

The SEES Informer

Guide to SEES Program News



In this issue:

- President Coley visit to SEES scholars
- Gilead Tour
- Pond Project
- SEES Award Winners
- SPIRES/LSAMP luncheon
- PROUD Scholars
- COS Research Symposium
- Goldstein presenters
- Commencement ceremonies
- Excursion
- Discovery Camps
- Student Accomplishments

A Return to Normalcy

The 2021-2022 school year saw students come back to campus after a nearly one-and-a-half year lockdown of the physical Cal Poly Pomona campus due to the COVID-19 pandemic. Classes began to be offered face-to-face and in-person events started to resume. SEES began to bring back its student events and continue its research programs (SPIRES/LSAMP).

The University President, Soraya Coley, paid a visit to the SEES scholars and spoke on her experience in academia and leadership. The program also had a banner year with 22 of its program members getting into graduate school and 14 more getting into summer research programs or internships. The Discovery Camps returned, providing an infusion of energy and joy to SEES camp counselors and to hundreds of camp participants. We saw the SEES and LSAMP programs bestow recognition to some of its top students. It was great to be back and we can't wait to bring back even many more traditional events in the near future for all the program's students!

President Coley visits SPIRES/LSAMP Scholars

SEES was awarded a \$1 Million NSF-funded program that we call SPIRES. It's a program that trains STEM students in various areas of professional development. One of the workshops of the program invites a person of high rank to speak to our students regarding the Obstacles to Leadership that they faced along the way. In other words, what did they have to put up with and what were some of the hardest things they had to overcome to reach a position of leadership. President Coley shared her story and was raw about events and circumstances she'd put up with growing up during the 50s and 60s in the south in her home state of North Carolina. She also shared stories about her journey on her way to a leadership position. Her story was incredibly inspiring and left many students in awe of her perseverance, her strength and her incredible heart. She was filled with joy to be around students after 1.5 years of little interaction during the shutdown. We appreciate her dedication to every student and to the SEES program. Thank you, President Coley!



SPIRES/LSAMP Scholars in SEES visit Gilead Sciences

The tour of Gilead Sciences was a fascinating experience. The first half focused on discussions with the Gilead team about their roles and responsibilities, as well as the types of drugs the company develops, packages, and ships. One key drug highlighted was Ambisome, a treatment for severe fungal infections in immunocompromised individuals. The second half of the tour covered the company's main facilities for drug packaging. The guide explained the importance of labeling, which includes dosage instructions and safety warnings, and emphasized that labeling can be even more crucial than the drug itself. The team also went over the packaging process, including primary and secondary packaging, serialization, and transportation. Lastly, the tour included information about job and internship opportunities at Gilead. Overall, the experience provided valuable insight into the operations of a leading biopharmaceutical company.



University Pond Project

As part of the SEES SCI 1110A Integrative Science II course, our SEES students' goal was to reverse the unhealthy condition of the pond water in the University's Duck Pond. This began with analysis of the water chemistry in spring 2022 and implementation of our pond restoration plan. The students analyzed the chemical components in the water known to contribute to algal growth. The pond water was found to have high levels of phosphate. The water was treated with different types of beneficial bacteria. Some bacteria stains compete with the algae for nutrients, while other varieties degrade the organic matter found at the bottom of the pond, which feeds the algal bloom. An air compressor was installed to aerate the pond at four different points and plants were introduced to also compete with algae for nutrients. Results have shown phosphate levels have decreased and the plan is to cultivate more water plants in the pond and supplement with further beneficial bacteria so as to restore the health of the water and benefit the wildlife that inhabits a pond that predates the creation of the University.



2022 SEES Award Winners



Abigail Trujillo (Hiemenz Award winner)



Mateo Avila (Burke Award winner)

Joining the SEES program has profoundly shaped my academic and personal growth. With mentorship during my freshman year and resources from the SCI1100 course, I set academic and career goals, fostering my interest in toxicology. Through the SPIRES-LSAMP program, I engaged in research at Western University of Health Sciences and later focused on environmental toxicology. These experiences deepened my passion for research and solidified my goal to become an analytical toxicologist.

Inspired by the support I received, I have given back as a SEES mentor, fostering relationships in the community and contributing to student success through workshops with Project CAMINOS. Despite challenges, I consistently achieved academic excellence, making the President's List twice and the Dean's List multiple times. My time at CPP has been rewarding, providing me with a supportive community and a clear path toward a career in research.

SEES has been a pivotal part of my college experience, providing me with a supportive community and opportunities for growth. Starting as a mentee in my first year, I later became a mentor to give back. I cherished working in the SEES office, particularly during summer discovery camps, and unexpectedly found value in conducting research through SPIRES as a computer science major. These projects expanded my knowledge beyond the classroom and allowed me to present at the College of Science Research Symposium.

Despite challenges like transitioning to college and navigating the pandemic, I am proud to graduate on time in Spring 2022, with recognition on the Dean's List in Fall 2021. My goal to join the industry after graduation led to multiple job offers, and I accepted a position with Southern California Edison as a Software Support Specialist. I credit SEES for much of my success, as its programs, community, and opportunities have been instrumental in shaping my journey.

SPIRES/LSAMP Research Scholar Luncheon

Returning back to laboratory, field and computer research on campus, this year's SEES scholars in the SPIRES and LSAMP programs were able to pour themselves back into their undergraduate research. Students worked hard on their projects and benefitted from the professional development workshops. To wind out the year, the scholars got to relax at Center Pointe with a nice brunch.



LSAMP Program Recognizing Outstanding Undergraduate Distinction (PROUD)



Carolina Mata

Carolina Mata graduated in Spring of 2022 with a Bachelor's of Science in Chemistry and an American Chemical Society accreditation. Her favorite part of being at CPP was participating in biochemical research with Dr. Kathryn McCulloch and attending a research summer program at Clemson University. Her work entailed primary bile acids and the role they play in digestion by assisting in the absorption of fats and oils entering the body. Throughout her academic career, Carolina served on the executive board of a variety of organizations including Alpha Pi Sigma Sorority Inc., Multicultural Greek Council, and Student Members of the American Chemical Society. Other organizations she was an active member of besides SEES were the Louis Stokes Alliance for Minority Participation (LSAMP), Kellogg Honors College, and NSF Scholars Program in Research Education and Science (SPIRES). She worked as a SEES chemistry workshop facilitator, Discovery science camp counselor, and SEES mentor. She volunteered in Pomona facilitating park clean ups, food drives, toy drives, and volunteering with the Prison Education Project. In addition to her extracurricular activities, Carolina often worked two to three part time jobs to help support herself. She chose to continue her education at Clemson University by pursuing her PhD in Analytical Chemistry. She plans to find a career that would benefit underserved communities in the US or abroad.



Toy Lemmons

Toy's community college experience lasted nearly seven years mostly stemming from depression. During that period, Toy overcame that depression with the help of his supportive group, and faith in Jesus Christ, all the while working as a multi-subject tutor and successfully discovering a ubiquitous antibiotic producer against a relative of Multidrug resistant and Virulent *Enterococcus Faecium* under Dr. Nora Sullivan. With the help of Jesus Christ, and his supportive community, he was able to transfer to Cal Poly Pomona in 2018. Toy has continued his nearly three and a half years of research in the fields of microbiology, medical biochemistry, and data analysis in biochemical thermodynamics. He presented at the Citrus College Research Small World Initiative Seminar, successfully proposed an NSF-LSAMP funded research project, and will be a first author on a Biochemical Thermodynamics Data analysis project upon successful manuscript submission. Since 2019, Toy's faith in Jesus Christ and involvement in his community here in Pomona has been evident. Toy served as Food Bank volunteer and a Faith-based Life Coach under the Newlife Pomona Church programs. In 2020, when the Pandemic made it hard for students to communicate effectively with classmates, he opened an instant-messaging platform for SEES community members, and classmates. Toy will be attending UCLA to pursue his PhD in Analytical Chemistry.

LSAMP Program Recognizing Outstanding Undergraduate Distinction (PROUD)



Patricia "Dani" Rodriguez



Patrick Ruiz

Patricia D. Rodriguez graduated Cum Laude from Cal Poly Pomona in 2022 with a B.S in Biology. She was a first-generation Mexican American student who began her education at Citrus Community College and transferred to CPP in 2019. Patricia graduated with a 3.93 CPP GPA and was named to the Dean's and President's list every semester. Patricia took an active role in organic chemistry research under the guidance of Dr. Thomas J. Osberger. Her research consisted of synthesizing a library of cyclobutane-containing molecules to be screened for biological activity against *E. coli* and other potential targets. During her time in the Osberger lab, she contributed 20 novel cyclobutane molecules to the library, including derivatives based on the pharmaceutical amantadine, which is known for its ability to treat Parkinson's disease. She presented her research at SCCUR, CSUPERB, RSCA, CARS and the College of Science Research Symposium. Patricia was awarded an NSF SPIRES research fellowship and was also accepted into the McNair Scholars Program during her college career. Patricia found a passion for organic chemistry and was accepted to the PhD program in Chemistry at the University of Minnesota to pursue drug discovery. She aspires to become a community college professor and mentor that focuses on outreach to help low-income students better understand the sciences and pave the road to their own higher education success stories.

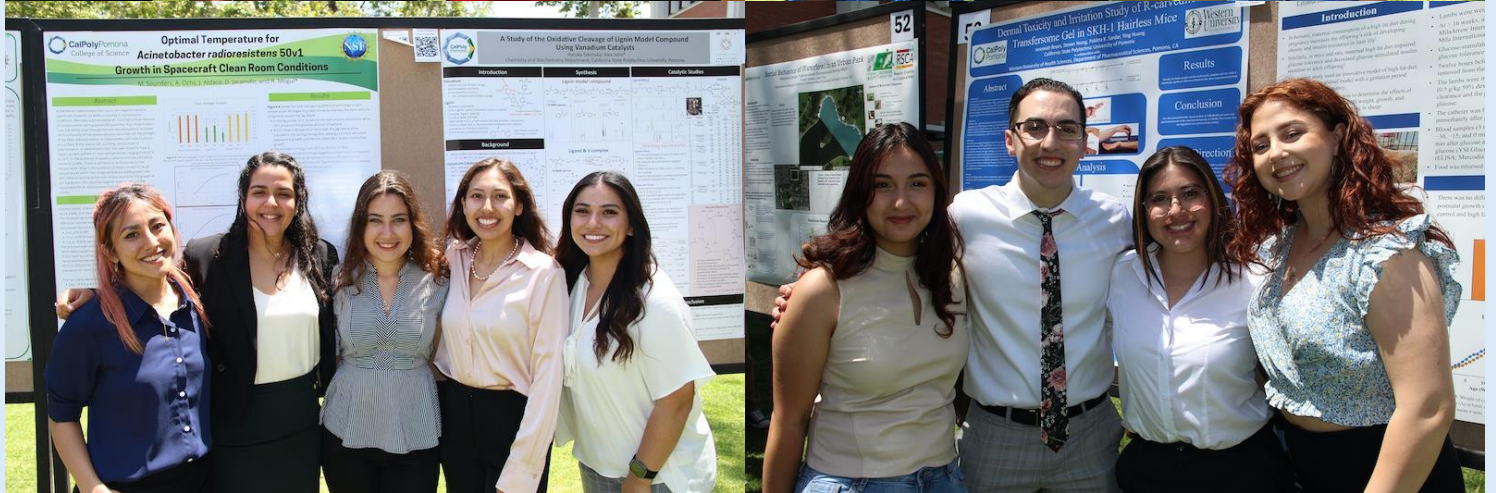
Patrick Ruiz, a first-generation college graduate, completed his Bachelor's degree in Mechanical Engineering at Cal Poly Pomona in the Spring of 2022. During his time at Cal Poly Pomona, he participated in two research programs. One program involved creating a device which harvested and safely stored biogas. In the second, he created a large database containing thermodynamic properties of a wide range of liquids and gases on Amazon Web Service's cloud computing for the use of future mechanical engineering students. His accomplishments during his undergraduate studies led him to be accepted by two of the top biomedical engineering schools in the nation, Columbia University and Johns Hopkins University. He decided to pursue his Master's degree at Columbia. This rapidly growing field of biomedical engineering has led him to pursue a focus in Controls and Robotics. In his spare time, his hobbies mirror some of the skills he's acquired in his academic and professional career as he frequently enjoys projects involving the creation of bioinspired models or robotic devices. He was eager to get started in his career so he most recently accepted an offer working as a Medical Device Engineer while finishing his Master's degree. Patrick expressed his gratitude to the CSU-LSAMP program at Cal Poly Pomona for financial assistance and guidance.

2022 College of Science Research Symposium

The Annual COS Symposium was back in person this year on Friday, April 29, 2022. We had 30+ SPIRES, LSAMP and SEES research scholars present from across the departments. Students presented their posters on topics such as metabolite & water analysis, chemical synthesis, microbiology, x-ray crystallography, food science, gene expression, stem cell biology, immunology, neurobiology, virology, antibiotics, lipid accumulation, enzymology, dermal toxicity, ecology, animal behavior, phylogenetics, programming mobile apps, machine learning, and video game design. It was an impressive display of scholarly excellence!!



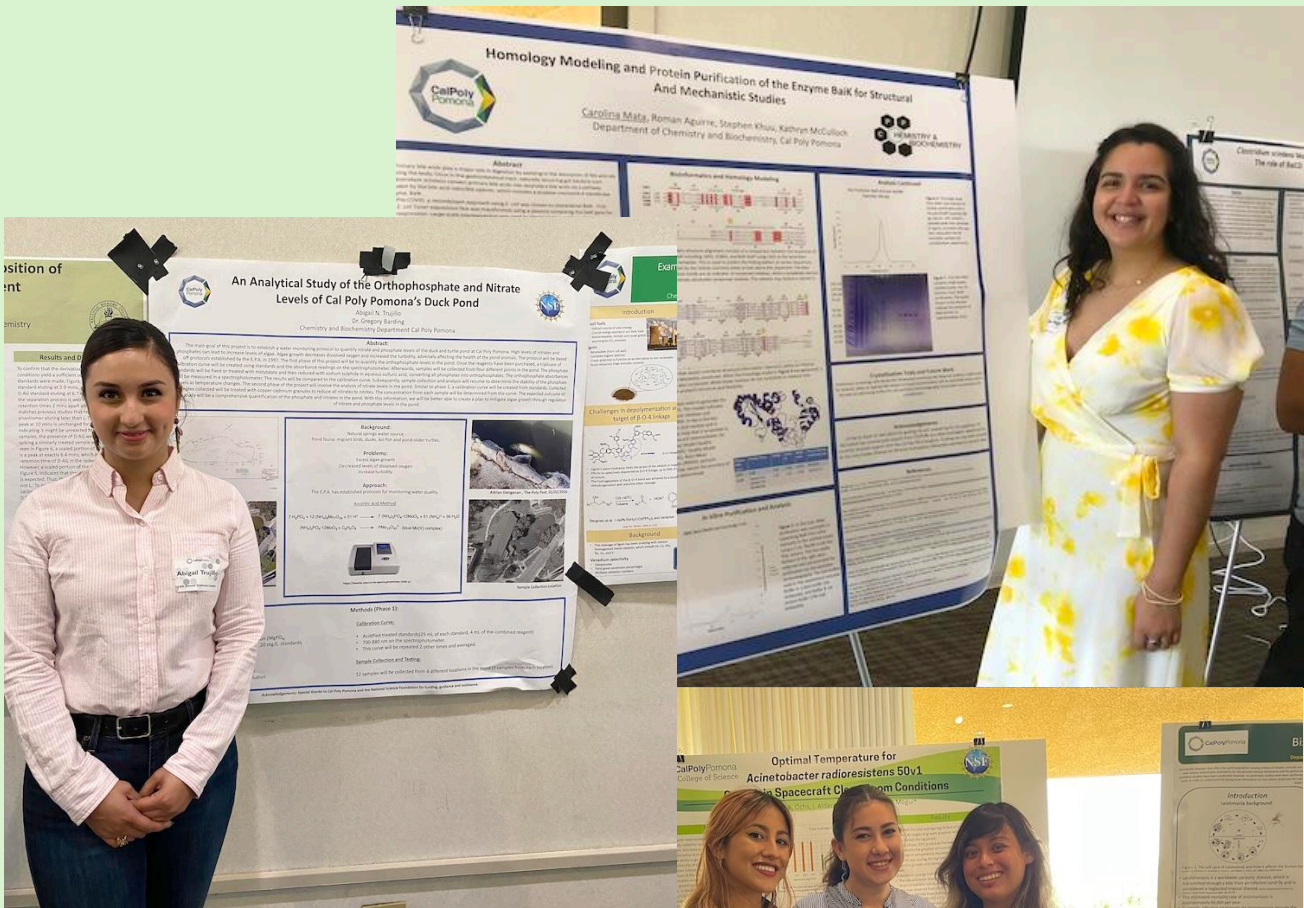
2022 College of Science Research Symposium



Annual Chevy Axelrad Goldstein Distinguished Lecture & Research Student Awards

The Annual Chevy Goldstein Distinguished Lecture and Student Research Awards Symposium allows students in the Department of Chemistry & Biochemistry to present original research they have been working on during the year. We are very proud of Carolina Mata, Abigail Trujillo, Dani Rodriguez, Morgan Saunders and Jeanney Munoz for the research accomplishments this past year.

Carolina Mata



Abigail Trujillo

(L-R) Dani Rodriguez, Morgan Saunders, Jeanney Munoz

2022 SEES Graduates!!!!

Commencement ceremonies for our CPP graduates were back on campus after a two-year absence. After losing 1.5 years of in-person interaction, our students got to return to campus and feel like college students again. We had a wonderful crop of SEES students who persevered through online instruction and being away from campus activities who celebrated the completion of their bachelors degrees. We wish them the happiest of lives and careers. We know they'll make wonderful contributions in this life.



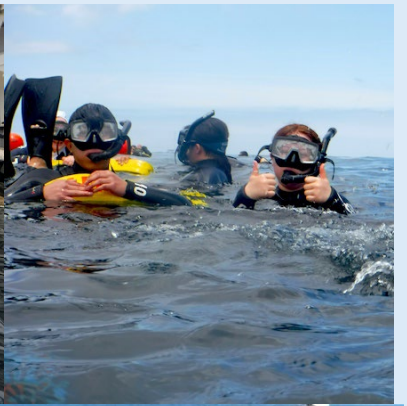
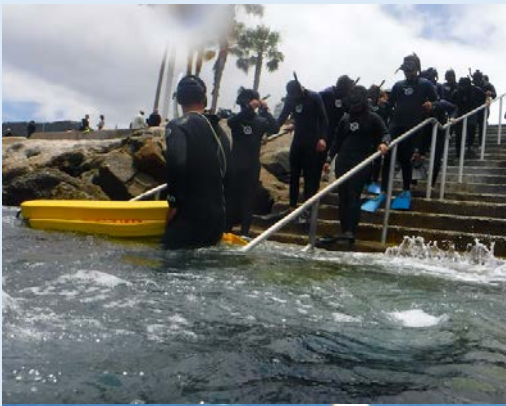
2022 SEES Graduates!!!!



End of the Year Excursion to Catalina Island

SEES is indebted to so many of its students for giving back to the program that the program does a *thank you* trip at the end of the year. Students who have contributed their time and effort to help the program, such as mentors, workshop facilitators and camp counselors, are offered the opportunity to go an excursion. This year, SEES went to Catalina Island for some snorkeling, eating, shopping and relaxing. Thank you for all you do to give back and make the program better!!!







Discovery Camps are back!!!

After being off for two years, the camps were back in summer 2022! We offered Science, Imagination, Computer & Robotics camps. The iLab offered Entrepreneurship camp under our umbrella. There were 842 campers that joined the Discovery Camps. We had a team of 22 counselors, many of them SEES students. In Science camp, counselors taught about biology, chemistry, physics, math, geology,



climate, paleontology and engineering. In Computer camp, campers got to learn how to program, develop video scenes through code, design in CAD and 3D print. Robotics camp gave kids the chance to program robot behavior, including battle bots! Imagination Camp allowed kids to learn about science, history, geography and many other topics.



Computer & Robotics

The Discovery Camps also bring in funds for SEES to have its events throughout the year, so we're happy they're back and that we're having in-person events again!!!!



Student Accomplishments

Acceptances into Graduate/Professional Schools

- Camille Abeyta (SEES) - Masters program at CSULB in chemical engineering.
- Elber Arevalo (LSAMP) - Masters in Engineering @ CPP.
- Esteban Castro (SEES) - Biology PhD offers from University of Washington (UW), University of Arizona, Oregon Health and Science U, and University of Texas Health and Science Center in San Antonio (UTHSCSA).
- Xiomara Diaz (SEES) - Morehouse School of Medicine for MD program.
- Diego Garcia (SEES) - Physics PhD program at Purdue University.
- Minh G. Le (LSAMP) - Doctor of Pharmacy degree program at USC.
- Toy Lemmons (SEES) - Chemistry & Biochemistry PhD Program at UCLA.
- Carolina Mata (SEES) - Analytical Chemistry PhD programs at UC Davis, UC San Diego, Clemson University, and University of Michigan.
- Michael A. Melkonian - Masters in Computer Science at the University of Southern California.
- Larry Mendoza (SEES) - Master's Program in Biology at CSUSB.
- Cameron Moffett-Smith (LSAMP) - Physics PhD program at UC Irvine
- Elysse Ornelas (SEES) - Johns Hopkins University for the Chemical-Biology Interface PhD Program.
- Joel Peña (SEES) - Master of Education, UC Riverside.
- Ashley D. Ramirez (SEES) - Masters in Biology @ CPP.
- Patricia "Dani" Rodriguez (SEES) - PhD in Chemistry at Univ of Minnesota.
- Patrick Anthony Ruiz (LSAMP) - MS in biomedical engineering at Columbia University.
- Christian Ruvalcaba (LSAMP) - MS degree program in Electrical Engineering at Cal Poly Pomona.

- Yasmine Saenz (SEES) - credential program at Cal Poly Pomona.
- Krystal Tien (LSAMP) - Master of Laboratory Animal Science program at Stanford University.
- Michelle Tran (LSAMP) - PhD program at UC Davis in the department of Earth and Planetary Science for Geobiology.
- Aiko Yamada (SEES) - MS Biology degree program at Washington State University.
- Christianne Yapor (LSAMP) - Masters programs in Food Science at CPP and Chapman University.

Acceptances into summer programs

- Clarence-Hugues Domond (SEES) - Summer internship at Coursera.
- Emiliano Gonzalez (SEES) - REU at Stanford University
- Kalif Johnson (SEES) - REU at City of Hope.
- George Mariscal (SEES) - REU at Purdue University.
- Lenia Morales (SEES) - SUNY Eye Care Camp 2022
- Jeanney Munoz (SEES) - REU at the Texas A&M University.
- Timmy Nguyen (LSAMP) - accepted to REUs at the University of Minnesota, USC, University of Puerto Rico, University of Nebraska-Lincoln, Kansas State University, Montana State University, and Miami University.
- Sophia Ramirez (SEES) - REU @ NASA Student Airborne Science Activation program.
- Karina Vargas (SEES) - REU @ UC Riverside.
- Justin Rebollar (LSAMP) - software engineering internship offer at Chewy.
- Isabel Romero (SEES) - REU at Oregon State University.
- William Salazar (SEES) - 2022 Polymath Jr program REU.
- Sarah Sharif (SEES) - REU @ University of Colorado, Boulder.
- Ivy Wang (LSAMP) - REU at Northeastern University Department of Chemistry.