

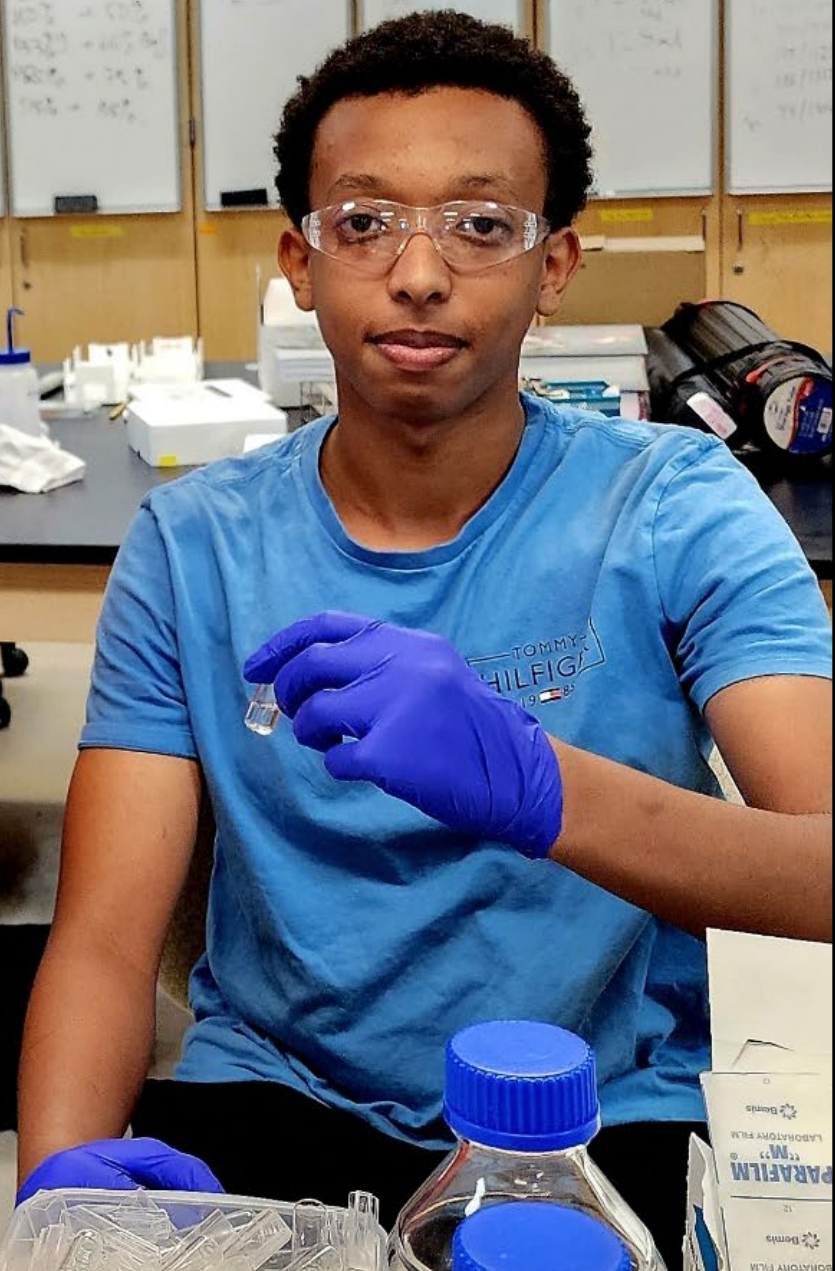


ACS
Chemistry for Life®

ACS Project SEED

2023 Program Report to Donors

Front cover: Katherine L., left, and Rona I. at Texas Wesleyan University Project SEED Site.
Inside front cover: Mahmoud H., left, and Ahmed O. at University of Maryland, Eastern Shore Project SEED Site.



ACS PROJECT SEED 2023 DONOR REPORT

Remarkably, this year marks the 55th anniversary of the founding of ACS Project SEED. Over the decades, in the face of so many social and economic changes—including those brought on by a pandemic—the program continues to remain steadfast in its mission. Then as now, the program invites talented, economically disadvantaged high school students into professional labs to enable them to experience the joys and challenges of chemistry research. Over the years, Project SEED has grown and evolved to also enable students to explore exciting scientific career paths and build college preparation and professional development skills.

Today, the program is stronger than ever. In 2023, the Project SEED summer program attracted 1,690 student applicants, of which 320 students were selected to engage in hands-on, in-person research projects at more than 60 participating research sites across the country. An additional 13 students participated in virtual research projects, connecting with a scientist mentor remotely. This year, participation in the program grew more than 20% compared to summer 2022, when in-person research resumed following the pandemic.

Each 2023 program participant attended a week-long Project SEED virtual orientation. It incorporated lab safety and résumé-building courses as well as professional development training to prepare them for their research work. In addition, the 2023 program again offered each student the opportunity to attend webinars or virtual seminars on topics ranging from pharmacology to college readiness to analytical chemistry careers.

At the end of the summer, a large group of more than 40 Project SEED students traveled to San Francisco to attend ACS Fall 2023. Students were excited to present posters on their work, attend inspiring scientific talks, and network with peers and professional scientists, including Nobel Laureates. For some, the trip marked the first time they ventured out of their home state.

From orientation through final poster presentations, the 2023 participants said that they were thrilled with their overall summer experience. Indeed, year after year, Project SEED participants report that they leave the program with a better understanding of science, an enhanced appreciation for chemistry and laboratory research, and a clearer vision for their future.

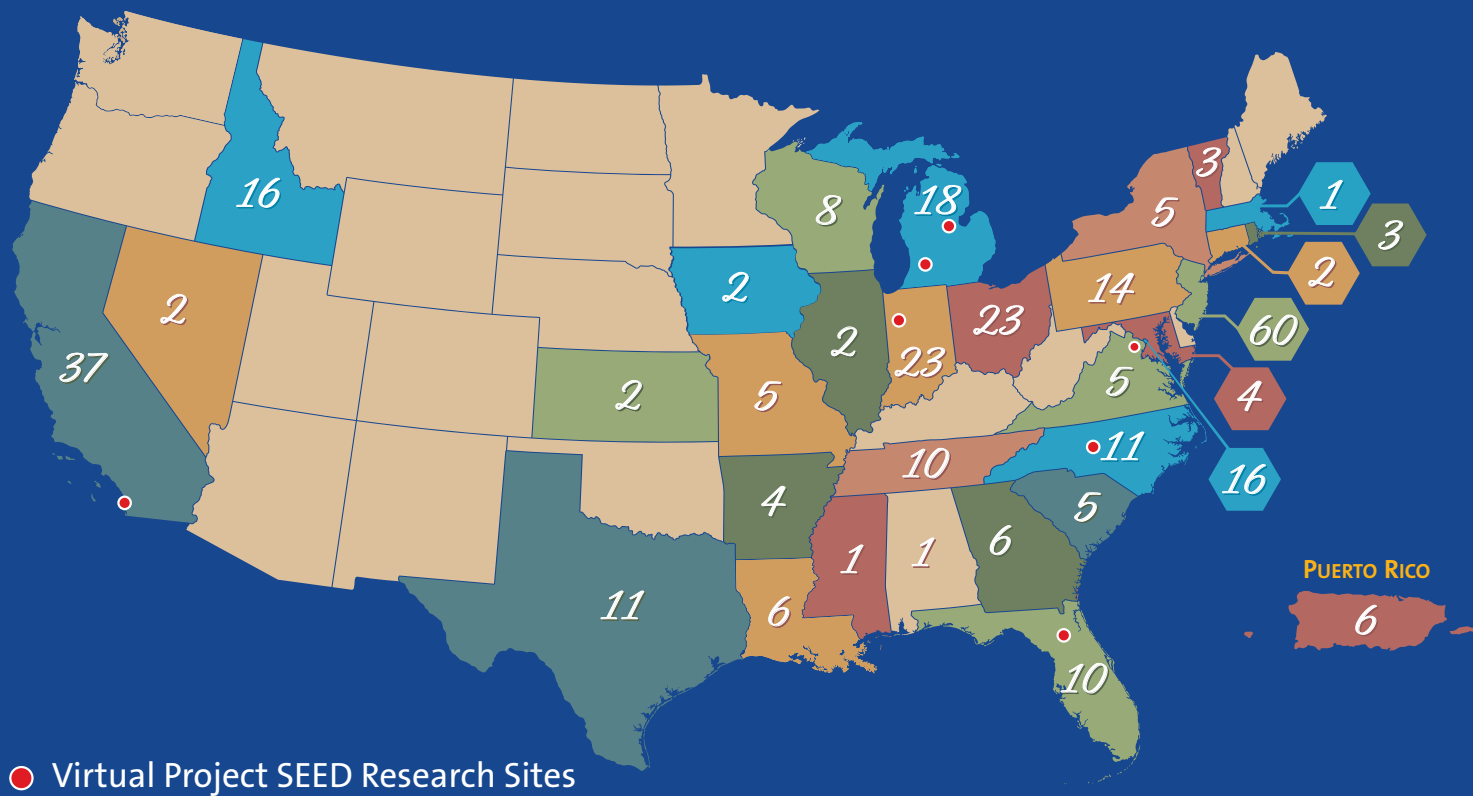
Like the thousands of Project SEED participants before them, this year's students are also benefitting from an expanding, donor-funded Project SEED College Scholarship Program. As they enter their freshman year, all Project SEED participants are eligible to compete for the scholarships that help to sustain their enthusiasm for science and their academic success. Scholarships are awarded to students who demonstrate a high potential to succeed in chemistry and declare a major in chemistry or another branch of science or engineering.

As we celebrate Project SEED's 55th year, we can attribute its success and longevity to the support of donors like you and the enthusiasm and dedication of hundreds of volunteer mentors and coordinators who work tirelessly with students at the local level.

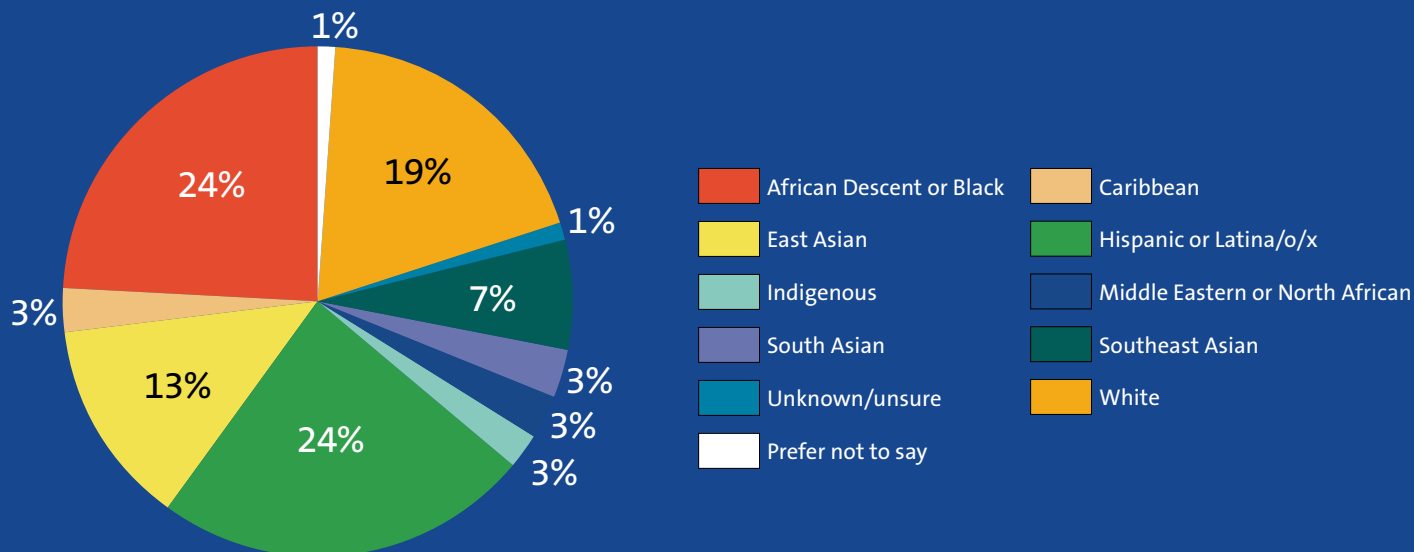
“Many years ago, when I first got involved with my local Project SEED program, it didn’t take me long to recognize the program’s impact and feel motivated to not only volunteer my time, but also start making donations to Project SEED,” says Judith Faye Rubinson, a 50-year ACS member and a member of the Committee on Project SEED. “Working with Project SEED students, I have watched their confidence blossom as they explore areas of science and career paths they might not otherwise have discovered. And although not all SEED students will become chemists, they participate in a program that helps them become scientifically literate citizens who think critically, analyze data, and ask informed questions – something our country desperately needs.”

Because of the commitment of ACS members like you, many bright students from economically disadvantaged backgrounds will be better positioned to achieve their academic and professional goals. As we continue to work together, we will ensure that the next generation is equipped to tackle challenges and seize new opportunities that we cannot yet begin to imagine. **Thank you!**

2023 PROJECT SEED RESEARCH SITES



2023 PROJECT SEED DEMOGRAPHICS



- Of the 333 students, 18% identified as more than one race/ethnic group.
- 63% of students identified as female; 34% as male; and 2% as non-binary.
- 22% returned to the program as Summer II students.

“During Project SEED 2022 and 2023, I was able to collaborate with undergraduates and grad students who allowed me to work independently on my projects. It was amazing to be working toward solving very real problems in our world—and to know that the science I was involved with could possibly impact a person’s life in the future. Another highlight was that through my contributions to our work, I was named as a coauthor on my first scientific publication!”

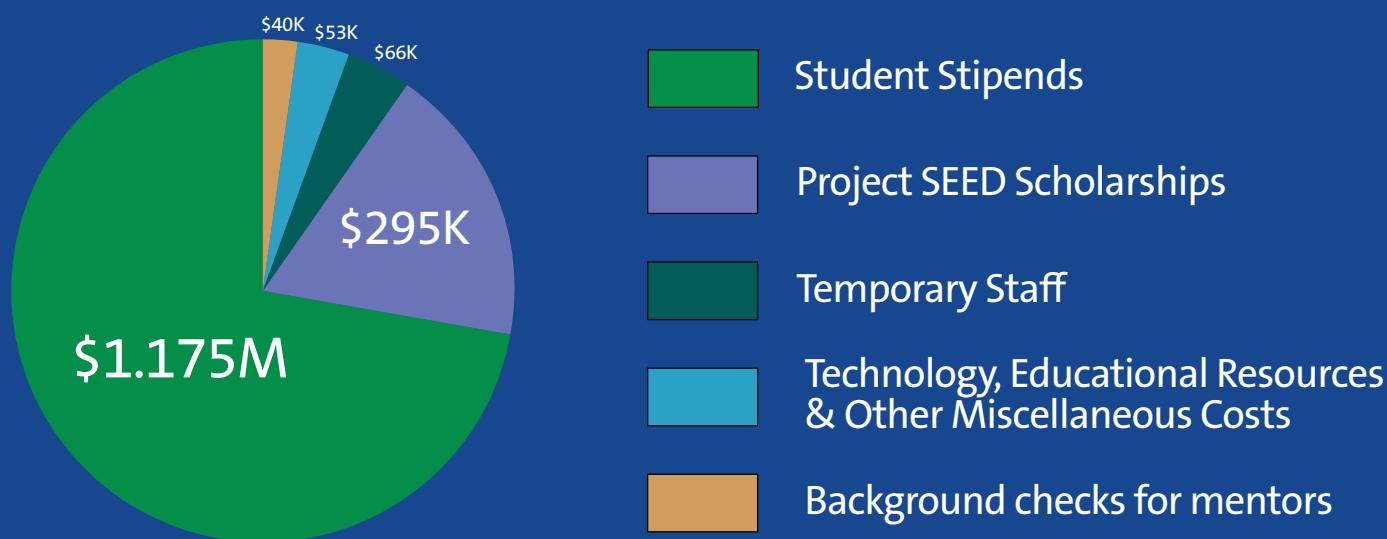
Brittany R.

**University of Puerto Rico, Rio Piedras Project SEED Site
Research Project Title: Enhancing the Anticancer Potency of
Titanium(IV) Chemical Transferrin Mimetic Complexes by
Exploring Synergism with a Fused Iron Chelator**



2023 FINANCIAL EXPENDITURES

Of the \$1.6 million in total Project SEED expenditures, 90% went to student participants in the form of stipends and scholarships. An additional \$428 thousand in student stipends were provided through the generous support of matching funds from Project SEED research sites and local sections.



“I want to sincerely thank donors who contribute to Project SEED! The program provides a great opportunity for students like me to learn about chemistry, enhance their teamwork skills, be better communicators, build self-confidence, and even learn about themselves and what careers they might consider in the future. We appreciate all you do to make this possible!”

Brian T.

**University of the Pacific, Stockton, California Project SEED Site
Research Project Title: Understanding Cancer Biology**



“In my first week in Project SEED, I struggled to understand the high-level chemistry concepts and was nervous to ask for help. By persevering—and through the support of my mentors—this program enabled me to overcome this fear, and now I feel my communication skills were greatly improved.

“The best part of the summer was conducting lab research and presenting at the Idaho Conference on Undergraduate Research.

“Project SEED was very valuable to me not only for broadening my view of chemistry but informing me more about the college experience.”

Galib G.

Boise State University Project SEED Site

Research Project Title: Developing Electrode Materials for Rechargeable Sodium-ion Batteries



“My first experience with Project SEED was participating in the 2021 Virtual Summer Camp. That led me to an amazing opportunity to connect with my program coordinator in Indiana and work in a lab during the school year. During summer 2023, I was accepted as a Project SEED virtual research student, and I had the chance to meet with a graduate student who uses special software in his research. After this summer’s program, I feel increasingly interested in scientific simulations and modeling in chemistry.

“Project SEED was the turning point for me. Working with and learning from amazing mentors and grad students and experiencing research at a younger age has helped me to develop new skills and gain confidence that carries outside the lab. I believe Project SEED changes lives and I would like to sincerely thank Project SEED donors for their support and trust in us.”

Sila Y.

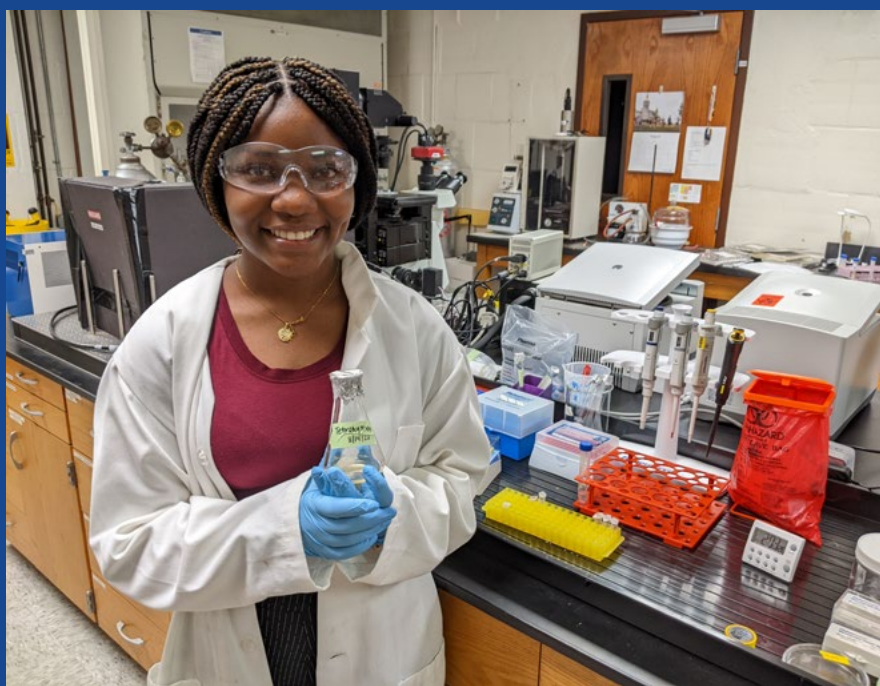
Carbondale, Illinois

Virtual Research Project through Purdue University

Research Project Title:

Computational Studies of Catalyst Surfaces

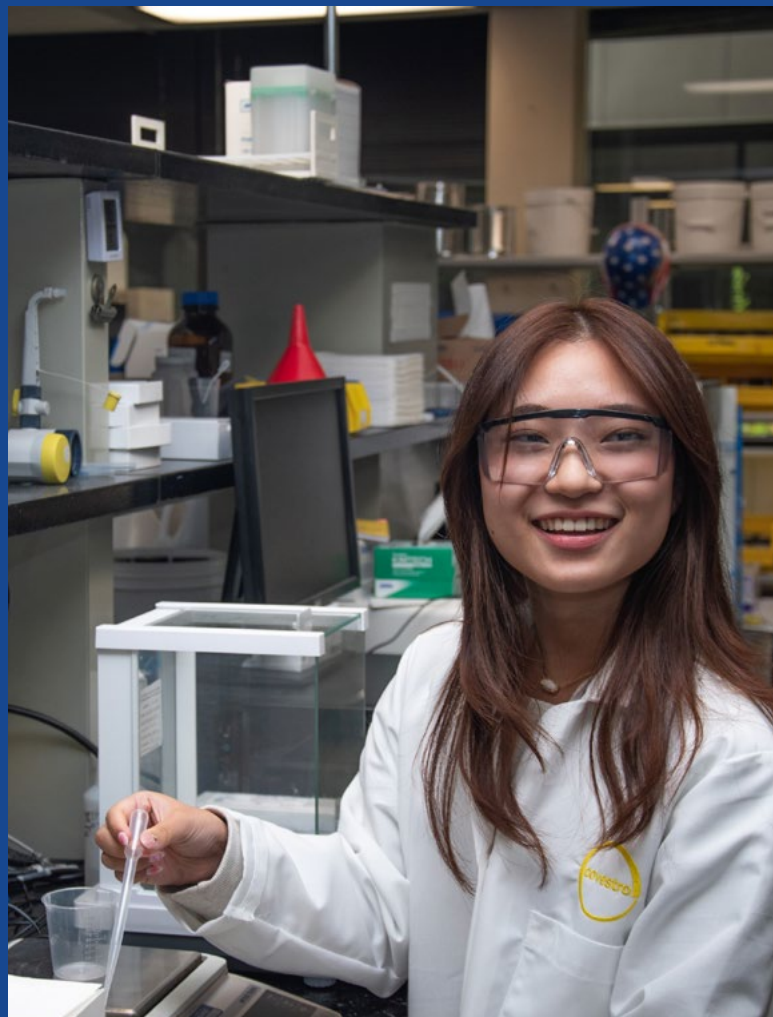
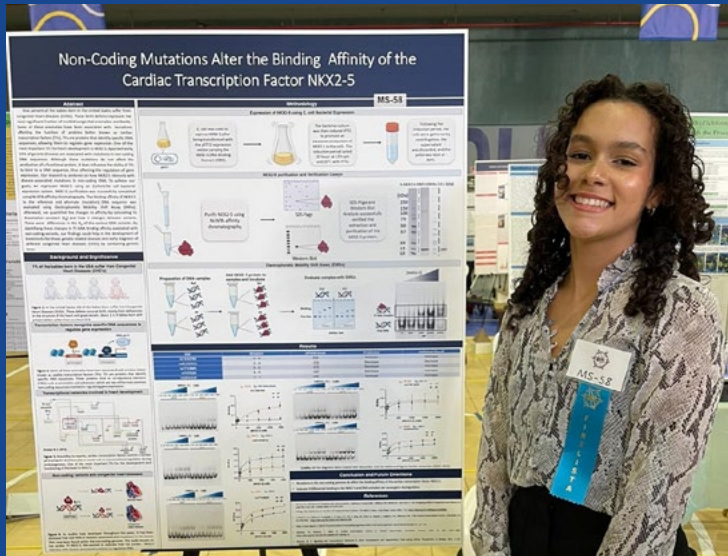




Project SEED Students in Action

From top-left, clockwise on pages 6 and 7:

1. Kenneth S. (left) with undergraduate Zayda D. at the University of Tennessee at Chattanooga.
2. Aliyah B. (left), grad student Ethan K., ACS CEO Al Horvath, and Maya A. at the University of Wisconsin-Milwaukee.
3. Brittany R., of the University of Puerto Rico, Rio Piedras Project SEED Site, presents her research.
4. Adrian C. at Rowan University.
5. Boa S. at the Covestro Project SEED Site.
6. Chloe W. at Boise State University
7. Asia H. at Trinity College.



ACS PROJECT SEED COLLEGE SCHOLARSHIPS

All Project SEED participants are eligible to compete for ACS Project SEED College Scholarships. Scholarships are awarded to students who demonstrate a high potential to succeed in chemistry and declare a major in chemistry or another branch of science or engineering. The scholarships help sustain students' excitement for science by providing the financial support they need to take the next step in their academic journey. In 2023, 48 students were each awarded a one-year scholarship, and an additional 12 were awarded renewable Project SEED College Scholarships. Biographies of a sampling of these talented students are included here.

Jessica Alvarez Duke University

Jessica Alvarez is a first-year student at Duke University, where she is pursuing a bachelor's degree in biomedical and chemical engineering. She graduated from the School for Advanced Studies in her native Miami in May 2023. Under Project SEED 2022, she conducted computational chemistry research with her Project SEED mentor Professor Rajeev Prabhakar at the University of Miami. Jessica also participated in the Project SEED Virtual Summer Camps in 2020 and 2021.



“Project SEED has undoubtedly changed my life for the better. I am certain I would not be anywhere near where I am currently, or the person I am today, without Project SEED and the Project SEED College Scholarship Program. Thank you, donors, for supporting me!”

Zon (Forest) Moua



Zon (Forest) Moua Harvard University

Zon (Forest) Moua is a freshman at Harvard University, where he is pursuing a bachelor's degree in bioengineering and biomedical engineering. He graduated from Merced High School in California, in spring 2023. As part of Project SEED in 2022, Zon conducted research on the functionalization of collagen-mimetic peptides under the mentorship of Dr. Andrea Merg at the University of California, Merced. Zon intends to pursue his doctorate in biochemistry or biomedicine and establish a career as a professor at a university research institution.



Afton Fults
Rice University

Afton Fults is a sophomore at Rice University, where she is pursuing a major in chemistry with a concentration in medicinal/organic chemistry. During the 2022-23 school year, Afton worked in Dr. Damian Young's lab at Baylor College of Medicine, researching the synthesis of 2,3-morpholine products for the purpose of fragment-based drug discovery. During Project SEED 2022, she investigated the chemical reactions induced by strong-field femtosecond lasers at Virginia Commonwealth University. In 2020 and 2021, Afton participated in the Project SEED Virtual Summer Camp. Afton plans to pursue an MD/PhD to continue her passion for research and medicine.



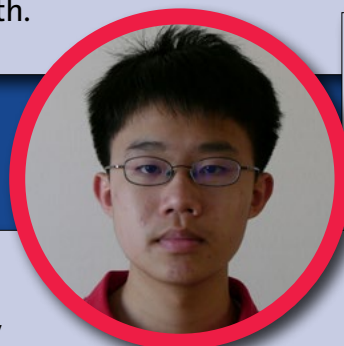
Avey Rodriguez
University of Texas at Austin

Avey Rodriguez is pursuing a bachelor's degree in chemical engineering at the University of Texas at Austin. He graduated from North Shore Senior High School in Houston in 2022. He participated in the 2021 Project SEED Virtual Summer Camp, which he said helped him broaden his understanding of chemistry and clarify his future career path.



Scarleth Garza-Gastelum
University of North Carolina at Chapel Hill

Scarleth Garza-Gastelum is a freshman at the University of North Carolina at Chapel Hill. Born and raised in Durham, North Carolina, she graduated from the City of Medicine Academy. Under Project SEED, she conducted research at North Carolina Central University chemistry department under the supervision of Dr. Omar Christian in 2022. The previous summer, she participated in the Project SEED Virtual Summer Camp. Scarleth plans to attend medical school and become a physician.



Hansen Yang
University of California, Berkeley

Hansen Yang is a freshman at the University of California, Berkeley, where he is pursuing a bachelor's degree in chemical engineering as a UC Regent's and Chancellor's Scholar. He graduated from Abraham Lincoln High School in San Francisco. Under Project SEED in 2022, Hansen studied the use of cobalt and nickel oxyhydroxides to accelerate the production of oxygen at San Francisco State University. He participated in the program a second time last summer at Lawrence Livermore National Laboratory, focusing on materials science and nanotechnology—fields he hopes to pursue in his future career.

“My college experiences have played a pivotal role in my growth as a person. I am excited about what the future holds. I could not have accomplished as much as I have without the support of donors who believed in me and invested in me through Project SEED and the Project SEED Scholarship Program. Thank you so much!”

Bernice Owusu
Project SEED College Scholarship Recipient
Muhlenberg University



GIFTS TO ENDOW COLLEGE SCHOLARSHIPS

“During the many years that I worked in the ACS Education Division I often supported Project SEED with small donations. I was impressed with the way it enabled economically disadvantaged students to become more involved in the practice of chemistry and encouraged them to pursue their chemistry studies.

“As a lifelong supporter of chemical education, I believe that using funds from my IRA as a gift to the Project SEED Endowment ensures that my support extends into the future and will enable many students to pursue higher education in chemistry and related sciences. I plan to continue to add to the endowment over time so that even more students may be inspired to pursue careers in science.”



Endowment donors Cyrelle Gerson (right) and her husband Craig Osteen.

*Cyrelle Gerson, ACS retiree
Arlington, Virginia*

WHERE ARE THEY NOW?

Project SEED Alum Kevin Hunt Chief Scientific Officer, Vanqua Bio

Kevin received his BS in chemistry at Tarleton State University in Stephenville, Texas. He earned a PhD in organic chemistry from Indiana University and was a Postdoctoral Research Fellow at The Scripps Research Center.

Kevin began his career at Array BioPharma in Boulder, before moving to Calico Life Science, where he focused on novel treatments for Parkinson's disease. Later, he was a faculty member in the Center for Alzheimer's and Neurodegenerative Diseases at The University of Texas Southwestern Medical Center. Prior to joining Vanqua Bio as its Chief Scientific Officer, he was Executive Director of Drug Discovery for Edgewise Therapeutics. Kevin has discovered multiple clinical candidates for life-threatening diseases and has published over 50 patents and publications.



Would you briefly describe your ACS Project SEED experience?

I participated in Project SEED at Tarleton State University, where I was part of a cohort of mostly rural high schoolers who aspired to be first-generation college students. We rotated through each professor's laboratory while being introduced to the fundamentals of college chemistry. Through the program, we also learned about the potential for chemistry to impact our lives and society.

How did your Project SEED experience impact you and influence your career aspirations?

Before I participated in Project SEED, I was already vaguely familiar with chemical engineering coming from an oil and gas-focused county in Texas. Through the program, I was excited to learn about the use of chemistry in drug discovery and development, novel materials, space exploration, renewable energy, agriculture, and many other fields. Project SEED was the catalyst that took me from the farm to pharma.

As a Project SEED donor, what motivates you to give?

Today, I am fortunate to be able to discover and develop drugs that have the potential to improve the lives of patients. Due to a successful career in biotech/pharma, it is my privilege to help young women and men from underprivileged segments of our nation – from rural farms to our largest cities—realize their passion for chemistry by supporting Project SEED.

I want to help enable this generation to impact human health, improve agricultural output, preserve our environment, and expand our understanding of the universe, regardless of their background or financial means.

LOOKING AHEAD

Thanks to the generous support of donors and volunteers, ACS again served hundreds of scientifically curious high school students through the 2023 Project SEED program.

Looking to the future, the ACS Education staff is working to incorporate more online components and practices into the traditional Project SEED program model to further enrich the program. These features may include new chemistry-based resources, chemistry seminars, and career development workshops to better serve students who come into the program with varying levels of chemistry knowledge. Work is also underway to build an administrative portal to help improve communications with mentors and coordinators.

At the same time, the dedicated ACS Education staff members are developing more sophisticated methods for assessing how Project SEED is impacting each individual student as well as entire student cohorts from year to year. They are revamping pre- and post-program student surveys to better gauge student outcomes and inform the development of training plans.

This training would help students learn about their professional identity while exploring STEM careers, gaining self-awareness, making informed decisions, and setting goals. The foundational framework for these evaluations grew from the National Science Foundation-funded project, “Impact Indicators and Instruments for Individual Development Plans,” says Corrie Kuniyoshi, manager of the ACS Project SEED team, who was the primary investigator for the project. Another goal for 2024 is to attract additional mentors to better respond to student demand for the program, which attracted almost 1,700 applicants in 2023.

As we celebrate Project SEED’s 55th anniversary, we want to acknowledge the important role you have played in this journey. And we are grateful for the opportunity to continue to partner with you to bring the wonders of chemistry to students who might not otherwise experience it. With your support, we will continue to empower and inspire the next generation of scientific leaders and innovators.

Thank you!



“As a low-income student, I didn’t think I could ever be a part of a program as hands-on, well-structured, and successful as this program while also earning a stipend. What I’ve learned and experienced this summer cannot be taught in a high school classroom, and I want to sincerely thank donors for this opportunity.”

Fertuna M.

George Mason University, Project SEED Site

Research Project Title: Idiopathic pulmonary fibrosis (IPF) treatment by blocking sulfatase-1 (Sulf-1)



Hannah M. at the University of Toledo Project SEED Site.



ACS
Chemistry for Life[®]

FOR ADDITIONAL INFORMATION, PLEASE CONTACT:

**Office of Philanthropy
American Chemical Society**

1155 Sixteenth Street NW
Washington, DC 20036

e: donate@acs.org

t: 202.872.6210