198	Chen, A.	CHED	378
Chan, P.	AGRO	270	Chapman, C.T.	PHYS	325	Chen, A.	COLL	505
Chan, P.W.	ORGN	108	Chapman, C.T.	PMSE	559	Chen, A.	ENFL	356
Chan, P.W.	ORGN	470	Chapman, D.	AGFD	183	Chen, A.	MEDI	377
Chan, R.	INOR	113	Chapman, G.	ANYL	241	Chen, A.	MEDI	89
Chan, S.	BIOL	212	Chapman, K.W.	INOR	370	Chen, A.	ORGN	521
Chan, S.C.	COLL	194	Chapman, P.	MEDI	260	Chen, A.	ORGN	522
Chan, S.C.	COLL	210	Char, A.	CHED	231	Chen, A.	PMSE	250
Chan, T.	PMSE	169	Char, K.	PMSE	438	Chen, A.	POLY	15
Chan, V.S.	ORGN	722	Char, K.	PMSE	455	Chen, A.A.	PHYS	472
Chan, W.	COLL	271	Char, K.	PMSE	649	Chen, B.	CATL	329
Chan, W.	COLL	474	Char, K.	POLY	422	Chen, B.	ENFL	162
Chan, W.	PMSE	169	Charette, A.B.	ORGN	557	Chen, B.	ENVR	411
Chan, W.	PMSE	576	Charif, A.C.	PMSE	101	Chen, B.	ENVR	414
Chan, X.	CATL	3	Charkoudian, L.K.	CHED	20	Chen, B.	ENVR	486

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Chen, B.	ENVR	764	Chen, J.	COLL	414	Chen, P.	TOXI	77
Chen, B.	ENVR	778	Chen, J.	COLL	436	Chen, P.C.	BIOL	215
Chen, B.	ENVR	780	Chen, J.	COMP	188	Chen, Q.	BIOL	222
Chen, B.	MEDI	18	Chen, J.	COMP	236	Chen, Q.	COLL	497
Chen, C.	ANYL	247	Chen, J.	COMP	36	Chen, Q.	ENFL	381
Chen, C.	BIOL	241	Chen, J.	ENFL	365	Chen, Q.	ENVR	640
Chen, C.	CATL	199	Chen, J.	ENVR	434	Chen, Q.	MEDI	287
Chen, C.	CATL	269	Chen, J.	ENVR	491	Chen, Q.	MEDI	43
Chen, C.	COMP	153	Chen, J.	ENVR	51	Chen, Q.	MEDI	79
Chen, C.	COMP	95	Chen, J.	ENVR	632	Chen, Q.	MEDI	84
Chen, C.	ENFL	270	Chen, J.	INOR	3	Chen, Q.	ORGN	545
Chen, C.	ENVR	609	Chen, J.	MEDI	22	Chen, Q.	PMSE	373
Chen, C.	ENVR	788	Chen, J.	ORGN	750	Chen, Q.	PMSE	380
Chen, C.	INOR	454	Chen, J.	PHYS	116	Chen, R.	POLY	414
Chen, C.	INOR	490	Chen, J.	PHYS	357	Chen, S.	AGFD	155
Chen, C.	MEDI	79	Chen, J.	PHYS	363	Chen, S.	AGFD	5
Chen, C.	ORGN	599	Chen, J.	PHYS	467	Chen, S.	COLL	158
Chen, C.	ORGN	617	Chen, J.	PMSE	282	Chen, S.	COLL	162
Chen, C.	PMSE	537	Chen, J.	PMSE	498	Chen, S.	COLL	383
Chen, C.	PMSE	611	Chen, J.	POLY	224	Chen, S.	COLL	421
Chen, C.	POLY	170	Chen, J.	POLY	402	Chen, S.	ENFL	386
Chen, C.	POLY	175	Chen, J.	POLY	427	Chen, S.	ENVR	122
Chen, C.	POLY	400	Chen, J.	POLY	556	Chen, S.	ENVR	293
Chen, C.V.	COLL	134	Chen, J.	POLY	557	Chen, S.	ENVR	563
Chen, D.	INOR	183	Chen, J.	POLY	96	Chen, S.	ENVR	707
Chen, D.	INOR	555	Chen, J.G.	CATL	174	Chen, S.	ENVR	800
Chen, D.	ORGN	359	Chen, J.G.	ENFL	60	Chen, S.	MEDI	104
Chen, D.A.	CATL	122	Chen, J.J.	MEDI	388	Chen, S.	MEDI	18
Chen, E.	INOR	376	Chen, J.S.	ORGN	781	Chen, S.	MEDI	319
Chen, F.	AGFD	18	Chen, J.S.	ORGN	93	Chen, S.	MEDI	380
Chen, F.	BIOL	228	Chen, J.Y.	TOXI	88	Chen, S.	MEDI	87
Chen, F.	COLL	160	Chen, K.	ANYL	169	Chen, S.	ORGN	458
Chen, F.	COLL	230	Chen, K.	COLL	362	Chen, S.	ORGN	693
Chen, F.	ENVR	588	Chen, K.	COLL	520	Chen, S.S.	MEDI	267
Chen, F.	TOXI	43	Chen, K.	COLL	574	Chen, T.	CATL	273
Chen, F.	TOXI	57	Chen, K.	ENVR	622	Chen, T.	CATL	72
Chen, F.	TOXI	59	Chen, K.	ENVR	732	Chen, T.	ENVR	611
Chen, G.	AGFD	233	Chen, K.	ENVR	733	Chen, T.	MEDI	227
Chen, G.	COLL	384	Chen, K.	ENVR	735	Chen, T.	MEDI	297
Chen, G.	ENFL	13	Chen, K.	ENVR	80	Chen, T.	ORGN	432
Chen, G.	ENFL	409	Chen, K.	INOR	1	Chen, T.	ORGN	674
Chen, G.	ENVR	33	Chen, K.	POLY	321	Chen, W.	AGRO	113
Chen, G.	MEDI	100	Chen, K.H.	MEDI	352	Chen, W.	AGRO	254
Chen, G.	MEDI	287	Chen, K.H.	ORGN	556	Chen, W.	AGRO	328
Chen, G.	MEDI	43	Chen, L.	AGFD	82	Chen, W.	AGRO	329
Chen, G.	MEDI	79	Chen, L.	ANYL	227	Chen, W.	AGRO	344
Chen, G.	MEDI	95	Chen, L.	CATL	186	Chen, W.	AGRO	81
Chen, H.	AGFD	128	Chen, L.	ENVR	41	Chen, W.	CATL	206
Chen, H.	AGFD	285	Chen, L.	ENVR	481	Chen, W.	COLL	262
Chen, H.	ANYL	186	Chen, L.	INOR	521	Chen, W.	COMP	128
Chen, H.	ANYL	318	Chen, L.	MEDI	276	Chen, W.	COMP	350
Chen, H.	CATL	201	Chen, L.	ORGN	39	Chen, W.	ENVR	165
Chen, H.	COMP	210	Chen, L.	ORGN	635	Chen, W.	ENVR	8
Chen, H.	COMP	319	Chen, L.	PMSE	370	Chen, W.	ENVR	811
Chen, H.	ENFL	365	Chen, L.X.	INOR	541	Chen, W.	INOR	144
Chen, H.	ENVR	674	Chen, L.X.	PHYS	195	Chen, W.	INOR	145
Chen, H.	ENVR	775	Chen, L.X.	PHYS	268	Chen, W.	INOR	293
Chen, H.	MEDI	16	Chen, L.X.	PHYS	62	Chen, W.	ORGN	146
Chen, H.	MEDI	388	Chen, M.	AGFD	169	Chen, W.	ORGN	353
Chen, H.	ORGN	263	Chen, M.	AGRO	267	Chen, W.	ORGN	636
Chen, H.	ORGN	358	Chen, M.	COLL	353	Chen, X.	ANYL	227
Chen, H.	ORGN	611	Chen, M.	ENFL	72	Chen, X.	ANYL	306
Chen, H.	ORGN	631	Chen, M.	ENVR	233	Chen, X.	BIOL	146
Chen, H.	PMSE	105	Chen, M.	ENVR	612	Chen, X.	CATL	274
Chen, H.	PMSE	136	Chen, M.	ENVR	687	Chen, X.	CATL	301
Chen, H.	PMSE	549	Chen, M.	PMSE	362	Chen, X.	COLL	385
Chen, H.	PMSE	623	Chen, M.	POLY	140	Chen, X.	COLL	519
Chen, H.	POLY	335	Chen, M.	POLY	563	Chen, X.	ENFL	114
Chen, H.	POLY	552	Chen, M.	POLY	8	Chen, X.	ENFL	316
Chen, H.C.	TOXI	77	Chen, M.H.	PMSE	567	Chen, X.	ENFL	342
Chen, J.	AGFD	249	Chen, M.S.	ORGN	223	Chen, X.	ENFL	376
Chen, J.	AGFD	250	Chen, N.	COMP	346	Chen, X.	ENFL	424
Chen, J.	AGRO	119	Chen, N.	ENVR	551	Chen, X.	ENVR	778
Chen, J.	AGRO	240	Chen, N.	INOR	138	Chen, X.	MEDI	18
Chen, J.	BIOL	205	Chen, N.	MEDI	388	Chen, X.	MEDI	267
Chen, J.	CATL	184	Chen, N.	POLY	499	Chen, X.	MEDI	349
Chen, J.	CATL	293	Chen, P.	CATL	217	Chen, X.	MEDI	380
Chen, J.	CHED	10	Chen, P.	CATL	259	Chen, X.	MEDI	89
Chen, J.	CINF	95	Chen, P.	PMSE	204	Chen, X.	ORGN	415

Chen, X.	PHYS	319	Cheng, C.	ORGN	729	Cherkasov, N.	COLL	177
Chen, X.	PMSE	388	Cheng, C.	ORGN	739	Chernyshova, I.	CATL	246
Chen, X.	PMSE	590	Cheng, C.	PMSE	608	Cherqui, C.	PHYS	322
Chen, X.	POLY	447	Cheng, C.	POLY	177	Cherr, G.N.	ENVR	423
Chen, X.	TOXI	10	Cheng, C.	POLY	531	Cherukuri, P.	ANYL	238
Chen, X.	COLL	378	Cheng, D.	ENFL	175	Cheruzel, L.E.	CHED	175
Chen, Y.	AGFD	138	Cheng, F.	PMSE	204	Cheryl, H.	ENVR	742
Chen, Y.	BIOL	14	Cheng, G.	ORGN	206	Chesmel, K.	CHED	4
Chen, Y.	BIOL	171	Cheng, H.	ANYL	178	Cheung, G.	CATL	221
Chen, Y.	BIOL	65	Cheng, H.	COLL	525	Cheung, K.	MEDI	33
Chen, Y.	COLL	142	Cheng, H.	COLL	564	Cheung, M.	ORGN	215
Chen, Y.	COLL	209	Cheng, H.	ENVR	141	Cheung, M.	TOXI	28
Chen, Y.	COLL	245	Cheng, H.	MEDI	327	Chhabra, J.	CHED	243
Chen, Y.	COLL	255	Cheng, H.	PHYS	3	Chhabra, J.	CHED	244
Chen, Y.	COLL	400	Cheng, H.N.	POLY	38	Chhabra, J.	ORGN	618
Chen, Y.	COLL	430	Cheng, J.	AGFD	14	Chi, H.	AGFD	96
Chen, Y.	COLL	558	Cheng, J.	ANYL	12	Chi, L.	ANYL	121
Chen, Y.	COMP	140	Cheng, J.	ENFL	408	Chi, L.	ANYL	128
Chen, Y.	ENFL	353	Cheng, J.	PMSE	11	Chi, L.	TOXI	19
Chen, Y.	ENFL	370	Cheng, J.	POLY	292	Chi, L.	TOXI	61
Chen, Y.	ENFL	414	Cheng, K.	ENFL	156	Chi, L.	TOXI	62
Chen, Y.	ENFL	6	Cheng, K.	MEDI	356	Chi, L.	TOXI	63
Chen, Y.	ENVR	163	Cheng, K.	MEDI	98	Chiang, C.	PMSE	684
Chen, Y.	ENVR	170	Cheng, K.	ORGN	86	Chiang, D.	ENVR	240
Chen, Y.	ENVR	273	Cheng, L.	ENFL	144	Chiang, D.	ENVR	40
Chen, Y.	ENVR	507	Cheng, L.	ENFL	294	Chiang, M.	PMSE	633
Chen, Y.	ENVR	594	Cheng, L.	MEDI	272	Chiang, P.	ENVR	599
Chen, Y.	ENVR	686	Cheng, L.	POLY	200	Chiang, P.	ENVR	601
Chen, Y.	ENVR	756	Cheng, M.	CATL	102	Chiang, W.	COLL	89
Chen, Y.	ENVR	794	Cheng, P.	CATL	328	Chiappone, A.	PMSE	547
Chen, Y.	MEDI	143	Cheng, P.T.	MEDI	18	Chiappone, A.	PMSE	598
Chen, Y.	MEDI	180	Cheng, P.T.	MEDI	267	Chiarizia, R.	NUCL	40
Chen, Y.	MEDI	200	Cheng, P.T.	MEDI	380	Chiba, M.	COLL	127
Chen, Y.	MEDI	22	Cheng, Q.	CINF	51	Chickering, C.	AGRO	268
Chen, Y.	MEDI	266	Cheng, Q.	ENFL	380	Chidambaram, D.	ENFL	482
Chen, Y.	MEDI	268	Cheng, Q.	ENVR	331	Chidara, V.K.	INOR	475
Chen, Y.	MEDI	277	Cheng, R.	FLUO	3	Chidara, V.K.	INOR	476
Chen, Y.	MEDI	297	Cheng, S.	FLUO	12	Chien, A.	PHYS	250
Chen, Y.	MEDI	385	Cheng, S.Z.	COLL	116	Chien, S.	AGFD	238
Chen, Y.	ORGN	434	Cheng, S.Z.	PMSE	594	Chihanga, T.	BIOL	202
Chen, Y.	ORGN	515	Cheng, S.Z.	PMSE	76	Chikindas, M.	COLL	122
Chen, Y.	ORGN	620	Cheng, S.Z.	POLY	29	Childers, M.I.	ENFL	469
Chen, Y.	PHYS	323	Cheng, S.Z.	POLY	425	Childers, W.	ORGN	163
Chen, Y.	PHYS	344	Cheng, T.	CINF	1	Childers, W.E.	MEDI	383
Chen, Y.	PHYS	345	Cheng, T.	ORGN	604	Childers, W.E.	MEDI	401
Chen, Y.	PHYS	386	Cheng, X.	ENVR	439	Childers, W.E.	SCHB	18
Chen, Y.	PHYS	82	Cheng, X.	MEDI	229	Chilkoor Gopala, K.	ENVR	77
Chen, Y.	PMSE	274	Cheng, X.	ORGN	629	Chilkoor, G.	ENVR	81
Chen, Y.	POLY	487	Cheng, Y.	CATL	257	Chilkoti, A.	COLL	327
Chen, Y.P.	POLY	318	Cheng, Y.	COMP	394	Chilkoti, A.	PHYS	115
Chen, Z.	CATL	72	Cheng, Y.	ENFL	272	Chilkoti, A.	PMSE	428
Chen, Z.	COLL	300	Cheng, Y.	ENFL	70	Chilkoti, A.	POLY	203
Chen, Z.	COLL	430	Cheng, Y.	ENFL	70	Chima, N.B.	ENFL	124
Chen, Z.	COLL	458	Cheng, Y.	ENVR	154	Chimalakonda, A.	MEDI	201
Chen, Z.	ENFL	371	Cheng, Y.	ENVR	566	Chimalakonda, A.	MEDI	272
Chen, Z.	ENFL	57	Cheng, Y.	ENVR	799	Chin, C.J.	ENVR	595
Chen, Z.	ENVR	545	Cheng, Z.	COLL	501	Chin, C.J.	ENVR	708
Chen, Z.	ENVR	560	Cheng, Z.	ENFL	196	Chin, C.M.	MEDI	102
Chen, Z.	ENVR	790	Cheng, Z.	FLUO	15	Chin, C.M.	MEDI	155
Chen, Z.	MEDI	104	Cheng, Z.	INOR	220	Chin, C.M.	MEDI	328
Chen, Z.	MEDI	165	Cheng, Z.	ORGN	611	Chin, C.M.	MEDI	329
Chen, Z.	MEDI	221	Chennamadhavuni, S.	COMP	375	Chin, S.	POLY	408
Chen, Z.	MEDI	305	Chenot, H.M.	ORGN	417	Chin, S.	POLY	490
Chen, Z.	MEDI	319	Chenoweth, D.M.	BIOL	22	Chin, S.	POLY	504
Chen, Z.	MEDI	53	Chenoweth, D.M.	BIOL	261	Chin, Y.	ENVR	209
Chen, Z.	MEDI	59	Chenoweth, D.M.	ORGN	2	China, S.	PHYS	87
Chen, Z.	MEDI	87	Chenoweth, D.M.	ORGN	451	Chiney, M.	MEDI	272
Chen, Z.	PMSE	647	Chenoweth, D.M.	ORGN	748	Chinnam, P.R.	ENFL	211
Chène, P.	MEDI	273	Cheon, J.	COLL	405	Chinnam, P.R.	ENFL	354
Chenel, C.	COMP	61	Cheon, J.	COLL	530	Chinnam, P.R.	POLY	88
Cheney, J.	INOR	242	Cheong, C.	ORGN	497	Chintala, S.	ORGN	40
Cheng, C.	ANYL	70	Cheong, J.	ORGN	513	Chio, L.	PMSE	250
Cheng, C.	COMP	287	Cheong, J.	ORGN	603	Chiong, E.	COLL	516
Cheng, C.	ENFL	137	Cheplick, M.J.	AGRO	262	Chiqueto, R.	MEDI	102
Cheng, C.	ENFL	237	Cheplick, M.J.	AGRO	327	Chirico, R.	I&EC	7
Cheng, C.	I&EC	13	Cheplick, M.J.	AGRO	328	Chirik, P.J.	AEI	34
Cheng, C.	I&EC	44	Cheplick, M.J.	AGRO	329	Chirik, P.J.	CATL	33
Cheng, C.	I&EC	47	Cheradame, H.	POLY	125	Chirik, P.J.	I&EC	2
Cheng, C.	INOR	606	Chereddy, S.	ENFL	354	Chirik, P.J.	INOR	100
Cheng, C.	NUCL	25	Cherian, Z.	POLY	510	Chirik, P.J.	INOR	260



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Chirik, P.J.	INOR	98	Choi, S.	PHYS	445	Christov, C.	COMP	381
Chisholm, J.	COMP	251	Choi, S.	PHYS	521	Christov, C.	INOR	16
Chisholm, J.D.	BIOL	110	Choi, T.	COLL	239	Christov, C.	INOR	17
Chisholm, J.D.	ORGN	290	Choi, T.	POLY	194	Christov, C.	ORGN	42
Chisholm, J.D.	ORGN	735	Choi, T.	POLY	422	Christov, C.	ORGN	549
Chittor Mannan, V.	MEDI	395	Choi, Y.	AGFD	200	Chrom, C.	BIOL	27
Chiu, C.	COLL	337	Choi, Y.	CATL	214	Chrom, C.	BIOL	28
Chiu, C.	INOR	168	Choi, Y.	ORGN	510	Chrysochoou, M.	COLL	336
Chiu, C.	INOR	170	Choi, Y.	ORGN	757	Chrysochoou, M.	GEOC	18
Chiu, J.C.	AGRO	59	Choksi, N.Y.	AGRO	346	Chu, B.	AGRO	15
Chiu, K.	CATL	205	Chong, E.	ORGN	400	Chu, B.	ENVR	224
Chiu, K.	ENVR	561	Chong, E.	ORGN	777	Chu, B.T.	PMSE	243
Chiu, M.	COMP	260	Chong, L.	COMP	223	Chu, C.	ENFL	250
Chiu, P.	ENVR	323	Choo, Z.	CHED	210	Chu, C.	ORGN	21
Chiu, R.	PHYS	41	Choo, Z.	ENFL	225	Chu, C.	ORGN	742
Chiu, S.	PHYS	520	Choquette, A.	INOR	47	Chu, D.	ENFL	30
Chiu, T.	COMP	4	Chordia, S.	BIOL	80	Chu, E.	PMSE	379
Chlebowski, A.	ENVR	393	Chorghade, M.	CATL	306	Chu, F.	ANYL	379
Chmely, S.C.	CATL	146	Chorghade, M.	ENFL	147	Chu, H.	ENVR	532
Chmely, S.C.	CATL	263	Chorghade, M.	ORGN	76	Chu, K.	ENVR	539
Cho, A.	AGFD	105	Chorghade, M.	ORGN	77	Chu, K.	ENVR	749
Cho, B.	TOXI	43	Chorghade, M.	SCHB	1	Chu, K.	ENVR	771
Cho, B.	TOXI	54	Chorghade, M.	SCHB	24	Chu, P.	POLY	565
Cho, C.G.	COLL	220	Chorghade, M.	TOXI	98	Chu, Q.R.	POLY	572
Cho, C.G.	PMSE	374	Chorghade, R.	ORGN	76	Chu, S.	INOR	238
Cho, E.	COLL	267	Chorghade, R.	ORGN	77	Chu, S.	ORGN	298
Cho, E.	ORGN	687	Chorghade, R.	SCHB	1	Chu, S.	PHYS	313
Cho, E.	ORGN	757	Chorghade, R.	SCHB	24	Chu, X.	COLL	204
Cho, E.J.	ORGN	221	Chorover, J.D.	ENVR	510	Chu, Y.	COLL	116
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Cho, I.	AGFD	31	Chou, C.	ENVR	611	Chuang, E.	BIOL	61
Cho, I.	AGFD	36	Chou, J.	AGFD	295	Chuang, H.	ANYL	313
Cho, J.	BIOL	175	Chou, K.	ORGN	263	Chuang, S.	CATL	14
Cho, J.	CHAL	2	Chou, X.	ENVR	630	Chuang, S.	CATL	227
Cho, J.	ENFL	471	Chou, Y.	MEDI	297	Chuang, S.	INOR	137
Cho, J.	PMSE	375	Choudhury, P.	ENFL	336	Chuang, S.	ORGN	548
Cho, J.	PMSE	376	Choudhury, S.	ENFL	356	Chuang, S.S.	PMSE	669
Cho, J.	PMSE	456	Choudry, A.	PMSE	41	Chuang, Y.	AGRO	201
Cho, J.	PMSE	491	Chourey, S.	ORGN	420	Chuang, Y.	ENVR	127
Cho, K.	ANYL	83	Chouyok, W.	ANYL	148	Chueh, W.	COLL	387
Cho, N.	BIOL	251	Chow, A.T.	ENVR	450	Chumanov, G.	POLY	13
Cho, N.	COLL	397	Chow, A.T.	ENVR	456	Chun, C.L.	ENVR	330
Cho, N.	MEDI	101	Chow, E.	ANYL	324	Chun, H.	AGFD	49
Cho, S.	INOR	465	Chow, S.	ORGN	390	Chun, J.	ENFL	469
Cho, S.	INOR	556	Chow, S.	ORGN	467	Chunfang, Y.	ORGN	440
Cho, S.	INOR	572	Chowdhury, A.	ANYL	117	Chung, C.	AGFD	235
Cho, S.H.	TOXI	71	Chowdhury, A.	PHYS	367	Chung, D.	ANYL	308
Cho, W.	PMSE	375	Chowdhury, A.U.	ANYL	158	Chung, D.	COMP	229
Cho, W.	PMSE	376	Chowdhury, B.	ENFL	486	Chung, D.	COMP	232
Cho, W.	PMSE	456	Chowdhury, I.	ENVR	404	Chung, D.	PMSE	375
Cho, W.	PMSE	491	Chowdhury, N.	ORGN	14	Chung, D.	PMSE	376
Cho, Y.	COMP	234	Chowdhury, S.	MEDI	263	Chung, D.	PMSE	456
Cho, Y.	ORGN	559	Choy, C.	MEDI	172	Chung, D.	PMSE	491
Cho, Y.	POLY	422	Chozinski, T.	PHYS	498	Chung, E.	ENVR	666
Chodera, J.D.	COMP	108	Chrisler, W.	COLL	523	Chung, E.M.	MEDI	107
Chodera, J.D.	COMP	167	Christadore, L.M.	POLY	364	Chung, H.	CATL	303
Choi, B.	INOR	37	Christe, K.O.	INOR	297	Chung, H.	ENVR	287
Choi, C.	CATL	214	Christensen, S.A.	AGRO	61	Chung, H.	PMSE	299
Choi, C.	ORGN	672	Christian, K.E.	PHYS	218	Chung, H.	POLY	291
Choi, D.	POLY	12	Christian, T.	PHYS	121	Chung, H.	POLY	90
Choi, E.	COLL	267	Christian, W.	MEDI	250	Chung, I.	MEDI	297
Choi, G.	ANYL	80	Christiansen, K.	ENVR	198	Chung, I.	PMSE	377
Choi, H.	AGFD	31	Christiansen, M.A.	CHED	423	Chung, K.	ANYL	81
Choi, H.	CATL	214	Christianson, D.W.	BIOL	101	Chung, K.	COLL	259
Choi, H.	INOR	649	Christianson, N.H.	BIOL	101	Chung, K.	ENFL	278
Choi, H.	PMSE	693	Christie, D.	PMSE	628	Chung, K.	ENVR	689
Choi, J.	CATL	147	Christie, H.S.	CHED	45	Chung, S.	AGFD	72
Choi, J.	CATL	161	Christie, P.D.	CHED	60	Chung, S.	GEOC	76
Choi, J.	COLL	259	Christodoulatos, C.	ENVR	264	Chung, T.	PHYS	323
Choi, J.	INOR	649	Christodoulatos, C.	ENVR	476	Chung, W.	BIOL	212
Choi, J.	MEDI	105	Christofidou-Solomidou, M.	MEDI	415	Chung, Y.	PMSE	20
Choi, J.	MEDI	396	Christofidou-Solomidou, M.	TOXI	28	Chung, Y.G.	PHYS	300
Choi, J.	PMSE	164	Christofidou-Solomidou, M.	TOXI	29	Chunshuai, H.	ORGN	440
Choi, J.	PMSE	269	Christofidou-Solomidou, M.	TOXI	48	Chupakhin, V.	MEDI	178
Choi, J.	PMSE	273	Christopher, P.	CATL	149	Chupik, R.B.	INOR	492
Choi, J.K.	ENVR	591	Christopher, P.	CATL	154	Church, G.	ENVR	195
Choi, M.	BIOL	127	Christopherson, J.	CHED	18	Church, J.	BIOL	15
Choi, S.	ANYL	83	Christou, G.	INOR	19	Church, J.	ENVR	474

Church, J.	ENVR	692	Clement, C.C.	ORGN	445	Cohen, S.	MEDI	315
Ciallella, H.L.	ANYL	327	Clemente, G.S.	FLUO	17	Cohen, S.	MEDI	333
Ciancetta, A.	MEDI	103	Clemente, N.	PHYS	32	Cohen, S.	ORGN	313
Ciancetta, A.	MEDI	165	Clements, H.	CATL	268	Cohen, S.Z.	AGRO	276
Ciavarrì, J.	MEDI	251	Clements, H.	ORGN	272	Cohen, S.Z.	AGRO	293
Ciccarelli, S.	ORGN	745	Clemmer, D.E.	ANYL	188	Cohen, S.Z.	AGRO	314
Cicerone, M.T.	ANYL	9	Clemons, B.	MEDI	111	Cohen-Karni, D.	POLY	451
Cichos, F.	ANYL	48	Clemons, B.	MEDI	261	Cohen-Karni, D.	POLY	592
Cichowicz, M.B.	AGFD	39	Clet, G.	CATL	100	Cohen-Karni, T.	POLY	592
Ciesielski, P.	CATL	263	Cleveland, C.	BIOL	120	Cohn, R.L.	PHYS	452
Ciglenecki, I.	ENVR	786	Cleveland, C.B.	AGRO	366	Colacot, T.	ORGN	383
Cihaner, A.	POLY	371	Cleveland, J.L.	MEDI	207	Colas, K.	ORGN	633
Cimatu, K.A.	COLL	194	Cleven, C.	POLY	564	Colby, R.H.	POLY	501
Cimatu, K.A.	COLL	210	Cleverdon, E.R.	BIOL	103	Cole, A.G.	MEDI	381
Cimatu, K.A.	COLL	484	Cleves, A.E.	COMP	166	Cole, B.	ENVR	377
Cimerol, S.	CHED	190	Clingenpeel, A.	ENFL	322	Cole, B.E.	INOR	445
Cinar, R.	ORGN	271	Clites, M.	ENFL	351	Cole, D.	GEOC	19
Cink, R.	ORGN	222	Clore, G.M.	PHYS	165	Cole, D.	GEOC	24
Cintron, J.M.	ANYL	209	Clouston, L.J.	INOR	26	Cole, D.	GEOC	54
Cirri, A.	INOR	672	Cnudde, P.	CATL	137	Cole, D.	GEOC	55
Cirz, R.	MEDI	278	Co, A.	ENFL	163	Cole, D.	GEOC	80
Cisneros, G.A.	COMP	147	Coates, A.	AGFD	245	Cole, D.	GEOC	83
Cisneros, G.A.	COMP	318	Coates, G.W.	POLY	138	Cole, E.	COLL	355
Cisneros-Martínez, J.	MEDI	132	Coates, G.W.	POLY	304	Cole, J.	POLY	289
Cisneros-Zevallos, L.	COLL	451	Coates, G.W.	POLY	348	Cole, K.P.	I&EC	5
Ciszewski, R.	COLL	101	Coates, T.A.	ENVR	456	Cole, P.A.	BIOL	41
Cizdziel, J.V.	AGRO	100	Coats, J.R.	AGRO	159	Cole, R.S.	CHED	131
Ckless, K.	ORGN	147	Coats, J.R.	AGRO	160	Coleman, J.G.	ENVR	405
Claeys, B.	POLY	584	Coats, J.R.	AGRO	76	Coleman, P.J.	FLUO	19
Claffin, M.S.	PHYS	555	Coats, R.A.	AGRO	195	Coleman, P.J.	MEDI	371
Clairmont, B.P.	INOR	28	Cobas, C.	CINF	46	Coleman, T.	MEDI	99
Clapham, J.	INOR	146	Cobb, A.	INOR	378	Colestock, T.	MEDI	398
Clapp, L.W.	ENVR	461	Cobb, C.L.	HIST	17	Colfer, A.	CHED	261
Claremon, D.A.	MEDI	100	Cobb, K.M.	ORGN	240	Colgan, A.C.	ORGN	82
Claremon, D.A.	MEDI	95	Cobb, K.M.	ORGN	409	Colglazier, S.	MEDI	275
Clarice, P.E.	NUCL	49	Cobb, K.M.	ORGN	71	Colina, C.M.	COMP	224
Claridge, S.A.	COLL	597	Cobb, K.M.	ORGN	765	Colina, C.M.	PMSE	6
Clark, B.	AGRO	144	Coble, J.	NUCL	16	Colina-Marquez, J.A.	ENVR	498
Clark, B.	AGRO	359	Coble, J.	NUCL	3	Colina-Marquez, J.A.	ENVR	554
Clark, C.G.	MEDI	265	Coburn, C.A.	MEDI	276	Colina-Marquez, J.A.	ENVR	648
Clark, C.R.	ANYL	120	Cocce, K.	MEDI	1	Colledge, L.	CINF	27
Clark, C.R.	MEDI	390	Cochran, E.W.	PMSE	154	Colletto, C.	ORGN	74
Clark, D.	ORGN	234	Cochran, J.	AGRO	115	Colleville, A.	ORGN	645
Clark, E.	INOR	99	Cochran, J.	ANYL	230	Collier, G.S.	POLY	570
Clark, H.	ORGN	20	Cochran, R.	PHYS	86	Collier, K.	PMSE	440
Clark, J.	ENFL	145	Cockett, M.	MEDI	22	Collier, R.H.	AGRO	185
Clark, J.	MEDI	271	Codrington, J.	COLL	316	Collier, T.L.	FLUO	9
Clark, J.M.	AGRO	103	Codrington, J.	COMP	219	Collings, M.	COLL	75
Clark, J.R.	ORGN	28	Cody, J.A.	CHED	369	Collings, M.	PHYS	273
Clark, K.	AGRO	268	Cody, J.A.	ORGN	38	Collins, D.	ENVR	160
Clark, K.	MEDI	25	Cody, J.A.	ORGN	679	Collins, D.	ENVR	223
Clark, K.M.	INOR	307	Cody, V.	MEDI	153	Collins, D.	ENVR	23
Clark, M.	POLY	168	Coelhoso, I.M.	PMSE	658	Collins, F.	AGFD	130
Clark, M.	YCC	11	Coffey, D.S.	ORGN	623	Collins, I.	FLUO	20
Clark, M.L.	INOR	54	Coffey, J.	CHED	291	Collins, I.	ORGN	677
Clark, P.G.	PMSE	205	Coffey, S.B.	ORGN	26	Collins, J.	BIOL	181
Clark, R.D.	AGRO	312	Coffey, T.	AGRO	82	Collins, J.	CHED	181
Clark, R.D.	COMP	149	Coffey, V.	AGFD	188	Collins, J.	COMP	181
Clark, R.W.	MEDI	299	Coffield, J.	CHED	154	Collins, J.	PHYS	313
Clark, S.B.	NUCL	21	Cogan, J.	MEDI	142	Collins, J.	PMSE	635
Clark, S.L.	AGRO	140	Cogen, J.M.	ANYL	225	Collins, J.L.	MEDI	206
Clark, T.R.	COMP	244	Coggon, M.	PHYS	122	Collins, M.A.	ENVR	511
Clark, W.W.	PMSE	360	Cohen, A.E.	ANYL	199	Collins, M.R.	ORGN	561
Clarke, D.D.	CHED	77	Cohen, C.	MEDI	263	Collins, R.E.	CHED	41
Clarke, N.	BIOL	186	Cohen, F.	MEDI	278	Collins, S.	CATL	97
Clarkson, B.H.	PMSE	28	Cohen, R.C.	ENVR	277	Collins, S.	COMP	217
Clarkson, R.W.	MEDI	48	Cohen, R.C.	PHYS	223	Collins, T.S.	AGFD	154
Clas, S.	MEDI	371	Cohen, R.C.	PHYS	43	Collison, C.J.	ORGN	679
Clausen, B.	AGRO	28	Cohen, R.C.	PHYS	90	Collot, M.	ORGN	596
Clausen, C.A.	ENVR	722	Cohen, R.E.	POLY	260	Colombo, R.	MEDI	62
Clausen, C.A.	ENVR	724	Cohen, S.	CATL	230	Colombo, R.	MEDI	63
Clavier, N.	NUCL	22	Cohen, S.	INOR	130	Colombo, R.	MEDI	65
Clavier, N.	NUCL	28	Cohen, S.	INOR	154	Colomer Utrera, I.	ORGN	81
Clearfield, A.	INOR	364	Cohen, S.	INOR	420	Colon, J.L.	INOR	364
Cleary, S.P.	ANYL	221	Cohen, S.	INOR	472	Colon, L.A.	ANYL	210
Cledon, M.	ENVR	359	Cohen, S.	MEDI	123	Colon, W.	BIOL	15
Cleland, G.	ENVR	776	Cohen, S.	MEDI	125	Colon, W.	BIOL	16
Clemas, J.	MEDI	84	Cohen, S.	MEDI	143	Colon, W.	BIOL	87
Clement, C.C.	BIOL	68	Cohen, S.	MEDI	145	Colón, Y.J.	PHYS	300
Clement, C.C.	MEDI	134	Cohen, S.	MEDI	184	Colon-Bernal, I.D.	ENVR	625

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Colorado Escobar, M.	COLL	227	Cook, K.	PRES	39	Corzett, M.H.	COLL	56
Colorado Escobar, M.	PMSE	528	Cook, L.	AGRO	191	Cosgriff-Hernandez, E.	PMSE	177
Colson, Y.	PMSE	52	Cook, M.	NUCL	1	Cosio, M.	PMSE	230
Colter, E.	POLY	13	Cook, M.T.	NUCL	36	Coskun, A.	PMSE	18
Coltharp, R.E.	BIOL	166	Cook, R.	POLY	498	Coskun, A.	PMSE	36
Coluzzi, N.	CHED	150	Cook, R.L.	ENVR	274	Coskun, A.	PMSE	4
Colvin, V.L.	COLL	343	Cook, T.R.	INOR	155	Coskun, A.	PMSE	630
Colvin, V.L.	COLL	542	Cook, T.R.	INOR	500	Coskun, A.	PMSE	656
Combee, L.A.	ORGN	774	Cook, T.R.	INOR	655	Coss, C.	COLL	98
Compagner, C.	ORGN	493	Cook, T.R.	INOR	657	Cossairt, B.M.	INOR	196
Composto, R.J.	COLL	109	Cooke, A.	MEDI	84	Cossairt, B.M.	PHYS	132
Compton, D.L.	AGFD	78	Cooke, E.	ORGN	610	Cossette, C.	ORGN	420
Compton, J.	TOXI	60	Cooke, R.	MEDI	30	Costa, F.	INOR	410
Conca, K.R.	AGFD	62	Cook-Sneathen, A.	ORGN	581	Costa, K.	ENVR	197
Conca, K.R.	AGFD	63	Cookson, R.	ORGN	458	Costa, M.	ORGN	708
Concepcion, J.J.	INOR	214	Coolbaugh Lester, C.	TOXI	41	Costache, A.	COMP	152
Concepcion, J.J.	INOR	314	Cooper, A.	PHYS	480	Costello, M.	BIOL	173
Concepcion, J.J.	INOR	451	Cooper, A.I.	ENFL	35	Cote, J.M.	BIOL	154
Concepcion, J.J.	INOR	455	Cooper, A.I.	PMSE	3	Cote, R.	PHYS	81
Conda-Sheridan, M.M.	MEDI	139	Cooper, A.R.	CATL	176	Cottell, J.J.	ORGN	206
Conda-Sheridan, M.M.	PMSE	582	Cooper, A.R.	ENFL	350	Cottrill, A.	ENFL	446
Condee, C.	ENVR	723	Cooper, G.	ORGN	196	Cotts, P.	PMSE	440
Conder, E.W.	ORGN	270	Cooper, J.D.	ORGN	662	Couch, K.D.	ENVR	320
Condon, B.D.	PMSE	226	Cooper, J.S.	ANYL	324	Coudert, F.	COMP	73
Condon, B.D.	PMSE	589	Cooper, T.M.	INOR	265	Coudert, F.	ENFL	406
Condon, J.	PMSE	378	Cooper-White, J.	POLY	3	Coudert, F.	INOR	246
Coneski, P.N.	ANYL	229	Cope, N.	BIOL	41	Coulthard, R.M.	ENVR	96
Conforti, M.	COLL	554	Coppey, M.	COLL	528	Courtis, A.M.	PHYS	313
Cong, L.	ENFL	250	Copping, R.	NUCL	33	Courtois, S.	ENVR	774
Cong, X.	COLL	602	Copping, R.	NUCL	48	Coustenis, A.	PHYS	22
Congdon, M.	MEDI	7	Copping, R.	NUCL	63	Couto, A.	COLL	218
Conicella, A.	BIOL	90	Corbin, M.	AGRO	43	Couto, R.	ANYL	113
Conicella, A.	PHYS	336	Cordell, K.	ORGN	685	Coveney, P.V.	COLL	409
Conklin, B.	ANYL	135	Cordero, T.	CATL	5	Coveney, P.V.	COMP	106
Conklin, E.	INOR	513	Cordes, D.B.	ORGN	498	Covert, K.	PHYS	347
Conley, J.T.	INOR	528	Cordes, M.H.	BIOL	130	Covington, M.	ANYL	17
Conn, A.	AGRO	223	Cordiner, M.	PHYS	26	Covington, M.	ANYL	329
Connal, L.a.	PMSE	635	Cordon-Obras, C.	MEDI	240	Cowart, J.	ENFL	146
Connell, J.W.	COLL	407	Cordova, D.	AGRO	102	Cowburn, D.	PHYS	214
Connell, J.W.	ENFL	284	Cordova, D.	AGRO	156	Cowie, D.	AGRO	349
Connelly, P.	AGRO	284	Cordova, D.	AGRO	291	Cowie, D.	AGRO	353
Conner, D.	PROF	11	Cordova, B.	COLL	363	Cowins, J.	AGRO	274
Conner, D.	PROF	12	Coric, I.	INOR	288	Cowles, R.S.	AGRO	38
Connolly, B.	FLUO	19	Corilo, Y.	ENFL	322	Cox, C.	BIOL	147
Connor, A.	PMSE	627	Corio, P.	COLL	419	Cox, E.	ENVR	523
Connor, G.	INOR	653	Corio, P.	PHYS	440	Cox, J.	COLL	105
Connor, R.E.	CHED	182	Corley, C.A.	POLY	380	Cox, J.M.	INOR	416
Connor, R.E.	CHED	81	Corley, C.A.	POLY	438	Cox, M.	MEDI	127
Connor, R.E.	CHED	87	Cormode, D.	COLL	270	Cox, M.B.	ENVR	54
Conrad, C.	POLY	13	Cormode, D.	INOR	271	Coyle, J.	MEDI	9
Conrad, F.	AGRO	220	Corn, R.M.	ANYL	290	Cozzolino, A.F.	INOR	242
Conroy, C.	ANYL	50	Cornebise, M.A.	MEDI	20	Cozzolino, A.F.	INOR	345
Conroy-Ben, O.	ENVR	748	Cornell, A.P.	CINF	9	Cozzolino, A.F.	INOR	514
Consolazio, N.	GEOC	33	Cornell, W.D.	COMP	109	Cozzolino, A.F.	ORGN	498
Console-Bram, L.	CHAS	56	Cornella-Taracido, I.	ORGN	212	Cozzolino, A.F.	ORGN	547
Consolin Chelucci, R.C.	MEDI	155	Cornelus, J.	ORGN	299	Crabb, C.	POLY	510
Consolin Chelucci, R.C.	MEDI	328	Cornet, T.	PHYS	27	Crabtree, R.H.	INOR	230
Consolin Chelucci, R.C.	MEDI	329	Cornille, A.	POLY	185	Crabtree, S.	MEDI	310
Constable, D.J.	I&E	37	Coronell, O.	ENVR	506	Crabtree, S.R.	MEDI	124
Constantine, S.N.	ENVR	330	Coronell, O.	ENVR	508	Craig, S.	PMSE	363
Constantinou, I.	PMSE	340	Coronella, C.	ENVR	296	Crain, C.	NUCL	5
Conticello, V.P.	COMP	93	Coropceanu, V.	PMSE	340	Crain, C.	POLY	331
Contreras, A.J.	CHED	205	Corradini, D.	COMP	73	Cramer, S.	INOR	281
Contreras, A.J.	CHED	220	Correia, B.	BIOL	11	Crandall, D.	GEOC	10
Convery, M.A.	MEDI	264	Correia, V.G.	POLY	70	Crane, R.M.	CHED	301
Conway, B.	PHYS	417	Corro, K.	ORGN	556	Crane, S.	MEDI	165
Conway, C.	MEDI	162	Corsello, M.	ORGN	357	Cranney, J.	AGRO	303
Conway, C.	ORGN	39	Corson, T.	MEDI	190	Crans, D.C.	COLL	485
Conway, J.	PMSE	469	Cort, J.R.	CATL	165	Crans, D.C.	INOR	197
Conway, J.	TOXI	60	Corte, J.R.	MEDI	345	Crans, D.C.	INOR	384
Conway, S.J.	AGFD	214	Corte, J.R.	MEDI	94	Crans, D.C.	INOR	396
Conway, S.J.	MEDI	253	Cortes Cabrera, A.	COMP	138	Crans, D.C.	MEDI	354
Conway, S.J.	ORGN	411	Cortes, C.	MEDI	17	Cranswick, M.	CHED	236
Cook, A.	COLL	304	Cortes, E.	BIOL	27	Cravatt, B.F.	BIOL	11
Cook, B.J.	COLL	442	Cortés, M.	FLUO	11	Craven, G.	COMP	46
Cook, E.W.	HIST	21	Cortés, M.	ORGN	391	Craven, G.	PHYS	20
Cook, G.R.	ORGN	625	Cortez, M.	POLY	121	Craven, T.	POLY	24
Cook, J.	PMSE	322	Corum, K.W.	COLL	80	Cravotta, C.A.	ENVR	42
Cook, J.M.	MEDI	397	Corvaro, M.	AGRO	154	Crawford, C.	AGRO	80
Cook, K.	PHYS	348	Corzett, M.H.	ANYL	130	Crawford, C.	MEDI	16

Crawford, J.M.	MEDI	99	Cruz, K.J.	COLL	381	Curry, S.	MEDI	276
Crawford, M.	PROF	6	Cruz, M.A.	POLY	459	Curry, T.	COLL	413
Crawford, R.	ENVR	464	Cruz-Diaz, G.	PHYS	72	Curry, T.	ENVR	255
Credille, C.V.	MEDI	125	Cruz-Ramos, C.A.	PMSE	320	Curtarolo, S.	PHYS	304
Credille, C.V.	MEDI	145	Cryder, Z.M.	AGRO	143	Curtin, G.	COMP	266
Cremer, P.S.	ANYL	51	Cryder, Z.M.	AGRO	48	Curtis, N.	MEDI	15
Cremer, P.S.	COLL	602	Cseke, A.	MEDI	412	Curtiss, L.A.	CATL	77
Creran, B.	COLL	518	Cubello, J.	MEDI	326	Curtiss, L.A.	ENFL	144
Crespo, A.	COMP	197	Cubides, Y.	PMSE	393	Curtiss, L.A.	ENFL	294
Crespo, J.	PMSE	658	Cuchetto, R.	AGRO	189	Curto, J.M.	ORGN	747
Cress, B.	MEDI	117	Cudjoe, E.	PMSE	59	Cushing, S.	ENFL	30
Crews, A.D.	AGRO	195	Cudworth, D.P.	AGRO	289	Cusick, R.D.	ENVR	291
Crews, C.M.	BIOL	250	Cui, B.	ANYL	285	Cusick, R.D.	ENVR	593
Crews, C.M.	MEDI	249	Cui, B.	COLL	529	Cusick, R.D.	ENVR	63
Cribb, M.	ENVR	635	Cui, C.	BIOL	7	Cutler, S.J.	MEDI	151
Crich, D.	MEDI	136	Cui, C.	CATL	247	Cuttica, F.	PMSE	146
Crich, D.	ORGN	188	Cui, C.	CATL	284	Cuttitta, C.	INOR	404
Crich, D.	ORGN	51	Cui, C.	INOR	221	Cutts, A.	MEDI	263
Crich, D.	ORGN	652	Cui, F.	ENVR	782	Cwiertny, D.M.	AGRO	94
Crichton, R.	PMSE	370	Cui, H.	COLL	195	Cwiertny, D.M.	ENVR	266
Crick, D.	COLL	485	Cui, H.	COLL	235	Cwiertny, D.M.	ENVR	394
Crick, D.	MEDI	354	Cui, H.	MEDI	191	Cygan, R.T.	GEOC	2
Crick, E.W.	I&EC	5	Cui, H.	PMSE	143	Cyr, P.	ORGN	557
Crimi, M.	ENVR	107	Cui, H.	PMSE	372	Czapor, B.	PMSE	213
Criscenti, L.J.	GEOC	2	Cui, H.	PMSE	474	Czarnik, A.W.	MEDI	274
Criscenti, L.J.	GEOC	8	Cui, H.	POLY	322	Czodrowski, P.	COMP	62
Crispell, E.K.	COMP	375	Cui, J.	ORGN	544	Czodrowski, P.	MEDI	28
Crist, K.	AGRO	136	Cui, J.	ORGN	614	Czuba, E.	INOR	319
Crist, L.E.	INOR	504	Cui, M.	ENFL	4	Czubatka-Bienkowska, A.	MEDI	322
Crittenden, J.C.	ENVR	163	Cui, Q.	COLL	394	Czubatka-Bienkowska, A.	MEDI	323
Crocker, J.	PMSE	138	Cui, Q.	COMP	176	Czubatka-Bienkowska, A.	MEDI	331
Crocker, K.	ORGN	458	Cui, Q.	COMP	35	da Costa Lopes, A.M.	ENFL	197
Crocker, M.	CATL	161	Cui, Q.	ORGN	542	da Rosa, J.A.	MEDI	155
Crocker, M.	CATL	295	Cui, Q.	PHYS	96	da Silva, D.	AGFD	117
Crockett, R.D.	ORGN	691	Cui, S.	CATL	293	da Silva, D.	ANYL	107
Croft, J.	PMSE	440	Cui, S.	PMSE	244	Da Silva, L.C.	POLY	330
Crofton, K.	CINF	28	Cui, S.	PMSE	498	Da, C.	COMP	370
Crofton, K.	TOXI	96	Cui, W.	ENVR	675	Da, J.	ENVR	255
Croley, T.R.	AGRO	34	Cui, X.	ENFL	232	Da, T.	BIOL	204
Cromer, S.B.	INOR	85	Cui, X.	ENVR	576	Dabertin, T.	INOR	566
Crompton, N.M.	GEOC	42	Cui, X.	ORGN	250	Dabral, S.	ENVR	300
Cronin, N.B.	ORGN	677	Cui, Y.	PHYS	313	Dacheux, N.	NUCL	22
Cronk, H.	AEI	10	Culberson, J.C.	COMP	340	Dacheux, N.	NUCL	28
Cronk, H.	CATL	210	Culberson, L.M.	PHYS	39	Dacic, M.	COLL	397
Cronk, H.	COLL	164	Culbert, E.	AGRO	36	Dada, E.A.	ENVR	650
Cropek, D.	PMSE	562	Culcu, G.	INOR	497	Daddysman, M.K.	AEI	50
Cropper, S.	AGFD	54	Cullen, D.	CHED	5	Daddysman, M.K.	PHYS	532
Crosby, A.	COLL	29	Cully, J.	MEDI	84	Dadgar, S.	COMP	374
Crosby, K.	AGFD	157	Culp, J.	PMSE	451	Dadmun, M.D.	PMSE	209
Crosby, L.A.	CATL	329	Culpepper, J.D.	ENVR	572	Dadmun, M.D.	PMSE	23
Cross, M.E.	ORGN	478	Culver, K.	MEDI	418	Dadmun, M.D.	PMSE	415
Cross, S.N.	INOR	78	Culy, C.	ORGN	191	Dadmun, M.D.	POLY	102
Crossley, S.	CATL	171	Cumbal, L.H.	ENVR	564	Daemen, I.	CATL	257
Crossley, S.	CATL	264	Cumin, F.	MEDI	262	Daemen, L.	ENFL	272
Crossley, S.	CATL	55	Cumings, J.	ENFL	338	Daek, K.	PMSE	656
Crossley, S.	ENFL	93	Cummins, C.C.	INOR	354	Dagher, M.M.	CHED	374
Croue, J.	ENVR	517	Cummins, C.C.	INOR	72	Dagle, R.	CATL	54
Crouse, J.D.	PHYS	173	Cundari, T.R.	COMP	245	Dagnall, K.A.	CATL	315
Crouse, J.D.	PHYS	224	Cundari, T.R.	COMP	324	Dahal, G.P.	BIOL	39
Crouse, G.	AGRO	289	Cundari, T.R.	COMP	326	Dahan, M.	COLL	528
Crow, J.	TOXI	44	Cundiff, S.	PHYS	36	Dahanayake, V.A.	INOR	174
Crowe, A.	COMP	158	Cunningham, C.	ENVR	438	Daher, S.	MEDI	355
Crowley, M.	AEI	19	Cunningham, D.W.	CINF	26	Dahl, E.W.	INOR	179
Crowley, M.	ENVR	58	Cunningham, J.A.	ENVR	98	Dahl, E.W.	INOR	323
Crowley, M.F.	COMP	261	Cunningham, K.A.	MEDI	16	Dahl, J.	AGRO	222
Crowley, V.	MEDI	41	Cuny, G.D.	ORGN	216	Dahlberg, P.D.	ANYL	337
Crownhart, C.	CHED	210	Cupil-Garcia, V.K.	CHED	286	Dahlberg, P.D.	PHYS	152
Crownhart, C.	ENFL	224	Curet, L.D.	ORGN	518	Dahlberg, P.D.	PHYS	200
Crowther, D.J.	PMSE	206	Cureton, L.T.	AGFD	100	Dahlberg, P.D.	WCC	1
Crozier, A.	AGFD	259	Cureton, L.T.	AGFD	29	Dahlhaus, A.	ENVR	340
Crozier, B.	INOR	353	Curia, S.	POLY	272	Dahlhaus, A.	ENVR	521
Crudden, C.M.	ORGN	386	Cur, R.F.	PRES	3	Dahlhauser, S.	BIOL	199
Cruikshank, D.	PHYS	204	Curley, E.A.	PHYS	259	Dahm, C.	ENVR	534
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Crumbliss, A.L.	CHED	379	Curley, P.B.	POLY	149	Dai, B.	INOR	613
Crumlin, E.	CATL	151	Currano, J.N.	CINF	48	Dai, B.	INOR	674
Crumlin, E.	COLL	386	Current, K.M.	ENVR	252	Dai, C.	ENFL	315
Cruz Tato, P.E.	PMSE	37	Current, K.M.	ENVR	615	Dai, C.	GEOC	52
Cruz, C.	ORGN	27	Currie, R.	AGRO	353	Dai, F.	ENVR	239
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Dai, H.	ANYL	321	Damkaci, F.	POLY	375	Datko, B.	PMSE	496
Dai, H.	ANYL	39	Damon, J.	PMSE	197	Datta, A.	ORGN	656
Dai, H.	ENFL	409	Dampf, S.J.	PHYS	460	Datta, P.	POLY	381
Dai, H.	PHYS	276	Dan, E.	ENVR	391	Datta, P.	POLY	413
Dai, H.	PHYS	288	Dan, Q.	BIOL	33	Datta, R.	ENVR	706
Dai, H.	PHYS	378	Danda, V.	POLY	591	Dattelbaum, J.D.	AEI	2
Dai, H.	PHYS	387	Dandapani, K.	MEDI	395	Daturi, M.	CATL	100
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Dai, H.	PHYS	441	Danes, J.	BIOL	177	Daturi, M.	ENFL	25
Dai, H.	PHYS	443	Dang, L.	MEDI	268	Daube, C.	PHYS	222
Dai, H.	PHYS	447	Dang, L.X.	COMP	3	Daubenmire, P.L.	CHED	108
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Dai, L.	ANYL	355	Daniel, Y.	PMSE	531	Daugan, A.	MEDI	15
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Dai, L.	POLY	392	Daniels, G.C.	PMSE	180	D'auria, T.D.	PMSE	41
Dai, M.	ORGN	306	Daniels, G.C.	PMSE	419	Davey, R.	MEDI	119
Dai, M.	ORGN	317	Daniels, M.H.	ORGN	622	David, B.	CATL	253
Dai, M.	ORGN	630	Danielson, A.	POLY	248	David, B.	CATL	255
Dai, N.	AGRO	172	Danielson, N.D.	ANYL	356	David, C.	GEOC	13
Dai, N.	ENVR	130	Danielson, N.D.	CHED	373	David, L.	ENFL	396
Dai, N.	ENVR	453	Danielson, N.D.	ENVR	547	David, L.	MEDI	176
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Dai, S.	ENFL	262	Dannecker, P.	POLY	33	Davidson, A.	MEDI	199
Dai, S.	ENFL	277	Dao, T.	BIOL	195	Davidson, D.	CHED	302
Dai, S.	ENFL	28	Dapper, C.H.	MEDI	358	Davidson, E.	AGFD	28
Dai, S.	ENVR	489	Darab, J.	CATL	161	Davidson, J.R.	PMSE	354
Dai, S.	ENVR	99	Darensbourg, M.Y.	INOR	20	Davidson, Z.	COLL	359
Dai, S.	INOR	115	Darensbourg, M.Y.	INOR	282	Davies, A.T.	ORGN	747
Dai, S.	PMSE	382	Darensbourg, M.Y.	INOR	411	Davies, G.H.	ORGN	220
Dai, S.	PMSE	570	Darensbourg, M.Y.	INOR	492	Davies, H.M.	ORGN	116
Dai, W.	INOR	613	Dares, C.	INOR	446	Davies, H.M.	ORGN	239
Dai, X.	TOXI	15	Darwish, I.Y.	MEDI	135	Davies, H.M.	ORGN	289
Dai, Y.	BIOL	143	Darwish, I.Y.	MEDI	288	Davies, H.M.	ORGN	91
Dai, Y.	BIOL	260	Daryaei, I.	BIOL	258	Davila, S.J.	ANYL	131
Dai, Y.	CATL	336	Das Mahapatra, R.	COLL	57	Davis, A.	MEDI	172
Dai, Y.	MEDI	370	Das, A.	INOR	81	Davis, A.C.	PHYS	473
Dai, Y.D.	ENVR	599	Das, A.	ORGN	249	Davis, A.V.	ORGN	272
Dai, Z.	COLL	255	Das, A.	ORGN	564	Davis, B.J.	PMSE	399
Dai, Z.	ENFL	142	Das, D.	COMP	30	Davis, C.	MEDI	388
Daifuku, S.	CATL	321	Das, D.	ENVR	401	Davis, C.A.	CHED	416
Daigle, F.	PMSE	168	Das, D.	ENVR	779	Davis, C.S.	COLL	34
Daigleault, M.	ENVR	245	Das, D.	ENVR	9	Davis, C.S.	POLY	499
Dailing, A.	MEDI	108	Das, P.	ORGN	361	Davis, D.H.	CHED	232
Dailing, A.	MEDI	109	Das, R.	BIOL	263	Davis, E.	CHED	353
Dailing, E.	COLL	573	Das, R.	COLL	215	Davis, E.	CINF	2
Dain, J.A.	AGFD	198	Das, R.	COLL	224	Davis, E.	CINF	44
Dain, J.A.	AGFD	58	Das, S.	COMP	52	Davis, E.	MEDI	29
Dal Peraro, M.	COMP	102	Das, S.	ENVR	662	Davis, J.	BIOL	40
Dal Peraro, M.	COMP	159	Das, S.	GEOC	25	Davis, K.	ENVR	241
Dal Peraro, M.	COMP	316	Das, S.	PHYS	261	Davis, M.E.	CATL	111
Dalafu, H.A.	INOR	31	Das, S.K.	COLL	161	Davis, R.D.	PMSE	198
Dalafu, H.A.	INOR	372	Das, S.R.	BIOL	178	Davis, R.D.	PMSE	528
Dalai, A.	ENFL	67	Daschakraborty, S.	PHYS	518	Davis, S.	BIOL	155
Dalai, A.K.	ENFL	489	Dasgupta, A.	INOR	612	Davis, S.	PHYS	88
Dalai, S.	MEDI	370	Dasgupta, B.	MEDI	162	Davis, T.	CATL	269
Dale, B.	CHED	79	Dasgupta, B.	MEDI	395	Davis, T.A.	ORGN	113
Daley, R.	ORGN	472	Dasgupta, J.	PHYS	267	Davison, B.H.	ENFL	205
Dall, E.	PMSE	117	Dasgupta, S.	ORGN	407	Davisson, V.J.	MEDI	119
Dalton, D.R.	ORGN	178	Dasgupta, S.	POLY	186	Davisson, V.J.	MEDI	55
Dalton, E.L.	CHED	204	Dasgupta, S.	POLY	373	Davoren, J.E.	MEDI	13
Dalton, M.J.	INOR	265	DaSilva, N.	AGFD	56	Davydov, A.	ENFL	503
Dalton, P.D.	POLY	209	DaSilva, N.	AGFD	59	Davydovich, O.	COLL	411
Dalton, S.E.	MEDI	264	Daskalov, P.N.	BIOL	160	Davydovich, O.	PMSE	379
Daly, M.L.	INOR	171	Dassanayake, A.C.	ENVR	99	Dawlaty, J.	PHYS	19
Daly, M.L.	INOR	173	Dassanayake, R.	I&EC	25	Daws, B.	ENVR	386
Daly, S.R.	NUCL	59	Dastidar, S.	INOR	48	Dawson, J.	ENVR	222
Dama, J.F.	COMP	173	Dastidar, S.	INOR	527	Dawson, J.N.	PHYS	560
Dambach, D.	TOXI	38	Dastidar, S.	INOR	85	Dawson, K.	COLL	446
Damjanovic, A.	COMP	60	Daston, G.	TOXI	41	Dawson, K.	COLL	522

Dawson, K.	COLL	527	DeBoon, T.	CHED	6	Delmau, L.H.	NUCL	49
Dawson, K.	COLL	578	Deborah, F.	MEDI	201	deLong, M.A.	MEDI	45
Dawson, P.	BIOL	11	DeBord, J.D.	ANYL	131	DeLongchamp, D.	PMSE	548
Day, C.	FLUO	21	DeBord, J.D.	ANYL	134	Delor, M.	PHYS	16
Day, D.A.	PHYS	43	Debord, J.D.	ANYL	18	Delorezo, E.A.	ORGN	484
Day, E.	COLL	532	DeBord, J.D.	CHED	84	DelPoeta, M.	MEDI	141
Day, H.R.	INOR	460	Debord, J.D.	ENVR	688	Delre, C.	ENFL	181
Day, P.	MEDI	15	DeBord, J.D.	PHYS	388	DeLuca, R.	INOR	261
Day, P.	MEDI	9	DeBord, M.	MEDI	124	Demarest, K.	MEDI	384
Day, T.	COMP	376	DeBord, M.	MEDI	310	Demarest, R.D.	BIOL	27
Dayal, B.	AGFD	254	DeBord, M.	MEDI	32	DeMars, M.D.	ORGN	365
Dayal, B.	AGFD	295	DeBord, M.	MEDI	72	Demas, J.N.	ANYL	179
Dazas, B.	GEOC	72	Debraine, M.	PHYS	354	Demchenko, D.O.	COLL	147
Dazas, B.M.	GEOC	67	DeCarlo, P.F.	PHYS	121	Demchenko, D.O.	INOR	339
De Andrade, V.	GEOC	68	DeCarlo, P.F.	PHYS	47	DeMeester, K.	AEI	8
de Araujo Ferreira, A.G.	GEOC	83	DeCarlo, P.F.	PHYS	486	DeMeester, K.	BIOL	124
De Beer, T.	POLY	584	DeCarlo, P.F.	PHYS	88	DeMeester, K.	BIOL	226
De Costa, T.	MEDI	221	Decho, A.W.	POLY	318	DeMeester, K.	ORGN	591
de Faria, A.F.	COLL	455	Decho, A.W.	POLY	487	Demerdash, O.	PHYS	11
de Gaetano, M.	MEDI	115	Decicco, E.	CHED	300	Demerdash, O.	PHYS	14
de Gaetano, M.	MEDI	348	Decker, E.A.	AGFD	172	Demeter, D.	AGRO	287
de Gaetano, M.	MEDI	351	Decker, S.	COLL	487	Demeter, D.	AGRO	289
De Geest, B.	POLY	251	Declercq, L.	MEDI	178	DeMille, D.	PHYS	118
De Geest, B.	POLY	309	DeColli, A.	BIOL	187	Deming, B.	PHYS	220
De Geest, B.	POLY	584	Dedman, H.	MEDI	111	Deming, T.J.	COMP	7
de Gouw, J.	PHYS	122	Dedman, H.	MEDI	261	Deming, T.J.	POLY	284
de Graaf, J.	COLL	494	Dedon, P.C.	TOXI	78	Deming, T.J.	POLY	546
de Graff, A.	PHYS	283	Deegan, J.	ORGN	171	Demirel, A.L.	POLY	230
de Groot, F.M.	INOR	538	Deepansh, S.	GEOC	80	Demirel, M.C.	PMSE	578
de Hoon, J.	FLUO	19	DeerInWater, K.M.	PROF	5	Demirosl, M.	PMSE	367
De Hoyos, M.	CHED	34	DeFelice, S.	PMSE	541	Demmers, S.	PHYS	100
De Jesus, O.T.	FLUO	12	Defever, R.	COMP	184	Demokritou, P.	ENVR	10
De Jesus-Flores, M.	ORGN	776	Deflorian, F.	MEDI	30	Demoranville, L.	CHED	138
De Jong, K.	ENFL	16	DeForest, P.	COMSCI	6	Demoranville, L.	CHED	410
De Jong, K.	ENFL	508	DeFrates, K.G.	PHYS	463	Demory, J.	AGRO	82
de Jongh, P.	CATL	83	Degenstein, J.C.	ENFL	150	DeMott, P.J.	ENVR	85
de Jongh, P.	ENFL	508	deGhetaldi, K.	ANYL	152	Dempsey, J.L.	INOR	237
De Juan, A.	ORGN	354	deGhetaldi, K.	COLL	382	Dempsey, J.L.	INOR	359
De Juan, A.	ORGN	8	DeGlopper, K.	ORGN	495	Demuth, D.R.	MEDI	417
de la Parra, J.	CHED	44	Degorce, S.L.	MEDI	5	Demuth, M.	BIOL	189
de la Parra, J.	CHED	79	DeGracia, K.	PMSE	227	Dench, J.	I&EC	21
de la Torre, X.	ANYL	346	Degrado, W.F.	ANYL	253	Dench, J.	I&EC	49
De Laet, N.	POLY	493	DeGrado, W.F.	ANYL	39	Denesyuk, N.	PHYS	238
de Leon, A.	POLY	470	Degrado, W.F.	BIOL	20	Deng, B.	ENVR	268
de Leon, A.C.	COLL	497	Degrado, W.F.	INOR	488	Deng, B.	ENVR	31
de Leon, A.C.	PMSE	437	DeGrado, W.F.	ORGN	554	Deng, B.	ENVR	537
de Leon, A.C.	POLY	353	Dehaut, J.	INOR	115	Deng, B.	ENVR	567
de Leon, A.C.	POLY	410	Dehipawala, S.	CHED	194	Deng, B.	ENVR	62
de Llergo, O.	COLL	501	Deibler, K.D.	CHED	352	Deng, B.	ENVR	752
De Long, S.	ENVR	448	Deiglmayr, J.	PHYS	169	Deng, J.	COLL	219
de Los Santos, M.	CHED	139	Deinhart, A.L.	ANYL	130	Deng, J.	PMSE	363
de Los Santos, M.	CHED	140	Deis, S.	MEDI	76	Deng, K.	ANYL	358
De Moraes, C.	AGRO	25	Deiters, A.	ORGN	60	Deng, K.	ANYL	95
de Moura, M.	AGFD	117	Dekock, R.L.	COMP	278	Deng, Q.	MEDI	14
de Moura, M.	ANYL	106	del Castillo, E.	AGFD	123	Deng, S.	ANYL	109
de Moura, M.	ANYL	107	del Solar, V.	AGRO	226	Deng, S.	ENVR	35
De Oliveira, J.	CHED	210	del Solar, V.	BIOL	81	Deng, S.	ENFL	373
De Oliveira, J.	ENFL	224	DeLacy, B.G.	ANYL	160	Deng, W.	ORGN	112
De Oliveira, J.	ENFL	225	DeLacy, B.G.	PHYS	443	Deng, X.	ORGN	464
De Savi, C.	MEDI	5	Delahaye, J.L.	BIOL	130	Deng, Y.	AGFD	256
De Silva, C.	POLY	486	Delaittre, G.	POLY	308	Deng, Y.	COLL	476
De Vito, F.	POLY	510	Delaittre, G.	POLY	521	Deng, Y.	ENVR	166
de Vries, R.	PMSE	140	Delaittre, G.	POLY	53	Deng, Z.	PMSE	85
de Waal, B.	AEI	64	Delancey, E.	MEDI	126	Denham, M.	AEI	24
de Waal, B.	PMSE	505	Delaney, K.T.	POLY	27	Denham, M.	GEOC	36
De Waard, A.	CINF	40	Delaney, K.T.	POLY	81	Deniakos, K.C.	CHED	330
de Wergifosse, M.	PHYS	260	Delbeke, E.	I&EC	19	Deniakos, K.C.	ENVR	57
De Wispelaere, K.	CATL	137	DelBianco, K.	CHED	191	Deniz, A.A.	PHYS	281
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Dovlatyan, M.	MEDI	388	Du, Q.	PMSE	365	Dunach, E.	ORGN	294
Dow, R.L.	MEDI	17	Du, Q.	PMSE	514	Dunach, E.	ORGN	341
Dow, R.L.	ORGN	419	Du, S.	CATL	158	Dunbar, K.	INOR	87
Dow, X.Y.	ANYL	14	Du, T.	BIOL	75	Dunbar, K.R.	INOR	34
Dow, X.Y.	ANYL	159	Du, W.	BIOL	207	Dunbar, S.R.	ORGN	441
Dowdle, W.	ORGN	212	Du, W.	ENVR	694	Duncan, A.J.	ORGN	433
Down, K.	MEDI	113	Du, W.	POLY	139	Duncan, B.	BIOL	263
Downey, A.H.	ANYL	63	Du, Y.	AGRO	282	Duncan, B.	COLL	215
Downey, P.	AGRO	135	Du, Y.	MEDI	370	Duncan, B.	COLL	222
Downie, M.	PMSE	346	Du, Y.	PMSE	9	Duncan, B.	COLL	518
Dowty, M.	MEDI	271	Du, Y.	YCC	17	Duncan, T.V.	ENVR	11
Doyle, A.G.	AEI	48	Du, Z.	ENVR	160	Duncan, T.V.	ENVR	403
Doyle, A.G.	ORGN	200	Duan, A.	ENFL	298	Duncan, W.	COMP	148
Doyle, A.G.	ORGN	24	Duan, A.	ENFL	300	Duncia, J.V.	MEDI	201
Doyle, A.G.	ORGN	339	Duan, A.	ENFL	303	Duncon, M.A.	MEDI	238
Doyle, A.G.	ORGN	34	Duan, C.	INOR	423	Dunford, D.G.	PMSE	339
Doyle, A.G.	ORGN	349	Duan, J.	COMP	243	Dunkel, A.	AGFD	123
Doyle, A.G.	ORGN	385	Duan, L.	INOR	211	Dunkelberger, A.D.	PHYS	215
Doyle, A.G.	ORGN	761	Duan, M.	TOXI	11	Dunlap, K.	ENVR	282
Doyle, A.G.	ORGN	87	Duan, P.	ENFL	308	Dunleavy, K.	PHYS	381
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Doyle, R.	BIOL	206	Duan, X.	AGRO	374	Dunn, B.	ENVR	169
Doyle, R.	INOR	256	Duan, X.	ENVR	398	Dunn, J.D.	ANYL	42
Doyle, R.	INOR	257	Duan, X.	INOR	684	Dunn, P.	INOR	587
Dozzo, P.	MEDI	278	Duan, X.	PMSE	483	Dunne, C.	YCC	21
Draghi, C.	ENVR	647	Duan, X.F.	PHYS	346	Dunnivant, F.M.	ENVR	128
Draghici, B.	BIOL	229	Duan, Y.	ENVR	766	Dunnivant, F.M.	ENVR	136
Draghici, B.	COLL	55	Duan, Y.	PHYS	401	Dunphy, K.	COLL	223
Draghici, B.	MEDI	46	Duarte, L.	POLY	188	Dunsford, J.J.	INOR	99
Drahusuk, L.	INOR	39	Dub, P.	INOR	554	Dunston, T.	BIOL	104
Drake, G.A.	POLY	441	Dubceac, C.	INOR	633	Dunwell, M.	CATL	245
Drake, I.	PMSE	396	Dube, K.	PMSE	329	Dunwell, M.	CATL	250
Drake, L.	MEDI	161	Dubey, B.	ENVR	654	Duong, N.	CATL	264
Draper, D.	PHYS	514	Dubost, C.	AGRO	196	Duoss, E.B.	PMSE	545
Draper, E.	POLY	146	Dubost, D.C.	MEDI	371	Dupretz, R.	PMSE	310
Drappier, C.	POLY	20	Dubowchik, G.M.	ORGN	39	Duquesne, S.	PMSE	196
Drappier, C.	POLY	203	Dubray, O.R.	ORGN	702	Duquesne, S.	PMSE	310

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Durán-Lara, E.F.	POLY	448	Eck, W.S.	AGRO	310	Eitrheim, E.	AEI	18
Durant, N.D.	ENVR	523	Eckel, W.P.	AGRO	313	Eitrheim, E.	COLL	342
Duranty, E.	PMSE	209	Eckelbarger, J.D.	AGRO	287	Eitrheim, E.	ENVR	380
Duranty, E.	PMSE	415	Ecker, G.F.	CINF	4	Ertzer, B.D.	AGRO	38
Durham, T.B.	MEDI	173	Ecker, G.F.	MEDI	412	Ejaz, M.	POLY	363
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Durstock, M.	PMSE	601	Eckmann, D.	COLL	358	Eklo, O.	AGRO	9
Dursun, S.	ENVR	649	Eckmann, D.	COMP	291	Eklund, A.G.	CHED	71
Dusaj, N.N.	PMSE	567	Eddy, C.	PMSE	367	El Khatib, M.	INOR	367
Dusaj, N.N.	POLY	253	Eddy, J.	INOR	52	El Khatib, M.	ORGN	228
Duscher, G.	PHYS	322	Edeback, V.	ENVR	44	El Sayess, R.	ANYL	352
Duster, A.	COMP	144	Edelbach, B.L.	CHED	111	El Shafei, A.	ENFL	492
Dustin, m.K.	GEOC	13	Edelbach, B.L.	CHED	369	El Shafei, A.	POLY	564
Dutoi, A.D.	COMP	16	Eden, M.	I&EC	32	Elahi, R.	MEDI	6
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Dutt, M.	COLL	204	Eder, J.	MEDI	250	Elalem, E.	MEDI	138
Dutt, M.	COLL	97	Eder, K.	CATL	43	El-Alfy, A.	AGFD	163
Dutt, M.	COMP	223	Edgar, K.J.	COMP	290	Elam, J.	CATL	180
Dutt, M.	COMP	385	Edgar, K.J.	POLY	328	Elangovan, S.	ENVR	437
Dutt, M.	COMP	388	Edgar, K.J.	POLY	426	El-Araby, M.E.	CHED	11
Dutta, A.	INOR	273	Edgar, K.J.	POLY	429	El-Araby, M.E.	MEDI	138
Dutta, P.K.	ENFL	92	Edley, M.E.	INOR	528	El-Araby, M.E.	MEDI	303
Dutta, S.	CATL	191	Edmisten, K.	ENVR	194	El-Araby, M.E.	MEDI	320
Dutta, S.	ENFL	368	Edmiston, P.	ENFL	115	Elashyi, T.	POLY	370
Dutta, S.	PHYS	168	Edmonds, K.A.	BIOL	1	Elavazhagan, S.	MEDI	395
Dutta, T.	CATL	165	Edmunds, A.	AGRO	292	El-Ayle, G.	ORGN	421
Duttwyler, S.	ENFL	369	Edri, E.	ENFL	135	Elbert, K.	COLL	214
Duval, C.E.	NUCL	7	Edula, S.	MEDI	167	Eldabagh, N.	COMP	207
Duval, C.E.	NUCL	9	Edwards, C.	MEDI	113	Eldalatony, M.	ENVR	302
Duvall, C.	COLL	448	Edwards, C.	MEDI	127	Eldalatony, M.	ENVR	303
Duvall, C.	COLL	573	Edwards, J.	ANYL	40	Elder, V.A.	AGFD	21
Duvenaud, D.	PHYS	243	Edwards, J.	ENVR	655	Eldred, D.V.	I&EC	20
Dvorak, H.	COLL	474	Edwards, J.	TOXI	96	El-Faky, M.	MEDI	138
Dwiatmoko, A.A.	CATL	147	Edwards, J.P.	POLY	569	Elgawish, M.S.	TOXI	20
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Dworkin, J.P.	PHYS	542	Edwards, R.J.	CHED	301	Elgoyhen, A.	MEDI	163
Dwyer, M.P.	MEDI	276	Edwards, S.J.	ENVR	328	Elgrishi, N.	INOR	359
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Dybek, M.B.	MEDI	391	Effenberger, R.	PMSE	69	Elias, A.	INOR	612
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Dziedzic, J.	PHYS	98	Egger, D.A.	PHYS	506	Elimelech, M.	ENVR	235
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Dzierba, C.D.	MEDI	395	Egolf, R.A.	HIST	25	Elkasabi, Y.	AGFD	200
Dzierlenga, M.W.	PHYS	458	Egsmose, M.	AGRO	9	Elkasabi, Y.	ENFL	36
Dzisah, P.	CATL	1	Ehimaghe, E.	COLL	453	Elkasabi, Y.	ENFL	37
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Fairbanks, A.	ORGN	711	Fang, J.	CHED	199	Faustino, P.J.	ANYL	31
Fairbanks, B.	POLY	192	Fang, J.	ENVR	808	Fautch, J.M.	CHED	247
Fairbrother, H.	COLL	453	Fang, K.	INOR	319	Fauvell, T.	PHYS	195
Fairbrother, H.	ENVR	255	Fang, L.	ORGN	612	Faux, G.	CHED	231
Fairbrother, H.	ENVR	738	Fang, L.	PMSE	171	Favela-Candia, A.	MEDI	132
Fairlie, D.	ORGN	336	Fang, L.	PMSE	343	Fawibe, K.B.	ORGN	480
Fairweather, E.	MEDI	260	Fang, N.	ANYL	169	Fawzi, N.	BIOL	90
Faisal, S.	ORGN	330	Fang, S.	ORGN	731	Fawzi, N.	PHYS	282
Faisal, S.	ORGN	699	Fang, T.	MEDI	345	Fawzi, N.	PHYS	336
Faith, J.	AGFD	89	Fang, T.	MEDI	94	Fawzi, N.	PHYS	339
Faivre, E.	MEDI	254	Fang, Y.	ENFL	422	Fawzi, N.	PHYS	34
Faivre, E.	MEDI	286	Fang, Y.	ENVR	267	Faye, S.	NUCL	17
Fakhraai, Z.	COLL	109	Fang, Y.	PHYS	453	Fazekas, N.	POLY	503
Fakhraai, Z.	COLL	146	Fang, Z.	ENFL	72	Fazlieva, R.	PHYS	3
Fakhraai, Z.	PHYS	551	Fang, Z.	PMSE	258	Fear, M.	BIOL	98
Fakhraai, Z.	PMSE	629	Faniyan, T.	CHED	280	Fearey, B.L.	ANYL	180
Falaras, P.	ENVR	416	Fantasia, S.M.	ORGN	435	Fears, K.	PHYS	215
Falàs, P.	ENVR	446	Fantino, E.	PMSE	547	Fedders, A.	ENVR	297
Falatach, R.	POLY	248	Fantino, E.	PMSE	598	Fedor, A.M.	CHED	85
Falcinelli, S.	PHYS	328	Fanucci, G.E.	PHYS	381	Fedorchak, M.V.	POLY	423
Falcinelli, S.	PHYS	423	Fanwick, P.E.	INOR	334	Fedorchak, M.V.	POLY	538
Falck, J.R.	MEDI	189	Farach-Carson, M.C.	PMSE	519	Fegheh-Hassanpour, Y.	ORGN	152
Fales, B.	COMP	178	Farahanchi, A.	POLY	512	Feher, V.	COMP	260
Fales, B.	PHYS	488	Faraji, S.	PHYS	137	Feher, V.A.	COMP	78
Falk, I.	ORGN	774	Farajidizaji, B.	ORGN	131	Feher, V.A.	COMP	81
Fall, B.	ENFL	211	Farajidizaji, B.	ORGN	132	Fehr, J.	AGRO	93
Fallah, H.	COMP	324	Farajidizaji, B.	ORGN	133	Fei, X.	MEDI	52
Falvello, L.R.	INOR	624	Faraon, A.	PHYS	536	Fei, X.	ORGN	291
Falvello, L.R.	INOR	625	Farberow, C.A.	CATL	136	Fei, Y.	ENFL	324
Fam, D.	PMSE	663	Farenhorst, A.	AGRO	252	Fei, Z.	PMSE	496
Fan, D.	ANYL	22	Fares, A.A.	ORGN	174	Feig, M.	COMP	2
Fan, D.	INOR	615	Fares, H.	COLL	489	Feiring, A.	ENFL	87
Fan, H.	CATL	170	Farghaly, A.	COLL	123	Feist, F.	POLY	547
Fan, H.	COLL	49	Farghaly, A.	INOR	614	Feke, D.	PMSE	70
Fan, H.	INOR	466	Farghaly, A.M.	MEDI	86	Fekry, M.	TOXI	91
Fan, J.	ENFL	298	Fargher, H.	INOR	443	Felberg, L.	COMP	317
Fan, J.	ENFL	300	Farha, O.K.	INOR	248	Felberg, L.	POLY	176
Fan, J.	ENFL	303	Farha, O.K.	INOR	356	Felder, S.	CHED	318
Fan, J.	ENFL	372	Farha, O.K.	INOR	370	Felder, S.	POLY	443
Fan, J.	ENFL	434	Farha, O.K.	MPPG	9	Feldman, H.J.	MEDI	420
Fan, J.	ENVR	418	Farha, O.K.	ORGN	545	Feldmann, J.	COLL	461
Fan, J.	ENVR	640	Farheen, S.	ENVR	730	Felemban, E.A.	CHED	11
Fan, J.	ENVR	85	Farid, G.	COLL	180	Felfer, P.	CATL	43
Fan, J.	PMSE	699	Farina, B.	ENVR	48	Feliciano, R.P.	AGFD	257
Fan, J.A.	ENFL	196	Farkas, J.	PMSE	254	Feliu, N.	COLL	294
Fan, K.	MEDI	95	Farkas, M.E.	COLL	466	Felker, K.	NUCL	34
Fan, L.	AGFD	272	Farlow, J.	COLL	405	Feller, J.	POLY	188
Fan, L.	ENFL	196	Farmer, D.	PHYS	123	Fells, J.	COMP	340
Fan, M.	ENFL	382	Farnum, B.	INOR	464	Felsot, A.	AGRO	36
Fan, R.	MEDI	401	Farnum, B.H.	INOR	467	Felten, A.	MEDI	38
Fan, W.	ENFL	319	Farrauto, R.J.	ENVR	493	Felten, A.	MEDI	39
Fan, W.	ENFL	506	Farre, M.	ENVR	422	Feng, A.	POLY	447
Fan, W.	ENFL	98	Farrell, R.P.	ORGN	203	Feng, C.	ENVR	30
Fan, X.	AGFD	211	Farrell, S.	PROF	11	Feng, D.	INOR	67
Fan, X.	AGFD	229	Farrell, S.	PROF	12	Feng, D.	MEDI	376
Fan, X.	AGFD	267	Farrell, S.A.	COLL	538	Feng, H.	AGFD	269
Fan, X.	AGFD	268	Farrier, A.	CHED	155	Feng, H.	POLY	396
Fan, X.	ENFL	408	Farrington, L.	HIST	19	Feng, J.	ANYL	41
Fan, X.	ENVR	685	Farsi, H.	ENFL	305	Feng, J.	CATL	170
Fan, X.	INOR	290	Fasan, R.	BIOL	116	Feng, J.	CATL	331
Fan, X.	PMSE	234	Fasching, B.	COMP	138	Feng, J.	COLL	140
Fan, X.	PMSE	444	Fasciano, J.	ANYL	356	Feng, J.	COMP	344
Fan, Y.	ENVR	374	Fasella, E.	CHED	199	Feng, J.	ENFL	413
Fan, Y.	MEDI	100	Fassbender, M.	NUCL	48	Feng, J.	ORGN	308
Fan, Y.	ORGN	500	Fast, W.	MEDI	135	Feng, K.	ORGN	28
Fan, Y.	ORGN	525	Fast, W.	MEDI	143	Feng, P.	ENFL	316
Fan, Y.	PMSE	687	Fast, W.	MEDI	145	Feng, P.	INOR	131
Fan, Z.	COLL	525	Fast, W.	MEDI	288	Feng, P.	ORGN	288
Fan, Z.	ENVR	729	Fastnacht, K.	POLY	378	Feng, R.	COLL	217
Fanara, P.M.	ORGN	679	Fastnacht, K.	POLY	381	Feng, R.	INOR	66



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Feng, S.	COLL	355	Fester, J.	COLL	389	Fischel, J.	GEOC	40
Feng, T.	ENVR	619	Fetrow, T.	COLL	342	Fischer, B.	PMSE	132
Feng, W.	POLY	393	Fetsch, C.	POLY	169	Fischer, D.	AGRO	217
Feng, X.	PHYS	262	Feuerwerker, S.	CHED	105	Fischer, D.	COLL	95
Feng, X.	PMSE	252	Few, C.	POLY	304	Fischer, D.A.	PHYS	553
Feng, Y.	CATL	331	Fhaner, C.	ANYL	17	Fischer, E.V.	PHYS	123
Feng, Y.	ENVR	803	Fiacco, S.V.	MEDI	177	Fischer, F.R.	INOR	205
Feng, Y.	POLY	448	Fianu, G.	ORGN	97	Fischer, F.R.	ORGN	16
Feng, Z.	ENFL	141	Fibiger, D.L.	PHYS	43	Fischer, N.	COLL	56
Feng, Z.	ENFL	194	Ficek, B.	POLY	113	Fischer, R.	AGRO	255
Fennell, Y.	ENVR	466	Fichthorn, K.A.	COLL	594	Fischer, R.	AGRO	256
Fennell, Y.	ENVR	473	Fidanze, S.	MEDI	254	Fischer, S.M.	ORGN	477
Fennely, C.	ORGN	461	Fidanze, S.	MEDI	286	Fischmann, T.	MEDI	346
Fenner, K.	ENVR	446	Fiebig, O.C.	PHYS	383	Fishel, K.	POLY	385
Fennimore, M.	PHYS	37	Fiebig, O.C.	PHYS	463	Fisher, A.	INOR	410
Fensome, A.	MEDI	271	Fiedler, A.T.	INOR	410	Fisher, C.	ANYL	299
Fenter, P.	CATL	279	Field, J.	CHED	88	Fisher, D.R.	AGFD	161
Fenter, P.	GEOC	66	Field, J.	ENVR	510	Fisher, J.	PMSE	268
Fenter, P.	GEOC	68	Field, J.	ORGN	462	Fisher, J.	TOXI	41
Fenter, P.	GEOC	70	Field, J.A.	ENVR	173	Fisher, R.A.	INOR	304
Fenton, J.L.	INOR	132	Field, K.D.	INOR	178	Fishilevich, E.	AGRO	206
Ferdousi, S.	CATL	206	Field, K.D.	INOR	443	Fishman, Z.	ENFL	447
Ferdousi, S.	COLL	262	Field, R.	PHYS	178	Fisk, J.S.	ORGN	398
Ferguson, A.	COMP	405	Field, R.	PHYS	179	Fites, J.	ORGN	418
Ferguson, A.	PHYS	529	Fields, G.	ORGN	549	Fitts, J.P.	GEOC	67
Ferguson, D.	INOR	688	Fierke, C.A.	BIOL	14	Fitzgerald, M.	COLL	136
Ferguson, D.	INOR	94	Fierke, C.A.	BIOL	26	Fitzgerald, R.W.	ORGN	190
Ferguson, D.	PMSE	384	Fierro, J.L.	CATL	114	Fitzgerald, T.	ORGN	460
Ferguson, F.T.	PHYS	205	Fierro, J.L.	CATL	294	Fitzpatrick, G.M.	AGRO	197
Ferguson, G.A.	ENFL	145	Figueras, M.	PMSE	246	Fitzpatrick, S.	MEDI	283
Ferguson, G.S.	INOR	512	Figueroa, M.	COLL	138	Fitzsimmons, J.	NUCL	48
Ferguson, J.	PMSE	681	Figueroa, M.	COLL	216	Fitzsimmons, J.	NUCL	53
Ferguson, J.A.	AGRO	232	Figula, B.C.	MEDI	154	Fitzsimmons, P.	AGRO	127
Ferguson, J.A.	AGRO	31	Fik, C.	POLY	457	Fivizzani, K.P.	CHAS	49
Ferguson, L.	ENVR	178	Filardi, L.	ORGN	450	Flach, A.	POLY	416
Ferguson, L.	ENVR	267	Filatov, A.S.	AEI	32	Flack, S.	AGRO	136
Ferguson, R.	COLL	125	Filatov, A.S.	INOR	636	Flack, S.	AGRO	345
Ferla, S.	MEDI	81	Filatov, A.S.	INOR	656	Flaherty, D.	ENFL	432
Ferlez, B.	BIOL	208	Filemban, N.	MEDI	398	Flaherty, D.	ENFL	95
Fern, J.	COLL	534	Filippov, S.K.	POLY	228	Flaherty, P.T.	MEDI	34
Fernandes, A.N.	AGFD	32	Filippov, S.K.	POLY	305	Flaherty, P.T.	MEDI	67
Fernandes, G.	MEDI	146	Filipski, K.J.	MEDI	226	Flaig, M.	AGFD	284
Fernandez, A.L.	CHED	106	Fimberger, M.	POLY	189	Flake, M.	CATL	54
Fernandez, A.L.	CHED	377	Fimberger, M.	POLY	458	Flammer, L.	AGFD	121
Fernandez, C.	ENFL	505	Finan, D.S.	AGRO	357	Flannagan, D.	CINF	32
Fernandez, C.A.	ENFL	469	Finan, P.	ORGN	212	Flaten, D.	AGRO	252
Fernandez, E.	INOR	175	Findlater, M.	ORGN	498	Flaumenhaft, R.	MEDI	156
Fernandez, H.	MEDI	77	Fine, J.	AGRO	151	Flechsigg, G.	ANYL	94
Fernandez, J.L.	INOR	348	Fine, J.	AGRO	152	Flechsigg, G.	COLL	560
Fernandez, N.F.	CINF	52	Finewax, Z.	PHYS	555	Fleischmann, T.	AGRO	145
Fernandez-Alberti, S.	PHYS	507	Fink, H.	PHYS	255	Fleischmann, T.	AGRO	18
Fernandez-Blazquez, J.	ORGN	8	Finkel, R.C.	ANYL	130	Fleming, A.M.	BIOL	238
Fernandez-Canoto, D.	COLL	339	Finkelstein, K.	INOR	662	Fleming, A.M.	BIOL	91
Fernandez-Pacheco, R.	PMSE	658	Finlay, H.	MEDI	377	Fleming, A.M.	TOXI	16
Fernandez-Serra, M.	PHYS	188	Finlay, H.	MEDI	89	Fleming, G.R.	PHYS	198
Fernando, G.	MEDI	265	Finley, E.	INOR	378	Fleming, I.N.	FLUO	7
Fernando, G.	MEDI	350	Finley, J.	AGFD	246	Fleming, K.G.	CMA	4
Fernando, R.	ORGN	546	Finley, J.W.	AGFD	181	Fleming, M.	ENVR	80
Feroz, H.M.	BIOL	208	Finley, J.W.	ENVR	183	Fleming, S.A.	CHED	435
Ferrante, R.F.	PHYS	158	Finn, M.	ORGN	417	Flemington, V.	AGFD	214
Ferrara, E.	CHED	323	Finn, P.	MEDI	227	Flemington, V.	ORGN	411
Ferraris, J.P.	ENFL	176	Finn, P.B.	ORGN	347	Fletcher, B.	PMSE	68
Ferraris, J.P.	ENFL	210	Finneran, I.	PHYS	541	Fletcher, E.	BIOL	180
Ferraris, J.P.	ENFL	88	Finster, D.C.	CHAS	26	Fletcher, J.	ANYL	32
Ferré-D'Amaré, A.R.	BIOL	244	Finster, D.C.	CHAS	37	Fletcher, J.T.	INOR	616
Ferreira de Melo, T.	MEDI	328	Fiocca, K.	CHED	278	Fletcher, J.T.	INOR	638
Ferreira, P.S.	AGFD	11	Fioravanti, L.	COLL	35	Fletcher, M.	ANYL	206
Ferrence, G.M.	CHAS	22	Fiore, K.	PHYS	481	Fletcher, M.	CHED	267
Ferrer, I.M.	ANYL	208	Fiore, K.	PHYS	545	Fletcher, M.	ORGN	162
Ferrer, J.	PMSE	66	Fiorin, E.	POLY	330	Fletcher, M.	ORGN	173
Ferretti, S.	MEDI	273	Fiorin, G.	COLL	543	Fleury, B.	PHYS	155
Ferrie, J.J.	BIOL	185	Fiorin, G.	COMP	401	Flocke, F.	PHYS	123
Ferrier, M.	INOR	331	Fiorin, G.	PMSE	678	Flocke, F.	PHYS	124
Ferrier, N.J.	PHYS	532	Fiorin, G.	POLY	212	Flood, A.H.	COLL	486
Ferrier, R.	COLL	109	Firestein, R.	MEDI	25	Flood, A.H.	COLL	590
Ferry, J.L.	CHED	219	Firestone, B.	ORGN	212	Flood, A.H.	COLL	591
Ferry, L.	PMSE	314	Firestone, B.	ORGN	559	Flood, A.H.	COMP	336
Ferry, M.J.	INOR	534	Firoved, R.	AGRO	110	Flood, A.H.	ORGN	428
Ferzoco, A.L.	AEI	52	Firman, J.	AGFD	7	Flood, A.H.	ORGN	429
Ferzoco, A.L.	PHYS	484	Firth, M.	COMP	171	Flood, A.H.	ORGN	511

Flood, A.H.	ORGN	600	Ford, R.	CHED	300	Fraczkiewicz, R.	COMP	149
Flood, A.H.	ORGN	601	Foreman, S.	PHYS	24	Fradera, X.	COMP	32
Flood, A.H.	ORGN	607	Forman, M.	BIOL	77	Fradkin Shaw, D.	POLY	374
Flood, A.H.	ORGN	617	Forman, M.	CHED	267	Fraga, S.	CINF	46
Flores, J.A.	COLL	430	Fornasiero, P.	CATL	172	Frail, P.R.	COLL	551
Flores, L.	ENFL	72	Fornasiero, P.	CATL	184	Fraley, A.E.	BIOL	33
Floriano, W.B.	COMP	374	Fornasiero, P.	ENFL	4	Fraley, M.E.	MEDI	159
Flourat, A.	ORGN	433	Fornasiero, P.	ENVR	494	Fraley, M.E.	MEDI	19
Flowers, G.	ENVR	497	Fornasiero, P.	CATL	5	Frampton, A.K.	INOR	498
Flowers, R.A.	ORGN	44	Forney, B.S.	PMSE	566	France, S.A.	ORGN	284
Flowers, R.A.	ORGN	97	Fors, B.P.	ORGN	569	France, S.A.	ORGN	399
Fluck, E.C.	COMP	247	Fors, B.P.	PMSE	284	Franceschini, E.	AGFD	266
Flum, J.	PMSE	64	Fors, B.P.	PMSE	86	Francisco, J.S.	CHED	338
Flynn, C.	PHYS	389	Forsell, M.	PMSE	577	Francisco, J.S.	PHYS	511
Flynn, J.	PMSE	467	Fors, B.P.	ENFL	195	Francl, M.M.	CHED	358
Flynn, J.D.	ANYL	177	Forst, M.	PMSE	196	Francl, M.M.	CMA	7
Flynn, J.D.	COLL	465	Forsthuber, T.	MEDI	356	Franco, S.	ENFL	466
Flynn, J.D.	PHYS	101	Fortenberry, R.C.	CHED	334	Francois, K.	ORGN	399
Flynn, K.	CHED	324	Fortenberry, R.C.	PHYS	510	Franczyk, T.	ORGN	722
Flynn, M.	PMSE	37	Forticaux, A.	BIOL	73	Frank, A.T.	ANYL	250
Flynn, W.	COMP	362	Fortin, P.	ORGN	559	Frank, B.	ENVR	255
Flytzani-Stephanopoulos, M.	CATL	48	Fortner, E.C.	ENVR	278	Frank, J.	PMSE	370
Focardi, C.	AGRO	37	Fortner, J.	NUCL	23	Frank, M.D.	MEDI	150
Fochtman, B.C.	COMP	250	Forys, J.	PMSE	19	Franke, M.	CHED	141
Fockink, D.	ENFL	202	Forys, J.	PMSE	398	Franke, M.	CHED	142
Foerster, S.	PMSE	132	Fosdick, S.	ANYL	227	Frankel, E.A.	COLL	475
Foley, B.J.	INOR	544	Foss, C.	PHYS	348	Frankenfield, K.	CHED	180
Foley, C.	ANYL	223	Foster, B.	COLL	166	Frankland, V.	COLL	75
Foley, J.	ANYL	138	Foster, E.	PMSE	64	Franklin, A.	AGRO	117
Foley, J.	ANYL	146	Foster, E.	POLY	517	Franklin, L.	AGFD	183
Foley, J.	ANYL	147	Foster, E.L.	COLL	265	Fransted, K.A.	PHYS	268
Foley, J.	COMP	207	Foster, J.	ANYL	40	Franz, A.K.	ORGN	31
Foley, J.	COMP	219	Foster, J.	ENVR	655	Franz, K.J.	BIOL	43
Foley, J.B.	CHED	22	Foster, J.	POLY	101	Fraser, C.	INOR	171
Foley, J.B.	CHED	24	Foster, J.	POLY	3	Fraser, C.	INOR	173
Foley, J.B.	CHED	414	Foster, J.E.	AGRO	52	Fraser, C.	ORGN	615
Foley, J.J.	COLL	316	Foster, M.C.	PHYS	436	Fraser, L.	PHYS	4
Foley, J.J.	PHYS	526	Foster, M.E.	PHYS	418	Frasor, J.	BIOL	177
Foley, J.P.	ANYL	141	Foster, S.	CHED	79	Frausto, F.	PMSE	688
Foley, J.P.	ANYL	206	Foster-Spence, C.	CHED	309	Frazar, S.	ENVR	259
Foley, J.P.	ANYL	297	Foster-Spence, C.	CHED	310	Fraze, M.	CHED	264
Foley, J.P.	ANYL	312	Foster-Spence, C.	CHED	311	Frazier, L.	CATL	21
Foley, J.P.	ORGN	273	Foston, M.B.	CATL	262	Frazier, L.	COLL	181
Foley, M.	AGRO	27	Foston, M.B.	POLY	86	Frazier, M.T.	AGRO	152
Foley, M.	PHYS	257	Fotsch, C.H.	MEDI	266	Frechette, J.	COLL	31
Foley, M.E.	COLL	211	Fouchet, M.	MEDI	15	Frederick, B.	MEDI	229
Folmer, M.	CHAS	52	Foudazi, R.	PMSE	74	Frederick, K.	PMSE	61
Fomsgaard, I.S.	AGFD	132	Fourches, D.	CINF	13	Frederick, K.	POLY	58
Fones, L.	MEDI	75	Fourches, D.	CINF	35	Fredin, L.A.	PHYS	194
Fong, L.	WCC	4	Fourches, D.	COMP	179	Fredrickson, G.H.	POLY	27
Fongarland, P.	CATL	192	Fourches, D.	COMP	268	Fredrickson, G.H.	POLY	81
Fonseca, M.	PMSE	637	Fourches, D.	ENVR	696	Fredriksson, H.	CATL	121
Fonslow, B.	ANYL	315	Fout, A.	INOR	225	Fredstrom, N.K.	CHAS	22
Fontaine, G.	PMSE	196	Fout, A.	INOR	380	Freedman, D.E.	INOR	251
Fontaine, G.	PMSE	310	Fout, A.	INOR	588	Freedman, J.D.	MEDI	416
Fontaine, G.	PMSE	588	Fout, A.	INOR	97	Freedman, M.	PHYS	556
Fontaine, N.	COLL	372	Fout, A.R.	INOR	236	Freedman, M.	PHYS	557
Fontaine, P.	ORGN	214	Fout, A.R.	INOR	322	Freedman, M.	PHYS	558
Fontana, J.	COLL	175	Fout, A.R.	INOR	691	Freedman, M.	PHYS	560
Fontana, J.	ENVR	496	Fowler, E.W.	PMSE	519	Freel Meyers, C.L.	BIOL	105
Fontana, J.	INOR	213	Fowler, G.D.	ENVR	374	Freel Meyers, C.L.	BIOL	187
Fontanella, J.	PHYS	372	Fox, B.G.	ANYL	95	Freel Meyers, C.L.	BIOL	60
Fontenot, P.R.	INOR	450	Fox, B.G.	INOR	409	Freeman, B.D.	COLL	495
Foody, M.	INOR	307	Fox, C.	POLY	403	Freeman, B.D.	I&EC	27
Foote, P.	BIOL	121	Fox, D.	COLL	227	Freeman, B.D.	I&EC	28
Forato, F.	CATL	200	Fox, D.	ENVR	322	Freeman, B.D.	PMSE	322
Forbes, M.D.	PHYS	376	Fox, D.	PMSE	528	Freeman, E.	POLY	13
Forbes, T.	AEI	18	Fox, G.	AGRO	300	Freeman, G.B.	MEDI	17
Forbes, T.	COLL	342	Fox, J.	ORGN	40	Freeman, H.S.	POLY	564
Forbes, T.	COLL	80	Fox, J.	PMSE	380	Fregoso, J.	POLY	167
Forbes, T.	ENVR	380	Fox, J.	PMSE	647	Freibert, F.J.	NUCL	20
Forbes, T.	ENVR	382	Fox, J.	POLY	206	Freifelder, R.	FLUO	12
Force, M.	CHED	279	Fox, J.	POLY	326	Freigang, J.	AGRO	256
Forcén-Vázquez, E.	INOR	625	Fox, J.M.	ORGN	96	Freire, S.G.	ENFL	429
Ford, G.	BIOL	42	Fox, M.T.	AEI	63	Freire, S.G.	PMSE	46
Ford, J.	AGRO	311	Fox, M.T.	PMSE	609	Freire, S.G.	PMSE	54
Ford, J.	CHED	270	Fox, R.G.	MEDI	16	French, J.M.	POLY	508
Ford, M.E.	CATL	36	Foy, G.P.	CHED	166	French, W.T.	ENFL	467
Ford, M.E.	CATL	5	Foy, G.P.	CHED	26	Frenkel, A.	CATL	118
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Freppon, D.	ANYL	11	Fu, J.	CATL	333	Gaan, S.	PMSE	314
Freudenberger, J.H.	AGRO	102	Fu, J.	ENFL	463	Gabanic, A.	ANYL	93
Freunberger, S.	PMSE	642	Fu, J.	FLUO	19	Gabel, C.	CHED	391
Frew, J.A.	AGRO	127	Fu, J.	POLY	85	Gabius, H.	ORGN	515
Frew, J.A.	AGRO	253	Fu, K.	MEDI	200	Gabius, H.	POLY	285
Frey, A.	TOXI	18	Fu, L.	COLL	253	Gabius, H.	POLY	330
Frey, C.	POLY	427	Fu, L.	ENFL	220	Gabriel, T.	MEDI	273
Frey, J.G.	CINF	81	Fu, L.	ENVR	156	Gadhamshetty, V.	ENVR	77
Frey, N.	COMP	68	Fu, L.	ORGN	289	Gadhamshetty, V.	ENVR	81
Frey, R.	CHED	418	Fu, L.	ORGN	91	Gadhiya, S.	MEDI	164
Freyer, J.	PMSE	323	Fu, L.	PHYS	160	Gadia, a.	PMSE	385
Frick, J.J.	INOR	560	Fu, L.	PHYS	289	Gadikota, G.	GEOC	4
Fricke, K.	ENFL	376	Fu, L.	PMSE	321	Gadre, S.	MEDI	77
Fried, A.	PHYS	124	Fu, Q.	AGRO	267	Gaede, H.C.	CHED	359
Friedberg, E.	AGFD	138	Fu, W.	ENFL	11	Gaeth, S.	ENVR	459
Friedel, B.	COLL	227	Fu, W.	ENVR	685	Gaffey, A.C.	POLY	254
Friedersdorf, L.	ENVR	188	Fu, W.	ORGN	207	Gaffney, A.M.	ENFL	48
Friedler, S.	CINF	34	Fu, X.	MEDI	284	Gagginapally, S.	MEDI	170
Friedler, S.	COMP	305	Fu, Y.	TOXI	52	Gagliardi, L.	INOR	26
Friedman, A.E.	AGRO	233	Fuchs, A.	INOR	246	Gagliardi, L.	INOR	370
Friedman, S.J.	ANYL	345	Fuchs, G.	PMSE	417	Gagnon, G.	COLL	432
Friedrich, H.	ENFL	508	Fuchs, G.	PMSE	494	Gagnon, N.L.	CHED	238
Friedrich, J.	INOR	444	Fuchs, J.	MEDI	357	Gagnon, N.L.	INOR	393
Friedrich, R.	ENVR	103	Fuchs, J.	MEDI	364	Gahan, K.	MEDI	115
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Friend, M.	NUCL	27	Fuentes, Á.L.	ORGN	89	Gai, F.	PHYS	112
Friesen, J.A.	BIOL	50	Fuentes, H.	MEDI	18	Gai, F.	PHYS	357
Friesner, R.A.	CHED	342	Fuentes, H.	MEDI	267	Gai, F.	PHYS	363
Friest, J.A.	ORGN	291	Fuentes, H.	MEDI	380	Gai, F.	PHYS	394
Friestad, G.	ORGN	123	Fuerst, D.	ORGN	272	Gai, F.	PHYS	396
Friestad, G.	ORGN	741	Fuglestad, B.	BIOL	21	Gai, F.	PHYS	467
Frim, R.	PMSE	69	Fujii, M.	ENFL	297	Gai, F.	PHYS	469
Frings, M.	ORGN	37	Fujiki, S.	ENFL	126	Gai, F.	PHYS	470
Frischknecht, A.L.	PMSE	539	Fujimori, D.G.	BIOL	235	Gaines, C.	COMP	233
Frisck, T.	CHED	18	Fujimori, S.	ORGN	207	Gaines, C.	COMP	398
Frisck, T.	INOR	379	Fujino, H.	ORGN	690	Gaines, P.	COLL	136
Frisck, T.	POLY	449	Fujisawa, K.	INOR	612	Gaines, P.	POLY	87
Fritschi, C.	CHED	8	Fujisawa, T.	MEDI	137	Gaines, T.D.	ORGN	285
Fritz, M.	PHYS	188	Fujita, E.	CATL	31	Gaitsch, J.	POLY	169
Frodin, B.	PHYS	125	Fujita, E.	INOR	211	Gajsiewicz, J.	ANYL	220
Frohn, M.J.	MEDI	388	Fujita, M.	MEDI	289	Gal, N.	COLL	575
Froimowicz, P.	PMSE	116	Fujita, M.	MEDI	362	Galabura, Y.D.	PMSE	365
Froimowicz, P.	PMSE	62	Fujiya, A.	ORGN	667	Galabura, Y.D.	PMSE	514
Froimowicz, P.	PMSE	637	Fukumoto, K.	ORGN	594	Galassi, R.	INOR	666
Fronczek, F.	ORGN	334	Fukunaga, H.	ENFL	66	Galchak, N.	BIOL	32
Fronczek, F.	ORGN	703	Fukuoka, A.	CATL	110	Gallella, M.	MEDI	89
Frontier, A.J.	ORGN	38	Fukushima, M.	ENVR	570	Gali, H.	ORGN	537
Frontiera, R.R.	PHYS	102	Fukushima, T.	INOR	238	Gali, K.	SCHB	3
Frontiera, R.R.	PHYS	356	Fukuzumi, A.	AGFD	22	Galinsky, N.	ENFL	404
Frontiera, R.R.	PHYS	361	Fulle, S.	COMP	168	Galka, C.S.	MEDI	180
Frontiera, R.R.	PHYS	534	Fuller, D.R.	ANYL	188	Galka, C.S.	MEDI	277
Frost, C.G.	ORGN	539	Fuller, J.	CHED	154	Galka, C.S.	MEDI	385
Frost, C.G.	ORGN	743	Fuller, J.F.	CHED	73	Gallagher, B.	ORGN	450
Frost, J.R.	ORGN	497	Fulong, C.	INOR	657	Gallagher, J.	ENFL	247
Frost, N.	ANYL	315	Fung, H.M.	ANYL	290	Gallagher, M.J.	ENVR	255
Fruttero, R.	MEDI	146	Funk, A.R.	COLL	175	Gallagher, N.	POLY	416
Fry, C.G.	COLL	297	Funk, C.	MPPG	15	Gallagher, S.	MEDI	367
Fry, H.C.	ENVR	11	Funtula, K.	ENVR	391	Galler, D.	ORGN	127
Fry, J.C.	AGFD	122	Fura, A.	MEDI	18	Galler, D.	ORGN	154
Fry, M.	AGRO	138	Fura, J.	BIOL	150	Galletti, A.	ENVR	691
Fry, M.	AGRO	79	Furet, P.	MEDI	273	Galli, C.	COLL	186
Frye, L.	MEDI	31	Furet, P.	ORGN	212	Galli, G.A.	PHYS	186
Frye, S.V.	COMP	370	Furgical, J.C.	POLY	171	Gallicchio, E.	COMP	272
Fu, B.	ANYL	177	Furgical, J.C.	POLY	418	Gallicchio, E.	COMP	284
Fu, D.	ENFL	383	Furlani, E.	PMSE	513	Gallicchio, E.	COMP	362
Fu, G.	CINF	81	Furman, S.	CHED	211	Galligan, J.	TOXI	1
Fu, G.	CINF	93	Furmanchuk, A.	PHYS	523	Gallington, L.	INOR	370
Fu, G.	COLL	384	Furness, K.W.	MEDI	173	Gallo, A.	INOR	407
Fu, G.	ENFL	371	Furrh, C.	CHED	165	Gallos, A.	POLY	583
Fu, H.	ENVR	336	Furst, E.M.	PMSE	305	Galmiche, B.	I&EC	17
Fu, H.	ENVR	718	Furukawa, Y.	CHED	329	Galoisy, L.	COLL	284
Fu, H.	ENVR	805	Furuya, M.	MEDI	85	Galopin, C.	AGFD	121
Fu, H.	PMSE	345	Fusco, N.	PMSE	320	Galoppini, E.	COLL	205
Fu, I.	TOXI	51	Fushman, D.	BIOL	193	Galoppini, E.	COLL	209
Fu, J.	AGFD	146	Fusi, S.	ENVR	592	Galoppini, E.	INOR	313
Fu, J.	BIOL	161	Futatsugi, K.	MEDI	299	Galoppini, E.	INOR	463

Galoppini, E.	INOR	466	Gao, L.	PMSE	386	Garcia-Torres, D.	BIOL	26
Galpin, T.	PHYS	552	Gao, M.	ENFL	191	Gardea-Torresdey, J.L.	ENVR	470
Gamalski, A.	CATL	6	Gao, M.	ENFL	313	Gardea-Torresdey, J.L.	ENVR	660
Gamarra, C.	I&EC	9	Gao, M.	MEDI	171	Gardea-Torresdey, J.L.	ENVR	694
Gamble, B.	AGRO	34	Gao, P.	CATL	158	Gardea-Torresdey, J.L.	ENVR	697
Gamble, L.	PHYS	59	Gao, P.	CATL	289	Gardea-Torresdey, J.L.	ENVR	739
Gamez, B.	INOR	595	Gao, P.	COLL	133	Gardecki, J.A.	ANYL	279
Gamez, B.	INOR	596	Gao, P.	PHYS	296	Gardiner, J.	GEOC	82
Gammon, S.	MEDI	177	Gao, R.	MEDI	112	Gardner, C.	POLY	414
Gamrat, J.M.	MEDI	154	Gao, S.	AGFD	247	Gardner, D.	MEDI	201
Gan, F.	PMSE	497	Gao, S.	COLL	521	Gardner, D.W.	CATL	142
Gan, F.	PMSE	501	Gao, S.	PHYS	559	Gardner, Z.	MEDI	369
Gan, J.	AGRO	143	Gao, W.	PMSE	121	Garfunkel, E.L.	COLL	438
Gan, J.	AGRO	169	Gao, X.	BIOL	147	Garfunkel, E.L.	ENFL	260
Gan, J.	AGRO	225	Gao, X.	CATL	73	Garg, A.	TOXI	90
Gan, J.	AGRO	48	Gao, X.	COLL	163	Garg, N.K.	ORGN	342
Gan, W.	ANYL	160	Gao, X.	ENVR	14	Garg, N.K.	ORGN	363
Gan, W.	PMSE	324	Gao, X.	MEDI	346	Garg, N.K.	ORGN	380
Ganapathy, V.	NUCL	26	Gao, X.	ORGN	300	Garg, N.K.	ORGN	404
Gandhi, D.	MEDI	156	Gao, X.	ORGN	452	Garg, N.K.	WCC	8
Gandon, V.	ORGN	449	Gao, X.	PHYS	75	Garlapati, P.	ENVR	420
Gandy, L.	CHED	39	Gao, Y.	CATL	186	Garlapati, P.	ENVR	709
Ganem Rondero, F.A.	BIOL	183	Gao, Y.	CATL	196	Garner, A.J.	ENVR	678
Ganewatta, M.S.	POLY	318	Gao, Y.	CATL	218	Garner, E.	ENVR	740
Ganewatta, M.S.	POLY	34	Gao, Y.	CATL	262	Garner-Prouty, B.	PMSE	640
Gangaraju, R.	AGRO	15	Gao, Y.	COMP	197	Garnett, R.M.	PHYS	494
Gangaraju, R.	AGRO	9	Gao, Y.	ENFL	386	Garni, M.	COLL	454
Ganghadharan, R.	MEDI	137	Gao, Y.	ENVR	141	Garni, M.	COLL	524
Gangjee, A.	MEDI	153	Gao, Y.	ENVR	545	Garrett, B.	INOR	55
Gangjee, A.	MEDI	307	Gao, Y.	ENVR	790	Garrick, T.	COLL	504
Gangjee, A.	MEDI	309	Gao, Y.	INOR	552	Garrido, S.P.	COLL	250
Gangjee, A.	MEDI	311	Gao, Y.	MEDI	346	Garrity, K.	INOR	373
Gangjee, A.	MEDI	76	Gao, Y.	ORGN	629	Garrod, R.	PHYS	384
Gangloff, N.	POLY	463	Gao, Y.	POLY	85	Garry, D.	COLL	446
Gangopadhyay, M.	ORGN	14	Gao, Z.	ENFL	286	Garry, D.	COLL	527
Gangopadhyay, S.A.	BIOL	137	Gao, Z.	MEDI	165	Garry, M.	TOXI	23
Ganguly, A.	ORGN	125	Gao, Z.	MEDI	284	Garry, S.	ORGN	693
Ganguly, A.	ORGN	241	Garagozzo, A.	BIOL	110	Gartner, T.E.	COMP	155
Gangwal, S.	ENFL	374	Garakyaraghi, S.	INOR	357	Gartner, Z.	COLL	405
Gani, T.Z.	ENFL	403	Garakyaraghi, S.	ORGN	95	Gartner, Z.	COLL	583
Ganiyu, S.A.	ENFL	299	Garanger, E.	POLY	20	Garvey, D.R.	GEOC	38
Gannett, P.M.	TOXI	80	Garanger, E.	POLY	476	Garvey, S.L.	NUCL	64
Gansaeuer, A.R.	ORGN	97	Garanger, E.B.	COLL	327	Gary, D.	PHYS	132
Gantert, L.	FLUO	19	Garanger, E.B.	POLY	203	Garza, B.	ORGN	771
Gao, A.	ENVR	172	Garanger, E.B.	POLY	546	Garza, C.	COMP	144
Gao, B.	AGFD	110	Garant, R.J.	CHAS	42	Garza, V.J.	ORGN	343
Gao, B.	ENVR	216	Garbay, B.	POLY	546	Gasco, A.	MEDI	146
Gao, B.	TOXI	19	Garbellotto, V.M.	PMSE	46	Gaskell, K.	COLL	95
Gao, B.	TOXI	61	Garbenis, E.	PHYS	270	Gaspar, A.R.	ENFL	198
Gao, B.	TOXI	63	Garber, K.	AGRO	181	Gaspard, P.	POLY	191
Gao, C.	COLL	482	García de Abajo, F.J.	COLL	292	Gaspari, R.	COMP	102
Gao, C.	ENFL	245	Garcia Fernandez de Barrena, M.	MEDI	257	Gaspari, R.	COMP	26
Gao, C.	ENVR	738	Garcia Herrera, Y.	CHED	230	Gasparrini, F.	ANYL	245
Gao, C.	PMSE	138	Garcia Perez, M.	CATL	141	Gassensmith, J.J.	ENFL	193
Gao, C.	POLY	464	Garcia Perez, M.	CATL	144	Gassner, G.T.	ANYL	253
Gao, F.	CATL	129	Garcia Rivera, D.	CHED	412	Gassner, G.T.	BIOL	20
Gao, F.	CATL	132	Garcia Rivera, D.	ORGN	325	Gassner, G.T.	INOR	488
Gao, F.	COLL	131	Garcia Rodríguez, J.M.	CHED	305	Gassner, G.T.	ORGN	554
Gao, F.	MEDI	104	García Sánchez, J.R.	BIOL	183	Gast, T.C.	PRES	46
Gao, F.	MEDI	319	García, A.	ORGN	123	Gastreich, M.	COMP	251
Gao, G.	POLY	111	García, A.E.	PHYS	32	Gates, B.C.	ENFL	483
Gao, H.	ENVR	479	García, B.A.	ANYL	21	Gates, C.M.	INOR	231
Gao, H.	INOR	401	García, B.A.	ORGN	278	Gates, J.M.	NUCL	46
Gao, H.	POLY	104	García, C.	ORGN	522	Gates, K.S.	TOXI	78
Gao, H.	POLY	338	García, D.	POLY	510	Gathiaka, S.	COMP	99
Gao, H.	POLY	339	García, E.	CHED	323	Gathiaka, S.M.	COMP	260
Gao, H.	POLY	341	García, E.	ENVR	171	Gatland, A.E.	ORGN	331
Gao, H.	POLY	577	García, E.A.	PMSE	39	Gatlin, D.M.	CHED	57
Gao, J.	CATL	72	García, E.A.	POLY	492	Gatlin, D.M.	ORGN	247
Gao, J.	COLL	361	García, I.	COLL	83	Gatto, E.	ENFL	336
Gao, J.	COMP	101	García, J.	CHED	107	Gau, M.	INOR	189
Gao, J.	COMP	145	García, J.	CHED	151	Gau, M.	INOR	639
Gao, J.	COMP	295	García, J.	ORGN	697	Gaudino, J.J.	ORGN	263
Gao, J.	COMP	34	García, M.	TOXI	88	Gauglitz, G.	COMP	92
Gao, J.	ENFL	245	García, R.	INOR	107	Gaulding, E.A.	INOR	293
Gao, J.	ENVR	812	García, R.A.	ENVR	419	Gaulding, E.A.	PHYS	104
Gao, J.	MEDI	350	García, R.A.	ENVR	579	Gaunt, M.	ORGN	367
Gao, J.	POLY	269	García, Y.A.	ENVR	54	Gaunt, M.	ORGN	644
Gao, J.	POLY	6	Garcia-Barchino, M.	MEDI	257	Gaur, S.S.	COLL	410
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Gautam, S.	GEOC	54	Genzer, J.	COLL	407	Ghosh, R.	PHYS	358
Gautier, R.	INOR	371	Georg, G.I.	AEI	4	Ghosh, S.	AGRO	136
Gautier, R.	INOR	569	Georg, G.I.	BIOL	126	Ghosh, S.	COLL	36
Gautier, T.J.	PHYS	274	George, C.	CATL	329	Ghosh, S.	ENVR	585
Gavartin, J.	COMP	356	George, E.Z.	PMSE	360	Ghosh, S.	INOR	608
Gavenonis, J.	CHED	65	George, J.	PMSE	38	Ghosh, U.	ENVR	210
Gawalt, E.S.	COLL	570	George, O.J.	POLY	326	Ghuman, P.	AGRO	322
Gawande, M.	CATL	335	George, S.M.	POLY	439	Giacomini, D.	AGRO	96
Ge, J.	COLL	144	George-Weinstein, M.	POLY	587	Giacomini, K.	MEDI	204
Ge, J.	ENVR	150	Geoui, T.	CINF	6	Giammanco, G.	POLY	589
Ge, J.	ENVR	342	Geraci, C.L.	ENVR	192	Giammar, D.	ENVR	66
Ge, J.	ENVR	568	Gerakines, P.A.	PHYS	158	Giammarco, J.M.	PMSE	365
Ge, M.	ENVR	161	Gerard, M.	COLL	284	Giammarco, J.M.	PMSE	514
Ge, N.	PHYS	312	Gerardi, J.	ANYL	77	Giancotti, G.	MEDI	366
Ge, Q.	CATL	170	Geraskin, I.M.	MEDI	402	Gianneschi, N.C.	PMSE	306
Ge, Q.	CATL	219	Gerber, B.	ANYL	1	Gianneschi, N.C.	POLY	216
Ge, Q.	CATL	247	Gerceker, D.	CATL	93	Gianneschi, N.C.	POLY	432
Ge, Q.	CATL	284	Gerhartz, B.	MEDI	262	Giannetto, M.J.	ENVR	231
Ge, Q.	ENFL	1	Gerken, P.	ORGN	597	Gianti, E.	COMP	297
Ge, Q.	ENFL	345	Gerlach, D.L.	INOR	278	Gianti, E.	COMP	401
Ge, S.	GEOC	31	Gerlach, D.L.	INOR	385	Gibb, B.C.	ORGN	422
Ge, Y.	COMP	218	Gerlach, R.	ENVR	324	Gibb, B.C.	ORGN	609
Ge, Y.	ENVR	224	Germack, D.S.	POLY	37	Gibbons, B.	INOR	567
Ge, Z.	PMSE	281	German, M.S.	ENVR	292	Gibbons, W.	CATL	18
Geacintov, N.E.	TOXI	51	German, M.S.	ENVR	316	Gibbons, W.	COLL	13
Geacintov, N.E.	TOXI	52	Gernold, Z.A.	ANYL	127	Gibbs, E.B.	PHYS	29
Geacintov, N.E.	TOXI	55	Gerstenberger, B.S.	MEDI	271	Gibbs, S.	ENFL	446
Geacintov, N.E.	TOXI	8	Gerstenberger, B.S.	ORGN	672	Gibson, K.D.	PHYS	208
Geary, L.	INOR	594	Geruntho, J.	MEDI	172	Giddings, J.	AGRO	253
Gedalanga, P.	ENVR	443	Gervasi, C.	PHYS	520	Gidley, M.J.	AGFD	223
Gedalanga, P.	ENVR	448	Gesell, J.T.	AGRO	35	Giedroc, D.P.	BIOL	1
Gedalanga, P.	ENVR	759	Gesell, J.T.	AGRO	56	Giese, T.J.	COMP	238
Geddes, B.	AGFD	214	Gestin, J.	ORGN	52	Gieseking, R.	PHYS	421
Geddis, S.	ORGN	175	Getachew, B.	ENVR	234	Giesen, D.J.	COMP	356
Gee, C.T.	AEI	4	Getman, R.	AEI	15	Giesen, D.J.	PMSE	560
Gee, C.T.	BIOL	126	Getman, R.	CATL	134	Giesen, J.A.	ANYL	19
Gee, W.	AGRO	64	Getzinger, G.J.	ENVR	112	Giesen, J.A.	POLY	295
Geeza, T.J.	ENVR	114	Gewirth, A.A.	ENFL	223	Giesen, J.A.	POLY	363
Geeza, T.J.	GEOC	29	Gewirth, A.A.	ENFL	497	Giesen, J.A.	POLY	448
Gehen, S.C.	AGRO	154	Geyer, A.	CHED	425	Gietter, A.	INOR	510
Gehl, S.	ANYL	53	Geyik, A.	ENVR	700	Giglio, C.	ANYL	347
Gehret, P.	CHED	322	Geyik, A.	ENVR	701	Gil Alvaradejo, G.	POLY	308
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Geiger, F.	COLL	394	Ghanakota, P.	COMP	377	Gilbert, B.	ENVR	574
Geiger, F.	COLL	453	Ghanty, U.	BIOL	141	Gilbert, B.	GEOC	72
Geiger, F.	COLL	457	Ghasemi, J.	COMP	262	Gilbert, J.	AGRO	29
Geiger, F.	COLL	526	Ghasemi, J.	COMP	274	Gilbert, J.R.	AGRO	180
Geiger, F.	COLL	579	Ghasemi, J.	COMP	407	Gilbert, J.R.	ANYL	17
Geiger, F.	ENVR	156	Ghasemi, S.	PMSE	5	Gilbert, T.R.	CHED	44
Geiger, F.	ENVR	279	Ghavami, M.	MEDI	358	Gilbert, Z.W.	INOR	21
Geiger, F.	GEOC	47	Ghavami, M.	MEDI	6	Gilbertson, J.D.	INOR	274
Geiger, F.	GEOC	48	Ghazi, P.	COLL	466	Gilbert-Wilson, R.	INOR	281
Geiger, F.	GEOC	60	Ghebreyessus, K.Y.	INOR	589	Gilbraith, W.E.	ANYL	99
Geiger, F.	PHYS	290	Ghidiu, M.	ENFL	276	Gilbreath, R.	NUCL	1
Geiger, M.	ANYL	315	Ghidiu, M.	ENFL	287	Gildawie, K.R.	AGFD	161
Geise, G.M.	ENVR	505	Ghidiu, M.	INOR	607	Gildert, G.	ENVR	428
Geisel, K.	COLL	408	Ghimire, M.M.	INOR	664	Giles, S.A.	CATL	79
Geist, A.	I&C	18	Ghimire, M.M.	INOR	665	Giles, S.L.	COLL	242
Geist, L.L.	AGRO	194	Ghimire, M.M.	INOR	666	Giliyaru, V. B.	MEDI	47
Geist, L.L.	AGRO	195	Ghiviriga, I.	INOR	210	Gill, H.	COLL	136
Gelb, M.H.	CHED	356	Ghobadi, A.	COMP	67	Gill, R.	COLL	269
Gelbaum, C.	ORGN	398	Ghobril, C.	POLY	66	Gill, R.	ENFL	307
Gelfand, M.P.	ANYL	214	Ghodsi, V.	INOR	368	Gillams, R.J.	COMP	339
Geller, A.	CATL	151	Ghodsi, V.	INOR	562	Gillams, R.J.	PHYS	464
Genccakir, N.	COMP	265	Ghogare, A.A.	ORGN	248	Gillan, M.	PMSE	387
Gendeleev, L.	COMP	137	Gholami, A.	AGFD	123	Gillani, S.S.	POLY	344
Gendrineau, T.	ORGN	458	Gholami, A.	ORGN	153	Gillani, S.S.	POLY	345
Gendron, L.	MEDI	160	Ghosh, A.K.	COMP	30	Gillard, T.	POLY	27
Genest, A.	CATL	117	Ghosh, B.	COLL	189	Gilleland, G.	ENFL	462
Genest, A.	COLL	337	Ghosh, B.	COLL	257	Gillespie, K.L.	ORGN	332
Genest, M.	MEDI	200	Ghosh, D.	COMP	325	Gillette, M.U.	ANYL	35
Geng, C.	POLY	553	Ghosh, I.	BIOL	246	Gilley, J.	ENVR	743
Geng, F.	MEDI	104	Ghosh, M.	CATL	14	Gilliard, R.J.	AEI	30
Geng, Y.	COLL	225	Ghosh, M.	CATL	227	Gilliard, R.J.	INOR	103
Geng, Y.	TOXI	93	Ghosh, M.	PMSE	698	Gilliard, R.J.	INOR	642
Geng, Z.	ENFL	71	Ghosh, P.	INOR	20	Gilligan, G.E.	INOR	250
Genna, V.	COMP	102	Ghosh, P.	INOR	282	Gilligan, G.E.	INOR	413
Gentekos, D.	PMSE	284	Ghosh, P.	INOR	411	Gillings, M.J.	POLY	553

Gillispie, E.C.	GEOC	43	Gkanas, E.	ENFL	231	Goeltl, F.	ENFL	488
Gillman, I.G.	TOXI	69	Glans-Suzuki, P.	CATL	44	Goepferich, A.	COLL	229
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Gilman, J.	PHYS	124	Glass, B.P.	ANYL	372	Goetz, J.D.	PHYS	121
Gilman, J.W.	COLL	314	Glass, B.P.	ANYL	68	Goetz, J.D.	PHYS	88
Gilman, J.W.	PMSE	581	Glassford, I.M.	MEDI	355	Goetz, M.	MEDI	370
Gilman, J.W.	POLY	499	Glassner, M.	POLY	267	Goff, J.	POLY	403
Gilmer, J.W.	PMSE	23	Glatz, B.	COMP	184	Goforth, A.	PHYS	520
Gilmore, D.	MEDI	126	Glavin, D.P.	PHYS	542	Gogineni, V.	MEDI	151
Gilmore, K.	CHED	70	Glaze, T.	AGRO	250	Gogna, M.	ANYL	53
Gilmore, K.	PMSE	406	Gleason, B.	PHYS	525	Gogna, M.	ENVR	578
Gilmore, S.F.	COLL	56	Gleason, J.	ENVR	387	Gogoi, N.	POLY	406
Gilpin, C.S.	CHED	427	Gleba, Y.	AGFD	271	Gogotsi, N.	COLL	311
Gilpin, C.S.	CHED	428	Gleason, S.	PMSE	388	Gogotsi, N.	INOR	82
Gilpin, C.S.	CINF	97	Gleason, S.	PMSE	627	Gogotsi, N.	PHYS	324
Gilpin, R.K.	ANYL	333	Glen, C.	ENVR	160	Gogotsi, Y.	COLL	555
Gilpin, R.K.	CHED	427	Glennon, B.	ORGN	648	Gogotsi, Y.	ENFL	177
Gilpin, R.K.	CHED	428	Glesner, M.G.	CHAS	23	Gogotsi, Y.	ENFL	180
Gilpin, R.K.	CINF	97	Glezakou, V.	CATL	108	Gogotsi, Y.	ENFL	276
Gilroy, K.	CATL	287	Glezakou, V.	CATL	8	Gogotsi, Y.	ENFL	287
Gilroy, K.	COLL	146	Glezakou, V.	ENFL	113	Gogotsi, Y.	ENFL	417
Gilroy, K.	COLL	51	Glezakou, V.	ENFL	143	Gogotsi, Y.	ENFL	441
Gilroy, K.D.	COLL	10	Glezakou, V.	ENFL	192	Gogotsi, Y.	ENFL	504
Gilroy, K.D.	COLL	50	Glezakou, V.	ENFL	194	Gogotsi, Y.	ENVR	352
Gilson, J.	ENFL	505	Glezakou, V.	ENVR	437	Gogotsi, Y.	ENVR	61
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Gimenez Bastida, J.	AGFD	149	Glibstrup, E.	ORGN	760	Gogotsi, Y.	ORGN	10
Gimeno, P.A.	ENFL	463	Glick, M.	CINF	54	Gogotsi, Y.	ORGN	149
Gin, D.L.	PMSE	508	Glick, M.	ORGN	212	Gogotsi, Y.	ORGN	17
Gin, K.Y.	ENVR	513	Glick, S.	BIOL	92	Gogotsi, Y.	POLY	42
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Ginder-Vogel, M.A.	ENVR	341	Glinski, D.	AGRO	370	Goh, T.	ENFL	251
Gindulyte, A.	CINF	80	Gloer, J.B.	AGRO	94	Goh, T.	ENFL	485
Gindulyte, A.	CINF	93	Glor, E.	COLL	109	Goh, W.	MEDI	8
Gindulyte, A.	CINF	95	Glor, E.	COLL	146	Gohlke, H.	COMP	92
Ginger, D.S.	PHYS	429	Glor, E.	PMSE	629	Gohre, K.	AGRO	19
Gingerich, D.	ENVR	248	Glutzer, S.C.	PHYS	490	Gohre, K.	AGRO	20
Gingerich, D.B.	ENVR	247	Glutzer, S.C.	POLY	126	Gohre, K.	AGRO	52
Ginosar, D.M.	ENFL	46	Glover, C.	ENVR	175	Gohre, K.	AGRO	91
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Ginotra, S.K.	ORGN	291	Glover, S.	ENVR	653	Gokce, G.	POLY	371
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Giordan, J.C.	PROF	23	Glowienke, S.	TOXI	46	Goldberg, A.	PMSE	560
Giordan, J.C.	SCHB	2	Gluck, S.J.	PMSE	655	Goldberg, D.	CHED	367
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Giordano, M.	PHYS	121	Gnanou, Y.	POLY	525	Goldberg, D.P.	INOR	327
Giordano, M.	PHYS	486	Goacher, R.E.	ANYL	127	Goldberg, D.P.	INOR	383
Giordano, M.	PHYS	88	Goacher, R.E.	ANYL	129	Goldberg, D.P.	INOR	68
Giorgi, J.	CATL	261	Goacher, R.E.	ANYL	53	goldberg, e.	COLL	175
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Giraldo, J.	ENVR	471	Gobert, Z.	AEI	12	Goldberg, N.M.	ENFL	36
Girardet, J.	MEDI	208	Gobert, Z.	COLL	594	Goldberg, N.M.	ENFL	38
Girardin, B.	PMSE	196	Gobeze, H.	COLL	439	Goldberg, Y.	MEDI	263
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Giritch, A.	AGFD	271	Godavarthy, M.	ENFL	93	Goldberger, J.E.	ENFL	285
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Girolami, G.S.	INOR	538	Goddard, J.M.	AGFD	172	Goldfarb, J.L.	ENFL	17
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Gisewhite, D.	INOR	399	Goddard, J.M.	COLL	222	Goldfield, E.	PHYS	347
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Giunta, C.J.	CHED	89	Godson, C.	MEDI	348	Goldman, A.S.	INOR	552
Giunta, C.J.	ENVR	310	Godson, C.	MEDI	351	Goldman, A.S.	INOR	585
Giunta, C.J.	HIST	1	Goede, C.I.	INOR	429	Goldman, A.S.	INOR	653
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Golemis, E.A.	PHYS	3	Goodman, K.R.	CATL	290	Gottspomer, A.	MEDI	126
Golovin, K.	PMSE	55	Goodpaster, J.	CATL	102	Gotz, M.G.	CHED	259
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Gomes, C.M.	COLL	595	Goodson, F.	CHED	307	Goudreau Collison, T.G.	CHED	282
Gomes, G.L.	AGRO	70	Goodson, T.G.	ENFL	295	Goudreau Collison, T.G.	CHED	283
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Gomez, E.	PMSE	166	Goodwin, E.	PHYS	104	Goulas, K.	CATL	313
Gomez, E.	PMSE	672	Goodwin, G.E.	AGRO	140	Gould, G.	POLY	163
Gomez, E.D.	PHYS	67	Goodwin, P.M.	ANYL	214	Gould, I.R.	COMP	146
Gomez, E.D.	PMSE	278	Goodwin, S.	BIOL	251	Gould, I.R.	COMP	345
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Gómez-Palacio, M.	MEDI	133	Goranov, A.	CHED	326	Goulian, M.	POLY	285
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Goncalves, D.	AGFD	64	Gordon, B.	INOR	178	Govindarajan, S.R.	PMSE	273
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Gong, X.	PMSE	669	Gordon, T.	ENVR	738	Grace, J.E.	MEDI	162
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Gong, Y.	ENVR	480	Gordon, W.O.	CATL	118	Gracias, D.H.	CATL	119
Gongglom, A.	ENVR	605	Gordon, W.O.	COLL	242	Gracias, D.H.	COLL	589
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Gonneau, C.	ENVR	463	Gorham, J.M.	COLL	314	Graff, R.W.	POLY	338
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Gonzalez Moreiras, M.	ORGN	783	Gorski, C.	ENVR	509	Graham, H.V.	PHYS	542
Gonzalez Valcarcel, I.	MEDI	341	Gorte, R.J.	CATL	162	Graham, K.J.	CHED	21
Gonzalez Valcarcel, I.	MEDI	344	Gorte, R.J.	CATL	172	Graham, O.J.	ENVR	429
Gonzalez, C.	PMSE	37	Gorte, R.J.	CATL	184	Graham, P.M.	INOR	684
Gonzalez, E.E.	CHED	205	Gorte, R.J.	CATL	23	Graham, S.M.	CHED	104
Gonzalez, E.E.	CHED	220	Gorte, R.J.	CATL	272	Graham, S.M.	MEDI	409
Gonzalez, J.	BIOL	68	Gorte, R.J.	ENFL	4	Grajeda, J.	INOR	224
Gonzalez, J.	MEDI	134	Gorte, R.J.	ENFL	50	Grams, S.	POLY	344
González, J.	INOR	364	Gosavi, P.	BIOL	104	Grams, S.	POLY	345
Gonzalez, J.M.	AGRO	203	Gosavi, P.	BIOL	57	Gramigna, K.M.	INOR	617
Gonzalez, P.P.	CHED	220	Gosens, R.	AEI	64	Gramlich, W.	POLY	103
Gonzalez, R.	ENVR	286	Gosens, R.	PMSE	505	Granata, D.	COMP	348
González, R.	INOR	624	Goss, L.C.	CHED	91	Granata, D.	PHYS	76
Gonzalez, Y.I.	CHAS	39	Gossai, N.P.	MEDI	298	Grandbois, M.	YCC	19
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Grande, D.	PMSE	134	Greenblatt, M.K.	CATL	203	Grinstaff, M.W.	MEDI	416
Grande, D.	PMSE	654	Greene, A.	INOR	450	Grinstaff, M.W.	PMSE	52
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Grandinetti, P.J.	GEOC	80	Greene, V.	PMSE	621	Grinstaff, M.W.	POLY	201
Grandinetti, P.J.	GEOC	83	Greene, V.	PMSE	624	Grinstaff, M.W.	POLY	364
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Granite, E.J.	GEOC	92	Greenman, K.M.	POLY	517	Grinstaff, M.W.	POLY	66
Granite, E.J.	GEOC	93	Greenslade, M.E.	COLL	492	Grinter, D.	CATL	94
Grannas, A.M.	ENVR	540	Greenslade, M.E.	PHYS	552	Grinter, D.	COLL	128
Grannas, A.M.	ENVR	541	Greenstein, J.	COLL	204	Grinter, D.	COLL	386
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Grant, C.	AGRO	252	Greenwood, S.	ANYL	98	Grissom, T.G.	COLL	130
Grant, C.	MEDI	99	Greenwood-Van Meerveld, B.	ORGN	215	Griswold, J.	NUCL	33
Grant, G.	ENVR	523	Greer, A.	ORGN	101	Griswold, J.	NUCL	35
Grant, J.	ENFL	484	Greer, A.	ORGN	248	Griswold, J.	NUCL	48
Grant, L.	INOR	603	Greer, C.	AGRO	126	Griswold, K.	AGFD	121
Grant, S.	AGRO	174	Greer, E.	ORGN	250	Griswold, M.	POLY	149
Granvogl, M.	AGFD	136	Greeson, K.T.	POLY	440	Grobler, J.A.	MEDI	371
Granvogl, M.	AGFD	145	Gregersen, P.L.	AGFD	132	Groehler, A.	TOXI	107
Granvogl, M.	AGFD	284	Gregerson, C.	ORGN	494	Groehler, A.	TOXI	23
Grassian, V.H.	PHYS	86	Grégoire, A.	COLL	545	Groen, D.	COLL	409
Grassian, V.H.	PHYS	89	Gregor, L.	INOR	224	Groenenboom, M.	CATL	107
Grassl, B.	POLY	76	Gregorich, K.E.	NUCL	46	Groenewold, G.S.	ENFL	204
Gratale, M.	COLL	359	Gregory, D.H.	CATL	254	Groenhof, G.	COMP	115
Grathwohl, P.	ENVR	146	Gregory, K.B.	ENVR	354	Grohol, D.	CATL	268
Graton, J.	AGRO	122	Gregory, K.B.	ENVR	355	Grollman, A.P.	TOXI	72
Graton, J.	AGRO	278	Gregory, K.B.	ENVR	47	Grondin, P.	MEDI	15
Grattale, M.	COLL	357	Grenningloh, R.	MEDI	200	Grondin, P.	MEDI	9
Gravel, S.	ORGN	420	Gresh, N.	COMP	318	Groninger, A.	COLL	485
Graves, C.R.	INOR	619	Grethe, J.	COMP	260	Gronski, P.	CHED	181
Graves, S.W.	ANYL	213	Greune, A.	ENVR	44	Groom, C.	CHED	351
Gravina, S.	AGFD	119	Greve, E.	ORGN	574	Gropler, R.	POLY	266
Gravina, S.	AGFD	121	Grewal, B.K.	COMP	325	Gros, M.	AGFD	16
Gray, C.	INOR	140	Grey, J.K.	PMSE	496	Groshens, T.	INOR	106
Gray, H.B.	INOR	175	Grey, P.	CINF	61	Groshens, T.	INOR	29
Gray, J.L.	INOR	8	Grice, L.N.	ENVR	435	Groski, D.	PMSE	440
Gray, P.	ENVR	403	Grieco, C.	PHYS	269	Gross, A.D.	AGRO	105
Gray, R.	POLY	67	Grieco, C.	PHYS	67	Gross, A.D.	AGRO	160
Gray, S.K.	COLL	316	Griego, J.	ANYL	350	Gross, A.D.	AGRO	205
Grayson, J.W.	ENVR	155	Griego, J.	GEOC	14	Gross, A.D.	AGRO	317
Grayson, S.M.	ANYL	19	Grieman, F.J.	PHYS	353	Gross, A.D.	AGRO	76
Grayson, S.M.	ANYL	223	Griep, M.	INOR	84	Gross, J.D.	PHYS	549
Grayson, S.M.	PMSE	392	Griesser, T.	PMSE	642	Gross, M.	AGRO	85
Grayson, S.M.	POLY	121	Griffen, E.J.	CINF	16	Gross, R.A.	MEDI	117
Grayson, S.M.	POLY	295	Griffen, S.	MEDI	18	Gross, R.A.	PMSE	33
Grayson, S.M.	POLY	310	Griffin, A.	YCC	3	Gross, R.A.	PMSE	579
Grayson, S.M.	POLY	363	Griffin, M.	CATL	300	Gross, S.	COLL	15
Grayson, S.M.	POLY	391	Griffin, M.	ENFL	44	Gross, S.	MEDI	268
Grayson, S.M.	POLY	448	Griffith, C.M.	AGRO	229	Grosser, J.W.	AGFD	187
Grayson, S.M.	POLY	473	Griffith, E.	COMP	52	Grossman, R.B.	ORGN	448
Grayson, S.M.	POLY	532	Griffith, W.B.	COLL	302	Grosso-Giordano, N.	ENFL	483
Graziani, M.	INOR	684	Griffith, W.B.	COLL	32	Grotjahn, D.B.	INOR	324
Graziano, Z.	CHED	212	Griffiths, L.	MEDI	260	Grotjahn, D.B.	INOR	385
Greathouse, J.A.	GEOC	1	Griggis, J.	INOR	607	Grotjahn, D.B.	INOR	389
Greatrex, B.	ORGN	433	Grigoriev, M.	COLL	208	Grove, L.	CHED	178
Greaves, J.	ENVR	245	Grill, G.	AGRO	356	Grove, R.	AGRO	371
Grebe, T.P.	MEDI	20	Grillot, A.M.	ORGN	267	Grover, M.	PHYS	491
Grecco, J.	ORGN	36	Grills, D.C.	INOR	652	Groves, J.T.	INOR	401
Greco, G.E.	ORGN	68	Grim, J.	POLY	117	Groves, M.S.	PHYS	410
Grecsek, H.	ENVR	402	Grim, J.C.	ORGN	593	Groysman, R.	CATL	280
Grecsek, H.	ENVR	693	Grimes, C.L.	AEI	8	Grubbs, R.B.	POLY	12
Greeley, J.P.	ENFL	267	Grimes, C.L.	BIOL	100	Grubbs, R.B.	POLY	130
Greeley, J.P.	ENFL	497	Grimes, C.L.	BIOL	106	Grubbs, R.B.	POLY	382
Green, A.M.	PHYS	455	Grimes, C.L.	BIOL	124	Grubbs, R.B.	POLY	416
Green, A.R.	ORGN	657	Grimes, C.L.	BIOL	18	Grubbs, R.H.	CHED	248
Green, C.A.	AGRO	110	Grimes, C.L.	BIOL	226	Grubbs, R.H.	COLL	324
Green, C.M.	ANYL	137	Grimes, C.L.	BIOL	85	Grubbs, R.H.	ORGN	197
Green, J.	AGRO	66	Grimes, C.L.	ORGN	376	Grubbs, R.H.	ORGN	628
Green, J.	ENVR	51	Grimes, C.L.	ORGN	591	Grubbs, R.H.	ORGN	742
Green, L.	ANYL	226	Grimes, T.S.	INOR	503	Grubbs, R.H.	ORGN	784
Green, M.	AGRO	33	Grimm, A.	INOR	581	Grubbs, R.H.	POLY	376
Green, N.	MEDI	63	Grimm, J.	INOR	6	Grubbs, R.H.	POLY	388
Green, T.C.	POLY	485	Grimm, J.	ORGN	653	Grubbs, R.H.	POLY	569
Greenbaum, S.	PHYS	372	Grimm, R.	CATL	316	Grubbs, R.H.	POLY	78
Greenbaum, S.G.	GEOC	80	Grimme, S.	PMSE	562	Grubbs, R.H.	SCHB	16
Greenberg, A.	ORGN	190	Grimwood, M.E.	MEDI	263	Grubbs, R.H.	WCC	5
Greenberg, L.	AGRO	143	Grina, J.	ORGN	263	Grubbs, W.T.	CHED	63
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Grudpan, K.	CHED	16	Guenthner, A.J.	POLY	495	Gunner, M.	COMP	61
Grue, C.E.	AGRO	127	Guerard, F.	ORGN	52	Gunsch, M.	PHYS	87
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Grulke, C.	PHYS	245	Guerrero-Perez, M.	CATL	100	Guo, F.	ENVR	322
Grulke, C.	TOXI	96	Guerrero-Perez, M.	CATL	35	Guo, F.	PMSE	204
Grundy, W.	PHYS	71	Guerrero-Perez, M.	CATL	5	Guo, H.	AGFD	285
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Grunlan, J.C.	PMSE	229	Guevara, H.	ORGN	190	Guo, H.	PMSE	602
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Grunlan, J.C.	PMSE	25	Guha, R.	CINF	53	Guo, J.	BIOL	125
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Grunlan, M.	POLY	332	Guichard, E.	AGFD	141	Guo, J.	COMP	217
Grusenmeyer, T.A.	INOR	265	Guidera, J.A.	ORGN	243	Guo, J.	ENFL	189
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Grützmacher, H.	INOR	103	Guild, C.	ENFL	23	Guo, K.	POLY	393
Grützmacher, H.	INOR	642	Guild, C.	ENFL	481	Guo, L.	AGFD	12
Gryska, S.	PMSE	7	Guillet, J.	INOR	499	Guo, L.	BIOL	44
Grzelakowski, M.	BIOL	208	Guillon, C.D.	SCHB	8	Guo, L.	ENFL	226
Grzelczak, M.	COLL	83	Guimaraes, C.R.	MEDI	17	Guo, L.	ENFL	313
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Gu, B.	ENVR	71	Guiry, P.J.	MEDI	114	Guo, M.	AGFD	273
Gu, B.	ENVR	775	Guiry, P.J.	MEDI	115	Guo, M.	CATL	51
Gu, C.	ENVR	176	Guiry, P.J.	MEDI	348	Guo, M.	ENFL	196
Gu, C.	ENVR	177	Guiry, P.J.	MEDI	351	Guo, M.	ENFL	337
Gu, C.	ENVR	761	Guiry, P.J.	ORGN	111	Guo, M.	ORGN	724
Gu, D.	MEDI	349	Guiry, P.J.	ORGN	84	Guo, R.	PMSE	130
Gu, H.	PMSE	418	Guisan-Ceinos, M.	ORGN	626	Guo, S.	ENVR	160
Gu, J.	PMSE	65	Gujarati, N.	MEDI	59	Guo, S.	ENVR	223
Gu, S.	PMSE	291	Guk, H.	COMP	229	Guo, S.	ENVR	23
Gu, S.	PMSE	298	Guk, H.	COMP	232	Guo, S.	INOR	260
Gu, W.	ENVR	733	Gukathasan, S.	ORGN	49	Guo, S.	ORGN	224
Gu, X.	ENFL	267	Gül, E.	INOR	126	Guo, T.	COLL	561
Gu, X.	PMSE	98	Gül, E.	INOR	481	Guo, X.	AGFD	277
Gu, X.	POLY	407	Gül, E.	INOR	483	Guo, X.	CATL	237
Gu, Y.	PMSE	238	Gul, R.	MEDI	291	Guo, X.	COLL	219
Gu, Y.	POLY	140	Gulati, K.	AGRO	231	Guo, X.	ENFL	15
Gu, Z.	AGFD	108	Gulati, K.	AGRO	264	Guo, X.	ENFL	193
Gu, Z.	ENVR	702	Gulcius Lagoy, S.	COLL	472	Guo, X.	ENFL	315
Guagenti, M.C.	CHED	146	Guler, M.O.	ORGN	552	Guo, X.	PMSE	300
Guagnano, V.	MEDI	273	Guler, M.O.	PMSE	40	Guo, X.	PMSE	389
Guajardo, T.V.	ORGN	697	Gulianello, M.	MEDI	395	Guo, X.	PMSE	390
Guan, A.	AGFD	76	Gulianello, M.	ORGN	39	Guo, X.	POLY	321
Guan, A.	AGFD	94	Gulka, A.	AGRO	108	Guo, X.	POLY	362
Guan, A.	AGFD	97	Gulledge, A.	POLY	385	Guo, X.	POLY	366
Guan, A.	AGFD	98	Gulyuz, U.	PMSE	564	Guo, X.	CATL	158
Guan, A.	AGFD	99	Gumidyala, A.	ENFL	93	Guo, Y.	COLL	191
Guan, C.	INOR	552	Gumus, C.E.	AGFD	262	Guo, Y.	COLL	217
Guan, H.	INOR	176	Gunasekara, T.N.	INOR	24	Guo, Y.	INOR	675
Guan, H.	ORGN	215	Gunathilake, C.	ENVR	93	Guo, Y.	PHYS	523
Guan, X.	ENVR	271	Gunathilake, C.	ENVR	99	Guo, Y.	PMSE	167
Guberman-Pfeffer, M.J.	CHED	383	Gunathilake, C.	I&EC	25	Guo, Z.	COMP	197
Guchhait, K.	MEDI	58	Gunathilake, S.	POLY	10	Guo, Z.	COMP	49
Gudipati, M.S.	PHYS	153	Gunawardana, V.L.	ORGN	702	Guo, Z.	PMSE	171
Gudipati, M.S.	PHYS	155	Gunaydin, H.	COMP	340	Guo, Z.	PMSE	343
Gudmundsdottir, A.D.	ORGN	187	Gundala, S.	BIOL	227	Gupta, A.	CHED	280
Gudmundsdottir, A.D.	ORGN	195	Gunderwala, A.	MEDI	359	Gupta, A.	COLL	222
Gudmundsdottir, A.D.	ORGN	247	Gundlach, L.	COLL	356	Gupta, A.	COLL	226
Gudmundsdottir, A.D.	ORGN	249	Gundlach, L.	COLL	38	Gupta, A.	COLL	275
Guduru, P.	ENFL	207	Gundlach, L.	PHYS	196	Gupta, A.	MEDI	18
Guegan, P.	POLY	125	Gundlach, L.	PHYS	373	Gupta, A.	PMSE	412
Guegan, P.	POLY	188	Gundlach, L.	PHYS	377	Gupta, A.	PMSE	648
Guenther, J.	ANYL	95	Gunduz, S.	ENFL	115	Gupta, A.	POLY	319
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Gupta, B.	COLL	118	Haddleton, D.M.	PMSE	88	Halaoui, L.I.	INOR	49
Gupta, M.	MEDI	34	Haddleton, D.M.	POLY	287	Halaweish, F.T.	MEDI	308
Gupta, M.	PMSE	511	Haddleton, D.M.	POLY	296	Halaweish, F.T.	MEDI	71
Gupta, N.	PMSE	355	Haderlein, S.B.	ENVR	208	Haldar, A.	INOR	369
Gupta, P.K.	ENVR	338	Haderlien, S.	ENVR	337	Halden, R.U.	AGRO	119
Gupta, R.	ENFL	478	Hadjeres, H.	ENVR	658	Halden, R.U.	AGRO	240
Gupta, S.	MEDI	338	Hadjichristidis, N.	PMSE	92	Halden, R.U.	AGRO	241
Guptill, D.	ORGN	91	Hadjichristidis, N.	POLY	525	Halden, R.U.	AGRO	242
Gupton, F.	I&EC	1	Hadjichristidis, N.	POLY	530	Halden, R.U.	AGRO	243
Gupton, F.	ORGN	107	Hadjichristidis, N.	POLY	536	Halden, R.U.	AGRO	324
Gupton, F.	ORGN	700	Hadjichristidis, N.	POLY	569	Halden, R.U.	AGRO	325
Gurarslan, R.	PMSE	262	Hadt, R.	PHYS	62	Halden, R.U.	ENVR	465
Gurarslan, R.	POLY	543	Hadt, R.G.	INOR	541	Halden, R.U.	ENVR	51
Gurau, G.	MPPG	13	Hadt, R.G.	PHYS	268	Halden, R.U.	MPPG	2
Gurian, P.	ENVR	246	Haefner, S.M.	AGRO	293	Halder, N.	ANYL	110
Guron, M.	CHED	384	Haegele, J.	TOXI	4	Hale, L.V.	INOR	177
Gurrapu, S.	MEDI	369	Haensele, E.	COMP	244	Hale, L.V.	INOR	546
Gurska, S.	MEDI	411	Haes, A.J.	ANYL	319	Haley, H.	AGFD	235
Gurtler, J.	AGFD	208	Haes, A.J.	COLL	26	Haley, J.E.	INOR	265
Gurung, R.	ORGN	618	Hafey, M.J.	MEDI	371	Halilovic, A.	INOR	421
Gurung, R.K.	CHED	243	Hafiz, S.A.	COLL	147	Halim, J.	ENFL	287
Gurung, R.K.	CHED	244	Hafiz, S.A.	INOR	339	Halim, J.	ENFL	441
Gussio, R.	MEDI	61	Hafner, J.H.	PHYS	100	Halim, J.	ENFL	504
Gustafson, K.	CATL	334	Hagaman, D.	ENFL	312	Haljasmaa, I.	GEOC	10
Gustafson, M.	COMP	263	Hagberg, E.C.	POLY	135	Hall, A.	COLL	296
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Gutgesell, L.	MEDI	304	Hagelgans, A.E.	CHED	239	Hall, D.M.	CHED	433
Guth, N.	AGRO	16	Hagenhoff, B.L.	ANYL	303	Hall, H.L.	NUCL	1
Guthrie, A.	AGRO	214	Hager, C.	PMSE	359	Hall, H.L.	NUCL	14
Guthrie, J.M.	ANYL	354	Hager, M.D.	PMSE	318	Hall, H.L.	NUCL	37
Guthrie, J.M.	NUCL	4	Hagerty, J.	CHED	181	Hall, K.	AGRO	128
Guthrie-Dixon, N.	CHED	421	Haghighatlari, M.	CINF	36	Hall, L.	AGRO	144
Gutteridge, S.	AGRO	102	Haghighatlari, M.	COMP	45	Hall, L.	AGRO	359
Gutzler, R.	PHYS	315	Haghighatlari, M.	PHYS	242	Hall, M.B.	INOR	20
Guvendiren, M.	PMSE	329	Haghighatlari, M.	PHYS	412	Hall, M.B.	INOR	282
Guy, C.S.	PHYS	334	Haglund, C.	MEDI	278	Hall, M.J.	ORGN	280
Guymon, A.	PMSE	566	Hagmann, J.A.	COLL	563	Hall, P.	CATL	17
Guymon, A.	POLY	207	Hagstrom, A.L.	ENVR	366	Hall, R.G.	AGRO	292
Guyot, F.	ORGN	551	Hahn, C.	CATL	62	Haller, G.L.	ENFL	447
Guzmán Blas, R.	CHED	230	Hahn, C.	CHED	256	Hallett, J.E.	PMSE	259
Guzman, J.	PHYS	39	Hahn, C.	HIST	4	Halls, M.	COMP	356
Guzman, M.I.	ORGN	379	Hahn, J.M.	AEI	43	Halls, M.	PMSE	429
Guzman, M.I.	PHYS	284	Hahn, M.	PMSE	183	Halls, M.	PMSE	560
Gwinn, E.	PHYS	341	Hahn, S.	MEDI	39	Halonski, J.F.	CHED	301
Gwinn, E.	PHYS	342	Hai, Y.	BIOL	22	Halpern, A.R.	PHYS	498
Gwon, D.	ORGN	491	Haider, K.	COMP	360	Halpern, J.M.	POLY	97
Ha Choi, E.	MEDI	183	Haider, K.	COMP	362	Halpern, S.	MEDI	265
Ha, J.	CATL	147	Haider, M.	COLL	323	Halpin, J.	CHED	81
Ha, T.	COLL	402	Haider, M.	PMSE	573	Halvorson, J.	ANYL	142
Ha, T.	MEDI	105	Haidle, A.	COMP	340	Halvorson, J.	ANYL	298
Ha, T.	MEDI	396	Haidzinskaya, T.	ORGN	408	Ham, H.	CATL	167
Ha, Y.	ENFL	223	Haiges, R.M.	INOR	297	Ham, H.	ENFL	471
Ha, Y.	ENFL	497	Haigh, S.J.	CATL	45	Hamada, K.	ORGN	594
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Haagenson, D.C.	CHED	75	Haile, M.	PMSE	229	Hamann, C.	CHED	349
Haas, T.	COLL	405	Hailei, S.	ENVR	476	Hamann, C.	PROF	9
Haase, D.N.	POLY	105	Haiman, C.A.	TOXI	35	Hamann, L.G.	ORGN	212
Haase, D.N.	POLY	561	Haimov, Y.	ENVR	167	Hamblin, N.	MEDI	113
Haase, D.N.	YCC	18	Haines, B.E.	ORGN	393	Hamby, K.A.	AGRO	59
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Habas, S.	INOR	42	Hajek, J.	CATL	137	Hamel, J.P.	CHED	210
Habdas, P.	COLL	357	Hajek, J.	CATL	139	Hamelberg, D.	COMP	406
Habdas, P.	COLL	359	Hajfathalian, M.	CATL	287	Hamers, R.J.	COLL	153
Haber, L.H.	ENFL	475	Hajfathalian, M.	COLL	50	Hamers, R.J.	COLL	297
Haber, L.H.	PHYS	371	Hajfathalian, M.	COLL	51	Hamers, R.J.	COLL	424
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Hu, K.	MEDI	392	Huang, F.	ENFL	304	Huang, X.	ENFL	382
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Jang, Y.	ENVR	689	Jaye, C.	COLL	95	Jeong, H.	BIOL	259
Jang, Y.	INOR	465	Jayne, J.T.	ENVR	17	Jeong, H.	PMSE	499
Jang, Y.	PMSE	138	Jayne, J.T.	ENVR	278	Jeong, J.	BIOL	190
Jani, K.	COMP	309	Jayne, J.T.	PHYS	222	Jeong, J.	BIOL	191
Janik, M.J.	CATL	244	Je, S.	PMSE	656	Jeong, J.	BIOL	219
Janik, M.J.	ENFL	112	Jeamjumnunja, K.	INOR	484	Jeong, K.	MEDI	101
Janik, M.J.	ENFL	346	Jean, B.	MEDI	40	Jeong, K.	ORGN	510
Janik, M.J.	INOR	290	Jean, Y.	PHYS	444	Jeong, K.	POLY	28
Janik, M.J.	INOR	669	Jean, Y.	AGFD	293	Jeong, M.	AGFD	204
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Janjic, J.M.	POLY	222	Jeanguenat, A.	AGRO	292	Jeong, Y.	COLL	215
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Janke, A.	POLY	174	Jeay, S.	MEDI	273	Jerolmack, D.	TOXI	25
Janke, A.M.	BIOL	90	Jee, S.	COMP	254	Jerolmack, D.	TOXI	26
Janney, P.K.	AGRO	111	Jee, S.	COMP	280	Jerry, D.	COLL	223
Janovitz, E.	MEDI	18	Jee, S.	COMP	303	Jeschke, P.	AGRO	165
Janovitz, E.	MEDI	267	Jefferson, A.	MEDI	250	Jeschke, P.	AGRO	255
Janovitz, E.	MEDI	380	Jefferson, A.B.	MEDI	78	Jesikiewicz, L.	ORGN	119
Janowska, M.	PHYS	163	Jefferson, K.	CHED	299	Jessing, M.	ORGN	683
Jansen, J.A.	POLY	275	Jefferson, L.	PMSE	533	Jesudason, C.D.	MEDI	173
Jansen, J.F.	POLY	515	Jeffrey, D.W.	AGFD	170	Jesudason, C.D.	MEDI	180
Jansen, J.M.	COMP	109	Jeganat, V.	MEDI	99	Jesudason, C.D.	MEDI	277
Jansen, T.C.	PHYS	146	Jehng, J.	CATL	1	Jew, A.D.	GEOC	13
Jansen, T.C.	PHYS	201	Jeilani, Y.A.	ORGN	251	Jewell, J.P.	ORGN	619
Janser, I.	ORGN	118	Jen, A.K.	PHYS	421	Jewell, P.	PHYS	541
Janser, I.	ORGN	412	Jen, C.N.	PHYS	517	Jezorek, R.	ORGN	488
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Jao, D.	PMSE	626	Jenkins, M.	PRES	38	Ji Chen, Y.	ANYL	255
Jaramillo, F.	ORGN	147	Jenkins, S.	MEDI	22	Ji, B.	PHYS	476
Jaramillo, J.	CHED	210	Jeness, G.	ENFL	27	Ji, D.	CHED	378
Jaramillo, J.	ENFL	225	Jeness, G.R.	CATL	174	Ji, H.	ENFL	312
Jaramillo, L.D.	AEI	27	Jennings, A.R.	POLY	412	Ji, H.	INOR	559
Jaramillo, R.	ANYL	300	Jennings, A.R.	POLY	438	Ji, S.	TOXI	107
Jarodsky, J.	BIOL	51	Jennings, B.C.	BIOL	26	Ji, S.	TOXI	53
Jaroliya, P.	ENVR	544	Jennings, L.	MEDI	253	Ji, X.	COLL	599
Jaroniec, M.	ENVR	93	Jennings, M.	BIOL	77	Ji, Y.	CATL	161
Jaroniec, M.	ENVR	99	Jennings, M.	CHED	260	Ji, Y.	ENVR	505
Jaroniec, M.	I&EC	25	Jennings, M.	CHED	267	Ji, Z.	ENVR	694
Jarosinski, M.	COMP	342	Jennings, M.	MEDI	413	Ji, Z.	INOR	517
Jarosinski, M.	COMP	57	Jennings, P.	BIOL	21	Jia, H.	BIOL	97
Jarto, I.	ANYL	349	Jenny, S.E.	INOR	474	Jia, H.	CATL	4
Jarvis, C.L.	ORGN	33	Jensen, B.M.	AGFD	132	Jia, H.	COLL	11
Jarvo, E.R.	ORGN	55	Jensen, C.D.	AEI	23	Jia, H.	MEDI	104
Jassby, D.	ENVR	232	Jensen, C.D.	CATL	238	Jia, L.	INOR	550
Jassby, D.	ENVR	33	Jensen, K.	CHED	269	Jia, L.	MEDI	100
Jasti, V.	TOXI	12	Jensen, K.	ORGN	142	Jia, L.	MEDI	95
Jastrzembki, J.A.	AGFD	138	Jensen, M.P.	INOR	255	Jia, L.	PMSE	31
Jastrzembki, J.A.	AGFD	81	Jensen, M.P.	NUCL	65	Jia, L.	POLY	40
Jaufurally, A.	CATL	267	Jensen, P.K.	AGRO	251	Jia, W.	PMSE	513
Jaufurally, A.	POLY	134	Jensen, P.K.	AGRO	54	Jia, X.	PMSE	380
Jaufurally, A.	POLY	347	Jensen, S.J.	AEI	59	Jia, X.	PMSE	384
Jauset, M.	AGFD	287	Jensen, S.J.	PHYS	368	Jia, X.	PMSE	436
Jauset, M.	AGFD	289	Jenson, L.J.	AGRO	104	Jia, X.	PMSE	519
Jauset, M.	ANYL	383	Jenson, L.J.	AGRO	209	Jia, X.	PMSE	521
Javed, S.	ORGN	125	Jentsch, A.K.	PMSE	399	Jia, X.	POLY	206
Javed, S.	ORGN	126	Jeon, B.	ENVR	302	Jia, X.	POLY	326
Javed, S.	ORGN	241	Jeon, B.	ENVR	303	Jia, Y.	COLL	521
Javed, U.	ORGN	174	Jeon, B.	ENVR	304	Jia, Z.	COMP	188
Javed, U.	ORGN	366	Jeon, B.	ENVR	571	Jialanella, G.	COLL	355
Javornik, U.	MEDI	409	Jeon, B.	ENVR	573	Jian, T.	ORGN	177
Jawad, K.	PHYS	327	Jeon, E.	PMSE	430	Jiang, .	MEDI	377
Jayaprakasha, G.	AGFD	157	Jeon, E.	POLY	368	Jiang, B.	ENVR	360
Jayarajan, P.	MEDI	168	Jeon, H.	CATL	190	Jiang, C.	ORGN	629
Jayarajan, P.	MEDI	169	Jeon, H.	CATL	195	Jiang, D.	ENFL	178
Jayarajan, P.	MEDI	170	Jeon, I.	POLY	409	Jiang, D.	ENFL	405
Jayaraman, A.	COMP	155	Jeon, I.	POLY	411	Jiang, D.	PHYS	292
Jayaraman, A.	COMP	67	Jeon, J.	ORGN	316	Jiang, G.	ENVR	767
Jayaraman, A.	PMSE	378	Jeon, K.	PHYS	375	Jiang, J.	ANYL	50
Jayarathna, D.R.	INOR	9	Jeon, S.	ORGN	138	Jiang, J.	CATL	301
Jayarathne, T.	PHYS	121	Jeon, S.	PMSE	400	Jiang, J.	CATL	331
Jayarathne, T.	PHYS	86	Jeon, W.	CATL	297	Jiang, J.	ENVR	124
Jayasundara, C.	ORGN	468	Jeon, Y.	ENVR	711	Jiang, J.	ENVR	141

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Jiang, J.	ENVR	488	Jin, S.	POLY	414	Johnson, C.	MEDI	174
Jiang, J.	ENVR	793	Jin, T.	AGFD	229	Johnson, C.A.	AEI	20
Jiang, J.	INOR	138	Jin, T.	AGFD	241	Johnson, C.A.	COLL	285
Jiang, J.	INOR	316	Jin, W.	AGFD	263	Johnson, C.E.	INOR	106
Jiang, J.	PHYS	181	Jin, W.	AGFD	88	Johnson, C.E.	INOR	29
Jiang, L.	AGFD	72	Jin, W.	ENFL	258	Johnson, C.R.	MEDI	118
Jiang, L.	ENFL	241	Jin, X.	ANYL	227	Johnson, D.	MEDI	384
Jiang, L.	ORGN	423	Jin, X.	MEDI	131	Johnson, D.D.	ENFL	435
Jiang, L.	ORGN	99	Jin, X.	ORGN	208	Johnson, D.K.	ENFL	199
Jiang, L.	PMSE	217	Jin, Y.	BIOL	241	Johnson, E.J.	INOR	693
Jiang, Q.	COMP	326	Jin, Y.	COMP	14	Johnson, G.	ANYL	228
Jiang, Q.	PMSE	510	Jin, Y.	ENFL	428	Johnson, G.	ENVR	282
Jiang, Q.	PMSE	657	Jin, Y.	PMSE	9	Johnson, G.T.	ORGN	702
Jiang, S.	AGRO	205	Jin, Z.	ENFL	425	Johnson, I.	PHYS	349
Jiang, S.	AGRO	211	Jin, Z.	ORGN	283	Johnson, J.	COLL	65
Jiang, T.	ENVR	318	Jindal, A.	PMSE	101	Johnson, J.	ENFL	263
Jiang, T.	INOR	533	Jindal, T.	AGRO	231	Johnson, J.	MEDI	377
Jiang, W.	COMP	334	Jindal, T.	AGRO	264	Johnson, J.	MEDI	89
Jiang, X.	AGFD	201	Jing, C.	ENVR	333	Johnson, J.A.	POLY	140
Jiang, X.	MEDI	284	Jing, C.	ENVR	334	Johnson, J.A.	POLY	197
Jiang, X.	PMSE	172	Jing, C.	ENVR	335	Johnson, J.A.	POLY	467
Jiang, Y.	AGFD	108	Jing, C.	ENVR	763	Johnson, J.A.	POLY	544
Jiang, Y.	AGFD	264	Jing, C.	POLY	313	Johnson, J.B.	ORGN	493
Jiang, Y.	AGFD	274	jing, G.	ENFL	13	Johnson, J.B.	ORGN	494
Jiang, Y.	AGFD	88	Jing, G.	ENFL	139	Johnson, J.B.	ORGN	495
Jiang, Y.	ANYL	71	Jing, H.	MEDI	192	Johnson, J.C.	ANYL	349
Jiang, Y.	COLL	466	Jing, M.	ANYL	315	Johnson, J.C.	PHYS	105
Jiang, Y.	ENFL	227	Jing, R.	ENVR	592	Johnson, J.S.	ORGN	59
Jiang, Y.	PMSE	13	Jing, R.	ENVR	647	Johnson, K.	CATL	103
Jiang, Z.	COLL	467	Jing, Y.	ENVR	753	Johnson, K.	COMP	21
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Jiao, F.	ENFL	108	Jishkariani, D.	COLL	214	Johnson, K.D.	MEDI	20
Jiao, J.	ENFL	308	Jishkariani, D.	INOR	293	Johnson, L.	AGRO	44
Jiao, J.	ENVR	429	Jishkariani, D.	INOR	335	Johnson, M.	CHED	255
Jiao, J.	ENVR	558	Jishkariani, D.	ORGN	7	Johnson, M.	CHED	270
Jiao, L.	CATL	220	Jishkariani, D.	POLY	344	Johnson, M.	MEDI	140
Jiao, X.	ENFL	215	Jishkariani, D.	POLY	345	Johnson, M.	WCC	12
Jiao, Y.	ENFL	74	Jitianu, A.	COLL	603	Johnson, M.D.	ORGN	270
Jiao, Y.	PHYS	40	Jitianu, A.	INOR	299	Johnson, N.	ENVR	283
Jiji, R.D.	ANYL	303	Jitianu, A.	PMSE	665	Johnson, N.	PHYS	205
Jiménez Pérez, V.	ORGN	676	Jitianu, M.	COLL	603	Johnson, N.M.	ENVR	284
Jimenez, A.	ORGN	147	Jitianu, M.	INOR	299	Johnson, N.M.	ENVR	642
Jimenez, J.	INOR	121	Jitianu, K.A.	CATL	288	Johnson, N.M.	ENVR	643
Jimenez, J.L.	PHYS	43	Jo, H.	BIOL	190	Johnson, P.	AGRO	259
Jimenez-Gonzalez, C.	I&EC	41	Jo, H.	BIOL	191	Johnson, Q.R.	COLL	68
Jimenez-Vergara, A.C.	PMSE	183	Jo, H.	BIOL	219	Johnson, Q.R.	ORGN	150
Jin Kim, Y.	CATL	311	Jo, I.	COLL	540	Johnson, Q.R.	PMSE	385
Jin, C.	COMP	254	Jo, J.	COLL	174	Johnson, R.	BIOL	197
Jin, F.	ENFL	161	Jo, J.	I&EC	12	Johnson, R.	CHED	168
Jin, F.	ENFL	2	Jo, J.	PMSE	401	Johnson, R.	CHED	169
Jin, F.	ENFL	7	Job, H.	CATL	56	Johnson, R.	CHED	186
Jin, G.	COLL	141	Jobic, S.	INOR	371	Johnson, R.	CHED	187
Jin, G.	COLL	52	Jockusch, S.	ORGN	252	Johnson, R.	CHED	189
Jin, J.	ORGN	108	Joda, H.A.	ANYL	94	Johnson, S.	AGFD	57
Jin, J.	ORGN	438	Joe, C.	ORGN	339	Johnson, S.	COMP	55
Jin, K.	POLY	187	Joe-Wong, C.M.	GEOC	13	Johnson, S.	MEDI	267
Jin, L.	COLL	437	Joe-Wong, C.M.	GEOC	57	Johnson, S.	MEDI	380
Jin, L.	PHYS	441	Jofat, D.	ENVR	712	Johnson, S.A.	INOR	334
Jin, L.	PHYS	447	Joffrin, A.M.	AGFD	214	Johnson, S.A.	INOR	75
Jin, R.	CATL	276	Joffrin, A.M.	ORGN	411	Johnson, T.	AGRO	288
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Jin, R.	PHYS	184	Johansson, M.J.	ORGN	391	Johnston, E.V.	CATL	334
Jin, R.	PHYS	185	John, C.	BIOL	142	Johnston, J.N.	ORGN	350
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Jin, R.	PHYS	294	Johns, A.	INOR	308	Johnston, K.A.	CHED	177
Jin, R.	PHYS	294	Johns, P.	COLL	417	Johnston, M.	COLL	91
Jin, R.	PHYS	344	Johns, R.W.	COLL	478	Johnston, M.	PHYS	527
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Jin, R.	PHYS	563	Johnson, A.	PMSE	655	Johnston-Peck, A.	CATL	57
Jin, S.	BIOL	73	Johnson, A.	ANYL	315	Johri, A.	PMSE	53
Jin, S.	ENFL	133	Johnson, A.T.	ENFL	360	Jolin, W.C.	ENVR	347
Jin, S.	ENFL	330	Johnson, A.T.	INOR	333	Jolly, L.	COMP	318
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Jones, B.P.	ORGN	624	Jorge, C.	BIOL	21	Jung, J.	POLY	171
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Jones, D.	MEDI	365	Jose, K.	AEI	60	Jung, S.	ORGN	356
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Jones, K.	INOR	651	Joshi-Imre, A.	POLY	591	Junker, M.	BIOL	170
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Jonnalagadda, S.C.	CHED	261	Julien, P.	CHED	18	Kagechika, H.	ORGN	453
Jonnalagadda, S.C.	MEDI	313	Jullian, C.	ORGN	526	Kahan, T.	PMSE	694
Jonnalagadda, S.C.	MEDI	369	Jun, J.V.	ORGN	451	Kahn, A.	INOR	86
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Joo, H.	PHYS	459	Jun, Y.	GEOC	61	Kaiser, R.L.	POLY	336
Joo, J.	ENFL	207	Jung, B.	PMSE	693	Kakkar, N.	BIOL	138
Joo, J.	ENFL	320	Jung, C.	ENVR	166	Kakuta, H.	MEDI	158
Joo, S.	ENVR	406	Jung, D.	PMSE	231	Kalantar, T.H.	ANYL	222
Joo, S.	ENVR	690	Jung, G.	COLL	237	Kalanyan, B.	ENFL	503
Joo, S.	ENVR	691	Jung, H.	AGFD	75	Kalasin, S.	COLL	565
Jordan, A.M.	MEDI	260	Jung, H.	ENVR	6	Kalberer, m.	PHYS	46
Jordan, A.M.	POLY	2	Jung, H.	GEOC	79	Kaldon, L.G.	ANYL	122
Jordan, D.	CHED	263	Jung, H.	PMSE	536	Kaldor, I.	MEDI	15
Jordan, E.J.	COMP	279	Jung, H.	PMSE	578	Kale, M.	CATL	149
Jordan, J.H.	ORGN	609	Jung, I.	COLL	368	Kaleuati, K.M.	CHED	27
Jordan, J.H.	ORGN	661	Jung, I.	ENFL	411	Kalgutkar, A.S.	MEDI	299
Jordan, J.H.	POLY	448	Jung, J.	AGRO	237	Kalinowski, S.	MEDI	18
Jordan, K.D.	PHYS	305	Jung, J.	ORGN	517	Kalish, I.	ENFL	503

Kallen, J.	MEDI	273	Kang, K.	ORGN	96	Karl, D.M.	ENVR	664
Kaller, M.R.	MEDI	388	Kang, L.	COLL	586	Karl, J.P.	AGFD	174
Kallman, N.J.	ORGN	560	Kang, M.	AGFD	68	Karlen, K.	ORGN	595
Kalnajs, L.	PHYS	88	Kang, M.	AGFD	75	Karmann, A.	ENVR	776
Kaloudis, V.	CHED	206	Kang, M.	AGRO	141	Karmegam, V.	POLY	10
Kalra, V.	ENFL	157	Kang, M.	PMSE	402	Karnes, M.	ORGN	529
Kalra, V.	ENFL	181	Kang, M.	PMSE	439	Karol, P.J.	CHED	56
Kalra, V.	ENFL	387	Kang, M.	PMSE	7	Karol, P.J.	ENVR	312
Kalyani, D.	ORGN	472	Kang, M.	POLY	306	Karp, J.M.	COLL	351
Kalyani, D.	ORGN	474	Kang, N.	COLL	248	Karpinski, J.M.	ORGN	173
Kalyani, D.	ORGN	476	Kang, N.	PMSE	403	Karsili, T.	PHYS	501
Kalyoncu, E.	AGFD	216	Kang, Q.	CATL	21	Karty, J.	BIOL	201
Kamada, A.	PHYS	468	Kang, S.	AGRO	20	Karunanayake, A.G.	AEI	19
kamasamudram, k.	CATL	127	Kang, S.	ENVR	391	Karunanayake, A.G.	ENVR	58
Kamat, P.V.	ENFL	129	Kang, T.	COLL	198	Karunarajne, D.	ENVR	734
Kamaura, M.	MEDI	386	Kang, Y.	INOR	623	Karunaweera, S.	COMP	124
Kamcev, J.	I&EC	28	Kang, Y.	PHYS	459	Karuturi, R.	MEDI	88
Kamdar, J.M.	INOR	389	Kang, Z.	ENVR	31	Kasahara, Y.	PMSE	535
Kamer, P.C.	ENVR	300	Kangawa, K.	MEDI	300	Kasai, S.	AGRO	163
Kamien, R.	PMSE	111	Kanji, M.	POLY	160	Kasavajhala, K.	COMP	358
Kamien, R.	POLY	181	Kanka, J.	COLL	490	Kaschowitz, M.	PMSE	642
Kamigaito, M.	POLY	145	Kannan, R.	INOR	265	Kasemo, B.	COLL	397
Kamigaito, M.	POLY	241	Kansupada, C.	INOR	645	Kaser, L.	PHYS	124
Kamigaito, M.	POLY	350	Kantak, A.	SCHB	1	Kashiwagi, T.	PMSE	251
Kamigaito, M.	POLY	394	Kanu, A.	ANYL	6	Kasi, R.	PMSE	119
Kaminski, M.	NUCL	61	Kanwal, F.	COLL	197	Kasi, R.	PMSE	431
Kaminski, N.E.	ENVR	464	Kao, C.	COMP	329	Kasibotla, A.	MEDI	313
Kaminsky, C.	INOR	238	Kao, L.	ENVR	797	Kasimova, M.	BIOL	184
Kamitakahara, H.	POLY	52	Kao, T.	PMSE	537	Kasko, A.M.	COLL	321
Kamiya, E.	BIOL	210	Kapelner, A.	ENVR	672	Kasko, A.M.	PMSE	516
Kammiyada, H.	POLY	395	Kapfunde, T.A.	INOR	30	Kaslaskar, V.	ENFL	461
Kamstra, R.	COMP	374	Kapilov-Buchman, K.	PMSE	69	Kassel, W.S.	INOR	447
Kan, Y.	INOR	364	Kapiti, G.	POLY	575	Kassel, W.S.	INOR	474
Kanaan, S.	COLL	9	Kaplan, J.	PMSE	52	Kassel, W.S.	INOR	478
Kanagy, C.J.	AGRO	45	Kaplan, P.T.	ORGN	566	Kassel, W.S.	INOR	498
Kanagy, L.K.	AGRO	45	Kapoor, T.	MEDI	217	Kassel, W.S.	ORGN	46
Kanai, Y.	COMP	183	Kapur, A.	COLL	1	Kassie, A.	INOR	133
Kanal, I.Y.	POLY	421	Kapur, A.	COLL	599	Kassie, A.	INOR	245
Kanal, I.Y.	POLY	541	Kar, S.	COMP	273	Kassie, F.	TOXI	81
Kanaoka, S.	POLY	299	Kar, S.	COMP	306	Kaster, S.	ORGN	114
Kanazawa, A.	POLY	299	Kar, S.S.	MEDI	47	Kastrinsky, D.	ORGN	117
Kanberoglu, E.	ORGN	121	Kara, H.	ORGN	552	Kasun, Z.A.	ORGN	300
Kande, P.	AGFD	118	Karabacak, T.	ENFL	472	Kasznel, A.J.	BIOL	22
Kandel, A.V.	INOR	434	Karabay, B.	POLY	371	Katana, A.	ORGN	206
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Kandpal, G.	MEDI	100	Karabencheva-Christova, T.	INOR	16	Kataoka, K.	POLY	278
Kandpal, G.	MEDI	95	Karabencheva-Christova, T.	INOR	17	Katara, G.K.	MEDI	332
Kandukuri, K.	MEDI	168	Karabencheva-Christova, T.	ORGN	42	Kath, J.	PHYS	256
Kandula, S.	MEDI	395	Karabencheva-Christova, T.	ORGN	549	Kathuria, .	PHYS	162
Kane, O.	CHED	410	Karadkhelkar, N.	MEDI	128	Kati, W.	MEDI	254
Kane, T.	MEDI	278	Karagöz, F.	COLL	58	Kati, W.	MEDI	286
Kaneda, K.	CATL	288	Karahan, O.	COLL	72	Katinas, J.	BIOL	50
Kaneko, K.	AGFD	102	Karakaya, I.	ORGN	296	Katircioglu, Z.	ENVR	649
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Kaneko, T.	POLY	89	Karan, N.	ENFL	207	Katiyar, V.	PMSE	100
Kaneko, T.	POLY	92	Karanfil, T.	ENVR	450	Katiyar, V.	PMSE	102
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Kang, D.	ENFL	461	Karatjas, A.G.	CHED	100	Katiyar, V.	PMSE	348
Kang, E.	BIOL	29	Karatjas, A.G.	CHED	101	Katiyar, V.	PMSE	596
Kang, E.	COLL	168	Karatjas, A.G.	CHED	422	Katiyar, V.	PMSE	644
Kang, E.	COLL	237	Karatjas, A.G.	CHED	99	Katiyar, V.	PMSE	645
Kang, E.	COLL	516	Karatum, O.	ENVR	168	Katiyar, V.	PMSE	646
Kang, E.	PMSE	661	Kareem, H.	CATL	209	Katiyar, V.	POLY	474
Kang, E.	POLY	422	Kareem, H.	CATL	210	Katiyar, V.	POLY	518
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Kang, H.	ORGN	156	Karim, A.	PMSE	601	Kato, D.	ORGN	206
Kang, H.	ORGN	185	Karim, A.	PMSE	669	Kato, D.	ORGN	439
Kang, H.	PHYS	365	Karim, A.	POLY	574	Kato, M.	CHED	175
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Kang, J.	INOR	659	Karkamkar, A.J.	ENFL	141	Katsura, H.	CHED	375
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Kaur, P.	ENVR	688	Keller, T.C.	COLL	511	Kerrigan, N.	ORGN	114
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Kawaguchi, M.	MEDI	330	Kelly, C.B.	ORGN	469	Kettleborough, C.	MEDI	374
Kawahara, K.	AGFD	2	Kelly, C.B.	ORGN	486	Kettleborough, C.	MEDI	375
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Kazmierczak, N.	CINF	33	Kenesei, P.	NUCL	26	Khalizov, A.	ENVR	628
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Keaney, E.P.	ORGN	212	Kennedy, A.J.	ENVR	405	Khan, F.	AGRO	9
Kearney, K.	INOR	511	Kennedy, C.	ORGN	243	Khan, J.	MEDI	162
Kearney, P.C.	ORGN	330	Kennedy, D.	ENVR	671	Khan, J.	MEDI	265
Kearney, P.C.	ORGN	699	Kennedy, D.	INOR	148	Khan, J.	MEDI	350
Kearns, F.L.	COMP	127	Kennedy, D.	PHYS	471	Khan, S.	ANYL	143
Kearns, F.L.	COMP	177	Kennedy, D.J.	ANYL	74	Khan, S.	INOR	572
Kearns, F.L.	COMP	276	Kennedy, G.	CATL	126	Khan, S.	PHYS	451
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Kearns, K.	COMP	154	Kennedy, J.	ENVR	636	Khan, W.	MEDI	112
Keating, C.D.	COLL	201	Kennedy, J.L.	CHED	331	Khang, H.	ANYL	83
Keating, C.D.	COLL	475	kennedy, r.	ANYL	184	Khanijo, I.	AGRO	327
Keating, C.D.	COLL	586	Kennedy, R.M.	CATL	180	Kharas, G.B.	POLY	396
Keating, C.D.	COLL	594	Kennedy, R.M.	CATL	329	Khare, K.S.	PMSE	674
Keating, C.D.	PHYS	333	Kennedy, S.M.	CHAS	10	Kharel, Y.	MEDI	7
Keaton, K.	ORGN	207	Kennedy, S.M.	CHAS	11	Khariwala, S.S.	TOXI	70
Keavney, D.	INOR	583	Kennedy, S.M.	CHED	200	Kharlampieva, E.P.	COLL	414
Kebede, N.	ORGN	193	Kensil, K.R.	AGFD	62	Kharlampieva, E.P.	COLL	450
Keding, S.J.	MEDI	180	Kensil, K.R.	AGFD	63	Kharlampieva, E.P.	COLL	514
Keding, S.J.	MEDI	277	Kenttamaa, H.I.	ANYL	15	Kharlampieva, E.P.	PMSE	355
Kedziora, G.S.	COMP	397	Kenttamaa, H.I.	ENFL	150	Kharlampieva, E.P.	PMSE	468
Keefe, M.H.	POLY	374	Kenttamaa, H.I.	ORGN	50	Kharlampieva, E.P.	PMSE	562
Keefe, M.H.	YCC	10	Keogh, M.	COLL	308	Kharlampieva, E.P.	POLY	144

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Khayat, M.T.	CHED	11	Kilmer, M.D.	COLL	74	Kim, J.	ANYL	266
Khayat, M.T.	MEDI	138	Kim, A.	AGRO	311	Kim, J.	ANYL	308
Khayat, M.T.	MEDI	303	Kim, A.	INOR	163	Kim, J.	CATL	297
Khayat, M.T.	MEDI	320	Kim, A.	INOR	164	Kim, J.	COLL	169
Khayyo, S.N.	CHED	294	Kim, B.	ANYL	69	Kim, J.	COLL	405
Khayyo, V.	CHED	294	Kim, B.	CHED	271	Kim, J.	COLL	478
Khemthong, B.	CATL	25	Kim, B.	COLL	344	Kim, J.	COLL	530
Khemthong, B.	CATL	58	Kim, B.	ENFL	437	Kim, J.	COLL	557
Kheradia, N.	AGFD	54	Kim, B.	ENVR	420	Kim, J.	COMP	254
Khodabandeh, A.	PMSE	72	Kim, B.	ENVR	469	Kim, J.	ENFL	148
Khokhar, M.	INOR	40	Kim, B.	ENVR	709	Kim, J.	ENFL	284
Kholmicheva, N.N.	COLL	167	Kim, B.	ORGN	138	Kim, J.	ENVR	229
Kholodovych, V.	COLL	122	Kim, B.	PMSE	231	Kim, J.	ENVR	230
Khosa, R.	MEDI	338	Kim, B.	PMSE	391	Kim, J.	ENVR	234
Khoshi, M.	ENFL	260	Kim, C.	AGFD	86	Kim, J.	ENVR	366
Khosrowabadi, J.	INOR	276	Kim, C.	BIOL	190	Kim, J.	ENVR	484
Khotavivattana, T.	ORGN	225	Kim, C.	BIOL	191	Kim, J.	INOR	151
Khoury, S.J.	CHED	374	Kim, C.	BIOL	219	Kim, J.	INOR	24
Khouz, M.	ENFL	231	Kim, C.	CATL	159	Kim, J.	MEDI	127
Khun, H.	POLY	367	Kim, C.	ENVR	421	Kim, J.	ORGN	716
Khutoryanskiy, V.V.	POLY	274	Kim, C.	POLY	368	Kim, J.	PHYS	24
Khuu, T.	INOR	175	Kim, C.C.	ORGN	172	Kim, J.	PHYS	459
Khvorova, A.	MEDI	223	Kim, C.W.	PHYS	148	Kim, J.	PMSE	403
Kiani, M.	ENVR	709	Kim, D.	AEI	45	Kim, J.	POLY	173
Kibata, H.	POLY	433	Kim, D.	COLL	259	Kim, J.	POLY	346
Kick, E.K.	MEDI	265	Kim, D.	COMP	229	Kim, J.	POLY	445
Kick, E.K.	MEDI	350	Kim, D.	COMP	232	Kim, J.	POLY	536
Kickhoefer, V.	ENVR	169	Kim, D.	ENFL	207	Kim, K.	ANYL	22
Kidd, R.	CINF	38	Kim, D.	ENFL	320	Kim, K.	BIOL	96
Kidder, M.	ENFL	120	Kim, D.	ENFL	442	Kim, K.	COLL	238
Kidder, M.	ENFL	172	Kim, D.	ENVR	458	Kim, K.	ENFL	496
Kiddle, J.J.	CHED	14	Kim, D.	ENVR	689	Kim, K.	MEDI	109
Kiddle, J.J.	ORGN	586	Kim, D.	ENVR	725	Kim, K.	MEDI	283
Kiddle, J.J.	ORGN	587	Kim, D.	INOR	465	Kim, K.	MEDI	321
Kidwell, N.M.	PHYS	454	Kim, D.	INOR	659	Kim, K.	MEDI	77
Kiefer, J.R.	MEDI	25	Kim, D.	ORGN	138	Kim, K.	PMSE	377
Kiefer, P.	PHYS	518	Kim, D.	ORGN	616	Kim, K.	POLY	27
Kiefer, S.	MEDI	395	Kim, D.	PMSE	402	Kim, K.S.	AGRO	62
Kieltyka, R.	POLY	46	Kim, D.H.	CATL	159	Kim, K.S.	CHED	431
Kiem, H.	AGFD	217	Kim, D.H.	CATL	297	Kim, M.	COLL	510
Kier, B.	COMP	218	Kim, E.	AGFD	38	Kim, M.	COMP	409
Kiernan, B.	AGRO	313	Kim, E.	AGRO	237	Kim, M.	ENVR	460
Kiernicki, J.J.	INOR	334	Kim, E.	ANYL	80	Kim, M.	ENVR	593
Kiesewetter, E.	POLY	381	Kim, E.	INOR	403	Kim, M.	ENVR	656
Kiesewetter, M.K.	POLY	378	Kim, E.	MEDI	127	Kim, M.	ENVR	728
Kiesewetter, M.K.	POLY	379	Kim, E.	PMSE	391	Kim, M.	PHYS	127
Kiesewetter, M.K.	POLY	381	Kim, E.	PMSE	407	Kim, M.	PHYS	321
Kiesewetter, M.K.	POLY	413	Kim, G.	CATL	147	Kim, M.	PHYS	523
Kiesling, L.	PRES	25	Kim, G.	POLY	414	Kim, N.	BIOL	223
Kiessling, L.L.	MPPG	5	Kim, G.	POLY	562	Kim, N.	BIOL	96
Kiessling, L.L.	POLY	283	Kim, H.	AGFD	159	Kim, N.	ENVR	94
Kiffe, M.	MEDI	250	Kim, H.	AGFD	33	Kim, P.	COLL	234
Kihara, N.	PMSE	535	Kim, H.	AGFD	75	Kim, R.	MEDI	346
Kiick, K.L.	COLL	323	Kim, H.	CHED	162	Kim, S.	AGFD	130
Kiick, K.L.	PMSE	15	Kim, H.	CHED	213	Kim, S.	AGFD	33
Kiick, K.L.	PMSE	302	Kim, H.	COLL	542	Kim, S.	AGRO	63
Kiick, K.L.	PMSE	384	Kim, H.	COLL	585	Kim, S.	ANYL	325
Kiick, K.L.	PMSE	436	Kim, H.	ENFL	295	Kim, S.	ANYL	371
Kiick, K.L.	PMSE	504	Kim, H.	ENFL	389	Kim, S.	BIOL	189
Kiick, K.L.	PMSE	518	Kim, H.	ENVR	366	Kim, S.	BIOL	263
Kiick, K.L.	PMSE	573	Kim, H.	ENVR	460	Kim, S.	BIOL	36
Kijak, P.J.	AGRO	34	Kim, H.	ENVR	460	Kim, S.	CATL	136
Kikuchi, J.	POLY	433	Kim, H.	ENVR	728	Kim, S.	CATL	138
Kikuchi, R.	PMSE	408	Kim, H.	GEOC	95	Kim, S.	CHED	185
Kikuchi, R.	PMSE	535	Kim, H.	INOR	522	Kim, S.	CINF	1
Kilbey, M.	POLY	500	Kim, H.	INOR	79	Kim, S.	CINF	47
Kilbey, M.	POLY	570	Kim, H.	MEDI	101	Kim, S.	CINF	93
Kilburg, D.	COMP	272	Kim, H.	ORGN	73	Kim, S.	COLL	164
Kilchrist, K.	COLL	573	Kim, H.	PHYS	498	Kim, S.	COLL	165
Kilin, D.	AEI	59	Kim, H.	PHYS	539	Kim, S.	COLL	168
Kilin, D.	COMP	354	Kim, H.	PHYS	90	Kim, S.	COLL	174
Kilin, D.	COMP	355	Kim, H.	POLY	442	Kim, S.	COLL	192
Kilin, D.	PHYS	202	Kim, H.	POLY	571	Kim, S.	COLL	239
Kilin, D.	PHYS	368	Kim, I.	CATL	147	Kim, S.	COLL	259
Kilin, D.	PHYS	398	Kim, I.	INOR	370	Kim, S.	ENVR	234
Kilin, D.	PHYS	400	Kim, J.	AGFD	38	Kim, S.	ENVR	495
Kilin, D.	PHYS	403	Kim, J.	AGFD	68	Kim, S.	INOR	162
Kilin, D.	PHYS	428	Kim, J.	AGFD	75	Kim, S.	INOR	571



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Kim, S.	MEDI	105	Kiprof, P.	INOR	128	Klein, M.L.	COMP	275
Kim, S.	MEDI	276	Kipsang, R.	CHED	196	Klein, M.L.	COMP	297
Kim, S.	MEDI	377	Kipsang, R.	CHED	369	Klein, M.L.	COMP	348
Kim, S.	MEDI	396	Kirar, S.	COLL	469	Klein, M.L.	COMP	401
Kim, S.	ORGN	465	Kiratitanavit, W.	PMSE	532	Klein, M.L.	ORGN	515
Kim, S.	ORGN	466	Kiratitanavit, W.	PMSE	587	Klein, M.L.	PMSE	678
Kim, S.	ORGN	471	Kirberger, S.E.	MEDI	258	Klein, M.L.	POLY	212
Kim, S.	PMSE	457	Kirby, C.J.	INOR	152	Klein, M.L.	POLY	285
Kim, S.	POLY	28	Kirby, C.J.	INOR	57	Klein, M.L.	POLY	330
Kim, S.D.	ORGN	138	Kirby, D.	COLL	594	Klein, M.L.	POLY	344
Kim, S.Y.	MEDI	117	Kirby, J.F.	CHED	420	Klein, M.L.	POLY	345
Kim, T.	AGRO	237	Kirby, J.F.	INOR	650	Klein, M.T.	ENFL	169
Kim, T.	CATL	3	Kirby, M.	MEDI	18	Klein, U.	HIST	34
Kim, T.	CATL	39	Kirby, M.	MEDI	267	Kleinberg, R.	PRES	18
Kim, T.	ENVR	504	Kirby, M.	MEDI	380	Kleinlein, C.	INOR	693
Kim, T.	ENVR	656	Kirchdessner, T.	MEDI	89	Kleinoder, T.	TOXI	50
Kim, T.	ORGN	160	Kirchhoff, J.R.	ANYL	114	Kleinová, A.	POLY	225
Kim, T.	PMSE	407	Kirchhoff, J.R.	ANYL	378	Kleinstreuer, N.	AGRO	346
Kim, T.D.	CHED	196	Kirchhoff, M.M.	MPPG	17	Kleist, E.	PHYS	465
Kim, T.D.	CHED	369	Kirchner, T.	MEDI	384	Klemba, M.	MEDI	358
Kim, W.	ENFL	209	Kireev, D.	COMP	370	Klemm, B.	BIOL	14
Kim, W.	ORGN	713	Kirkegaard, M.	NUCL	24	Klimavicz, J.S.	AGRO	159
Kim, W.	ORGN	759	Kirkpatrick, A.K.	ORGN	256	Klimecki, W.	TOXI	34
Kim, W.	POLY	441	Kirkpatrick, R.J.	GEOC	9	Klimova, A.	BIOL	165
Kim, Y.	AGFD	105	Kirmaier, C.R.	ORGN	185	Kline, D.	PMSE	469
Kim, Y.	AGFD	31	Kirmaier, C.R.	PHYS	365	Kline, J.	ENVR	51
Kim, Y.	ANYL	82	Kirpes, R.	PHYS	87	Klingsporn, J.M.	INOR	569
Kim, Y.	BIOL	223	Kirshenbaum, K.	POLY	24	Klinkenberg, M.	GEOC	65
Kim, Y.	BIOL	256	Kiselev, E.	MEDI	103	Klinman, J.	BIOL	12
Kim, Y.	BIOL	256	Kisley, L.	AEI	11	Kloer, D.	AGRO	257
Kim, Y.	BIOL	29	Kisley, L.	PHYS	103	Klos, J.	COMP	409
Kim, Y.	BIOL	96	Kislitsyn, D.A.	PHYS	520	Klosterman, L.	PMSE	158
Kim, Y.	BIOL	96	Kiss, A.M.	GEOC	13	Klosterman, L.	PMSE	522
Kim, Y.	COMP	280	Kissai, M.	INOR	10	Klosterman, L.	PMSE	577
Kim, Y.	INOR	162	Kisslinger, K.	ENVR	565	Klosterman, L.	POLY	558
Kim, Y.	INOR	8	Kisslinger, K.	PMSE	601	Kloxin, A.M.	COLL	512
Kim, Y.	INOR	80	Kistler, K.A.	TOXI	69	Kloxin, C.J.	PMSE	27
Kim, Y.	MEDI	106	Kita, C.	ANYL	141	Kloxin, C.J.	PMSE	504
Kim, Y.	ORGN	727	Kita, C.	ANYL	297	Kloxin, C.J.	PMSE	592
Kim, Y.	PHYS	210	Kita, M.	INOR	224	Kloxin, C.J.	POLY	186
Kim, Y.	PMSE	338	Kita, M.	INOR	326	Kloxin, C.J.	POLY	373
Kim, Y.	PMSE	400	Kitazaki, T.	MEDI	386	Kloxin, C.J.	POLY	508
Kim, Y.	PMSE	484	Kitt, J.P.	ANYL	67	Klug, D.	MEDI	240
Kim, Y.	PMSE	522	Kittilstved, K.R.	INOR	369	Klundt, D.J.	NUCL	18
Kim, Y.	PMSE	577	Kiwfo, K.	ANYL	304	Klymchenko, A.	ORGN	596
Kim, Y.	PMSE	666	Kiwfo, K.	CHED	16	Knafels, J.	MEDI	271
Kim, Y.	POLY	414	Kizewski, A.	COLL	143	Knap, J.	COMP	412
Kimber, M.	AGRO	160	Kizjakina, K.	BIOL	143	Knapp, M.	BIOL	198
Kimber, M.	AGRO	76	Kjellerup, B.V.	ENVR	245	Knapp, M.	COLL	224
Kimerling, L.	PMSE	365	Kjellerup, B.V.	ENVR	328	Knapp, M.	ORGN	208
Kimerling, L.	PMSE	514	Kjellerup, B.V.	ENVR	592	Knapp, M.	ORGN	212
Kimmins, S.	PMSE	184	Kjellerup, B.V.	ENVR	647	Knappe, D.	COLL	431
Kimmins, S.	POLY	390	Kjellerup, B.V.	ENVR	745	Knappe, D.	ENVR	152
Kimura, K.	MEDI	330	Klampfer, L.	COLL	514	Knappe, D.	ENVR	44
Kinarivala, N.	MEDI	387	Klapars, A.	ORGN	297	Knappenberger, E.	CHED	84
Kinchla, A.	AGFD	41	Klapars, A.	ORGN	772	Knauer, K.M.	POLY	412
Kinchla, A.	AGFD	45	Klaper, R.	COLL	264	Knauer, K.M.	POLY	497
King, A.	ORGN	215	Klaper, R.	ENVR	731	Knauer, K.M.	POLY	559
King, A.W.	INOR	330	Klaper, R.	TOXI	42	Knaut, R.R.	INOR	237
King, D.B.	CHED	395	Klapper, M.	COLL	412	Knaut, R.R.	INOR	452
King, D.B.	CHED	409	Klapper, M.	COLL	415	Knaut, V.C.	AGFD	219
King, E.	AGFD	183	Klapper, M.	COLL	58	Knauss, D.M.	PMSE	285
King, J.R.	AEI	6	Klapper, M.	COLL	73	Knecht, M.R.	ENVR	406
King, J.R.	AGFD	215	Klarich, K.L.	AGRO	94	Kneebone, J.L.	INOR	605
King, M.E.	COLL	236	Klaunig, J.E.	AGRO	348	Kneipp, J.	COLL	23
Kinghorn, A.	AGFD	256	Klebe, G.	MEDI	26	Knemeyer, I.	MEDI	346
Kinghorn, A.D.	AGFD	53	Klee, M.S.	ANYL	300	Knewton, K.E.	MEDI	241
Kingsbury, R.	ENVR	506	Klees, L.	ORGN	534	Knight, A.	AEI	39
Kingsbury, R.	ENVR	508	Klees, L.	ORGN	550	Knight, A.	PMSE	205
Kingston, C.	ORGN	111	Kleespies, S.	INOR	405	Knight, A.B.	FLUO	9
Kingston, D.G.	MEDI	370	Kleiman, V.D.	AEI	59	Knight, D.	CATL	200
Kinlen, P.J.	PMSE	338	Klein, V.D.	PRES	31	Knight, D.	COLL	175
Kinlen, P.J.	PMSE	484	Klein, D.	ORGN	7	Knight, D.	ENVR	496
Kintz, H.	CHED	211	Klein, D.J.	MEDI	371	Knight, D.	INOR	213
Kinyua, M.	ENFL	8	Klein, H.F.	MEDI	37	Knight, K.	INOR	53
Kinzel, B.	MEDI	262	Klein, L.C.	PMSE	665	Knight, K.	NUCL	17
Kinzie, C.R.	ORGN	162	Klein, M.L.	BIOL	184	Knob, R.	ANYL	314
Kioupakis, E.	INOR	376	Klein, M.L.	CATL	21	Knoch, F.	COLL	240
Kippelen, B.	PMSE	275	Klein, M.L.	COLL	543	Knoester, J.	PHYS	201

Knot, C.	INOR	493	Koh, S.	BIOL	212	Koo, B.	POLY	405
Knope, K.	INOR	435	Kohane, D.S.	MPPG	6	Koo, J.	COLL	195
Knope, K.	INOR	567	Kohler, J.	MEDI	227	Koo, Y.	PMSE	98
Knope, K.E.	INOR	329	Kohli, A.H.	GEOC	13	Koob, B.	ENFL	374
Knope, K.E.	INOR	62	Kohli, R.M.	BIOL	141	Koob, J.	INOR	165
Knope, K.E.	INOR	63	Kohli, R.M.	PHYS	457	Koodali, R.T.	ENFL	34
Knop-Gericke, A.	CATL	41	Kohlstedt, K.L.	WCC	4	Koodali, R.T.	PHYS	398
Knopper, L.	AGRO	126	Kohn, E.M.	BIOL	30	Kool, E.T.	ORGN	5
Knorr, D.B.	COLL	202	Kohn, J.	COMP	286	Koole, M.	FLUO	19
Knorr, D.B.	COLL	95	Kohn, J.B.	PMSE	182	Koo-McCoy, S.	MEDI	227
Knott, K.	BIOL	79	Kohn, J.B.	PMSE	329	Koop, T.	ENVR	154
Knouse, K.W.	BIOL	34	Koizumi, K.	ENVR	664	Kopach, M.E.	I&EC	5
Knouse, K.W.	ORGN	162	Koizumi, K.	GEOC	76	Kopcho, L.M.	MEDI	18
Knouse, K.W.	ORGN	303	Koizumi, Y.	ENFL	87	Kopcho, L.M.	MEDI	265
Knowles, A.	BIOL	92	Kojio, K.	PMSE	123	Kopcho, L.M.	MEDI	267
Knowlton, E.	PMSE	528	Kojio, K.	PMSE	634	Kopcho, L.M.	MEDI	350
Knowlton, K.	ENVR	788	Kokai-Kun, D.	COMP	29	Kopcho, L.M.	MEDI	380
Knox, C.K.	COMP	386	Kokel, D.	COMP	137	Kopczynski, C.C.	MEDI	45
Knox, C.K.	COMP	387	Kokkonda, P.	ORGN	304	Kopecky, D.J.	MEDI	266
Knueppel, D.	AGRO	287	Kolanos, R.	AGFD	102	Kopelman, R.	COLL	85
Ko, F.	ANYL	70	Kolarov, F.	COMP	92	Koper, C.	AGRO	79
Ko, F.	ENFL	237	Kolb, C.E.	ENVR	17	Koplit, B.	PMSE	383
Ko, F.	I&EC	13	Kolb, C.E.	PHYS	222	Koppisch, A.T.	BIOL	105
Ko, F.	I&EC	44	Kolb, F.	MEDI	262	Koradin, C.	AGRO	74
Ko, F.	I&EC	47	Kole, M.	ANYL	365	Korakavi, N.	ORGN	365
Ko, F.	PMSE	608	Kolenski, A.	COLL	247	Korc, M.	ANYL	75
Ko, H.	ORGN	395	Kolesnichenko, I.	ORGN	426	Kordes, M.	AGRO	74
Ko, M.	ORGN	141	Koleti, A.	CINF	51	Korendovych, I.	BIOL	104
Ko, Y.	BIOL	256	Koleva, B.	TOXI	60	Korendovych, I.	BIOL	57
Koback, M.	POLY	168	Kolewicz, K.	COLL	565	Korkmaz Yavuz, S.	CHED	109
Kobayakawa, T.	ORGN	536	Koley, A.	INOR	571	Korley, L.	COLL	65
Kobayashi, H.	BIOL	119	Kolin, D.A.	ORGN	100	Korley, L.	PMSE	424
Kobayashi, H.	CATL	110	Kolling, D.	CHED	188	Korley, L.	POLY	2
Kobayashi, H.	COLL	63	Kolmar, S.	INOR	439	Korlipara, V.L.	MEDI	305
Kobayashi, S.	PMSE	432	Kolocouris, A.	COMP	92	Korlipara, V.L.	MEDI	53
Kobayashi, T.	MEDI	158	Kolodziej, E.P.	ENVR	266	Korlipara, V.L.	MEDI	59
Kobe, .	MEDI	364	Kolomeisky, A.	PHYS	395	Kornecook, T.	MEDI	280
Kobe, M.	MEDI	357	Kolopajlo, L.H.	ENVR	311	Kornecook, T.	MEDI	388
Kober, E.M.	INOR	262	Kolopajlo, L.H.	ENVR	378	Körner, C.	ORGN	137
Koberstein, J.T.	POLY	486	Kolpak, A.M.	CATL	249	Kornev, K.	PMSE	35
kobierski, M.E.	I&EC	5	Kolpin, D.W.	AGRO	133	Kornev, K.	PMSE	466
Kocen, A.	ORGN	714	Komamura, T.	PMSE	135	Kornfield, J.A.	POLY	346
Kocevska, S.	PHYS	171	Komamura, T.	PMSE	408	Kornfield, J.A.	POLY	536
Kocevski, V.	PHYS	520	Komber, H.	POLY	174	Kornienko, N.	ENFL	164
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Kochumalayil Jose, J.	PMSE	146	Kondakow, M.	ENVR	524	Korpany, K.V.	INOR	78
Kochuveedu, S.	ENVR	689	Kondaveeti, S.K.	INOR	185	Korshin, G.	ENVR	457
Kocun, M.	PMSE	631	Kondaveeti, S.K.	INOR	227	Korshin, G.	ENVR	516
Koda, S.	ENFL	297	Kondengaden, M.	MEDI	80	Korshin, G.	ENVR	520
Kodadek, T.J.	ORGN	368	Kondo, N.	ORGN	706	Korshin, G.	ENVR	769
Kodali, G.	PHYS	474	Koneru, P.	MEDI	357	Korter, T.M.	PHYS	408
Koeh, P.K.	ENFL	141	Koneru, P.	MEDI	364	Korter, T.M.	PHYS	460
Koeh, P.K.	ENFL	194	Kong, C.	ORGN	107	Korter, T.M.	PHYS	461
Koeh, P.K.	ENFL	469	kong, c.	ORGN	281	Kosakowska, K.A.	POLY	121
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Koehle, M.	I&EC	34	Kong, L.	CATL	69	Kosakowska, K.A.	POLY	391
Koehler, K.	ENVR	283	Kong, L.	ENFL	381	Kosakowska, K.A.	POLY	473
Koehler, K.	ENVR	284	Kong, L.	ENFL	420	Kosanovich, A.J.	INOR	112
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Koehler, M.	MEDI	25	Kong, X.	ENVR	124	Kosciuszek, N.	CHED	272
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Koenig, L.	ORGN	456	Koniges, U.	COLL	135	Koss, A.	PHYS	122
Koenig, S.G.	ORGN	435	Konishcheva, E.	POLY	281	Kossmann, B.	COMP	286
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Koenig, T.	PHYS	41	Konkolewicz, D.	PMSE	64	Kosswattaarachchi, M.A.	INOR	655
Koenigs, R.M.	ORGN	106	Konkolewicz, D.	POLY	248	Kostenbader, K.	COMP	253
Koenigs, R.M.	ORGN	286	Konopka, M.	BIOL	255	Koster Van Groos, P.G.	ENVR	723
Koerner, H.	PMSE	160	Konopka, M.	PHYS	535	Koster, J.	PHYS	201
Koes, D.	COMP	181	Konrad, W.	POLY	547	Kostetsky, P.	CATL	116
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Koga, R.	MEDI	289	Konstantinovskiy, D.	PHYS	481	Kostich, W.	MEDI	395
Koga, R.	MEDI	362	Konstantinovskiy, D.	PHYS	545	Kostich, W.	ORGN	39
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Kottisch, V.	PMSE	284	Krempner, C.	INOR	349	Krzesinki, B.J.	INOR	414
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Kouba, K.	AGRO	178	Krems, R.	PHYS	38	Krzyaniak, M.D.	INOR	251
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Kovacs, L.	PMSE	117	Krieger, K.	AGRO	44	Kuang, R.	MEDI	349
Kovacs, P.R.	AGRO	195	Krikorian, A.	MEDI	346	Kuba, A.G.	PMSE	692
Koval, A.	ORGN	162	Krikorian, M.	CHED	60	Kubasik, M.A.	CHED	309
Koval, A.	ORGN	167	Krilov, G.	COMP	402	Kubasik, M.A.	CHED	310
Kovaliov, M.	MEDI	62	Krische, M.J.	ORGN	300	Kubasik, M.A.	CHED	311
Kovaliov, M.	MEDI	63	Krische, M.J.	ORGN	308	Kubiak, C.P.	INOR	54
Kovaliov, M.	MEDI	65	Krische, M.J.	ORGN	343	Kubiak, R.W.	ORGN	116
Kovarik, L.	CATL	47	Krische, M.J.	ORGN	637	Kubicki, J.D.	CHED	329
Kovarik, M.L.	ANYL	288	Krische, M.J.	ORGN	643	Kubicki, J.D.	COLL	336
Kovarik, M.L.	CHED	158	Krishnamoorthy, S.	TOXI	82	Kubicki, J.D.	GEOC	18
Kovarik, M.L.	CHED	159	Krishnamoorthy, S.	ORGN	344	Kubicki, J.D.	GEOC	3
Kovnir, K.	INOR	70	Krishnamurthy, A.	PHYS	320	Kubicki, J.D.	GEOC	49
Kovtyukhova, N.	INOR	290	Krishnamurthy, A.	PHYS	435	Kubicki, J.D.	GEOC	56
Kowalczyk, M.	INOR	211	Krishnamurthy, R.	ORGN	284	Kubik, M.	PMSE	320
Kowaleff, M.	COLL	603	Krishnan, M.	PMSE	136	Kubilay, S.	ENVR	617
Kowalewski, T.	PMSE	321	Krishnan, V.V.	ENFL	9	Kubilay, S.	ENVR	618
Kowalske, M.G.	CHED	135	Krist, D.T.	BIOL	121	Kubo, I.	AGFD	10
Kowalske, M.G.	CHED	14	Kristensen, J.L.	ORGN	683	Kubo, I.	BIOL	232
Kowalski, J.A.	AGRO	115	Kristoffersen, H.H.	ENFL	400	Kubo, O.	MEDI	386
Kowalski, J.A.	AGRO	222	Kristufek, S.L.	POLY	190	Kubo, T.	CHED	347
Koyack, M.J.	MEDI	312	Kriwacki, R.	PHYS	334	Kubota, L.T.	ANYL	58
Koyuncu, I.	COLL	72	Krizan, J.W.	INOR	560	Kubow, C.	CHED	222
Koza, M.B.	CHAS	15	Krizan, J.W.	INOR	563	Kubu, P.	CHAS	53
Kozak, C.	COLL	35	Kroenlein, K.	I&EC	11	Kucharski, T.J.	INOR	40
Koziej, D.	PMSE	651	Kroenlein, K.	I&EC	7	Kuchkina, N.	COLL	208
Kozikowski, A.P.	MEDI	144	Kroetsch, D.	AGRO	9	Kuchnicki, T.	AGRO	9
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Kozloski, R.	INOR	670	Krogh-Jespersen, K.	INOR	552	Kuda-Wedagedara, A.N.	BIOL	206
Kozlovskaya, V.A.	COLL	414	Krohn, M.	PMSE	161	Kuebler, S.M.	CHED	39
Kozlovskaya, V.A.	COLL	450	Kroll, J.A.	PHYS	332	Kuebler, S.M.	PHYS	525
Kozlovskaya, V.A.	COLL	514	Kroll, J.H.	ENVR	17	Kuech, T.	COLL	297
Kozlovskaya, V.A.	PMSE	355	Kroll, J.H.	PHYS	222	Kuech, T.	COLL	394
Kozlovskaya, V.A.	PMSE	468	Krolski, M.E.	AGRO	318	Kuech, T.	COLL	453
Kozlovskaya, V.A.	POLY	224	Krone, D.	CHAS	40	Kuech, T.	COLL	456
Kozlowski, J.A.	MEDI	276	Kronek, J.	POLY	225	Kuenemann, M.A.	COMP	268
Kozlowski, J.A.	MEDI	346	Kroneková, Z.	POLY	225	Kuenemann, M.A.	COMP	371
Kozlowski, M.	ORGN	124	Kronik, L.	ENFL	418	Kuesel, K.	COLL	285
Kozlowski, M.	ORGN	156	Kronik, L.	INOR	85	Kuespert, D.R.	CHAS	33
Kozlowski, M.	ORGN	179	Kronik, L.	PHYS	506	Kufareva, I.	COMP	91
Kozuka, K.	MEDI	227	Kronquist, R.	ANYL	4	Kugelman-Lester, C.	CHED	231
Krabbe, S.W.	ORGN	722	Kropf, A.J.	ENFL	267	Kuhn, A.	COMP	21
Kraemer, R.H.	PMSE	530	Kroupa, D.	INOR	86	Kuiken, T.	ENVR	201
Kraft, D.J.	PMSE	140	Krska, S.W.	MEDI	14	Kuipers, A.	INOR	175
Kraft, G.M.	PMSE	152	Krug, J.	AEI	12	Kukkadapu, R.K.	CATL	129
Kraft, L.J.	ORGN	96	Kruga, M.	ENVR	657	Kukoyi, A.A.	INOR	114
Kraft, M.L.	PHYS	142	Kruger, A.A.	ENVR	458	Kukoyi, A.A.	INOR	437
Krajewski, L.C.	ENFL	468	Kruger, A.A.	ENVR	725	Kuksenok, O.	PMSE	563
Krajnc, P.	PMSE	67	Kruger, B.P.	PHYS	371	Kul, A.	ENVR	618
Kramer, J.	AGRO	44	Kruichak, J.N.	GEOC	14	Kularatne, R.	POLY	16
Kramer, J.	COMP	154	Kruk, M.	COLL	180	Kularatne, R.N.	CATL	304
Krämer, M.	ORGN	115	Krumina, L.	ENVR	72	Kularatne, R.N.	POLY	35
Kramer, T.T.	ORGN	270	Krumins, V.	ENVR	325	Kularatne, R.N.	POLY	553
Krantz, B.A.	ANYL	221	Krumm, C.	POLY	457	Kulathila, R.	ORGN	559
Krasley, A.	ORGN	229	Krummel, A.T.	PHYS	366	Kulatilleke, C.P.	INOR	127
Krasnomowitz, J.	ANYL	20	Kruper, W.J.	INOR	311	Kulik, H.J.	CATL	133
Krasnoperov, L.N.	PHYS	171	Krupinski, J.	MEDI	18	Kulik, H.J.	ENFL	403
Krasovskiy, A.L.	INOR	311	Kruse, A.	COLL	210	Kulikov, O.V.	ORGN	519
Kratz, E.G.	COMP	147	Kruss, S.	COLL	332	Kulkarni, A.D.	INOR	458
Kratz, E.G.	COMP	318	Kruszyk, M.	ORGN	683	Kulkarni, N.V.	INOR	602
Kraus, G.A.	MEDI	402	Krygowski, E.	ORGN	206	Kulshreshtha, A.	MEDI	389
Kraus, J.	COLL	538	Kryjevski, A.	PHYS	202	Kulshreshtha, A.	MEDI	332
Krause, J.A.	INOR	176	Krykunova, V.	ENVR	679	Kultgen, S.G.	MEDI	381

Kulyk, O.	PMSE	681	Kurtz, R.	CATL	65	LaCrue, A.N.	MEDI	148
Kulzick, M.A.	CATL	45	Kurtz, R.W.	ENVR	193	Ladd, C.D.	PMSE	360
Kumal, R.	PHYS	371	Kurtzman, T.P.	COMP	360	Ladner, D.	ENVR	182
Kumar, A.	CATL	127	Kurtzman, T.P.	COMP	361	Ladner, D.	ENVR	417
Kumar, A.	COLL	410	Kurtzman, T.P.	COMP	362	Laduca, R.L.	ORGN	65
Kumar, A.	COLL	471	Kurup, P.	COLL	136	Laethem, C.L.	MEDI	45
Kumar, A.	COLL	71	Kushibe, C.	ANYL	139	LaFemina, N.	PMSE	411
Kumar, A.	ENFL	477	Kushibe, C.	ORGN	709	Laforge, S.	ENFL	505
Kumar, A.	ENVR	246	Kushida, T.	COLL	518	Lafratta, C.N.	PHYS	446
Kumar, A.	FLUO	14	Kushima, Y.	PMSE	135	Lagalante, A.F.	ANYL	133
Kumar, A.	PMSE	100	Kushima, Y.	PMSE	386	Lagalante, A.F.	ANYL	60
Kumar, A.	PMSE	644	Kushwaha, A.	PMSE	130	Lagalante, A.F.	YCC	8
Kumar, A.	POLY	474	Kushwaha, S.	INOR	560	Lagardère, L.	COMP	318
Kumar, B.	CHED	134	Kuster, B.	AGFD	123	Laggner, C.	COMP	20
Kumar, B.	ENVR	564	Kusui, T.	ENVR	664	Laggner, C.	MEDI	174
Kumar, D.	ORGN	625	Kutchko, B.	GEOC	82	Laggner, C.	MEDI	175
Kumar, J.	COLL	136	Kutes, Y.	PMSE	186	Lagos, L.	CHED	434
Kumar, J.	PMSE	587	Kuwent, Z.	ORGN	681	Laha, J.	COLL	469
Kumar, M.	BIOL	208	Kuwama, L.	ENVR	738	Lahanas, N.O.	INOR	667
Kumar, M.	COLL	246	Kuwata, K.T.	PHYS	172	Lahdenpera, A.S.	ORGN	236
Kumar, M.	ENVR	170	Kuzuya, A.	AGFD	2	Lahm, G.P.	AGRO	102
Kumar, M.	ENVR	48	Kvaratskhelia, M.	MEDI	357	Lahm, G.P.	AGRO	156
Kumar, M.	PHYS	511	Kvaratskhelia, M.	MEDI	364	Lahm, G.P.	AGRO	291
Kumar, N.	AEI	54	Kwag, H.	COLL	589	Lahser, F.	MEDI	276
Kumar, N.	CATL	163	Kwak, J.	CATL	47	Lai, B.	AGFD	233
Kumar, N.	CATL	308	Kwak, K.	AGFD	49	Lai, C.	AGFD	96
Kumar, N.	COMP	302	Kwak, S.	AGFD	75	Lai, C.	ENFL	84
Kumar, N.	COMP	353	Kwak, S.	COMP	356	Lai, C.	ENVR	298
Kumar, N.	COMP	75	Kwak, S.	ENVR	471	Lai, C.	ENVR	681
Kumar, N.	INOR	222	Kwak, S.	PMSE	429	Lai, C.	MEDI	74
Kumar, R.	AEI	37	Kwan, J.	BIOL	169	Lai, F.	ENFL	493
Kumar, R.	INOR	135	Kwan, J.	ENVR	542	Lai, L.	COLL	303
Kumar, R.	POLY	342	Kwoczak, R.	AGFD	6	Lai, M.	CATL	234
Kumar, R.	POLY	500	Kwok, K.	COLL	589	Lai, S.	BIOL	75
Kumar, R.	POLY	563	Kwon, B.	GEOC	76	LAi, S.	PHYS	372
Kumar, R.S.	ORGN	595	Kwon, H.	ENFL	411	Lai, W.	ENVR	125
Kumar, S.	BIOL	122	Kwon, H.	ENVR	689	Lai, W.	ENVR	127
Kumar, S.	ORGN	215	Kwon, H.	PHYS	321	Laine, D.	AGRO	222
Kumar, S.	PMSE	538	Kwon, H.	PHYS	523	Laio, A.	PHYS	76
Kumarapperuma, S.C.	MEDI	68	Kwon, I.	BIOL	175	Laird, B.B.	ENFL	433
Kumarasamy, E.	ORGN	94	Kwon, I.	PMSE	410	Lajoie, D.M.	BIOL	130
Kumarasamy, E.	PHYS	110	Kwon, I.	PMSE	522	Lajoie, L.	BIOL	225
Kumari, P.	COLL	189	Kwon, I.	PMSE	577	Lakhani, B.	COMP	320
Kumari, P.	COLL	257	Kwon, I.C.	PMSE	377	Lakiss, L.	ENFL	505
Kumari, S.	AGFD	70	Kwon, J.	ANYL	308	Lakkaraju, S.K.	COMP	104
Kumbhalkar, M.	CATL	93	Kwon, K.	ORGN	151	Lakshmi, K.V.	INOR	234
KUMI, G.	ANYL	367	Kwon, K.	ORGN	250	Lal, R.	AGRO	264
Kumpanead, N.	PMSE	409	Kwon, M.	ENVR	123	Lala, D.	MEDI	100
Kunai, Y.	ENFL	446	Kwon, M.	POLY	550	Lala, D.	MEDI	95
Kundu, R.	ORGN	139	Kwon, S.	ENFL	411	Lalancette, R.	POLY	398
Kundu, S.	PHYS	220	Kwon, W.	INOR	162	Lalli, P.	ENFL	322
Kundu, S.	PMSE	351	Kwong, K.	ORGN	432	Lam, K.	COMP	264
Kundu, S.	PMSE	625	Kwun, D.	CHED	164	Lam, K.	COMP	358
Kung, D.W.	MEDI	299	Kyle, D.	MEDI	140	Lam, P.Y.	MEDI	345
Kung, Y.	CHED	346	Kyle, D.	MEDI	148	Lam, P.Y.	MEDI	91
Kunkel, D.	AGRO	269	Kymissis, I.	ORGN	516	Lam, P.Y.	MEDI	94
Kunos, G.	ORGN	271	Kyser, E.	NUCL	30	LaMar, J.	AGRO	145
Kunselman, L.	MEDI	18	L'amoreaux, W.	INOR	404	LaMar, J.	AGRO	18
Kunte, N.	ENVR	107	La Sala, G.	COMP	26	Lamb, M.	ENFL	41
Kuo, H.	INOR	509	La Scala, J.J.	PMSE	583	Lambarqui, A.	ANYL	190
Kuo, J.	INOR	96	La, D.S.	MEDI	280	Lambe, A.	ENVR	17
Kuo, W.	AGFD	175	La, H.	ORGN	620	Lambe, A.	PHYS	222
Kuo, Y.	BIOL	174	Laas, J.	PHYS	159	Lambe, R.	AGRO	144
Kuppannan, K.	ANYL	17	Laaser, J.	PMSE	13	Lambert, A.	PHYS	497
Kuppannan, K.	ANYL	329	Labbe, C.M.	COMP	371	Lambert, E.	POLY	335
Kuppannan, K.	POLY	208	Labbé, N.	CATL	146	Lambert, K.M.	ORGN	715
Küpper, J.	PHYS	166	LaBella, M.	AGRO	323	Lambert, M.	COLL	371
Kuppers, S.	ENVR	340	Laber, B.	AGRO	256	Lambert, M.	COLL	372
Kuppuswamy, S.	INOR	577	Labinger, J.A.	HIST	2	Lambert, P.M.	PMSE	208
Kuppuswamy, S.	INOR	617	Laboy Lopez, S.	PMSE	659	Lambert, W.T.	AGRO	289
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Kurbanov, E.K.	MEDI	123	Labuda, A.	PMSE	631	Lambeth, R.	COMP	387
Kurbis, G.	AGRO	302	Lachance, Z.T.	CHED	45	Lambeth, R.	PMSE	695
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Kuroda, K.	POLY	247	LaCorte, M.	CHED	258	Lambeth, S.	PHYS	369
Kuroda, K.	POLY	54	LaCount, D.J.	MEDI	119	Lamic-Humbolt, A.	CATL	46
Kurogi, T.	INOR	604	LaCoursiere, E.	ORGN	46	Lammers, K.D.	GEOC	7
Kurono, S.	MEDI	408	Lacroix, C.	TOXI	91	LaMonaca, S.	AGRO	230
Kurten, T.	ENVR	25	Lacroix, M.	AGFD	237	LaMonaca, S.	AGRO	50
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Lan, J.	ORGN	208	Lara, A.	CHED	226	Laury, M.L.	COMP	298
Lanaro, C.	MEDI	328	Larese, J.Z.	CATL	198	Lauterbach, J.H.	PRES	43
Lancaster, B.	CHED	186	Larese, J.Z.	COLL	339	Lauterbach, J.H.	TOXI	94
Lancaster, K.M.	INOR	199	Larese, J.Z.	NUCL	5	Lauterbach, S.	TOXI	94
Lancaster, K.M.	INOR	418	Larese, J.Z.	POLY	331	Lava, K.	PMSE	29
Lancaster, K.M.	INOR	530	Larese-Casanova, P.	ENVR	669	Lavach, M.	POLY	510
Lancaster, K.M.	INOR	535	Larese-Casanova, P.	ENVR	695	Lavasanifar, A.	COLL	115
Lancaster, K.M.	INOR	658	Large, J.	MEDI	374	Lavelle, V.	POLY	155
Lancaster, K.M.	INOR	660	Large, J.	MEDI	375	Lavergne, S.Y.	MEDI	299
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Landis, F.A.	PMSE	633	Larkin, J.D.	COMP	277	Laviska, D.A.	INOR	585
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Landis, R.	PMSE	648	Larsen, M.	BIOL	52	Lawler, M.	PHYS	514
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Landry, M.	ENVR	471	Larsen, R.W.	INOR	90	Lawniczak, J.	ORGN	400
Landry, M.	PMSE	250	Larsen, E.	ANYL	142	Lawniczak, J.	ORGN	777
Lane, C.	COLL	146	Larson, E.	ANYL	298	Lawrence, D.S.	BIOL	123
Lane, K.C.	ORGN	678	Larson, G.L.	INOR	305	Lawrence, J.	PMSE	205
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Langerman, N.R.	CHAS	47	Lathem, A.P.	INOR	348	Lazar, D.	ENVR	629
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Langlois, X.	MEDI	178	Lau, C.	INOR	426	Le Marchand, L.	TOXI	35
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Langschwager, F.	COLL	560	Lau, E.Y.	PHYS	471	Le Neindre, M.	POLY	468
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Lansdell, T.A.	ORGN	279	Lau, H.	PMSE	384	Le Questel, J.	AGRO	278
Lansigan, M.P.	INOR	583	Lau, K.K.	ENFL	256	Le Quoc, L.	INOR	527
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LaPara, T.	ENVR	791	Lauchnor, E.	ENVR	324	Le, H.	MEDI	278
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Lapeyrouse, N.	ENVR	724	Laughlin, T.	CHED	25	Le, N.	COLL	225
Lapid, R.J.	ORGN	550	Laulhe, S.	ORGN	479	Le, N.	TOXI	93
Lapides, A.	INOR	314	Laurich, M.	ORGN	46	Le, N.Q.	PHYS	293
Lapides, A.	INOR	452	Laurila, M.E.	I&EC	5	Le, S.	COLL	563
Lapides, A.	INOR	519	Laurila, M.E.	ORGN	270	Le, S.	ORGN	556
Lapina, O.	ORGN	207	Laurino, J.P.	PRES	47	Le, T.	GEOC	54
Lapina, O.B.	CATL	2	Lauritsen, J.	COLL	389	Le, T.	PHYS	67
Laponogov, I.	PHYS	530	Lauro, M.	BIOL	100	Le, T.	PMSE	166
Laporte, M.	MEDI	62	Lauro, M.	BIOL	106	Le, T.	PMSE	672
LaPorte, M.	MEDI	63	Lauro, P.C.	SCHB	1	Lea, A.S.	GEOC	26
LaPorte, M.	MEDI	65	Laursen, A.B.	CATL	203	Lea, M.A.	AGFD	112
Laporte, S.	ORGN	551	Laursen, B.	ORGN	617	Lea, M.A.	AGFD	254

Lea, M.A.	BIOL	160	Lee, G.	CATL	313	Lee, M.	POLY	411
Leach, A.	CINF	16	Lee, G.	ORGN	177	Lee, M.	POLY	526
Leach, A.	INOR	33	Lee, H.	AGFD	35	Lee, M.	WCC	9
Leach, R.A.	ANYL	66	Lee, H.	BIOL	253	Lee, R.	TOXI	78
Leadbeater, N.E.	ORGN	715	Lee, H.	CATL	159	Lee, R.E.	COMP	52
Leah, L.	AGRO	154	Lee, H.	COLL	405	Lee, R.E.	FLUO	17
Leahy, C.T.	COMP	158	Lee, H.	ENFL	275	Lee, S.	AGFD	105
Leahy, K.	POLY	23	Lee, H.	ENFL	288	Lee, S.	AGFD	169
Leal, W.	CINF	90	Lee, H.	ENFL	411	Lee, S.	AGFD	33
Leamon, C.P.	MEDI	35	Lee, H.	ENFL	476	Lee, S.	AGFD	4
Leamon, C.P.	MEDI	36	Lee, H.	ENVR	667	Lee, S.	AGFD	68
Leamon, C.P.	MEDI	38	Lee, H.	ENVR	668	Lee, S.	AGFD	75
Leamon, C.P.	MEDI	39	Lee, H.	ENVR	755	Lee, S.	AGRO	141
Leapman, R.D.	PHYS	60	Lee, H.	MEDI	107	Lee, S.	AGRO	141
Lear, B.J.	INOR	672	Lee, H.	MEDI	283	Lee, S.	AGRO	148
Leary, D.H.	COLL	175	Lee, H.	ORGN	716	Lee, S.	AGRO	58
Leary, D.H.	ENVR	496	Lee, H.	PHYS	442	Lee, S.	ANYL	124
Leary, R.	ENVR	69	Lee, H.	PMSE	499	Lee, S.	CATL	145
Lease, N.	INOR	545	Lee, I.	CATL	313	Lee, S.	CATL	167
Lease, N.	INOR	653	Lee, I.	ENFL	27	Lee, S.	CATL	279
leavens, m.	BIOL	153	Lee, I.G.	TOXI	87	Lee, S.	CATL	336
Lebarbier Dagle, V.	CATL	54	Lee, J.	AGFD	38	Lee, S.	CATL	336
Lebel, M.A.	POLY	164	Lee, J.	AGFD	38	Lee, S.	CATL	93
Leblanc, R.M.	ANYL	104	Lee, J.	AGFD	38	Lee, S.	CATL	93
Leblanc, R.M.	COLL	251	Lee, J.	ANYL	266	Lee, S.	CHED	148
Leblanc, R.M.	COLL	473	Lee, J.	ANYL	79	Lee, S.	CHED	170
Leccese, E.	MEDI	346	Lee, J.	ANYL	80	Lee, S.	CHED	171
Lechner, A.	ENVR	319	Lee, J.	ANYL	81	Lee, S.	CHED	172
Leckband, D.E.	PHYS	103	Lee, J.	ANYL	82	Lee, S.	CHED	173
Lecommandoux, S.	COLL	327	Lee, J.	ANYL	83	Lee, S.	CHED	174
Lecommandoux, S.	COLL	60	Lee, J.	BIOL	253	Lee, S.	CHED	329
Lecommandoux, S.	POLY	20	Lee, J.	BIOL	259	Lee, S.	COLL	238
Lecommandoux, S.	POLY	203	Lee, J.	CATL	159	Lee, S.	COLL	374
Lecommandoux, S.	POLY	476	Lee, J.	CATL	172	Lee, S.	COLL	483
Lecommandoux, S.	POLY	546	Lee, J.	COLL	165	Lee, S.	COMP	331
Lecommandoux, S.	POLY	82	Lee, J.	COLL	405	Lee, S.	ENFL	271
Leddy, J.	ANYL	389	Lee, J.	COLL	530	Lee, S.	ENFL	271
Lederer, A.	POLY	580	Lee, J.	COMP	60	Lee, S.	ENFL	444
Ledesma, E.B.	ENVR	479	Lee, J.	MEDI	73	Lee, S.	ENFL	471
Lee, A.	COLL	351	Lee, J.	ORGN	364	Lee, S.	ENVR	22
Lee, A.	INOR	421	Lee, J.	ORGN	612	Lee, S.	ENVR	563
Lee, A.	PHYS	224	Lee, J.	ORGN	762	Lee, S.	ENVR	577
Lee, A.A.	BIOL	216	Lee, J.	ORGN	769	Lee, S.	ENVR	667
Lee, A.S.	AGRO	101	Lee, J.	PHYS	382	Lee, S.	ENVR	668
Lee, B.	ENFL	146	Lee, J.	PMSE	164	Lee, S.	ENVR	707
Lee, B.	MEDI	190	Lee, J.	PMSE	343	Lee, S.	FLUO	6
Lee, B.	ORGN	470	Lee, J.	PMSE	377	Lee, S.	GEOC	66
Lee, B.	PHYS	43	Lee, J.	PMSE	499	Lee, S.	GEOC	68
Lee, B.	PMSE	45	Lee, J.	POLY	574	Lee, S.	GEOC	70
Lee, B.M.	COLL	237	Lee, J.	TOXI	44	Lee, S.	INOR	572
Lee, C.	AGRO	1	Lee, J.C.	PHYS	101	Lee, S.	INOR	623
Lee, C.	AGRO	2	Lee, J.W.	ENVR	533	Lee, S.	INOR	644
Lee, C.	CATL	234	Lee, J.Y.	ENFL	183	Lee, S.	MEDI	321
Lee, C.	CATL	234	Lee, K.	BIOL	190	Lee, S.	ORGN	138
Lee, C.	COLL	234	Lee, K.	BIOL	191	Lee, S.	ORGN	159
Lee, C.	ENFL	411	Lee, K.	BIOL	219	Lee, S.	ORGN	160
Lee, C.	ENVR	460	Lee, K.	COMP	36	Lee, S.	ORGN	161
Lee, C.	ENVR	728	Lee, K.	ENFL	411	Lee, S.	ORGN	511
Lee, C.	INOR	544	Lee, K.	ENFL	471	Lee, S.	ORGN	601
Lee, C.	PHYS	86	Lee, K.	ENFL	507	Lee, S.	ORGN	617
Lee, C.W.	ENVR	27	Lee, K.	ENVR	257	Lee, S.	PMSE	205
Lee, D.	ANYL	222	Lee, K.	INOR	37	Lee, S.	PMSE	445
Lee, D.	COLL	174	Lee, K.	MEDI	107	Lee, S.	PMSE	574
Lee, D.	COLL	192	Lee, K.	MEDI	108	Lee, S.	POLY	27
Lee, D.	COLL	203	Lee, K.	MEDI	283	Lee, S.	POLY	325
Lee, D.	COLL	502	Lee, K.	PMSE	280	Lee, S.	POLY	6
Lee, D.	ENFL	361	Lee, K.	POLY	6	Lee, S.A.	COLL	465
Lee, D.	ENVR	749	Lee, K.G.	AGFD	281	Lee, S.C.	INOR	285
Lee, D.	ORGN	138	Lee, L.	MEDI	9	Lee, S.W.	COLL	329
Lee, D.	ORGN	465	Lee, M.	ANYL	320	Lee, T.	ANYL	266
Lee, D.	ORGN	471	Lee, M.	CATL	108	Lee, T.	COMP	319
Lee, D.	PMSE	138	Lee, M.	CATL	190	Lee, T.	COMP	49
Lee, D.	PMSE	366	Lee, M.	ENFL	113	Lee, T.	MEDI	287
Lee, D.	TOXI	4	Lee, M.	ENVR	304	Lee, T.D.	AGFD	121
Lee, D.Y.	SCHB	21	Lee, M.	ENVR	595	Lee, T.J.	PHYS	509
Lee, E.	INOR	104	Lee, M.	GEOC	23	Lee, T.J.	PHYS	512
Lee, E.	INOR	623	Lee, M.	ORGN	232	Lee, W.	AGFD	114
Lee, E.	INOR	644	Lee, M.	PMSE	400	Lee, W.	AGRO	279
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Lei, Y.	POLY	557	Lerman, Z.M.	PRES	4	Lewis, J.A.	CHED	366
Lei, Y.	POLY	96	Lerner, B.	PHYS	122	Lewis, J.A.	PMSE	270
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Leibfarth, F.A.	POLY	544	Leroux, Y.R.	COLL	592	Lewis, J.G.	MEDI	227
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Li Pi Shan, C.	COLL	350	Li, J.	AGFD	72	Li, M.	ENFL	12
Li Sip, Y.	CHED	39	Li, J.	ANYL	103	Li, m.	ENFL	28
Li, A.	ENVR	520	Li, J.	BIOL	245	Li, M.	ENVR	444
Li, A.	PMSE	300	Li, J.	CATL	108	Li, M.	INOR	606
Li, A.	PMSE	324	Li, J.	CATL	210	Li, M.	ORGN	632
Li, B.	AGFD	263	Li, J.	CATL	237	Li, N.	BIOL	81
Li, B.	AGFD	82	Li, J.	CATL	69	Li, N.	CATL	166
Li, B.	AGFD	88	Li, J.	COLL	12	Li, N.	MEDI	298
Li, B.	CATL	226	Li, J.	COLL	391	Li, P.	ANYL	144
Li, B.	COLL	458	Li, J.	COLL	439	Li, P.	INOR	248
Li, B.	ENFL	383	Li, J.	COMP	157	Li, P.	MEDI	9
Li, B.	ENFL	480	Li, J.	ENFL	229	Li, P.	MEDI	90
Li, B.	ENFL	71	Li, J.	ENFL	229	Li, P.	ORGN	545
Li, B.	ENFL	79	Li, J.	ENFL	30	Li, P.	PMSE	671
Li, B.	INOR	549	Li, J.	ENFL	318	Li, Q.	BIOL	125
Li, C.	ANYL	12	Li, J.	ENFL	479	Li, Q.	COLL	557
Li, C.	COLL	109	Li, J.	ENVR	161	Li, Q.	ENFL	3
Li, C.	COLL	306	Li, J.	ENVR	28	Li, Q.	ENFL	54
Li, C.	COLL	349	Li, J.	ENVR	292	Li, Q.	ENVR	369
Li, C.	COLL	391	Li, J.	ENVR	316	Li, Q.	ENVR	370
Li, C.	ENFL	457	Li, J.	ENVR	430	Li, Q.	ENVR	764
Li, C.	ENVR	109	Li, J.	ENVR	555	Li, Q.	ENVR	780
Li, C.	ENVR	229	Li, J.	ENVR	682	Li, Q.	INOR	337
Li, C.	ENVR	366	Li, J.	ENVR	766	Li, Q.	MEDI	299
Li, C.	PMSE	388	Li, J.	FLUO	19	Li, Q.	ORGN	26
Li, C.	PMSE	520	Li, J.	I&EC	15	Li, Q.	ORGN	419
Li, C.	PMSE	627	Li, J.	MEDI	104	Li, Q.	PHYS	230
Li, C.	POLY	392	Li, J.	MEDI	315	Li, Q.	PMSE	308
Li, D.	COLL	160	Li, J.	MEDI	319	Li, Q.X.	AGRO	374
Li, D.	COMP	329	Li, J.	MEDI	333	Li, Q.X.	BIOL	156
Li, D.	ENVR	497	Li, J.	MEDI	403	Li, R.	AGFD	26
Li, D.	ENVR	684	Li, J.	MEDI	87	Li, R.	ANYL	96
Li, D.	ENVR	801	Li, J.	ORGN	47	Li, R.	ENVR	280
Li, D.	PMSE	623	Li, J.	ORGN	692	Li, R.	ENVR	568
Li, D.	TOXI	43	Li, J.	PHYS	2	Li, R.	ENVR	702
Li, D.	TOXI	57	Li, J.	PHYS	310	Li, R.	PMSE	5
Li, D.	TOXI	59	Li, J.	PMSE	28	Li, S.	ANYL	104
Li, F.	AEI	33	Li, J.	PMSE	43	Li, S.	BIOL	139
Li, F.	AGRO	197	Li, J.	PMSE	440	Li, S.	BIOL	33
Li, F.	CATL	20	Li, J.	PMSE	478	Li, S.	CATL	166
Li, F.	ENFL	160	Li, J.	POLY	435	Li, S.	COLL	311
Li, F.	ENFL	404	Li, J.	POLY	57	Li, S.	COLL	471
Li, F.	ENFL	413	Li, K.	CATL	301	Li, S.	COLL	473
Li, F.	ENVR	758	Li, K.	ENVR	161	Li, S.	COMP	382
Li, F.	INOR	241	Li, K.	ENVR	288	Li, S.	ENFL	250
Li, F.	INOR	618	Li, K.	ORGN	244	Li, S.	ENVR	606
Li, F.	MEDI	378	Li, L.	AGFD	55	Li, S.	INOR	137
Li, G.	ENFL	345	Li, L.	AGFD	82	Li, S.	INOR	48
Li, G.	ENFL	71	Li, L.	AGFD	85	Li, S.	ORGN	131
Li, G.	ENVR	30	Li, L.	CATL	70	Li, S.	ORGN	132
Li, G.	ENVR	619	Li, L.	COLL	136	Li, S.	ORGN	133
Li, G.	ENVR	620	Li, L.	ENFL	239	Li, S.	PHYS	324
Li, G.	ENVR	631	Li, L.	ENFL	383	Li, S.	POLY	451
Li, G.	ENVR	717	Li, L.	ENVR	699	Li, S.	POLY	592
Li, G.	MEDI	397	Li, L.	ENVR	79	Li, S.F.	AEI	22
Li, G.	PHYS	133	Li, L.	INOR	597	Li, S.L.	COMP	33
Li, G.	PHYS	322	Li, L.	INOR	606	Li, S.L.	COMP	367
Li, H.	AGFD	76	Li, L.	MEDI	254	Li, T.	AEI	37
Li, H.	AGRO	135	Li, L.	MEDI	283	Li, T.	CHED	295
Li, H.	AGRO	199	Li, L.	MEDI	286	Li, T.	COMP	131
Li, H.	AGRO	201	Li, L.	ORGN	207	Li, T.	ENFL	247
Li, H.	AGRO	34	Li, L.	ORGN	224	Li, T.	ENFL	271
Li, H.	CATL	178	Li, L.	ORGN	724	Li, T.	ENFL	45
Li, H.	ENFL	321	Li, L.	PHYS	141	Li, T.	ENFL	70
Li, H.	ENVR	345	Li, L.	PMSE	300	Li, T.	ENVR	677
Li, H.	ENVR	464	Li, L.	PMSE	302	Li, T.	INOR	135
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Liu, L.	PMSE	608	Liu, X.	CATL	331	Liutheviceni Cordeiro, M.	COLL	39
Liu, L.S.	AGFD	7	Liu, X.	CATL	50	Lively, R.	ENFL	75
Liu, M.	AGFD	221	Liu, X.	COLL	151	Livernois, W.	CHED	210

Livernois, W.	ENFL	225	Lohse, D.	ENVR	521	Lopez-Sanchez, P.	AGFD	223
Livi, K.	COLL	288	Loiseleur, O.	AGRO	292	Loprete, K.	ENFL	87
Livi, K.	ENFL	491	Lokey, S.	MEDI	213	Lora, J.H.	ENVR	579
Livi, K.	ENVR	69	Lokey, S.	MEDI	344	Lorenz, C.D.	PHYS	464
Livi, K.	ENVR	735	Lokhandwala, J.	BIOL	144	Lorenzo, E.	ORGN	354
Livinghouse, T.	ORGN	499	Lokitz, B.S.	POLY	261	Loring, J.	GEOC	26
Livshits, M.Y.	INOR	540	Lokitz, B.S.	POLY	500	Loring, J.	GEOC	5
Livshits, M.Y.	POLY	358	Lokitz, B.S.	POLY	563	Lorson, T.	POLY	209
Liwosz, T.	CHED	280	Loman, J.	ORGN	715	Lorson, T.	POLY	226
Liyanage, R.	AGFD	203	Lombard-Banek, C.	ANYL	260	Lorthiois, E.	MEDI	262
Liyanage, T.	ANYL	75	Lombardi, J.P.	COLL	248	Lorzing, G.R.	INOR	684
Liz Marzan, L.	COLL	107	Lombardi, J.P.	PMSE	403	Loscher, C.	MEDI	114
Liz Marzan, L.	COLL	292	Lombardo, L.	MEDI	272	Loschiavo, T.M.	CHED	28
Liz Marzan, L.	COLL	83	Lomora, M.	COLL	454	Losey, D.J.	PHYS	557
Lizardi, C.L.	ANYL	5	Lomora, M.	COLL	524	Losito, E.	BIOL	137
Lizardo, D.	BIOL	81	Lomoth, R.	PHYS	61	Losovjy, Y.	COLL	177
Lizza, J.	ORGN	450	Lonardo, A.L.	INOR	482	Lotesta, S.D.	MEDI	100
Lizza, J.R.	ORGN	730	Londergan, C.H.	PHYS	481	Lotesta, S.D.	MEDI	95
Llanos, E.	CINF	90	Londergan, C.H.	PHYS	545	Lott, J.	PMSE	399
Llerena Suster, C.R.	CATL	97	London, B.	AGRO	74	Lottemoser, J.	CHED	149
Llobet, A.D.	INOR	520	London, C.	MEDI	84	Lotti Diaz, L.M.	CHED	230
Llorca, J.	ENFL	481	Londregan, A.T.	ORGN	26	Lou, J.	INOR	612
Lloyd, J.	MEDI	377	Long, A.	COLL	227	Lou, Z.	MEDI	345
Lloyd, R.S.	TOXI	100	Long, A.	COMP	405	Lou, Z.	MEDI	94
Lloyd, S.	PHYS	265	Long, B.K.	POLY	570	Lougee, R.	ENVR	696
Lo Giudice, M.	COLL	522	Long, G.R.	CHED	47	Lountos, G.	BIOL	199
Lo Giudice, M.	COLL	527	Long, H.	COLL	441	Love, A.M.	CATL	128
Lo, C.	PHYS	494	Long, H.	ENFL	3	Love, A.M.	COMP	296
Lo, C.	PMSE	340	Long, H.	MEDI	33	Love, A.M.	ENFL	484
Lo, F.	MEDI	265	Long, J.K.	AGRO	194	Love, J.	INOR	786
Lo, K.	PMSE	169	Long, J.R.	ENFL	193	Loveland, W.	NUCL	32
Lo, M.M.	MEDI	14	Long, J.R.	INOR	71	Loverde, S.	ANYL	117
Lo, S.	ENVR	612	Long, M.J.	BIOL	163	Low, J.	ORGN	544
Lobo, R.F.	CATL	225	Long, M.J.	ORGN	442	Lowe, D.M.	CINF	94
Lobo, R.F.	CATL	272	Long, M.J.	TOXI	4	Lowell, A.N.	BIOL	139
Lobo, R.F.	CATL	82	Long, S.	INOR	265	Lowell, A.N.	BIOL	52
Lobo, R.F.	ENFL	465	Long, T.E.	COLL	130	Lowell, A.N.	ORGN	365
Lobo, R.F.	ENVR	433	Long, T.E.	COLL	89	Lowik, D.	COLL	61
Lobo, R.F.	I&EC	34	Long, T.E.	PMSE	208	Lowit, A.	AGRO	340
Lobodin, V.	ENFL	468	Long, T.E.	PMSE	543	Lownsbury, J.	INOR	669
Lobos, A.	ENVR	98	Long, T.E.	POLY	503	Lowry, B.	ANYL	143
Lochhead, R.Y.	CHED	330	Long, T.E.	POLY	514	Lowry, B.	ANYL	31
Lochhead, R.Y.	ENVR	57	Long, T.E.	POLY	563	Lowry, G.	ENVR	14
Lochhead, R.Y.	POLY	157	Long, T.E.	POLY	8	Lowry, G.	ENVR	354
Lochhead, R.Y.	POLY	436	Long, X.	ENVR	620	Lowry, G.	ENVR	47
Lock, L.	MEDI	191	Long, Y.	ENVR	369	Lowry, G.	GEOC	33
Locke, G.	MEDI	265	Long, Y.	ENVR	370	Loy, D.A.	PMSE	61
Locke, G.	MEDI	350	Longchamp, J.	PHYS	255	Loy, D.A.	POLY	58
Locke, G.	MEDI	89	Loomis, C.	COMP	20	Lozano, N.	ENVR	53
Lockhart, J.	POLY	327	Loomis, C.	MEDI	174	Lozano-Rodriguez, J.	NUCL	22
Lodge, T.P.	PMSE	13	Loomis, D.J.	PMSE	131	Lu, A.	CATL	211
Lodge, T.P.	PMSE	78	Loomis, R.	PHYS	541	Lu, B.	ANYL	153
Loe, A.M.	BIOL	230	Lopano, C.	GEOC	82	Lu, B.	FLUO	4
Loe, A.M.	PHYS	318	Loparo, J.	PHYS	256	Lu, B.	PMSE	418
Loe, R.A.	CATL	295	Lopchuk, J.M.	ORGN	80	Lu, C.	AGFD	277
Loeb, B.L.	INOR	518	Lopez de Alda, M.	ENVR	770	Lu, C.	COMP	180
Loeb, S.	ENVR	229	Lopez Garriga, J.	CHED	180	Lu, C.	COMP	335
Loeffler, F.	ENVR	459	López Hernández, J.E.	CHED	305	Lu, C.	INOR	26
Loeffler, M.J.	PHYS	274	Lopez, A.	COLL	471	Lu, C.	INOR	370
Loeffler, M.J.	PHYS	329	Lopez, A.	ORGN	626	Lu, F.	ENVR	750
Loes, N.A.	ENFL	138	Lopez, A.	ORGN	8	Lu, G.	CATL	50
Loew, P.	CINF	14	Lopez, K.M.	BIOL	8	Lu, G.	ENFL	82
Lofink, B.J.	PMSE	150	Lopez, K.M.	CHED	177	Lu, G.	ORGN	119
Lofink, B.J.	PMSE	151	Lopez, M.	CHED	171	Lu, G.	ORGN	718
Lofland, S.E.	INOR	583	Lopez, M.	CHED	174	Lu, H.	ANYL	240
Loftus, J.	CHED	231	Lopez, N.	INOR	354	Lu, H.	ANYL	287
Loftus, L.M.	INOR	123	Lopez, S.	CHED	221	Lu, H.	ANYL	344
Logan, B.E.	ENVR	504	Lopez, S.	MEDI	295	Lu, H.	COLL	272
Logan, B.E.	ENVR	509	Lopez, S.A.	CHED	57	Lu, H.	MEDI	377
Logan, T.	ENVR	87	Lopez-Acevedo, O.	PHYS	342	Lu, H.	MEDI	89
Loganathan, N.	GEOC	9	Lopez-Gonzalez, C.	POLY	552	Lu, H.	PHYS	317
Logsdon, A.S.	CHED	209	Lopez-Hilfiker, F.	PHYS	43	Lu, J.	ENVR	782
Loguinov, A.	TOXI	102	Lopez-Islas, M.	BIOL	214	Lu, J.	PHYS	491
Lohith, T.	FLUO	19	Lopez-Islas, M.	WCC	2	Lu, K.	TOXI	19
Lohr, T.	CATL	324	Lopez-Linares, F.A.	ENFL	462	Lu, K.	TOXI	61
Lohr, T.	ORGN	662	Lopez-Linares, F.A.	ENFL	514	Lu, K.	TOXI	63
Lohrasbi, M.	CATL	14	López-Muñoz, F.J.	MEDI	166	Lu, L.	ENFL	203
Lohrasbi, M.	CATL	227	Lopez-Puertas, M.	PHYS	27	Lu, M.	ENVR	600
Lohrey, T.D.	INOR	591	Lopez-Ruiz, J.A.	CATL	176	Lu, M.	ENVR	605
Lohry, M.	MEDI	127	Lopez-Ruiz, J.A.	ENFL	350	Lu, N.	COLL	554



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Lu, Q.	CATL	245	Lum, W.	COLL	347	Luther, J.L.	ANYL	57
Lu, Q.	POLY	504	Lum, W.	COLL	600	Luthy, R.G.	AGRO	372
Lu, T.	PMSE	250	Lumb, J.	ORGN	322	Luthy, R.G.	ENVR	185
Lu, W.	AGFD	110	Lumb, J.	ORGN	403	Luthy, R.G.	ENVR	207
Lu, W.	AGFD	12	Lumb, K.J.	COMP	377	Lutter, E.	POLY	333
Lu, W.	AGFD	221	Lumetta, G.J.	NUCL	55	Lutterman, D.A.	ENFL	272
Lu, W.	AGFD	285	Lun, S.	MEDI	144	Luttrell, R.	AGRO	123
Lu, W.	AGFD	286	Lund, B.R.	PMSE	211	Lutz, J.	POLY	195
Lu, X.	AEI	61	Lund, B.R.	PMSE	600	Lutz, J.	POLY	542
Lu, X.	AGFD	116	Lund, M.	ANYL	72	Lutz, J.P.	ORGN	34
Lu, X.	AGRO	92	Lundeen, J.	INOR	8	Lutz, M.	AEI	64
Lu, X.	COLL	116	Lundell, C.	INOR	639	Lutz, M.	PMSE	505
Lu, X.	COLL	458	Lundell, F.	PHYS	468	Luu, Q.H.	ORGN	278
Lu, X.	ENVR	71	Lundin, J.	COLL	242	Lux, J.	POLY	265
Lu, X.	ENVR	738	Lundin, J.	PMSE	179	Luxenhofer, R.	POLY	169
Lu, X.	ENVR	793	Lundin, J.	PMSE	180	Luxenhofer, R.	POLY	209
Lu, X.	PMSE	118	Lundin, J.	PMSE	419	Luxenhofer, R.	POLY	226
Lu, X.	PMSE	431	Luning Prak, D.J.	ENFL	146	Luxenhofer, R.	POLY	231
Lu, X.	POLY	156	Lunn, D.J.	PMSE	205	Luxenhofer, R.	POLY	279
Lu, X.	POLY	425	Lunsford, A.M.	INOR	282	Luxenhofer, R.	POLY	454
Lu, Y.	ANYL	89	Lunt, R.	CATL	317	Luxenhofer, R.	POLY	463
Lu, Y.	BIOL	7	Luo, C.	ENVR	143	Luzenski, J.	COLL	280
Lu, Y.	COLL	11	Luo, F.	COLL	438	Luzinov, I.A.	COLL	252
Lu, Y.	ENFL	183	Luo, F.	ENFL	260	Luzinov, I.A.	COMP	97
Lu, Y.	ENVR	491	Luo, G.	ENFL	365	Luzinov, I.A.	PMSE	22
Lu, Y.	ENVR	708	Luo, G.	ORGN	39	Luzinov, I.A.	PMSE	35
Lu, Y.	INOR	221	Luo, H.	INOR	115	Luzinov, I.A.	PMSE	365
Lu, Y.	INOR	270	Luo, H.	INOR	438	Luzinov, I.A.	PMSE	466
Lu, Y.	PMSE	273	Luo, H.	PMSE	39	Luzinov, I.A.	PMSE	514
Lu, Z.	CATL	181	Luo, H.	PMSE	500	Luzzio, F.A.	MEDI	417
Lu, Z.	COLL	191	Luo, H.	PMSE	515	Lv, B.	ENFL	139
Lu, Z.	COLL	217	Luo, H.	POLY	537	Lv, C.	PHYS	13
Lu, Z.	COLL	398	Luo, J.	ANYL	103	Lv, J.	ENVR	806
Lu, Z.	ENFL	76	Luo, J.	CATL	127	Lv, L.	ENFL	248
Luan, Y.	CATL	326	Luo, J.	CATL	172	Lv, M.	ENFL	381
Luan, Y.	CATL	332	Luo, J.	CATL	209	Lv, X.	I&EC	10
Lübcke, M.	FLUO	11	Luo, J.	CATL	210	Lvqi, J.	FLUO	1
Lübcke, M.	ORGN	391	Luo, J.	CATL	211	Lwin, S.	ENFL	47
Lubitz, W.W.	INOR	281	Luo, J.	CATL	216	Lwoya, B.S.	CHED	320
Lucaciu, C.	COLL	477	Luo, J.	COLL	151	Ly, A.	MEDI	344
Lucas, K.	ANYL	53	Luo, J.	COLL	164	Ly, D.H.	ORGN	3
Lucena Agell, D.	COMP	138	Luo, J.	COLL	233	Ly, H.	PMSE	654
Lucero, A.J.	ENFL	374	Luo, J.	COLL	248	Lydon, B.	PHYS	472
Luchansky, J.B.	AGFD	210	Luo, J.	COLL	362	Lykourinou, V.	CHED	44
Luchini, A.	MEDI	108	Luo, J.	ENFL	4	Lykourinou, V.	CHED	79
Luchini, A.	MEDI	109	Luo, J.	ENFL	50	Lyman, E.	COMP	212
Luchko, T.	COMP	118	Luo, J.	ORGN	534	Lyman, E.	COMP	220
Luciani, C.V.	I&EC	5	Luo, J.	ORGN	670	Lyman, E.	COMP	222
Lucius, M.	POLY	248	Luo, J.	PMSE	403	Lyman, E.	COMP	300
Ludwig, J.	ORGN	455	Luo, L.	ENVR	806	Lyman, E.	COMP	311
Luebking, J.	INOR	176	Luo, P.	POLY	374	Lymperopoulos, L.	COLL	227
Luebtow, M.	POLY	454	Luo, Q.	ENVR	108	Lynch, D.	AGRO	311
Luef, K.P.	POLY	307	Luo, Q.	ENVR	174	Lynch, J.K.	CHED	176
Luef, K.P.	POLY	458	Luo, Q.	ENVR	477	Lynch, K.R.	MEDI	7
Luef, K.P.	POLY	76	Luo, Q.	ENVR	676	Lyngsie, G.	ENVR	72
Luehmann, H.	POLY	266	Luo, S.	CATL	57	Lynn, D.M.	PMSE	507
Luek, J.	ENVR	449	Luo, S.	CHED	248	Lynn, K.	AGRO	146
Luek, J.	ENVR	519	Luo, S.	COLL	128	Lynn, K.	AGRO	147
Luek, J.	GEOC	81	Luo, S.	ENVR	120	Lynn, K.	AGRO	246
Luengo, G.S.	POLY	211	Luo, S.	ENVR	220	Lynn, C.	POLY	289
Lueth, E.	MEDI	369	Luo, S.	ORGN	784	Lyon, R.E.	PMSE	193
Luettgen, J.	MEDI	345	Luo, S.	PMSE	130	Lyon, R.E.	PMSE	194
Luettgen, J.	MEDI	91	Luo, T.	PMSE	518	Lyon, R.E.	PMSE	195
Luettgen, J.	MEDI	94	Luo, W.	ENVR	608	Lyons, C.	INOR	53
Luévano-De la Cruz, A.	MEDI	152	Luo, X.	ENVR	475	Lyons, D.	ANYL	40
Luévano-De la Cruz, A.	MEDI	379	Luo, Y.	AGFD	110	Lyons, D.	ENVR	655
Lugar, D.	BIOL	208	Luo, Z.	ENFL	286	Lyons, D.	TOXI	96
Lühmann, T.	POLY	226	Luo, Z.	INOR	134	Lypson, A.	ORGN	194
Lui, I.	POLY	51	Luo, Z.	PMSE	187	Lythgo, C.	AGRO	9
Luk, L.	CATL	201	Luong, T.	ORGN	637	Lytle, T.	PMSE	614
Luk, L.	CATL	221	Lupu, N.	ENFL	231	Lyu, H.	ENVR	480
Luk, L.	ENVR	226	Lupyan, D.	COMP	377	Lyu, Y.	AGFD	171
Luk, L.	ENVR	674	Luque, R.	CATL	260	Lyu, Y.	COLL	536
Luk, L.	I&EC	45	Luque, R.	ENVR	253	Ma, A.	ORGN	528
Luk, L.	I&EC	46	Luque, R.	ENVR	256	Ma, B.	BIOL	199
Lukatskaya, M.	ENFL	504	Luscombe, C.K.	POLY	49	Ma, B.	PMSE	512
Lukens, J.T.	INOR	418	Lusi, R.	POLY	367	Ma, B.	TOXI	70
Lukens, W.W.	ENVR	458	Luther, G.W.	ENVR	5	Ma, B.	TOXI	97
Lum, J.	COLL	293	Luther, G.W.	ENVR	751	Ma, B.C.	PMSE	5
Lum, W.	ANYL	370	Luther, J.	INOR	86	Ma, C.	ENFL	183

Ma, D.	ENFL	131	Ma, Y.	PMSE	605	Macor, J.E.	MEDI	272
Ma, D.	ENFL	309	Ma, Z.	MEDI	189	Macor, J.E.	MEDI	395
Ma, G.	PMSE	414	Maag, A.R.	ENFL	78	Macor, J.E.	ORGN	39
Ma, H.	AGFD	12	Ma'ayan, A.	CINF	52	MacPherson, Q.	COMP	69
Ma, H.	AGFD	198	Maaza, M.	ENVR	16	Madachik, M.R.	COLL	241
Ma, H.	AGFD	55	Mabbott, S.	COLL	87	Madary, M.	AGRO	55
Ma, H.	AGFD	56	Maboudian, R.	COLL	441	Maday, Y.	COMP	318
Ma, H.	AGFD	57	Mabrouk, P.A.	CHED	110	Maddaus, A.G.	POLY	149
Ma, H.	AGFD	58	Mabrouk, P.A.	CHED	58	Madder, A.	POLY	493
Ma, H.	AGFD	59	Mabry, J.M.	PMSE	120	Maddi, S.	MEDI	201
Ma, H.	AGFD	60	Mabry, J.M.	POLY	260	Maddumapatabandi, T.	CATL	122
Ma, H.	AGFD	76	Mabry, J.M.	POLY	440	Madeira, C.L.	ENVR	510
Ma, H.	AGFD	92	Mabury, S.A.	CHED	431	Madej, B.	COMP	146
Ma, H.	AGFD	99	Macalady, D.L.	ENVR	208	Madej, B.	COMP	345
Ma, H.	I&EC	15	MacAlpine, J.	CHAL	13	Madi, A.E.	ENVR	658
Ma, H.	PMSE	43	Macalush, B.	CHED	240	MADRAHIMOV, S.	CATL	310
Ma, H.	POLY	57	Macalush, B.	CHED	324	Madsen, E.	PMSE	245
Ma, J.	CATL	328	Macaluso, R.T.	INOR	191	Madufor, C.R.	INOR	428
Ma, J.	ENVR	124	MacArthur, A.H.	INOR	28	Madura, J.D.	MEDI	40
Ma, J.	ENVR	141	Macchioni, A.	INOR	666	Madzharova, F.	COLL	23
Ma, J.	ENVR	580	MacCrehan, W.A.	ANYL	330	Maeda, R.	PMSE	135
Ma, J.	ENVR	793	MacDermaid, C.M.	COLL	543	Maeda, R.	PMSE	535
Ma, J.	ORGN	723	MacDermaid, C.M.	PMSE	678	Maegawa, T.	ORGN	682
Ma, J.	PMSE	389	MacDermaid, C.M.	POLY	212	Maekawa, T.	MEDI	386
Ma, J.	PMSE	390	MacDermaid, C.M.	POLY	344	Mael, A.	PMSE	640
Ma, K.	PMSE	341	MacDermaid, C.M.	POLY	345	Maeno, Z.	CATL	288
Ma, L.	ANYL	274	Maddonald, G.	MEDI	178	Maenosono, S.	COLL	380
Ma, L.	ENVR	717	Macdonald, J.	INOR	33	Maffezzoli, A.	PMSE	198
Ma, L.	PHYS	106	MacDonald, J.P.	ORGN	31	Magalhães, J.	COLL	218
Ma, M.	AGRO	146	MacDonnell, F.M.	AEI	26	Magano, J.	ORGN	501
Ma, M.	AGRO	147	Mace, C.	POLY	51	Magee, T.V.	MEDI	299
Ma, M.	AGRO	29	Macewan, S.	COLL	327	Maggard, P.A.	INOR	375
Ma, M.	ENFL	165	Macewan, S.	POLY	203	Maglaty, J.	YCC	12
Ma, Q.	AGFD	240	Macfarlane, R.	PHYS	313	Magliery, T.J.	BIOL	247
Ma, Q.	AGRO	137	MacGillivray, R.	ENVR	102	Magnanelli, T.J.	PHYS	21
Ma, Q.	AGRO	299	MacGillivray, R.	ENVR	55	Magni, K.	PMSE	396
Ma, Q.	AGRO	361	Mach, R.H.	FLUO	18	Magoc, T.	MEDI	254
Ma, R.	CATL	266	Machajewski, T.	MEDI	278	Magoc, T.	MEDI	286
Ma, R.	COLL	252	Macharia, J.	ENVR	318	Mague, J.T.	INOR	450
Ma, R.	PMSE	22	Machesky, M.L.	GEOC	53	Mague, J.T.	INOR	621
Ma, R.	PMSE	467	Machida, M.	CATL	258	Maguire, C.	CHED	386
Ma, R.	TOXI	102	Machonkin, T.E.	INOR	394	Magyar, A.P.	CATL	48
Ma, S.	ENFL	430	Machuca-Martínez, F.	ENVR	425	Mah, R.	MEDI	273
Ma, S.	ENFL	437	Machuca-Martínez, F.	ENVR	648	Mahaffey, M.J.	AGRO	194
Ma, S.	PMSE	590	Macieja, A.	MEDI	322	Mahaffey, R.K.	PMSE	232
Ma, S.	PMSE	592	Macieja, A.	MEDI	323	Mahaffy, P.G.	CHED	6
Ma, T.	ENFL	71	Macieja, A.	MEDI	331	Mahaffy, P.G.	CHED	94
Ma, V.	MEDI	388	Macinnes, D.	HIST	10	Mahaffy, P.R.	PHYS	23
Ma, W.	CHED	322	Maciulis, L.	CATL	233	Mahajan, L.H.	PMSE	119
Ma, W.	ORGN	528	Mack, B.	ORGN	558	Mahajan, L.H.	PMSE	431
Ma, W.	PMSE	420	Mack, E.	COMP	148	Mahajan, S.	ENFL	446
Ma, W.	PMSE	474	Mack, J.	POLY	23	Mahajani, N.S.	BIOL	110
Ma, X.	CATL	168	Mack, K.	PHYS	462	Mahanthappa, M.K.	PMSE	153
ma, x.	CATL	208	Mack, K.L.	BIOL	104	Mahanthappa, M.K.	POLY	28
Ma, X.	CATL	248	Mack, K.L.	BIOL	35	Mahanti, B.	CATL	280
Ma, X.	CATL	291	Mack, S.	BIOL	178	Mahar, R.B.	ENVR	747
Ma, X.	CHED	82	MacKay, A.	ENVR	347	Mahbub, R.	TOXI	63
Ma, X.	COLL	205	Mackerell, A.D.	COMP	104	Mahendra, S.	ENVR	169
Ma, X.	COLL	280	Mackerell, A.D.	COMP	125	Mahendra, S.	ENVR	172
Ma, X.	COLL	359	Mackerell, A.D.	COMP	239	Mahendra, S.	ENVR	443
Ma, X.	COMP	259	Mackerell, A.D.	COMP	240	Mahendra, S.	ENVR	448
Ma, X.	ENFL	109	Mackerell, A.D.	COMP	242	Mahendra, S.	ENVR	759
Ma, X.	ENVR	13	Mackerell, A.D.	COMP	255	Maher, K.	GEOC	13
Ma, X.	ENVR	187	Mackerell, A.D.	COMP	338	Maher, K.	GEOC	57
Ma, X.	ENVR	254	Mackerell, A.D.	COMP	378	Mahjouri-Samani, M.	ANYL	385
Ma, X.	ENVR	474	Mackerell, A.D.	PHYS	10	Mahler, B.	AGRO	46
Ma, X.	MEDI	104	Mackey, M.D.	MEDI	343	Mahler, B.	AGRO	47
Ma, X.	MEDI	18	Mackiewicz, M.R.	COLL	521	Mahler, C.H.	INOR	254
Ma, X.	MEDI	267	Mackin, R.T.	INOR	621	Mahmood, R.	COLL	269
Ma, X.	MEDI	380	Maclachlan, J.L.	ANYL	328	Mahmood, S.	ENFL	176
Ma, X.	MEDI	381	Maclachlan, J.L.	ENVR	526	Mahmoodi, M.	ORGN	588
Ma, X.	MEDI	382	Maclachlan, J.L.	ENVR	673	Mahmoud, K.A.	COLL	555
Ma, X.	PMSE	421	Maclachlan, J.L.	PRES	20	Mahmoud, K.A.	ENVR	352
Ma, X.	POLY	556	Maclachlan, J.L.	SCHB	1	Mahmoud, K.A.	ENVR	61
Ma, X.	POLY	557	Maclaughlin, C.M.	COLL	326	Mahmoudi, F.	ENVR	50
Ma, X.	POLY	96	MacLaughlin, C.M.	COLL	82	Mahmoudi, M.	COLL	275
Ma, Y.	ANYL	100	MacLaurin, .	PHYS	243	Mahmud, S.	INOR	515
Ma, Y.	ENVR	21	MacLeod, K.C.	CATL	59	Mahnashi, M.	MEDI	71
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Maleski, K.	ORGN	17	Mang, S.	CHED	325	Mao, S.	COMP	69
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Malhotra, D.	ENFL	141	Mangadlao, J.D.	POLY	353	Mao, Y.	COLL	588
Malhotra, D.	ENFL	192	Mangadlao, J.D.	POLY	64	Mao, Y.	COMP	130
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Marceau, E.	CATL	46	Marrero-Ortiz, W.	ENVR	628	Martinez-Grau, M.A.	MEDI	385
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March, Z.	BIOL	17	Marrs, C.	ENVR	792	Martinez-Ortega, B.A.	CHED	34
Marchand, C.	MEDI	295	Marrs, K.A.	MEDI	275	Martinez-Ortega, B.A.	CHED	35
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Marchuk, K.	ANYL	111	Marsh, M.L.	INOR	441	Martin-Matute, B.	ORGN	397
Marcinkeviciene, J.	MEDI	18	Marshall, A.	INOR	86	Martin-Montero, R.	ORGN	633
Marcondes, S.	MEDI	329	Marshall, A.G.	ENFL	149	Martins, J.C.	POLY	122
Marcott, C.A.	ANYL	340	Marshall, A.G.	ENFL	468	Martinson, A.B.	INOR	370
Marcotte, I.	COLL	393	Marshall, C.L.	CATL	180	Martinson, A.B.	PHYS	268
Marcu, J.	AGRO	187	Marshall, C.L.	ENFL	267	Martinson, M.	ORGN	263
Marcu, J.	CHAS	18	Marshall, F.	MEDI	30	Martin-Subero, J.	MEDI	257
Marcu, J.	CHAS	53	Marshall, J.	COLL	250	Martiriggiano, C.	MEDI	103
Marcu, J.	CHAS	56	Marshall, J.W.	AGFD	104	Martoglio, B.	MEDI	250
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Marcus, A.P.	MEDI	100	Marshall, M.	ENFL	324	Marton, J.	ANYL	129
Marcus, A.P.	MEDI	95	Marshall, M.D.	PHYS	399	Marty, D.E.	ORGN	463
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Margaretta, E.	POLY	8	Martens, E.	PHYS	257	Marx, A.A.	AGRO	235
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Margulies, E.	PHYS	106	Marti, E.	ENVR	454	Maryanoff, C.A.	CHED	98
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Marino, J.P.	MEDI	9	Martin, G.E.	PMSE	200	Mason, A.	CHED	265
Marino, L.B.	MEDI	146	Martin, K.J.	ENFL	24	Mason, H.	GEOC	12
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Mathur, A.	ANYL	144	Maximenko, N.	ENVR	664	McCall, W.S.	AGRO	363
Mathur, A.	MEDI	18	Maximenko, N.	GEOC	76	McCallum, A.	AEI	3
Mathur, A.	MEDI	267	Maxon, M.	ENVR	198	McCallum, A.M.	INOR	494
Matich, E.	AGRO	226	Maxson, T.	BIOL	147	McCallum, A.M.	INOR	506
Matich, E.	AGRO	233	Maxwell, A.	PMSE	78	McCallum, S.A.	ENFL	220
Mativetsky, J.M.	ENFL	500	Maxwell, S.	NUCL	60	McCammant, M.	FLUO	6
Matolyak, L.	COLL	65	May, J.W.	CINF	94	McCandless, B.	COLL	166
Matolyak, L.E.	PMSE	424	May, N.	CHED	54	McCandless, B.	COLL	232
Matsen, M.	POLY	388	May, N.	ENVR	625	McCandless, G.	ORGN	519
Matsen, M.	WCC	5	May, P.S.	COMP	355	McCann, S.F.	AGRO	195
Matsika, S.	PHYS	359	May, S.	ENFL	504	McCarley, R.L.	PHYS	371
Matsika, S.	PHYS	360	May, S.	INOR	47	McCarren, P.R.	TOXI	46
Matsika, S.	PHYS	37	May, S.	INOR	607	McCarroll, M.N.	COMP	137
Matsika, S.	PHYS	411	May, W.	MPPG	3	McCarron, D.	PHYS	118
Matsika, S.	PHYS	474	Maye, M.M.	COLL	149	McCartan, S.C.	COMP	158
Matsinha, L.	CATL	307	Maye, M.M.	COLL	176	McCarter, J.	MEDI	266
Matson, E.M.	AEI	33	Maye, M.M.	COLL	245	McCarthy, B.	INOR	359
Matson, E.M.	INOR	241	Maye, M.M.	COLL	381	McCarthy, S.M.	ORGN	582
Matson, E.M.	INOR	618	Maye, M.M.	COLL	559	McCarthy-Riley, B.	ANYL	30
Matsubara, Y.	COMP	252	Maye, M.M.	COLL	562	McCartt, A.D.	ANYL	64
Matsuda, K.	AGRO	167	Mayer, B.P.	ANYL	130	McCarty, M.	ENVR	530
Matsuki, S.	CATL	258	Mayer, B.P.	ANYL	74	McCaskill, D.G.	ANYL	17
Matsunami, H.	BIOL	227	Mayer, B.P.	ENVR	671	McCauley, J.P.	ANYL	326
Matsunami, H.	COMP	382	Mayer, B.P.	INOR	148	McCauley, P.	CHED	394
Matsuoka, K.	CATL	185	Mayer, B.P.	PHYS	471	McClain, A.T.	PMSE	101
Matsushita, M.	COMP	252	Mayer, J.M.	COMP	75	McClain, K.R.	INOR	29
Matta, D.	COMP	61	Mayer, J.M.	INOR	222	McClelland, B.	MEDI	9
Matta, M.E.	PMSE	97	Mayer, J.M.	INOR	400	McClelland, B.	MEDI	90
Matta, M.E.	POLY	482	Mayer, J.M.	INOR	439	McClelland, M.L.	MEDI	25
Mattheakis, L.	MEDI	229	Mayer, J.M.	INOR	453	McClements, D.	AGFD	194
Matthews, C.R.	PHYS	162	Mayer, M.F.	ORGN	498	McClements, D.	AGFD	225
Matthews, J.	ORGN	561	Mayer, T.S.	PHYS	525	McClements, D.	AGFD	50
Matthews, J.	PHYS	100	Mayes, M.D.	COMP	312	McClements, D.J.	AGFD	262
Matthews, M.L.	BIOL	11	Maynard, C.K.	AGFD	188	McClory, A.	ORGN	209
Matthews, S.	COLL	247	Mayo, K.	AGRO	279	McCollom, S.	INOR	381
Matthews, S.	COLL	68	Mayo, K.	AGRO	309	McCollum, J.	POLY	438
Matthews, S.	PMSE	385	Mays, J.W.	PMSE	599	McConathy, J.	FLUO	13
Matthews, T.	FLUO	20	Mayville, M.J.	AGRO	85	McConnell, L.L.	AGRO	134
Matthiesen, J.E.	ENFL	97	Maza, W.	INOR	558	McConnell, L.L.	AGRO	135
Mattia, A.	AGFD	102	Mazaheripour, A.	COMP	68	McCool, N.S.	AEI	55
Mattioda, A.L.	PHYS	72	Mazaj, M.	PMSE	73	McCool, N.S.	INOR	140
Mattioni, B.E.	COMP	340	Mazal, T.	CATL	173	McCord, K.	CHED	231
Mattoussi, H.M.	COLL	1	Maziarz, K.	CHED	202	McCormick, B.	CHED	205
Mattoussi, H.M.	COLL	599	Mazza, S.	PHYS	269	McCourt, M.P.	MEDI	326
Mattoussi, H.M.	COLL	601	Mazzini, F.	POLY	514	McCourt, M.P.	MEDI	419
Mattson, S.	ORGN	733	Mbofana, C.	ORGN	400	McCoustra, M.R.	COLL	75
Maturo, M.	COMP	77	Mbofana, C.	ORGN	777	McCoustra, M.R.	PHYS	273
Matus-Meza, A.S.	MEDI	83	Mc Bride, M.B.	ENVR	67	McCracken, J.L.	ANYL	258
Matyjaszewski, K.	PMSE	127	Mc Cullough, A.	TOXI	100	McCracken, J.L.	BIOL	142
Matyjaszewski, K.	PMSE	158	Mc Elroy, N.R.	ENVR	45	McCray, J.E.	ENVR	34
Matyjaszewski, K.	PMSE	321	Mc Masters, D.R.	MEDI	84	McCray, J.E.	ENVR	528

McCray, M.	INOR	167	McGuigan, C.	MEDI	81	McNaughton, B.	WCC	2
McCrea, C.	MEDI	20	McGuigan, L.	AGFD	188	McNeese, J.	POLY	450
McCrum, I.	ENFL	346	McGuiggan, P.	COLL	296	McNeill, A.	PMSE	681
McCulloch, B.	PMSE	121	McGuinness, B.F.	CHED	78	McNeill, V.F.	PHYS	288
Mcculloch, W.D.	ENFL	280	McGuinness, B.F.	MEDI	381	McNeill, V.F.	PHYS	485
McCune, C.D.	BIOL	212	McGuinness, B.F.	MEDI	382	McNeill, V.F.	PHYS	85
McCune, C.D.	ORGN	657	McGuire, B.	PHYS	541	McQuade, T.	BIOL	52
McCusker, J.K.	INOR	355	McGuire, M.A.	AGRO	251	McQueeney, K.E.	MEDI	10
McCusker, J.K.	INOR	471	McGuire, M.A.	AGRO	251	McQuilken, A.	INOR	327
McDaid, H.M.	MEDI	334	McIndoe, J.S.	ANYL	305	McShane, M.	PMSE	682
McDaniel, K.	MEDI	254	McInnis, D.	ENVR	106	McShane, M.	PMSE	689
McDaniel, K.	MEDI	286	McIntee, E.J.	CHED	21	McWilliams, S.F.	CATL	59
McDaniel, P.	ANYL	228	McIntosh, M.C.	ORGN	659	McWilliams, S.F.	INOR	198
McDaniel, T.J.	INOR	23	McIntyre, K.	CHAL	11	McWilliams, S.F.	INOR	272
McDaniel, T.J.	ORGN	279	McIntyre, K.	CHAL	15	Mdluli, V.	INOR	479
McDonald, A.R.	INOR	342	Mcintyre, K.	MEDI	272	Meade, L.E.	CHED	152
McDonald, L.W.	NUCL	12	Mcintyre, M.	CATL	89	Meade, L.E.	CHED	223
McDonald, L.W.	NUCL	21	McKary, M.	BIOL	197	Meade, T.J.	MEDI	418
McDonald, T.	ENFL	193	McKee, W.	CATL	65	Meador, M.	PMSE	295
McDonald, T.	ENVR	643	McKee, W.	ENFL	349	Meadows, M.	ORGN	426
McDonnell, D.	MEDI	1	McKeen, S.	PHYS	124	Means, N.	ENFL	235
Mcdonough, J.	ENVR	236	Mckeever, B.M.	MEDI	100	Meanwell, N.A.	MEDI	196
McDonough, R.T.	PHYS	478	Mckeever, B.M.	MEDI	95	Meanwell, N.A.	MEDI	22
McDuffie, E.	PHYS	43	McKeever, L.	AGFD	213	Meanwell, N.A.	MEDI	232
McElroy, J.	ANYL	354	McKeithan, C.	INOR	663	Meanwell, N.A.	TOXI	36
McElwee-White, L.	INOR	571	McKeithan, C.	INOR	90	Meany, B.	PHYS	321
McElwee-White, L.	INOR	79	McKendry, I.	CATL	21	Meany, B.	PHYS	523
McEnaney, J.M.	INOR	671	McKendry, I.	INOR	156	Meany, F.B.	ORGN	725
Mcennis, K.	AEI	62	McKendry, I.	INOR	525	Meckel, S.E.	PHYS	359
McEnroe, G.A.	MEDI	278	McKendry, I.G.	INOR	185	Mecozzi, S.	COLL	186
McEntee, M.L.	CATL	91	McKenna, K.	ORGN	140	Medard, G.	AGFD	123
McEntee, M.L.	PHYS	522	McKenzie, E.R.	CATL	287	Medebielle, M.	ORGN	225
McEwan, M.	CHED	304	McKenzie, E.R.	ENVR	34	Mededovic, S.	ENVR	59
McEwan, L.	CHAS	28	McKenzie, E.R.	ENVR	528	Mededovic-Thagard, S.	ENVR	239
McEwan, L.	CINF	42	McKenzie, J.	PHYS	530	Medeiros, L.	AGFD	32
McEwan, L.	CINF	57	McKeown, B.A.	COMP	75	Medillin Azuara, J.	ENVR	181
McEwan, L.	CINF	58	McKeown, N.B.	PMSE	1	Medina Ramos, J.	CATL	279
McEwan, L.	CINF	7	McKernan, J.	ENVR	327	Medina, J.	COLL	132
McEwan, L.	CINF	75	McKinley, G.H.	POLY	260	Medina, J.	ENVR	347
McEwan, L.	CINF	77	McKinnon, M.	PMSE	200	Medina, J.	ORGN	342
McEwan, L.	CINF	80	McKinnon, M.	PMSE	588	Medina, J.T.	CHED	256
McEwan, L.	CINF	81	McKinnon, M.E.	CATL	228	Medina, L.	PMSE	146
McEwan, L.	CINF	83	McKinnon, M.E.	CATL	27	Medina, L.	PMSE	256
McEwan, L.	CINF	84	McKinnon, M.E.	INOR	652	Medina, P.A.	INOR	565
McFadden, P.D.	POLY	58	McKnight, C.	POLY	504	Medina, S.	COLL	1
McFarland, B.J.	CHED	429	McLachlan, S.	TOXI	84	Medina-Bolivar, F.	AGFD	4
McFarland, B.J.	ENVR	376	McLain, D.	NUCL	13	Medina-Cleghorn, D.	TOXI	84
McFarland, B.J.	HIST	42	McLain, H.L.	PHYS	542	Medina-Kauwe, L.	INOR	320
McGann, C.L.	PMSE	179	McLain, J.	AGRO	117	Medina-Velo, I.A.	ENVR	470
McGann, C.L.	PMSE	180	McLain, J.	ENVR	740	Medina-Velo, I.A.	ENVR	660
McGann, C.L.	PMSE	419	McLain, K.	AGRO	82	Medintz, I.	ENVR	11
McGarrigle, E.M.	ORGN	82	McLain, S.E.	BIOL	99	Meduri, K.	ENVR	429
McGarvey, A.M.	AGRO	235	McLain, S.E.	COMP	339	Meduri, K.	ENVR	558
McGath, M.	COLL	296	McLain, S.E.	INOR	402	Medvedev, D.G.	NUCL	33
McGaughey, G.	COMP	140	McLain, S.E.	PHYS	464	Medvedev, D.G.	NUCL	48
McGeachy, A.	COLL	394	McLain, S.E.	PHYS	464	Medvedev, D.G.	NUCL	50
McGeachy, A.	COLL	453	McLandsborough, L.	AGFD	239	Medvedev, G.A.	INOR	151
McGeachy, A.	COLL	457	McLauchlan, C.C.	INOR	116	Medvedev, G.A.	INOR	24
McGeachy, A.	COLL	526	McLauchlan, C.C.	INOR	197	Medvedev, G.A.	INOR	24
McGee, S.	AGRO	126	McLaughlin, E.C.	ORGN	773	Meek, K.	MEDI	221
McGeehan, G.	MEDI	100	McLaughlin, j.	BIOL	104	Meek, S.	ORGN	320
McGeehan, G.	MEDI	95	McLaughlin, J.	PMSE	566	Meenakshisundaram, V.	POLY	574
McGhee, C.	ANYL	89	McLaughlin, N.	ORGN	461	Meepagala, K.M.	AGRO	28
McGill, T.J.	COLL	521	McLaughlin, P.	POLY	519	Meepagala, K.M.	AGRO	316
McGinty, H.	CINF	51	McLaughlin, S.	AGRO	361	Meerheim, R.	ORGN	137
McGinty, L.	ORGN	692	McLendon, R.	GEOC	10	Mees, M.A.	POLY	122
McGivney, E.	ENVR	355	McLeod, A.	CHED	157	Mees, M.A.	POLY	272
McGlone, C.	POLY	248	McLeod, C.	AGRO	289	Mees, M.A.	POLY	493
McGlone, M.E.	CHED	170	McLeod, D.	ORGN	245	Mees, M.A.	POLY	68
McGonagle, A.	MEDI	260	Mcluckey, S.A.	AEI	51	Meese, M.	PMSE	60
McGovern, K.R.	BIOL	110	Mcluckey, S.A.	PHYS	414	Meguerdichian, A.	COLL	507
McGown, L.B.	PHYS	270	McMahon, J.	MEDI	229	Mehendale, R.	SCHB	15
McGrail, B.	GEOC	23	McMahon, S.	FLUO	7	Mehl, R.A.	CHED	343
McGrail, B.	GEOC	26	McManus, S.A.	ANYL	237	Mehlmann, F.	POLY	510
McGrail, B.	GEOC	5	McMenamin, R.	MEDI	9	Mehrpoouya-Bahrami, P.	POLY	318
McGrath, A.	PMSE	205	McMillan, P.	CHAS	23	Mehta, A.	AGFD	254
McGrath, A.	POLY	266	McMillan, P.	CHAS	3	Mehta, A.	PHYS	212
McGrath, J.E.	PMSE	322	McMonagle, P.	MEDI	276	Mehta, A.	SCHB	19
McGraw, R.	ENVR	18	McMurry, P.H.	PHYS	517	Mehta, N.	FLUO	4
McGregor, D.	CHED	430	McNamara, S.	CHED	54	Mehta, P.	ENFL	343
			McNaughton, B.	BIOL	214	Mehta, S.	ENFL	511

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<b>Mehta-Hurt, D.</b>	PHYS	327	<b>Meng, A.</b>	ENVR	370	<b>Mesaros, C.</b>	TOXI	30
<b>Mei, D.</b>	CATL	176	<b>Meng, J.</b>	ENFL	374	<b>Mesaros, C.</b>	TOXI	45
<b>Mei, D.</b>	CATL	284	<b>Meng, P.</b>	ENVR	35	<b>Mesaros, C.</b>	TOXI	79
<b>Mei, D.</b>	ENFL	111	<b>Meng, Q.</b>	COMP	355	<b>Mescher, M.</b>	AGRO	25
<b>Mei, D.</b>	ENFL	24	<b>Meng, Q.</b>	ORGN	703	<b>Meschwitz, S.M.</b>	AGFD	57
<b>Mei, D.</b>	ENFL	350	<b>Meng, S.</b>	AGFD	72	<b>Mesgar, M.</b>	ORGN	230
<b>Mei, D.</b>	ENFL	367	<b>Meng, S.</b>	MEDI	100	<b>Meshot, E.R.</b>	ENVR	231
<b>Mei, J.</b>	PMSE	263	<b>Meng, S.</b>	MEDI	95	<b>Meshram, B.</b>	MEDI	127
<b>Mei, N.</b>	AGFD	233	<b>Meng, T.</b>	PMSE	667	<b>Mesko, A.</b>	PHYS	271
<b>Mei, S.</b>	COLL	306	<b>Meng, W.</b>	MEDI	18	<b>Meslamani, J.</b>	CINF	86
<b>Mei, S.</b>	PMSE	627	<b>Meng, W.</b>	MEDI	267	<b>Meslamani, J.</b>	MEDI	33
<b>Meier, M.</b>	POLY	199	<b>Meng, W.</b>	MEDI	380	<b>Mespouille, L.M.</b>	POLY	251
<b>Meier, M.</b>	POLY	33	<b>Meng, W.S.</b>	COLL	570	<b>Messenger, L.</b>	POLY	169
<b>Meier, W.</b>	COLL	454	<b>Meng, X.</b>	AGRO	241	<b>Messina, K.</b>	BIOL	179
<b>Meier, W.</b>	POLY	131	<b>Meng, X.</b>	CATL	194	<b>Metallo, S.J.</b>	PHYS	5
<b>Meier, W.</b>	POLY	229	<b>Meng, X.</b>	COMP	290	<b>Metch, J.</b>	ENVR	472
<b>Meier, W.</b>	POLY	281	<b>Meng, X.</b>	ENFL	142	<b>Methuku, K.</b>	MEDI	397
<b>Meijer, A.J.</b>	PHYS	16	<b>Meng, X.</b>	ENFL	205	<b>Metiu, H.</b>	CATL	22
<b>Meijer, E.W.</b>	AEI	64	<b>Meng, X.</b>	ENFL	355	<b>Metiu, H.</b>	ENFL	400
<b>Meijer, E.W.</b>	PMSE	505	<b>Meng, X.</b>	ENFL	68	<b>Metwally, E.</b>	COMP	206
<b>Meijer, E.W.</b>	POLY	234	<b>Meng, X.</b>	ENVR	150	<b>Metwally, E.</b>	MEDI	420
<b>Meijer, E.W.</b>	POLY	452	<b>Meng, X.</b>	ENVR	163	<b>Metz, C.</b>	MEDI	356
<b>Meijer, E.W.</b>	POLY	475	<b>Meng, X.</b>	ENVR	264	<b>Metzger, E.</b>	MEDI	14
<b>Meijer, E.W.</b>	POLY	7	<b>Meng, X.</b>	ENVR	334	<b>Metzger, J.O.</b>	POLY	33
<b>Meinhold, W.</b>	PMSE	631	<b>Meng, X.</b>	ENVR	342	<b>Meucci, E.A.</b>	INOR	689
<b>Meininger, C.</b>	ENVR	282	<b>Meng, X.</b>	ENVR	476	<b>Meucci, E.A.</b>	INOR	95
<b>Meireles, L.</b>	COMP	140	<b>Meng, X.</b>	INOR	411	<b>Meuler, A.J.</b>	POLY	260
<b>Meisel, N.A.</b>	COLL	33	<b>Meng, X.</b>	PMSE	307	<b>Meunier, D.M.</b>	ANYL	222
<b>Mejia, J.</b>	COLL	287	<b>Meng, Y.</b>	ENFL	183	<b>Meunier, D.M.</b>	ANYL	329
<b>Mekala, V.</b>	MEDI	168	<b>Mengel, S.</b>	INOR	527	<b>Meunier, V.</b>	COMP	283
<b>Mekala, V.</b>	MEDI	170	<b>Menges, C.</b>	TOXI	28	<b>Meydani, M.</b>	AGFD	130
<b>Melaet, G.</b>	CATL	24	<b>Menges, S.</b>	CHED	276	<b>Meyer, A.</b>	ORGN	253
<b>Melaet, G.</b>	CATL	314	<b>Menner, A.</b>	PMSE	510	<b>Meyer, F.</b>	POLY	510
<b>Melby, E.</b>	COLL	453	<b>Menner, A.</b>	PMSE	657	<b>Meyer, G.J.</b>	INOR	312
<b>Melby, E.</b>	COLL	456	<b>Menner, A.</b>	PMSE	66	<b>Meyer, G.J.</b>	INOR	314
<b>Melby, E.</b>	COLL	457	<b>Mennucci, B.</b>	PHYS	93	<b>Meyer, G.J.</b>	INOR	523
<b>Melby, E.</b>	COLL	526	<b>Mensa, B.</b>	ANYL	39	<b>Meyer, G.J.</b>	INOR	536
<b>Melby, E.</b>	ENVR	731	<b>Mensch, A.C.</b>	COLL	456	<b>Meyer, G.J.</b>	PHYS	566
<b>Melchor, M.</b>	COLL	389	<b>Mensch, K.</b>	PHYS	384	<b>Meyer, J.</b>	PMSE	569
<b>Mele, N.</b>	COMP	198	<b>Menter, D.</b>	BIOL	40	<b>Meyer, K.</b>	INOR	593
<b>Mele, N.</b>	COMP	244	<b>Menumerov, E.</b>	CATL	287	<b>Meyer, K.</b>	INOR	77
<b>Melendez, J.</b>	AGRO	320	<b>Menumerov, E.</b>	COLL	50	<b>Meyer, K.G.</b>	AGRO	197
<b>Meleties, P.</b>	CHED	160	<b>Menzel, K.</b>	COMP	340	<b>Meyer, T.</b>	INOR	312
<b>Meleties, P.</b>	CHED	224	<b>Mercadante, M.A.</b>	ORGN	715	<b>Meyer, T.J.</b>	INOR	216
<b>Meleties, P.</b>	CHED	227	<b>Mercado, B.Q.</b>	CATL	59	<b>Meyer, T.J.</b>	INOR	264
<b>Melkonian, A.</b>	PMSE	516	<b>Mercado, B.Q.</b>	INOR	272	<b>Meyer, T.J.</b>	INOR	314
<b>Mellentine, J.</b>	ENVR	435	<b>Mercado, B.Q.</b>	INOR	288	<b>Meyer, T.J.</b>	INOR	446
<b>Melnyk, J.E.</b>	BIOL	106	<b>Mercado, E.V.</b>	BIOL	33	<b>Meyer, T.J.</b>	INOR	452
<b>Melnyk, J.E.</b>	BIOL	85	<b>Mercado, L.N.</b>	POLY	318	<b>Meyer, T.J.</b>	INOR	453
<b>Melo-Hernández, L.A.</b>	MEDI	166	<b>Mercado, R.</b>	PMSE	338	<b>Meyer, T.J.</b>	INOR	456
<b>Melton, O.T.</b>	PMSE	338	<b>Mercado, R.</b>	PMSE	484	<b>Meyer, T.J.</b>	INOR	464
<b>Melton, O.T.</b>	PMSE	484	<b>Merchant, M.</b>	ORGN	263	<b>Meyer, T.J.</b>	INOR	467
<b>Mély, Y.</b>	ORGN	596	<b>Mercurio, A.M.</b>	COLL	225	<b>Meyer, T.J.</b>	INOR	519
<b>Melzer, M.M.</b>	CHED	402	<b>Mereddy, V.</b>	MEDI	369	<b>Meyer, T.J.</b>	INOR	557
<b>Memon, M.H.</b>	ENVR	368	<b>Meredith, A.N.</b>	AGRO	33	<b>Meyer, T.Y.</b>	PMSE	265
<b>Men, Y.</b>	ENVR	446	<b>Meredith, H.</b>	COLL	91	<b>Meyer, T.Y.</b>	PMSE	360
<b>Mena, C.</b>	INOR	113	<b>Meredith, W.</b>	ENFL	69	<b>Meyer, T.Y.</b>	POLY	421
<b>Menard, G.</b>	INOR	149	<b>Merenbloom, B.</b>	MEDI	144	<b>Meyer, T.Y.</b>	POLY	423
<b>Menard, G.</b>	INOR	152	<b>Merg, A.</b>	INOR	83	<b>Meyer, T.Y.</b>	POLY	424
<b>Menard, G.</b>	INOR	157	<b>Merget, B.</b>	COMP	168	<b>Meyer, T.Y.</b>	POLY	538
<b>Menard, G.</b>	INOR	57	<b>Merhi, A.</b>	COMP	258	<b>Meyerhoff, M.E.</b>	ANYL	167
<b>Menard, G.</b>	INOR	654	<b>Merino, E.F.</b>	MEDI	6	<b>Mezhoud, S.</b>	PMSE	654
<b>Ménard, R.</b>	POLY	184	<b>Merino, E.J.</b>	BIOL	88	<b>Mezic, I.</b>	BIOL	186
<b>Menasco, D.</b>	ORGN	532	<b>Merino, E.J.</b>	INOR	8	<b>Mezic, I.</b>	BIOL	59
<b>Menceloglu, Y.Z.</b>	AGFD	278	<b>Merino, N.</b>	ENVR	172	<b>Mezyk, S.P.</b>	ENVR	319
<b>Menceloglu, Y.Z.</b>	COLL	72	<b>Merino, N.</b>	ENVR	448	<b>Mezyk, S.P.</b>	ENVR	320
<b>Mencer, D.E.</b>	CHED	398	<b>Merker, R.I.</b>	AGFD	244	<b>Mezyk, S.P.</b>	ENVR	385
<b>Mencer, D.E.</b>	ORGN	689	<b>Merkl, J.</b>	COLL	601	<b>Mezyk, S.P.</b>	ENVR	386
<b>Mendelsohn, R.</b>	COLL	209	<b>Merkt, F.</b>	PHYS	169	<b>Mezyk, S.P.</b>	ENVR	387
<b>Mendelsohn, R.</b>	COLL	438	<b>Merrick, M.F.</b>	AGRO	115	<b>Mezyk, S.P.</b>	ENVR	398
<b>Mendelsohn, R.</b>	ENFL	260	<b>Merritt, A.</b>	MEDI	374	<b>Mezyk, S.P.</b>	ENVR	412
<b>Mendenhall, C.J.</b>	INOR	627	<b>Merritt, A.</b>	MEDI	375	<b>Mezzari, I.</b>	COLL	431
<b>Mendivelso, D.</b>	ANYL	11	<b>Merritt, J.R.</b>	CHED	78	<b>Mi, Y.</b>	MEDI	284
<b>Mendonca, A.</b>	AGFD	236	<b>Merritt, J.W.</b>	INOR	430	<b>Miao, J.</b>	ENFL	220
<b>Mendoza, A.</b>	ORGN	633	<b>Mertz, C.</b>	NUCL	61	<b>Miao, Y.</b>	ENVR	443
<b>Mendoza, G.</b>	CHED	323	<b>Mertzenich, C.L.</b>	CHED	403	<b>Miao, Y.</b>	NUCL	23
<b>Mendoza-Garcia, A.</b>	COLL	343	<b>Mertzman, M.</b>	MEDI	272	<b>Miao, Y.</b>	ORGN	12
<b>Mendoza-Garcia, A.</b>	COLL	67	<b>Mervin, L.</b>	COMP	171	<b>Miao, Z.</b>	POLY	270
<b>Menezes da Silva, V.H.</b>	COMP	245	<b>Merz, K.M.</b>	COMP	90	<b>Michael, H.A.</b>	GEOC	44
<b>Meng, A.</b>	ENVR	369	<b>Merzel, R.</b>	POLY	427	<b>Michaelis, D.J.</b>	INOR	27

Michaelos, T.	INOR	230	Miller, M.	ORGN	275	Mirkin, C.A.	WCC	4
Michal, B.	COLL	352	Miller, M.D.	MEDI	371	Miro, P.	AEI	15
Michaudel, Q.	ORGN	569	Miller, P.	FLUO	19	Miro, P.	CATL	134
Michel, A.K.	TOXI	65	Miller, R.	CHED	80	Mironenko, A.	CATL	172
Michel, A.K.	TOXI	66	Miller, R.D.	COMP	94	Mironenko, A.	CATL	173
Michel, B.	ORGN	596	Miller, S.	MEDI	388	Mironenko, A.	ENFL	344
Michel, C.	CATL	261	Miller, S.A.	INOR	472	MirsalehKohan, N.	CHED	386
Michel, G.	CATL	51	Miller, S.A.	POLY	357	Mirsaleh-Kohan, N.	PHYS	451
Michel, G.	CATL	54	Miller, S.E.	COMP	344	Mirzadeh, S.	NUCL	33
Michel, G.	CATL	56	Miller, T.	COMP	217	Mirzadeh, S.	NUCL	35
Michienzi, M.R.	ANYL	127	Miller, T.F.	COMP	110	Mirzadeh, S.	NUCL	48
Michmerhuizen, A.	ANYL	371	Miller, Y.	PHYS	518	Mirzadeh, S.	NUCL	63
Michniak-Kohn, B.	POLY	95	Millerick, K.	ENVR	590	Mishra, A.	ENFL	404
Mickelsen, K.	ORGN	499	Milligan, I.	POLY	139	Mishra, N.K.	MEDI	258
Mickelson, W.	COLL	441	Milligan, J.A.	ORGN	19	Mishra, O.P.	MEDI	415
Middlecamp, C.H.	CHED	409	Milliron, D.J.	COLL	478	Mishra, S.	PMSE	625
Middleton, L.R.	PMSE	94	Mills, J.M.	PHYS	520	Misichronis, K.	PMSE	599
Midgley, P.	ENVR	69	Mills, M.	GEOC	71	Miskowicz, A.	NUCL	24
Midoux, P.	POLY	125	Mills, P.	CHED	430	Misra, R.	ENVR	471
Miecznikowski, J.R.	CHED	234	Millstone, J.	INOR	294	Misra, R.N.	MEDI	175
Miecznikowski, J.R.	CHED	31	Millstone, J.	PHYS	322	Misselwitz, M.N.	AGRO	115
Miecznikowski, J.R.	CHED	32	Millward, S.W.	BIOL	40	Mitch, W.	ENVR	350
Miecznikowski, J.R.	CHED	382	Millward, S.W.	MEDI	177	Mitch, W.	ENVR	397
Miecznikowski, J.R.	CHED	383	Millne, J.	ORGN	276	Mitch, W.	ENVR	454
Mielnicki, L.	MEDI	326	Milorey, B.	PHYS	482	Mitch, W.	ENVR	49
Mielnicki, L.	MEDI	419	Milosavljevic, B.H.	PHYS	354	Mitch, W.	ENVR	518
Miernik, K.	NUCL	34	Milosavljevic, B.H.	PHYS	452	Mitchell, A.E.	AGFD	183
Mighion, J.D.	ORGN	116	Milshteyn, E.	PHYS	381	Mitchell, D.	BIOL	147
Mighion, J.D.	ORGN	289	Miltner, A.	AGRO	120	Mitchell, D.	MEDI	242
Migler, K.B.	COLL	34	Mims, C.	ENFL	367	Mitchell, D.	ORGN	205
Mihailescu, M.	BIOL	95	Min, B.	CATL	190	Mitchell, D.E.	POLY	287
Mikhailov, E.	ENVR	154	Min, B.	CATL	195	Mitchell, E.P.	TOXI	31
Mikhalyova, E.A.	INOR	434	Min, J.	TOXI	10	Mitchell, G.	AGFD	230
Miki, K.	POLY	52	Min, W.	ANYL	33	Mitchell, G.	AGRO	140
Mikkelsen, M.H.	COLL	544	Min, W.	POLY	273	Mitchell, G.	AGRO	358
Mikkelson, K.	ENVR	451	Minamino, N.	MEDI	300	Mitchell, G.	BIOL	83
Milaczewska, A.	INOR	424	Minasian, S.G.	INOR	166	Mitchell, H.	COLL	523
Milam, S.N.	PHYS	26	Minbiole, K.P.	BIOL	77	Mitchell, H.	ORGN	144
Milam, S.N.	PHYS	271	Minbiole, K.P.	CHED	260	Mitchell, H.	INOR	19
Milanese, J.	AEI	16	Minbiole, K.P.	CHED	267	Mitchell, M.	CHED	260
Milanese, J.	COMP	17	Minbiole, K.P.	MEDI	361	Mitchell, M.	MEDI	15
Milanovich, N.	PRES	41	Minbiole, K.P.	MEDI	413	Mitchell, S.	ORGN	706
Milbank, J.	COMP	21	Minbiole, K.P.	ORGN	418	Mitchell, T.D.	PHYS	347
Milczarek, R.R.	AGFD	144	Mindiola, D.J.	INOR	22	Mitlin, D.	ENFL	279
Milenbaugh, P.K.	ORGN	270	Mindiola, D.J.	INOR	547	Mito, S.	ORGN	278
Miles, L.	BIOL	17	Mindiola, D.J.	INOR	603	Mitra, S.	ENFL	11
Milgram, B.	MEDI	280	Mindiola, D.J.	INOR	604	Mitra, S.	ENFL	355
Mili, M.	POLY	518	Mindiola, D.J.	ORGN	783	Mitra, S.	MEDI	383
Milianta, P.	CHED	171	Mineart, K.P.	PMSE	344	Mitra, S.	PMSE	110
Miljak, M.	COMP	198	Minegishi, S.	PMSE	535	Mitra, S.	PMSE	115
Miljak, M.	COMP	244	Miner, A.	CHED	183	Mitra, S.	PMSE	32
Miller, A.	ENVR	282	Miner, P.	AGRO	361	Mitrano, D.	BIOL	166
Miller, A.	PHYS	383	Ming, Y.	ENVR	633	Mitrea, D.M.	PHYS	334
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Miller, A.J.	INOR	224	Minh Ngo, Q.	COLL	233	Mittag, T.	PHYS	338
Miller, A.J.	INOR	326	Minko, S.	COMP	44	Mittal, J.	PHYS	210
Miller, A.J.	INOR	529	Minnema, D.	AGRO	353	Mittal, J.	PHYS	33
Miller, A.J.	INOR	653	Minoux, H.	MEDI	27	Mittal, J.	PHYS	336
Miller, A.L.	ANYL	63	Minsky, H.	COLL	295	Mittal, J.	PHYS	74
Miller, B.	BIOL	92	Minter, D.J.	MEDI	163	Mittal, J.	PHYS	76
Miller, B.D.	NUCL	26	Miotto, R.J.	ORGN	79	Mittal, N.	PHYS	468
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Miller, C.	PHYS	210	Miranda Nieves, D.	COLL	351	Mittapalli, R.	INOR	53
Miller, C.E.	PHYS	106	Miranda, A.	AGFD	117	Miu, C.	INOR	643
Miller, D.	COMP	149	Miranda, A.	ANYL	106	Miura, Y.	POLY	529
Miller, D.D.	MEDI	290	Miranda, C.S.	FLUO	17	Miwa, K.	ANYL	139
Miller, D.O.	PHYS	218	Miranda, E.	MEDI	257	Miwa, K.	ORGN	709
Miller, E.	INOR	86	Mirgona, E.N.	AGRO	146	Miyadera, Y.	ORGN	485
Miller, E.	MEDI	65	Mirica, K.	CHED	269	Miyagi, K.	PMSE	535
Miller, G.	COMP	200	Mirica, K.	ORGN	11	Miyazaki, Y.	PHYS	41
Miller, G.C.	AGRO	188	Mirica, K.	ORGN	141	Miyazato, M.	MEDI	300
Miller, J.	ENFL	247	Mirica, K.	ORGN	142	Miyoshi, T.	PMSE	443
Miller, J.	ENVR	361	Mirica, K.	ORGN	144	Mizugaki, T.	CATL	288
Miller, J.	PMSE	328	Mirica, K.	ORGN	613	Mizuhara, T.	BIOL	263
Miller, K.	CHED	196	Mirica, L.M.	INOR	192	Mizuno, C.S.	MEDI	120
Miller, K.A.	PMSE	425	Mirkin, C.A.	ANYL	289	Mizuno, F.	ENFL	437
Miller, K.M.	POLY	523	Mirkin, C.A.	INOR	268	Mlsna, T.	AEI	19
Miller, L.W.	ANYL	155	Mirkin, C.A.	MPPG	10	Mlsna, T.	ENVR	58
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Moerner, W.E.	PHYS	536	Mondal, S.	ORGN	656	Moore, J.S.	PMSE	304
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Mohamed, A.	CHED	270	Monier, M.	PMSE	433	Moore, M.	MEDI	288
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Mohamed, A.	COLL	232	Monnery, B.	POLY	232	Moore, P.B.	COMP	346
Mohamed, M.	MEDI	364	Monnery, B.	POLY	267	Moore, P.B.	COMP	351
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Mohanty, S.K.	GEOC	41	Monteith, L.T.	CATL	134	Morales, K.	ANYL	390
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Mohsin, S.	ENVR	777	Monzel, C.	COLL	528	Moran, K.	ORGN	150
Moir, M.M.	ENFL	514	Moody, K.	NUCL	17	Moran, K.D.	AGRO	242
Mojica, E.E.	CHED	141	Moody, M.P.	CATL	46	Moran, K.D.	AGRO	243
Mojica, E.E.	CHED	142	Moody, S.A.	ANYL	260	Moran, K.D.	AGRO	323
Mojica, E.E.	CHED	143	Moody, S.A.	PHYS	57	Moran, K.D.	AGRO	89
Mojica, E.E.	CHED	144	Moog, R.S.	CHED	409	Moran, P.	AGRO	46
Molander, G.A.	MEDI	239	Moon, A.P.	PHYS	109	Morandi, F.	MEDI	200
Molander, G.A.	ORGN	199	Moon, A.P.	PHYS	266	Morang, J.	PHYS	552
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Molander, G.A.	ORGN	228	Moon, E.	ENFL	504	More, S.	CATL	11
Molander, G.A.	ORGN	296	Moon, J.	AGFD	86	Moreadith, R.	POLY	277
Molander, G.A.	ORGN	394	Moon, J.	AGFD	87	Moreau, R.	AGFD	150
Molander, G.A.	ORGN	469	Moon, J.	AGRO	153	Moreau, R.	AGFD	268
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Moldaenke, C.	ENVR	521	Moonschi, F.	BIOL	230	Moreno, D.	ORGN	263
Molde, J.	PMSE	329	Moonschi, F.	PHYS	318	Moreno, J.	ORGN	363

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Moreno-Sanz, G.	CHAS	57	Morrow, J.R.	INOR	628	Moyer, B.	MEDI	280
Moreno-Silerio, R.	MEDI	132	Morrow, M.G.	ORGN	153	Moyer, B.A.	NUCL	56
Moreton, J.	INOR	130	Morse, D.C.	POLY	81	Moyer, R.O.	CHED	381
Moretti, A.E.	CHED	231	Morse, J.	INOR	673	Mozhdehi, D.	PMSE	428
Moretti, A.E.	COLL	137	Morse, M.	CHED	52	Mozyrsky, D.	PHYS	503
Moretti, A.E.	PMSE	308	Morseth, Z.	INOR	316	Mpourmpakis, G.	CATL	105
Moretti, A.E.	POLY	55	Morstein, J.	ORGN	729	Mpourmpakis, G.	CATL	116
Moretto, A.	AGRO	272	Mortensen, J.	ENVR	534	Mpourmpakis, G.	CATL	75
Morgan, A.B.	PMSE	147	Morton, G.C.	MEDI	383	Mpourmpakis, G.	PHYS	229
Morgan, A.B.	PMSE	149	Mosa, J.	PMSE	665	Mrksich, M.	INOR	248
Morgan, A.B.	PMSE	313	Mosby, B.M.	PMSE	304	Mrlík, M.	POLY	225
Morgan, B.	CHAS	2	Mosby, M.	NUCL	44	Mroczkowski, B.	MEDI	63
Morgan, B.	CHAS	23	Mosca, F.	PMSE	369	Msayib, K.	PMSE	1
Morgan, B.	PMSE	23	Moseh, P.	PMSE	51	Mtchedlidze, G.	MEDI	103
Morgan, D.	CHED	261	Moseley, T.	PHYS	370	Mu, G.	COLL	116
Morgan, M.	AEI	3	Mosely, R.	PMSE	352	Mu, G.	POLY	425
Morgan, M.	INOR	494	Moseni, K.	INOR	685	Mu, H.	TOXI	55
Morgan, M.	INOR	506	Mosier, A.	ENVR	92	Mu, L.	COLL	351
Morgan, N.	I&EC	21	Mosier, P.D.	COMP	239	Mucci, A.	ENVR	5
Morgan, N.	I&EC	49	Moskovits, M.	ANYL	293	Mucha, N.	INOR	245
Morgan, S.E.	CHED	330	Moskowitz, B.M.	CATL	39	Muchero, W.	ENFL	205
Morgan, S.E.	ENVR	57	Moskowitz, L.E.	CHED	138	Muckelbauer, J.	MEDI	18
Morgan, S.E.	POLY	412	Moslin, R.	MEDI	272	Muckelbauer, J.	MEDI	267
Morgan, S.E.	POLY	436	Mosnacek, J.	POLY	225	Muckelbauer, J.	MEDI	380
Morgan, S.E.	POLY	497	Mosquera, M.A.	COMP	13	Muckelbauer, J.	MEDI	395
Morgese, G.	POLY	280	Mosquera, M.A.	PHYS	502	Muckelbauer, J.K.	MEDI	162
Mori, K.	BIOL	157	Mosquera-Giraldo, L.I.	COMP	290	Muckerman, J.T.	CATL	31
Mori, K.	MEDI	300	Mosquera-Giraldo, L.I.	POLY	429	Muckerman, J.T.	INOR	211
Moriarty, B.E.	I&EC	22	Mosquin, P.	AGRO	113	Muckerman, J.T.	INOR	216
Moriarty, G.	PHYS	163	Mosquin, P.	AGRO	114	Muddana, N.	MEDI	169
Moriarty, T.	AGRO	215	Mosquin, P.	AGRO	254	Muddiman, D.C.	PHYS	55
Morimoto, H.	ORGN	85	Moss, T.	ORGN	707	Muddineti, O.	COLL	189
Morimoto, S.	MEDI	386	Moss-Hayes, V.	ENFL	69	Muddineti, O.	COLL	257
Morin, G.	COLL	284	Mossine, A.	FLUO	6	Mudiyanselage, A.Y.	ORGN	503
Morin, P.	MEDI	91	Mostofian, B.	ENVR	439	Muehl, E.	ANYL	220
Morioka, N.	PMSE	432	Mostrag-Szlichtyng, A.	TOXI	50	Muellen, K.	COLL	412
Morisaki, K.	ORGN	85	Mosurkal, R.	COLL	136	Muellen, K.	COLL	415
Morishita, D.W.	AGRO	68	Mosurkal, R.	PMSE	532	Muellen, K.	COLL	73
Moritz, F.	AGFD	293	Mosurkal, R.	PMSE	587	Mueller, A.	PMSE	359
Morizawa, Y.	ORGN	25	Motiwala, H.	ORGN	585	Mueller, C.	INOR	548
Morkan, A.	INOR	126	Motlagh, H.N.	PHYS	2	Mueller, C.	INOR	579
Morkan, A.	INOR	481	Motley, T.C.	INOR	523	Mueller, C.E.	AGRO	372
Morkan, A.	INOR	483	Motoo, T.	PMSE	426	Mueller, H.	PHYS	384
Morkan, I.	INOR	126	Motro, Y.	PHYS	518	Mueller, K.T.	GEOC	54
Morkan, I.	INOR	483	Mott, D.M.	COLL	380	Mueller, K.T.	GEOC	55
Morkan, I.A.	INOR	161	Motta, A.	MEDI	67	Mueller, L.	INOR	239
Moroz, O.	BIOL	104	Mou, C.	PMSE	427	Mueller, M.	PMSE	557
Moroz, P.	COLL	320	Mou, Z.	COMP	408	Mueller, P.	CATL	148
Moroz, Y.	BIOL	104	Mou, Z.	ORGN	15	Mueller, P.	ENFL	484
Morozov, D.	COMP	115	Mould, D.	MEDI	260	Mueller, T.	PHYS	301
Morphy, J.R.	ORGN	225	Mouliom, A.M.	ORGN	463	Muench, L.	NUCL	53
Morra, B.	CHED	431	Mouillet, A.	PHYS	326	Muenter Edwards, A.	PHYS	352
Morra, M.	COLL	551	Moulton, N.	ENVR	412	Mueses, M.	ENVR	425
Morris, A.	INOR	686	Mounfield, W.	ENFL	28	Mueses, M.A.	ENVR	498
Morris, A.J.	INOR	244	Moural, T.W.	ORGN	657	Mueses, M.A.	ENVR	554
Morris, A.J.	INOR	247	Moura-Letts, G.	ORGN	340	Muguruma, K.	MEDI	336
Morris, A.J.	INOR	558	Moura-Letts, G.	ORGN	450	Mugweru, A.M.	CHED	228
Morris, A.L.	INOR	668	Moura-Letts, G.	ORGN	730	Mui, J.	ENVR	469
Morris, C.A.	ANYL	364	Moura-Letts, G.	ORGN	732	Muir, T.W.	BIOL	237
Morris, D.	INOR	106	Moura-Letts, G.	ORGN	744	Mujahid, A.	CATL	204
Morris, G.M.	COMP	373	Moura-Letts, G.	ORGN	766	Mujahid, A.	ENVR	730
Morris, J.J.	ENVR	338	Mourant, B.L.	CHED	39	Mujahid, A.	PMSE	397
Morris, J.R.	CATL	118	Mousavi, A.	HIST	36	Mujahid, A.	PMSE	48
Morris, J.R.	CATL	91	Mousavi, A.	HIST	37	Mukarakate, C.	ENFL	171
Morris, J.R.	COLL	130	Mousavi, A.	TOXI	49	Mukarakate, C.	ENFL	44
Morris, M.A.	PMSE	334	Mouser, P.	ENVR	112	Mukerjee, J.M.	CHED	213
Morris, R.H.	CATL	28	Moussa, K.	PMSE	544	Mukherjee, A.	INOR	574
Morris, R.H.	INOR	601	Mousseau, J.J.	ORGN	672	Mukherjee, D.	AGFD	106
Morris, T.	COLL	442	Moussodia, R.	ORGN	515	Mukherjee, D.	PHYS	467
Morris, W.	CHED	339	Moussodia, R.	POLY	344	Mukherjee, D.	PHYS	470
Morris, W.A.	INOR	171	Moussodia, R.	POLY	345	Mukherjee, G.	COMP	240
Morrison, K.	ORGN	167	Mout, R.	ANYL	71	Mukherjee, P.	ANYL	365
Morrissey, C.A.	AGRO	93	Mout, R.	BIOL	165	Mukherjee, S.	PHYS	550
Morrissey, J.H.	ANYL	220	Mout, R.	BIOL	263	Mukherjee, S.	TOXI	106
Morrow, B.H.	COMP	263	Mout, R.	COLL	223	Mukku, V.	ORGN	46
Morrow, B.H.	COMP	43	Mouterde, L.M.	ORGN	416	Mukosera, G.	BIOL	82
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Mullen, C.A.	AGFD	200	Murphy, S.E.	TOXI	35	Nagai, K.	PMSE	480
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Mullen, C.A.	AGFD	276	Murray, A.	BIOL	232	Nagai, K.	PMSE	490
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Mullen, C.A.	ENFL	37	Murray, C.	MEDI	9	Nagaraja, A.	PMSE	689
Mullen, C.A.	ENFL	38	Murray, C.B.	CATL	172	Nagarajan, B.	COMP	299
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Muller, V.S.	ENFL	198	Murray, C.B.	INOR	335	Nagarajan, R.	PMSE	532
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Munaretto, J.S.	AGRO	85	Murray, S.	CHED	231	Nahar, L.	COLL	123
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Muñoz-Espí, R.	COLL	15	Muskal, S.M.	COMP	29	Nair, S.	ENFL	407
Muñoz-Espí, R.	COLL	272	Musselman, I.H.	ENFL	88	Nair, S.	ENFL	75
Muñoz-Osuna, F.	CHAS	24	Mussille, P.	COMP	286	Nair, S.	MEDI	201
Muñoz-Osuna, F.	CHAS	25	Mustard, T.J.	PMSE	429	Nair, S.	PMSE	51
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Murakami, K.	ORGN	393	Mutka, T.	MEDI	148	Najer, A.	COLL	524
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Muramatsu, Y.	ENVR	657	Mutowo, P.	CINF	50	Najmr, S.	INOR	678
Murano, H.	ENVR	582	Mutthamsetty, V.	BIOL	37	Naka, A.	AGFD	22
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Murayama, M.	ENVR	781	Myers, J.	MEDI	345	Nakagawa, H.	ANYL	85
Murelli, R.P.	COMP	272	Myers, J.	MEDI	91	Nakagawa, H.	MEDI	330
Murillo, C.A.	PHYS	348	Myers, J.	MEDI	94	Nakagawa, Y.	ORGN	92
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Murphy, B.	CINF	12	Myrdakis, A.	ANYL	132	Nakano, T.	POLY	433
Murphy, B.M.	CATL	113	Myung, K.	AGRO	55	Nakao, T.	AGRO	168
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Murphy, C.	CATL	287	Na, J.	PMSE	391	Nakatani, R.	PMSE	535
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Murphy, C.J.	COLL	456	Nadadur, S.	ENVR	190	Nalawade, S.	MEDI	356
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Murphy, C.J.	ENVR	472	Nadres, E.T.	POLY	54	Nalluri, S.	ORGN	616

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Nam, K.	CATL	277	Naylor, M.	MEDI	344	Nenoff, T.M.	ENVR	389
Nam, K.	COMP	369	Nayyar, B.	INOR	285	Neoh, K.	COLL	516
Nam, S.	ENFL	471	Nazaré, S.	PMSE	198	Neoh, K.	PMSE	661
Nam, S.	PMSE	589	Nazarenko, A.Y.	CHED	350	Neretina, S.	CATL	287
Nam, Y.	ENFL	125	Nazarenko, V.	ORGN	534	Neretina, S.	COLL	10
Naman, C.	AGFD	256	Nazarenko, V.	ORGN	550	Neretina, S.	COLL	146
Naman, C.	AGFD	53	Nazaretski, E.	GEOC	67	Neretina, S.	COLL	50
Nambukara Wellala, N.P.	INOR	176	Nazari, B.	POLY	501	Neretina, S.	COLL	51
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Namjouyan, K.	ORGN	110	Nazin, G.	PHYS	520	Nesterov, V.N.	INOR	666
Namkajorn, M.	CATL	25	Nazir, K.	PMSE	48	Nettles, J.H.	COMP	375
Namkajorn, M.	CATL	58	Ndaya, D.	PMSE	119	Neu, H.M.	INOR	68
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Nanchung, T.	INOR	413	Neal, L.	CATL	20	Neumann, S.	BIOL	54
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Nanda, S.	ORGN	170	Neal, S.R.	INOR	25	Nevedal, K.	CHAS	53
Nandedkar, A.	ENVR	651	Neary, M.C.	INOR	584	Neves, R.	CHED	179
Nangia, S.	COMP	334	Neau, D.	MEDI	278	Nevill, C.	MEDI	180
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Nanita, S.C.	AGRO	30	Nebel, L.M.	CHED	276	Nevill, C.	MEDI	385
Nanita, S.C.	ANYL	122	Nebel, L.M.	PHYS	362	Newberg, J.T.	CATL	156
Nann, T.	CATL	222	Nedwed, K.	ANYL	375	Newberg, J.T.	CHED	313
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Nara, S.	MEDI	395	Neely, J.	INOR	93	Newcombe, A.	AGRO	78
Naranjo, T.	ORGN	608	Neese, F.	INOR	200	Newcombe, A.	AGRO	91
Narayanan, A.	POLY	352	Nefedov, A.	COLL	41	Newhouse, A.	AGFD	188
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Narayanan, R.	MEDI	265	Negi, S.	COLL	164	Newman, W.	HIST	16
Narsimhan, G.	AGFD	171	Negley, T.L.	AGRO	131	Newman, W.	HIST	6
Narsimhan, G.	COLL	536	Negley, T.L.	AGRO	263	Newmister, S.	BIOL	139
Narth, C.	COMP	318	Negley, T.L.	AGRO	330	Newmister, S.	ORGN	413
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Nash, C.P.	CATL	115	Negley, T.L.	AGRO	91	Nfon, E.	AGRO	216
Nash, C.P.	ENFL	44	Negmeldin, A.T.	MEDI	70	Ng, A.	ORGN	39
Nash, C.P.	INOR	41	Negmeldin, A.T.	ORGN	651	Ng, C.	PHYS	70
Nash, C.P.	INOR	42	Negrel, C.	POLY	185	Ng, C.	PHYS	70
Nash, J.	ENFL	334	Negrel, C.	POLY	185	Ng, K.	ANYL	117
Nash, J.J.	ENFL	150	Nehme, A.S.	INOR	49	Ng, K.	PHYS	367
Nash, J.J.	ENFL	150	Neidig, M.L.	CATL	321	Ng, S.	ENFL	64
Nash, J.J.	ORGN	50	Neidig, M.L.	INOR	153	Ng, S.	ENFL	83
Nash, K.L.	NUCL	41	Neidig, M.L.	INOR	598	Ng, Y.	ENFL	83
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Nauen, R.	AGRO	255	Nelson, A.M.	POLY	8	Nguyen, A.	CHED	192
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Ong, H.L.	ENVR	607	Ortoleva, P.	ORGN	511	Ouyang, L.	PMSE	597
Ong, H.L.	ENVR	796	Ortoleva, P.	ORGN	600	Ouyang, R.	ENFL	483
Ong, J.	COLL	329	Ortoleva, P.	ORGN	601	Ouyang, W.	PHYS	424
Ong, S.	ENFL	127	Ortoleva, P.	PHYS	420	Ovadia, M.	PMSE	71
Ong, X.	PMSE	670	Orville, R.	ENVR	639	Ovalles, C.F.	ENFL	513
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Onishi, N.	CATL	31	Osada, K.	POLY	278	Overbury, S.H.	ENFL	269
Onjiko, R.	ANYL	260	Osada, M.	ENFL	66	Overcash, J.	AGRO	212
Onjiko, R.	PHYS	57	Osakada, K.	POLY	303	Ovian, J.	ORGN	715
Onn, T.	CATL	162	Osati, S.	MEDI	49	Oviedo, M.B.	ENFL	291
Onn, T.M.	CATL	184	Osawa, S.	POLY	278	Oviedo, P.S.	INOR	470
Ono, I.	PMSE	175	Osborn, E.	FLUO	9	Ow, H.	COLL	105
Ono, S.	PHYS	178	Osborn, T.H.	PMSE	213	Owczarek, M.	AEI	45
Ono, S.	PHYS	179	Osborn, W.A.	COLL	314	Owen, J.	AGRO	268
Onogi, S.	PMSE	574	Osborne, B.	COLL	231	Owen, W.J.	AGRO	197
Onogi, S.	POLY	325	Osborne, S.	MEDI	374	Owens, A.	BIOL	116
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Onorato, J.	POLY	517	Osburn, J.	COLL	56	Owens, A.	NUCL	63
Onufriev, A.V.	COMP	119	Osby, J.	PMSE	367	Owens, K.	ANYL	43
Onufriev, A.V.	COMP	332	Oschmann, B.D.	PMSE	205	Owens, K.	ANYL	47
Onyango, J.	ORGN	550	Oseghale, C.I.	CATL	17	Owens, T.D.	MEDI	219
Oosterhout, S.D.	PMSE	340	Oseghale, C.O.	INOR	258	Owi, W.	ENVR	796
Opasanont, B.	INOR	527	Osei-Prempeh, G.	I&EC	8	Owirutsky, J.	PHYS	215
Oppenheimer, D.G.	CINF	61	Osioma, O.	ORGN	195	Ow-Yang, C.	COLL	72
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Oprea, T.I.	CINF	20	Osorio Roa, C.	AGFD	253	Oxman, J.	POLY	118
Oprea, T.I.	CINF	49	Osorno, L.L.	POLY	587	Oyama, H.	POLY	320
Oprea, T.I.	COMP	136	Ossowski, M.	COMP	227	Oyama, S.T.	ENFL	268
Oracko, T.	COLL	177	Ossowski, M.	COMP	389	Oyama, Y.	MEDI	85
Oram, M.K.	TOXI	64	Ossowski, M.	COMP	50	O-Yang, C.	MEDI	284
Orden, R.V.	MEDI	100	Ostermann, N.	MEDI	262	Oyarzabal, J.	MEDI	257
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O'Reilly, M.C.	CHED	341	Ostrand, E.	AGRO	96	Ozaki, Y.	COMP	241
O'Reilly, M.C.	ORGN	595	Ostrom, C.	COLL	505	Ozbay, G.	AGFD	96
O'Reilly, R.K.	PHYS	501	Ostroumov, E.	PHYS	269	Ozbil, M.	BIOL	227
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Ozerov, O.	INOR	112	Pal, R.	COMP	284	Pan, Y.	ORGN	215
Ozerov, O.	INOR	392	Pal, R.	COMP	362	Panagakos, G.	ENFL	230
Ozerov, O.	INOR	544	Pal, S.	INOR	76	Panagakos, G.	ENFL	231
Ozgur, U.	COLL	147	Pal, S.	ORGN	656	Panatdasirisuk, W.	PMSE	109
Ozgur, U.	INOR	339	Pal, Y.	PHYS	438	Panatdasirisuk, W.	PMSE	509
Ozkan, U.S.	ENFL	115	Palacios Hernández, T.	PMSE	39	Panayotov, D.	CATL	91
OZKAR, S.	INOR	161	Palacios-Hernandez, T.D.	PMSE	500	Panchal, S.	MEDI	254
Ozoe, Y.	AGRO	71	Palaganas, J.	COLL	144	Pancras, T.	ENVR	236
Oztürk, N.	INOR	126	Palaganas, J.	PMSE	437	Pancrazio, J.	POLY	591
Pabst, B.A.	MEDI	299	Palaganas, J.	POLY	353	Panday, A.	PHYS	121
Pace, J.	MEDI	153	Palaganas, J.	POLY	410	Pande, V.S.	PHYS	528
Pace, R.	INOR	233	Palaganas, N.	COLL	144	Pandei, J.K.	ENFL	486
Pacer, E.R.	CHED	272	Palaganas, N.	PMSE	437	Pandey, R.	PHYS	109
Pacheco, C.N.	PMSE	578	Palaganas, N.	POLY	353	Pandey, R.	PHYS	266
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Pacholski, M.L.	COLL	32	Palazzotto, M.	PMSE	7	Pandiscia, L.	PHYS	482
Pacholski, M.L.	PMSE	65	Palde, P.B.	BIOL	131	Pandiyan, T.	ENVR	205
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Padilha, E.	MEDI	155	Palermo, E.	POLY	98	Pang, G.K.	NUCL	46
Padilla, C.E.	PMSE	263	Paley, M.A.	CHED	336	Pang, S.	ENFL	75
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Padilla, L.	AGRO	294	Palivan, C.	COLL	524	Pangilinan, K.	POLY	353
Padilla, L.	AGRO	295	Paliwal, S.	MEDI	383	Pangilinan, K.	POLY	410
Padilla, L.	AGRO	49	Palizkar, M.	CHED	322	Panisko, E.	CATL	175
Padmanabha, R.	MEDI	395	Paljevaca, M.	PMSE	67	Pannacciulli, N.	MEDI	18
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Padua, G.	COLL	235	Palma, M.	COLL	250	Panopoulos, K.	ENFL	230
Pae, A.	MEDI	101	Palma, M.	COLL	334	Pantelopulos, G.A.	COMP	328
Paek, E.	ENFL	153	Palmer, M.J.	ENVR	258	Pantelopulos, G.A.	PHYS	550
Paes, G.	POLY	583	Palmer, W.N.	INOR	100	Panzner, M.	MEDI	32
Paesani, F.	PHYS	12	Palmese, G.R.	I&E	35	Panzner, M.	MEDI	72
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Pagels, R.F.	COLL	119	Palos Pacheco, R.	COLL	98	Papathodorou, A.	MEDI	99
Pagels, R.F.	COLL	53	Palos Pacheco, R.	ENVR	286	Papautsky, I.	ANYL	281
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Paik, T.	INOR	293	Pan, L.	ENVR	713	Parekh, S.	COLL	58
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Park, A.A.	ENFL	376	Parker, D.	MEDI	162	Patel, M.	PHYS	367
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Park, C.	ENFL	466	Parker, K.A.	ORGN	127	Patel, P.D.	ENFL	433
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Park, K.	MEDI	101	Patel, A.	CHED	218	Patton, D.L.	POLY	256
Park, K.	MEDI	105	Patel, A.	COLL	148	Patton, D.L.	POLY	377
Park, K.	MEDI	396	Patel, A.	COLL	247	Patton, D.L.	POLY	436
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Park, S.	COLL	483	Patel, A.	ORGN	150	Paul, A.	INOR	457
Park, S.	ENVR	140	Patel, A.	PMSE	385	Paul, A.	INOR	682
Park, S.	ENVR	495	Patel, A.A.	PMSE	33	Paul, B.	AGFD	217
Park, S.	ENVR	577	Patel, A.A.	PMSE	579	Paul, D.	ANYL	108
Park, S.	INOR	556	Patel, B.	MEDI	313	Paul, D.	ANYL	110
Park, S.	INOR	659	Patel, B.	PMSE	546	Paul, D.R.	I&EC	27
Park, S.	ORGN	505	Patel, D.	MEDI	229	Paul, D.R.	I&EC	28
Park, S.	PMSE	158	Patel, H.	AGFD	89	Paul, E.	MEDI	262
Park, S.	POLY	507	Patel, H.	CHED	228	Paul, J.J.	CHED	384

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Pavanello, M.	COMP	357	Pekarek, R.	INOR	522	Peranganangin, N.	AGRO	360
Pavel Ivanoff, R.	COLL	209	Pekour, M.	ENVR	278	Peranganangin, N.	AGRO	81
Pavia Sanders, A.	COLL	430	Pelczar, E.M.	INOR	545	Percec, S.	PMSE	440
Pavitt, A.S.	ENVR	204	Peleg, Y.	MEDI	177	Percec, V.	ORGN	427
Pavitt, A.S.	ENVR	569	Pellati, F.	AGFD	251	Percec, V.	ORGN	488
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Paydary, P.	ENVR	695	Pelletier, M.G.	COLL	136	Percec, V.	POLY	285
Payne, C.	PHYS	100	Pelletier, M.G.	POLY	87	Percec, V.	POLY	30
Payne, G.F.	COMP	42	Pellizzeri, S.L.	AEI	15	Percec, V.	POLY	330
Payne, M.	POLY	121	Pellizzeri, S.L.	CATL	134	Percec, V.	POLY	344
Paz, S.A.	PMSE	673	Pelmenschikov, V.	INOR	281	Percec, V.	POLY	345
Pazicni, S.	INOR	489	Peltz, A.	PRES	21	Percec, V.	POLY	386
Paz-orozco, W.	ORGN	681	Pemberton, B.C.	INOR	469	Percec, V.	POLY	478
Pcion, D.	ORGN	207	Pemberton, B.C.	INOR	531	Perdew, J.P.	AEI	49
Peace, S.	MEDI	347	Pemberton, B.C.	ORGN	95	Perdew, J.P.	COMP	15
Peach, R.	MEDI	111	Pemberton, J.E.	CHED	45	Perea-Lopez, N.	INOR	612
Peach, R.	MEDI	261	Pemberton, J.E.	COLL	103	Pereira, A.	BIOL	172
Peacock, C.L.	COLL	286	Pemberton, J.E.	COLL	106	Pereira, A.	MEDI	200
Pearce, A.	INOR	590	Pemberton, J.E.	COLL	258	Pereira, T.	MEDI	14
Pearl, D.L.	AGRO	214	Pemberton, J.E.	COLL	98	Pereira-Almao, P.	ENFL	511
Pearl, T.P.	COMP	386	Pemberton, J.E.	ENVR	286	Pereira-Caro, G.	AGFD	259
Pearl, T.P.	COMP	387	Pemberton, J.E.	ENVR	95	Perera, C.	MEDI	241
Pearl, T.P.	PMSE	690	Pemberton, R.P.	COMP	56	Perera, L.	AGFD	30
Pearl, T.P.	PMSE	695	Pena, J.	ENVR	574	Perez De Leon, A.A.	AGRO	76
Pearl, T.P.	PMSE	696	Penadés, S.	COLL	83	Perez Ruiz, A.	BIOL	183
Pearsall, M.	CHED	241	Pena-Francesch, A.	PMSE	578	Perez, C.	MEDI	315
Pearsall, M.	CHED	242	Penchoff, D.A.	COMP	76	Perez, C.	MEDI	333
Pearson, R.A.	PMSE	546	Penchoff, D.A.	INOR	61	Perez, E.G.	MEDI	163
Peaslee, G.F.	CHED	117	Penchoff, D.A.	NUCL	14	Perez, E.M.	ORGN	354
Peaslee, G.F.	CHED	56	Penchoff, D.A.	NUCL	37	Perez, E.M.	ORGN	608
Peccinin, R.G.	MEDI	155	Pendleton, L.	COLL	244	Perez, E.M.	ORGN	8
Pecha, B.	CATL	141	Peng, D.	CATL	211	Perez, E.V.	ENFL	88
Pechagin, M.	COMP	45	Peng, H.	INOR	156	Perez, M.	CHED	194
Pechauer, A.	COLL	521	Peng, H.	INOR	525	Pérez, N.	INOR	113
Peck, C.	AGRO	112	Peng, H.	PMSE	414	Perez, R.	AGRO	40
Peck, C.	AGRO	138	Peng, J.	ENVR	160	Perez, S.	AGRO	40
Peck, C.	AGRO	173	Peng, J.	ENVR	344	Perez, S.M.	MEDI	299
Peck, C.	AGRO	43	Peng, J.	ENVR	585	Pérez-Gómez, K.	CHAS	25
Peck, T.C.	CATL	4	Peng, J.	ENVR	652	Perez-Juste, J.	COLL	81
Pecoraro, M.P.	ENVR	589	Peng, K.	ENFL	203	Perez-Ovillo, A.	AGRO	300
Pecoraro, V.L.	INOR	491	Peng, L.	ENFL	397	Perez-Rios, R.	CHAS	24
Peden, C.H.	CATL	129	peng, I.	ORGN	542	Perez-Viloria, M.	POLY	66
Peden, C.H.	CATL	132	Peng, P.	ORGN	547	Perillo, E.p.	ANYL	265
Peden, C.H.	CATL	47	Peng, R.	ENFL	182	Periole, X.	COMP	300
Peden, C.H.	ENFL	367	Peng, R.	ENFL	34	Perkins, C.K.	COLL	487
Pedersen, C.M.	ORGN	760	Peng, T.	ENVR	322	Perkins, C.K.	ENVR	186
Pedersen, J.	PMSE	593	Peng, W.	POLY	568	Perkins, C.L.	INOR	86
Pedersen, J.A.	AGRO	121	Peng, X.	PMSE	150	Perkins, K.M.	ENVR	97
Pedersen, J.A.	COLL	297	Peng, X.	PMSE	151	Perkins, W.S.	ORGN	16
Pedersen, J.A.	COLL	394	Peng, Y.	ENFL	479	Perkowski, A.	ORGN	27
Pedersen, J.A.	COLL	453	Peng, Z.	ANYL	104	Perla, L.G.	INOR	347
Pedersen, J.A.	COLL	456	Penketh, S.	AGRO	51	Perlich, J.	PMSE	132
Pedersen, J.A.	COLL	457	Penn, L.S.	TOXI	88	Perlin, D.S.	BIOL	31
Pedersen, J.A.	COLL	526	Penn, R.	ENVR	68	Pernites, R.	COLL	265
Pedersen, J.A.	ENVR	211	Penn, R.	INOR	370	Pernites, R.	PMSE	465
Pedersen, J.A.	ENVR	731	Pennell, K.D.	ENVR	459	Pero, J.E.	MEDI	9
Pedersen, J.A.	GEOC	38	Penner, R.M.	ANYL	263	Pero, J.E.	MEDI	90
Pederson, R.L.	INOR	308	Pennifold, R.	PHYS	247	Perreault, F.	COLL	455
Pedrazolli, D.	PMSE	558	Penning, T.M.	BIOL	117	Perrier, S.	POLY	243
Peev, T.	AEI	16	Penning, T.M.	BIOL	89	Perrine, Z.	AGRO	97
Peffer, R.	AGRO	349	Penning, T.M.	TOXI	24	Perry, D.	CHED	273
Peffer, R.	AGRO	353	Penning, T.M.	TOXI	33	Perry, G.	ORGN	295
Pegis, M.	COMP	75	Penning, T.M.	TOXI	87	Perry, J.	CHAS	6
Pegis, M.	INOR	222	Pennington, A.M.	CATL	315	Perry, J.	ORGN	754
Pehrsson, P.E.	COLL	242	Pennisi, K.	ENFL	87	Perry, K.L.	CHED	304
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Persson, P.	ENVR	72	Petters, S.	PHYS	555	Pidgeon, S.	BIOL	150
Peru, A.	ORGN	433	Pettersen, D.	MEDI	24	Piechon, P.	ORGN	559
Peru, K.	AGRO	93	Pettersen, J.C.	MEDI	299	Pielak, G.J.	PHYS	212
Peruzzi, C.	CHED	156	Pettersson, M.	ORGN	338	Pienkos, P.	ENVR	297
Pestana, L.	PHYS	191	Petterson, M.	PHYS	183	Pierce, B.	MEDI	271
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Peterca, M.	ORGN	427	Pettibone, J.M.	ENVR	784	Pierce, J.G.	ORGN	372
Peterca, M.	ORGN	507	Pevzner, Y.	ORGN	701	Piermarini, P.	AGRO	210
Peterca, M.	ORGN	508	Peyton, L.	MEDI	367	Piernavieja-Hermida, M.	CATL	181
Peterca, M.	ORGN	515	Peyton, S.	MEDI	107	Piernavieja-Hermida, M.	ENFL	76
Peterca, M.	POLY	236	Peyton, S.	MEDI	283	Pierre Louis, A.	ENVR	326
Peterca, M.	POLY	30	Pezzato, C.	AEI	45	Pietrofesa, R.A.	MEDI	415
Peters, B.	COLL	485	Pezzato, C.	ENFL	442	Pietrofesa, R.A.	TOXI	28
Peters, B.	MEDI	354	Pezzato, C.	POLY	177	Pietrofesa, R.A.	TOXI	29
Peters, C.A.	GEOC	15	Pfannkoch, E.	AGRO	84	Pietrofesa, R.A.	TOXI	48
Peters, C.A.	GEOC	67	Pfefferle, L.	ENFL	447	Pietrucci, F.	ORGN	551
Peters, J.	BIOL	107	Pfeifer, B.A.	AGRO	226	Pietrucci, F.	PHYS	189
Peters, N.	NUCL	45	Pfeifer, L.	ORGN	225	Pignatello, J.J.	ENVR	147
Peters, S.	COLL	56	Pfeiffer, C.T.	ORGN	602	Pignatello, J.J.	ENVR	408
Peters, S.J.	ORGN	696	Pfeiffer, E.	PHYS	349	Pignatello, J.J.	ENVR	410
Petersen, J.L.	ORGN	131	Pfeiffer, J.	INOR	333	Pignatello, J.J.	ENVR	698
Petersen, J.L.	ORGN	132	Pfister, K.	MEDI	250	Pikma, P.	COLL	156
Petersen, J.L.	ORGN	133	Pfister, K.	MEDI	78	Pilath, H.M.	ENFL	228
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Petersen, K.S.	ORGN	315	Pflug, M.H.	MEDI	70	Pilgrim, B.S.	ORGN	662
Peterson, A.	AGFD	137	Pflug, M.K.	ORGN	651	Pilkington, A.W.	BIOL	93
Peterson, A.	INOR	356	Pham, A.	ENVR	349	Pillai, K.	ENVR	403
Peterson, A.M.	COLL	513	Pham, A.	ENVR	524	Pillai, X.	CHAL	1
Peterson, B.R.	MEDI	241	Pham, C.	INOR	281	Pillar-Little, E.A.	PHYS	284
Peterson, C.	AGRO	333	Pham, M.A.	ORGN	524	Pilon dos Santos, G.	ANYL	58
Peterson, C.	INOR	61	Pham, M.A.	ORGN	525	Pimentel, D.	COMP	29
Peterson, C.	NUCL	14	Pham, T.	AGFD	169	Pimstone, S.	MEDI	263
Peterson, C.	NUCL	37	Pham, T.	COLL	441	Pinard, L.	ENFL	505
Peterson, C.C.	COMP	76	Pham, V.	TOXI	4	Pine, D.	COLL	540
Peterson, D.G.	AGFD	142	Phan, A.	GEOC	54	Pines, D.	PHYS	518
Peterson, E.	INOR	447	Phan, D.	ENVR	738	Pines, E.	PHYS	518
Peterson, E.M.	ANYL	269	Phan, H.	INOR	582	Pingitore, A.T.	POLY	385
Peterson, G.	ANYL	331	Phan, T.T.	GEOC	27	Pinheiro, M.	COLL	218
Peterson, G.W.	COLL	242	Phan, T.T.	GEOC	82	Pinheiro, P.	MEDI	97
Peterson, H.	AGRO	234	Phan, T.T.	GEOC	84	Pinheiro, S.	COLL	218
Peterson, K.A.	INOR	66	Phelan, F.R.	COLL	541	Pink, M.	ORGN	607
Peterson, L.A.	TOXI	64	Phelan, F.R.	PMSE	674	Pinkhassik, E.	COLL	510
Peterson, R.J.	MEDI	265	Phelan, F.R.	PMSE	675	Pinnick, V.T.	PHYS	274
Petersson, E.J.	BIOL	120	Phelan, F.R.	POLY	263	Pint, C.	ENFL	188
Petersson, E.J.	BIOL	146	Phenix, C.	FLUO	22	Pintauer, T.	INOR	159
Petersson, E.J.	BIOL	164	Philipp, M.	BIOL	68	Pintauer, T.	INOR	160
Petersson, E.J.	BIOL	185	Philipp, M.	MEDI	134	Pintauer, T.	ORGN	473
Petersson, E.J.	BIOL	236	Philipp, M.	ORGN	445	Pintauer, T.	ORGN	477
Petersson, E.J.	ORGN	451	Philippson, L.H.	AEI	50	Pinto, D.	MEDI	345
Petersson, E.J.	ORGN	457	Phillips, J.	AGRO	346	Pinto, D.	MEDI	91
Petersson, E.J.	ORGN	538	Phillips, J.F.	ENVR	623	Pinto, M.	POLY	365
Petersson, E.J.	PHYS	551	Phillips, M.	MEDI	377	Pinto, P.	ENVR	327
Petersson, G.A.	COMP	77	Phillips, M.	MEDI	89	Pinto, S.	COLL	218
Peti, W.	BIOL	129	Phillips, M.	NUCL	30	Pinto-Pacheco, B.	INOR	124
Peti, W.	PHYS	1	Phillips, S.	ENVR	162	Piontek, S.	COLL	173
Petit, C.	POLY	76	Phillips, S.	PHYS	553	Piotrowski, P.	PRES	23
Petitdemange, R.	POLY	546	Phillips, S.R.	CHED	372	Piplani, P.	MEDI	389
Petkov, V.	CATL	209	Phillips, S.T.	ANYL	282	Pippin, D.A.	MEDI	112
Petkov, V.	CATL	210	Phillips, S.T.	ANYL	58	Pi-Puig, T.	COLL	338
Petkov, V.	CATL	216	Phillips, S.T.	COLL	348	Piquemal, J.A.	COMP	318
Petkov, V.	COLL	164	Phillips, S.T.	POLY	442	Piquemal, J.A.	PHYS	53
Petkovic, L.M.	ENFL	46	Phillips, S.T.	POLY	99	Pires, K.D.	INOR	583
Petkovic, L.M.	ENFL	47	Phivilay, S.P.	CATL	6	Pires, M.E.	MEDI	329
Petr, M.	PMSE	320	Phivilay, S.P.	ENVR	494	Pires, M.M.	BIOL	150
Petr, M.	PMSE	562	Phongsawat, W.	CATL	25	Pirisedigh, A.	MEDI	160
Petr, M.	POLY	19	Phongsawat, W.	CATL	58	Pirnie, R.T.	ANYL	311
Petrenèiková, N.	POLY	225	Pi, Z.	MEDI	377	Piro, N.A.	INOR	447
Petridis, L.	ENVR	439	Pi, Z.	MEDI	89	Piro, N.A.	INOR	474
Petrie, M.	ENVR	540	Piana-Agostinetti, S.	PHYS	31	Piro, N.A.	INOR	478
Petrie, S.	INOR	233	Piane, J.	ORGN	782	Piro, N.A.	INOR	498
Petrone, P.	COMP	138	Piao, Y.	PHYS	321	Piro, N.A.	ORGN	46
Petros, A.	MEDI	254	Pias, S.C.	COMP	182	Pirone, J.	AGRO	346
Petrou, A.L.	CHED	257	Piazza, D.J.	ENVR	579	Pirrone, G.	CHED	291
Petrov, D.P.	MEDI	119	Piazza, L.	COLL	128	Pisaneschi, F.	MEDI	177
Petrov, D.P.	MEDI	55	Piccirilli, J.A.	MEDI	298	Pisignano, D.	ORGN	8
Petrov, P.	PHYS	536	Pickard, F.C.	PHYS	51	Piskula, M.	AGFD	149
Petrova, R.	PMSE	32	Pickel, J.M.	CHAS	17	Piskiewicz, S.	PHYS	212
Petrukhina, M.A.	INOR	632	Pickin, K.A.	CHED	262	Pitard, B.	POLY	125

Pitera, J.W.	COMP	94	Polesi, M.C.	MEDI	329	Portius, P.	INOR	353
Pitman, C.	ANYL	129	Poletika, N.	AGRO	294	Portmann, A.C.	ENVR	185
Pitman, C.L.	INOR	212	Polezhaev, A.V.	COLL	442	Porto-Fett, A.C.	AGFD	210
Pitman, C.L.	INOR	529	Poliks, M.D.	COLL	248	Portugal, C.A.	PMSE	658
Pitock, J.	ENFL	504	Poliks, M.D.	PMSE	403	Pöschke, O.	MEDI	44
Pitt, W.	MEDI	29	Polinski, R.	CHED	190	Pöschl, U.	COMP	394
Pitteloud, J.	INOR	124	Polisike, M.	POLY	167	Pöschl, U.	ENVR	154
Pitts, W.J.	MEDI	201	Polite, L.N.	ANYL	233	Poshkus, J.	AGFD	39
Piunova, V.	COMP	94	Politica, D.A.	AEI	67	Posillico, j.	ORGN	460
Pivak, P.	CHED	269	Polizzi, N.	INOR	533	Poss, C.	COMP	21
Pivak, P.	ORGN	142	Polizzotto, M.	GEOC	43	Post, E.R.	POLY	440
Piwnica-Worms, D.	MEDI	177	Pollack, I.B.	PHYS	123	Post, J.	COLL	283
Piyankarage, S.C.	ANYL	41	Pollack, K.A.	POLY	190	Post, J.E.	GEOC	64
Pizzi, N.	ENVR	681	Pollard, B.C.	COMP	261	Postma, A.	PMSE	89
Place, L.W.	COLL	472	Pollastri, M.P.	MEDI	240	Postma, A.	POLY	239
Placone, J.	PMSE	268	Pollet, P.	ORGN	398	Potemkin, I.	COLL	408
Plakas, K.	COLL	87	Pollino, J.	POLY	497	Potemkin, I.	PMSE	593
Plank, H.	PMSE	642	Pollock, P.M.	I&EC	5	Pothoof, J.	ENVR	313
Plass, K.	INOR	583	Polo, E.	COLL	446	Pothoof, J.	ENVR	379
Plass, K.	INOR	670	Polo, E.	COLL	522	Potma, E.	ANYL	13
Plata, D.L.	ENVR	110	Polo, E.	COLL	527	Potma, E.	PHYS	312
Plata, D.L.	ENVR	112	Polo, E.	COLL	578	Potocny, A.M.	INOR	495
Plata, D.L.	ENVR	113	Polt, R.	COLL	103	Potoczak, D.	ANYL	129
Plata, D.L.	ENVR	168	Polt, R.	COLL	106	Potvain, F.	MEDI	9
Plata, D.L.	ENVR	231	Polt, R.	COLL	98	Poudel, A.	PHYS	319
Plata, D.L.	ENVR	96	Polt, R.	ENVR	286	Poudel, P.P.	ORGN	246
Plavec, J.	MEDI	409	Polyakov, A.N.	NUCL	34	Poudeu Poudeu, P.F.	INOR	376
Plaxco, K.	ANYL	362	Polyakov, V.	COMP	22	Pouilloux, Y.	ENFL	505
Plaxco, K.	ANYL	387	Polyzos, A.	ORGN	217	Pouliot, M.	AGRO	286
Plaxco, K.	ANYL	98	Polzner, F.	COLL	323	Poulouse, A.	PMSE	440
Plazas-Tuttle, J.	ENVR	9	Pomerantseva, E.	ENFL	351	Poulsen, L.K.	AGFD	132
Ploense, K.	ANYL	387	Pomerantseva, E.	ENFL	357	Poupart, R.	PMSE	134
Plonka, A.	CATL	118	Pomerantz, A.E.	ENFL	513	Poutsma, J.	CHED	217
Ploskonka, A.	INOR	88	Pomerantz, W.C.	AEI	4	Powell, B.	CHED	10
Plothe, R.	POLY	455	Pomerantz, W.C.	BIOL	126	Powell, B.	INOR	3
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Plotnikov, A.	MEDI	33	Pomes, R.	PHYS	114	Powell, D.A.	MEDI	371
Plotto, A.	BIOL	231	Pommier, Y.	MEDI	295	Powell, J.	CHED	297
Plumer, J.	ANYL	63	Pond, B.B.	ANYL	242	Powell, L.R.	PHYS	321
Plummer, M.	PMSE	149	Ponder, J.W.	AEI	13	Powell, L.R.	PHYS	564
Plunkett, K.N.	ORGN	634	Ponder, J.W.	COMP	180	Powell, M.	ANYL	353
Pluntke, K.	AGRO	79	Ponder, J.W.	COMP	248	Powell, R.	MEDI	111
Pluth, M.D.	INOR	195	Ponder, J.W.	COMP	298	Powell, R.	MEDI	261
Po, P.	COMP	348	Ponder, J.W.	COMP	318	powell, T.	COLL	302
Pochan, D.J.	COLL	323	Ponder, J.W.	PHYS	13	Powell, W.A.	AGFD	188
Pochan, D.J.	COLL	430	Ponder, J.W.	PHYS	9	Powell, W.S.	ORGN	420
Pochan, D.J.	COMP	9	Pongdee, R.	ORGN	64	Powers, C.	PHYS	159
Pochan, D.J.	ORGN	515	Ponnurangam, S.	CATL	246	Powers, C.	PHYS	73
Pochan, D.J.	PMSE	504	Ponticello, R.	MEDI	267	Powers, S.	INOR	53
Pochan, D.J.	PMSE	573	Ponticello, R.	MEDI	380	Powley, C.R.	AGRO	176
Pochan, D.J.	PMSE	647	Poole, P.	AGFD	214	Poyton, M.F.	ANYL	51
Pochan, D.J.	POLY	285	Poon, H.T.	MEDI	406	Poyton, M.F.	COLL	602
Pochan, D.J.	POLY	527	Popczun, E.J.	INOR	671	Prabhakar, G.	PHYS	90
Pochan, D.J.	POLY	555	Popescu, V.C.	INOR	20	Pradhan-Bhatt, S.	PMSE	519
Pochas, C.M.	PHYS	358	Popescu, V.C.	INOR	282	Pradon, J.	PRES	17
Pochodylo, A.	ENVR	546	Pophristic, V.	COMP	230	Prakash, S.G.	ORGN	344
Poda, A.R.	ENVR	405	Pophristic, V.	COMP	247	Prakash, S.G.	ORGN	583
Podgorski, D.C.	ENFL	322	Popielek, L.	CHED	412	Prakasha Gowda, A.	TOXI	95
Podkolzin, S.G.	CATL	72	Poplawski, T.	MEDI	322	Pramanik, A.	COLL	139
Poe, M.M.	MEDI	397	Poplawski, T.	MEDI	323	Pramanik, A.	COLL	155
Poehlman, J.	ANYL	112	Poplawski, T.	MEDI	331	Pramanik, S.	CHED	251
Poeppelmeier, K.R.	CATL	180	Popolan-Vaida, D.	PHYS	382	Pramanik, S.	CHED	252
Poeppelmeier, K.R.	CATL	329	Popov, A.V.	MEDI	415	Pramanik, S.	COLL	264
Poeppelmeier, K.R.	INOR	569	Popova, M.	BIOL	94	Pramanik, S.	INOR	117
Poganik, J.R.	TOXI	5	Popova, M.	INOR	424	Pramanik, S.	INOR	118
Pogash, M.	INOR	684	Popovic, J.	AGRO	299	Pramudya, I.	PMSE	299
Pogrebnyakov, A.	PHYS	525	Popovici-Muller, J.V.	MEDI	268	Prasad, A.	PMSE	348
Pohl, E.	AGFD	230	Porch, A.	CATL	255	Prasifka, J.	AGRO	27
Pohl, E.	BIOL	83	Porch, A.	CATL	256	Praske, E.	PHYS	224
Pohlman, M.	AGRO	74	Poree, D.E.	POLY	257	Prasse, C.	ENVR	138
Poirier, L.	ENFL	462	Porel, M.	POLY	18	Prasse, C.	ENVR	270
Poirier, L.	ENFL	514	Porras, A.M.	COLL	328	Prather, K.A.	MPPG	1
Poitras, A.	INOR	102	Portela, R.	CATL	100	Prather, K.A.	PHYS	126
Pokharel, D.	ORGN	731	Porter, J.	ORGN	574	Prather, K.A.	PHYS	86
Pokharel, R.	NUCL	26	Porter, J.R.	MEDI	359	Pratihari, S.	COMP	259
Pokhrel, L.	ENVR	654	Porter, N.	INOR	394	Prato, M.	COLL	494
Pokhrel, M.	INOR	611	Porter, N.J.	BIOL	101	Pratt, D.	CINF	5
Pokross, M.	MEDI	395	Porterfield, D.R.	NUCL	18	Pratt, J.	MEDI	254
Polack, E.	COMP	318	Portero, E.	ANYL	260	Pratt, J.	MEDI	286
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Pratt, L.R.	COLL	104	Pulczynski, J.C.	ENVR	642	Qian, Y.	PHYS	485
Praveen, P.	PHYS	121	Pulczynski, J.C.	ENVR	643	Qian, Y.L.	AGFD	135
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Prelusky, D.B.	MEDI	349	Pullin, A.	ENVR	533	Qiao, B.	ORGN	617
Premadasa, U.I.	COLL	194	Pullman, D.P.	COLL	308	Qiao, G.G.	PMSE	87
Prendergast, M.	ORGN	427	Pulsipher, K.W.	COLL	598	Qiao, Y.	INOR	432
Prendergast, M.	ORGN	508	Pulster, E.	TOXI	89	Qiao, Y.	PMSE	495
Presland, J.	MEDI	346	Pump, E.	CATL	153	Qin, A.	ORGN	263
Press, L.	INOR	544	Pump, E.	CATL	327	Qin, D.	COLL	113
Pressly, E.D.	POLY	266	Pun, A.	ORGN	543	Qin, D.	COLL	12
Prestat, E.	CATL	45	Pun, A.	PHYS	110	Qin, D.	COLL	206
Preston, A.Z.	INOR	151	Punia, K.	INOR	404	Qin, D.	NUCL	22
Preston, A.Z.	INOR	24	Punia, K.	MEDI	56	Qin, D.	NUCL	28
Preston, S.S.	CHED	436	Punter, M.	PMSE	140	Qin, D.	ORGN	215
Prévost, G.	AGFD	16	Pupillo, R.C.	INOR	510	Qin, J.	PMSE	610
Prezhdo, O.V.	ENFL	289	Puppala, N.	AGFD	72	Qin, J.	POLY	81
Priambodo, R.	ENVR	802	Purcell, C.R.	ORGN	555	Qin, L.	ENFL	196
Pribyl, J.	PMSE	68	Purcell, D.	COMSCI	5	Qin, L.	ENVR	370
Price, K.	PMSE	49	Purcell, M.	FLUO	19	Qin, Q.	ENVR	580
Price, M.	PMSE	320	Purdie, E.	CHED	275	Qin, S.	COMP	89
Price, N.E.	TOXI	73	Purdy, A.P.	INOR	296	Qin, Y.	ENFL	249
Price, R.	AGFD	235	Purdy, J.R.	AGRO	124	Qin, Y.	ENFL	65
Price, S.L.	PHYS	251	Purdy, J.R.	AGRO	183	Qin, Z.	ENFL	505
Prié, G.	MEDI	92	Purdy, J.R.	AGRO	213	Qing, F.	ORGN	72
Priestley, R.D.	PMSE	628	Purdy, J.R.	AGRO	261	Qing, Z.	POLY	15
Prieto, A.L.	ENVR	328	Puretzky, A.	CATL	6	Qiu, C.	ANYL	230
Prieto, J.A.	ORGN	401	Purkal, J.	MEDI	299	Qiu, C.	ENVR	222
Prigiobbe, V.	ENVR	115	Purkey, H.E.	MEDI	21	Qiu, C.	ENVR	623
Prigozhin, M.B.	PHYS	313	Purkey, H.E.	ORGN	620	Qiu, J.	INOR	345
Primer, D.N.	ORGN	296	Purnapatre, K.P.	MEDI	137	Qiu, K.	PMSE	330
Primera-Pedrozo, O.	COLL	132	Purucker, S.	AGRO	370	Qiu, L.	ORGN	103
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Prinslow, S.	INOR	370	Pushkar, Y.	INOR	235	Qiu, M.	PMSE	476
Prior, R.L.	AGFD	203	Puskas, J.	MEDI	185	Qiu, R.	ORGN	750
Prisinzano, T.E.	MEDI	281	Puskas, J.E.	PMSE	101	Qiu, S.	PMSE	441
Pritchett, T.	ANYL	157	Puskas, J.E.	POLY	444	Qiu, T.	INOR	52
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Prokopovich, D.	PHYS	477	Pwamang, J.A.	AGRO	271	Qiu, Z.	POLY	362
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Prosper, F.	MEDI	257	Pyzer-Knapp, E.O.	PHYS	241	Qu, X.	ENVR	336
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Protasiewicz, J.D.	AEI	30	Qadi, O.I.	CHED	11	Qu, X.	ENVR	805
Protasiewicz, J.D.	INOR	103	Qafoku, N.P.	GEOC	16	Qu, Z.	ENVR	727
Protasiewicz, J.D.	INOR	581	Qafoku, O.	GEOC	5	Qualter, D.	ANYL	59
Protasiewicz, J.D.	INOR	642	Qamar, a.Z.	COLL	188	Quan, M.L.	MEDI	345
Protich, Z.T.	ORGN	679	Qattan, Y.	PMSE	607	Quan, M.L.	MEDI	94
Proulx, J.	CHED	231	Qi, C.	ENFL	240	Quan, W.	ENFL	91
Provencher, B.	CHED	106	Qi, H.	COLL	306	Quan, W.	PHYS	501
Provorse, M.R.	AEI	16	Qi, H.	PMSE	388	Quan, Z.	ENFL	193
Provorse, M.R.	COMP	17	Qi, H.	PMSE	520	Quancard, J.	MEDI	250
Pruden, A.	ENVR	472	Qi, H.	PMSE	627	Quancard, J.	MEDI	78
Pruden, A.	ENVR	740	Qi, J.	PMSE	687	Quarles, S.L.	PMSE	586
Pruden, A.	ENVR	788	Qi, K.	PMSE	440	Que, E.L.	ORGN	649
Prudhomme, R.K.	COLL	117	Qi, L.	MEDI	39	Que, L.	INOR	405
Prudhomme, R.K.	COLL	119	Qi, P.X.	AGFD	229	Queener, S.F.	MEDI	153
Prudhomme, R.K.	COLL	134	Qi, X.	ENFL	158	Queffelec, C.	CATL	200
Prudhomme, R.K.	COLL	53	Qi, X.	ENFL	506	Quéléver, L.	PHYS	221
Pryor, E.M.	CHAS	18	Qi, Y.	CATL	325	Quell, A.	PMSE	297
Pryor, E.M.	CHAS	59	Qi, Y.	CATL	60	Quemener, D.	PMSE	658
Pryor, E.M.	SCHB	4	Qi, Y.	ORGN	13	Quichocho-Rosario, S.	COLL	308
Przystas, A.	PMSE	314	Qi, Z.	ENFL	317	Quinaz, B.	ANYL	113
Psarras, P.C.	ENFL	326	Qian, B.	ANYL	48	Quinn, D.	ORGN	766
Psciuk, B.	PHYS	290	Qian, E.K.	INOR	485	Quiñones Díaz, B.	CHED	305
Ptaszek, M.	CHED	290	Qian, F.	ENVR	434	Quinones, O.	ENVR	548
Pu, J.	COMP	364	Qian, H.	ORGN	717	Quinter, K.	ENVR	182
Puangploy, P.	COLL	224	Qian, H.	PHYS	185	Quintero, Y.	COLL	78
Pudasaini, B.	CATL	117	Qian, M.C.	AGFD	135	Quirk, A.	COLL	399
Pugh, C.R.	PMSE	175	Qian, M.C.	AGFD	19	Quiroga-Campano, C.	ORGN	526
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Pugh, C.R.	POLY	552	Qian, W.	AGFD	111	Qureshi, M.	ANYL	62
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Rabe, K.M.	INOR	373	Rahimi, M.	ENVR	504	Ramos de Dios, S.M.	ORGN	749
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Rabinovich, D.	INOR	576	Rahman, A.	POLY	95	Ramos, K.	ENVR	423
Rabinovich, D.	INOR	622	Rahman, A.	SCHB	1	Ramos, L.	ENFL	202
Rabinovich, D.	INOR	645	Rahman, M.	COLL	246	Ramos, R.	MEDI	273
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Racicot, K.	AGFD	174	Raich, L.	PHYS	97	Ramstrom, O.	ORGN	41
Raciti, D.	CATL	119	Raigoza, A.F.	CHED	21	Rana, M.	COLL	420
Raciti, D.	CATL	232	Raigoza, A.F.	PHYS	258	Rana, M.	ENVR	490
Raciti, D.	CATL	243	Railing, M.E.	CHED	198	Rana, R.	ENFL	67
Raciti, D.	ENFL	491	Railing, M.E.	CHED	204	Randl, S.	MEDI	262
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Raczko, R.F.	ENVR	774	Rajagopal, V.	PHYS	484	Rani, S.	CATL	156
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Radovanovic, P.V.	INOR	562	Rajput, A.	ORGN	547	Rao, Y.	ENFL	409
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Ravula, J.	MEDI	405	Register, R.A.	POLY	533	Ren, L.	ORGN	263
Rawal, S.	ENFL	349	Regmi, Y.N.	AEI	36	Ren, M.	PMSE	104
Rawal, V.H.	ORGN	287	Regmi, Y.N.	CATL	146	Ren, N.	MEDI	84
Rawal, V.H.	ORGN	83	Regmi, Y.N.	CATL	263	Ren, P.	COMP	318
Rawashdeh-Omary, M.A.	INOR	243	Regmi, Y.N.	INOR	561	Ren, P.	PHYS	13
Rawson, J.	INOR	209	Regueiro-Ren, A.	MEDI	22	Ren, S.	COLL	385
Rawson, J.	INOR	533	Rehulka, J.	MEDI	292	Ren, S.	ORGN	724
Rawson, J.	PHYS	437	Reibach, P.	AGRO	190	Ren, T.	INOR	683
Rawson, J.	PHYS	565	Reibach, P.	AGRO	232	Ren, X.	ENFL	280
Rawson, N.	AGFD	28	Reibach, P.	AGRO	31	Ren, X.	ENVR	768
Ray, J.	ANYL	336	Reibenspies, J.H.	INOR	392	Ren, X.	ENVR	807
Ray, J.	ANYL	339	Reichert, W.	AGFD	93	Ren, X.	PMSE	234
Ray, K.	CATL	67	Reichmanis, E.	CHED	97	Ren, X.	PMSE	444
Ray, K.	INOR	382	Reichmanis, E.	PHYS	491	Ren, Y.	CATL	304
Ray, M.	BIOL	165	Reichmanis, E.	PMSE	342	Ren, Y.	ORGN	41
Ray, M.	COLL	467	Reichmanis, E.	POLY	565	Ren, Y.	PMSE	104
Ray, M.	PMSE	413	Reid, K.	PMSE	113	Ren, Y.	PMSE	445
Ray, P.	ENVR	788	Reid, W.B.	ORGN	345	Ren, Y.	POLY	35
Ray, P.C.	COLL	139	Reidl, C.	MEDI	135	Ren, Z.	CATL	158
Ray, P.C.	COLL	155	Reidl, C.	MEDI	288	Renatus, M.	MEDI	250
Ray, P.C.	COLL	549	Reidy, T.	COLL	221	Renatus, M.	MEDI	78
Ray, S.S.	ENVR	800	Reiff, R.	MEDI	163	Renbaum-Wolff, L.	PHYS	222
Ray, T.	PHYS	168	Reig, A.J.	CHED	190	Rendina, A.	MEDI	345
Raymakers, J.	POLY	227	Reig, A.J.	INOR	193	Rendina, A.	MEDI	94
Raymond, D.	CHED	280	Reijer, E.	INOR	281	Rengert, Z.	COLL	577
Raymond, J.E.	POLY	190	Reilly, R.M.	INOR	270	Renn, M.H.	AEI	50
Raza, H.	CATL	204	Reimhult, E.	COLL	575	Renne, P.	NUCL	17
Raza, H.	ENVR	730	Reineke, T.M.	COLL	62	Renner, F.	INOR	686
Raza, H.	PMSE	397	Reineke, T.M.	PMSE	13	Renninger, C.	CHED	277
Raza, H.	PMSE	48	Reineke, T.M.	PMSE	575	Reno, K.	POLY	186
Razgoniaev, A.	POLY	358	Reiner, T.	INOR	6	Renock, D.	GEOC	28
Razgoniaev, A.	POLY	485	Reiner, T.	POLY	220	Renye, J.	AGFD	270
Razgoniaeva, N.	COLL	279	Reinert, L.K.	ORGN	418	Réocreux, R.	CATL	261
Razler, T.M.	ORGN	173	Reinhard, B.M.	ANYL	170	Repasky, M.	COMP	148
Razolonjatovo, B.	POLY	125	Reinhard, B.M.	ANYL	23	Repasky, M.	COMP	243
Razzaghi Soufiani, A.	COLL	340	Reinhard, B.M.	COLL	462	Repice, M.	CHED	418
Read, C.G.	INOR	671	Reinhart, G.	MEDI	111	Rering, C.	AGRO	171
Rearden, P.	ANYL	134	Reinhart, G.	MEDI	261	Resasco, D.E.	CATL	264
Rearden, P.	MEDI	371	Reinus, B.J.	ORGN	684	Resasco, D.E.	ENFL	100

Reschke, B.	AGRO	30	Rick, S.W.	PHYS	306	Robbins, J.	CATL	72
Resmini, M.	POLY	419	Rick, S.W.	PMSE	616	Robbins, S.	PMSE	242
Resseler, H.	AGRO	363	Rickard, M.	ORGN	272	Robbins, W.K.	ENFL	322
Restrepo, G.	CINF	90	Ricke, N.	COMP	165	Robbins, W.K.	ENFL	468
Restrepo, G.	ENVR	314	Rickey, D.	CHED	55	Robert, C.	POLY	300
Restrepo, G.	I&EC	24	Ricks, M.J.	AGRO	197	Robert, M.D.	ENVR	405
Retrato, M.C.	INOR	110	Rico, C.M.	ENVR	660	Roberto, J.B.	NUCL	34
Rettig, M.B.	ORGN	459	Rieder, C.	ORGN	207	Roberts, A.	ENVR	396
Reuther, J.F.	PMSE	422	Riegel, S.	CHED	407	Roberts, B.	ORGN	207
Rey, E.	COLL	257	Riegel, S.	I&EC	16	Roberts, C.A.	CATL	4
Reyes, V.C.	ENVR	448	Riera, M.	PHYS	12	Roberts, C.A.	CATL	6
Reynaud, S.	POLY	510	Rietz, A.	MEDI	55	Roberts, C.J.	PMSE	436
Reynaud, S.	POLY	76	Riffel, K.A.	FLUO	19	Roberts, D.A.	ORGN	662
Reyniers, M.	POLY	71	Riffle, J.S.	PMSE	322	Roberts, J.A.	CHED	95
Reynolds, C.C.	ANYL	242	Rifkin, M.	ANYL	336	Roberts, J.M.	I&EC	20
Reynolds, D.	ENVR	523	Rifkin, M.	ANYL	339	Roberts, J.M.	PHYS	122
Reynolds, J.R.	PMSE	340	Rigo, M.	INOR	548	Roberts, R.W.	MEDI	177
Reynolds, M.	CHED	181	Rigo, M.	INOR	579	Roberts, S.A.	BIOL	130
Reynolds, M.A.	ENFL	510	Riives, A.	CHED	255	Roberts, S.T.	PHYS	109
Reynolds, M.M.	INOR	318	Rikova, K.	CINF	52	Roberts, S.T.	PHYS	266
Reynolds, N.A.	MEDI	180	Riley, K.R.	ANYL	330	Roberts, T.	AGRO	214
Reynolds, N.A.	MEDI	277	Riley, S.J.	COLL	532	Roberts-Kirchhoff, E.	ENVR	536
Reynolds, N.A.	MEDI	385	Riley, S.J.	ENFL	352	Robertson, J.D.	NUCL	4
Reynolds, R.	AGRO	152	Riley, S.J.	ENFL	440	Robertson, J.D.	NUCL	45
Reza, M.	ENVR	296	Rim, J.H.	NUCL	18	Robertson, M.J.	CHED	385
Rezazadeh, S.	ORGN	579	Rimal, A.	BIOL	170	Robertson, M.L.	PMSE	154
Rezes, R.	ENVR	723	Riman, R.	SCHB	23	Robertson, M.L.	POLY	190
Rhee, Y.M.	PHYS	148	Rimando, A.M.	AGFD	158	Robertson, N.	COLL	150
Rheingold, A.L.	COLL	96	Rimando, A.M.	AGFD	159	Robichaud, A.J.	MEDI	270
Rheingold, A.L.	INOR	389	Rimshaw, A.	PHYS	67	Robichaud, D.	CATL	138
Rheingold, A.L.	INOR	575	Rinderspacher, C.B.	COLL	202	Robichaud, D.	ENFL	145
Rhile, I.	PHYS	419	Ring, K.A.	CHED	304	Robinette, L.	MEDI	263
Rhoades, A.M.	POLY	501	Rinke, G.	PHYS	315	Robinson, A.	PHYS	125
Rhoades, E.	PHYS	6	Rios, A.C.	ORGN	196	Robinson, C.	AGFD	231
Rhodes, L.	PMSE	396	Rios-Soto, L.	MEDI	133	Robinson, D.	MEDI	27
Rhys, N.H.	BIOL	99	Rioux, R.M.	INOR	290	Robinson, J.	ORGN	436
Rhys, N.H.	INOR	402	Rippmann, F.	COMP	168	Robinson, P.R.	CHED	116
Riabtseva, A.	POLY	305	Rispoli, D.	ANYL	331	Robinson, T.	ORGN	499
Ribaucourt, A.	ORGN	164	Rissanen, M.P.	PHYS	221	Robison, T.	ORGN	105
Ribeiro, F.	ENFL	150	Risteen, B.	PMSE	342	Robison, T.W.	POLY	354
Riccardi, L.	COMP	26	Ristic, R.	AGFD	139	Robl, J.A.	MEDI	18
Ricci, P.	ORGN	225	Ritter, L.	AGRO	251	Robl, J.A.	MEDI	267
Ricci, S.M.	INOR	532	Ritter, L.	AGRO	54	Robl, J.A.	MEDI	380
Rice, B.	PMSE	213	Ritter, A.M.	AGRO	262	Robustelli, P.	PHYS	31
Rice, C.P.	ENVR	53	Ritter, A.M.	AGRO	300	Rocha, J.R.	COMP	266
Rice, F.	AGRO	41	Ritter, A.M.	AGRO	327	Rocha, M.A.	CHED	259
Rice, J.E.	COMP	126	Ritter, A.M.	AGRO	358	Rocha, T.	CATL	41
Rice, J.E.	COMP	94	Ritter, D.W.	ANYL	58	Rocha, C.	ORGN	427
Rice, J.E.	POLY	176	Ritter, T.	FLUO	8	Roche, C.	ORGN	508
Rice, P.J.	AGRO	142	Riva, M.	PHYS	221	Roche, C.	POLY	236
Rice, S.E.	BIOL	121	Rivalti, D.	ORGN	700	Roche, J.	PHYS	77
Rice, T.	INOR	53	Rivas, N.	PHYS	155	Rochford, J.J.	CATL	228
Rich, C.	PHYS	366	Rivera, D.	CHED	180	Rochford, J.J.	CATL	27
Rich, S.	ENVR	525	Rivera, E.	ORGN	129	Rochford, J.J.	CATL	280
Rich, S.	MEDI	9	Rivera, J.	PHYS	224	Rochford, J.J.	INOR	250
Richard, A.	PHYS	245	Rivera, N.	AEI	20	Rochford, J.J.	INOR	413
Richard, J.	ORGN	135	Rivera, N.	MEDI	410	Rochford, J.J.	INOR	652
Richard, J.	ORGN	710	Rivera, O.	COLL	132	Rochford, J.J.	ORGN	184
Richard, R.	COMP	48	Rivera-Torres, Y.	MEDI	147	Rochford, J.J.	ORGN	186
Richards, C.I.	BIOL	230	Rivero, R.A.	MEDI	9	Rochford, J.J.	ORGN	98
Richards, C.I.	PHYS	318	Rivero, R.A.	MEDI	90	Rock, J.M.	ORGN	697
Richards, J.	AGRO	169	Rivero-Baleine, C.	PHYS	525	Rockcliffe, D.A.	PHYS	347
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Richardson, K.	PHYS	525	Rizzo, C.J.	TOXI	100	Rocke, A.J.	HIST	7
Richardson, K.	PMSE	365	Rizzo, C.J.	TOXI	75	Rockett, A.	INOR	511
Richardson, K.	PMSE	514	Rizzo, J.I.	ORGN	143	Rod, K.A.	ENFL	469
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Richardson, R.D.	ORGN	540	Rizzo, R.C.	COMP	217	Rodda, K.	ENVR	259
Richardson, T.	ENVR	27	Rizzo, R.C.	COMP	221	Rodell, C.B.	COLL	566
Richardson, T.	ENVR	64	Rizzo, R.C.	COMP	250	Rodell, C.B.	PMSE	327
Richardson, T.	ENVR	663	Rizzo, R.C.	COMP	54	Rodell, C.B.	PMSE	434
Richburg, J.	ENVR	45	Rizzo, R.C.	MEDI	392	Rodell, C.B.	PMSE	567
Richmond, G.L.	COLL	101	Roa, R.	COLL	11	Rodell, C.B.	POLY	150
Richter, C.A.	COLL	563	Roa, S.	MEDI	257	Rodell, C.B.	POLY	253
Richter, D.	PHYS	124	Robarge, K.D.	ORGN	263	Rodell, C.B.	POLY	428
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Rodgers, R.P.	ENFL	468	Rojas, C.M.	ORGN	63	Rosenfeld, D.	ENVR	85
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Rogachev, A.Y.	COMP	72	Rosa, E.	AGFD	95	Rotello, V.M.	AGFD	250
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Rogel, E.	ENFL	513	Rosario, R.	ANYL	380	Rotello, V.M.	BIOL	263
Rogel, O.	MEDI	262	Rosas, A.S.	INOR	139	Rotello, V.M.	COLL	215
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Rogers, R.D.	CINF	43	Rose, A.	MEDI	89	Rotello, V.M.	COLL	466
Rogers, R.D.	MPPG	13	Rose, i.	PMSE	1	Rotello, V.M.	COLL	467
Rogers, R.D.	NUCL	42	Rose, M.J.	INOR	15	Rotello, V.M.	COLL	518
Rogers, S.	POLY	228	Rose, M.J.	INOR	511	Rotello, V.M.	PMSE	412
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Rohrer, J.	AGFD	71	Rosenberg, M.	ANYL	279	Roth, E.	GEOC	93
Rohrer, J.	AGFD	73	Rosenberg, M.	BIOL	128	Roth, J.J.	AGRO	259
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Rothfuss, N.	PHYS	555	Rubinsky, M.	AGRO	223	Russo, P.	PMSE	342
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Rothman, G.	AGRO	79	Rubio, F.M.	AGRO	250	Rusz, J.	PHYS	520
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Rotondaro, M.C.	CHED	311	Rucker, J.	MEDI	399	Rutherford, J.	CHED	147
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Rouffet, M.J.	MEDI	315	Ruddy, D.	INOR	42	Ruzsinszky, A.	AEI	49
Rouillard, A.D.	CINF	52	Ruddy, D.A.	CATL	115	Ruzsinszky, A.	COMP	15
Rouleau, S.	ORGN	113	Ruddy, D.A.	CATL	300	Ryan, D.	ANYL	214
Roullier-Gall, C.	AGFD	104	Ruddy, D.A.	INOR	41	Ryan, E.P.	AGFD	129
Roullier-Gall, C.	AGFD	17	Rudel, H.E.	PHYS	410	Ryan, E.P.	AGFD	37
Roullier-Gall, C.	AGFD	293	Rudel, R.A.	TOXI	102	Ryan, J.J.	AGRO	357
Round, L.M.	INOR	474	Rudewicz, P.	ORGN	208	Ryan, J.N.	GEOC	39
Rountree, E.	INOR	359	Rudick, J.G.	POLY	235	Ryan, K.	COMP	411
Roush, W.R.	MEDI	207	Rüdissler, S.	MEDI	262	Ryan, K.S.	BIOL	111
Roushanbakhti, A.	ORGN	302	Rudov, A.	COLL	408	Ryan, M.	AGRO	181
Rousseau, R.	CATL	108	Rudov, A.	PMSE	593	Ryan, S.J.	ORGN	764
Rousseau, R.	CATL	8	Rudshteyn, B.	ENFL	447	Ryan, S.M.	CHED	63
Rousseau, R.	ENFL	113	Rudshteyn, B.	ORGN	101	Ryan, V.	PHYS	282
Rousseau, R.	ENFL	143	Rudshteyn, B.	PHYS	290	Ryan, V.	PHYS	339
Rousseau, R.	ENFL	192	Ruecker, A.M.	ENVR	450	Ryan, V.H.	BIOL	90
Rousseau, R.	ENFL	194	Rueda, J.C.	POLY	174	Rychlik, K.	ENVR	284
Rousseau, R.	ENVR	437	Ruedlinger, B.	CHED	184	Rychlik, K.	ENVR	642
Roussi, F.	ORGN	449	Ruepp, S.	MEDI	201	Rychlik, K.	ENVR	643
Roux, A.	ANYL	46	Ruetz, S.	MEDI	273	Rychlik, M.	AGFD	104
Rovani, S.	AGFD	32	Rufin, M.A.	PMSE	176	Rychnovsky, S.	PHYS	348
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Rovis, T.	ORGN	21	Ruger, G.W.	SCHB	1	Rylaarsdam, A.	ANYL	371
Rovis, T.	ORGN	405	Ruggeri, R.B.	MEDI	226	Rylaarsdam, A.	BIOL	176
Rovnak, A.M.	AGFD	161	Ruggiero, P.L.	ORGN	268	Ryland, E.S.	INOR	538
Rovnyak, D.S.	ANYL	311	Ruggles, E.L.	ORGN	530	Ryland, E.S.	PHYS	64
Rowan, S.J.	COLL	352	Ruhman, M.	AGRO	138	Rynn, C.	MEDI	273
Rowan, S.J.	PMSE	185	Ruhman, M.	AGRO	9	Ryona, I.	AGFD	80
Rowan, S.J.	PMSE	59	Ruitenbeek, M.	CATL	182	Ryono, D.	MEDI	18
Rowan, S.J.	PMSE	70	Ruiz, G.	MEDI	79	Ryou, Y.	CATL	159
Rowan, S.J.	POLY	517	Ruiz, H.A.	ENFL	201	Ryu, D.	ORGN	296
Rowan, S.J.	POLY	94	Ruiz, R.	COLL	426	Ryu, H.	COLL	220
Rowe, A.	ENVR	442	Ruiz-Talavera, R.	CHAS	24	Ryu, H.	INOR	644
Rowe, S.M.	ENFL	204	Rukavishnikov, A.	ORGN	431	Ryu, H.	PMSE	374
Rowland, S.	ENFL	149	Rukes, S.C.	CHED	124	Ryu, J.	AGFD	75
Rowland, S.	ENFL	322	Rukes, S.C.	CHED	125	Ryu, J.	COLL	190
Rowlands, C.	AGRO	342	Rukes, S.C.	CHED	126	Ryu, J.	ORGN	430
Roy, A.	POLY	437	Rukes, S.C.	CHED	127	Ryu, J.	POLY	219
Roy, D.	COMP	158	Rukes, S.C.	CHED	128	Rzasa, R.M.	MEDI	388
Roy, J.K.	COMP	273	Rukes, S.C.	CHED	129	Rzayev, J.	PMSE	239
Roy, M.	INOR	482	Rukes, S.C.	CHED	30	Rzayev, J.	POLY	579
Roy, P.	ENFL	466	Rukes, S.C.	POLY	107	Rzuczek, S.	MEDI	225
Roy, S.	INOR	452	Rukes, S.C.	POLY	109	S., Siva Shankar Prasad	AGRO	247
Roy, S.	ORGN	585	Ruley, K.M.	MEDI	180	Saadeh, F.	MEDI	387
Roy, S.	PMSE	110	Ruley, K.M.	MEDI	277	Saba, S.	PMSE	131
Roy, S.	PMSE	115	Rulon, Z.A.	ORGN	463	Sabaraya, I.V.	ENVR	779
Roy, S.	PMSE	32	Rumfelt, S.	MEDI	388	Sabat, M.	INOR	171
Roy, S.	POLY	170	Rummel, L.	ENFL	219	Sabat, M.	ORGN	615
Roy, S.	POLY	407	Ruotolo, B.T.	ANYL	250	Sabaté del Rio, J.	ANYL	363
Roy, U.	TOXI	106	Rupakheti, C.	COMP	51	Sabbah, I.	ENVR	167
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Roy, X.	INOR	37	Rupar, P.	POLY	123	Sabelnikov, A.V.	NUCL	34
Roy, X.	INOR	570	Ruparelia, J.	ENVR	485	Sabhachandani, P.	ANYL	286
Roy, X.	PHYS	129	Rupprecht, A.J.	INOR	159	Sabol, J.E.	CHED	90
Royalty, S.M.	MEDI	45	Rushmore, D.	BIOL	55	Sabol, J.E.	SCHB	1
Royappa, A.T.	CHED	345	Rusinko, A.	COMP	340	Sacher, O.	TOXI	50
Royer, L.A.	AGRO	191	Rusinova, E.	MEDI	33	Sachinthani, K.	POLY	434
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Royzen, M.	COLL	150	Rusling, J.	COLL	437	Sachs, J.	INOR	393
Royzen, M.	ORGN	650	Russell, F.	PMSE	370	Sacko, O.	ENVR	533
Rozovsky, S.	BIOL	222	Russell, J.	ORGN	215	Sacks, G.L.	AGFD	138
Rozovsky, S.	CMA	8	Russell, K.	ORGN	113	Sacks, G.L.	AGFD	80
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Sadhvani, N.	I&EC	32	Salah, S.	COMP	61	Sams, A.G.	MEDI	176
Sadik, O.A.	CHED	370	Salaita, K.	ANYL	268	Samstag, A.	AEI	15
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Sadowski, J.P.	AEI	9	Salamatipour, A.	TOXI	25	Sanabria-Chanaga, E.	MEDI	152
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Sagle, L.	COLL	212	Saleh, N.B.	ENVR	779	Sánchez-Sanz, G.	COMP	158
Sagle, L.	COLL	347	Saleh, N.B.	ENVR	9	Sanchis, J.	ENVR	422
Sagle, L.	COLL	600	Saleh, N.M.	COLL	275	Sandahl, J.F.	AGRO	333
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Saha, K.	COLL	275	Saleh, T.A.	CATL	302	Sander, S.P.	PHYS	353
Saha, K.	COLL	518	Saleh, T.A.	COLL	126	Sanders, A.M.	PHYS	21
Saha, M.	AGRO	57	Saleh, T.A.	COLL	433	Sanders, C.	BIOL	170
Saha, M.	ORGN	447	Saleh, T.A.	ENFL	299	Sanders, J.	COMP	340
Saha, S.	ENVR	303	Saleh, T.A.	ENFL	302	Sanders, J.	PMSE	560
Sahai, N.	POLY	336	Salem, D.	ANYL	325	Sanders, J.M.	MEDI	371
Sahare, S.	PMSE	358	Salger, M.	AGFD	282	Sanders, S.	BIOL	105
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Sahle-Demessie, E.	ENVR	64	Salituro, G.	MEDI	84	Sandi, G.	NUCL	61
Sahle-Demessie, E.	ENVR	663	Sallach, B.	ENVR	787	Sandland, C.	CHED	287
Sahle-Demessie, E.	ENVR	677	Sallach, J.B.	ENVR	464	Sandmark, J.	MEDI	24
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Sahu, R.S.	ENVR	801	Salvi, C.	COLL	513	Sanford, M.J.	POLY	138
Sahu, S.	INOR	327	Salvino, J.M.	SCHB	7	Sanford, M.S.	FLUO	6
Saiah, E.	MEDI	271	Salvo, A.	ENVR	279	Sanford, M.S.	INOR	143
Saido, K.	ENVR	664	Samad, L.	ENFL	335	Sanford, M.S.	INOR	44
Saido, K.	GEOC	76	Samad, M.B.	MEDI	139	Sanford, M.S.	INOR	688
Saiers, J.	GEOC	39	Samad, M.B.	PMSE	582	Sanford, M.S.	INOR	689
Saija, F.	ORGN	551	Samankumura, L.	MEDI	63	Sanford, M.S.	INOR	94
Sailor, M.J.	ENFL	207	Samankumura, L.	MEDI	65	Sanford, M.S.	INOR	95
Sailor, M.J.	ENFL	320	Samant, S.	PMSE	601	Sanford, M.S.	ORGN	387
Saint-Cricq-Riviere, P.	INOR	366	Samanta, A.	ORGN	616	Sanford, M.S.	ORGN	400
Saito, K.	PMSE	447	Samanta, A.	ORGN	664	Sanford, M.S.	ORGN	581
Saito, M.	ENVR	582	Samanta, D.	ANYL	28	Sanford, M.S.	ORGN	764
Saito, T.	COLL	127	Samanta, H.	MEDI	22	Sanford, M.S.	ORGN	777
Saito, T.	COLL	406	Samanta, S.	POLY	486	Sanford, M.S.	WCC	9
Saito, T.	COLL	593	Samantaray, M.	CATL	153	Sang, B.	ENVR	705
Saito, T.	PMSE	599	Samantaray, M.	CATL	327	Sang, S.	AGFD	126
Saitoh, K.	ENVR	664	Samareh Afsari, H.	ANYL	155	Sang, S.	AGFD	128
Saitta, A.	ORGN	551	Samaritoni, J.G.	AGRO	289	Sang, S.	AGFD	146
Saitta, A.	PHYS	189	Samaritoni, J.G.	CHED	412	Sang, S.	AGFD	23
Saitz, C.	ORGN	526	Samaritoni, J.G.	MEDI	275	Sang, S.	AGFD	255
Sajomsang, W.	POLY	202	Sames, D.	ANYL	392	Sang, S.	AGFD	255
Sajomsang, W.	POLY	65	Sammeta, V.	AGRO	239	Sang, Z.	ENVR	727
Sak, M.	CHED	302	Sammons, D.	AGRO	96	Sanganee, H.	AGFD	214
Sakai, T.	ANYL	304	Sammons, D.	AGRO	97	Sanganee, H.	ORGN	411
Sakai, T.	CHED	16	Sammynaiken, R.	ENFL	489	Sanghera, J.S.	POLY	441
Sakai, T.	COLL	310	Sampaio, R.	PHYS	566	Sangkapong, N.	PMSE	448
Sakai, T.	COLL	366	Sample, A.	ORGN	65	Sani, E.S.	ENVR	709
Sakallioglu, I.T.	BIOL	177	Samples, E.	INOR	473	Sanjay, S.	ANYL	280
Sakamoto, J.	ENFL	121	Sampsell, T.A.	CHED	232	Sankar, M.	PMSE	348
Sakhno, T.	ENVR	679	Sampsell, T.A.	CHED	239	Sankaranarayanan, N.	COMP	299
Sakhno, T.	PHYS	385	Sampson, N.S.	CMA	1	Sankaranarayanan, N.	COMP	301
Sakhno, T.	PHYS	393	Sampson, N.S.	PMSE	266	Sanku, R.K.	BIOL	229
						Sanku, R.K.	MEDI	293

Sanku, R.K.	MEDI	66	Sarikahya, H.	POLY	375	Savage, P.E.	ENFL	167
Sanschagrín, P.	CHED	316	Sarikahya, N.	ORGN	681	Savage, S.	ORGN	209
Sanschagrín, P.	CINF	2	Sariola, V.	PMSE	578	Savage, S.A.	ORGN	558
Sanschagrín, P.	MEDI	29	Saripada, J.	CHED	270	Savall, B.M.	MEDI	269
Santella, J.B.	MEDI	201	Sarjeant, A.	CHED	315	Savara, A.	CATL	271
Santhanam, L.	BIOL	78	Sarjeant, A.	CHED	351	Savaram, K.	COLL	438
Santhapuram, H.K.	MEDI	35	Sarjeant, A.	CINF	44	Savaram, K.	ENFL	260
Santhapuram, H.K.	MEDI	39	Sarkar, A.	COLL	589	Savaram, K.	ENFL	473
Santiago, B.	ENVR	340	Sarkar, A.	COMP	239	Savary, B.J.	AGFD	169
Santiago, K.M.	CHED	305	Sarkar, D.	ENVR	706	Savary, B.J.	AGFD	4
Santiago, L.	ORGN	776	Sarkar, S.	ANYL	286	Savary, B.J.	AGFD	65
Santiago-Martoral, L.	PMSE	37	Sarkar, S.	ENVR	317	Savary, B.J.	AGFD	67
Santillan-Jimenez, E.	CATL	295	Sarkar, S.	ENVR	357	Savchak, M.	COLL	252
Santini, C.	MEDI	378	Sarkar, S.	ENVR	544	Savchak, M.	PMSE	22
Santiso, E.E.	ENFL	404	Sarker, P.	CATL	316	Savelieva, K.	MEDI	162
Santone, K.	MEDI	22	Sarkes, D.A.	COLL	517	Savelieva, K.	MEDI	395
Santore, M.M.	COLL	565	Sarkes, D.A.	COMP	187	Saven, J.G.	COLL	323
Santoró, N.	BIOL	52	Sarma, K.	ORGN	207	Saven, J.G.	COMP	10
Santos, D.	COLL	419	Sarma, N.	MEDI	96	Saven, J.G.	COMP	192
Santos, D.	ENFL	242	Sarnik, J.	MEDI	322	Saven, J.G.	PMSE	504
Santos, J.J.	COLL	419	Sarnik, J.	MEDI	323	Saven, J.G.	PMSE	573
Santos, J.J.	PHYS	440	Sarnik, J.	MEDI	331	Savjani, D.	COMP	309
Santos, J.L.	MEDI	102	Sarno, D.M.	CHED	273	Savran, A.	ENVR	617
Santos, J.L.	MEDI	146	Sarno, D.M.	CHED	317	Savun, B.	ENVR	583
Santos, J.L.	MEDI	155	Sarode, H.	ENFL	117	Sawa, M.	ORGN	85
Santos, J.L.	MEDI	328	Sarpong, R.	BIOL	33	Sawada, G.	MEDI	341
Santos, J.L.	MEDI	329	Sarpong, R.	ORGN	384	Sawada, G.	MEDI	344
Santos, L.S.	POLY	448	Sarthy, A.	MEDI	254	Sawada, H.	COLL	124
Santos, S.	PMSE	125	Sarthy, A.	MEDI	286	Sawada, H.	COLL	127
Santos, V.H.	PMSE	150	Sarupria, S.	COMP	184	Sawada, H.	COLL	305
Santos, V.H.	PMSE	151	Sarvasiddhi, S.K.	MEDI	395	Sawada, H.	COLL	406
Santos, W.	BIOL	260	Sarvi, B.	ENVR	427	Sawada, H.	COLL	593
Santos, W.	MEDI	7	Sasago, Y.	PMSE	449	Sawamoto, M.	POLY	395
Santosa, D.	ENVR	437	Sasahara, S.	COLL	124	Sawamoto, M.	POLY	477
Santra, A.	ORGN	415	Sasaki, S.	ORGN	709	Sawamoto, M.	POLY	535
Santra, C.	ENFL	486	Sasaki, T.	MEDI	158	Sawant, K.B.	POLY	355
Saouma, C.T.	INOR	239	Sasan, K.	ENVR	389	Sawant, K.B.	POLY	446
Sapelkin, A.	COLL	250	Sasidharan, S.	ENVR	755	Saxena, A.	MEDI	201
Sapia, R.	PHYS	525	Sasimovich, I.	YCC	2	Saxton, R.	CATL	269
Sapienza, N.S.	PMSE	696	Saslow, S.	ENVR	725	Sayle, R.A.	CINF	74
Sapozhnikova, Y.	AGRO	87	Sassi, M.	COLL	336	Sayle, R.A.	CINF	82
Sapozhnikova, Y.	AGRO	88	Sastray, K.R.	MEDI	167	Sayle, R.A.	CINF	91
Sapp, W.	PHYS	398	Sastray, K.R.	MEDI	168	Sayle, R.A.	CINF	94
Sapp, W.	PHYS	428	Sastray, K.R.	MEDI	169	Saylor, R.	ORGN	31
Sappington, K.	AGRO	184	Sastray, K.R.	MEDI	170	Saylor, R.M.	MEDI	281
Sappington, K.	AGRO	320	Satam, S.	COLL	493	Sazanovich, I.	PHYS	16
Sappington, T.	AGRO	123	Satchivi, N.M.	AGRO	259	Scafetta, M.	INOR	47
Sappy, I.	CHED	268	Sathoud, O.	ANYL	90	Scales, S.A.	ORGN	561
Sappy, I.	MEDI	129	Sathoud, O.	ANYL	99	Scalzo, R.	POLY	375
Sapse, I.	INOR	10	Satija, S.	PMSE	601	Scanlon, J.	INOR	58
Saqib, A.N.	COLL	196	Sato, H.	ORGN	637	Scapens, D.	CATL	161
Saqib, A.N.	ENVR	703	Sato, H.	PMSE	535	Scarborough, C.	INOR	275
saquing, c.	PMSE	440	Sato, K.	MEDI	386	Scarim, C.B.	MEDI	155
Saquing, J.M.	ENVR	323	Sato, M.	ORGN	690	Scarrow, R.C.	CHED	20
Sarabia-Sánchez, M.	MEDI	152	Sato, M.	POLY	417	Scarrow, R.C.	INOR	631
Sarabia-Sánchez, M.	MEDI	379	Satoh, K.	POLY	145	Scattergood, P.A.	PHYS	16
Saraci, E.	ENVR	433	Satoh, K.	POLY	241	Scerba, M.	ORGN	447
Saraf, R.	COLL	329	Satoh, K.	POLY	350	Schaak, R.	INOR	673
Saraf, S.	INOR	424	Satoh, K.	POLY	394	Schaak, R.E.	INOR	132
Saraf, S.	MEDI	168	Satooka, H.	AGFD	10	Schaak, R.E.	INOR	289
Saraf, S.	MEDI	169	Satooka, H.	BIOL	232	Schaak, R.E.	INOR	32
SARALADEVI, J.	PHYS	168	Sattely, E.S.	AGRO	372	Schaak, R.E.	INOR	671
Saranjampour, P.	AGRO	266	Satterfield, A.D.	AGRO	258	Schaake, R.P.	POLY	501
Saravanan, K.	CATL	109	Satterfield, B.	I&EC	40	Schaal, M.T.	ENFL	430
Saravanan, K.	CATL	251	Satterfield, M.C.	ENVR	282	Schabes, B.	COLL	101
Sardan, M.	ORGN	552	Sattigeri, J.A.	MEDI	137	Schablik, J.D.	COLL	138
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Sevian, H.	CHED	48	Shan, J.	COLL	79	Shaw, P.B.	ENVR	653
Seville, A.	AGRO	360	Shan, P.	COLL	79	Shaw, R.	NUCL	51
Sevov, S.C.	AEI	33	Shan, S.	ANYL	103	Shaw, S.	COLL	286
Sevov, S.C.	INOR	347	Shan, S.	CATL	209	Shaw, S.	MEDI	265
Sevryugina, Y.	ORGN	519	Shan, S.	CATL	210	Shaw, S.	MEDI	350
Seward, E.	ORGN	620	Shan, S.	CATL	211	Shaw, T.E.	ENVR	722
Sexton, M.	CHED	307	Shan, S.	CATL	216	Shaw, T.E.	ENVR	724
Seyedsayamdost, M.R.	BIOL	234	Shan, S.	COLL	248	Shaw, T.W.	INOR	509
Seyfferth, A.	ENVR	249	Shan, Z.	ORGN	720	Shaw, W.J.	INOR	273
Seyfferth, A.	GEOC	45	Shanahan, J.P.	INOR	277	Shawkey, M.	PMSE	303
Seyfferth, A.	GEOC	46	Shanahan, J.P.	INOR	480	Shaya, J.	ORGN	596
Sfeir, M.	INOR	47	Shanbhag, S.	ENVR	501	Shayo, Y.	COMP	20
Sfeir, M.	PHYS	110	Shanbhag, S.	ENVR	502	Shayo, Y.	MEDI	174
Sfeir, M.	PHYS	184	Shand, N.	COLL	87	She, J.	AGFD	294
Sfeir, M.	PHYS	185	Shang, D.	ENVR	160	Shea, J.E.	ENFL	400
Sfougatakis, C.	ANYL	257	Shang, X.	ENVR	291	Shea, J.E.	PHYS	111
Sguera, S.	AGRO	224	Shangguan, N.	ENFL	87	Shea, K.J.	PMSE	574
Sguera, S.	AGRO	238	Shankar, B.	MEDI	276	Shea, K.J.	PMSE	580
Sha, W.	AGFD	126	Shanmugam, S.	PMSE	349	Shea, K.J.	PMSE	91
Sha'Ato, R.	ENVR	16	Shanmugasundaram, V.	COMP	106	Shea, K.J.	POLY	325
Shabana, A.M.	COLL	143	Shanmugasundaram, V.	COMP	21	Shear, L.	ANYL	151
Shabana, A.M.	MEDI	66	Shanmugasundaram, V.	COMP	78	Sheardy, R.D.	CHED	413
Shabbir, S.	COLL	269	Shannon, T.M.	ORGN	218	Shearer, M.	ENFL	335
Shadnia, H.	COMP	246	Shanov, V.	PMSE	98	Shearin, S.	COMP	271
Shadnia, H.	MEDI	317	Shao, C.	ORGN	753	Sheehan, C.	ANYL	374
Shafaat, H.S.	INOR	201	Shao, C.T.	AGFD	21	Sheehan, J.	ENFL	167
Shaffer, A.	POLY	374	Shao, D.	AGFD	159	Sheehan, J.	I&EC	33
Shaffer, D.W.	INOR	214	Shao, L.	AGFD	229	Sheehan, P.	ORGN	610
Shaffer, D.W.	INOR	451	Shao, M.	ENVR	160	Sheehan, S.W.	CATL	202
Shaffer, D.W.	INOR	455	Shao, Y.	COMP	84	Sheehan, S.W.	INOR	532
Shaffer, G.	CHED	231	Shao, Y.	ENVR	539	Sheen, L.	AGFD	238
Shaffer, M.	PMSE	663	Shao, Y.	ENVR	771	Sheen, S.	AGFD	238
Shaffer, T.M.	INOR	6	Shao, Y.	PHYS	308	Sheesley, R.J.	PHYS	87
Shah, A.	ENVR	132	Shao, Y.	PHYS	51	Sheets, J.	GEOC	55
Shah, A.	MEDI	58	Shao, Y.	PHYS	95	Sheets, J.	GEOC	80
Shah, A.	POLY	106	Shao, Y.	PHYS	98	Sheetz, M.	AGRO	281
Shah, B.	ENVR	485	Shao, Z.	ENFL	97	Shehee, T.C.	PMSE	68
Shah, D.N.	AGFD	254	Shao, Z.	INOR	337	Shehzad, K.	CATL	204
Shah, D.U.	POLY	499	Shaparenko, B.	ANYL	313	Shehzad, K.	PMSE	397
Shah, I.	PHYS	245	Shapiro, J.A.	BIOL	149	Sheibley, D.	BIOL	92
Shah, I.	TOXI	96	Shapiro, M.	ANYL	291	Sheils, T.	CINF	53
Shah, K.S.	MEDI	153	Sharghi-Moshtahin, R.	COLL	551	Sheindorf, C.	ENVR	167
Shah, M.S.	COMP	122	Sharifian, M.	ANYL	321	Sheindorf, C.	ENVR	295
Shah, N.	ORGN	207	Sharifian, M.	ANYL	39	Shekhar, S.	ORGN	722
Shah, N.	POLY	158	Sharifi-Mood, N.	ENFL	361	Shelat, A.	COMP	52
Shah, R.	AGFD	102	Sharifuddin, S.	INOR	553	Shelby, A.	AGRO	138
Shah, R.	AGRO	346	Sharifzadeh, S.	COMP	68	Shelby, M.L.	PHYS	268
			Sharlow, E.R.	MEDI	10	Shelby, M.L.	PHYS	62

Shelp, R.	COLL	178	Sherman, W.	COMP	53	Shimshock, S.	POLY	365
Shelton, A.H.	CHED	401	Sherman, W.	MEDI	27	Shin, C.	ORGN	716
Shelton, C.	BIOL	108	Sherpa, C.	BIOL	260	Shin, C.H.	ANYL	38
Sheludko, B.	CATL	226	Sherrer, S.M.	AEI	7	Shin, D.	ENFL	275
Shelver, W.L.	AGRO	235	Sherrer, S.M.	TOXI	21	Shin, D.	INOR	162
Shen, B.	ENFL	20	Sherrill, D.	COMP	48	Shin, D.	ORGN	456
Shen, B.	ENFL	246	Sherry, B.	MEDI	356	Shin, D.	POLY	507
Shen, B.	ENFL	258	Shertz, S.	PHYS	124	Shin, E.	CHED	163
Shen, B.	ENFL	321	Shervin, J.	PHYS	351	Shin, H.	MEDI	57
Shen, B.	ENFL	457	Shewchuk-Chapman, L.	COMP	78	Shin, H.	PMSE	455
Shen, B.	ENVR	808	Shewmaker, F.	PHYS	339	Shin, H.	PMSE	649
Shen, B.	ORGN	724	Shewry, P.R.	AGFD	152	Shin, H.	POLY	306
Shen, C.	AGFD	234	Shewry, P.R.	AGFD	167	Shin, H.	POLY	89
Shen, F.	ENFL	158	Shi, A.	POLY	31	Shin, J.	BIOL	218
Shen, F.	PMSE	371	Shi, B.	ORGN	207	Shin, J.	BIOL	220
Shen, J.	COMP	128	Shi, C.	ORGN	534	Shin, J.	COMP	254
Shen, J.	COMP	228	Shi, D.	CATL	265	Shin, J.	ENVR	667
Shen, J.	COMP	237	Shi, D.	CATL	47	Shin, J.	ENVR	668
Shen, J.	COMP	350	Shi, D.	MEDI	381	Shin, J.	POLY	358
Shen, J.	ENVR	20	Shi, F.	ANYL	125	Shin, J.H.	CHED	161
Shen, J.	PMSE	585	Shi, F.	ANYL	45	Shin, J.H.	CHED	162
Shen, L.	COMP	38	Shi, G.	ORGN	482	Shin, J.H.	CHED	163
Shen, T.	MEDI	33	Shi, G.	ORGN	568	Shin, K.	ORGN	505
Shen, W.	BIOL	212	Shi, H.	ANYL	100	Shin, M.	PMSE	439
Shen, W.	ENFL	385	Shi, H.	FLUO	8	Shin, S.	ANYL	69
Shen, X.	ENVR	212	Shi, J.	INOR	534	Shin, S.	BIOL	253
Shen, Y.	AEI	21	Shi, J.	MEDI	388	Shin, S.	BIOL	29
Shen, Y.	ENFL	203	Shi, K.	PMSE	453	Shin, S.	MEDI	105
Shen, Y.	ENVR	487	Shi, L.	MEDI	74	Shin, S.	MEDI	396
Shen, Y.	ENVR	575	Shi, L.	PMSE	454	Shin, Y.	AGFD	38
Shen, Y.	ENVR	78	Shi, Q.	ENVR	150	Shin, Y.	MEDI	418
Shen, Y.	MEDI	104	Shi, Q.	ENVR	334	Shinde, A.K.	MEDI	167
Shen, Y.	MEDI	254	Shi, Q.	ENVR	568	Shinde, A.K.	MEDI	168
Shen, Y.	MEDI	286	Shi, Q.	ORGN	446	Shinde, A.K.	MEDI	169
Shen, Z.	COLL	219	Shi, W.	ANYL	112	Shinde, A.K.	MEDI	170
Shen, Z.	GEOC	21	Shi, W.	ANYL	360	Shing, V.	AGRO	155
Shen, Z.	ORGN	123	Shi, W.	ENVR	231	Shinnar, A.E.	CHED	43
Sheng, E.	AGFD	248	Shi, W.	ENVR	284	Ship, T.S.	PMSE	138
Sheng, N.	ENFL	68	Shi, W.	MEDI	181	Shipley, H.J.	ENVR	356
Sheng, Q.	ENFL	227	Shi, Y.	COLL	112	Shipp, D.A.	POLY	567
Sheng, Q.	ENFL	245	Shi, Y.	COLL	155	Shiraishi, T.	ORGN	439
Sheng, W.	AGFD	195	Shi, Y.	INOR	362	Shirasaka, T.	MEDI	336
Shenje, R.	ORGN	399	Shi, Y.	MEDI	18	Shirazi Amin, A.	ENVR	427
Shenoy, G.G.	MEDI	47	Shi, Y.	MEDI	267	Shirazinejad, C.	PHYS	100
Shensky, W.M.	INOR	534	Shi, Y.	MEDI	380	Shiring, S.B.	PHYS	421
Shepardson, S.	ORGN	456	Shi, Y.	POLY	338	Shirokovsky, I.V.	NUCL	34
Shepherd, J.J.	COMP	165	SHI, Y.	POLY	339	Shirts, M.R.	COMP	288
Shepherd, S.L.	INOR	448	Shi, Y.	POLY	341	Shisler, J.	ENVR	243
Sheppard, G.S.	MEDI	254	Shiakolas, A.R.	ORGN	418	Shivakumar, S.	MEDI	383
Sheppard, G.S.	MEDI	286	Shibahara, O.	MEDI	158	Shkrob, I.A.	NUCL	61
Sheppard, W.S.	AGRO	36	Shibata, M.	AGFD	3	Shoaib, T.	COLL	400
Sherborne, B.	COMP	197	Shibatomi, K.	ORGN	92	Shoba, V.	ORGN	242
Sherborne, B.	COMP	49	Shibuya, K.	ENVR	680	Shoda, M.	AGRO	46
Sherborne, B.	COMP	78	Shieh, M.	INOR	643	Shoda, M.	AGRO	80
Sherer, E.C.	COMP	343	Shiek, S.	BIOL	55	Shoemaker, B.A.	CINF	1
Sherer, S.	AGRO	187	Shields, B.J.	ORGN	761	Shoff, K.J.	ORGN	463
Sherer, S.	CHAS	53	Shields, J.	PMSE	198	Shoffler, C.A.	ORGN	407
Sheridan, M.V.	INOR	456	Shifrina, Z.	COLL	177	Shokrollahi Yancheshmeh, M.	CATL	241
Sheridan, M.V.	INOR	557	Shifrina, Z.	COLL	208	Sholl, D.	ENFL	28
Sheridan, P.E.	CHED	155	Shih, C.	COMP	45	Sholl, D.	ENFL	407
Sheridan, R.P.	COMP	340	Shih, F.	POLY	382	Sholl, D.	ENFL	72
Sheriff, S.	MEDI	345	Shih, K.	ENVR	803	Sholl, D.	ENFL	74
Sheriff, S.	MEDI	91	Shih, N.	MEDI	349	Sholl, D.	ENFL	75
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Sherman, B.	INOR	456	Shih, Y.	ENVR	596	Shonkoff, S.B.	PRES	19
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Sherman, B.	MEDI	45	Shih, Y.	ENVR	606	Shores, M.P.	INOR	499
Sherman, B.D.	INOR	452	Shih, Y.	ENVR	610	Short, A.L.	PMSE	265
Sherman, D.H.	BIOL	139	Shih, Y.	ENVR	613	Short, A.L.	POLY	424
Sherman, D.H.	BIOL	194	Shih, Y.	ENVR	802	Short, A.L.	POLY	538
Sherman, D.H.	BIOL	33	Shilling, J.	ENVR	278	Short, G.	POLY	357
Sherman, D.H.	BIOL	52	Shim, B.	COLL	248	Shorter, J.	BIOL	17
Sherman, D.H.	MEDI	82	Shim, J.	AGRO	237	Shorter, J.	BIOL	23
Sherman, D.H.	ORGN	365	Shim, Y.M.	MEDI	107	Shorter, J.	BIOL	35
Sherman, D.H.	ORGN	413	Shim, Y.M.	MEDI	283	Shorter, J.	BIOL	44
Sherman, S.	COLL	472	Shimada, I.	ENFL	66	Shorter, J.	BIOL	61
Sherman, S.E.	ORGN	515	Shimasaki, T.	AGFD	3	Shorter, J.	PHYS	337
Sherman, S.E.	POLY	330	Shimizu, K.	AGFD	10	Shorter, J.	PHYS	462
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Shriver, L.P.	MEDI	32	Silberstein, K.	INOR	662	Singh, A.K.	ANYL	95
Shriver, L.P.	MEDI	72	Silcox, C.A.	AGRO	284	Singh, D.	ENVR	246
Shu, W.	MEDI	256	Sillanpaa, M.	ENVR	228	Singh, G.	ENFL	396
Shu, Y.	PHYS	299	Sillanpaa, M.	ENVR	556	Singh, K.	BIOL	76
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Shuler, S.	ORGN	580	Silva, K.C.	PHYS	440	Singh, R.	MEDI	238
Shuler, W.G.	ORGN	774	Silva, W.R.	PHYS	534	Singh, S.	CATL	165
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Shull, K.R.	COLL	32	Silver, J.E.	ANYL	149	Singh, S.	ENVR	612
Shuller-Nickles, L.C.	NUCL	11	Silverman, L.	MEDI	268	Singh, S.B.	MEDI	100
Shultz, M.D.	MEDI	284	Silverman, R.B.	CHED	96	Singh, S.B.	MEDI	211
Shumeyko, M.V.	NUCL	34	Silverman, S.	ORGN	772	Singh, S.B.	MEDI	95
Shumlas, S.	CATL	21	Silverman, S.M.	ORGN	297	Singh, S.P.	ORGN	134
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Shumlas, S.	INOR	525	Silvester, J.	PMSE	527	Singh, V.	PMSE	365
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Shwartz, Y.	CHED	130	Sim, J.	ORGN	208	Singh, W.	COMP	381
Shwartz, Y.	CHED	53	Sim, K.	MEDI	101	Singh, W.	INOR	16
Si, W.	ENFL	479	Sim, K.	PMSE	375	Singh, W.	INOR	17
Si, Y.	ENVR	30	Sim, K.	PMSE	376	Singh, W.	ORGN	549
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Siburt, C.J.	CHED	433	Simakova, A.	PMSE	321	Sinha, S.S.	COLL	139
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Sieber-McMaster, E.	MEDI	382	Simmons, B.	CATL	165	Sirkoch, C.	PHYS	446
Siebert, H.	COLL	91	Simmons, B.	ORGN	297	Siron, M.	POLY	215
Siebert, M.R.	ORGN	255	Simmons, B.	ORGN	772	Sirrine, J.M.	COLL	130
Siebert, M.R.	ORGN	256	Simmons, D.	POLY	574	Sirrine, J.M.	PMSE	208
Siebert, M.R.	ORGN	257	Simmons, R.	TOXI	28	Siska, E.	ENFL	195
Sieburth, S.M.	ORGN	173	Simmons, T.J.	BIOL	45	Sisko, J.	MEDI	371
Sieburth, S.M.	ORGN	347	Simocko, C.K.	COLL	14	Sistani, H.	ANYL	125
Sieburth, S.M.	ORGN	738	Simocko, C.K.	PMSE	539	Sistla, R.	MEDI	201
Sieburth, S.M.	ORGN	780	Simon, G.	PMSE	442	Sit, S.	MEDI	22
Siegel, D.	COMP	302	Simon, J.	AGFD	101	Sita, L.R.	INOR	253
Siegel, D.	COMP	353	Simon, J.	AGFD	89	Sita, L.R.	PMSE	319
Siegel, J.B.	BIOL	145	Simon, J.	AGFD	90	Sitti, M.	PMSE	578
Siegel, S.	MEDI	140	Simon, J.	AGFD	91	Sittko, I.	POLY	455
Siegfried, B.	AGFD	243	Simon, J.	AGFD	93	Siu, M.	CHED	234
Siegfried, B.	AGRO	206	Simonetti, A.	NUCL	10	Siu, M.	CHED	31
Siegler, M.	INOR	383	Simonetti, A.	NUCL	6	Sivaguru, J.	ORGN	252
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Siegrist, R.L.	ENVR	528	Simonetti, M.	ORGN	295	SivalingamAnbazhagan, K.	COLL	447
Siegwart, D.J.	POLY	221	Simonich, S.L.	ENVR	393	Sivaprakasam, S.	SCHB	3
Siegwart, D.J.	POLY	359	Simonovis, J.	CATL	88	Sivaram, S.	PMSE	207
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Siemienski, P.	PHYS	354	Simpkins, B.	PHYS	215	Skaf, R.	BIOL	54
Siepmann, J.I.	COMP	122	Simpson, G.J.	ANYL	14	Skala, S.	MEDI	201
Siepmann, T.	CHED	331	Simpson, G.J.	ANYL	159	Skanchy, D.	ORGN	446
Sierra-Alvarez, R.	ENVR	510	Simpson, H.M.	CHED	282	Skaug, M.	PMSE	471
Sierra-Campos, E.	MEDI	132	Simpson, M.E.	MEDI	6	Skeete, Z.	ANYL	103
Sierra-Campos, E.	MEDI	133	Simpson, S.	INOR	450	Skeete, Z.	CATL	209
Sifri, R.	INOR	205	Sims, I.R.	PHYS	217	Skeete, Z.	CATL	211
Sigmann, S.B.	CHAS	28	Sims, J.W.	AGRO	61	Skeete, Z.	CATL	216

Skeete, Z.	CHED	378	Smith, A.	PMSE	46	Smith, M.R.	ORGN	218
Skeete, Z.	COLL	151	Smith, A.	PMSE	54	Smith, M.R.	ORGN	468
Skeete, Z.	COLL	164	Smith, A.B.	MEDI	334	Smith, M.R.	ORGN	783
Skeete, Z.	COLL	233	Smith, A.B.	ORGN	646	Smith, P.A.	INOR	64
Skeete, Z.	COLL	248	Smith, B.	BIOL	166	Smith, P.B.	POLY	581
Skerratt, S.	COMP	106	Smith, B.	ORGN	275	Smith, P.E.	COMP	123
Skillinghaug, B.F.	ORGN	570	Smith, B.	PMSE	166	Smith, P.E.	COMP	124
Skinner, G.E.	ENVR	11	Smith, B.D.	AEI	12	Smith, P.E.	PHYS	211
Skinner, M.	POLY	250	Smith, B.D.	COLL	594	Smith, P.F.	INOR	231
Skjevik, A.	COMP	146	Smith, B.D.	COLL	64	Smith, R.	ENVR	243
Skjevik, A.	COMP	345	Smith, B.D.	ORGN	425	Smith, R.	MEDI	30
Skog, K.	PHYS	224	Smith, B.J.	PMSE	357	Smith, R.	POLY	13
Skoglundh, M.	CATL	130	Smith, C.	CATL	54	Smith, R.	POLY	522
Skomski, D.	COLL	174	Smith, C.	CINF	15	Smith, R.C.	ENVR	538
Skomski, D.	COLL	442	Smith, C.R.	COMP	182	Smith, T.	ORGN	559
Skorski, M.	COLL	227	Smith, D.J.	AGRO	235	Smith, W.	BIOL	123
Skorski, T.	ORGN	163	Smith, D.K.	INOR	389	Smith-Carpenter, J.E.	CHED	179
Skoura, A.	MEDI	17	Smith, D.L.	MEDI	180	Smith-Carpenter, J.E.	CHED	191
Skouridou, V.	ANYL	92	Smith, D.L.	MEDI	277	Smithies, O.	TOXI	47
Skouteris, D.	PHYS	328	Smith, E.	ANYL	11	Smola, S.S.	INOR	434
Skouteris, D.	PHYS	423	Smith, F.	ANYL	120	Smolen, J.M.	CHED	218
Skrabalak, S.E.	COLL	369	Smith, F.C.	ANYL	372	Smolin, S.	INOR	47
Skrabalak, S.E.	INOR	295	Smith, F.C.	ANYL	68	Smolin, Y.Y.	PMSE	692
Skrydstrup, T.	CATL	64	Smith, F.N.	CHED	329	Smolin, Y.Y.	POLY	42
Skrydstrup, T.	ORGN	573	Smith, G.	FLUO	20	Smolinski, B.	ENVR	476
Skylaris, C.	COMP	12	Smith, G.D.	ENVR	162	Smuts, J.	ANYL	230
Skylaris, C.	PHYS	94	Smith, G.D.	PHYS	553	Smyrl, W.H.	ENFL	422
Skylaris, C.	PHYS	98	Smith, G.N.	PMSE	112	Smythe, M.	MEDI	229
Slama, J.	BIOL	200	Smith, G.N.	PMSE	259	Smythers, A.	CHED	188
Slanec, T.	AGRO	197	Smith, G.N.	PMSE	534	Snape, C.E.	ENFL	118
Slater, B.J.	ENFL	35	Smith, G.R.	SCHB	6	Snape, C.E.	ENFL	69
Slater, J.W.	INOR	201	Smith, H.E.	POLY	440	Snape, C.E.	ENVR	765
Slater, K.A.	ORGN	741	Smith, I.	CHED	245	Snow, J.	ENVR	653
Slawek, P.	PMSE	369	Smith, J.	ANYL	157	Snee, P.T.	ANYL	155
Sledge, A.	MEDI	394	Smith, J.	ANYL	40	Snee, P.T.	INOR	81
Slegeris, R.	PMSE	299	Smith, J.	CMA	8	Snitsirivat, S.	PHYS	176
Slegeris, R.	POLY	291	Smith, J.	ENFL	312	Snow, D.D.	ENVR	512
Sleiman, P.	COMP	329	Smith, J.	ENVR	655	Snow, D.D.	ENVR	743
Sleph, P.	MEDI	265	Smith, J.	INOR	224	Snow, D.D.	ENVR	787
Slesinger, P.	ANYL	200	Smith, J.	PHYS	514	Snurr, R.	AEI	15
Slick, G.	ORGN	517	Smith, J.	PMSE	113	Snurr, R.	CATL	134
Sligar, S.G.	ANYL	220	smith, j.	PMSE	226	Snurr, R.	PHYS	300
Sliman, D.	COMP	29	Smith, J.C.	ENVR	439	Snyder, B.D.	MEDI	416
Slininger, P.	ENFL	41	Smith, J.D.	CHED	228	Snyder, B.D.	INOR	628
Slipchenko, L.V.	COMP	111	Smith, J.L.	BIOL	194	Snyder, J.M.	CATL	207
Slipchenko, L.V.	COMP	290	Smith, J.L.	BIOL	33	Snyder, J.D.	ENFL	332
Slipchenko, L.V.	COMP	390	Smith, J.M.	PHYS	276	Snyder, J.P.	COMP	375
Slipchenko, L.V.	PHYS	92	Smith, J.M.	PHYS	378	Snyder, N.	TOXI	18
Slitt, A.	AGFD	56	Smith, J.P.	ANYL	152	Snyder, N.	TOXI	30
Sloand, J.N.	POLY	254	Smith, J.P.	ANYL	372	Snyder, N.	TOXI	45
Slobodchikova, I.	ORGN	420	Smith, J.P.	ANYL	68	Snyder, N.J.	AGRO	77
Slocum, K.	ORGN	559	Smith, J.P.	ANYL	99	Snyder, S.	ANYL	247
Slocum, S.	BIOL	194	Smith, J.P.	PROF	8	Snyder, S.	ORGN	599
Slocum, S.	ORGN	365	Smith, K.	ENFL	294	So, F.	PMSE	340
Slough, D.	CHED	212	Smith, K.	MEDI	260	So, M.C.	INOR	356
Slowing, I.I.	CATL	298	Smith, K.	MEDI	9	Soai, K.	ORGN	326
Slusher, L.B.	AGFD	39	Smith, K.A.	COLL	442	Soares, J.W.	AGFD	174
Smaldone, R.	PMSE	129	Smith, K.C.	ENVR	291	Sobiech, T.	ORGN	681
Smaldone, R.	PMSE	354	Smith, K.M.	ORGN	334	Sobkowicz, M.J.	PMSE	346
Smale, A.	INOR	626	Smith, K.T.	INOR	547	Sobkowicz, M.J.	PMSE	368
Small, H.	MEDI	260	Smith, K.T.	ORGN	783	Sobkowicz, M.J.	PMSE	552
Small, M.C.	COMP	187	Smith, L.	MEDI	91	Sobkowicz, M.J.	POLY	512
Small, M.J.	ENVR	455	Smith, M.	CHED	234	Sobotta, F.H.	POLY	60
Smallheer, J.	MEDI	265	Smith, M.	CHED	269	Sobrado, P.	BIOL	143
Smallwood, Z.	INOR	353	Smith, M.	GEOC	12	Sobral-Filho, R.	COLL	293
Smee, D.	CHED	307	Smith, M.	INOR	199	Sobus, J.	ANYL	376
Smerdon, M.	TOXI	11	Smith, M.	INOR	660	Sobus, J.	ANYL	40
Smidler, A.	ENVR	195	Smith, M.	ORGN	142	Socia, A.	ANYL	297
Smilgies, D.	PMSE	238	Smith, M.	ORGN	144	Sode, O.	COMP	173
Smiljanic-Hurley, E.	MEDI	374	Smith, M.	ORGN	460	Sode, O.	COMP	331
Smiljanic-Hurley, E.	MEDI	375	Smith, M.A.	PHYS	330	Söderberg, D.	PHYS	468
Smirk, R.A.	MEDI	18	Smith, M.D.	ENVR	439	Soderholm, L.	INOR	65
Smirk, R.A.	MEDI	267	Smith, M.D.	INOR	682	Soderlund, D.M.	AGRO	164
Smirk, R.A.	MEDI	380	Smith, M.D.	ORGN	20	Soejarto, D.D.	AGFD	53
Smit, I.	AGRO	277	Smith, M.D.	ORGN	236	Soennichsen, C.	COLL	240
Smit, J.J.	POLY	189	Smith, M.D.	ORGN	298	Soergel, S.	AGRO	74
Smita, K.	ENVR	564	Smith, M.D.	ORGN	597	Sofia, M.J.	SCHB	5
Smith, A.	ENFL	429	Smith, M.K.	ORGN	23	Sofranko, J.A.	CATL	20
Smith, A.	INOR	208	Smith, M.M.	GEOC	7	Soh, L.	ENVR	131
Smith, A.	PMSE	41	Smith, M.R.	INOR	547	Soh, L.	ENVR	441

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Sohlberg, K.W.	PHYS	422	Song, M.	ENFL	395	Spano, T.L.	NUCL	6
Sohma, Y.	MEDI	300	Song, M.	ENVR	155	Spano, T.L.	NUCL	8
Sohn, B.	COLL	238	Song, T.	MEDI	8	Spanogiannopoulos, P.	MEDI	231
Sohn, H.	ENFL	115	Song, W.	INOR	314	Sparks, D.	BIOL	79
Sojati, J.	BIOL	32	Song, W.	INOR	454	Sparks, D.L.	GEOC	40
Sojo, L.	MEDI	263	Song, Y.	AGFD	85	Sparks, D.L.	GEOC	44
Sok, A.	MEDI	84	Song, Y.	AGFD	94	Sparks, J.	PMSE	64
Sokolov, A.	PHYS	561	Song, Y.	CATL	185	Sparks, S.	PHYS	214
Solaiman, D.	AGFD	267	Song, Y.	CATL	252	Sparks, T.	PHYS	43
Solano, D.M.	CHED	284	Song, Y.	ENFL	71	Sparks, T.C.	AGRO	289
Solano, L.	MEDI	313	Song, Y.	ENVR	342	Sparling, B.	MEDI	280
Solano, L.	MEDI	369	Song, Y.	ORGN	512	Spata, V.A.	PHYS	359
Solano, L.	MEDI	50	Song, Y.	POLY	208	Spata, V.A.	PHYS	360
Solch, J.	CHED	427	Songkiatissak, P.	ANYL	238	Spatari, S.	ENFL	364
Solch, J.	CHED	428	Soni, A.	MEDI	137	Spatari, S.	ENVR	437
Soldemo, M.	COLL	128	Soniat, M.	COMP	317	Spatz, D.	AGRO	173
Soler, J.M.	PHYS	188	Sonker, M.	ANYL	314	Spear, J.	BIOL	145
Soliani, A.E.	PMSE	365	Sonnenberg, L.A.	AEI	63	Speck, T.	COLL	240
Soliani, A.E.	PMSE	514	Sonnenberg, L.A.	PMSE	609	Speetjens, F.W.	PMSE	153
Soliman, H.	AGFD	59	Sonnenschein, M.F.	COLL	355	Speitel, L.C.	PMSE	195
Solimando, X.	PMSE	524	Sonnet, P.E.	ORGN	178	Spencer, L.	COMP	154
Solinski, A.E.	ORGN	167	Sonntag, M.D.	PHYS	369	Spencer, M.	PHYS	388
Solis, D.M.	COLL	292	Sonntag, M.D.	PHYS	370	Spencer, P.	AGRO	342
Solleder, S.	POLY	199	Sonoda, S.	MEDI	362	Spencer, R.K.	COMP	11
Solola, L.	INOR	328	Sonousi, A.	MEDI	136	Spencer, S.	ANYL	324
Solomon, E.I.	CHED	190	Soong, Y.	GEOC	10	Spencer, W.	CHED	282
Solomon, E.I.	INOR	493	Soong, Y.	GEOC	11	Sperandio, O.	COMP	371
Solomon, K.R.	AGRO	129	Soong, Y.	GEOC	92	Spergel, S.	MEDI	201
Solomos, M.A.	COLL	184	Soong, Y.	GEOC	93	Spergel, S.	MEDI	272
Solomos, M.A.	COLL	187	Sopa, J.	AGRO	195	Speth, T.	COLL	431
Solouki Bonab, V.	PMSE	641	Sopajaree, K.	ENVR	605	Spiccia, L.	PMSE	58
Solouki, T.	ENVR	645	Soper, S.A.	ANYL	212	Spiegel, D.A.	ORGN	310
Solovyov, A.	ENFL	483	Sorasaenee, K.	INOR	175	Spiegel, P.	BIOL	108
Solowey, D.	INOR	22	Sorensen, N.	MEDI	243	Spiegel, P.	BIOL	109
Soltau, S.	ANYL	337	Sorgo, R.	ANYL	149	Spielman-Sun, E.	ENVR	14
Soltau, S.	PHYS	152	Soriano, A.	FLUO	19	Spiess, H.W.	ORGN	507
Somasundaran, P.	CATL	246	Sorolla, A.	COLL	468	Spiess, H.W.	POLY	528
Somers, B.	AGFD	91	Soror, S.	MEDI	138	Spillane, J.	ORGN	345
Somers, D.	MEDI	15	Sorota, S.	MEDI	349	Spiller, K.L.	COLL	449
Somers, D.	MEDI	9	Soroush, M.	ENFL	255	Spinelle, R.	CHED	293
Somers, D.	MEDI	90	Soroush, M.	PMSE	692	Spink, S.	POLY	381
Somerson, J.	ANYL	362	Soroush, M.	POLY	42	Spiridiglozzi, J.	CHED	272
Somerson, J.	ANYL	387	Sorrentino, Z.	PHYS	381	Spirk, S.	PMSE	642
Somkuti, G.A.	AGFD	270	Sorunmu, Y.	ENFL	364	Spisak, S.N.	INOR	632
Sommariva, R.	PHYS	41	Sorunmu, Y.	ENVR	437	Spisak, S.N.	INOR	633
Sommer, R.	ORGN	519	Sosa-Pintos, A.	ANYL	324	Spisni, E.	ENVR	690
Sommerhalter, R.	CHED	241	Sotelo, C.	CHED	315	Spivak, D.	PRES	34
Sommers, C.	AGFD	238	Soteras, I.	COMP	255	Spivey, J.J.	CATL	308
Sommers, E.M.	CHAL	14	Sotin, C.	PHYS	27	Spokas, K.	GEOC	15
Sommers, E.M.	CHAL	4	Soto, C.M.	COLL	175	Spokas, K.	GEOC	67
Sommers, T.V.	COLL	55	Soto, C.M.	ENVR	496	Spontak, R.J.	PMSE	344
Somorjai, G.A.	CATL	24	Soto, J.	AGFD	121	Sporn, Z.	BIOL	210
Somorjai, G.A.	CATL	314	Sottos, N.R.	PMSE	304	Sposato, L.K.	COLL	256
Somorjai, G.A.	ENFL	470	Sotzing, G.A.	PMSE	467	Spratt, T.	TOXI	95
Somorjai, G.A.	ORGN	9	Soubra, M.K.	CHED	374	Sprick, R.S.	ENFL	35
Somoza, A.	ORGN	608	Soucek, M.D.	PMSE	225	Sprick, R.S.	PMSE	3
Son, D.	AGFD	86	Soukupova, J.	MEDI	48	Spring, D.R.	ORGN	175
Son, D.H.	ENVR	363	Soulages, J.	PMSE	206	Spring, D.R.	ORGN	706
Son, D.Y.	INOR	206	Soule, J.	PMSE	346	Spring, D.R.	ORGN	707
Son, D.Y.	PMSE	364	Soundararajan, N.	PMSE	347	Spring, O.	AGRO	27
Son, J.	CHED	38	Soural, M.	MEDI	411	Spronk, S.	MEDI	18
Son, P.	ANYL	377	Sourk, R.L.	ORGN	330	Spronk, S.	MEDI	380
Son, W.	MEDI	101	Sousa, A.A.	PHYS	60	Sproules, S.	INOR	621
Son, Y.	ENFL	411	Southall, N.	CINF	53	Sproules, S.	ORGN	389
Son, Y.	ENVR	471	Southall, N.	COMP	341	Sprouse, D.	COLL	62
Son, Y.	INOR	606	Southard, K.	COLL	405	Sprouse, D.	PMSE	13
Sone, B.	ENVR	16	Southerland, M.	MEDI	310	Sproviero, E.M.	AEI	17
Song, C.	CATL	237	Southerland, M.	MEDI	32	Sproviero, E.M.	INOR	487
Song, C.	ENFL	119	Southerland, M.	MEDI	72	Spruell, J.M.	CHAS	13
Song, C.	ENFL	315	Southworth, L.	ENVR	63	Sprunger, P.	CATL	65
Song, C.	ENFL	91	Souza, A.B.	MEDI	120	Spulber, M.	COLL	524
Song, J.	ENFL	460	Souza, P.C.	MEDI	146	Šramková, P.	POLY	225
Song, J.	TOXI	81	Spadaccini, C.	PMSE	163	Sreedhar, B.	ENFL	486
Song, K.	PMSE	457	Spadaccini, C.	PMSE	545	Srinivasan, A.	CATL	127
Song, K.	PMSE	458	Spakowitz, A.	COMP	69	Srinivasan, P.D.	CATL	124
Song, K.	PMSE	630	Spaniol, J.M.	ORGN	514	Srinivasan, R.	AGRO	81
Song, L.	ENFL	65	Spann, B.T.	PHYS	215	Srirajavatsavai, C.	ANYL	62
Song, L.	PMSE	252	Spano, F.C.	PHYS	263	Srirat, N.	CATL	25
Song, M.	AGFD	206	Spano, F.C.	PHYS	358	Srirat, N.	CATL	58

Srivastava, D.	GEOC	83	Stavis, C.	AGRO	195	Stephani, R.	MEDI	53
Srivastava, P.	MEDI	383	Stavros, V.	PHYS	501	Stephanopoulos, G.	AGFD	215
Srivastava, R.	MEDI	201	Ste.Marie, E.	ORGN	530	Stephenson, N.	FLUO	9
Srivastava, R.K.	PMSE	662	Steadman, D.W.	COMSCI	3	Steppan, J.	BIOL	78
Srivastava, S.	MEDI	91	Stebbins, D.	ENVR	322	Stern, J.	PHYS	274
Sriwattana, S.	AGFD	22	Stebbins, N.B.	AGFD	203	Stern, S.	PHYS	204
Sriyaratne, D.M.	ORGN	187	Stebbins, N.D.	POLY	56	Stern, S.	PHYS	71
Sriyaratne, D.M.	PHYS	380	Stebe, K.J.	ENFL	361	Stetz, M.	BIOL	70
St Angelo, S.K.	CHED	81	Stebe, K.J.	PMSE	366	Stevanovic, A.	PHYS	522
St.Ange, K.	ANYL	121	Stec, J.	MEDI	144	Stevens, A.J.	AGRO	341
Staal, A.	MEDI	18	Stec, J.	YCC	16	Stevens, B.	PMSE	149
Staben, S.T.	MEDI	202	Steckle, W.P.	PMSE	68	Stevens, C.T.	AGRO	326
Stabler, C.B.	AGRO	260	Steckle, W.P.	POLY	385	Stevens, C.T.	ENVR	203
Stacchiola, D.J.	CATL	120	Stedwell, C.N.	ANYL	131	Stevens, C.V.	I&EC	19
Stacchiola, D.J.	COLL	128	Stedwell, C.N.	ANYL	134	Stevens, C.V.	MEDI	42
Stacchiola, D.J.	COLL	386	Stedwell, C.N.	CHED	84	Stevens, D.	ENVR	776
Stach, E.	CATL	49	Stedwell, C.N.	ENVR	688	Stevens, J.M.	AGRO	86
Stach, E.	CATL	57	Stedwell, C.N.	PHYS	388	Stevens, M.	ORGN	390
Stach, E.	CATL	6	Steeger, T.	AGRO	181	Stevens, M.	ORGN	467
Stach, E.	COLL	39	Steel, J.J.	CHED	265	Stevens, M.J.	PMSE	264
Stachowiak, J.C.	PHYS	213	Steel, P.G.	AGFD	230	Stevenson, M.	INOR	118
Stachyra-Valat, T.	MEDI	273	Steel, P.G.	BIOL	83	Stevenson, S.M.	PMSE	690
Stack, A.G.	CHED	329	Steele, A.	ORGN	303	Stevenson, T.M.	AGRO	102
Stack, A.G.	GEOC	66	Steele, A.D.	BIOL	34	Stevenson, T.M.	AGRO	193
Stack, D.E.	ORGN	436	Steele, B.L.	AGRO	176	Stevenson, T.M.	AGRO	195
Stack, D.E.	ORGN	437	Steele, J.	AGRO	119	Stevenson, T.M.	AGRO	260
Stack, M.	POLY	323	Steele, J.	AGRO	241	Stewart, A.	MEDI	135
Staelens, S.	POLY	267	Steele, J.	AGRO	324	Stewart, A.	MEDI	288
Stafford, C.M.	PMSE	45	Steele, T.G.	MEDI	371	Stewart, A.W.	INOR	436
Stafford, C.M.	POLY	437	Steelman, K.	INOR	24	Stewart, B.W.	GEOC	27
Stafford, C.M.	POLY	439	Steenbergen, K.G.	ENFL	433	Stewart, D.J.	INOR	265
Stafford, J.	MEDI	74	Steenrod, N.	CHED	325	Stewart, E.	TOXI	69
Stafslie, S.	PMSE	176	Steevens, J.A.	ENVR	405	Stewart, H.	ORGN	707
Stahl, C.H.	AGFD	271	Stefan, M.C.	CATL	304	Stewart, I.	CHED	433
Staiber, P.	CATL	272	Stefan, M.C.	POLY	10	Stewart, J.D.	ORGN	416
Stains, C.I.	BIOL	249	Stefan, M.C.	POLY	35	Stewart, J.M.	AGRO	367
Stair, P.C.	CATL	180	Stefan, M.C.	POLY	370	Stewart, K.R.	AGFD	188
Stair, P.C.	CATL	329	Stefan, M.C.	POLY	553	Stewart, L.	MEDI	374
Stair, P.C.	ENFL	267	Stefan, M.C.	POLY	93	Stewart, L.	MEDI	375
Stallings, D.	CMA	2	Stefani, H.A.	ORGN	531	Stewart, M.	PHYS	349
Stalnioniene, I.	CATL	235	Stefani, H.A.	ORGN	673	Stewart, M.N.	MEDI	393
Stamatakis, E.	ENFL	230	Stefani, H.A.	ORGN	675	Stewart, R.C.	MEDI	416
Stamatakis, M.	CATL	116	Stefani, H.A.	ORGN	686	Stewart, R.J.	PHYS	439
Stamford, A.W.	MEDI	14	Steffensen, S.K.	AGFD	132	Stiff, C.M.	ORGN	338
Stamm, B.	COMP	318	Stegemeier, C.	PMSE	132	Stika, K.M.	ANYL	66
Stamper, T.	COMSCI	4	Stegemeier, J.	ENVR	14	Still, T.	COLL	359
Stancl, H.	ENVR	484	Steigen, L.A.	CHED	254	Stillings, L.L.	CHED	329
Standard, J.M.	ORGN	122	Steigerwald, M.L.	COLL	234	Stillman, J.	PHYS	462
Stanek, J.	INOR	56	Steigerwald, M.L.	INOR	37	Stinespring, C.C.	PHYS	401
Staniforth, M.	PHYS	501	Steigerwald, M.L.	PHYS	110	Stingley, K.	ORGN	128
Stankeviciene, I.	CATL	233	Steill, J.D.	PHYS	39	Stiuftuc, G.	COLL	477
Stankeviciene, I.	ENFL	208	Stein, A.	ENFL	422	Stiuftuc, R.	COLL	477
Stankeviciute, G.	BIOL	172	Stein, A.	INOR	370	Stivers, P.	MEDI	346
Stankovikj, F.	CATL	144	Stein, B.	INOR	433	Stobba-Wiley, C.M.	ORGN	270
Stanley, C.B.	PHYS	334	Stein, B.W.	INOR	331	Stock, W.A.	YCC	15
Stanley, J.	CHED	79	Stein, G.	COLL	30	Stockdale, C.	ORGN	780
Stanley, N.	PHYS	528	Stein, P.D.	MEDI	381	Stocker, K.M.	CATL	104
Stanley, R.H.	PHYS	476	Stein, P.D.	MEDI	382	Stockton, A.M.	PHYS	24
Stanley, R.J.	PHYS	359	Stein, T.	COMP	304	Stockwell, C.	PHYS	121
Stanley, R.J.	PHYS	431	Steinbeck, C.	CINF	69	Stoddard, J.	COLL	521
Stanley, R.J.	PHYS	456	Steinberg, D.	ORGN	476	Stoddard, J.F.	AEI	45
Stanley, R.J.	PHYS	474	Steinecker, M.	PHYS	118	Stoddard, J.F.	ENFL	442
Stanley, R.J.	PHYS	540	Steinhaus, M.	AGFD	134	Stoddard, J.F.	ORGN	545
Stansbury, J.W.	POLY	111	Steinke, N.	PHYS	464	Stoddard, J.F.	ORGN	604
Stansfield, R.	MEDI	74	Steinmann, H.	AGRO	69	Stoddard, J.F.	ORGN	616
Stanton, A.L.	PMSE	425	Steinsaltz, M.	CHED	208	Stoddard, J.F.	POLY	177
Stanton, C.J.	CATL	283	Stell, M.	PHYS	124	Stoeber, J.	CHED	274
Stanton, J.	PMSE	459	Stella, M.	PHYS	247	Stoian, G.	ENFL	231
Stanzione, J.F.	CHED	228	Stellacci, F.	COLL	322	Stoianova, D.	ORGN	330
Star, A.	COLL	572	Stellacci, F.	COLL	6	Stokes, R.W.	INOR	27
Staretz Greenfield, M.E.	ANYL	157	Stelzer, F.	POLY	76	Stoliarov, S.	PMSE	200
Stark, L.	CHAS	50	Stelzig, S.	COLL	415	Stoliarov, S.	PMSE	530
Stark, M.	PMSE	209	Stenger-Smith, J.D.	POLY	505	Stoliarov, S.	PMSE	588
Stark, R.E.	PMSE	246	Stepan, A.F.	MEDI	214	Stoll, D.	ANYL	142
Starke, I.	MEDI	24	Stepan, A.F.	MEDI	235	Stoll, D.	ANYL	298
Starr, J.	COMP	21	Stepanek, P.	POLY	228	Stoll, D.R.	ENVR	742
Stashko, M.	COMP	370	Stepanek, P.	POLY	305	Stoll, S.	INOR	433
Staton, T.	ORGN	272	Stepanov, I.	TOXI	70	Stoll, S.L.	INOR	174
Statsyuk, A.	BIOL	121	Stepanov, I.	TOXI	90	Stoll, S.L.	INOR	298
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Stoll, S.L.	INOR	31	Strayer, T.	POLY	384	Sturm, L.	COLL	33
Stoll, S.L.	INOR	372	Streger, S.	ENVR	723	Sturnfield, J.	POLY	437
Stoll, S.L.	INOR	583	Streger, S.	ENVR	771	Stutz, A.	ORGN	115
Stoller, A.	AGRO	292	Streifel, B.	PMSE	179	Stutz, S.	MEDI	16
Stone, A.T.	COLL	282	Streifel, B.	PMSE	419	Stutz, S.	MEDI	273
Stone, A.T.	ENVR	142	Streifel, B.C.	PMSE	180	Styron, M.	INOR	622
Stone, C.	AGRO	108	Strein, T.G.	ANYL	311	Styron, M.	INOR	645
Stone, C.	AGRO	109	Streisel, D.J.	CHED	257	Su, B.	INOR	490
Stone, E.A.	PHYS	121	Streit, A.	CHED	283	Su, B.	ORGN	599
Stone, E.A.	PHYS	86	Stringfellow, W.	PRES	19	Su, C.	ENVR	406
Stone, M.P.	TOXI	100	Striolo, A.	COLL	99	Su, C.	ENVR	690
Stone, M.P.	TOXI	12	Striolo, A.	GEOC	24	Su, C.	ENVR	691
Stone, W.W.	AGRO	46	Striolo, A.	GEOC	32	Su, D.	COLL	67
Stone, W.W.	AGRO	80	Striolo, A.	GEOC	54	Su, H.	COLL	195
Stoner, K.A.	AGRO	38	Strnad, J.	MEDI	272	Su, H.	COMP	394
Stopera, C.J.	ENVR	623	Strohbach, J.W.	COMP	31	Su, H.	ENVR	150
Storey, R.F.	POLY	450	Stromyer, M.	MEDI	124	Su, H.	ENVR	154
Storms, W.K.	PMSE	175	Stromyer, M.	MEDI	310	Su, H.	PMSE	372
Stout, C.	INOR	647	Strongin, D.R.	CATL	21	Su, H.	PMSE	474
Stout, H.	INOR	9	Strongin, D.R.	COLL	336	Su, J.	CATL	323
Stowell, A.	MEDI	260	Strongin, D.R.	ENVR	326	Su, J.	COLL	136
Stoyer, M.A.	NUCL	34	Strongin, D.R.	GEOC	56	Su, J.	MEDI	410
Stoyer, N.J.	NUCL	34	Strongin, D.R.	INOR	156	Su, L.	AGRO	172
Straatsma, T.	ENFL	72	Strongin, D.R.	INOR	525	Su, M.	MEDI	268
Stracener, D.W.	NUCL	33	Stroobants, S.	POLY	267	Su, N.	ENFL	114
Tracey, N.	INOR	410	Stroud, L.M.	CHAS	35	Su, W.	PMSE	537
Strack, G.M.	COLL	136	Strouse, G.F.	COLL	129	Su, W.	PMSE	556
Stracke, J.	POLY	374	Strouse, G.F.	COLL	211	Su, X.	ENVR	475
Strącz, A.	COMP	152	Strouse, G.F.	INOR	340	Su, Y.	ENFL	416
Strahan, G.	ENVR	419	Strouse, G.F.	INOR	343	Su, Y.	ENVR	478
Strahs, L.	ENVR	455	Strouse, G.F.	INOR	358	Su, Y.	ENVR	613
Straight, S.	PHYS	12	Struckhoff, J.	POLY	200	Su, Z.	PMSE	487
Strain, S.M.	POLY	494	Strulson, C.	ANYL	251	Suarez, C.	CINF	90
Straley, K.	MEDI	268	Struthers, M.	MEDI	84	Suarez, M.	ORGN	327
Stram, D.O.	TOXI	35	Struyk, A.	FLUO	19	Suastegui, M.	ENFL	97
Straney, P.	PHYS	322	Strynar, M.	ANYL	376	Subbarao, N.	ANYL	194
Strange, N.A.	CATL	198	Strynar, M.	ANYL	40	Subbotin, V.G.	NUCL	34
Strange, N.A.	COLL	339	Strynar, M.	ENVR	152	Subdiaga, E.	ENVR	208
Strange, N.A.	NUCL	5	Stuart, R.	CHAS	28	Subotnik, J.E.	PHYS	413
Stranger, R.	INOR	233	Stuart, R.	CHAS	38	Subotnik, J.E.	PHYS	424
Stranges, D.	PHYS	423	Stuart, R.	CHAS	46	Subotnik, J.E.	PHYS	425
Stranick, S.	PHYS	374	Stuart, R.	CHED	408	Subotnik, J.E.	PHYS	427
Stranick, S.J.	ENFL	503	Stuart, R.	CINF	7	Subotnik, J.E.	PHYS	450
Stranick, S.J.	PMSE	581	Stuart, R.	CINF	77	Subrahmanyam, N.	MEDI	79
Stranick, S.J.	POLY	499	Stuart, R.	CINF	80	Subramani, C.	COLL	518
Strano, M.	AEI	29	Stuart, R.	CINF	84	Subramaniam, B.	ENFL	436
Strano, M.	ANYL	320	Stuart, R.	ENVR	238	Subramaniam, S.	CATL	312
Strano, M.	ANYL	325	Stubbe, J.	BIOL	133	Subramanian, R.	MEDI	167
Strano, M.	COLL	332	Stubbs, J.	COLL	20	Subramanian, R.	MEDI	168
Strano, M.	ENFL	187	Stubbs, J.	GEOC	17	Subramanian, R.	MEDI	169
Strano, M.	ENFL	446	Stubbs, J.	GEOC	50	Subramanian, R.	MEDI	170
Strano, M.	ENVR	471	Stubbs, J.	GEOC	66	Subramanian, S.	ENVR	445
Strano, M.	INOR	341	Stubbenrauch, C.	PMSE	290	Subramanian, V.	ANYL	215
Strano, M.	INOR	39	Stubbenrauch, C.	PMSE	297	Such, G.	INOR	319
Strano, M.	INOR	606	Stubbenrauch, C.	PMSE	565	Suchewski, M.	CHED	249
Strano, M.	PMSE	250	Stubos, A.	ENFL	230	Sudesh, S.	PHYS	462
Strano, M.	PRES	11	Stubos, G.	ENFL	230	Sudowe, R.	NUCL	13
Stratford, P.W.	CHED	132	Stuckey, J.	INOR	491	Sudowe, R.	NUCL	60
Strathmann, T.J.	ENVR	178	Stuckey, J.W.	GEOC	44	Sue, H.	PMSE	26
Strathmann, T.J.	ENVR	267	Stuckman, M.	GEOC	82	Sue, H.	PMSE	671
Strathmann, T.J.	ENVR	297	Stuff, J.R.	ANYL	150	Sugiya, M.	COLL	127
Strathmann, T.J.	ENVR	343	Stuffer, A.	PMSE	521	Sugiya, M.	COLL	305
Strathmann, T.J.	ENVR	428	Stuhl, C.	AGRO	23	Sugiya, M.	COLL	406
Stratis-Cullum, D.N.	COLL	517	Stukenkemper, T.	POLY	515	Sugiyama, M.	MEDI	85
Stratis-Cullum, D.N.	COMP	187	Stull, J.A.	INOR	433	Suh, D.	CATL	147
Stratton, G.	ENVR	239	Stults, J.	ORGN	263	Suh, N.	AGFD	180
Stratton, G.	ENVR	59	Stultz, C.	PHYS	78	Suh, S.	BIOL	261
Stratton, L.M.	POLY	72	Stultz, L.K.	INOR	460	Suh, S.	ORGN	748
Stratz, S.	NUCL	37	Stump, C.	FLUO	19	Suh, W.H.	CHED	322
Straub, A.	ENVR	503	Stumpfe, D.	CINF	88	Suh, W.H.	COLL	141
Straub, J.E.	COMP	328	Stumpfe, D.	COMP	150	Suh, W.H.	COLL	142
Straub, J.E.	POLY	504	Stupp, S.I.	CHED	364	Suh, W.H.	COLL	52
Straus, D.	PHYS	104	Stupp, S.I.	COLL	4	Suh, W.H.	PMSE	420
Strauss, S.H.	AGFD	186	Stupp, S.I.	COMP	41	Suh, Y.	MEDI	321
Strauss, S.H.	CHED	92	Stupp, S.I.	POLY	179	Suh, Y.	ORGN	159
Strauss, S.Y.	NUCL	34	Stupp, S.I.	POLY	408	Suh, Y.	ORGN	160
Strayer, M.	INOR	139	Stupp, S.I.	POLY	490	Suh, Y.	ORGN	161
Strayer, M.	INOR	290	Sturchio, N.C.	GEOC	68	Suh, Y.	PHYS	500
Strayer, M.	INOR	303	Sturdivant, J.M.	MEDI	45	Suhanovsky, M.	PHYS	4

Suhara, R.	POLY	52	Sun, J.	COMP	15	Sun, Y.	INOR	365
Sui, Z.	MEDI	384	Sun, J.	ENFL	24	Sun, Y.	INOR	565
Suib, S.L.	COLL	437	Sun, J.	ENVR	713	Sun, Y.	MEDI	284
Suib, S.L.	COLL	507	Sun, J.	ENVR	714	Sun, Y.	MEDI	294
Suib, S.L.	ENFL	23	Sun, J.	ENVR	715	Suna, Y.	CATL	31
Suib, S.L.	ENFL	481	Sun, J.	ENVR	758	Sunasee, R.	ORGN	147
Suib, S.L.	ENVR	318	Sun, J.	ENVR	810	Sunasee, R.	ORGN	733
Suib, S.L.	ENVR	427	Sun, J.	MEDI	18	Sundaram, B.	ENVR	246
Suib, S.L.	POLY	43	Sun, J.	MEDI	267	Sundaresan, V.	ANYL	111
Suizu, T.	PMSE	460	Sun, J.	MEDI	319	Sundby, B.	ENVR	5
Sukhishvili, S.A.	COLL	515	SUN, J.	ORGN	504	Sundell, B.J.	PMSE	322
Sukhishvili, S.A.	PMSE	393	Sun, J.	ORGN	545	Sung, E.	PHYS	432
Sukhishvili, S.A.	PMSE	394	SUN, J.	ORGN	717	Sung, L.	ENVR	403
Sukhishvili, S.A.	PMSE	404	Sun, J.	POLY	25	Sung, M.M.	INOR	601
Sukhishvili, S.A.	PMSE	50	Sun, L.	COLL	556	Sung, P.	ORGN	124
Sukhishvili, S.A.	PMSE	619	Sun, L.	ENFL	19	Sung, S.	INOR	659
Sukhishvili, S.A.	PMSE	650	Sun, L.	ENFL	429	Sungwienwong, I.	ORGN	457
Sukhishvili, S.A.	POLY	323	Sun, L.	ENVR	365	Sun-mi, L.	MEDI	106
Sukhov, A.M.	NUCL	34	Sun, L.	MEDI	54	Sunsdahl, B.	ORGN	499
Suleimenov, A.	ENFL	17	Sun, L.	PMSE	117	Sunthar, P.	COLL	360
Sullenberger, M.	AGRO	287	Sun, L.	PMSE	150	Sunthar, P.	COLL	365
Sulli, C.	AGFD	28	Sun, L.	PMSE	151	Suntivich, J.	ENFL	495
Sullivan, A.	PHYS	43	Sun, L.	PMSE	41	Suo, Z.	TOXI	104
Sullivan, F.	ORGN	263	Sun, L.	PMSE	46	Supalo, C.A.	PROF	10
Sullivan, K.	CHED	148	Sun, L.	PMSE	54	Supkowski, R.M.	CATL	169
Sullivan, K.	ORGN	163	Sun, M.	ENVR	152	Supkowski, R.M.	COLL	256
Sullivan, M.M.	ENFL	270	Sun, M.	ENVR	47	Supowit, S.D.	AGRO	325
Sullivan, M.O.	PMSE	15	Sun, M.	GEOC	85	Supowit, S.D.	ENVR	465
Sullivan, R.	CHED	192	Sun, M.	PMSE	603	Supplee, J.	BIOL	53
Sullivan, R.	CHED	194	Sun, M.	POLY	85	Supuran, C.T.	BIOL	229
Sullivan, R.C.	PHYS	44	Sun, P.	ENVR	275	Sur, C.	FLUO	19
Sullivan, R.C.	PHYS	554	Sun, Q.	CATL	70	Sur, R.	AGRO	363
Sulman, E.	COLL	177	Sun, Q.	ENFL	142	Surendran Assary, R.	ENFL	144
Sulman, E.	COLL	208	Sun, R.	COMP	173	Surendranath, Y.	INOR	238
Sulmonetti, T.P.	CATL	140	Sun, R.	COMP	331	Suresh, G.	AGRO	247
Sulsky, R.	MEDI	18	Sun, S.	COLL	67	Suresh, S.	INOR	33
Sulsky, R.	MEDI	267	Sun, S.	MEDI	110	Suri, R.P.	ENVR	538
Sulsky, R.	MEDI	380	Sun, S.	MEDI	98	Suri, R.P.	ENVR	55
Sultan, D.	POLY	266	Sun, W.	ANYL	70	Suri, R.P.	ENVR	772
Sultan, M.Z.	INOR	515	Sun, W.	COLL	233	Suriye, K.	CATL	25
Sultana, C.	PHYS	86	Sun, W.	ENFL	237	Suriye, K.	CATL	58
Sumalekshmy, S.	INOR	506	Sun, W.	ENFL	317	Surmaitis, R.	COLL	568
Sumaria, C.S.	ORGN	83	Sun, W.	ENVR	325	Surratt, C.K.	MEDI	40
Sumer, B.	POLY	269	Sun, W.	I&EC	13	Surta, W.	INOR	485
Sumerlin, B.S.	PMSE	86	Sun, W.	I&EC	44	Surti, N.	MEDI	162
Sumistha, D.	AGRO	281	Sun, W.	I&EC	47	Surti, N.	MEDI	395
Sumner, A.	AGRO	174	Sun, W.	MEDI	190	Surya, S.	BIOL	163
Sumner, A.J.	ENVR	113	Sun, W.	ORGN	270	Susam, D.	ORGN	120
Sumner, C.	CATL	198	Sun, W.	PMSE	434	Susan, D.F.	ANYL	350
Sumpter, B.	POLY	500	Sun, W.	PMSE	608	Suslick, K.S.	AGFD	288
Sun, B.	AGRO	205	Sun, X.	AGFD	221	Suslick, K.S.	ANYL	105
Sun, C.	MEDI	56	Sun, X.	AGFD	97	Suslick, K.S.	ORGN	12
Sun, C.	PMSE	283	Sun, X.	ANYL	128	Suss, M.	COLL	553
SUN, D.	CHED	397	Sun, X.	COLL	291	Suss, M.	COLL	554
Sun, D.	ENFL	409	Sun, X.	COLL	335	Sussman, C.	ANYL	311
Sun, D.	ORGN	158	Sun, X.	ENVR	247	Suter, J.	COLL	409
Sun, D.	ORGN	758	Sun, X.	ENVR	248	Suter, R.	AEI	30
Sun, D.	PHYS	433	Sun, X.	FLUO	14	Suter, R.	INOR	103
Sun, D.Z.	ANYL	144	Sun, X.	INOR	573	Suter, R.	INOR	642
Sun, D.Z.	MEDI	18	Sun, X.	PMSE	462	Sutheimer, S.	CHED	409
Sun, G.	AGFD	162	Sun, X.	POLY	392	Sutherland, B.	POLY	373
Sun, H.	AGRO	163	Sun, Y.	CATL	166	Sutherland, B.	INOR	493
Sun, H.	COLL	136	Sun, Y.	CATL	274	Sutisna, B.	PMSE	241
Sun, h.	ENVR	768	Sun, Y.	CATL	289	Suto, Y.	COLL	406
Sun, H.	ENVR	807	Sun, Y.	CHED	133	Sutter, J.	INOR	593
Sun, H.	MEDI	272	Sun, Y.	CHED	370	Sutton, J.E.	CATL	271
Sun, H.	ORGN	427	Sun, Y.	CHED	378	Sutton, R.A.	AGRO	242
Sun, H.	ORGN	507	Sun, Y.	COLL	228	Sutton, R.A.	AGRO	243
Sun, H.	ORGN	508	Sun, Y.	COLL	254	Suturina, E.	INOR	200
Sun, H.	PMSE	253	Sun, Y.	COLL	316	Suzuki, K.	ENVR	582
Sun, H.	PMSE	461	Sun, Y.	COLL	385	Suzuki, T.	ENFL	516
Sun, H.	POLY	236	Sun, Y.	COMP	281	Suzuki, T.	PHYS	36
Sun, H.	POLY	263	Sun, Y.	ENFL	154	Svergun, D.I.	POLY	228
Sun, H.	POLY	531	Sun, Y.	ENFL	250	Sverjensky, D.A.	ENVR	69
Sun, I.	CHED	192	Sun, Y.	ENFL	378	Svetkowski, C.	ORGN	455
Sun, I.	CHED	224	Sun, Y.	ENFL	381	Svobodova, M.	AGFD	287
Sun, I.	CHED	225	Sun, Y.	ENFL	420	Svobodova, M.	AGFD	289
Sun, I.	CHED	226	Sun, Y.	ENFL	58	Svobodova, M.	ANYL	252
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Svoronos, P.D.	CHED	164	Szanyi, J.	CATL	47	Takahashi, H.	POLY	54
Svoronos, P.D.	CHED	224	Szarka, A.	AGRO	345	Takahashi, M.	COLL	380
Svoronos, P.D.	CHED	225	Szarka, A.Z.	AGRO	136	Takahashi, N.	ENFL	66
Svoronos, P.D.	CHED	226	Szarka, A.Z.	AGRO	368	Takahashi, R.	COLL	593
Svoronos, P.D.	CHED	227	Szarko, J.M.	PMSE	591	Takahashi, T.	MEDI	177
Svoronos, S.	CHED	139	Szczepura, L.F.	INOR	630	Takahira, Y.	ORGN	25
Svoronos, S.	CHED	140	Szczesniak, L.M.	BIOL	212	Takai, T.	MEDI	386
Swager, T.M.	POLY	405	Szejgis, W.	COMP	61	Takalkar, S.	ANYL	72
Swagler, C.S.	ANYL	127	Szeligo, B.	CHED	154	Takalkar, S.	ANYL	73
Swagler, C.S.	ANYL	53	Szenknect, S.	NUCL	22	Takamatsu, Y.	COMP	30
Swain, G.	BIOL	142	Szenknect, S.	NUCL	28	Takanabe, K.	ENVR	494
Swain, M.	PMSE	320	Szilagyi, R.K.	COMP	193	Takano, H.	PMSE	535
Swale, D.	AGRO	107	Szklarski, A.R.	CHED	288	Takano, T.	POLY	52
Swale, D.	AGRO	157	Szklarski, A.R.	CHED	437	Takase, M.K.	CHED	248
Swale, D.	AGRO	158	Szostak, J.W.	AEI	5	Takatama, K.	GEOC	76
Swan, D.L.	POLY	108	Szostak, M.	COLL	438	Takats, Z.	PHYS	530
Swan, J.W.	ENVR	471	Szostak, M.	ENFL	260	Takatsuka, T.	ENFL	66
Swaney, S.	BIOL	52	Szteinberg, G.A.	CHED	418	Takaya, N.	POLY	89
Swanson, J.	COMP	342	Szuchmacher Blum, A.	INOR	78	Takayama, K.	MEDI	300
Swanson, J.	COMP	57	Szulczewski, M.	COLL	105	Takayama, K.	MEDI	336
Swanson, J.P.	PMSE	273	Szymanski, C.	COLL	523	Takayama, K.	ORGN	485
Swanson, J.P.	POLY	459	Szymczak, N.K.	INOR	177	Takayama, K.	ORGN	594
Swartling, D.J.	CHED	12	Szymczak, N.K.	INOR	179	Take, K.	MEDI	386
Swartz, J.	MEDI	18	Szymczak, N.K.	INOR	223	Takechi, K.	ENFL	437
Swartz, L.	ANYL	27	Szymczak, N.K.	INOR	277	Takekawa, S.	MEDI	386
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Sweedler, J.V.	ANYL	35	Szymczak, N.K.	INOR	480	Takemura, T.	GEOC	76
Sweedler, J.V.	CINF	37	Szymczak, N.K.	INOR	546	Takeshima, H.	POLY	350
Sweeney, A.	COLL	585	T. Hall, B.	INOR	612	Taketa, K.	MEDI	300
Sweeney, J.	COLL	35	Tabasko, C.	POLY	571	Takeuchi, D.	POLY	303
Sweeney, J.	ORGN	575	Tabba, H.	ORGN	277	Takeuchi, E.S.	ENFL	410
Sweeney, P.	AGRO	78	Taber, B.	PHYS	520	Takeuchi, K.J.	ENFL	358
Sweet, C.	CHAS	12	Taboada, J.M.	COLL	292	Takiar, N.	ORGN	446
Sweet, C.	CHAS	9	Tabor, C.E.	COLL	304	Takizawa, K.	ENFL	66
Sweet, C.	ORGN	487	Tabora, J.	MEDI	227	Taksuka, T.	ANYL	95
Sweet, E.	CHAS	28	Tachaboonyakiat, W.	PMSE	350	Takumi, S.	COLL	366
Sweetser, D.	PMSE	387	Tachaboonyakiat, W.	PMSE	361	Tal, T.	CHED	51
Swenson, R.E.	ORGN	678	Tachaboonyakiat, W.	PMSE	448	Talamás-Rohana, P.	MEDI	83
Swidorski, J.J.	MEDI	22	Tada, N.	ORGN	667	Talarchek, J.	TOXI	28
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Swierk, J.	ANYL	301	Taft, B.R.	MEDI	256	Talcott, S.	AGFD	147
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Swift, J.A.	COLL	187	Taguchi, A.	BIOL	133	Tallapally, V.	COLL	159
Swift, J.A.	ORGN	140	Taguchi, A.	MEDI	300	Tallapally, V.	INOR	609
Swilley, S.	POLY	252	Taguchi, A.	MEDI	336	Talley, M.	INOR	27
Swiner, D.A.	POLY	538	Taguchi, A.	ORGN	485	Talley, S.J.	PMSE	292
Swiner, D.J.	POLY	423	Taguchi, A.	ORGN	594	Talley, S.J.	PMSE	463
Swope, W.C.	COMP	126	Taheri, M.	PHYS	486	Talley, S.J.	POLY	506
Swope, W.C.	COMP	94	Tahir, F.	PMSE	352	Talley, S.J.	POLY	8
Swope, W.C.	PHYS	527	Tahsini, L.	INOR	685	Tamae, D.H.	BIOL	89
Swope, W.C.	POLY	176	Tai, E.	MEDI	8	Tamae, D.H.	TOXI	87
Swyka, R.A.	ORGN	291	Tai, H.	INOR	496	Tamamura, H.	ORGN	536
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Sychkova, S.	PHYS	393	Taifan, W.	ENFL	152	Tamasauskaite-Tamasiunaite, L.	CATL	235
Sydlik, S.A.	PMSE	247	Taillemaud, S.	ORGN	557	Tamasauskaite-Tamasiunaite, L.	ENFL	208
Sydlik, S.A.	POLY	249	Tainer, J.	TOXI	105	Tamasauskaite-Tamasiunaite, L.	ENFL	242
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Sykes, R.	ENFL	205	Tait, S.L.	CHED	58	Tamiya, J.	MEDI	111
Sykora, M.	INOR	517	Tait, S.L.	COLL	174	Tamiya, J.	MEDI	261
Sylla, S.	COLL	146	Tait, S.L.	COLL	192	Tamo, G.	COMP	316
Symanovicz, P.	MEDI	271	Tait, S.L.	COLL	442	Tamura, H.	AGFD	22
Synatschke, C.	POLY	408	Tait, S.L.	COLL	486	Tan, B.	PMSE	24
Synatschke, C.	POLY	490	Tait, S.L.	COLL	590	Tan, B.	PMSE	552
Sytnyk, M.	COLL	463	Tait, S.L.	COLL	591	Tan, C.	ORGN	109
Sytnyk, M.	COLL	69	Tait, S.L.	ORGN	511	Tan, D.	PHYS	31
Szabo, K.	FLUO	11	Tait, S.L.	ORGN	600	Tan, G.	PHYS	24
Szabo, K.	ORGN	391	Tait, S.L.	ORGN	601	Tan, J.	MEDI	417
Szabo, K.	ORGN	483	Taj, S.	COLL	75	Tan, K.	PMSE	238
Szabo, K.	ORGN	564	Takacs, J.M.	ORGN	242	Tan, K.L.	ORGN	622
Szabo, L.	COLL	103	Takacs, J.M.	ORGN	30	Tan, L.	COLL	104
Szalda, D.J.	INOR	211	Takahagi, H.	MEDI	386	Tan, L.	ENFL	418
Szalda, D.J.	INOR	214	Takahara, A.	COLL	92	Tan, L.	INOR	265
Szalda, D.J.	INOR	451	Takahara, A.	PMSE	123	Tan, L.	INOR	285
Szantai-Kis, D.	BIOL	164	Takahara, A.	PMSE	634	Tan, L.	INOR	85
Szantai-Kis, D.	ORGN	538	Takahara, A.	POLY	417	Tan, L.	PHYS	506

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Tan, S.	ENVR	755	Tang, Z.	AGRO	91	Taya, N.	ORGN	709
Tan, T.	ORGN	240	Tang, Z.	CATL	72	Taylor, A.J.	AGFD	104
Tan, W.	COLL	8	Tang, Z.	COLL	110	Taylor, A.J.	AGFD	17
Tan, W.	ENVR	694	Tang, Z.	ENFL	381	Taylor, B.L.	CHED	248
Tan, W.	PMSE	108	Tang, Z.	ENFL	420	Taylor, B.L.	ORGN	784
Tan, W.	PMSE	497	Tang, Z.	ORGN	750	Taylor, D.	MEDI	377
Tan, W.	PMSE	501	Tang, Z.	MEDI	383	Taylor, D.	MEDI	89
Tan, Y.	AGFD	61	Tangirala, R.S.	ENVR	393	Taylor, E.A.	BIOL	154
Tan, Y.	AGRO	340	Tani, T.	ANYL	76	Taylor, J.	MEDI	18
Tan, Y.	AGRO	92	Tanielyan, S.K.	CATL	11	Taylor, J.	MEDI	267
Tan, Y.	ANYL	17	Taniguchi, N.	PMSE	464	Taylor, J.	MEDI	380
Tan, Y.	POLY	208	Tanner, D.	PHYS	124	Taylor, J.	ORGN	206
Tan, Z.	BIOL	9	Tanner, J.	BIOL	143	Taylor, J.A.	AGRO	204
Tan, Z.	MEDI	410	Tanoury, G.J.	ORGN	268	Taylor, J.A.	MEDI	84
Tanaka, A.	MEDI	362	Tanrikulu, I.C.	BIOL	73	Taylor, J.J.	ENFL	138
Tanaka, K.	AGFD	83	Tanski, J.	CHED	344	Taylor, K.	AEI	37
Tanaka, K.	AGRO	106	Tanski, J.	INOR	690	Taylor, K.	INOR	135
Tanaka, K.	ENVR	665	Tantillo, D.J.	ORGN	54	Taylor, L.	COMP	290
Tanaka, M.	ORGN	667	Tanyeli, C.	ORGN	120	Taylor, L.	POLY	429
Tanaka, R.	ENFL	516	Tanyeli, C.	ORGN	121	Taylor, M.	PHYS	229
Tanaka, S.	COMP	190	Tanygin, V.	INOR	672	Taylor, M.M.	AGFD	113
Tanaka, T.	MEDI	85	Tanyildizi, S.	INOR	126	Taylor, M.M.	PMSE	416
Tanaka, Y.	PMSE	535	Tanyildizi, S.	INOR	161	Taylor, S.	AGRO	118
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Tandon, H.K.	PHYS	399	Tao, A.R.	ANYL	176	Taylor, S.M.	CHED	64
Tandon, K.	AGRO	32	Tao, A.R.	COLL	480	Taylor-Pashow, K.M.	PMSE	68
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Tang, A.	ANYL	349	Tao, F.	CATL	6	Taylor-Wells, J.	AGRO	317
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Tang, B.	ENFL	216	Tao, F.	ENFL	431	Tcyrulnikov, S.	ORGN	179
Tang, B.	ORGN	307	Tao, F.	ENFL	435	Teanby, N.	PHYS	27
Tang, B.	PMSE	218	Tao, F.	ENFL	486	Tearney, G.J.	ANYL	279
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Tang, C.	PMSE	435	Tao, J.	ENVR	565	Tebo, B.M.	ENVR	5
Tang, C.	PMSE	495	Tao, J.	MEDI	407	Techikawara, K.	CATL	110
Tang, C.	POLY	318	Tao, S.	ENVR	766	Tedrow, J.S.	ORGN	203
Tang, C.	POLY	34	Tao, S.	MEDI	18	Teerlink, J.	AGRO	355
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Tang, C.	POLY	487	Tao, S.	MEDI	380	Tefferi, M.	PMSE	467
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Tang, J.	INOR	676	Tardugno, R.	AGFD	251	Teixeira, I.	CATL	116
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Tang, M.	CATL	219	Taricani, L.	ORGN	208	Teketel, S.	ENFL	465
Tang, M.	COLL	491	Tarighi, M.	ENFL	505	Tekwani, B.L.	MEDI	120
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Tang, R.	COLL	467	Tasker, T.	ENVR	48	Temme, D.J.	CHED	218
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Tang, W.	MEDI	84	Tateyama, S.	POLY	89	Templeton, J.L.	INOR	314
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Teunis, M.	COLL	43	Thomas, A.	PMSE	496	Tian, J.	ENVR	87
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Thakkar, M.	ENVR	552	Thomas, M.	AGFD	130	Tice, C.M.	MEDI	211
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Tilton, R.D.	ENVR	354	Tomkiewicz, W.	ENVR	453	Toure, B.	ORGN	559
Timko, M.T.	ENFL	217	Tomkinson, N.C.	ORGN	645	Tournassat, C.	GEOC	69
Timko, M.T.	ENFL	415	Tomlin, J.	PHYS	383	Tovar Díaz, A.L.	AGRO	273
Timko, M.T.	ENFL	78	Tomlinson, D.W.	ENVR	523	Tovar, J.C.	AGFD	67
Timony, G.	MEDI	111	Tommos, C.	BIOL	133	Tovar, J.C.	TOXI	89
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Timsina, Y.	POLY	344	Tompsett, G.	ENFL	217	Tovar, K.	MEDI	381
Timsina, Y.	POLY	345	Tomsho, J.W.	BIOL	55	Tovar, K.	MEDI	382
Ting, P.	ANYL	337	Tomsho, J.W.	BIOL	56	Tovera, J.	MEDI	229
Ting, P.	PHYS	152	Tomsho, J.W.	MEDI	130	Towairqi, R.	CHED	266
Ting, P.	PHYS	200	Tomsho, J.W.	MEDI	154	Townsend, J.	PMSE	35
Ting, P.	WCC	1	Tomson, N.C.	INOR	381	Townsend, J.	PMSE	466
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Ting, P.C.	MEDI	349	Tondreau, A.	INOR	60	Toy, P.H.	ORGN	292
Ting, Y.	AGFD	30	Tondreau, A.	INOR	600	Trabbic, C.J.	BIOL	200
Ting, Y.	AGFD	42	Tonelli, A.	ENVR	686	Tracy, T.S.	TOXI	80
Tinnacher, R.M.	GEOC	69	Tonelli, A.E.	PMSE	262	Traeger, A.	COLL	531
Tino, J.	MEDI	201	Tonelli, A.E.	PMSE	585	Traeger, A.	POLY	223
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Tinoco, I.	BIOL	188	Tonetti, D.A.	MEDI	2	Trainer, M.G.	PHYS	274
Tiong-Yip, C.	MEDI	20	Tonetti, D.A.	MEDI	304	Trammell, S.	CATL	200
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Tirrell, M.V.	POLY	178	Toney, M.	PMSE	340	Trammell, S.	ENVR	496
Tish, W.D.	TOXI	80	TONG, C.	POLY	396	Trammell, S.	INOR	213
Titaley, I.	ENVR	393	Tong, F.	AGRO	205	Tran, C.	MPPG	17
Titcombe Lee, M.	AGRO	280	Tong, F.	ORGN	45	Tran, C.	PMSE	212
Titova, L.	ENFL	134	Tong, L.	AEI	63	Tran, D.N.	ENFL	469
Tiu, B.B.	COLL	265	Tong, L.	INOR	141	Tran, H.	PMSE	540
Tiu, B.B.	COLL	443	Tong, L.	MEDI	276	Tran, H.T.	BIOL	33
Tiu, B.B.	PMSE	114	Tong, L.	PMSE	609	Tran, K.	AGRO	221
Tiu, B.B.	PMSE	465	Tong, M.	AGRO	291	Tran, K.	WCC	11
Tiu, C.	AGRO	369	Tong, Q.	INOR	578	Tran, N.	ENFL	422
Tiu, S.	PMSE	465	Tong, S.	MEDI	392	Tran, N.T.	COLL	202
Tius, M.A.	INOR	595	Tong, X.	CATL	229	Tran, N.T.	COLL	95
Tius, M.A.	INOR	596	Tong, X.	ENVR	594	Tran, P.	ENVR	492
Tiwari, A.	PMSE	697	Tong, Z.	ENVR	551	Tran, T.	PMSE	431
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Tiwold, E.	CHED	167	Tongesayi, T.	ENVR	535	Tranter, M.	ANYL	93
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Tjeerdema, R.S.	AGRO	198	Tonks, I.	INOR	21	Tratnyek, P.G.	ENVR	204
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Tlahuice-Flores, A.	PHYS	228	Tonks, I.	INOR	590	Tratnyek, P.G.	ENVR	429
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Todd, O.A.	ENVR	58	Tooteja, P.	CHED	210	Treich, G.M.	PMSE	467
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Ulichny, J.C.	CHED	397	Vaddypally, S.	INOR	227	Van Dover, R.	PMSE	242
Ulijn, R.	COLL	59	Vaddypally, S.	ORGN	304	Van Duyne, R.P.	ANYL	166
Ulijn, R.	COMP	6	Vaddypally, S.	ORGN	500	Van Duyne, R.P.	ANYL	343
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Ullman, A.M.	INOR	541	Vaden, T.D.	BIOL	30	Van Duyne, R.P.	COLL	22
Ulloa, L.	CHED	194	Vaden, T.D.	PHYS	383	Van Duyne, R.P.	INOR	569
Ulrich, E.M.	ANYL	376	Vaden, T.D.	PHYS	463	Van Dyk, A.	PMSE	65
Ulrich, E.M.	ANYL	40	Vagadia, P.	ORGN	36	Van Enige, M.	PHYS	24
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Um, W.	ENVR	458	Vaiana, S.M.	PHYS	33	Van Guyse, J.	ORGN	598
Um, W.	ENVR	725	Vaicuniene, J.	CATL	235	Van Guyse, J.	POLY	124
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Unal, H.	AGFD	278	Vaidya, N.A.	SCHB	22	van Hoek, E.M.	COLL	500
Unal, S.	AGFD	278	Vaidya, T.	POLY	348	Van Hoomissen, D.J.	ENVR	105
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Uno, C.	ENFL	66	Valdez, C.	INOR	493	van Montfort, R.	ORGN	677
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Unser, S.	COLL	212	Valdez, C.A.	INOR	148	Van Orden, A.K.	ANYL	214
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Upadhyaya, L.	PMSE	658	Valen, D.	CINF	45	Van Speybroeck, V.	CATL	139
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Upshur, M.A.	ENVR	156	Valentine, K.A.	CHED	283	Van Zee, N.J.	POLY	138
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Wand, A.J.	BIOL	21	Wang, F.	MEDI	268	Wang, J.	PMSE	473
Wand, A.J.	BIOL	70	Wang, F.	ORGN	561	Wang, J.	PMSE	52
Wander, R.	ORGN	472	Wang, F.	PHYS	128	Wang, J.	PMSE	53
Wang, A.	MEDI	18	Wang, F.	PHYS	310	Wang, J.	PMSE	551
Wang, A.	MEDI	267	Wang, F.	PMSE	19	Wang, J.	POLY	362
Wang, A.	MEDI	380	Wang, F.	PMSE	479	Wang, J.	POLY	366
Wang, B.	CATL	264	Wang, G.	ANYL	50	Wang, J.	PRES	14
Wang, B.	COMP	367	Wang, G.	ENFL	245	Wang, J.	TOXI	15
Wang, B.	ENFL	100	Wang, G.	ENVR	452	Wang, J.	TOXI	83
Wang, B.	ENFL	401	Wang, G.	ENVR	545	Wang, J.	COLL	193
Wang, B.	ENFL	422	Wang, G.	ENVR	613	Wang, K.	AGRO	125
Wang, B.	ENFL	92	Wang, G.	ORGN	521	Wang, K.	CATL	142
Wang, B.	ENFL	93	Wang, G.	ORGN	522	Wang, K.	ENFL	170
Wang, B.	ENVR	805	Wang, G.	ORGN	605	Wang, K.	ORGN	422
Wang, B.	FLUO	14	Wang, G.	ORGN	606	Wang, K.	PMSE	313
Wang, B.	INOR	450	Wang, G.	PHYS	181	Wang, K.	PMSE	555
Wang, B.	MEDI	267	Wang, H.	AGRO	246	Wang, K.	PMSE	667
Wang, B.	PHYS	87	Wang, H.	AGRO	267	Wang, K.K.	ORGN	131
Wang, C.	AEI	57	Wang, H.	ANYL	279	Wang, K.K.	ORGN	132
Wang, C.	CATL	119	Wang, H.	BIOL	44	Wang, K.K.	ORGN	133
Wang, C.	CATL	131	Wang, H.	BIOL	78	Wang, K.Y.	MEDI	39
Wang, C.	CATL	172	Wang, H.	CATL	145	Wang, L.	ANYL	41
Wang, C.	CATL	232	Wang, H.	CATL	247	Wang, L.	CATL	230
Wang, C.	CATL	243	Wang, H.	CATL	284	Wang, L.	CHED	315
Wang, C.	COLL	44	Wang, H.	CATL	289	Wang, L.	CHED	316
Wang, C.	ENFL	206	Wang, H.	COLL	253	Wang, L.	CHED	319
Wang, C.	ENFL	338	Wang, H.	COLL	490	Wang, L.	COLL	222
Wang, C.	ENFL	491	Wang, H.	COMP	121	Wang, L.	COLL	518
Wang, C.	ENFL	50	Wang, H.	ENFL	106	Wang, L.	COLL	558
Wang, C.	ENFL	81	Wang, H.	ENFL	18	Wang, L.	COMP	344
Wang, C.	ENVR	15	Wang, H.	ENFL	345	Wang, L.	ENFL	142
Wang, C.	ENVR	702	Wang, H.	ENFL	356	Wang, L.	ENFL	207
Wang, C.	ENVR	710	Wang, H.	ENFL	378	Wang, L.	ENFL	213
Wang, C.	ENVR	758	Wang, H.	ENVR	156	Wang, L.	ENFL	320
Wang, C.	ENVR	799	Wang, H.	ENVR	426	Wang, L.	ENFL	435
Wang, C.	ENVR	84	Wang, H.	ENVR	720	Wang, L.	ENFL	459
Wang, C.	MEDI	159	Wang, H.	ENVR	727	Wang, L.	ENFL	68
Wang, C.	MEDI	179	Wang, H.	MEDI	112	Wang, L.	ENVR	109
Wang, C.	MEDI	207	Wang, H.	MEDI	14	Wang, L.	ENVR	141
Wang, C.	PHYS	32	Wang, H.	MEDI	207	Wang, L.	ENVR	159
Wang, C.	PHYS	533	Wang, H.	MEDI	297	Wang, L.	ENVR	217
Wang, C.	PHYS	568	Wang, H.	PHYS	288	Wang, L.	ENVR	433
Wang, C.	PMSE	142	Wang, H.	PHYS	289	Wang, L.	FLUO	3
Wang, C.	PMSE	51	Wang, H.	PHYS	290	Wang, L.	INOR	39

Wang, L.	MEDI	254	Wang, S.	AGFD	153	Wang, X.	PHYS	442
Wang, L.	MEDI	284	Wang, S.	AGFD	195	Wang, X.	PMSE	300
Wang, L.	MEDI	286	Wang, S.	AGRO	120	Wang, X.	POLY	338
Wang, L.	PHYS	391	Wang, S.	CATL	158	Wang, X.	POLY	339
Wang, L.	PHYS	496	Wang, S.	CATL	166	Wang, X.	POLY	341
Wang, L.	PHYS	50	Wang, S.	CATL	168	Wang, X.	TOXI	93
Wang, L.	PHYS	527	Wang, S.	CATL	246	Wang, Y.	AEI	8
Wang, L.	PMSE	335	Wang, S.	CATL	248	Wang, Y.	AGFD	133
Wang, L.	PMSE	412	Wang, S.	CATL	291	Wang, Y.	AGFD	265
Wang, L.	PMSE	648	Wang, S.	CHED	54	Wang, Y.	AGFD	4
Wang, L.	POLY	193	Wang, S.	ENFL	109	Wang, Y.	ANYL	136
Wang, L.	POLY	217	Wang, S.	ENFL	234	Wang, Y.	ANYL	220
Wang, L.	POLY	314	Wang, S.	ENFL	250	Wang, Y.	ANYL	220
Wang, L.	POLY	315	Wang, S.	ENFL	460	Wang, Y.	BIOL	102
Wang, L.	POLY	316	Wang, S.	ENFL	77	Wang, Y.	BIOL	226
Wang, L.L.	POLY	254	Wang, S.	ENVR	493	WANG, Y.	BIOL	49
Wang, M.	AGFD	15	Wang, S.	ORGN	207	Wang, Y.	CATL	108
Wang, M.	AGFD	227	Wang, S.	ORGN	620	Wang, Y.	CATL	129
Wang, M.	AGFD	248	Wang, S.	PHYS	230	Wang, Y.	CATL	132
Wang, M.	ANYL	336	Wang, S.	PHYS	231	Wang, Y.	CATL	194
Wang, M.	BIOL	75	Wang, S.	PHYS	41	Wang, Y.	CATL	291
Wang, M.	ENFL	393	Wang, S.	PMSE	154	Wang, Y.	CATL	52
Wang, M.	ENVR	169	Wang, S.	POLY	372	Wang, Y.	CATL	8
Wang, M.	ENVR	172	Wang, S.	POLY	86	Wang, Y.	CATL	81
Wang, M.	ENVR	217	Wang, S.P.	BIOL	75	Wang, Y.	CINF	1
Wang, M.	ENVR	808	Wang, T.	ANYL	50	Wang, Y.	CINF	47
Wang, M.	MEDI	171	Wang, T.	ENVR	799	Wang, Y.	COLL	140
Wang, M.	PMSE	390	Wang, T.	INOR	370	Wang, Y.	COLL	195
Wang, M.	PMSE	685	Wang, T.	MEDI	294	Wang, Y.	COLL	263
Wang, M.	POLY	362	Wang, T.	MEDI	377	Wang, Y.	COLL	384
Wang, N.	BIOL	125	Wang, T.	NUCL	17	Wang, Y.	COLL	496
Wang, N.	COLL	122	Wang, T.	PHYS	181	Wang, Y.	COLL	540
Wang, N.	ENVR	468	Wang, T.A.	BIOL	215	Wang, Y.	COMP	101
Wang, N.	INOR	20	Wang, T.A.	BIOL	216	Wang, Y.	COMP	409
Wang, P.	AGFD	126	Wang, W.	AGFD	224	Wang, Y.	ENFL	109
Wang, P.	AGFD	128	Wang, W.	CINF	30	Wang, Y.	ENFL	111
Wang, P.	CATL	217	Wang, W.	CINF	31	Wang, Y.	ENFL	143
Wang, P.	CATL	259	Wang, W.	COLL	1	Wang, Y.	ENFL	156
Wang, P.	ENFL	235	Wang, W.	COLL	556	Wang, Y.	ENFL	24
Wang, P.	ENFL	243	Wang, W.	COLL	599	Wang, Y.	ENFL	334
Wang, P.	ENVR	141	Wang, W.	ENFL	274	Wang, Y.	ENFL	373
Wang, P.	ENVR	481	Wang, W.	ENVR	161	Wang, Y.	ENFL	42
Wang, P.	INOR	53	Wang, W.	ENVR	218	Wang, Y.	ENFL	460
Wang, P.	MEDI	177	Wang, W.	ENVR	299	Wang, Y.	ENFL	479
Wang, P.	MEDI	349	Wang, W.	ENVR	301	Wang, Y.	ENFL	77
Wang, P.	TOXI	13	Wang, W.	ENVR	360	Wang, Y.	ENVR	11
Wang, P.	TOXI	15	Wang, W.	ENVR	365	Wang, Y.	ENVR	127
Wang, P.	TOXI	17	Wang, W.	ENVR	371	Wang, Y.	ENVR	157
Wang, P.	TOXI	22	Wang, W.	ENVR	627	Wang, Y.	ENVR	160
Wang, P.	TOXI	83	Wang, W.	ENVR	683	Wang, Y.	ENVR	301
Wang, P.G.	MEDI	80	Wang, W.	MEDI	51	Wang, Y.	ENVR	46
Wang, Q.	AGFD	14	Wang, W.	ORGN	263	Wang, Y.	ENVR	551
Wang, Q.	BIOL	37	Wang, W.	PMSE	300	Wang, Y.	ENVR	633
Wang, Q.	CATL	118	Wang, W.	POLY	313	Wang, Y.	ENVR	638
Wang, Q.	COLL	288	Wang, X.	CATL	70	Wang, Y.	ENVR	639
Wang, Q.	COLL	32	Wang, X.	COLL	162	Wang, Y.	ENVR	86
Wang, Q.	COMP	51	Wang, X.	COLL	303	Wang, Y.	ENVR	91
Wang, Q.	ENFL	439	Wang, X.	COLL	470	Wang, Y.	FLUO	19
WANG, Q.	ENVR	674	Wang, X.	COMP	334	Wang, Y.	FLUO	4
Wang, Q.	INOR	606	Wang, X.	COMP	370	Wang, Y.	GEOC	14
Wang, Q.	MEDI	18	Wang, X.	COMP	394	Wang, Y.	GEOC	2
Wang, Q.	MEDI	267	Wang, X.	ENFL	103	Wang, Y.	GEOC	30
Wang, Q.	MEDI	290	Wang, X.	ENFL	356	Wang, Y.	GEOC	8
Wang, Q.	MEDI	380	Wang, X.	ENFL	375	Wang, Y.	INOR	446
Wang, q.	ORGN	104	Wang, x.	ENFL	382	Wang, Y.	MEDI	18
Wang, Q.	ORGN	231	Wang, X.	ENFL	43	Wang, Y.	MEDI	267
Wang, Q.	ORGN	590	Wang, X.	ENFL	91	Wang, Y.	MEDI	380
Wang, Q.	PHYS	364	Wang, X.	ENVR	101	Wang, Y.	MEDI	91
Wang, Q.	TOXI	18	Wang, X.	ENVR	212	Wang, Y.	MEDI	94
Wang, R.	AGFD	109	Wang, X.	ENVR	268	Wang, Y.	ORGN	177
Wang, R.	COLL	213	Wang, X.	ENVR	339	WANG, Y.	ORGN	504
Wang, R.	COMP	197	Wang, X.	ENVR	692	Wang, Y.	PHYS	128
Wang, R.	INOR	209	Wang, X.	ENVR	766	Wang, Y.	PHYS	321
Wang, R.	MEDI	117	Wang, X.	GEOC	86	Wang, Y.	PHYS	523
Wang, R.	MEDI	254	Wang, X.	INOR	108	Wang, Y.	PHYS	564
Wang, R.	MEDI	286	Wang, X.	INOR	635	Wang, Y.	PMSE	191
Wang, R.	MEDI	79	Wang, X.	INOR	83	Wang, Y.	PMSE	20
Wang, R.	ORGN	420	Wang, X.	MEDI	3	Wang, Y.	PMSE	249
Wang, R.	PHYS	376	Wang, X.	ORGN	534	Wang, Y.	PMSE	311
Wang, R.	POLY	340	Wang, X.	ORGN	692	Wang, Y.	PMSE	474



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Wang, Y.	PMSE	546	Warren, T.H.	COMP	324	Webb, L.S.	BIOL	166
Wang, Y.	PMSE	650	Warren, T.H.	INOR	69	Webb, M.	MEDI	381
WANG, Y.	POLY	322	Waschinski, C.	POLY	457	Webb, M.	MEDI	382
Wang, Y.	POLY	439	Washburn, N.	ENVR	97	Webb, M.J.	MEDI	263
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Wang, Y.	POLY	6	Washington, K.E.	POLY	553	Weber, C.	PMSE	189
Wang, Y.	TOXI	13	Washington, M.A.	POLY	423	Weber, C.	POLY	469
Wang, Y.	TOXI	15	Washington, M.A.	POLY	538	Weber, D.	AGRO	265
Wang, Y.	TOXI	17	Washton, N.M.	CATL	129	Weber, E.J.	AGRO	326
Wang, Y.	TOXI	22	Washton, N.M.	CATL	47	Weber, E.J.	ENVR	203
Wang, Y.	TOXI	73	Washton, N.M.	GEOC	54	Weber, J.	GEOC	65
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Wang, Y.	TOXI	83	Wasielewski, M.R.	ORGN	604	Weber, R.	PHYS	43
Wang, Y.	TOXI	99	Wasielewski, M.R.	PHYS	106	Weber, R.	PHYS	515
Wang, Z.	AGFD	249	Wasson, M.C.	ORGN	473	Weber, R.S.	ENFL	143
Wang, Z.	AGFD	76	Waszkowycz, B.	MEDI	260	Weber, R.T.	INOR	250
WANG, Z.	AGRO	348	Watanabe, A.	ENVR	582	Weber, R.T.	INOR	413
Wang, Z.	BIOL	172	Watanabe, K.	ANYL	279	Weber, S.G.	ANYL	310
Wang, Z.	BIOL	41	Watanabe, K.	PMSE	475	Webster, C.E.	INOR	53
Wang, Z.	COLL	496	Watanabe, M.	MEDI	158	Webster, D.C.	PMSE	223
Wang, Z.	COLL	556	Watanabe, T.	COLL	310	Webster, G.H.	CHED	409
Wang, Z.	COMP	248	Watanabe, T.	ENFL	126	Webster, M.	PMSE	206
Wang, Z.	ENFL	355	Waterhouse, A.L.	AGFD	137	Wechsler, S.J.	AGRO	67
Wang, Z.	ENFL	427	Wathier, M.C.	MEDI	416	Wedel, B.J.	AGRO	74
Wang, Z.	ENFL	429	Watkins, S.C.	POLY	423	Wedemeyer, C.	MEDI	163
Wang, Z.	ENVR	109	Watkins, S.C.	POLY	538	Weder, C.	POLY	3
Wang, Z.	ENVR	179	Watson, A.E.	ENVR	625	Wedge, D.E.	AGRO	28
Wang, Z.	ENVR	23	Watson, A.J.	ORGN	389	Wedlich, R.	AGRO	4
Wang, Z.	ENVR	31	Watson, A.J.	ORGN	392	Wee, K.	INOR	453
Wang, Z.	ENVR	339	Watson, B.	PHYS	270	Weems, A.	PMSE	572
Wang, Z.	ENVR	365	Watson, C.	FLUO	20	Weems, A.C.	POLY	549
Wang, Z.	ENVR	475	Watson, D.A.	INOR	510	Weerasiri, K.	INOR	181
Wang, Z.	ENVR	491	Watson, D.A.	ORGN	345	Weerawardene, K.M.	COMP	285
Wang, Z.	ENVR	66	Watson, D.A.	ORGN	578	Weerawardene, K.M.	PHYS	297
Wang, Z.	ENVR	676	Watson, D.A.	ORGN	579	Weerawarne, D.	COLL	248
Wang, Z.	ORGN	282	Watson, D.A.	ORGN	580	Wegener, A.	MEDI	44
Wang, Z.	ORGN	446	Watson, J.	AGRO	117	Wehres, N.	PHYS	159
Wang, Z.	PHYS	428	Watson, K.B.	AGRO	5	Wehres, N.	PHYS	384
Wang, Z.	PMSE	186	Watson, L.J.	AGRO	30	Wehrmann, C.M.	ORGN	223
Wang, Z.	PMSE	255	Watson, M.P.	ORGN	240	Wei, A.	MEDI	91
Wang, Z.	PMSE	5	Watson, M.P.	ORGN	409	Wei, C.	ENVR	150
Wang, Z.	PMSE	54	Watson, M.P.	ORGN	765	Wei, C.	ENVR	336
Wang, Z.	POLY	36	Watt, J.	COLL	14	Wei, G.	BIOL	199
Wang, Z.	POLY	57	Watters, R.	ANYL	59	Wei, G.	COMP	116
Wangtrakuldee, P.	BIOL	89	Watterson, A.	COLL	118	Wei, G.	COMP	5
Wanjura, J.	AGRO	135	Watts, A.	ENVR	348	Wei, H.	ENVR	145
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Ward, G.W.	ORGN	284	Waxman, E.	ENVR	25	Wei, K.	INOR	606
Ward, M.	INOR	7	Way, A.	PMSE	59	Wei, L.	ANYL	33
Ward, R.	COMP	198	Wayland, B.B.	INOR	158	Wei, L.	COLL	588
Ward, R.	COMP	244	Wayland, B.B.	PHYS	441	Wei, L.	MEDI	294
Ward, S.	CHED	351	Wayland, B.B.	PHYS	447	Wei, N.	ENVR	170
Ward, T.	AEI	4	Wayland, H.A.	ENVR	731	Wei, O.	ENFL	64
Ward, T.	BIOL	126	Wayu, M.B.	AEI	2	Wei, S.	ANYL	266
Wardell, S.	MEDI	1	Wayu, M.B.	ANYL	118	Wei, S.	ENFL	391
warder, s.	MEDI	254	Weatherbee, S.	COLL	154	Wei, T.	COLL	576
Wardrop, D.J.	ORGN	695	Weaver, E.	PHYS	144	Wei, T.	PMSE	105
Ware, M.S.	MEDI	275	Weaver, H.	PHYS	204	Wei, T.	POLY	171
Ware, R.	ENFL	149	Weaver, H.	PHYS	25	Wei, T.	POLY	418
Ware, T.H.	POLY	16	Weaver, H.	PHYS	71	Wei, W.	CATL	289
Waring, M.	PHYS	47	Weaver, J.D.	BIOL	76	Wei, W.	ENFL	31
Warneke, C.	PHYS	122	Weaver, J.D.	ORGN	402	Wei, W.	ENFL	420
Warner, I.M.	ANYL	322	Weaver, J.D.	ORGN	56	Wei, W.	ENFL	448
Warner, I.M.	ENFL	475	Weaver, J.D.	ORGN	577	Wei, W.	I&EC	29
Warner, J.C.	CHED	123	Weaver, J.D.	ORGN	584	Wei, X.	ENFL	301
Warner, J.C.	MPPG	11	Weaver, J.D.	ORGN	638	Wei, X.	ENVR	400
Warner, J.H.	INOR	341	Weaver, J.D.	ORGN	640	Wei, X.	ENVR	92
Warner, L.	ENFL	218	Weaver, J.D.	ORGN	641	Wei, Y.	AGRO	170
Warner, N.R.	ENVR	114	Weaver, J.D.	ORGN	642	Wei, Y.	BIOL	213
Warner, N.R.	GEOC	29	Weaver, T.	COMP	202	Wei, Y.	CATL	69
Warnick, E.P.	MEDI	165	Webb, A.	AGFD	231	Wei, Y.	COLL	362
Warnick, J.	AGRO	42	Webb, A.	COMP	222	Wei, Y.	INOR	1
Waroquier, M.E.	CATL	137	Webb, C.	CHED	79	Wei, Z.	AEI	32
Waroquier, M.E.	CATL	139	Webb, J.A.	CHED	100	Wei, Z.	INOR	632
Warren, R.L.	AGRO	13	Webb, J.A.	CHED	101	Wei, Z.	INOR	633
Warren, R.L.	AGRO	14	Webb, J.A.	CHED	422	Wei, Z.	INOR	636
Warren, R.L.	AGRO	248	Webb, K.	INOR	239	Wei, Z.	INOR	656

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Weidner, J.	COLL	504	Weng, L.	TOXI	30	Whitcomb, K.J.	ANYL	214
Weidner, T.	COLL	272	Weng, L.	TOXI	45	White, A.	AEI	58
Weidner, V.L.	CATL	324	Weng, Y.	ANYL	295	White, A.	COMP	269
Weight, C.	TOXI	82	Weng, Y.	COMP	101	White, A.	PHYS	503
Weight, C.	TOXI	99	wengel, j.	ORGN	61	White, A.G.	POLY	265
Weih, T.P.	INOR	321	Wenger, M.	PMSE	529	White, C.	ANYL	373
Weikum, E.	COMP	286	Wengryniuk, S.E.	ORGN	22	White, C.	ORGN	65
Weilhammer, D.	COLL	56	Wengryniuk, S.E.	ORGN	726	White, D.R.	ORGN	346
Weinheimer, A.	PHYS	124	Wenjun, Z.	ORGN	440	White, E.A.	ENFL	44
Weinheimer, A.	PHYS	43	Wennberg, P.	PHYS	173	White, E.J.	BIOL	43
Weininger, S.J.	HIST	32	Wennberg, P.	PHYS	224	White, G.	AGRO	285
Weinrich, M.	CHED	107	Wenny, M.B.	PHYS	434	White, G.	MEDI	15
Weinstein, D.S.	MEDI	272	Wenping, Y.	ORGN	138	White, J.	AGRO	11
Weinstein, J.A.	PHYS	16	Wereszczynski, J.	COMP	105	White, J.	AGRO	263
Weinstein, M.A.	INOR	690	Werghi, B.	CATL	270	White, J.C.	ENVR	12
Weintraub, R.A.	CHED	415	Werner, A.	TOXI	46	White, J.K.	INOR	5
Weintraub, R.A.	CHED	46	Werner, D.	COLL	586	White, J.T.	PHYS	2
Weires, N.A.	ORGN	404	Werner, E.	ORGN	207	White, K.	TOXI	99
Weis, A.	BIOL	108	Werner, J.J.	ENVR	442	White, K.E.	AGRO	138
Weis, D.D.	CHED	83	Werner-Allen, J.	BIOL	24	White, K.E.	AGRO	313
Weiss, A.	MEDI	250	Werpachowski, N.	CHED	195	White, K.E.	AGRO	326
Weiss, C.	ENVR	405	Werrel, S.	ORGN	301	White, M.	ORGN	28
Weiss, D.S.	COMP	375	Werth, C.J.	ENVR	428	White, M.A.	MEDI	16
Weiss, I.	INOR	463	Wesdemiotis, C.	ANYL	224	White, M.G.	CATL	290
Weiss, M.M.	MEDI	280	Wesdemiotis, C.	MEDI	32	White, R.J.	CHED	149
Weiss, P.S.	INOR	291	Wessels, F.	AGRO	287	White, R.J.	CHED	153
Weiss, P.S.	PHYS	99	West, D.	BIOL	255	White, S.	PMSE	304
Weiss, R.	BIOL	180	West, H.	MEDI	68	White, S.S.	PROF	1
Weiss, R.A.	PMSE	224	West, R.	PHYS	27	White, S.S.	SCHB	2
Weiss, R.A.	PMSE	75	Westerhoff, L.	COMP	400	White, T.A.	INOR	123
Weiss, R.M.	PMSE	265	Westerhoff, P.K.	ENVR	261	White, T.A.	INOR	537
Weiss, R.M.	POLY	424	Westerhoff, P.K.	ENVR	358	White, T.J.	POLY	262
Weiss, R.M.	POLY	538	Westerhoff, P.K.	ENVR	417	Whitehead, L.	ANYL	59
Weissenrieder, J.	COLL	128	Westerhoff, P.K.	ENVR	484	Whitehead, L.	CHED	67
Weisshaar, J.C.	PHYS	314	Westerman, C.	ORGN	502	Whitehead, L.	PRES	17
Weitz, D.	PHYS	445	Westmoreland, T.D.	INOR	421	Whitehead, L.	TOXI	46
Weitz, D.	PHYS	521	Weston, C.E.	ORGN	540	Whitehead, P.	COLL	243
Wekesa, F.S.	CATL	236	Westover, T.	ENFL	204	Whiteker, G.	INOR	311
Welborn, M.G.	COMP	165	Westphal, C.S.	ANYL	66	Whiteley, J.	ENFL	444
Welch, C.	AGFD	101	Westphal, R.	MEDI	162	Whitener, R.	PMSE	503
welch, c.	ANYL	251	Westphal, R.	MEDI	395	Whitesides, G.M.	ORGN	96
Welch, C.J.	ANYL	187	Westwell, A.D.	MEDI	48	Whitfield Aslund, M.	AGRO	126
Welch, C.J.	ANYL	332	Wetmore, S.D.	TOXI	54	Whitfield, R.	PMSE	88
Welch, C.J.	I&EC	12	Wett, B.	ENFL	8	Whitford, J.	ENVR	435
Welch, C.J.	ORGN	273	Wetzel, K.	POLY	199	Whiting, D.	POLY	451
Welch, D.S.	ORGN	274	Wex, B.	COMP	258	Whiting, D.	POLY	592
Welch, J.T.	PMSE	248	Wexler, R.R.	MEDI	265	Whitley, D.	COMP	244
Welch, L.A.	ENVR	553	Wexler, R.R.	MEDI	345	Whittemore, T.J.	INOR	537
Welch, S.	GEOC	55	Wexler, R.R.	MEDI	350	Whitten, S.	PHYS	277
Welch, S.	GEOC	80	Wexler, R.R.	MEDI	377	Wickens, Z.K.	ORGN	742
Welford, M.	COLL	152	Wexler, R.R.	MEDI	89	Wickline, J.	MEDI	116
Welford, M.	GEOC	20	Wexler, R.R.	MEDI	91	Wickstrom, E.	BIOL	241
Welle, P.	ENVR	181	Wexler, R.R.	MEDI	94	Wickstrom, E.	FLUO	4
Wellons, M.S.	NUCL	19	Weyman, G.	AGRO	265	Wickstrom, L.B.	COMP	284
Wells, A.K.	ORGN	618	Whalen, M.	TOXI	86	Wickstrom, L.B.	COMP	362
Wells, K.	PMSE	117	Whaley, J.	PMSE	18	Widger, L.R.	INOR	327
Wells, M.J.	ENVR	522	Whaley, J.	MEDI	267	Widicus Weaver, S.L.	PHYS	159
Wells, R.G.	COLL	566	Whaley, J.	MEDI	380	Widicus Weaver, S.L.	PHYS	271
Wells, R.G.	ORGN	444	Whalley, D.	MEDI	374	Widicus Weaver, S.L.	PHYS	73
Welsh, M.A.	CHED	341	Whalley, D.	MEDI	375	Wiebe, D.	TOXI	27
Welsler, K.	ANYL	237	Whalley, S.J.	AGRO	341	Wieczorek, L.	ANYL	324
Welsler, K.	PHYS	538	Whatling, P.	AGRO	108	Wieczorek, S.	POLY	198
Welton, E.R.	ANYL	127	Whatling, P.	AGRO	109	Wiedenhoef, D.	ORGN	574
Welton, E.R.	ANYL	53	Whatling, P.	AGRO	294	Wiedensohler, A.	ENVR	23
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Wen, L.	AGRO	359	Wheat, T.M.	AEI	37	Wiederrecht, G.	COLL	318
Wen, M.N.	PMSE	49	Wheat, T.M.	INOR	135	Wiedershain, D.	ORGN	212
Wen, P.	ORGN	652	Wheeler, K.A.	CHED	348	Wiedman, G.	BIOL	31
Wen, Y.L.	GEOC	87	Wheeler, K.A.	ORGN	514	Wiedner, E.S.	INOR	386
Wen, Z.	CATL	293	Wheeler, M.C.	ENFL	39	Wiegand, J.	PMSE	130
Wen, Z.	PMSE	498	Wheeler, P.	INOR	308	Wielenberg, K.	INOR	128
Wencewicz, T.A.	BIOL	149	Wheeler, S.E.	ORGN	304	Wiener, C.G.	PMSE	224
Wenderski, T.	ORGN	207	Wheeler, T.A.	INOR	21	Wiener, C.G.	PMSE	75
Wendland, M.S.	PMSE	7	Wheldon, M.	MEDI	374	Wiesbrock, F.	POLY	189
Wendling, K.S.	CHED	145	Wheldon, M.	MEDI	375	Wiesbrock, F.	POLY	307
Wendling, K.S.	CHED	146	Whiddon, K.	BIOL	255	Wiesbrock, F.	POLY	458
Wendling, K.S.	CHED	394	Whitacre, J.F.	ENVR	501	Wiesbrock, F.	POLY	76
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Wiest, O.	ORGN	189	Williams, B.R.	INOR	397	Wilson, B.	COLL	326
Wigent, R.	COMP	393	Williams, B.R.	INOR	398	Wilson, B.E.	ENFL	422
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Wignot, T.	CHED	398	Williams, C.B.	PMSE	208	Wilson, D.A.	POLY	180
Wijayapala, R.	PMSE	351	Williams, C.B.	PMSE	543	Wilson, D.A.	POLY	330
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Wilcox, M.J.	CHAS	18	Williams, E.	MEDI	60	Wilson, J.T.	COLL	569
Wilcox, M.J.	CHAS	59	Williams, G.	MEDI	9	Wilson, J.W.	ANYL	221
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Wildman, S.A.	COMP	330	Williams, K.	BIOL	95	Wilson, T.S.	PMSE	545
Wiley, J.B.	INOR	142	Williams, K.	CHED	180	Wilson, Z.E.	ORGN	647
Wilhelm, M.J.	ANYL	321	Williams, K.	CHED	225	Wilson, Z.R.	ORGN	257
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Wilhelm, M.J.	PHYS	378	Williams, L.D.	PHYS	543	Wiltowski, T.S.	ENFL	413
Wilhelm, M.R.	CHAS	37	Williams, L.R.	ENVR	17	Wilts, E.	POLY	400
Wilhelm, S.	COLL	474	Williams, L.R.	ENVR	278	Wimpenny, J.	NUCL	17
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Wilkerson, J.	INOR	330	Williams, M.L.	CHED	284	Winans, R.E.	ENFL	45
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Wilkerson-Hill, S.M.	ORGN	239	Williams, R.	NUCL	17	Winchell, M.	AGRO	295
Wilkie, C.A.	PMSE	309	Williams, R.M.	BIOL	33	Winchell, M.	AGRO	49
Wilkins, M.D.	POLY	155	Williams, R.M.	ORGN	413	Winchell, M.	AGRO	81
Wilkins, O.	PHYS	384	Williams, R.W.	AGRO	334	Winey, K.I.	PMSE	264
Wilkinson, K.	AGFD	139	Williams, S.	BIOL	34	Winey, K.I.	PMSE	481
Wilkinson, L.	INOR	478	Williams, S.	ORGN	303	Winey, K.I.	PMSE	93
Will, E.	PHYS	446	Williams, T.	INOR	254	Winey, K.I.	PMSE	94
Will, J.	CHED	264	Williams, T.	POLY	255	Winfield, L.	PRES	33
Will, Y.	TOXI	39	Williams, T.L.	ANYL	379	Winge-Barnes, S.	ORGN	550
Willa, C.	PMSE	651	Williams, U.J.	CHAS	27	Winget, S.A.	COLL	113
Willenbring, J.	ENVR	462	Williams, U.J.	CHED	254	Wingler, L.	BIOL	127
Willenbring, J.	ENVR	463	Williams, W.J.	PHYS	476	Winkel, R.W.	PMSE	395
Willenbring, J.	GEOC	41	Williamson, A.C.	POLY	396	Winkler, J.D.	BIOL	89
Willenbring, J.	TOXI	25	Williard, P.G.	ORGN	181	Winkler, J.D.	ORGN	443
Willenbring, J.	TOXI	26	Willis, M.C.	ORGN	747	Winkler, J.D.	ORGN	444
Willenbring, J.	TOXI	48	Willitsch, S.	PHYS	84	Winkler, J.D.	ORGN	454
Willets, K.A.	ANYL	111	Wills, M.	POLY	374	Winkler, J.D.	ORGN	458
Willets, K.A.	ANYL	368	Wilson, A.M.	CHED	135	Winkler, J.D.	ORGN	461
Willets, K.A.	CHED	157	Wilson, T.M.	COMP	107	Winnik, F.M.	POLY	172
Willets, K.A.	COLL	157	Wilmot, J.	AGRO	287	Winnik, M.	INOR	270
Willets, K.A.	COLL	170	Wilsily, A.	ORGN	203	Winnik, M.	PMSE	137
Willets, K.A.	COLL	171	Wilson, A.	BIOL	79	Winstead, A.J.	CHED	303
Willets, K.A.	COLL	423	Wilson, A.	COLL	170	Winstead, A.J.	INOR	117
Willets, K.A.	COLL	546	Wilson, A.	PHYS	347	Winter, A.	PMSE	318
Willett, J.	TOXI	47	Wilson, A.	PHYS	348	Winterton, N.	INOR	459
Willey, J.J.	AGRO	195	Wilson, A.	PHYS	349	Winther-Jensen, B.	PMSE	58
Williams, A.A.	CHED	205	Wilson, A.	PRES	36	Winton, A.	ENFL	214
Williams, A.A.	CHED	220	Wilson, A.A.	COLL	157	Winton, A.	ENFL	440
Williams, A.C.	POLY	274	Wilson, A.J.	COLL	423	Wipf, P.	MEDI	10
Williams, A.J.	AGRO	102	Wilson, A.K.	COMP	133	Wipf, P.	MEDI	61
Williams, A.J.	ANYL	376	Wilson, A.K.	COMP	76	Wipf, P.	MEDI	62
Williams, A.J.	ANYL	40	Wilson, A.K.	INOR	61	Wipf, P.	MEDI	63
Williams, A.J.	CINF	28	Wilson, A.K.	NUCL	14	Wipf, P.	MEDI	64
Williams, A.J.	ENVR	655	Wilson, A.K.	PRES	29	Wipf, P.	MEDI	65

Wipf, P.	ORGN	19	Wong, K.	AGFD	45	Worsnop, D.R.	ENVR	153
Wipfli, C.	AEI	24	Wong, K.	BIOL	41	Worsnop, D.R.	ENVR	17
Wipfli, C.	GEOC	36	Wong, K.	ENVR	214	Worsnop, D.R.	ENVR	278
Wiratan, L.	CHED	290	Wong, M.	ENVR	471	Worsnop, D.R.	PHYS	221
Wirtz, J.	AGRO	253	Wong, M.	MEDI	18	Worsnop, D.R.	PHYS	222
Wise, J.	AGRO	337	Wong, M.	MEDI	267	Worthington, P.	POLY	555
Wise, M.	AGFD	130	Wong, M.K.	MEDI	276	Wower, J.	PMSE	503
Wise, R.	CHED	143	Wong, M.S.	CATL	186	Wozniak, D.	PHYS	447
Wisian-Neilson, P.	INOR	169	Wong, M.S.	CATL	96	Wozniak, D.I.	INOR	687
Wisitpitthaya, S.	BIOL	180	WONG, N.	BIOL	168	Wray, P.	ENVR	360
Wisman, D.L.	COLL	442	Wong, N.	ORGN	435	Wriedt, M.	INOR	34
Wisniewski, A.	AEI	4	Wong, P.T.	BIOL	212	Wriedt, M.	INOR	87
Wisniewski, A.	BIOL	126	Wong, R.O.	PHYS	498	Wright, C.	BIOL	213
Wisniewski, T.	MEDI	84	Wong, S.S.	COLL	440	Wright, C.	CHED	36
Wissinger, J.E.	CHED	17	Wongkaew, A.	COLL	504	Wright, C.	POLY	133
Wissinger, J.E.	CHED	347	Wongwilai, W.	ANYL	304	Wright, C.E.	CHED	14
Wissner, R.F.	BIOL	185	Wongwilai, W.	CHED	16	Wright, C.E.	ORGN	587
Witzczak, Z.J.	MEDI	322	Woo, H.	COMP	234	Wright, D.	BIOL	162
Witzczak, Z.J.	MEDI	323	Woo, H.	COMP	235	Wright, D.S.	INOR	107
Witzczak, Z.J.	MEDI	331	Woo, H.C.	CATL	297	Wright, K.E.	NUCL	26
Witzczak, Z.J.	ORGN	689	Woo, Y.	AGRO	309	Wright, R.E.	POLY	112
Withrow, B.	CHED	201	Wood, B.A.	PMSE	440	Wright, S.W.	ORGN	672
Witkin, J.M.	MEDI	397	Wood, C.	COLL	216	Wright, T.	MEDI	34
Witt, R.L.	PMSE	519	Wood, E.	PHYS	220	Wright, T.	MEDI	67
Witter, A.E.	CHED	81	Wood, F.	BIOL	98	Wright, T.B.	ORGN	237
Witting, M.	AGFD	293	Wood, P.A.	CHED	351	Wright, Z.	POLY	249
Wlasichuk, K.	MEDI	278	Wood, T.	CATL	253	Wrighton, K.	ENVR	112
Wlcek, K.	MEDI	412	Wood, T.	CHED	291	Wrobel, T.	ANYL	8
Wnek, G.E.	COLL	429	Woodard, P.	POLY	266	Wroblewski, S.	MEDI	272
Wnek, G.E.	PMSE	254	Wood-Black, F.K.	CHAS	29	Wu, A.	ORGN	717
Wnek, G.E.	POLY	588	Wood-Black, F.K.	CHAS	30	Wu, A.	TOXI	60
Wo, S.	BIOL	109	Wood-Black, F.K.	CHAS	31	Wu, B.	ENVR	423
Wodo, O.	PHYS	492	Wood-Black, F.K.	CHAS	43	Wu, B.	ENVR	481
Wodzanowski, K.	CHED	314	Wood-Black, F.K.	CHED	120	Wu, B.	INOR	577
Woell, C.	COLL	41	Wood-Black, F.K.	CHED	332	Wu, C.	AGFD	211
Woerner, T.E.	CHAS	23	Wood-Black, F.K.	I&EC	42	Wu, C.	AGFD	229
Woerner, T.E.	CHAS	3	Woodcock, H.L.	COMP	127	Wu, C.	AGFD	273
Wofford, P.	AGFD	232	Woodcock, H.L.	COMP	177	Wu, C.	AGFD	47
Wohl, C.	COLL	407	Woodcock, H.L.	COMP	261	Wu, C.	CATL	44
Wohlert, C.W.	INOR	532	Woodcock, H.L.	COMP	276	Wu, C.	ENFL	282
Woicik, J.	COLL	95	Woodcock, H.L.	COMP	363	Wu, C.	ENFL	34
Wojtas, L.	INOR	90	Woodcock, H.L.	COMP	84	Wu, C.	ORGN	215
Wojtowicz, M.A.	ENFL	168	Woodcock, J.W.	COLL	314	Wu, C.	ORGN	9
Wolbers, R.C.	ANYL	133	Woodcock, J.W.	PMSE	581	Wu, C.	PMSE	20
Wolbers, R.C.	ANYL	60	Woodcock, J.W.	POLY	499	Wu, C.	PMSE	683
Wolckenhauer, S.	ORGN	207	Woodroofe, C.C.	ORGN	678	Wu, C.	PMSE	81
Wold, E.A.	MEDI	16	Woods, A.S.	ANYL	46	Wu, D.	ANYL	144
Wolf, C.	ANYL	225	Woods, B.	AEI	48	Wu, D.	CATL	274
Wolf, C.	ORGN	728	Woods, B.	ORGN	87	Wu, D.	COLL	16
Wolf, C.	PMSE	396	Woods, D.J.	ENFL	35	Wu, D.	ENFL	193
Wolf, C.	PMSE	65	Woods, R.D.	AGFD	144	Wu, D.	MEDI	18
Wolf, L.	CHED	361	Woodward, D.	ENVR	241	Wu, D.	MEDI	87
Wolf, L.	MPPG	4	Woodward, D.	ENVR	242	Wu, D.	ORGN	658
Wolf, L.M.	INOR	504	Woodward, E.	AGRO	117	Wu, D.	PMSE	127
Wolf, P.	CATL	148	Woodward, E.	AGRO	133	Wu, D.	PMSE	504
Wolfand, J.	ENVR	207	Woodward, H.	MEDI	282	Wu, F.	COLL	428
Wolfe, D.	AEI	12	Woodward, R.	PMSE	663	Wu, F.	COLL	436
Wolfe, G.M.	PHYS	43	Woodward, S.	AGFD	17	Wu, F.	COLL	458
Wolfe, J.P.	CHED	367	Woodridge, P.	PHYS	43	Wu, F.	ENVR	264
Wolfe, J.P.	CHED	54	Wooley, K.L.	CHED	318	Wu, F.	PHYS	444
Wolfe, J.P.	ORGN	346	Wooley, K.L.	COLL	430	Wu, F.H.	ORGN	282
Wolfe, R.M.	PMSE	340	Wooley, K.L.	PMSE	572	Wu, G.	CATL	259
Wollmann, N.	AGFD	17	Wooley, K.L.	PMSE	647	Wu, G.	COLL	502
Wolverton, C.	PHYS	302	Wooley, K.L.	PMSE	699	Wu, G.	ENFL	329
Womack, J.C.	COMP	12	Wooley, K.L.	POLY	190	Wu, G.	ENFL	356
Womble, T.	POLY	14	Wooley, K.L.	POLY	443	Wu, G.	ENVR	282
Wong, A.S.	INOR	319	Wooley, K.L.	POLY	549	Wu, G.	I&EC	15
Wong, B.M.	COMP	160	Woolford, A.	MEDI	15	Wu, G.	INOR	36
Wong, B.M.	ENFL	291	Woolford, A.	MEDI	9	Wu, G.	PHYS	438
Wong, B.M.	ENVR	171	Woolford, A.	MEDI	90	Wu, G.	PMSE	44
Wong, C.	AGRO	55	Woolley, A.	ANYL	314	Wu, G.	PMSE	477
Wong, C.F.	COMP	314	Woolston, B.M.	AGFD	215	Wu, H.	BIOL	1
Wong, C.S.	AGRO	83	Woon, D.E.	PHYS	508	Wu, H.	COMP	330
Wong, G.	COLL	321	Woon, E.C.	MEDI	8	Wu, H.	MEDI	14
Wong, J.	COLL	364	Workentin, M.S.	PHYS	180	Wu, H.	MEDI	201
Wong, J.	I&EC	17	Workie, B.	COLL	166	Wu, H.	MEDI	346
Wong, J.	I&EC	21	Workie, B.	COLL	232	Wu, H.	MEDI	349
Wong, J.	I&EC	49	Workie, B.	ENVR	677	Wu, H.	PMSE	158
Wong, J.	PMSE	99	workinger, J.L.	BIOL	206	Wu, H.	PMSE	19
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Wu, J.	MEDI	25	Wu, Y.	PHYS	288	Xia, Q.	ANYL	128
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Wu, L.	COLL	276	Wu, Y.	PHYS	485	Xia, Y.	COLL	274
Wu, L.	ENVR	499	Wu, Y.	PHYS	485	Xia, Y.	COLL	47
Wu, L.	MEDI	104	Wu, Z.	CATL	181	Xia, Y.	COLL	84
Wu, L.	MEDI	319	Wu, Z.	CATL	36	Xia, Y.	ENFL	101
Wu, L.	MEDI	87	Wu, Z.	COLL	558	Xia, Y.	ORGN	283
Wu, L.	PRES	24	Wu, Z.	ENFL	103	Xia, Y.	PMSE	111
Wu, L.	TOXI	26	Wu, Z.	ENFL	182	Xia, Y.	PMSE	477
Wu, M.	ENVR	344	Wu, Z.	ENFL	269	Xia, Y.	PMSE	478
Wu, M.	ENVR	588	Wu, Z.	ENFL	28	Xia, Y.	PMSE	8
Wu, M.	ENVR	652	Wu, Z.	ENFL	75	Xia, Y.	POLY	302
Wu, M.P.	ANYL	59	Wu, Z.	ENFL	76	Xia, Z.	COLL	399
Wu, M.Y.	ENVR	536	Wu, Z.	ENVR	157	Xia, Z.	ENFL	298
Wu, N.	ANYL	342	Wu, Z.	ENVR	23	Xia, Z.	ENFL	300
Wu, N.	BIOL	14	Wu, Z.	MEDI	337	xia, z.	ENFL	303
Wu, N.	CATL	188	Wu, Z.	PHYS	340	Xia, Z.	ENVR	738
Wu, N.	ENFL	30	Wubbolt, C.	AGRO	8	Xia, Z.	PMSE	532
Wu, N.	ENFL	311	Wuchte, L.	PMSE	352	Xia, Z.	PMSE	587
Wu, P.	CATL	205	Wuest, W.M.	BIOL	34	Xian, J.	CHED	103
Wu, P.	COLL	276	Wuest, W.M.	BIOL	6	Xian, W.	COLL	321
Wu, P.	ENVR	561	Wuest, W.M.	BIOL	77	Xiang, B.	AGRO	96
Wu, P.	MEDI	349	Wuest, W.M.	CHED	260	Xiang, F.	AEI	65
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Wu, Q.	AGFD	89	Wuest, W.M.	ORGN	162	Xiang, N.	AGFD	171
Wu, Q.	AGFD	90	Wuest, W.M.	ORGN	167	Xiang, N.	COLL	536
Wu, Q.	AGFD	91	Wuest, W.M.	ORGN	303	Xiang, W.	MEDI	307
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Wu, Q.	AGFD	99	Wujcik, C.E.	AGRO	251	Xiao, C.	COLL	140
Wu, Q.	CATL	229	Wujcik, C.E.	AGRO	54	Xiao, C.	ENFL	251
Wu, Q.	CATL	290	Wujcik, M.	COMP	230	Xiao, C.	ENFL	435
Wu, Q.	ENFL	68	Wulf, V.	COLL	240	Xiao, C.	ENFL	485
Wu, Q.	ENVR	565	Wunder, N.	ENFL	145	Xiao, D.	CATL	135
Wu, R.	ENFL	286	Wunder, S.L.	ENFL	211	Xiao, D.	PHYS	160
Wu, R.	INOR	134	Wunder, S.L.	ENFL	354	Xiao, E.	ENVR	325
Wu, S.	ENVR	8	Wunder, S.L.	ENVR	420	Xiao, F.	ENFL	142
Wu, S.	MEDI	267	Wunder, S.L.	ENVR	709	Xiao, F.	ENFL	459
Wu, S.	MEDI	380	Wunder, S.L.	POLY	88	Xiao, F.	ENFL	68
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Wu, W.	CHED	378	Wünsch, B.	MEDI	166	Xiao, H.	AGFD	194
Wu, W.	ENVR	409	Wurtz, N.	MEDI	265	Xiao, H.	AGFD	220
Wu, W.	POLY	15	Wurtz, N.	MEDI	350	Xiao, H.	ENVR	622
Wu, X.	AGFD	220	Wurzer, J.	CHAS	54	Xiao, H.	ENVR	632
Wu, X.	CATL	63	Wyffels, L.	POLY	267	Xiao, J.	AGFD	196
Wu, X.	COMP	60	Wykoff, D.	BIOL	106	Xiao, J.	CHED	319
Wu, X.	ENVR	632	wynn, J.	BIOL	260	Xiao, J.	FLUO	3
Wu, X.	MEDI	403	Wynne, J.H.	COLL	242	Xiao, J.	MEDI	173
Wu, X.	MEDI	404	Wynne, J.H.	ORGN	180	Xiao, J.	POLY	314
Wu, Y.	ANYL	253	Wynne, J.H.	ORGN	192	Xiao, L.	MEDI	349
Wu, Y.	BIOL	104	Wynne, J.H.	PMSE	179	Xiao, L.	ORGN	208
Wu, Y.	BIOL	20	Wynne, J.H.	PMSE	180	Xiao, M.	PMSE	303
Wu, Y.	CATL	234	Wynne, J.H.	PMSE	419	Xiao, Q.	ORGN	515
Wu, Y.	COLL	113	Wynne, K.J.	PMSE	222	Xiao, Q.	POLY	285
Wu, Y.	COLL	12	Wynne, K.J.	PMSE	51	Xiao, Q.	POLY	330
Wu, Y.	COLL	206	Wynne, K.J.	POLY	484	Xiao, Q.	POLY	478
Wu, Y.	COLL	308	Wypych, D.	AEI	53	Xiao, R.	ENVR	120
Wu, Y.	COLL	311	Wyrebeek, M.E.	AGRO	213	Xiao, R.	ENVR	220
Wu, Y.	ENFL	280	Wyrick, J.	TOXI	11	Xiao, S.	TOXI	72
Wu, Y.	ENFL	33	Wysocki, L.	ORGN	66	Xiao, S.	TOXI	82
Wu, Y.	ENFL	409	Xantheas, S.	PHYS	140	Xiao, S.	TOXI	99
Wu, Y.	ENVR	160	Xi, B.	ENVR	568	Xiao, T.	ENVR	325
Wu, Y.	ENVR	762	Xi, B.	ENVR	634	Xiao, W.	CATL	197
Wu, Y.	ENVR	799	Xi, B.	ENVR	87	Xiao, X.	ENFL	417
Wu, Y.	INOR	293	Xi, E.	COMP	313	Xiao, X.	ENVR	178
Wu, Y.	INOR	488	Xi, J.	BIOL	207	Xiao, X.	ENVR	267
Wu, Y.	MEDI	200	Xi, J.	TOXI	88	Xiao, X.	ENVR	414
Wu, Y.	ORGN	507	Xi, W.	ANYL	319	Xiao, Z.	PMSE	635
Wu, Y.	ORGN	554	Xi, W.	POLY	192	Xiaodong, Z.	CATL	334
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Xie, D.	CATL	269	Xu, C.	COLL	351	Xu, Y.	POLY	352
Xie, J.	COLL	376	Xu, C.	ENVR	558	Xu, Y.	POLY	392
Xie, J.	PMSE	167	Xu, C.	INOR	138	Xu, Z.	CATL	178
Xie, K.	ANYL	295	Xu, C.	MEDI	18	Xu, Z.	ENVR	716
Xie, K.	CATL	122	Xu, C.	ORGN	500	Xu, Z.	MEDI	346
Xie, L.	ORGN	338	Xu, C.	ORGN	525	Xuan, S.	ORGN	334
Xie, P.	CATL	131	Xu, C.	POLY	270	Xuan, S.	POLY	312
Xie, R.	ENVR	163	Xu, D.	COLL	535	Xue, B.	COLL	414
Xie, R.	MEDI	9	Xu, D.	MEDI	200	Xue, B.	COLL	450
Xie, R.	MEDI	90	Xu, F.	ENVR	218	Xue, B.	COLL	514
Xie, R.	PMSE	154	Xu, G.	PMSE	461	Xue, B.	PMSE	468
Xie, S.	ENVR	507	Xu, H.	GEOC	79	Xue, B.	POLY	224
Xie, X.	ANYL	235	Xu, H.	ORGN	211	Xue, D.	PMSE	454
Xie, X.	ENFL	276	Xu, J.	AGFD	12	Xue, F.	MEDI	118
Xie, X.	ENVR	769	Xu, J.	AGFD	4	Xue, F.	MEDI	327
Xie, X.	ORGN	559	Xu, J.	AGFD	55	Xue, F.	ORGN	629
Xie, Y.	AGFD	97	Xu, J.	AGFD	65	Xue, J.	AGRO	48
Xie, Y.	AGFD	98	Xu, J.	AGFD	67	Xue, J.	POLY	321
Xie, Y.	AGRO	355	Xu, J.	ANYL	153	Xue, W.	ENFL	384
Xie, Y.	COLL	523	Xu, J.	MEDI	346	Xue, Y.	PMSE	398
Xie, Y.	INOR	214	Xu, J.	MEDI	74	Xue, Y.	PMSE	470
Xie, Y.	INOR	451	Xu, J.	PMSE	418	Xue, Y.	PMSE	479
Xie, Y.	PMSE	241	Xu, K.	ENFL	439	Xufeng, L.	INOR	411
Xie, Z.	COLL	160	Xu, K.	ENVR	499	Ya Hsuan, L.	ENVR	797
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Xin, H.	CATL	208	Xu, L.	ORGN	565	Yabushita, M.	CATL	110
Xin, H.	CATL	224	Xu, M.	ENFL	196	Yacout, A.M.	NUCL	23
Xin, H.	CATL	248	Xu, M.	MEDI	371	Yadav, G.	CATL	85
Xin, H.	ENFL	234	Xu, M.	ORGN	559	Yadav, M.	CATL	12
Xin, H.	ENFL	238	Xu, P.	AGRO	282	Yadav, M.	CATL	282
Xin, J.	ENFL	222	Xu, P.	ENVR	426	Yadav, S.	PMSE	307
Xing, B.	ENVR	344	Xu, Q.	ANYL	175	Yadav, S.	PMSE	517
Xing, B.	ENVR	409	Xu, Q.	COLL	228	Yadav, S.	PMSE	583
Xing, B.	ENVR	411	Xu, Q.	PMSE	680	Yadav, V.K.	COMP	27
Xing, B.	ENVR	475	Xu, R.	INOR	486	Yadav, V.K.	COMP	275
Xing, B.	GEOC	73	Xu, R.	MEDI	104	Yadavalli, S.S.	POLY	285
Xing, C.	ANYL	96	Xu, R.	MEDI	87	Yadavalli, S.S.	POLY	330
Xing, C.	PMSE	687	Xu, R.	NUCL	23	Yagci, M.	ENFL	392
Xing, L.	MEDI	271	Xu, S.	FLUO	19	Yager, K.G.	PMSE	601
Xing, N.	CATL	305	Xu, T.	AGRO	13	Yager, K.G.	POLY	12
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Xiong, B.	ENVR	48	Xu, W.	CATL	57	Yakushiji, F.	ORGN	485
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Xiong, J.	ENFL	175	Xu, W.	ENFL	481	Yalcin, O.	CATL	42
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Xiong, R.	POLY	401	Xu, X.	COMP	367	Yamada, T.	ENFL	126
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Xiong, Z.	INOR	674	Xu, X.	ORGN	750	Yamaguchi, E.	ORGN	668
Xiong, Z.	INOR	676	Xu, X.	ORGN	89	Yamaguchi, S.	ANYL	270
Xu, B.	ANYL	160	Xu, X.	PHYS	391	Yamaguchi, T.	ORGN	668
Xu, B.	BIOL	249	Xu, X.	POLY	488	Yamaji, H.	PMSE	480
Xu, B.	CATL	113	Xu, X.N.	ANYL	238	Yamaki, A.	MEDI	85
Xu, B.	CATL	123	Xu, Y.	AGFD	155	Yamamoto, A.	COLL	366
Xu, B.	CATL	245	Xu, Y.	AGFD	156	Yamamoto, K.	ORGN	246
Xu, B.	CATL	250	Xu, Y.	AGFD	98	Yamamoto, K.	ORGN	503
Xu, B.	ENFL	104	Xu, Y.	CATL	65	Yamasaki, R.	ORGN	690
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Xu, B.	PHYS	387	Xu, Y.	ENVR	580	Yan, B.	COLL	215
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Ycas, P.	MEDI	258	Yeung, K.	INOR	144	Yokoyama, W.H.	AGFD	159
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Ye, D.	POLY	335	Yeung, K.	MEDI	406	Yonekura, H.	INOR	136
Ye, G.	COLL	428	Yeung, K.	ORGN	146	Yonekura, L.	AGFD	22
Ye, G.	COLL	436	Yeung, K.	ORGN	353	Yonemaru, N.	PMSE	489
Ye, J.	CATL	103	Yeung, M.	AGRO	307	Yonesaki, R.	ORGN	85
Ye, J.	ENFL	402	Yezerets, A.	CATL	127	Yong, C.S.	GEOC	67
Ye, P.	COLL	312	Yeziarski, E.J.	CHED	3	Yonkos, L.T.	AGRO	233
Ye, P.	PMSE	487	Yi, C.	PMSE	669	Yoo, C.	ANYL	44
Ye, Q.	AGRO	267	Yi, G.	COLL	169	Yoo, C.	ENFL	205
Ye, Q.	ORGN	420	Yi, G.	COLL	540	Yoo, H.	PHYS	392
Ye, R.	ORGN	9	Yi, J.	COLL	16	Yoo, M.	ENVR	667
Ye, S.	ENVR	20	Yi, J.	PMSE	488	Yoo, M.	ENVR	668
Ye, S.	PMSE	98	Yi, K.	AGRO	344	Yoo, P.	COLL	503
Ye, T.	ENVR	120	Yi, P.	ENVR	410	Yoo, S.	AGFD	105
Ye, T.	ENVR	220	Yi, P.	ENVR	698	Yook, S.	INOR	270
Ye, X.	AGFD	5	Yi, P.	ENVR	733	Yoon, C.	COLL	589
Ye, X.	ENVR	621	Yi, S.	ENVR	173	Yoon, D.S.	MEDI	267
Ye, Z.	ENVR	115	Yi, W.	ORGN	721	Yoon, D.S.	MEDI	380
Ye, Z.	ORGN	268	Yi, W.	ORGN	723	Yoon, H.	ENFL	496
Yeager, A.N.	PHYS	142	Yi, Z.	ORGN	472	Yoon, H.	GEOC	71
Yeager, A.R.	MEDI	111	Yicheng, L.	COLL	209	Yoon, H.	PMSE	42
Yeager, A.R.	MEDI	261	Yigit, M.V.	ANYL	102	Yoon, H.	PMSE	452
Yeagley, A.A.	CHED	211	Yigit, M.V.	COLL	150	Yoon, I.	BIOL	261
Yeagley, A.A.	CHED	299	Yigit, M.V.	COLL	330	Yoon, J.	BIOL	104
Yearsley, D.M.	PHYS	431	Yigit, M.V.	COLL	420	Yoon, J.	BIOL	185
Yedidi, R.	COMP	30	Yigit, M.V.	ENVR	490	Yoon, J.	COLL	483
Yedoyan, J.	ORGN	694	Yijin, L.	GEOC	13	Yoon, J.	PMSE	686
Yee, N.	ENVR	591	Yildirim, E.	ENVR	686	Yoon, S.	ENFL	471
Yeh, C.	MEDI	297	Yildirim, E.	POLY	564	Yoon, T.	COLL	404
Yeh, I.	COLL	202	Yildirim, I.	POLY	469	Yoon, W.	AGFD	35
Yeh, K.	ANYL	8	Yilmaz, E.	ENFL	392	Yoon, Y.	CATL	8
Yeh, T.	ANYL	181	Yin, C.	MEDI	53	York, D.M.	CHED	68
Yeh, T.	ANYL	265	Yin, G.	ORGN	580	York, D.M.	COMP	174
Yeh, T.	ENVR	440	Yin, H.	CATL	19	York, D.M.	COMP	210
Yeh, T.	ORGN	177	Yin, H.	COLL	66	York, D.M.	COMP	233
Yeh, Y.	BIOL	263	Yin, H.	INOR	112	York, D.M.	COMP	238
Yeh, Y.	CATL	272	Yin, H.	INOR	432	York, D.M.	COMP	253
Yeh, Y.	COLL	518	Yin, H.	ORGN	573	York, D.M.	COMP	319
Yeh, Y.	PMSE	597	Yin, H.	PHYS	441	York, D.M.	COMP	396
Yehl, P.M.	ANYL	185	Yin, H.	PHYS	447	York, D.M.	COMP	398
Yehya, N.	ANYL	117	Yin, H.H.	MEDI	246	York, D.M.	COMP	49
Yehya, N.	PHYS	367	Yin, J.	ENVR	268	York, D.M.	PHYS	426
Yeldell, S.	BIOL	254	Yin, J.	ORGN	263	Yorulmaz, S.	COLL	397
Yelekci, K.	COMP	194	Yin, S.	ANYL	237	Yoshida, A.	PMSE	490
Yelleswarapu, C.	ORGN	184	Yin, T.	ENVR	513	Yoshida, G.	ANYL	93
Yen, C.H.	ANYL	143	Yin, X.	MEDI	377	Yoshida, Y.	AGFD	2
Yen, H.	ENFL	356	Yin, X.	MEDI	89	Yoshii, T.	COLL	225
Yen, K.	MEDI	268	Yin, X.	ORGN	176	Yoshikawa, T.	MEDI	386
Yen, S.	ENVR	611	Yin, X.	ORGN	614	Yoshinaga, A.	POLY	52
Yeo, B.	CATL	278	Yin, X.	PMSE	495	You, B.	ENFL	58
Yeon, S.	MEDI	105	Yin, Y.	AGFD	18	You, C.	TOXI	15
Yeon, S.	MEDI	396	Yin, Y.	CATL	275	You, F.	MEDI	37
Yépez-Mulia, L.	MEDI	152	Yin, Y.	COLL	108	You, J.	AGRO	199
Yerke, A.	AGFD	128	Yin, Y.	ENVR	622	You, W.	INOR	209
yerlikaya, f.	ANYL	143	Yin, Y.	ENVR	632	You, W.	PMSE	279
Yesilbag Tonga, G.	BIOL	165	Ying, L.	PMSE	172	You, W.	POLY	421
Yesilbag Tonga, G.	BIOL	263	Ying, L.	PMSE	234	You, Y.	PMSE	682
Yesilbag Tonga, G.	COLL	215	Yingling, J.D.	MEDI	45	You, Y.	PMSE	689
Yesilbag Tonga, G.	COLL	223	Yining, L.	ENFL	13	You, Y.	POLY	193
Yesilbag Tonga, G.	COLL	224	Yip, H.	ANYL	144	You, Y.	POLY	316
Yesilbag Tonga, G.	COLL	466	Yip, H.	COLL	121	You, Y.	POLY	397
Yesilbag Tonga, G.	TOXI	93	Yip, N.	ENVR	235	Youk, J.	POLY	306
Yesinowski, J.P.	INOR	296	Yip, N.	ENVR	500	Youn, H.	BIOL	190
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Young, D.	AGRO	138	Yu, S.	ORGN	29	Yuan, Z.	BIOL	125
Young, D.	AGRO	79	Yu, S.	ORGN	567	Yuan, Z.	PMSE	390
Young, D.	MEDI	378	Yu, S.	PMSE	375	Yuan, Z.	POLY	362
Young, D.	PHYS	90	Yu, S.	PMSE	376	Yubuchi, S.	ENFL	128
Young, E.R.	INOR	513	Yu, S.	PMSE	456	Yue, B.	ENFL	114
Young, E.R.	INOR	578	Yu, S.	PMSE	491	Yue, D.	ENVR	20
Young, E.R.	PHYS	320	Yu, S.	PMSE	532	Yue, D.	ENVR	23
Young, E.R.	PHYS	435	Yu, S.	PMSE	587	Yue, L.	PMSE	33
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Young, J.A.	ANYL	378	Yu, T.	ENFL	209	Yue, Q.	ORGN	208
Young, K.	CHED	410	Yu, W.	COMP	239	Yue, Z.	COMP	228
Young, L.	PHYS	204	Yu, W.	COMP	378	Yue, Z.	MEDI	62
Young, L.	PHYS	71	Yu, W.	MEDI	276	Yue, Z.	MEDI	63
Young, M.S.	AGRO	116	Yu, W.	MEDI	346	Yue, Z.	MEDI	65
Young, M.S.	AGRO	221	Yu, W.	PMSE	362	Yuen, P.K.	CHED	66
Young, R.	PHYS	106	Yu, X.	COLL	204	Yuen, P.K.	INOR	426
Young, R.	PMSE	317	Yu, X.	COLL	66	Yuen, P.K.	INOR	646
Young, V.G.	CHED	347	Yu, X.	COLL	97	Yuge, N.	ENVR	582
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Youngs, W.J.	MEDI	124	Yu, X.	ENFL	429	Yujun, Z.	CATL	291
Youngs, W.J.	MEDI	310	Yu, X.	ENVR	622	Yujun, Z.	ENFL	109
Youngs, W.J.	MEDI	32	Yu, X.	GEOC	44	Yukun, W.	POLY	313
Youngs, W.J.	MEDI	72	Yu, X.	INOR	154	Yun, B.	TOXI	72
Yousef, M.	PHYS	397	Yu, X.	PMSE	396	Yun, B.	CATL	246
Yousefi, N.	ENVR	214	Yu, X.	PMSE	54	Yun, H.	CATL	172
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Yu, A.Z.	PMSE	223	Yu, Y.	ANYL	171	Yun, H.	ENFL	4
Yu, B.	CINF	1	Yu, Y.	ANYL	25	Yun, Y.	PMSE	98
Yu, C.	ENVR	227	Yu, Y.	ANYL	78	Yung, M.	ENFL	44
Yu, C.	MEDI	297	Yu, Y.	BIOL	7	Yunker, L.	ANYL	305
Yu, C.	ORGN	620	Yu, Y.	CATL	151	Yurtsever, F.M.	ENFL	472
Yu, C.	ORGN	757	Yu, Y.	COLL	501	Yurukcu, M.	ENFL	472
Yu, D.	COMP	154	Yu, Y.	ENVR	323	Yurum, A.	COLL	72
Yu, F.	BIOL	139	Yu, Y.	INOR	221	Yusof, I.	COMP	399
Yu, F.	COLL	471	Yu, Y.	INOR	427	Yuste, R.	ANYL	202
Yu, F.	ENVR	19	Yu, Y.	MEDI	14	Yusuf, M.	INOR	352
Yu, F.	ORGN	365	Yu, Y.	MEDI	346	Yusuf, S.M.	CATL	20
Yu, F.	ORGN	413	Yu, Y.	POLY	298	Zabawa, S.	ORGN	499
Yu, G.	CATL	216	Yu, Y.	POLY	306	Zabet, M.	PMSE	625
Yu, G.	COMP	289	Yu, Y.	POLY	531	Zabetakis, D.	COLL	175
Yu, G.	ENFL	273	Yu, Y.	TOXI	83	Zabet-Moghaddam, M.	MEDI	408
Yu, G.	ENFL	397	Yu, Z.	CHED	290	Zabielaita, A.	ENFL	208
Yu, G.	ENVR	122	Yu, Z.	INOR	265	Zaborenko, N.	ORGN	270
Yu, H.	CATL	19	Yu, Z.	MEDI	284	Zabukovec Logar, N.	PMSE	73
Yu, H.	COLL	358	Yuan, B.	AGFD	91	Zabula, A.	INOR	112
Yu, H.	ENFL	61	Yuan, B.	ORGN	9	Zaccaron, S.	COLL	296
Yu, H.	ENVR	326	Yuan, B.	PHYS	122	Zachara, N.	BIOL	18
Yu, H.	ENVR	772	Yuan, B.	PMSE	252	Zacharia, N.	COLL	172
Yu, H.	ORGN	415	Yuan, C.	AGFD	55	Zacharia, N.	COLL	349
Yu, H.	PMSE	241	Yuan, G.	FLUO	2	Zacharia, N.	COLL	434
Yu, H.S.	COMP	33	Yuan, G.	PMSE	601	Zachariah, M.R.	CATL	18
Yu, J.	CATL	332	Yuan, H.	ANYL	96	Zachariah, M.R.	COLL	13
Yu, J.	COLL	234	Yuan, H.	CATL	317	Zacharias Millward, N.	BIOL	40
Yu, J.	INOR	37	Yuan, H.	FLUO	21	Zacher, A.	CATL	145
Yu, J.	ORGN	671	Yuan, H.	PHYS	483	Zaczek, A.	PHYS	408
Yu, K.	ENVR	563	Yuan, H.	PMSE	687	Zadeh, N.	CINF	51
Yu, K.	ENVR	707	Yuan, J.	MEDI	100	Zadrozny, J.	INOR	251
Yu, L.	CHED	138	Yuan, J.	MEDI	95	Zaera, F.	CATL	88
Yu, L.	PHYS	195	Yuan, J.	PMSE	568	Zagar, E.	PMSE	73
Yu, L.	PHYS	383	Yuan, J.	PMSE	651	Zaharevitz, D.	CINF	65
Yu, L.	PMSE	215	Yuan, J.	POLY	447	Zahler, R.	MEDI	18
Yu, L.	PMSE	478	Yuan, J.	POLY	520	Zahoranová, A.	POLY	225
Yu, L.L.	AGFD	110	Yuan, K.	GEOC	68	Zakharov, A.	COMP	341
Yu, L.L.	AGFD	184	Yuan, L.	ENVR	20	Zakia, S.	BIOL	68
Yu, L.L.	AGFD	221	Yuan, L.	ENVR	622	Zakia, S.	ORGN	445
Yu, L.L.	AGFD	285	Yuan, L.	PHYS	323	Zalaznick, J.	MEDI	18
Yu, L.L.	AGFD	286	Yuan, L.	POLY	34	Zalupski, P.R.	INOR	503
Yu, M.	ENFL	280	Yuan, L.	POLY	36	Zaluzec, N.	CATL	45
Yu, M.	INOR	365	Yuan, Q.	ANYL	272	Zambare, N.	ENVR	324
Yu, M.	INOR	7	Yuan, Q.	ANYL	296	Zamboni, N.	ANYL	346
Yu, M.	PMSE	43	Yuan, Q.	ENFL	399	Zambrowicz, B.	MEDI	162
Yu, M.	POLY	57	Yuan, S.	PMSE	443	Zambrowicz, B.	MEDI	395
Yu, P.	CATL	259	Yuan, T.	AGFD	60	Zamkov, M.	COLL	167
Yu, P.	ENVR	746	Yuan, T.	AGFD	8	Zamkov, M.	COLL	279
Yu, Q.	MEDI	20	Yuan, T.	PMSE	343	Zamkov, M.	COLL	281
Yu, Q.	PMSE	105	Yuan, W.	INOR	109	Zamkov, M.	COLL	320
Yu, R.	ENFL	155	Yuan, X.	ENVR	807	Zammarano, M.	PMSE	198
Yu, S.	AGFD	4	Yuan, X.	MEDI	118	Zamora, M.L.	ENVR	160

Zamora, M.L.	ENVR	223	Zelesky, T.	ANYL	195	Zhang, C.	ANYL	378
Zamora, M.L.	ENVR	282	Zeller, M.	INOR	434	Zhang, C.	BIOL	171
Zamora, M.L.	ENVR	642	Zeller, M.	INOR	504	Zhang, C.	CATL	196
Zamponi, G.W.	MEDI	86	Zemedede, G.	MEDI	229	Zhang, C.	CATL	212
Zander, N.	COLL	517	Zeng, C.	PHYS	130	Zhang, C.	CATL	215
Zander, N.	PMSE	387	Zeng, C.	PHYS	345	Zhang, C.	CATL	218
Zane, C.P.	ENVR	686	Zeng, E.	AGRO	170	Zhang, C.	CATL	220
Zanella, R.	COLL	338	Zeng, F.	POLY	214	Zhang, C.	CATL	240
Zanetti, A.	MEDI	114	Zeng, G.	CATL	166	Zhang, C.	CATL	320
Zang, L.	MEDI	80	Zeng, J.	ANYL	95	Zhang, C.	COLL	422
Zang, M.	ORGN	731	Zeng, J.	ENVR	762	Zhang, C.	MEDI	319
Zang, Q.	ORGN	330	Zeng, L.	ENVR	160	Zhang, C.	MEDI	360
Zang, T.	BIOL	117	Zeng, L.	ENVR	20	Zhang, C.	MEDI	54
Zang, T.	BIOL	89	Zeng, L.	INOR	423	Zhang, C.	PHYS	13
Zang, T.	TOXI	87	Zeng, L.	MEDI	59	Zhang, C.	PMSE	492
Zapata, J.	CHED	142	Zeng, P.	ENFL	21	Zhang, C.	PMSE	603
Zapol, W.M.	ORGN	443	Zeng, Q.	MEDI	276	Zhang, C.	POLY	456
Zaragoza, J.	INOR	383	Zeng, Q.	PHYS	405	Zhang, D.	AGFD	19
Zaragoza, J.	PHYS	123	Zeng, S.	ENFL	429	Zhang, D.	ANYL	12
Zaragoza-Galan, G.	ORGN	129	Zeng, S.	PMSE	41	Zhang, D.	COLL	230
Zarbin, P.	ORGN	589	Zeng, S.	PMSE	46	Zhang, D.	ENFL	362
Zarco, D.	CHED	132	Zeng, S.	PMSE	54	Zhang, D.	ENFL	429
Zardecki, C.	CHED	195	Zeng, T.	ENVR	454	Zhang, D.	ENFL	85
Zare, R.N.	ANYL	28	Zeng, T.	ENVR	49	Zhang, D.	ENVR	585
Zare, R.N.	PHYS	382	Zeng, T.	ENVR	518	Zhang, D.	ORGN	655
Zarecki, M.	COMP	144	Zeng, X.	ENFL	89	Zhang, D.	PMSE	150
Zarei, I.	AGFD	37	Zeng, X.	ENVR	511	Zhang, D.	PMSE	151
Zarkovic Grove, T.	COLL	533	Zeng, X.	ORGN	427	Zhang, D.	PMSE	165
Zarkovic Grove, T.	POLY	100	Zeng, X.	ORGN	507	Zhang, D.	PMSE	183
Zarth, A.T.	TOXI	97	Zeng, X.	ORGN	508	Zhang, D.	PMSE	46
Zarzana, C.A.	ENFL	204	Zeng, X.	POLY	236	Zhang, D.	PMSE	497
Zarzynczy, B.	INOR	254	Zeng, X.	POLY	30	Zhang, D.	PMSE	501
Zaslavsky, L.	CINF	93	Zeng, Y.	ANYL	283	Zhang, D.	PMSE	54
Zauhar, R.J.	COMP	401	Zeng, Y.	ENVR	719	Zhang, D.	POLY	21
Zavada, S.R.	PMSE	618	Zeng, Y.	PHYS	288	Zhang, D.	POLY	312
Zavala-Reyna, A.	CHAS	24	Zeng, Y.	PHYS	485	Zhang, F.	AGRO	342
Zavalij, P.	INOR	253	Zeng, Z.	ENFL	497	Zhang, F.	ANYL	78
Zavalij, P.	INOR	534	Zeng, Z.	FLUO	19	Zhang, F.	BIOL	262
Zavalij, P.	INOR	681	Zeng, Z.	COLL	534	Zhang, F.	ENFL	220
Zavalov, O.	COMP	213	Zenker, J.	ENVR	624	Zhang, F.	ENFL	419
Zaware, N.K.	ORGN	117	Zenobi, R.	ANYL	36	Zhang, F.	ENVR	165
Zawatzky, K.	ANYL	251	Zenobi-Wong, M.	POLY	280	Zhang, F.	ENVR	30
Zawatzky, K.	ANYL	332	Zerdoum, A.	PMSE	521	Zhang, F.	ENVR	509
Zayas, B.	COLL	132	Zerdoum, A.	POLY	206	Zhang, F.	ENVR	784
Zayed, A.	ORGN	412	Zerze, G.	PHYS	336	Zhang, F.	MEDI	86
Zbieg, J.	ORGN	692	Zerze, G.	PHYS	74	Zhang, F.	NUCL	26
Zbieg, J.	ORGN	746	Zerze, G.	PHYS	76	Zhang, F.	ORGN	157
Zboril, R.	CATL	335	Zerze, G.H.	PHYS	33	Zhang, F.	AGRO	374
Zdilla, M.	CATL	21	Zesski, J.	CHAS	8	Zhang, G.	BIOL	257
Zdilla, M.	ENFL	211	Zetttl, A.	COLL	441	Zhang, G.	ENVR	559
Zdilla, M.	INOR	156	Zgorski, A.	COMP	220	Zhang, G.	PMSE	604
Zdilla, M.	INOR	158	Zgrabik, J.	CHED	237	Zhang, G.	POLY	217
Zdilla, M.	INOR	185	Zha, R.H.	AEI	64	Zhang, H.	CATL	180
Zdilla, M.	INOR	186	Zha, R.H.	PMSE	505	Zhang, H.	COLL	230
Zdilla, M.	INOR	187	Zhai, C.	PMSE	291	Zhang, H.	COLL	323
Zdilla, M.	INOR	188	Zhai, L.	PMSE	106	Zhang, H.	ENFL	110
Zdilla, M.	INOR	189	Zhai, Q.	INOR	131	Zhang, H.	ENFL	298
Zdilla, M.	INOR	227	Zhai, Y.	ANYL	295	Zhang, H.	ENFL	300
Zdilla, M.	INOR	406	Zhai, Y.	CATL	275	Zhang, H.	ENFL	303
Zdilla, M.	INOR	525	Zhan, C.	BIOL	199	Zhang, H.	ENFL	340
Zdilla, M.	INOR	634	Zhan, J.	COLL	112	Zhang, H.	ENFL	459
Zdilla, M.	INOR	639	Zhan, N.	BIOL	168	Zhang, H.	ENVR	551
Zdilla, M.	ORGN	304	Zhan, N.	COLL	601	Zhang, H.	ENVR	585
Zdilla, M.	ORGN	500	Zhan, W.	PMSE	105	Zhang, H.	ENVR	641
Zdyrko, B.V.	PMSE	365	Zhan, X.	PMSE	478	Zhang, H.	INOR	568
Zdyrko, B.V.	PMSE	514	Zhan, Y.	PMSE	687	Zhang, H.	MEDI	18
Zebo, R.	MEDI	18	Zhang, A.	CATL	213	Zhang, H.	MEDI	267
Zebo, R.	MEDI	267	Zhang, A.	ENFL	315	Zhang, H.	MEDI	380
Zebo, R.	MEDI	380	Zhang, A.	ORGN	533	Zhang, H.	MEDI	54
Zecevic, J.	ENFL	16	Zhang, A.	ORGN	550	Zhang, H.	ORGN	209
Zecevic, J.	ENFL	508	Zhang, B.	ANYL	223	Zhang, H.	ORGN	219
Zedan, A.F.	CATL	239	Zhang, B.	COLL	116	Zhang, H.	ORGN	29
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Zeglis, B.M.	INOR	6	Zhang, B.	ENVR	507	Zhang, H.	ORGN	446
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Zehr, J.D.	CHED	349	Zhang, B.	ENVR	594	Zhang, H.	PMSE	336
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Zhang, H.B.	MEDI	360	Zhang, P.	POLY	322	Zhang, T.	ENVR	20
Zhang, H.J.	ENVR	431	Zhang, Q.	AGRO	225	Zhang, T.	GEOC	34
Zhang, H.J.	ENVR	7	Zhang, Q.	AGRO	92	Zhang, T.	PMSE	121
Zhang, H.J.	ENVR	73	Zhang, Q.	CATL	185	Zhang, T.	PMSE	259
Zhang, H.J.	GEOC	59	Zhang, Q.	COLL	209	Zhang, T.	PMSE	396
Zhang, J.	ANYL	119	Zhang, Q.	COLL	55	Zhang, T.	POLY	581
Zhang, J.	CINF	80	Zhang, Q.	ENFL	156	Zhang, W.	AGRO	201
Zhang, J.	CINF	81	Zhang, Q.	ENFL	286	Zhang, W.	AGRO	290
Zhang, J.	COLL	113	Zhang, Q.	ENFL	373	Zhang, W.	AGRO	291
Zhang, J.	COMP	405	Zhang, Q.	ENVR	218	Zhang, W.	COLL	116
Zhang, J.	ENFL	262	Zhang, Q.	ENVR	293	Zhang, W.	ENFL	11
Zhang, J.	ENVR	133	Zhang, Q.	ENVR	629	Zhang, W.	ENFL	18
Zhang, J.	ENVR	264	Zhang, Q.	FLUO	7	Zhang, W.	ENFL	416
Zhang, J.	ENVR	481	Zhang, Q.	INOR	51	Zhang, W.	ENFL	444
Zhang, J.	ENVR	489	Zhang, Q.	MEDI	284	Zhang, W.	ENFL	85
Zhang, J.	ENVR	555	Zhang, Q.	PHYS	90	Zhang, W.	ENVR	345
Zhang, J.	ENVR	559	Zhang, Q.	PMSE	108	Zhang, W.	ENVR	418
Zhang, J.	INOR	86	Zhang, Q.	PMSE	238	Zhang, W.	ENVR	456
Zhang, J.	MEDI	229	Zhang, Q.	PMSE	279	Zhang, W.	ENVR	545
Zhang, J.	MEDI	284	Zhang, Q.	PMSE	497	Zhang, W.	ENVR	555
Zhang, J.	MEDI	284	Zhang, Q.	PMSE	501	Zhang, W.	ENVR	685
Zhang, J.	MEDI	349	Zhang, Q.	PMSE	575	Zhang, W.	ENVR	789
Zhang, J.	PHYS	174	Zhang, Q.	POLY	287	Zhang, W.	ENVR	790
Zhang, J.	PMSE	493	Zhang, R.	AGFD	155	Zhang, W.	ENVR	805
Zhang, J.	PMSE	661	Zhang, R.	AGFD	225	Zhang, W.	I&EC	4
Zhang, J.	POLY	27	Zhang, R.	CATL	166	Zhang, W.	INOR	669
Zhang, J.	POLY	487	Zhang, R.	CATL	194	Zhang, W.	PHYS	357
Zhang, J.	TOXI	91	Zhang, R.	COLL	219	Zhang, W.	PHYS	363
Zhang, J.Z.	COLL	370	Zhang, R.	COMP	382	Zhang, W.	PMSE	107
Zhang, J.Z.	ENFL	105	Zhang, R.	ENVR	160	Zhang, W.	PMSE	263
Zhang, J.Z.	ENFL	107	Zhang, R.	ENVR	223	Zhang, W.	PMSE	474
Zhang, K.	ANYL	273	Zhang, R.	ENVR	225	Zhang, W.	PMSE	493
Zhang, K.	ANYL	355	Zhang, R.	ENVR	23	Zhang, W.	PMSE	57
Zhang, K.	COLL	89	Zhang, R.	ENVR	281	Zhang, W.	PMSE	9
Zhang, K.	FLUO	4	Zhang, R.	ENVR	282	Zhang, W.	POLY	425
Zhang, K.	INOR	538	Zhang, R.	ENVR	284	Zhang, W.	POLY	425
Zhang, K.	PMSE	5	Zhang, R.	ENVR	626	Zhang, W.	POLY	520
Zhang, K.	PMSE	512	Zhang, R.	ENVR	627	Zhang, W.	POLY	520
Zhang, K.	PMSE	62	Zhang, R.	ENVR	628	Zhang, X.	AGFD	267
Zhang, K.	POLY	472	Zhang, R.	ENVR	633	Zhang, X.	BIOL	45
Zhang, K.	POLY	8	Zhang, R.	ENVR	638	Zhang, X.	BIOL	49
Zhang, L.	AEI	22	Zhang, R.	ENVR	639	Zhang, X.	CATL	266
Zhang, L.	AGFD	198	Zhang, R.	ENVR	642	Zhang, X.	CATL	285
Zhang, L.	AGFD	27	Zhang, R.	ENVR	642	Zhang, X.	ENFL	227
Zhang, L.	CHED	199	Zhang, R.	ENVR	432	Zhang, X.	ENVR	222
Zhang, L.	CHED	37	Zhang, R.	PMSE	45	Zhang, X.	ENVR	468
Zhang, L.	COLL	273	Zhang, S.	AGFD	255	Zhang, X.	ENVR	685
Zhang, L.	COLL	471	Zhang, S.	CATL	6	Zhang, X.	ENVR	685
Zhang, L.	COLL	471	Zhang, S.	CATL	6	Zhang, X.	GEOC	26
Zhang, L.	COMP	21	Zhang, S.	COLL	24	Zhang, X.	INOR	34
Zhang, L.	ENFL	257	Zhang, S.	COLL	266	Zhang, X.	INOR	420
Zhang, L.	ENFL	71	Zhang, S.	COLL	32	Zhang, X.	INOR	87
Zhang, L.	ENVR	634	Zhang, S.	COMP	289	Zhang, X.	MEDI	117
Zhang, L.	GEOC	10	Zhang, S.	COMP	324	Zhang, X.	MEDI	287
Zhang, L.	GEOC	11	Zhang, S.	COMP	357	Zhang, X.	MEDI	349
Zhang, L.	GEOC	11	Zhang, S.	ENFL	365	Zhang, X.	MEDI	384
Zhang, L.	MEDI	104	Zhang, S.	ENFL	4	Zhang, X.	MEDI	43
Zhang, L.	MEDI	271	Zhang, S.	ENFL	431	Zhang, X.	MEDI	79
Zhang, L.	MEDI	404	Zhang, S.	ENFL	435	Zhang, X.	ORGN	157
Zhang, L.	PMSE	669	Zhang, S.	ENFL	55	Zhang, X.	PHYS	135
Zhang, L.	TOXI	64	Zhang, S.	ENVR	122	Zhang, X.	PHYS	268
Zhang, M.	AGRO	234	Zhang, S.	ENVR	293	Zhang, X.	PHYS	417
Zhang, M.	CATL	331	Zhang, S.	ENVR	294	Zhang, X.	PHYS	90
Zhang, M.	COLL	111	Zhang, S.	ENVR	294	Zhang, X.	PMSE	669
Zhang, M.	COLL	558	Zhang, S.	ENVR	443	Zhang, X.	POLY	324
Zhang, M.	COMP	131	Zhang, S.	ENVR	483	Zhang, X.	POLY	574
Zhang, M.	ORGN	207	Zhang, S.	ENVR	759	Zhang, Y.	AGFD	14
Zhang, M.	PMSE	44	Zhang, S.	ENVR	774	Zhang, Y.	AGFD	173
Zhang, N.	AGFD	4	Zhang, S.	ENVR	806	Zhang, Y.	AGFD	195
Zhang, N.	AGFD	65	Zhang, S.	INOR	354	Zhang, Y.	AGFD	69
Zhang, N.	CATL	197	Zhang, S.	INOR	69	Zhang, Y.	AGFD	70
Zhang, N.	CATL	199	Zhang, S.	MEDI	22	Zhang, Y.	AGFD	70
Zhang, N.	COLL	316	Zhang, S.	MEDI	287	Zhang, Y.	AGFD	9
Zhang, N.	ENVR	686	Zhang, S.	MEDI	372	Zhang, Y.	AGRO	118
Zhang, N.	MEDI	334	Zhang, S.	ORGN	515	Zhang, Y.	BIOL	22
Zhang, N.	ORGN	488	Zhang, S.	POLY	285	Zhang, Y.	BIOL	227
Zhang, N.	PMSE	585	Zhang, S.	POLY	324	Zhang, Y.	BIOL	243
Zhang, P.	ENFL	193	Zhang, S.	POLY	330	Zhang, Y.	CATL	185

Zhang, Y.	COLL	122	Zhao, J.	AGFD	84	Zhao, Y.	ENVR	150
Zhang, Y.	COLL	297	Zhao, J.	COLL	158	Zhao, Y.	ENVR	263
Zhang, Y.	COLL	317	Zhao, J.	COLL	162	Zhao, Y.	ENVR	568
Zhang, Y.	COLL	504	Zhao, J.	COLL	241	Zhao, Y.	MEDI	100
Zhang, Y.	COMP	321	Zhao, J.	COLL	421	Zhao, Y.	MEDI	95
Zhang, Y.	COMP	51	Zhao, J.	ENFL	473	Zhao, Y.	ORGN	108
Zhang, Y.	COMP	87	Zhao, J.	ENFL	480	Zhao, Y.	ORGN	14
Zhang, Y.	ENFL	19	Zhao, J.	ENVR	141	Zhao, Y.	ORGN	470
Zhang, Y.	ENFL	419	Zhao, J.	ENVR	475	Zhao, Y.	PHYS	125
Zhang, Y.	ENFL	64	Zhao, J.	INOR	454	Zhao, Y.	PMSE	473
Zhang, Y.	ENVR	156	Zhao, J.	MEDI	304	Zhao, Y.	PMSE	664
Zhang, Y.	ENVR	369	Zhao, J.	ORGN	9	Zhao, Y.	TOXI	4
Zhang, Y.	ENVR	370	Zhao, J.	PMSE	670	Zhao, Z.	ANYL	115
Zhang, Y.	ENVR	464	Zhao, L.	AGRO	373	Zhao, Z.	ANYL	359
Zhang, Y.	ENVR	478	Zhao, L.	CATL	117	Zhao, Z.	CATL	69
Zhang, Y.	ENVR	512	Zhao, L.	CINF	30	Zhao, Z.	ENFL	100
Zhang, Y.	ENVR	532	Zhao, L.	CINF	31	Zhao, Z.	ENFL	229
Zhang, Y.	ENVR	545	Zhao, L.	ENFL	246	Zhao, Z.	ENFL	298
Zhang, Y.	ENVR	684	Zhao, L.	ENVR	739	Zhao, Z.	ENFL	300
Zhang, Y.	ENVR	702	Zhao, L.	MEDI	229	Zhao, Z.	ENFL	303
Zhang, Y.	ENVR	766	Zhao, L.	MEDI	265	Zhao, Z.	ENVR	482
Zhang, Y.	ENVR	789	Zhao, L.	MEDI	377	Zhao, Z.	ENVR	566
Zhang, Y.	ENVR	790	Zhao, L.	MEDI	89	Zhdanov, V.	COLL	397
Zhang, Y.	INOR	13	Zhao, M.	BIOL	37	Zhen, J.	AGFD	101
Zhang, Y.	INOR	454	Zhao, M.	BIOL	64	Zhen, L.	INOR	138
Zhang, Y.	INOR	500	Zhao, M.	COLL	172	Zhen, L.	POLY	270
Zhang, Y.	MEDI	272	Zhao, M.	COLL	434	Zheng, C.	ORGN	679
Zhang, Y.	MEDI	294	Zhao, M.	ENFL	180	Zheng, C.	PMSE	104
Zhang, Y.	ORGN	753	Zhao, M.	ENFL	233	Zheng, C.	PMSE	107
Zhang, y.	PMSE	128	Zhao, M.	ENFL	276	Zheng, F.	ANYL	86
Zhang, Y.	PMSE	174	Zhao, M.	ENFL	441	Zheng, F.	COLL	225
Zhang, y.	PMSE	277	Zhao, M.	ENFL	504	Zheng, F.	ENFL	418
Zhang, Y.	PMSE	476	Zhao, M.	ENVR	368	Zheng, F.	PHYS	506
Zhang, Y.	PMSE	494	Zhao, M.	ENVR	372	Zheng, G.	COLL	277
Zhang, Y.	PMSE	629	Zhao, M.	ENVR	488	Zheng, G.	COLL	326
Zhang, Y.	TOXI	51	Zhao, M.	ENVR	576	Zheng, G.	ENFL	265
Zhang, Y.	TOXI	55	Zhao, M.	ORGN	96	Zheng, H.	AGFD	192
Zhang, Z.	AGFD	193	Zhao, N.	ENVR	218	Zheng, H.	AGFD	43
Zhang, Z.	AGFD	261	Zhao, N.	ORGN	334	Zheng, H.	CATL	334
Zhang, Z.	CATL	143	Zhao, P.	ORGN	705	Zheng, H.	CINF	17
Zhang, Z.	CATL	177	Zhao, Q.	CATL	133	Zheng, H.	ENVR	475
Zhang, Z.	CATL	178	Zhao, Q.	ENVR	413	Zheng, H.	PHYS	478
Zhang, Z.	CATL	185	Zhao, Q.	ORGN	500	Zheng, J.	COMP	367
Zhang, Z.	CATL	82	Zhao, Q.	POLY	324	Zheng, J.	ENFL	334
Zhang, Z.	COLL	191	Zhao, R.	MEDI	267	Zheng, J.	ENVR	160
Zhang, Z.	COLL	217	Zhao, R.	PHYS	224	Zheng, J.	ENVR	160
Zhang, Z.	COLL	556	Zhao, R.	PMSE	91	Zheng, J.	ENVR	21
Zhang, Z.	ENFL	363	Zhao, S.	CATL	229	Zheng, J.	FLUO	3
Zhang, Z.	ENVR	365	Zhao, S.	CATL	49	Zheng, J.	INOR	674
Zhang, Z.	ENVR	683	Zhao, S.	MEDI	388	Zheng, J.	MEDI	345
Zhang, Z.	INOR	420	Zhao, S.	ORGN	358	Zheng, J.	MEDI	94
Zhang, Z.	INOR	472	Zhao, S.	ORGN	360	Zheng, j.	PHYS	295
Zhang, Z.	INOR	620	Zhao, S.	ORGN	500	Zheng, J.	PMSE	669
Zhang, Z.	MEDI	263	Zhao, S.	ORGN	755	Zheng, M.	ENFL	226
Zhang, Z.	MEDI	319	Zhao, S.	PHYS	294	Zheng, M.	ENFL	313
Zhang, Z.	MEDI	407	Zhao, S.	PMSE	172	Zheng, N.	COLL	384
Zhang, Z.	ORGN	734	Zhao, T.	COMP	341	Zheng, N.	ENFL	371
Zhang, Z.	PMSE	668	Zhao, T.	ENVR	436	Zheng, N.	MEDI	247
Zhang, Z.	PMSE	92	Zhao, T.	POLY	269	Zheng, N.	ORGN	288
Zhang, Z.	POLY	193	Zhao, T.	BIOL	231	Zheng, N.	PHYS	225
Zhang, Z.	POLY	251	Zhao, W.	COLL	151	Zheng, P.	ANYL	342
Zhang, Z.	POLY	314	Zhao, W.	COLL	248	Zheng, P.	PMSE	440
Zhang, Z.	POLY	397	Zhao, W.	ENVR	29	Zheng, Q.	ENFL	20
Zhang, Z.	POLY	435	Zhao, W.	ORGN	717	Zheng, Q.	ENVR	364
Zhang, Z.	POLY	530	Zhao, W.	POLY	525	Zheng, Q.	MEDI	171
Zhang-Hoover, J.	MEDI	346	Zhao, X.	COLL	93	Zheng, Q.	ENVR	716
Zhao, A.	ENVR	402	Zhao, X.	ENVR	576	Zheng, W.	AGRO	118
Zhao, A.	ENVR	693	Zhao, X.	INOR	131	Zheng, W.	CATL	173
Zhao, B.	POLY	63	Zhao, X.	INOR	53	Zheng, W.	CATL	313
Zhao, C.	ENVR	90	Zhao, X.	PMSE	497	Zheng, W.	PHYS	466
Zhao, D.	ENVR	346	Zhao, X.	PMSE	501	Zheng, W.	PHYS	74
Zhao, D.	ENVR	418	Zhao, X.	PMSE	523	Zheng, X.	PHYS	313
Zhao, D.	ENVR	430	Zhao, X.	POLY	152	Zheng, Y.	BIOL	45
Zhao, D.	GEOC	75	Zhao, Y.	AGFD	15	Zheng, Y.	CATL	129
Zhao, D.	PMSE	167	Zhao, Y.	ANYL	153	Zheng, Y.	MEDI	100
Zhao, F.	ANYL	169	Zhao, Y.	BIOL	163	Zheng, Y.	MEDI	211
Zhao, F.	ENVR	532	Zhao, Y.	BIOL	180	Zheng, Y.	MEDI	95
Zhao, G.	INOR	83	zhao, y.	CATL	209	Zheng, Y.	PMSE	343
Zhao, H.	ENFL	155	Zhao, Y.	ENFL	250	Zheng, Y.	PMSE	551
Zhao, H.	ENFL	268	Zhao, Y.	ENVR	122	Zheng, Y.	PMSE	652



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Zheng, Z.	COLL	537	Zhou, M.	CINF	86	Zhu, P.	BIOL	92
Zheng, Z.	PMSE	340	Zhou, M.	ENFL	347	Zhu, Q.	ENVR	762
Zheng, Z.	TOXI	42	Zhou, M.	ENFL	356	Zhu, R.	CHED	82
Zhenzhen, X.	ENVR	560	Zhou, M.	INOR	337	Zhu, S.	AGFD	143
Zhi Siang, T.Z.	AGFD	107	Zhou, M.	MEDI	33	Zhu, S.	AGFD	277
Zhi, B.	ENVR	255	Zhou, M.	PHYS	184	Zhu, S.	CATL	272
Zhi, C.	ENFL	341	Zhou, M.	PHYS	185	Zhu, S.	ENVR	506
Zhi, G.	PHYS	105	Zhou, Q.	ORGN	240	Zhu, S.	INOR	14
Zhi, Y.	POLY	313	Zhou, R.	PHYS	284	Zhu, S.	INOR	397
Zhong, B.	BIOL	168	Zhou, R.	PHYS	547	Zhu, S.	INOR	398
Zhong, B.	BIOL	169	Zhou, S.	CATL	19	Zhu, S.	PMSE	603
Zhong, B.	ENVR	542	Zhou, S.	PMSE	488	Zhu, T.	ENVR	285
Zhong, B.	MEDI	276	Zhou, T.	COLL	306	Zhu, T.	ENVR	785
Zhong, B.	MEDI	406	Zhou, T.	INOR	178	Zhu, T.	ENVR	785
Zhong, C.	ANYL	101	Zhou, T.	INOR	549	Zhu, T.	PHYS	105
Zhong, C.	ANYL	103	Zhou, T.	MEDI	33	Zhu, T.	PMSE	495
Zhong, C.	CATL	209	Zhou, T.	PMSE	520	Zhu, W.	INOR	442
Zhong, C.	CATL	210	Zhou, T.	ANYL	333	Zhu, W.	INOR	442
Zhong, C.	CATL	211	Zhou, W.	ENVR	619	Zhu, X.	AGFD	171
Zhong, C.	CATL	216	Zhou, X.	AGRO	146	Zhu, X.	CATL	179
Zhong, C.	COLL	151	Zhou, X.	BIOL	249	Zhu, X.	CATL	247
Zhong, C.	COLL	160	Zhou, X.	CHED	233	Zhu, X.	CATL	284
Zhong, C.	COLL	164	Zhou, X.	ENVR	478	Zhu, X.	COLL	121
Zhong, C.	COLL	233	Zhou, X.	ENVR	532	Zhu, X.	COLL	200
Zhong, C.	COLL	248	Zhou, X.	INOR	442	Zhu, X.	COLL	536
Zhong, C.	COLL	506	Zhou, X.	POLY	213	Zhu, X.	COMP	55
Zhong, C.	PMSE	403	Zhou, Y.	AGRO	92	Zhu, X.	ENFL	345
Zhong, D.	COMP	295	Zhou, Y.	COMP	221	Zhu, X.	ENVR	434
Zhong, H.	ENFL	161	Zhou, Y.	ENVR	20	Zhu, X.	ENVR	509
Zhong, J.	ANYL	7	Zhou, Y.	INOR	315	Zhu, X.	ENVR	809
Zhong, L.	ENFL	378	Zhou, Y.	ORGN	222	Zhu, X.	PMSE	382
Zhong, L.	ENVR	20	Zhou, Y.	PHYS	128	Zhu, X.	PMSE	570
Zhong, M.	PMSE	158	Zhou, Z.	ENFL	139	Zhu, X.	PMSE	591
Zhong, Q.	AGFD	173	Zhou, Z.	INOR	633	Zhu, Y.	AGFD	126
Zhong, Q.	AGFD	240	Zhu, C.	ENFL	379	Zhu, Y.	AGFD	146
Zhong, T.	POLY	111	Zhu, C.	PMSE	545	Zhu, Y.	AGFD	25
Zhong, W.	ENVR	676	Zhu, D.	ENVR	213	Zhu, Y.	ANYL	382
Zhong, W.	MEDI	388	Zhu, D.	ENVR	336	Zhu, Y.	ENFL	221
Zhong, Y.	BIOL	172	Zhu, D.	ENVR	545	Zhu, Y.	ENFL	353
Zhou, A.	INOR	405	Zhu, D.	ENVR	716	Zhu, Y.	ENFL	397
Zhou, A.	ORGN	263	Zhu, D.	ENVR	718	Zhu, Y.	ENFL	414
Zhou, A.	PHYS	476	Zhu, D.	ENVR	789	Zhu, Y.	ENFL	502
Zhou, A.	PMSE	586	Zhu, D.	ENVR	790	Zhu, Y.	ENVR	627
Zhou, A.	PMSE	639	Zhu, D.	ENVR	805	Zhu, Y.	PHYS	118
Zhou, B.	CATL	320	Zhu, F.	ANYL	316	Zhu, Y.	PMSE	485
Zhou, C.	BIOL	196	Zhu, G.	ENFL	75	Zhu, Y.	PMSE	667
Zhou, C.	ENFL	140	Zhu, G.	PMSE	107	Zhu, Y.	PMSE	9
Zhou, C.	ENVR	719	Zhu, H.	CATL	50	Zhu, Y.	CATL	316
Zhou, D.	COLL	230	Zhu, H.	CINF	11	Zhu, Z.	COLL	471
Zhou, D.	ENVR	588	Zhu, H.	CINF	30	Zhu, Z.	ENFL	248
Zhou, F.	ORGN	768	Zhu, H.	CINF	31	Zhu, Z.	ORGN	224
Zhou, G.	COLL	391	Zhu, H.	ENFL	150	Zhuang, H.	BIOL	227
Zhou, G.	COMP	403	Zhu, H.	ENVR	768	Zhuang, H.	COMP	382
Zhou, G.	MEDI	276	Zhu, H.	ENVR	807	Zhuang, L.	MEDI	100
Zhou, G.	MEDI	84	Zhu, J.	ANYL	86	Zhuang, L.	MEDI	95
Zhou, G.	PHYS	550	Zhu, J.	COLL	261	Zhuang, M.	PMSE	187
Zhou, H.	COLL	525	Zhu, J.	ENFL	241	Zhuang, W.	ENVR	173
Zhou, H.	COMP	89	Zhu, J.	ENVR	193	Zhuang, Z.	BIOL	192
Zhou, H.	ENVR	367	Zhu, J.	MEDI	407	Zhuang, Z.	BIOL	69
Zhou, H.	ENVR	369	Zhu, J.	PHYS	351	Zhukov, A.	MEDI	30
Zhou, H.	ENVR	370	Zhu, K.	CATL	177	Zhuo, H.	ENVR	368
Zhou, H.	ENVR	752	Zhu, L.	ENFL	158	Zhuo, X.	COLL	121
Zhou, H.	INOR	240	Zhu, L.	ENFL	356	Zhuo, X.	COLL	200
Zhou, H.	INOR	635	Zhu, L.	ENVR	713	Ziegler, D.	ORGN	742
Zhou, H.	INOR	67	Zhu, L.	ENVR	714	Zielinska, D.	AGFD	149
Zhou, H.	MEDI	23	Zhu, L.	ENVR	715	Zielinski, H.	AGFD	149
Zhou, H.	PHYS	211	Zhu, L.	ENVR	758	Zielinski, J.	ANYL	228
Zhou, H.	PMSE	2	Zhu, L.	ENVR	810	Ziem, B.	POLY	286
Zhou, H.	PMSE	520	Zhu, L.	PHYS	519	Ziemann, P.	PHYS	555
Zhou, J.	AGFD	97	Zhu, L.	PMSE	332	Ziamba, L.	PHYS	90
Zhou, J.	COMP	289	Zhu, L.	PMSE	513	Zietsman, J.	ENVR	283
Zhou, J.	ENFL	417	Zhu, L.	PMSE	604	Zietsman, J.	ENVR	284
Zhou, J.	ENVR	448	Zhu, L.	PMSE	668	Zietsman, J.	ENVR	643
Zhou, J.	ENVR	468	Zhu, M.	CATL	36	Ziffer, M.	PHYS	429
Zhou, J.	INOR	544	Zhu, M.	CATL	41	Zikos, C.	COMP	92
Zhou, J.	MEDI	100	Zhu, M.	COLL	288	Zillgens, B.	AGRO	363
Zhou, J.	MEDI	16	Zhu, M.	COLL	336	Zimmerberg, J.	PHYS	142
Zhou, J.	MEDI	95	Zhu, M.	GEOC	86	Zimmerman, P.M.	CATL	164
Zhou, I.	CATL	319	Zhu, M.	PHYS	226	Zimmerman, P.M.	CATL	76
Zhou, L.	ENFL	134	Zhu, N.	POLY	393	Zimmerman, P.M.	COMP	142

Zimmerman, P.M.	COMP	185	Zohre, G.	COLL	347	Zuckermann, R.N.	POLY	25
Zimmerman, P.M.	ENFL	295	Zoi, I.	PHYS	409	Zuckermann, R.N.	POLY	26
Zimmerman, P.M.	PHYS	250	Zolotarskaya, O.Z.	POLY	484	Zuckermann, R.N.	POLY	462
Zimmerman, S.C.	ORGN	518	Zondlo, N.J.	PHYS	30	Zuckermann, R.N.	POLY	483
Zimmerman, S.R.	ANYL	130	Zones, S.I.	CATL	269	Zuend, A.	PHYS	556
Zimmermann, M.	MEDI	33	Zones, S.I.	ENFL	483	Zugic, B.	CATL	48
Zimmermann, S.	MEDI	198	Zong, C.	ANYL	358	Zumbulyadis, A.	HIST	38
Zimmermann, T.	CHED	280	Zong, Y.	MEDI	302	Zumrut, H.	MEDI	69
Zimmt, M.	COLL	178	Zong, Z.	POLY	85	Zuo, J.	ENFL	513
Zimudzi, T.	POLY	437	Zonja, B.	ENVR	770	Zuo, L.	ENFL	241
Zinga, S.	PHYS	159	Zorlutuna, P.	PHYS	144	Zuo, P.	ENFL	388
Zinga, S.	PHYS	73	Zorn, G.	COLL	551	Zuo, P.	ENFL	390
Zink, J.I.	AEI	29	Zou, G.	POLY	62	Zuo, S.	ENFL	240
Zink, J.I.	ENVR	694	Zou, J.	PHYS	162	Zuo, X.	GEOC	52
Zink, J.I.	INOR	217	Zou, J.	PMSE	699	Zupa-Fernandez, A.	MEDI	272
Zink, J.I.	INOR	366	Zou, J.	POLY	531	Zurek, N.	ANYL	215
Zinker, B.	MEDI	18	Zou, L.	COLL	260	Zuverza, N.	ENVR	739
Zinker, B.	MEDI	267	Zou, L.	PHYS	159	Zuverza-Mena, N.	ENVR	660
Zinker, B.	MEDI	380	Zou, N.	MEDI	37	Zuverza-Mena, N.	ENVR	694
Zinn, N.	AGRO	186	Zou, N.	MEDI	38	Zweigenbaum, J.	AGRO	86
Zipfel, S.	ORGN	206	Zou, S.	COLL	421	Zweigenbaum, J.	ENVR	777
Ziylan Yavas, A.	ENVR	583	Zou, S.	COLL	547	Zwickau, B.	CHED	106
Ziylan Yavas, A.	ENVR	587	Zou, Y.	PMSE	171	Zwier, T.S.	AEI	51
Zlibut, E.	POLY	502	Zowada, R.	PMSE	74	Zwier, T.S.	PHYS	327
Zlotkowski, K.	BIOL	199	Zrinyi, N.	ENVR	524	Zwier, T.S.	PHYS	414
Zoback, M.	GEOC	13	Zschoche, S.	POLY	174	Zwijnenburg, M.	ENFL	35
Zobel-Thropp, P.A.	BIOL	130	Zubieta, J.A.	INOR	257	Zwijnenburg, M.	PMSE	3
Zoellner, B.	INOR	375	Zublick, S.	YCC	9	Zydney, A.L.	BIOL	208
Zoerb, M.	PHYS	127	Zubris, D.L.	INOR	474	Zydney, A.L.	ENVR	48
Zoh, K.	ENVR	656	Zuccaccia, C.	INOR	666	Zydziaik, N.	POLY	547

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ACS Volunteers contribute thousands of hours of service to create and implement programs that promote our science, benefit our members, and contribute to the development of our communities. Thanks to your contributions, the Society provides its nearly 157,000 members with:

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We salute the outstanding volunteer efforts that have contributed to the suc-

cess of this year's national and regional meetings, including division officers and national meeting program chairs, regional meeting organizers and program chairs, symposium organizers, session and award presiders, short course and workshop instructors, career counselors, and all members of our Society's governance. To get involved, visit [www.acs.org](http://www.acs.org).



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## Shuttle Schedule

### SUNDAY, AUGUST 21

7:00 AM – 10:00 AM ..... 15 minute intervals  
 10:00 AM – 4:00 PM ..... 30 minute intervals  
 4:00 PM – 7:00 PM ..... 15 minute intervals  
 7:00 PM – 11:00 PM ..... 30 minute intervals

### MONDAY, AUGUST 22

7:00 AM – 10:00 AM ..... 15 minute intervals  
 10:00 AM – 4:00 PM ..... 30 minute intervals  
 4:00 PM – 11:00 PM ..... 15 minute intervals

### TUESDAY, AUGUST 23

7:00 AM – 10:00 AM ..... 15 minute intervals  
 10:00 AM – 4:00 PM ..... 30 minute intervals  
 4:00 PM – 11:00 PM ..... 15 minute intervals

### WEDNESDAY, AUGUST 24

6:30 AM – 11:00 PM ..... 30 minute intervals

### THURSDAY, AUGUST 25

7:00 AM – 6:00 PM..... 60 minute intervals

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# American Chemical Society

## Volunteer/National Meeting Attendee Conduct Policy

One of the key strengths of the ACS has been the enduring and varied contributions made by its thousands of dedicated volunteers.

Another unassailable strength of the ACS is its outstanding national meetings program. ACS national meetings are among the most respected scientific meetings in the world. ACS national meetings offer scientific professionals a legitimate platform to present, publish, discuss, and exhibit the most exciting research discoveries and technologies in chemistry and its related disciplines. Furthermore, ACS national meetings facilitate networking opportunities, career development and placement, and provide organizations with opportunities to exhibit products and services to targeted audiences.

The Society's Congressional Charter explicitly lists among its objectives "the improvement of the qualifications and usefulness of chemists through high standards of professional ethics, education and attainments..." The ACS expects its volunteers and national meeting attendees to display the highest qualities of personal and professional integrity in all aspects of their ACS-related activities. Indeed, every chemical professional has obligations to the public, to volunteer and staff colleagues, and to science.

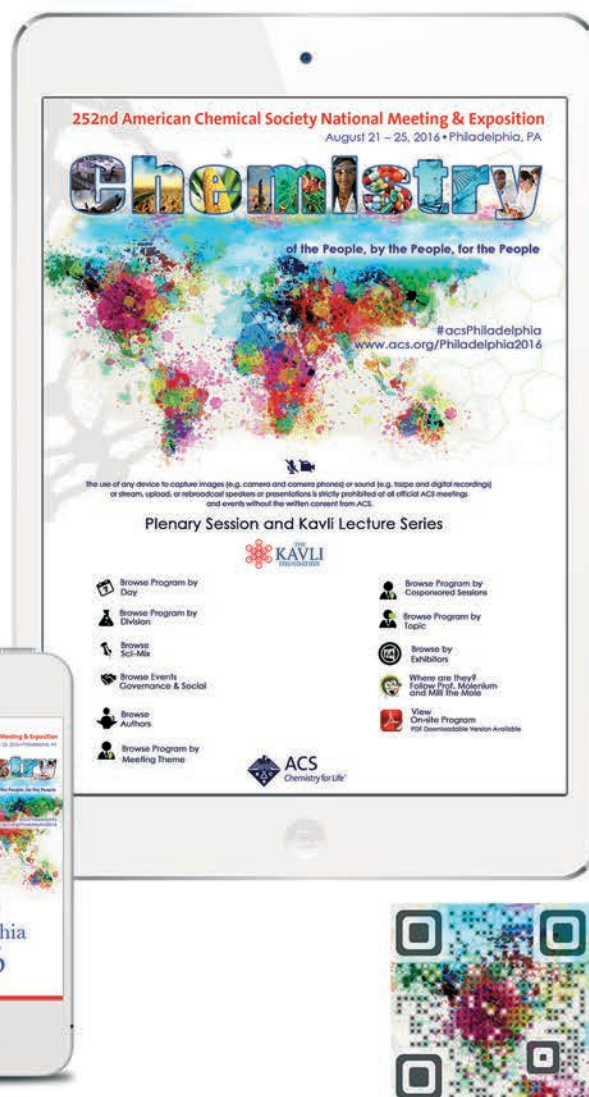
Accordingly, and to foster a positive environment built upon a foundation of trust, respect, open communications, and ethical behavior, the ACS Board of Directors has issued this Conduct Policy. It applies to ACS Volunteers, i.e., it applies to individuals conducting the business and affairs of the ACS without compensation for that conduct. It also applies to attendees at ACS national meetings. Volunteers and national meeting attendees should at all times abide by this Conduct Policy. Specifically:

1. Volunteers should understand and support ACS's vision and mission.
2. Volunteers and national meeting attendees should contribute to a collegial, inclusive, positive, and respectful environment for their fellow volunteers and attendees, as well as for other stakeholders, including national meeting vendors and ACS staff.
3. Volunteers and national meeting attendees must avoid taking any inappropriate actions based on race, gender, age, religion, ethnicity, nationality, sexual orientation, gender expression, gender identity, marital status, political affiliation, presence of disabilities, or educational background. They should show consistent respect to colleagues, regardless of the level of their formal education and whether they are from industry, government or academia, or other scientific and engineering disciplines.
4. Volunteers and national meeting attendees should interact with others in a cooperative and respectful manner. Volunteers and national meeting attendees should refrain from using insulting, harassing, or otherwise offensive language in their ACS interactions. Disruptive, harassing, or inappropriate behavior toward other volunteers, stakeholders, or staff is unacceptable. Personal boundaries set by others must be observed. Harassment of any kind, including but not limited to unwelcome sexual advances, requests for sexual favors, and other verbal or physical harassment will not be tolerated.
5. Volunteers must obey all applicable laws and regulations of the relevant government authorities while acting on behalf of the ACS. Likewise, national meeting attendees must obey all applicable laws and regulations of the relevant government authorities while attending ACS national meetings. Volunteers and national meeting attendees alike should also ensure that they comply with all applicable safety guidelines relating to public chemistry demonstrations.
6. Volunteers and national meeting attendees should only use ACS's trademarks, insignia, name, logos, and other intellectual property in compliance with ACS regulations and directives as may be issued from time to time.
7. Violations of this Conduct Policy should be reported promptly to the ACS Secretary and General Counsel or to the Chair of the ACS Board of Directors. In cases of alleged persistent and/or serious violations of this Conduct Policy, the Board shall review the evidence and shall take such actions as may be appropriate, including but not limited to requiring volunteers to leave their volunteer position(s); precluding volunteers from serving in Society volunteer roles in the future; requiring national meeting attendees to leave the meeting; and, precluding meeting attendees from attending future ACS national meetings. ACS, through its Board of Directors, reserves the right to pursue additional measures as it may determine are appropriate.

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