



LEADS

**UNIVERSITY
OF
CALIFORNIA**

Leadership Excellence
through Advanced
Degrees (UC LEADS)

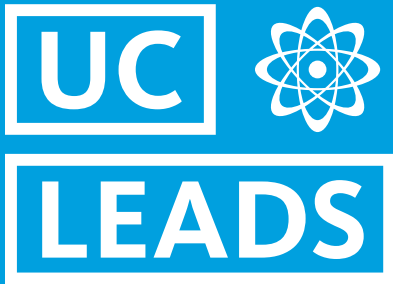


Annual Report

22-23

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Preparing Promising Scholars for Graduate School and Beyond

The University of California Leadership Excellence through Advanced DegreeS (UC LEADS) program trains California's future leaders by preparing promising students for advanced education in science, technology, mathematics, and engineering (STEM). UC LEADS identifies exceptional UC undergraduate students with great potential to succeed in these disciplines, but who have experienced situations or conditions that have adversely impacted their advancement in their field of study. UC LEADS Scholars participate in a two-year program guided by faculty mentors and UC LEADS staff, including 2 years of scientific research at their home campus, an 8 – 10 week summer program and research at another UC campus, professional development, and graduate school preparation. By providing valuable educational experiences for a diverse pool of graduate applicants, the UC system empowers a new generation of leaders.

The Year in Review

A MESSAGE FROM THE DIRECTOR



Summer 2022 saw programming that was fully back in person. It was great to build those relationships and connections best made in person. Systemwide, we also offered the online Graduate Division Panel, introducing scholars to outreach representatives from all 10 UC Graduate Divisions, and a Summer STEM Speaker Series, coordinated by UC Berkeley's Diana Lizarraga and Christian Noble.

In the fall, we launched a new orientation for first year scholars to introduce them to the UC LEADS campus staff and assist them in planning for their second summer of research at another UC campus. We also reviewed the general deadlines and procedures, and hosted a panel of second year scholars to share their tips on planning for second summer. In April 2023, we hosted the 2023 Koret UC LEADS Research and Leadership Symposium back in person at UC San Diego.

Campuses received some new Student Academic Preparation and Educational Partnerships (SAPEP) funding this year, and many were able to accept more scholars, or lay the foundation to bring on more in the future.

Overall, it was a great year, in which we were able to get back to the true model of UC LEADS.

A handwritten signature in black ink that reads "Michele Johnson". The signature is written in a cursive, flowing style.

Michele Johnson
UC LEADS Statewide Director

Leadership in Scholarship

IMPACT THROUGH SCHOLARLY CONTRIBUTIONS

These UC LEADS Scholars are already making an impact through their scholarly publications:

Kevin Alfaro / UC Los Angeles

Boscoe B, Do T, Jones E, Li Y, **Alfaro K**, and Ma C. (2022). Elements of effective machine learning datasets in astronomy. arXiv preprint, arXiv:2211.14401.

Queenie Lin / UC Riverside

Xu C, Uahengo G, Rudnicki C, Hung C, Huang A, **Xu Q**, et al. (2022). Nanocrystalline Yttria-Stabilized Zirconia Ceramics for Cranial Window Applications. *ACS Applied Bio Materials*. 5 (6), 2664-2675. DOI: 10.1021/acsabm.2c00119

Kudryashev JA, Madias MI, Kandell RM, **Lin QX**, and Kwon EJ (2023). An Activity-Based Nanosensor for Minimally-Invasive Measurement of Protease Activity in Traumatic Brain Injury. *Adv. Funct. Mater.* 33, 2300218. <https://doi.org/10.1002/adfm.202300218>

Clara Medina / UC Merced

Medina CY, Kadonsky KF, et al. (2022). The need of an environmental justice approach for wastewater based epidemiology for rural and disadvantaged communities: A review in California. *Current Opinion in Environmental Science & Health*. 27, 100348. <https://www.sciencedirect.com/science/article/pii/S246858442200023X>

Jim Solomon / UC Los Angeles

Flores GFF, Nasseraddin C, **Solomon J**, et al. (2022). AtOMICS: A neural network-based Automated Optomechanical Intelligent Coupling System for testing, and characterization of silicon photonics chiplets. arXiv preprint, arXiv:2210.16946.

Imanol Ulloa / UC Santa Barbara

Phillips AA, **Ulloa I**, et al. (2023). Organic sulfur from source to sink in low-sulfate Lake Superior. *Limnol Oceanogr.* <https://doi.org/10.1002/lno.12454>

2023 Koret **Research and Leadership** Symposium

APRIL 15, 2023 / UC San Diego



The **23rd Annual Koret UC LEADS Research and Leadership Symposium** was a grand celebration, bringing the UC LEADS scientific community back together for the first time since 2020. Attendees were welcomed to campus by the campus staff, as well as Dr. Eduardo Fricovsky, Pharm.D, a UCSD UC LEADS alum and current UC San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences (SSPPS) Associate Clinical Professor and Director of the Hispanic Center of Excellence-Research Methodology and Training Laboratory (HCOE-RTML). Seventy-one scholars presented their research posters to peers and 54 faculty judges during the two morning poster sessions.

Over lunch, attendees heard from a panel of UC LEADS alumni discussing graduate education and career possibilities after UC LEADS. The panel included Dr. Elisa Maldonado Greene, Victoria Lerda, and Brandon Leung, MS, and was moderated by Dr. David Gray from UCLA. After lunch, a networking break allowed scholars to connect with and ask more personal questions of the panelists. Scholars took off on a walking tour of campus for the remainder of the afternoon, while judges were

welcome to gather in The Loft for music and conversation in thanks for their contribution to the day. As always, we ended the evening with awards and a celebration of all the scholars' hard work. Dr. Sonya Neal, UCSD UC LEADS alum and current UC San Diego Cell and Developmental Biology Assistant Professor gave a powerful and relatable evening keynote.

The **Graduate Deans' Leadership Award** was given to three scholars who exhibited extraordinary leadership during their tenure as UC LEADS scholars. Awards went to **Daniel Maldonado Naranjo** (Mechanical Engineering, UC San Diego), **Wendy Su** (Biological Sciences, UC Los Angeles), and **Padma Venkatraman** (Information Science, UC Berkeley). This \$500 award was selected by the UC LEADS Executive Steering Committee and funded by the deans of all 10 UC Graduate Divisions. Other nominees and recipients of the **Campus Leadership Awards** were **Cherrie Li** (UC Davis), **Ana-Teresa Mendoza** (UC Irvine), **Emily Gomez** (UC Merced), **Queenie Lin** (UC Riverside), **Charlotte Chen** (UC Santa Barbara), and **Valeria Galindo-Eguiarte** (UC Santa Cruz).

UC LEADS **Symposium Awards**



POSTER TOP HONORS **WINNERS**

Biological Sciences

Vicky Lam, UCI
Kira Wallquist, UCSB
Kylie Williams, UCLA

Engineering & Computer Sciences

Isabella Demetz, UCB
Ukamaka Ezimora, UCM
Santiago Karam, UCB
Daniel Maldonado Naranjo, UCSD

Physical Sciences & Mathematics

Saira Cazarez, UCI
Caitlyn Nojiri, UCSC
Justin Purnomo, UCLA

CAMPUS **HONORABLE MENTIONS**

Biological Sciences

Bezawit Danna, UCLA
Melanie Jones, UCSC
Cecilia Ma Li, UCD

Engineering & Computer Sciences

Clara Medina, UCM
Andrew Oabel, UCSD
Ulía Zaman, UCI

Physical Sciences & Mathematics

Madeleine Haddad, UCR
Trung Kien Le, UCSB
Alfred Vargas, UCB

LEADERSHIP **AWARDS**

Graduate Dean's Award

Daniel Maldonado Naranjo, UCSD
Wendy Su, UCLA
Padma Venkatraman, UCB

Campus Leadership Awards

Cherrie Li, UCD
Ana-Teresa Mendoza, UCI
Emily Gomez, UCM
Queenie Lin, UCR
Charlotte Chen, UCSB
Valeria Galindo-Eguiarte, UCSC

Welcome
to the

23RD ANNUAL

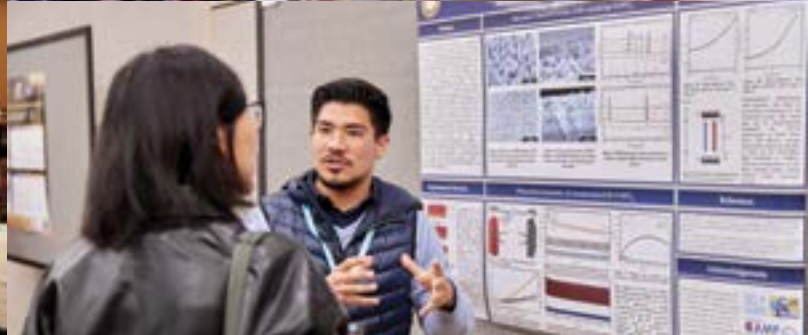
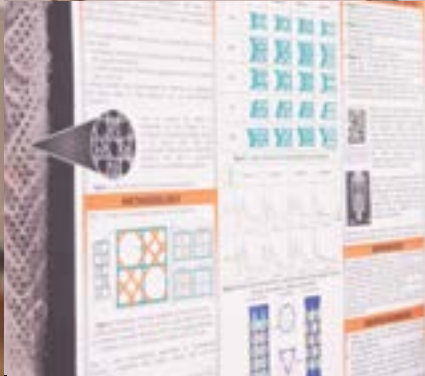
KORET UC LEADS

RESEARCH & LEADERSHIP
SYMPOSIUM

UC San Diego

APRIL 15, 2023



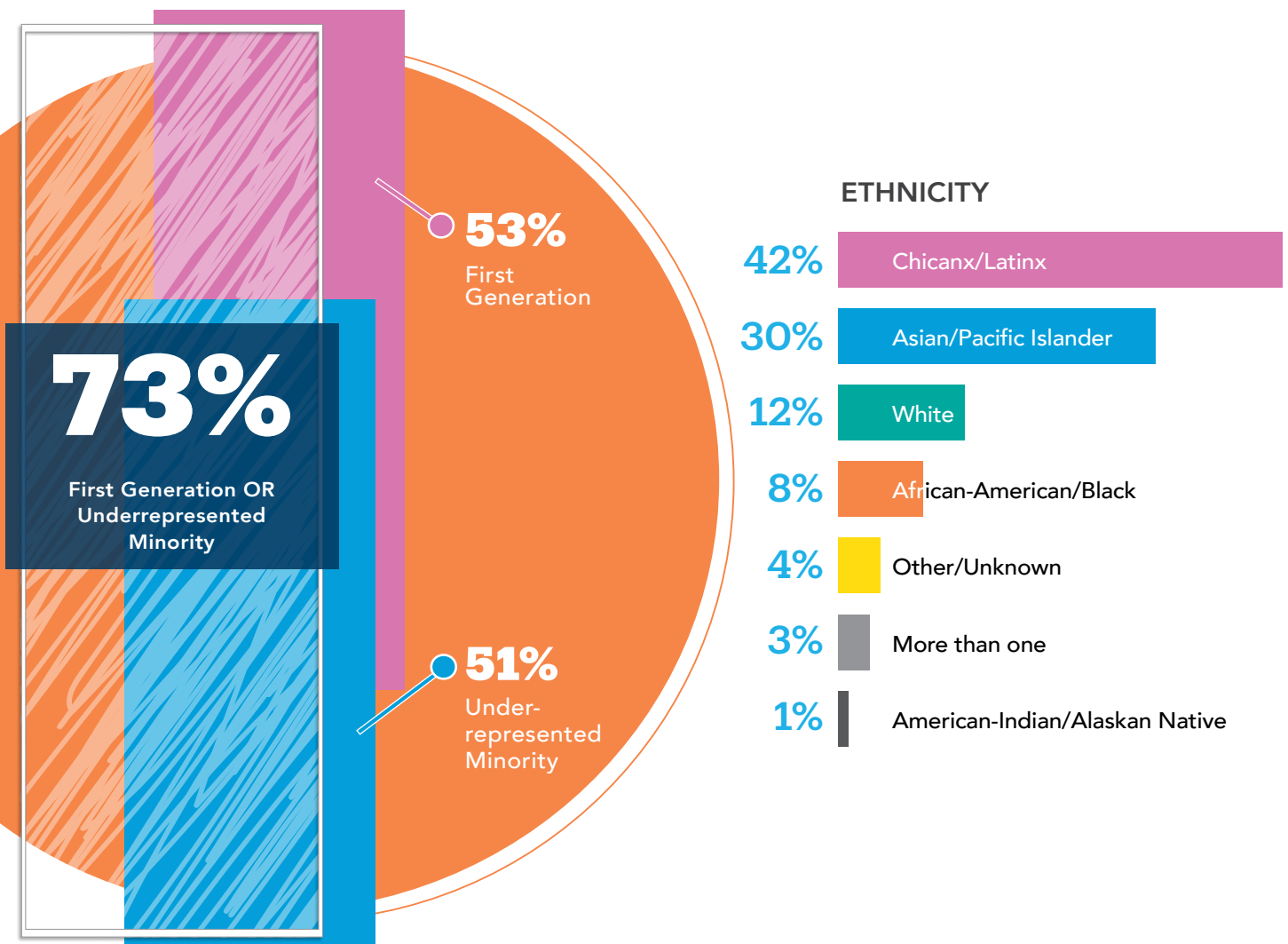


Program Impact Summary

DIVERSITY IN UC LEADS

UC LEADS has supported 1259 scholars over the last 23 years. The program pursues its goal of diversifying graduate education and STEM leadership by recruiting a diverse pool of scholars. The UC LEADS population is 73% first generation college students OR underrepresented minorities (separately: 53% first generation college students, 51% underrepresented minorities). Males and females are represented almost equally in program alumni (51.2% females, 48.4% male, and 0.4% other).

UNDERREPRESENTED MINORITIES



FACULTY ACCOLADES

UC faculty **love** working with our UC LEADS scholars.



“I never heard of UC LEADS before your student came to me. She’s amazing and incredibly talented. I wish I could have all UC LEADS students in my lab.”

“Your student is AMAZING! They’re doing graduate student level work in my lab. Please send more UC LEADS scholars my way whenever possible.”

GRADUATE SCHOOL BOUND

UC LEADS has an impressive 99% undergraduate graduation rate, and 74% of alumni go on to graduate school. 48% of these alumni attending graduate school go to a UC graduate program, and 28% of these go to a program at the campus where they spent their UC LEADS research second summer.

With the increased scrutiny of university admissions since the SCOTUS ruling, programs such as UC LEADS are ever more important in preparing scholars to be competitive (or shine through) in holistic admissions by (1) exposing them to research opportunities, (2) elevating their academic preparedness, (3) exposing them to networking opportunities with leading UC researchers who are seeking to prepare future scholars, (4) acquainting them with the benefits of advanced degrees, and (5) preparing them to navigate UC-system and academia. These skillsets are especially beneficial for the 53% of UC LEADS scholars who identify as first-generation



74%

**GRADUATE SCHOOL
MATRICULATION RATE**



PhD

39%

**PHD
MATRICULATION RATE**

FOCUS ON THE PHD

One of the original programmatic visions for UC LEADS was that it support the path to the professoriate. To this end, 39% of all UC LEADS alumni matriculate into PhD programs; 52% of these attend a UC. These alumni go on to become leaders in academia, government, and industry. Of the 42 alumni employed in tenure track faculty positions, 10 are at a UC.

Campus Updates



UC Berkeley | Year in Review

UC LEADS is housed in the CalNERDS suite of programs at our centrally located student center in 230B Stephens Hall. CalNERDS received the 2022 UC Berkeley Faculty Collegium Award for Excellence in Undergraduate Education and the 2023 National Edge in Tech Athena Award Next Generation Engagement Award. We continue to host professional development workshops, python coding boot camps, 3D printing, study space, micro-food pantry, poster printing, graduate school application support, advising, mentoring, and additional technical training. We have graduate student directors serving as role models, including UC LEADS UC Merced Alumnus & Chemistry doctoral student Anthony Garcia. During the summer, we hosted four visiting scholars who did a great job taking advantage of the resources and opportunities presented to them. Some travel highlights included graduate school visits to UC Davis and Stanford University. In addition, we visited Lawrence Livermore National

Lab by invitation of two UC LEADS alumni: Astrophysicist Dr. Kirsten Howley and Acting Deputy Division Leader National Security Engineering Division Dr. Andrea Schmidt. We also travelled to Puerto Rico to attend the SACNAS conference, among other national STEM conferences. During the spring, we hosted two community college STEM MESA programs for an in-person college day visit. We are proud of our symposium research presenters, including our five awardees: Isabella Demetz, Santiago Karam, and Alfred Vargas plus two of our visiting research scholars Ukamaka Ezimora (UCM) and Trung Kien Le (UCSB). In addition, we celebrated Padma Venkatraman's Graduate Dean's Statewide Leadership Award. Three of our four second year scholars moved forward with their graduate school pathways, including two NSF Graduate Research Fellowships. Five of our six first year scholars are on track to apply to graduate school in the fall of 2023.



UC LEADS is under the CaNERDS umbrella of programs, within the UC Berkeley Division of Equity & Inclusion.

| Second-Year Scholars

Martin Beshara (Mechanical Engineering) is a transfer student and did his summer research at UC San Diego. His summer research project was entitled *PWP Modeling of the Upper Ocean's Wind-Driven Mixed Layer*. He graduated in spring 2023 and was accepted as a Mechanical Engineering PhD student at John Hopkins University. Martin was awarded the prestigious NSF Graduate Research Fellowship.

Isaac Sloan (Data Science: Applied Mathematics & Modeling) did his second summer research at UC Santa Barbara. He graduated in spring 2023. Isaac is currently working as a data scientist at NeuroScouting, a tech company that offers neural-based sports analytics services.

Alfred Vargas (Chemical Engineering) did his second summer research at UC Irvine. His poster, *Synthesis of Nanostructured FeWO₄ Thin Films for Efficient Photoelectrochemical Water Splitting*, received an honorable mention at the 2023 UC LEADS Symposium. He graduated in spring 2023 and was accepted as a Chemical Engineering PhD student at Stanford University. Alfred was awarded the prestigious NSF Graduate Research Fellowship.

Padma Venkatraman (Astrophysics & Data Science) did her second summer research at UC Berkeley. She presented a poster at the 2023 UC LEADS Symposium titled *Extensive Modeling of Supernova Shock Cooling Emission*. She also exhibited exceptional leadership qualities during her time in UC LEADS and received the Graduate Deans' Leadership Award. She graduated in spring 2023 and was accepted as a post baccalaureate fellow at Stanford University. She will be applying for doctoral programs after this fellowship.

| First-Year Scholars

Efrain Alvarado (Astrophysics) is a transfer student and he did his summer research at UC Berkeley. He presented a poster at the 2023 UC LEADS Symposium titled *Hot Jupiters on the Move: Exploring Tidal Orbital Decay*. He is working on a publication and plans to graduate in August 2023. Efrain will be applying to doctoral Astrophysics programs in the fall of 2023.

Kate Bostow (Astrophysics) is a transfer student and did her summer research at UC Berkeley. She presented a poster at the 2023 UC LEADS Symposium titled *The Velocity of Thermonuclear Supernova Explosions Using the Spectroscopic Silicon II Line*. Under the direction of the Filippenko lab, she has discovered 1,575 supernovae. She will be applying to graduate school in the fall and plans to graduate in May of 2024.

Isabella Demetz (Industrial Engineering & Operations Research) did her first summer research at UC Berkeley. Her poster, *Quantifying Industrial Exoskeleton Performance Among Workers*, received top honors at the 2023 UC LEADS Symposium. She will be applying to graduate school in the fall and plans to graduate in May of 2024.

Aldo Gonzalez Ruiz (Mechanical Engineering) did his first summer research at UC Berkeley. He graduated in spring 2023 and secured an Intelligent Devices and Software Control Engineer position at Intelligent Devices at Rockwell Automation.

Santiago Karam Padilla (Industrial Engineering & Operations Research) did his first summer research at UC Berkeley. His poster, *The Effect of Integration Complexity and Strategies on the Performance of Technology-Motivated Acquisitions: An Exploratory Analysis on Frequent Acquirers from 2000-2021*, received top honors at the 2023 UC LEADS Symposium. He plans to apply to graduate school in the fall of 2023 and will graduate in May of 2024.

Gabrielle Stewart (Astrophysics) is a transfer student and did her summer research at UC Berkeley. She presented a poster at the 2023 UC LEADS Symposium titled *Ultraviolet and Optical Spectroscopy of the Type II Supernova 2022*. She has discovered over 450 supernovae, including the rare gravitationally lensed supernova (SN Zwicky). She will be applying to graduate school in the fall and plans to graduate in May of 2024.

Alumni Spotlight



ANDREW CARDES

UC LEADS 2004-2005

B.S. Mechanical Engineering

After receiving his BS in Mechanical Engineering from UC Berkeley, Andrew Cardes went on to earn a MS in Mechanical Engineering from UC Berkeley and a JD from UC Law San Francisco with a focus in intellectual property. He is currently a Technical Fellow and Chief Engineer at Northrop Grumman, where he leads the development of advanced systems for airborne and space applications.

“

UC LEADS taught me not to be afraid of asking questions. I also learned to distill **complex concepts** for a wide range of audiences and gained the confidence to lead large teams of talented engineers.

Campus Updates



UC Davis | Year in Review

The goal of returning to a fully in-person summer program was both exciting and overwhelming at the same time. Planning for social events, gatherings, and activities to promote and foster community was reintegrated along with innovative ideas developed by our graduate student mentor team. Any challenges that arose were mostly due to campus operations, policies, and procedures that we managed to work with and resolve. Gratefully, all the scholars were able to engage in research and lab activities in-person and their faculty and graduate student mentors were very supportive and accommodating as needed. Our cohort of UC LEADS scholars included four UC Davis first years, and two visiting 2nd years from UC Merced. In conjunction with our other summer research program, the Summer 2022 cohort consisted of fifteen scholars in total, which was ideal for all programming and activities. The diversity of their disciplines, home campuses, interests, hobbies, etc. was a highlight to witness. It was fun to take part in the community and friendships they built over the course of the eight weeks..

For the first time, ample funding was available for second year scholars to travel and participate in a variety of National Conferences for research and/or professional development (ABRCMS, SACNAS, NASPA, Society for Neuroscience (SfN)). Additionally, the SAPEP funding allowed for two of the second year scholars to conduct their own grad school campus visits in and out of the UC system as they prepared for the graduate school admissions process. Second year scholar Qiaolin (Cherrie) Li was awarded a special invite to attend Media Day at UC San Diego, where she and her research team members were present to view the testing of the featured Shake Table, the research project she contributed to during her second summer at UC San Diego. Alexandra Serna Godoy, another second year scholar, got a publication for the research project she had been diligently working on for the last two years.



UC LEADS is supported by
UC Davis Graduate Studies.



UC Davis

| Second-Year Scholars

Natalie Laurie (B.A. Music Performance - B.S Cognitive Neuroscience) did her second summer research at UC San Diego. She presented a poster at the 2023 UC LEADS Symposium titled *Phonological Priming Effects on Naturalistic Audiovisual Speech Recognition*. She graduated in spring 2023 and is currently working as an assistant director for the UC Davis Marching Band.

Qiaolin (Cherrie) Li (Civil Engineering) did her second summer research at UC San Diego. At the 2023 UC LEADS Symposium, she presented a poster titled *Early-Age Behavior of Concrete in Bridge Decks: Assessment of Shrinkage Cracking Behavior* and also received the Campus Leadership Award. She graduated in spring 2023 and was accepted as a Masters student in Civil Engineering at UC Berkeley.

Jose Samano Catalan (Neuroscience) did his second summer research at UC San Diego. He graduated in spring 2023 and is currently enrolled in CHP Academy.

Alexandra Serna Godoy (Cognitive Psychology) did her second summer research at UC San Francisco. She presented a poster at the 2023 UC LEADS Symposium titled *Gonadal Hormones Act During Puberty to Reduce the Reactivity of Oxytocin Neurons in the Anterior Paraventricular Nucleus*. She is currently applying to Neuroscience PhD programs.

| First-Year Scholars

Edward Jenkins (Cognitive Psychology) did his first summer research at UC Davis. He presented a poster at the 2023 UC LEADS Symposium titled *The Role of The Hippocampus in Auditory Working Memory*. He plans to graduate in 2024.

Ryan Kyeremeh (Animal Science) did his first summer research at UC Davis. He presented a poster at the 2023 UC LEADS Symposium titled *Animal Behavior and Personality of Captive Raptors Using the Novel Object Test*. He plans to graduate in 2024.

Cecilia Ma Li (Animal Science) did her first summer research at UC Davis. Her poster, *The Effects of Temperature on Delta Smelt Embryo Development*, received an honorable mention at the 2023 UC LEADS Symposium. She plans to graduate in 2024.

Ernest Wang (Biomedical Engineering) did his first summer research at UC Davis. He presented a poster at the 2023 UC LEADS Symposium titled *Microfluidics Lab Development*. He plans to graduate in 2025.

Alumni Spotlight



RADHA DAYA

UC LEADS 2013-2015

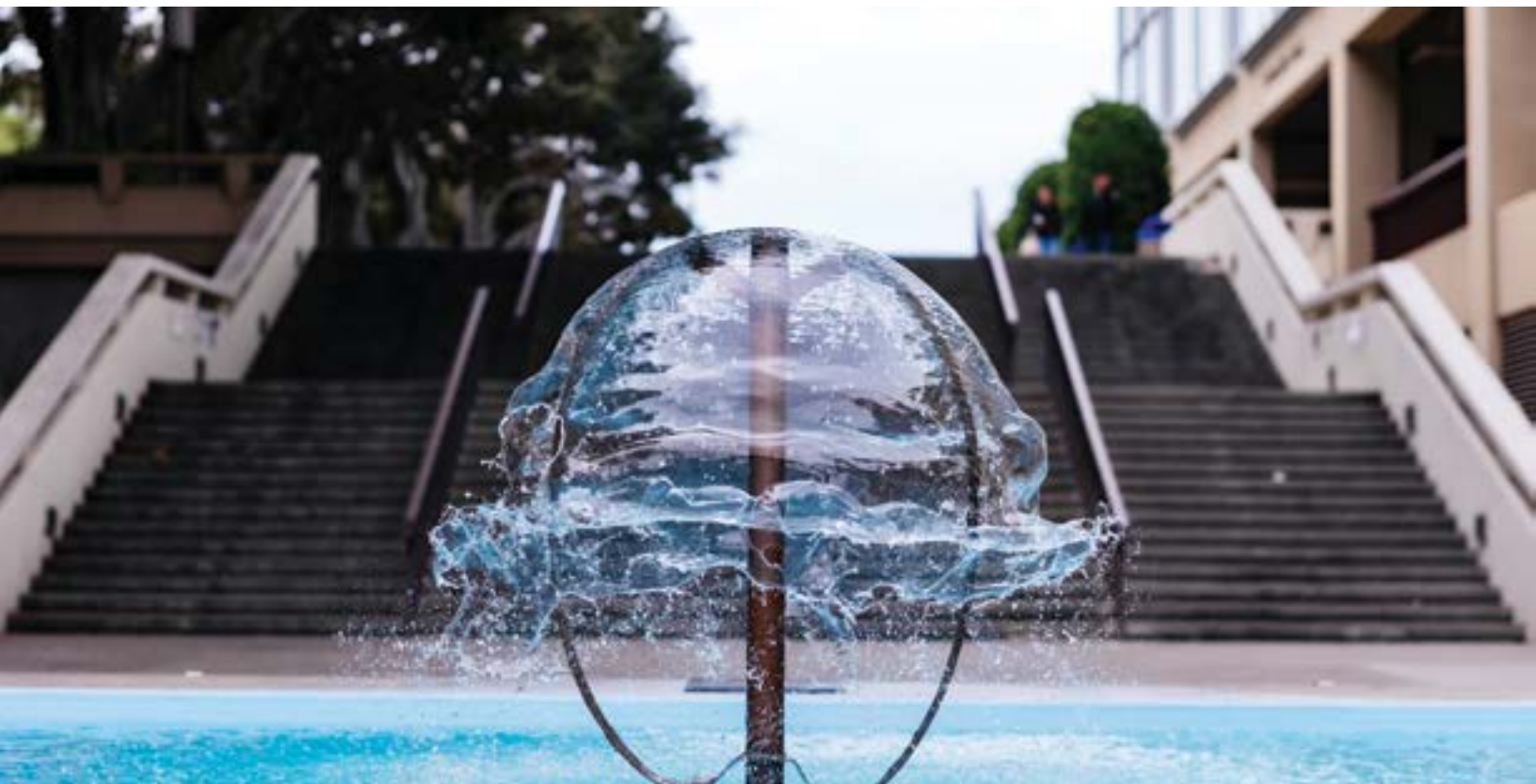
B.S. in Biomedical Engineering

Radha Daya received her BS in Biomedical Engineering from UC Davis before pursuing a MS in Bioengineering from UC Riverside. The foundation of her MS thesis was her UC LEADS second summer research at UC Berkeley, and she met her graduate school advisor at the UC LEADS Symposium while presenting that research. Radha went on to spend five years as a Diagnostic Device Systems Engineer and is currently a Scientific Business Analyst at Bristol Myers Squibb. She is the first woman in her family to earn a MS degree and is part of the first generation of working women in her family.

“

As a first generation student and a woman in STEM, UC LEADS played an **integral role** in my career trajectory. Not only did I develop valuable professional development skills (resume writing, publication writing, graduate school application support, research presentation preparation, etc.) but **UC LEADS gave me the confidence and support** I needed to keep taking steps forward. Lynne Arcangel went above and beyond to provide me with everything I needed to succeed. UC LEADS filled my cup so that I can continue to pour into anyone I meet who needs the same guidance I've needed.

Campus Updates



UC Irvine | Year in Review

After two virtual summers, our UC LEADS scholars conducted in-person research across multiple University of California campuses. Our first year scholars were able to be a part of the UC Irvine in-person summer program along with other visiting scholars. Participating in an in-person experience enabled students to network with a larger community of young researchers and strengthen a community of support.

The summer program culminated with a research symposium that allowed students to showcase their summer projects. We were excited to learn students were accepted to present their summer research projects at national conferences like ABRCMS and SACNAS!

For the first time since our scholars joined the program, they were able to travel and experience in-person conferencing. Our students had the opportunity to present their research in conferences not only domestically at ABRCMS, SACNAS, and Society for

Neuroscience (SfN), but also internationally at the Conference on Human Factors in Computing Systems (CHI). First year scholar Ulia Zaman traveled to Hamburg, Germany to present her research at the CHI conference! We implemented our first ever Southern California UC Tour, where we took a road trip with first year scholars to visit UC Santa Barbara, UC Los Angeles, and University of Southern California to learn about the graduate programs and services offered at each campus. We hope to make the Southern California UC Tour every year and are planning to do a Northern California UC Tour in the fall.

Four second year scholars applied and were accepted to graduate school. The second-year scholars also held workshops for the first-year scholars to talk about their experiences applying to graduate school and how they managed their academic and research priorities. We are immensely proud of all our scholars' accomplishments and look forward to their future endeavors.



UC LEADS is supported by the UC Irvine Graduate Division.



| Second-Year Scholars

Ivan Martin del Campo (Chemistry) did his second summer research at UC San Diego but withdrew from the program in the fall. He graduated in spring 2023.

Ana-Teresa Mendoza (Chemistry) did her second summer research at UC Berkeley. She presented a poster at the 2023 UC LEADS Symposium titled *Investigating Thickness-Dependent Properties of 1T-TaS₂*. She graduated in spring 2023 and was accepted as a Chemistry PhD student at the University of Notre Dame.

Hien Nguyen (Chemistry) did his second summer research at UC Los Angeles. He presented a poster at the 2023 UC LEADS Symposium titled *Developing Synthetic Routes for the Alkylation of Iodinated Boron Clusters for Cell Imaging*. He graduated in spring 2023 and was accepted as a Chemistry PhD student at the Massachusetts Institute of Technology.

Dustin Tran (Biological Sciences) did his second summer research at UC Riverside. He presented a poster at the 2023 UC LEADS Symposium titled *Quantifying the Interactive effect of Muscle Length and Shortening Velocity on Force Capacity*. He graduated in spring 2023 and was accepted as a Kinesiology Masters student at University of Illinois at Urbana-Champaign.

| First-Year Scholars

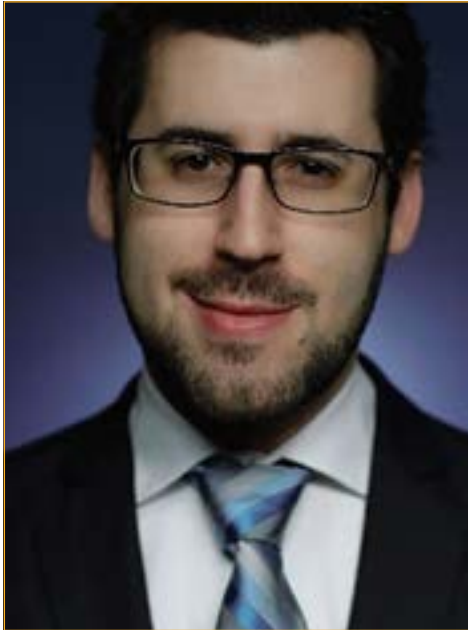
Saira Cazarez (Biological Sciences) did her first summer research at UC Irvine. Her poster, *Influence of Biomolecules on ZIF-67 Metal-Organic Framework Nucleation and Growth*, received top honors at the 2023 UC LEADS Symposium. She plans to graduate in 2024.

Cathy Dang (Pharmacology) did her first summer research at UC Irvine. She presented a poster at the 2023 UC LEADS Symposium titled *Evaluating Short- and Long-Term Memory in a Rodent Model of Focal Temporal Lobe Epilepsy (TLE)*. She plans to graduate in 2024.

Vicky Lam (Biological Sciences) did her first summer research at UC Irvine. Her poster, *Using RNA Interference to Investigate Calcium-Mediated Dendrite Injury Detection and Repair In-Vivo*, received top honors at the 2023 UC LEADS Symposium. She plans to graduate in 2024.

Ulia Zaman (Computer Science) did her first summer research at UC Irvine. Her poster, *Exploring Computational Thinking Practices and Gestures in the Context of Matrix Math*, received an honorable mention at the 2023 UC LEADS Symposium. She plans to graduate in 2024.

Alumni Spotlight



ALEXANDER RING

UC LEADS 2006-2008

B.S.Chemistry

After participating in UC LEADS in 2008, Alexander Ring joined the neuroscience department at an inpatient addiction treatment facility and provided, as well as investigated, the use of patient-specific electroencephalographic (EEG)-targeted noninvasive neuromodulation. He expanded the use of this technology to treat additional clinical conditions, including PTSD, Autism, Tinnitus, and Cognitive decline in the years following. He grew from a research technician administering therapy to Senior Scientist and now operates as the Director of Applied Neuroscience and the Director of the Department of Data Science, at Wave Neuroscience, servicing over 120 clinics worldwide that are currently employing the technology. Ring has a master's degree in Applied Neuroscience from King's College London.



UC LEADS allowed me the **opportunity to work in a research environment** and establish a foundation of knowledge in a research topic of interest. Whereas other college research associates would transition through the lab by quarter or semester, I was able to participate, contribute to and eventually lead several projects with my growing understanding of the lab direction and process. Presenting at UC LEADS conferences drove me to present my research at academic conferences and **made academic discussion significantly less daunting**. In this way, I believe UC LEADS provided me with a path and framework for success.

Campus Updates



UC Los Angeles | Year in Review

Our UC LEADS summer program returned to in-person research in 2022. We were thrilled to host four visiting scholars from UC Irvine, UC Merced, and UC San Diego in addition to our first-year cohort. Each of these phenomenal young researchers had productive summers in the lab, participated in a journal club and writing workshop, and ultimately presented their work in the UCLA Summer Symposium. As a break from research, our group took a great trip to the nearby Getty Museum to enjoy one of Los Angeles's famous sites.

During the 2022-23 academic year, the UC Los Angeles UC LEADS cohort continued their exceptional research. Scholars presented their work at a variety of conferences both on and off campus, in the US and abroad. Jim

Solomon and Kevin Alfaro both coauthored publications based on their research. The UC Los Angeles scholars also participated in a newly designed course on Effective Science Communication, in which they created, polished, and perfected elevator pitches and presentations for various types of audiences.

Our 2nd year students have all graduated and are on to great things. We are so proud of all the accomplishments and hard work of all the scholars and we are excited to see what they do in their next career steps.



UC LEADS is supported by the UC Los Angeles Undergraduate Research Center–Sciences.

UC Los Angeles

| Second-Year Scholars

Yenifer Hernandez (Computational and System Biology) did her second summer research at UC Irvine. She presented a poster at the 2023 UC LEADS Symposium titled *Embedding Analyses of Large-Scale Epigenetic Datasets Within a Comprehensive Ontology of Anatomy and Development to Study Rare Chromatin Modifier Syndromes*. She graduated in spring 2023 and is currently working as a research assistant at UC Los Angeles.

Jim Solomon (Electrical Engineering) did his second summer research at UC San Diego. He presented a poster at the 2023 UC LEADS Symposium titled *Surface Reconstruction of LiDAR Point Cloud Data*. He graduated in spring 2023 and is currently working as a research assistant at UCLA.

Wendy Su (Computational and System Biology) did her second summer research at UC San Francisco. She presented a poster at the 2023 UC LEADS Symposium titled *Leveraging Publicly Available Transcriptomics Data for Computational Drug Discovery in Endometriosis*. She exhibited exceptional leadership qualities during her time in UC LEADS and received the Graduate Deans' Leadership Award. She graduated in winter 2023 and was accepted as a Genomics and Computational Biology PhD student at the University of Pennsylvania.

Kylie Williams (Biochemistry) did her second summer research at UC Santa Cruz. Her poster, *Pharmacological Approaches to Target Actin Hyperstabilization in The Aging Brain*, received top honors at the 2023 UC LEADS Symposium. She graduated in spring 2023.

| First-Year Scholars

Kevin Alfaro (Astrophysics) did his first summer research at UC Los Angeles. He presented a poster at the 2023 UC LEADS Symposium titled *Measuring the Distances to Galaxies Using Images and Deep Neural Networks*. He plans to graduate in 2024.

Bezawit Danna (Biochemistry) did her first summer research at UC Los Angeles. Her poster, *Development and Validation of Mass Spectrometry Methods to Study De Novo Lipid Synthesis in Mammalian Cells*, received an honorable mention at the 2023 UC LEADS Symposium. She plans to graduate in 2024.

Justin Purnomo (Biochemistry) did his first summer research at UC Los Angeles. His poster, *Stochastic Density Functional Theory with the Harmonic Oscillator Model*, received top honors at the 2023 UC LEADS Symposium. He plans to graduate in 2024.

Kimberly Vasquez (Chemistry) did her first summer research at UC Los Angeles. She presented a poster at the 2023 UC LEADS Symposium titled *Block Copolymers Prepared by Ring-Opening Polymerization of Lactide in the Presence of Poly(ethylene glycol)*. She plans to graduate in 2024.

Alumni Spotlight



AMANDA ARMIJO

UC LEADS 2006-2008

B.S. Microbiology, Immunology & Molecular Genetics

Amanda Armijo earned her PhD in Molecular Pharmacology at the UCLA School of Medicine in 2014. She went on to earn her DVM from the College of Veterinary Medicine at Cornell University in 2017, and worked in a dual postdoctoral program in Biological Engineering and Comparative Medicine at MIT. Currently, she works as a Research/Clinical Veterinarian at MIT, pursuing groundbreaking research initiatives within Dr. Essigmann's laboratory. She plays a crucial role in ensuring the health and welfare of research animals at MIT's campus and remains committed to advancing scientific knowledge while upholding the ethical treatment of animals in research.



The early exposure to biomedical research that UC LEADS provided became a **catalyst** for a profound shift in my aspirations. It opened my eyes to the vast possibilities within this field and set me on an extraordinary life's journey that I could not have foreseen when I first stepped onto UCLA's campus as an undergraduate. This program not only expanded my knowledge but also **ignited a passion** that continues to drive me forward in the pursuit of excellence in biomedical research. UC LEADS has been instrumental in shaping not just my career but also my perspective on what is achievable, and for that, I am profoundly grateful.

Campus Updates



UC Merced | Year in Review

The UC LEADS Program continues as one of the only undergraduate research programs to guarantee two years of research at UC Merced. The scholars' accomplishments continue to highlight the great experiences in this program: Ukamaka Ezimora received Top Honors and Clara Medina received Honorable Mention both in Engineering & Computer Sciences for their presentations at the 2023 UCLEADS Annual Symposium; Clara Medina has been accepted to the Civil and Environmental Engineering PhD program at Stanford University; Emily Gomez received the Campus Leadership Award at the 2023 UCLEADS Annual Symposium; and our alumni stay involved with presentations and speaker panels for new scholars to share their experiences with the campus community at events, both virtually and in person. We included academic year funding for the scholars to continue

research into the academic year with additional SAPEP funding, so students received \$1,500 per semester to advance their projects and continue their development.

This year the scholars attended the AAAS Emerging Researchers National (ERN) Conference in Washington, DC, in February 2023 to network and receive beneficial workshops for graduate school preparation.

All of the first-year scholars conducted in-person research projects at UC Merced and are excited about their next steps in research and graduate school preparation. We are immensely proud of the scholars for all their accomplishments.



UC LEADS is under the Undergraduate Research Opportunities Center (UROC) umbrella of programs at UC Merced.

| Second-Year Scholars

Ukamaka Ezimora (Mechanical Engineering) did her second summer research at UC Berkeley. Her poster, *Exploring the Cross-Sectional Shape Effect of 3D Printed Lightweight Tubular Structure Inspired By Sea-Sponge and Honeycomb*, received top honors at the 2023 UC LEADS Symposium. She also presented a poster titled *Understanding the Effect of Fabrication Technique on Recycled Plastics* at the TechConnect World Innovation Conference & Expo 2023. She plans to graduate in 2024.

Emily Gomez (Civil Engineering) did her second summer research at UC Davis. At the 2023 UC LEADS Symposium, she presented a poster titled *Potential for Automating Environmental Compliance by Farmers: Soil Carbon Emissions* and received the Campus Leadership Award.

Brandon Lopez (Biomedical Engineering) did his second summer research at UC Santa Barbara. He presented a poster at the 2023 UC LEADS Symposium titled *Capillary Imbibition*. He graduated in fall 2022 and is now a supply chain engineer at OSI Optoelectronics.

Nicholas Maldonado (Mechanical Engineering) did his second summer research at UCLA. He presented a poster at the 2023 UC LEADS Symposium titled *Study on Spacecraft Electric Propulsion Systems Through Ionic Thrusters*. He graduated in fall 2022 and is now an associate engineer at Aerojet Rocketdyne.

Clara Medina (Civil Engineering) did her second summer research at UC San Diego. Her poster, *Spatiotemporal Patterns in Coastal Climate and Groundwater in the California Pajaro Valley*, received an honorable mention at the 2023 UC LEADS Symposium. She graduated in spring 2023 and is now a Civil and Environmental Engineering PhD student at Stanford University.

Tiffany Murga Duarte (Biomedical Engineering) did her second summer research at UC Davis. She presented a poster at the 2023 UC LEADS Symposium titled *Role of Inflammation and PTH-Mediated Bone Remodeling in Systemic Bone Loss Following Femur Fracture*. She plans to graduate in fall 2023.

Ashley Valdez (Biology) did her second summer research at UC Irvine. She presented a poster titled *Genetic Contributions of Chronic Ethanol Tolerance in Drosophila* at the 2023 UC LEADS Symposium and at the 2023 West Coast Biological Sciences Undergraduate Research (WCBSURC) Conference. She graduated in spring 2023 and works as a research associate at BioLegend.

| First-Year Scholars

Gabriela Ceron (Biology, Microbiology and Immunology emphasis) did her first summer research at UC Merced. She presented a poster at the 2023 UC LEADS Symposium titled *How Sugar Modifications to the GPI of Toxoplasma Gondii Impact Antibody and Complement Recognition of Toxoplasma Gondii*. She plans to graduate in 2023.

Yumie Lee (Bioengineering) did her first summer research at UC Merced. She presented a poster at the 2023 UC LEADS Symposium titled *Towards Building 2D and 3D Porous Biomaterials: Design, Synthesis, and Assembly of Multivalent Peptide-Organic Hybrid Building Blocks*. She plans to graduate in spring 2024.

Maria Pimentel (Biology and Chemistry) did her first summer research at UC Merced. She presented a poster at the 2023 UC LEADS Symposium titled *Microbiome Protection Against Coccidioides Growth*. She plans to graduate in spring 2024.

Adelynn Wagner (Chemistry) did her first summer research at UC Merced. She presented a poster at the 2023 UC LEADS Symposium titled *Electrochemical Hydrosilylation Promoted by a Manganese Complex*. She plans to graduate in fall 2024.

Alumni Spotlight



JESSICA LOPEZ LARA

UC LEADS 2017-2019

B.S. Chemistry

A first generation college student, Lopez Lara earned her bachelor's degree in Chemistry with an emphasis in Materials Science from UC Merced, and worked as Materials Science intern at the Sandia National Laboratories. She went on to join the Read de Alaniz group with a 2020 Regents in Chemistry Fellowship as a PhD student in Chemistry. In 2023, she won the Robert H. DeWolfe Distinguished Teaching Fellowship in Organic Chemistry.



I think the UC LEADS had a large impact on my academic career because **I ended up pursuing my PhD** at UCSB which is where I did my second summer research experience. It also **made the process of joining a research lab for grad school easier** because I already knew the professor I now work for. (I did my second summer with the same professor.)

Campus Updates



UC Riverside | Year in Review

In 2022 we welcomed our UC LEADS students to the first post-pandemic, in-person summer program. We were delighted to offer them a rich program of social activities, professional development, and in-the-lab, hands-on research experience. Our scholars were a dynamic, resourceful, and ambitious group that adapted quickly to our programming and elevated our program to new heights. Some challenges remained (multiple members of our UC LEADS community came down with Covid), but our students clearly appreciated the informal contacts that are best in person, such as practicing their symposium presentations with each other in small groups.

We increased our UC LEADS cohort by two first-year participants with the additional SAPEP Funding this year, for a total of 6 first-year students. We also supported four second-year UCR scholars to work at UC San Diego and UC San Francisco, where they continued their cutting-

edge research and expanded their breadth of knowledge and experience.

The summer culminated in an in-person research symposium in which students presented their research in either oral or poster presentations. Mentors and lab mates attended to cheer on our talented developing scientists. First-year UC LEADS scholar Erik Hakopian earned the Best Poster Presentation Award.

Additionally, UC LEADS student Queenie Lin established the Academic Preparation, Recruitment, and Outreach (APRO) Student Ambassadors club, which worked with our office to host social and professional development meetings for students interested or involved in research. These meetings were especially helpful in the run-up to the UC LEADS Spring Symposium.



UC LEADS is supported by the UC Riverside Graduate Division.



| Second-Year Scholars

Zachary Amador (Cell & Molecular Biology) completed his second summer research at UC San Francisco. He presented a poster at the 2023 UC LEADS Symposium titled *Functional Characterization of Human Accelerated Regions (HARs) in Gene Regulation via Allelic RNA-seq*. He graduated in spring 2023 and was accepted as a Genetics and Genomics PhD student at the University of Washington.

Dannya Enriquez Barrundia (Bioengineering) completed her second summer research at UC San Francisco. She presented a poster at the 2023 UC LEADS Symposium titled *Analysis of Bile Acid Metabolites in Maternal and Fetal Samples at Post-Partum*. She graduated in spring 2023.

Queenie Lin (Bioengineering) completed her second summer research in the UC San Diego Kwon Lab for Nanoscale Bioengineering. Her second summer research on *Activity-Based Nanosensors for Traumatic Brain Injury* was presented at the UCSD Summer Research Conference for UC LEADS/UCSD STARS and has been submitted for publication. At the 2023 UC LEADS Symposium, she presented a poster titled *Severity- and Sex-Dependent Biodistribution of an Activity-Based Nanosensor for Traumatic Brain Injury* and also received the Campus Leadership Award. She is the Senior Advisor to the BioMedical Engineering Society at UCR and the Professional Development Chair for the UCR Society of Women Engineers. She was awarded the Outstanding Undergraduate Researcher Award by the UCR Bourns College of Engineering. She graduated in spring 2023 and is applying to engineering PhD programs.

Peter Nguyen (Materials Science & Engineering) completed his second summer research at UC San Diego. He presented a poster at the 2023 UC LEADS Symposium titled *Bio-Inspired Active Skins for Passive Temperature Sensors*. He graduated in spring 2023 and was accepted as a Materials Science and Engineering Masters student at UC Irvine.

| First-Year Scholars

Shamed Amani (Biology) completed his first summer research at UC Riverside. He presented a poster at the 2023 UC LEADS Symposium titled *Seeking to Inhibit The Spread of Congo Crimean Hemorrhagic Fever Virus by Pinpointing Animal Reservoirs*. He plans to graduate in 2024.

Miriam Contreras Castillo (Bioengineering) completed her first summer research at UC Riverside. She plans to graduate in 2024.

Madeleine Haddad (Mathematics) completed her first summer research at UC Riverside. Her poster, *Los Angeles Traffic Emission Trends Throughout the Covid-19 Pandemic*, received an honorable mention at the 2023 UC LEADS Symposium. She plans to graduate in 2024.

Erik Hakopian (Neuroscience) completed his first summer research at UC Riverside. He presented a poster at the 2023 UC LEADS Symposium titled *Exploring the Effects of MK-801 on Functional Connectivity of The Septo-Hippocampal Networks Via Machine Learning Algorithm Classifications*. He plans to graduate in 2024.

Alexander Nguyen (Cell & Molecular Biology) completed his first summer research at UC Riverside. He presented a poster at the 2023 UC LEADS Symposium titled *Increased Growth Mindset from a Community-Based Technology Intervention for Low-income Older Adults*. He plans to graduate in 2024.

An Truong (Chemistry) completed her first summer research at UC Riverside. She presented a poster at the 2023 UC LEADS Symposium titled *Investigating the Degradation Efficiency of PPCPs by Applying UV/PS*. She plans to graduate in 2024.

Alumni Spotlight



JULIANNE ROLF

UC LEADS 2013-2015

B.S. Environmental Engineering

Rolf graduated from UC Riverside with a bachelor's degree in environmental engineering and went on to do research on temporal lake water quality in the northeast region of Germany. After earning her PhD in Chemical and Environmental Engineering from Yale University, she served as a budget analyst and California Council on Science and Technology Policy Fellow in the California Department of Finance. She also works as an Academic Director of an international education company for middle and high school students.



UC LEADS gave me the opportunity to get into a lab and create new knowledge in an important field. By working in two labs at two different UC campuses, I learned a variety of research skills, especially **how to creatively solve scientific challenges**, as well as networking. I met a lot of amazing researchers and scientists who helped me on my journey to graduate school and beyond. Having **a healthy, supportive research community** cultivated my love of science in a way that all researchers should be able to experience!

Campus Updates



UC San Diego | Year in Review

In summer 2022, our UC LEADS scholars did a summer research experience in person for the first time in two years because of the COVID pandemic. Scholars gained hands-on research experience with a faculty mentor's research project, attended transfer and graduate school preparation workshops, visited the San Diego Zoo and the beach, and presented their research at the UCSD Summer Research Conference. The scholars appreciated having the opportunity to be in person with other students, getting to build relationships, network, and practice their research skills.

Our rising second-year scholars did research at UC Irvine, UC Los Angeles, and UC Berkeley. These scholars had the opportunity to expand their knowledge at each of these campuses, where they were supported by a structured program and caring mentors.

During the academic year, the program hosted meetings where scholars discussed topics of interest to them. We also welcomed students back to in-person social outings to ensure our scholars could bond and become closer. Many of our scholars received awards, fellowships, and scholarships to support their graduate school efforts and post-graduation journeys. All of our scholars continued to present their research, attend conferences, and serve in various leadership activities, such as mentoring and executive roles in student organizations.



UC LEADS is supported by the UC San Diego Graduate Division.



UC San Diego

| Second-Year Scholars

Wai Lam Hong (Biology) is a first-generation college student. She did her second summer research at UC Irvine. She presented a poster at the 2023 UC LEADS Symposium titled *Exploring the Role of Organelle Segregation During Asymmetric Cell Divisions in Arabidopsis Thaliana*. She graduated in spring 2023.

Athena Leisching (Neuroscience) did her second summer research at UC Berkeley. She graduated in spring 2023 as the first in her immediate and extended family to pursue higher education.

Hsu Lin (Managerial Economics) did his second summer research at UC Los Angeles. He presented a poster at the 2023 UC LEADS Symposium titled *Returns to Education in Asian Americans*. He graduated in spring 2023 and is currently working as a research assistant at UCLA.

Antonio Loaiza (Biomedical Engineering) did his second summer research at UC Irvine. He presented a poster at the 2023 UC LEADS Symposium titled *Stabilizing Drone Flight: "Alpha" Quad-flapper's Application on Lift and Thrust Efficiency*. He is a transfer student from San Diego City Community College, and he graduated in spring 2023. He was accepted as a master's student at UC Irvine for the Mechanical and Aerospace Engineering program.

Daniel Maldonado Naranjo (Mechanical Engineering) is a first-generation college student. He did his second summer research at UC Los Angeles. His poster, *Metamaterial Mechanical Properties: Auxetic Unit Cells for The Design and Manufacturing of Curved Surfaces*, received top honors at the 2023 UC LEADS Symposium. He also exhibited exceptional leadership qualities during his time at UC LEADS and received the Graduate Deans' Leadership Award. He graduated in spring 2023 and was accepted as a Mechanical Engineering PhD student at Massachusetts Institute of Technology. He was awarded the GEM Employer Fellowship that will financially support his first year of his PhD program.

| First-Year Scholars

Vicky Chen (Biochemistry) is a first-generation college student. She did her first summer research at UC San Diego. She presented a poster at the 2023 UC LEADS Symposium titled *mRNA Localization to The Mitochondrial Surface Increases Protein Expression*. She plans to graduate in 2024.

Jessica De La Torre (Mechanical Engineering) did her first summer research at UC San Diego. She presented a poster at the 2023 UC LEADS Symposium titled *Low-Cost, 3D Printed, Modular Micro Acoustofluidic Platform for Increased Measurement Fidelity*. She plans to graduate in 2025.

Ali Kattae (Mechanical Engineering) is a first-generation college student. He did his first summer research at UC San Diego. He presented a poster at the 2023 UC LEADS Symposium titled *Continuous Scale Battery Modeling for CubeSat Design Optimization*. He plans to graduate in 2024.

Andrew Oabel (Computer Science) did his first summer research at UC San Diego. His poster, *Detecting Risk Factors in Problem Gamblers Through Online Communities on Reddit*, received an honorable mention at the 2023 UC LEADS Symposium. He plans to graduate in 2024.

Claire Wellenkamp (Aquatic Biology) did her first summer research at UC San Diego. She presented a poster at the 2023 UC LEADS Symposium titled *Counting Calories: Investigating Prey Nutritional Quality for Top Predators in a Coastal Upwelling System*. She plans to graduate in 2024.

Alumni Spotlight



BRANDON LEUNG

UC LEADS 2017-2019

B.S. Computer Science

Brandon Leung received a BS in Computer Science from UC San Diego before pursuing a MS in Machine Learning and Data Science from the same institution. After completing his studies, he continued onto a career in industry as an engineer at Tesla Autopilot, where he now uses applied research and software engineering to develop real-world autonomous 3D vision systems at scale.



As a first generation student, I had no previous exposure to research but was introduced through UC LEADS. I fell in love with how **exploratory, scientific, and cutting-edge** topics were compared to my coursework, which were quite rigid and outdated. One of my favorite parts about UC LEADS is that it gave me an opportunity to interact with a community of other undergraduate researchers from many different fields. Overall, **the program was a catalyst** for my academic research career, which was critical in providing the experience needed for my current career path.

Campus Updates



UC Santa Barbara | Year in Review

UC Santa Barbara had a vibrant Summer 2022 research program, uniting scholars from various disciplines for workshops on topics like writing a statement of purpose, faculty mentoring, presentation skills, self-care, career exploration, and grad school prep. Faculty, mentors, and peers led sessions, blending academia with fun events like movies and bowling.

Scholars showcased their summer research at our Academic Research Consortium Symposium, and again at a poster session in conjunction with other STEM-based summer research programs across campus. Through these opportunities, they fostered connections and friendship

after pandemic-induced isolation. Scholars, facilitators, and staff uniformly expressed gratitude for these opportunities to congregare with one another in person and begin to find a sense of normalcy.

During the academic year we continued to foster opportunities for community building and networking. We hosted our first dinner with both current Scholars and UC LEADS Alumni. The year culminated in another lively dinner where we welcomed our newest cohort and congratulated our graduating seniors heading off to doctoral studies and lucrative careers.



UC LEADS is supported by the
UC Santa Barbara Graduate Division.

UC Santa Barbara

| Second-Year Scholars

Charlotte Chen (Biological Sciences) did her second summer research at UC San Francisco. At the 2023 UC LEADS Symposium, she presented a poster titled *Utilization of Optogenetics in PKR Activation* and also received the Campus Leadership Award. Graduating with High Honors, Charlotte is currently participating in a Santa Barbara Cottage Hospital shadowing program in Internal Medicine, and applying to Fall 2024 MD/PhD programs.

Jorge Gutierrez (Electrical Engineering) did his second summer research at UC Irvine. At SACNAS 2022, he presented a poster titled *Fabrication of Thin Film Transistors for Microrobotics*. Jorge was honored as the College of Engineering's 2023 recipient of the prestigious John and Sheila Lake Excellence Award, for demonstrating outstanding academic performance and an extraordinary level of engagement within the college. He graduated in spring 2023 and is currently working as a hardware engineer at Northrop Grumman.

Kien Le (Physics) did his second summer research at UC Berkeley. His poster, *Quantum Resource States with Photonic Time and Frequency Degrees of Freedom*, received an honorable mention at the 2023 UC LEADS Symposium. Kien served in leadership positions with multiple campus groups, including as Co-Chair of the workshops for transfer students with the Physics department's Undergraduate Diversity and Inclusion Committee. A recipient of a 2023 NSF-GRFP award, he graduated in Spring 2023 and is enrolled as an Applied Physics PhD student at Stanford University.

Imanol Ulloa (Aquatic Biology) did his second summer research at UC San Diego. He presented a poster at the 2023 UC LEADS Symposium titled *Sulfur Cycling in the Archean: Insights from Lake Superior Sedimentary Lipids*. He presented this work a second time at the Fall 2022 Meeting of the American Geophysical Union (AGU). Imanol was honored at commencement with an Excellence Award from the Office of Student Engagement and Leadership for his work with first-generation and low-income students. He graduated in spring 2023 and is enrolled as a Earth and Planetary Science PhD student at UC Berkeley with a concentration in Marine Biology.

| First-Year Scholars

Trey Dold (Physics) did his first summer research at UC Santa Barbara. He presented a poster at the 2023 UC LEADS Symposium titled *Controlling the Phase Separation of Polymers Peg and Dextran in the Search of Creating New Soft Materials*. Trey studied at the University of Edinburgh with the UC Education Abroad Program during Fall 2022. He plans to graduate in 2024.

Colby Fagan (CCS Biology) did his first summer research at UC Santa Barbara. He presented a poster at the 2023 UC LEADS Symposium titled *In search of the Methuselah Worm: a New Method of Screening for Longevity Mutants in the Nematode C. Elegans*. Through his research, Colby became involved in the public launch of UCSB's Center for Aging and Longevity Studies. He plans to graduate in 2024.

Janae Gayle (Biology) did her first summer research at UC Santa Barbara. She presented a poster at the 2023 UC LEADS Symposium titled *Observing Changes within hiPSC-CM through the use of Dual Protein Patterning*. She won Best Undergraduate Poster for her poster titled *Data Analysis Using Sarcograph Provides Insight on The Effects of Spermidine on Doxorubicin-Treated Stem-Cell Derived Cardiomyocytes* at the 2022 BioEngineering Research Symposium and Biotechnology Industry Showcase. She plans to graduate in 2024.

Keryn Jung (CCS Physics) did her first summer research at UC Santa Barbara. She presented a poster at the 2023 UC LEADS Symposium titled *A Step Towards Solving The Neutrino Mass Puzzle Through the Detection of Muon to Positron Conversion*. She plans to graduate in 2024.

Kira Wallquist (Pharmacology) did her first summer research at UC Santa Barbara. Her poster, *Choice and Motivation in a Rat Model of Methamphetamine Addiction*, received top honors at the 2023 UC LEADS Symposium. She plans to graduate in 2024. Selected as a UCSB Bentson Scholar for 2019-2023, she plans to graduate in spring 2023.

Alumni Spotlight



WHITNEY SHATZ

UC LEADS 2003-2005

B.S. Biochemistry

After UC LEADS, Whitney Shatz graduated from UCSB with her MS in Biochemistry and Molecular Biology and began working at Amgen that same year. A year and a half later, she was hired at Genentech, which enabled her to move back to the Bay Area. Several years later, while still working at Genentech, she began a PhD program through the University of Geneva. She graduated with her doctorate in Pharmaceutical Sciences several years later and also recently celebrated 16 years at Genentech.



UC LEADS was an invaluable experience which **provided me a path forward** to pursue an advanced degree. The program supported me with the opportunity to do undergraduate research in a biochemistry lab. It also gave me a preview of what graduate school was like by organizing UC-wide symposia and by connecting me with a network of other students with similar goals. These experiences, helped guide my academic journey and without a doubt **gave me the confidence** to pursue advanced degrees in Biochemistry and Pharmaceutical Sciences.

Campus Updates



UC Santa Cruz | Year in Review

We were excited to return to a fully in-person summer research program in the summer of 2022. We hosted in-person professional development workshops, book club, ethics training, writing lectures, faculty research seminars, and social community-building events. We also took advantage of Zoom and guest speakers from Bayer, Yale, and the FDA. In addition to professional development, scholars spent most of their time immersing themselves in the research environment, which was limited during the previous virtual or hybrid summer program. The adaptation of Zoom also allowed scholars to join other UC campus activities, workshops, and events organized by the statewide office. Our first-year scholars completed an intensive, eight-week, full-time summer research training, including 12 hours of research ethics and 15 hours of professional development. All scholars participated in the end-of-the-summer poster symposium showcasing their summer research.

During the academic year of 2022-2023, all scholars participated in quarterly check-ins with program coordinators, received tutoring for upper-division courses, and participated in professional development workshops throughout the academic year. During the fall of 2022, two scholars attended SACNAS, and one attended the ABRCMS conferences. Six UC LEADS scholars attended the Undergraduate Research Network Conference at Washington, DC, in February of 2023 to engage in professional development and networking with professionals and scholars across the country.

Three UC LEADS scholars graduated in the spring of 2023. One of the graduates is working as a medical assistant. The other two graduates work as post-bacs at UC Santa Cruz and Stanford to further their research training.



UC LEADS is supported by the STEM Diversity Research Programs group, within the UC Santa Cruz Division of Physical & Biological Sciences.

UC Santa Cruz

| Second-Year Scholars

Valeria Galindo-Eguiarte (Environmental Sciences) did her second summer research at UC Santa Cruz in the laboratory of Dr. Adina Payton in the Earth and Planetary Sciences department. At the 2023 UC LEADS Symposium, she presented a poster titled *EPore Water Alkalinity in a Variety of Wetland Settings in Elkhorn Slough* and also received the Campus Leadership Award. She graduated in summer 2023.

Alejandro Medina Enciso (Cell & Molecular Biology) is a first-generation and transfer student from Riverside City College. He did his second summer research at UC Santa Cruz with Dr. Vicki Auerbuch-Stone in the Microbiology and Environmental Toxicology Department. Alejandro attended the Annual Biomedical Research Conference for Minoritized Students in the fall of 2023. He also presented a poster at the 2023 UC LEADS Symposium titled *Analyzing The Impact of The PagP Lipid A Modification Enzyme on Yersinia Pseudotuberculosis*. He graduated in spring 2023 and is currently a post-baccalaureate fellow at Stanford.

Bonifacio Miranda (Mathematics) did his second summer research at UC Santa Cruz. He decided to pursue other interests unrelated to research in the fall of 2023 and is expected to graduate in fall 2024 with a B.S. in Computer Engineering.

Lucia Suarez (Cell & Molecular Biology), from Modesto, CA, is the first in her family to attend college. Lucy did her second summer research at UC Santa Cruz. She presented a poster at the 2023 UC LEADS Symposium titled *Generating and Evaluating Kinase Dead Mutants of CDK2 and MAPK*. She graduated in spring 2023 and works as a medical assistant in the Modesto area.

| First-Year Scholars

Chris Avila (Earth Sciences, Planetary Sciences Concentration) joined UC LEADS late and did not conduct research over the summer in 2022. He presented a poster at the 2023 UC LEADS Symposium titled *UCSC-FERP stem data(How do Forests change*, based on his academic year research. He plans to graduate in 2025.

Daniel Bautista Acevedo (Human Biology) did his first summer research at UC Santa Cruz with Dr. Doug Kellogg. He plans to graduate in 2024 and is applying to MPH programs for fall 2024.

Natalie Hermosillo (Earth Science) did her first summer research at UC Santa Cruz in the Earth and Planetary Sciences department under the mentorship of Dr. Adina Paytan. Natalie attended the 2022 SACNAS National Conference and participated in the C.O.L.O.R leadership retreat and she presented a poster at the 2023 UC LEADS Symposium titled *Analyzing Major Anions in Subsurface Sediments of The Elkhorn Slough Estuary During the Wet and Dry Season*. She graduated in spring 2023 and is a UCSC research assistant for the Paytan lab.

Melanie Jones (Chemistry, Biochemistry Concentration) did her first summer research at UC Santa Cruz. Her poster, *Directed Evolution of Cyclase dsKabC: Transforming a Glutamate Receptor Agonist Producing Enzyme into an Antagonist Producer*, received an honorable mention at the 2023 UC LEADS Symposium. She plans to graduate in 2025.

Caitlyn Nojiri (Astrophysics) is a transfer student from Orange Coast College. She did her first summer research at UC Santa Cruz. Caitlyn attended the SACNAS National Conference in Puerto Rico in the fall of 2022. Her poster, *Life Changing Cosmic Rays*, received top honors at the 2023 UC LEADS Symposium. She plans to graduate in 2024 and apply for graduate programs in 2024.

Alumni Spotlight



ANGEL GARCIA

UC LEADS 2020-2021

B.S. Molecular, Cell, & Developmental Biology

After completing his BS in Molecular, Cellular, & Developmental Biology at UC Santa Cruz, Angel joined the post-baccalaureate program at UCSF. He worked as a research assistant in a neuroscience lab for two years and then transitioned into the Neuroscience PhD program across the bay at UC Berkeley. As a National Science Foundation fellow, Angel will study the cellular interactions between neurons and non-neuronal cells in the nervous system. He plans to pursue a career in academia, in which he can lead his own research group and mentor younger scientists.



My participation in the UC LEADS program was an essential stepping stone in my career development. As a low-income student working a part-time job to financially support myself through college, volunteering in a lab was largely inaccessible. The **financial support** the program provided increased the accessibility of working in a research lab and also brought me into **a community of students** from similar backgrounds. My interactions with graduate students and professors through UC LEADS showed me how a PhD could prepare me to become a more independent scientist, capable of making the complex connections that lead to discovery.

Campus Updates



UC San Francisco | Year in Review

After hosting a virtual program in 2021, the UC San Francisco UC LEADS summer program returned to in-person research in summer 2022, with a cohort of five brilliant second summer scholars that participated as a part of a larger cohort of forty-four summer researchers.

Scholars conducted 8 to 10 weeks of research, gaining access to UC San Francisco's cutting-edge computational applications, being mentored by faculty,

postdocs, and graduate students, and experiencing the culture and collegiality of being a member of a "lab group." To conclude the summer, scholars gave oral and poster presentations during the symposium.

We are proud of the 2022 UC LEADS scholars for leading the program back to in-person research while maintaining health and safety!



UC LEADS is supported by the UC San Francisco Graduate Division.

| Second-Year Scholars

Zachary Amador (Cell & Molecular Biology) was a second summer research student from UC Riverside. He presented a poster at the 2023 UC LEADS Symposium titled *Functional Characterization of Human Accelerated Regions (HARs) in Gene Regulation via Allelic RNA-seq*. He graduated in spring 2023 and was accepted as a Genetics and Genomics PhD student at the University of Washington.

Charlotte Chen (Biological Sciences) was a second summer research student from UC Santa Barbara. At the 2023 UC LEADS Symposium, she presented a poster titled *Utilization of Optogenetics in PKR Activation* and also received the Campus Leadership Award. She is currently applying to MD/PhD programs.

Dannya Enriquez Barrundia (Engineering) was a second summer research student from UC Riverside. She presented a poster at the 2023 UC LEADS Symposium titled *Analysis of Bile Acid Metabolites in Maternal and Fetal Samples at Post-Partum*. She graduated in spring 2023.

Alexandra Serna Godoy (Cognitive Psychology) was a second summer research student from UC Davis. She presented a poster at the 2023 UC LEADS Symposium titled *Gonadal Hormones Act During Puberty to Reduce The Reactivity of Oxytocin Neurons in The Anterior Paraventricular Nucleus*. She is currently applying to STEM PhD programs.

Wendy Su (Biological Sciences) was a second summer research student from UC Los Angeles. She presented a poster at the 2023 UC LEADS Symposium titled *Leveraging Publicly Available Transcriptomics Data for Computational Drug Discovery in Endometriosis*. She exhibited exceptional leadership qualities during her time in UC LEADS and received the Graduate Deans' Leadership Award. She graduated in winter 2023 and was accepted as a Genomics and Computational Biology PhD student at the University of Pennsylvania.



HANNAH TABAKH

UC LEADS 2011-2013

B.S. Microbial Biology

Hannah Tabakh participated in the UCSF UC LEADS program, while working toward her BS in Microbial Biology at UC Berkeley. She then received a PhD in Microbiology from the University of Washington. Since the completion of her PhD she has been working at Lumen Bioscience, a clinical-stage biotechnology company that develops biologics for highly prevalent diseases.

“ UC LEADS gave me the **freedom to focus** exclusively on research and greatly improve my laboratory skills while still in the early stages of my scientific path. This prepared me for graduate school and **helped me succeed** in the highly dynamic environments of both academia and private industry. I continue to draw upon skills I learned as a UC LEADS scholar many years into my scientific career.

Executive Steering Committee

The UC LEADS Executive Steering Committee guides the policies, procedures, best practices and direction of the program on a UC-systemwide level. It includes the following members:



Dr. Robert Hamm
Interim Chair
Executive Steering Committee
Graduate Division Assistant Dean
UC Santa Barbara

Michele Johnson
UC LEADS Systemwide Director
UC Santa Barbara

NORTHERN CALIFORNIA

Dr. Alexei Filippenko
Faculty Representative
UC Berkeley

Dr. Jorge Arroyo
UC LEADS Staff Representative
UC Merced

SOUTHERN CALIFORNIA

Dr. Sonya Neal
Faculty Representative
UC San Diego

Mariela Menendez
UC LEADS Staff Representative
UC Irvine

The UC LEADS Systemwide Office is currently housed within the Graduate Division at UC Santa Barbara, and is supported by the Graduate Studies office at the University Office of the President.

Campus **Contacts**

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