

UNIVERSITY OF CALIFORNIA

Leadership Excellence through Advanced Degrees (UC LEADS)



Preparing Scholars for Graduate Education in





Annual Report

23-24

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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 STATEWIDE DIRECTOR MICHELE JOHNSON



UC LEADS Systemwide Director, Michele Johnson



UC LEADS Directors, past and present, at the UC LEADS Reunion, July 2023

This summer we hosted our first ever UC LEADS Reunion! One hundred fifty UC LEADS alumni and family, current scholars, and UC LEADS staff reconnected at the UC Berkeley Campanile Esplanade on July 15th, 2023. Many continued the celebration exploring the Lawrence Hall of Science together. We certainly hope it won't be another 20 years before we get together again!

In the fall, we reprised our Second Summer Planning Workshop to introduce first-year scholars 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.

This year we also welcomed Dr. Jean-Pierre Delplanque, Vice Provost and Dean of Graduate Studies at UC Davis, into the role of UC LEADS Executive Steering Committee Chair. Dr. Delplanque restores UC LEADS's connection with the UC Graduate Deans, and we are grateful for his time and advocacy. We are also incredibly appreciative for the years of guidance in the interim by UC Santa Barbara Assistant Dean Dr. Robert Hamm, since the departure of UC Santa Barbara Anne and Michael Towbes Graduate Dean Dr. Carol Genetti.

The campus UC LEADS staff continue to do amazing work supporting the academic pipeline for underrepresented groups and preparing UC LEADS scholars for graduate school and leadership beyond. To bolster this work, campuses received additional ongoing and one-time funding as a Student Academic Preparation and Educational Partnerships (SAPEP) program. As a result, campuses have been able to support more UC LEADS scholars and provide these scholars with more competitive support. UC President Drake also approved a funding allocation to support a 3-year pilot UC LEADS Fellowship designed to increase the application, admission, and enrollment of talented UC LEADS scholars in UC Ph.D. programs. The details of this exciting fellowship were announced in fall 2024.

Michel Johnson

Leadership in Scholarship

IMPACT THROUGH SCHOLARLY CONTRIBUTIONS:

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

Saira Cazarez | UC Irvine

Dhaoui R, Cazarez SL, et al. (2023). 3D Visualization of Proteins within Metal-Organic Frameworks Via Ferritin-Enabled Electron Microscopy. Adv. Funct. Mater. 2312972.

https://doi.org/10.1002/adfm.202312972

Gabriela Ceron | UC Merced

Alvarez JA, Gas-Pascual E, Malhi S, Sánchez-Arcila JC, Njume FN, van der Wel H, Zhao Y, García-López L, Ceron G, et al. (2024). The GPI Sidechain of Toxoplasma Gondii Inhibits Parasite Pathogenesis. mBio. https://doi.org/10.1128/mbio.00527-24

Bezawit Danna | UC Los Angeles

Acevedo A, Jones AE, Danna BT, et al. (2024). The BCKDK inhibitor BT2 is a chemical uncoupler that lowers mitochondrial ROS production and de novo lipogenesis. Journal of Biological Chemistry. 300 (3). 105702. DOI: 10.1016/j.jbc.2024.105702.

Tim Duong | UC Los Angeles

Nguyen M, Duong T, and Neuhauser D. (2024). Time-Dependent Density Functional Theory with The Orthogonal Projector Augmented Wave Method. J. Chem. Phys. 144101.

https://doi.org/10.1063/5.019334

Colby Fagan | UC Santa Barbara

Longhini AP, et al. (2025). Protein-Like Polymer for Inhibition of Tau Fibril Propagation in Human-Derived Models of Neurodegeneration. bioRxiv.

https://doi.org/10.1101/2025.02.02.636155

Sonali Feeley | UC Los Angeles

Feeley B, Feeley S, and Chambers C. (2024). Fastpitch Softball Injuries: Epidemiology, Biomechanics, and Injury Prevention. Curr Rev Musculoskelet Med. 17, 110-116 (2024).

https://doi.org/10.1007/s12178-024-09886-y

Vicky Lam / UC Irvine

Duarte V, Lam VT, Rimicci D, Thompson-Peer KL. (2024). Calcium Plays an Essential Role in Early-Stage Dendrite Injury Detection and Regeneration. Progress in Neurobiology. 239 (2024) 102635. https://doi.org/10.1016/j.pneurobio.2024.102635

Yumie Lee | UC Merced

Perez AR, Lee Y, Colvin ME, Merg AD. Interhelical E@g-N@a Interactions Modulate Coiled Coil Stability within a De Novo Set of Orthogonal Peptide Heterodimers. J. Pept. Sci. 2024; 30(2):e3540. https://doi.org/10.1002/psc.3540

Caitlyn Nojiri | UC Santa Cruz

Nojiri C, Globus N, and Ramirez-Ruiz E. (2025). Life in The Bubble: How a Nearby Supernova Left Ephemeral Footprints on The Cosmic-Ray Spectrum and Indelible Imprints on Life. The Astrophysical Journal Letters, 979(1), L18.

https://doi.org/10.3847/2041-8213/ada27a

Justin Purnomo | UC Los Angeles

Grotjahn R, Purnomo J, Jin D, Lutfi N, and Furche F. (2024). Chemically Accurate Singlet–Triplet Gaps of Arylcarbenes from Local Hybrid Density Functionals. The Journal of Physical Chemistry. 128 (29), 6046-6060. DOI: 10.1021/acs.jpca.4c02852.

Nicole Sang Lav | UC Irvine

Yale AR, Kim E, Gutierrez B, Hanamoto JN, Lav NS, Nourse JL, ... & Flanagan LA. (2023). Regulation of Neural Stem Cell Differentiation and Brain Development by MGAT5-Mediated N-Glycosylation. Stem Cell Reports. 18(6):1340-1354. DOI: 10.1016/j.stemcr.2023.04.007.

Alexandra Serna Godoy | UC Davis

Wright EC, Luo PX, Zakharenkov HC, Serna Godoy A, et al. (2023). Sexual Differentiation of Neural Mechanisms of Stress Sensitivity During Puberty. Proceedings of the National Academy of Sciences. 120 (43) e2306475120. DOI:10.1073/pnas.2306475120.

Daniel Torres Pomares | UC Los Angeles

Ready A, Nelson Y, Torres Pomares D, and Spokoyny A. (2024). Redox-Active Boron Clusters. Acc. Chem. Res. 2024, 57, 9, 1310-1324. https://doi.org/10.1021/acs.accounts.4c00040

Adelynne Wagner | UC Merced

Wagner A, Smiley R, Velázquez J. (2024). Microwave Assisted Solid-State Synthesis and Characterization of RuMo5Se8 and Preliminary Proton Adsorption Studies.

https://doi.org/10.1021/scimeetings.5c10755

Kira Wallquist | UC Santa Barbara

Stocco MR, Purpura M, Vieira PA, Wallquist K, et al. (2025). Time to Choose: Impact of Intertrial Interval on Selecting Between Methamphetamine and Food reinforcement in Male and Female Rats. Psychopharmacology, 242(4), 693-702.

https://doi.org/10.1007/s00213-025-06750-w

https://doi.org/10.1016/j.pneurobio.2024.102635

2024 KORET UC LEADS Research and Leadership Symposium

MARCH 2, 2024



The 24th Annual Koret UC LEADS Research and Leadership Symposium was hosted by UC Berkeley at the Martin Luther King, Jr. Student Union Building. Attendees were welcomed to campus by the campus staff, as well as UC Berkeley Chancellor Carol Christ. With increased SAPEP funding, campuses have been able to support more UC LEADS scholars, and as a result, a record 93 students presented research posters this year. We are incredibly grateful to the 40 faculty and alumni judges who gave their feedback during the two morning poster sessions.

At lunch, Vice Provost for Graduate Studies and Dean of the UC Berkeley Graduate Division Lisa García Bedolla spoke about graduate school and introduced the exciting new UC LEADS Fellowship. Attendees then heard from a panel of UC LEADS alumni discussing

graduate education and career possibilities after UC LEADS. The panel included Dr. Julianne Rolf (UC Riverside), Walter Mancia (UCLA), and Kiko Galang (UCLA), and was moderated by Dr. David Gray (UCLA). After lunch, a networking break allowed for scholars to connect with and ask more personal questions of the panelists. Scholars had the opportunity to tour the campus while on their way to two lab tours led by UC LEADS scholars and alumni currently in PhD programs at UC Berkeley. As always, we ended the evening with awards and a celebration of all the scholars' hard work. Dr. Salvador Barriga, UC Berkeley UC LEADS alum and Senior Vice President of Research and Development for Pure Lithium Corporation, gave a powerful and inspirational evening keynote.







Poster Top Honors Winners

Biological Sciences Melanie Jones, UC Santa Cruz Ryan Kyeremeh, UC Davis Marissa Todesco, UC San Diego Engineering and Computer Sciences Adriann Josef Brodeth, UCLA Tin Nguyen, UC San Diego Julian Ramirez, UC San Diego Physical Sciences and Mathematics Ashai Moreno, UC Santa Cruz Caitlyn Nojiri, UC Santa Cruz Steven Umbarger, UC Merced







Campus Honorable Mentions

Biological Sciences
Joshuah Arellano, UC Irvine
Rosie Manner, UC Santa Barbara
Emily Thrall, UC Davis

Engineering and Computer Sciences Andrew Abdala, UC Riverside Mabel Espinoza, UC Merced Anna My Nguyen, UC San Diego Physical Sciences and Mathematics Kate Bostow, UC Berkeley Justin Purnomo, UCLA Yeison Samayoa, UC Santa Cruz

2024 KORET UC LEADS Research and Leadership Symposium MARCH 2, 2024

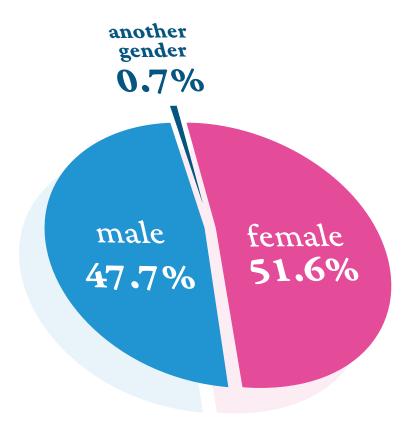




Program Impact Summary

RECRUITING A DIVERSE POOL OF SCHOLARS

UC LEADS begins to fulfill its goal of diversifying graduate education and STEM leadership by recruiting a diverse pool of scholars. The UC LEADS population is 52% first generation college students and 51% underrepresented minorities. Males and females are represented almost equally in program alumni (51.6% females, 47.7% male, and 0.7% another gender). Over the past 24 years, UC LEADS has supported 1,320 scholars.



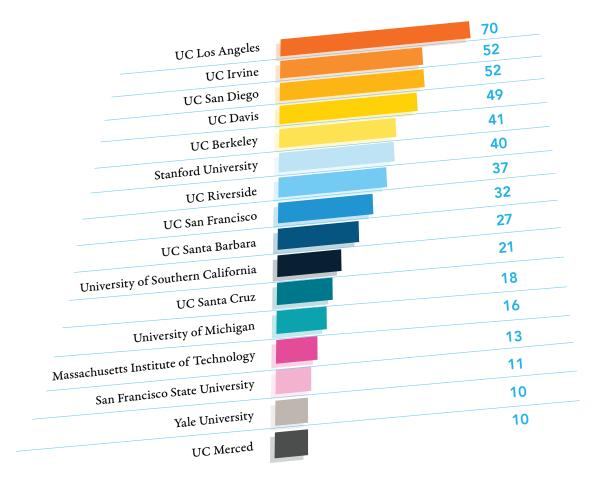


Beyond the theoretical knowledge, the program has also allowed me to immerse myself in the day-to-day life of a researcher. It is one thing to read about research, but to actually conduct it is a different experience altogether. This hands-on experience has given me a deeper understanding of the responsibilities, challenges, and rewards that come with being a researcher.

— UC Merced UC LEADS scholar

GRADUATE SCHOOL BOUND

UC LEADS continues to fulfill its goal of diversifying graduate education and STEM leadership by supporting scholars' preparation for graduate school. 99.6% of UC LEADS scholars graduate with their undergraduate degree, and 74% of alumni go on to graduate school. UC LEADS specifically diversifies graduate education within the UC, as 49% of alumni attending graduate school go to UC graduate programs. These alumni go on to become leaders in academia, government, and industry. Of the 43 alumni currently employed in faculty positions, 9 are at a UC. With the establishment of the new UC LEADS Fellowship, we hope to see an increase in the number of UC LEADS alumni in UC graduate programs. We have been working hard toward this goal, as seen in the figure below and hope to see even greater improvement over the next three years.



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I joined [UC LEADS] with the goal of learning more about research and whether or not it was the path for me. I am relieved to say that's the exact experience I got, and because of that I feel I have a better grasp on what grad school is like, and what my preferences are in what I'd like in a future career. I felt as if I enrolled in a mock grad school experience. Getting to work alongside other grad students and my PI closely was like I was a grad student myself. They did a good job of making me feel a part of the team and I learned many valuable insights into the life of a graduate student in physics.



UC Berkeley | Year in Review

We kicked off our year by hosting the first UC LEADS Statewide Alumni Reunion, which took place in the Campanile Esplanade. We were also proud to host the 2024 Koret UC LEADS Research and Leadership Symposium. Our UC Berkeley program brought in six scholars for our 2023 cohort and four visiting summer scholars. Five of our graduating scholars were successfully accepted into STEM graduate programs in California and an additional scholar has secured a position as a Post Baccalaureate Fellow at Stanford University's Kavli Institute for Particle Astrophysics and Cosmology. One of our alumni, Dr. Steven Chavez, finished a post doc at Stanford University and accepted an Assistant Professor position at UCLA in the department of Chemical and Biomolecular Engineering to begin in the fall of 2024. A few of our scholars demonstrated their leadership by co-teaching an Intro to Python Coding Weekend Boot Camp supporting non-dominant students, especially community college students. In addition, we have developed and implemented MESA STEM Program Administrator training, which provided a tour of our student center and how we manage this space, programming highlights, and student support service strategies. We also hosted two college visiting days for MESA STEM program community college students, featuring a hands-on lab tour with alum Anthony Salzar. Some of our scholars gained important professional development skills by attending research conferences, including Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), American Astronomical Society, and Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS). We also provided advising, guidance on graduate school application preparation, a graduate school visit to UC Davis, research poster design support, 3D printing lab access, micro-food snack pantry, and networking events with our UC Berkeley UC LEADS graduate student alumni. One alum, UC Berkeley Physics Project Scientist Dr. Cassie Reuter, has volunteered her time to be a role model and provide helpful tips for applying to graduate school. We also provided professional clothes grants, 1:1 graduate student mentoring by a visiting scholar alum and 4th-year UC Berkeley Chemistry doctoral student Anthony Garcia, and raffled off new luggage to support our scholars in need. We found it important to organize a variety of speakers from NASA, Author Marjorie Weingrow on resume development, etc. Our staff was recognized by UC Berkeley for campus-wide awards: Chris Noble received the Advising on the Spot Award and Diana Lizarraga was nominated by her scholars to receive the highest campus advising honor - the Mary Slakey Howell Excellence in Advising and Student Services Award.



UC Berkeley

Second-Year Scholars

Efrain Alvarado (Astrophysics) did his second summer research at UC San Diego. He graduated in summer 2023 and is pursuing a Master's in Astronomy at San Francisco State University.

Kate Bostow (Astrophysics) did her second summer research at UC Berkeley. Her poster titled WD 1856+534 Constraining the Efficiency of Tidal Dissipation in a White Dwarf-Hot Jupiter System received an honorable mention at the 2024 UC LEADS Symposium. She also exhibited exceptional leadership qualities during her time in UC LEADS and received the 2024 Campus Leadership Award. She graduated in fall 2024 and is an Astronomy Master's student at San Francisco State University

Isabella Demetz (Industrial Engineering) did her second summer research at UC Los Angeles. She presented a poster at the 2024 UC LEADS Symposium titled Optimal Design of Nonprofit Web Default Donation Systems. She graduated in spring 2024 and is an Industrial Engineering and Operations Research Master's student at UC Berkeley.

Santiago Karam Padilla (Industrial Engineering) did his second summer research at UC Los Angeles. He presented a poster at the 2024 UC LEADS Symposium titled Optimal Design of Online Nonprofit Default Donations Menus. He graduated in spring 2024 and is an Industrial Engineering and Operations Research Master's student at UC Berkeley.

Gabrielle Stewart (Astrophysics) did her second summer research at UC Berkeley. She presented a poster at the 2024 UC LEADS Symposium titled Early-Time High-Cadence Photometry of SN 2023ixf. She graduated in summer 2024 and is pursuing a post-baccalaureate at Harvard.

| First-Year Scholars

Mechenna Bae (Chemistry & Computer Science) did her first summer research at UC Berkeley. She plans to graduate in 2025.

Vy Duong (Chemical Engineering) did her first summer research at UC Berkeley. She presented a poster at the 2024 UC LEADS Symposium titled Preparation and Characterization of Size-Controlled Polyethylene Particles. She has applied to doctoral graduate school and graduated in December 2024.

Andrew Gabagat (Cell & Molecular Biology) did his first summer research at UC Berkeley. He presented a poster at the 2024 UC LEADS Symposium titled HIV-1 Capsid Drug Resistance Mutations Modify Viral Replication. He plans to graduate in 2026.

Jason Hodes (Mechanical Engineering) did his first summer research at UC Berkeley. He presented a poster at the 2024 UC LEADS Symposium titled Solar Terrestrial Probes Program: Dynamical Neutral Atmosphere-Ionosphere Coupling (DYNAMIC) Announcement of Opportunity-Satellite Orbit Analysis. He plans to graduate in 2026

Clarissa Jacobo Hernandez (Biomedical Engineering) did her first summer research at UC San Diego. She presented a poster at the 2024 UC LEADS Symposium titled Exploring the Regenerative Process of Injured Pelvic Floor Muscles in a Pregnant Rat Model. She plans to graduate in 2025.

Cassandra Reyes (Biomedical Engineering) did her first summer research at UC Berkeley. She graduated in spring 2024 and is a researcher at Innovative Genomics Institute.

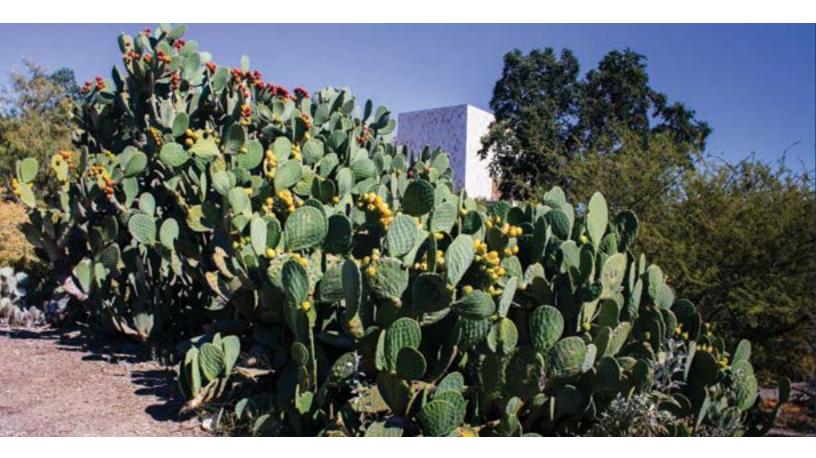


STEVEN CHAVEZ
UC LEADS 2012-2014
BS Chemical Engineering

Steven Chavez received his BS in Chemical Engineering from UC Berkeley before going on to receive his MS and PhD in Chemical Engineering from the University of Michigan as a NSF Graduate Research Fellow, Ford Foundation Fellow, and Rackham Predoctoral Fellow. He is a strong advocate for increasing diversity in STEM and has 12+ years of experience planning and executing programs and events that improve the recruitment and retention of first-generation, low-income students. He now works as an Assistant Professor of Chemical and Biomolecular Engineering at UC Los Angeles, where his research focuses on developing and implementing heterogeneous thermocatalysts and photocatalysts to decarbonize chemical production processes. He also works closely with the Chicano Studies Research Center to implement and evaluate programs that help UCLA reach its goal of becoming a Hispanic Serving Institution.



The academic and research mentorship provided to me throughout the UC LEADS Program was critical in solidifying my love of academic research and expanding my professional network. I doubt I would be where I am today without their support during the later part of my undergraduate studies.



UC Davis Year in Review

Overall, this summer was a success that proved to be more exceptional because of the balance and harmony of the group dynamics. The scholars presented differently this year, perhaps a result of post-pandemic feelings. The scholars were genuinely eager and interested in engaging in their research groups and as a cohort. This is always evident when I observe them initiating social gatherings, activities, and meet-ups outside of the program schedule, as such, resulting in a more supportive and dynamic summer research symposium to close out the summer. Such experiences built their confidence where they were more comfortable and empowered to actively communicate in their research groups and lab meetings, all of which helped diminish feelings of imposter phenomenon.

Fortunately, the SAPEP funds provided the opportunity to enhance our summer research program in numerous ways, including more enriched programming, guest speakers, field trips, and frequent community-building activities. Additionally, with the SAPEP funds, a new pilot program was introduced as a means to recruit from local community college incoming and prospective transfer students who participated in the 8-week program. It was successful and will continue as a standard practice for the program. The timing of the UC LEADS Alumni Reunion was perfect! The new first-year scholars were delighted to attend and have the opportunity to meet the second-year scholars and alumni from years past. They expressed feeling so lucky and proud to be part of a program that has a positive and impactful reputation and history of helping change the lives of so many UC students over the course of 20+ years.



UC Davis

Second-Year Scholars

Edward Jenkins (Cognitive Psychology) did his second summer research at UC Los Angeles. He presented a poster at the 2024 UC LEADS Symposium titled The Role of the Ventrolateral Prefrontal Cortex in Valued-Directed Recall. He graduated in spring 2024 and is taking part in the PREP Post-Baccalaureate program at UC Berkeley.

Ryan Kyeremeh (Animal Science) did his second summer research at UC Davis. His poster titled Effect of Various Environmental Enrichment on Piglet Behavior received top honors at the 2024 UC LEADS Symposium. He graduated in spring 2024 and is working as an animal behaviorist.

Cecilia Ma Li (Animal Science) did her second summer research at UC San Diego. She presented a poster at the 2024 UC LEADS Symposium titled Contaminant Concentrations and Detections as a Function of Delta Outflow. She also exhibited exceptional leadership qualities during her time in UC LEADS and received the 2024 Graduate Deans' Leadership Award. She graduated in spring 2024.

Ernest Wang (Biomedical Engineering) did his second summer research at UC Los Angeles. He presented a poster at the 2024 UC LEADS Symposium titled Stochastic Python Simulator for Processing Event Camera Data. He plans to graduate in 2025.

| First-Year Scholars

Elle Defensor (Civil Engineering) did her first summer research at UC Davis. She presented a poster at the 2024 UC LEADS Symposium titled Future N95 Masks: Fabrication of Biodegradable, Reusable, and Biocidal Nanofibrous Membrane Filters. She plans to graduate in 2025.

Emily Thrall (Biomedical Engineering) did her first summer research at UC Davis. Her poster titled Studying The Metabolic and Behavioral Effects of Circadian Entrainment in a PWS Mouse Model received an honorable mention at the 2024 UC LEADS Symposium. She plans to graduate in fall 2025.

Taylor Tran (Neurobiology, Physiology and Behavior) did her first summer research at UC Davis. She presented a poster at the 2024 UC LEADS Symposium titled Characterizing Novel Peptide NHIP in Relation to Gene Expression. She graduated in 2024 and is working as a junior specialist in the University of California system.

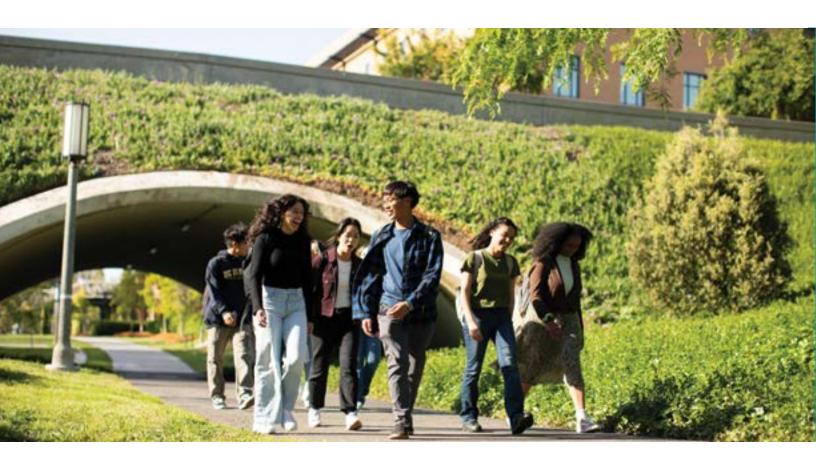


MELVIN LORENZO
UC LEADS 2013-2015
BS Mechanical Engineering

Melvin Lorenzo received his BS in Mechanical Engineering from UC Davis, where his research focused on synthesizing, isolating, and characterizing endohedral metallofullerenes. He then went on to receive his PhD in Biomedical Engineering from Virginia Tech, where his research focused on developing electroporation-based cancer therapies with applications in brain, hepatic, and pancreatic tumors. He now works as a Senior Principal Scientist leading the Preclinical Program at a startup company Arga Medtech.



UC LEADS encouraged me to be proactive and nurtured my passion for scientific discovery. Through seminars, mentorship, and hands-on experience, I developed critical thinking skills, communication skills, and resilience. The program gave me confidence and direction, reinforcing my commitment to research. UC LEADS not only introduced me to science, but also empowered me to pursue it wholeheartedly, shaping my success in the field today.



UC Irvine | Year in Review

This year we welcomed 9 first-year UC LEADS scholars, a record-breaking number for our campus. We also supported our second-year UC LEADS scholars, who conducted in-person research at UCLA, UCSF and UCSD. Our first-year scholars were able to be a part of the UC Irvine in-person summer program, along with 4 visiting UC LEADS scholars and 100 other diverse students. We offered scholars a rich program of social activities, mentorship, in-the-lab, handson research experience, writing support, and professional development. This year we introduced a faculty speaker series, where students heard current UCI faculty speak about their journey to graduate school. The summer program culminated with a research symposium that allowed students to showcase their summer projects.

To kick off the academic year, scholars participated in the first Northern California tour of University of California campuses by visiting UC Berkeley and UC Davis. The campus visits offered opportunities to meet with prospective second summer labs, tour the campuses, meet with current graduate students and faculty, and learn about each campus' graduate admissions process. The tour also created an opportunity for scholars to network with one another and build community. Students also traveled to the SACNAS, ABRCMS, and NCUR conferences to present their research. Scholars continue to use conference attendance to network and as an opportunity to learn more about their respective fields. This year, UC LEADS alumni engaged in our programing as well. Monika Kirkland facilitated professional development workshops in the area of time management and leadership development. We also hosted a networking alumni lunch with UC LEADS scholars and alumni enrolled at UCI in doctoral studies. We ended the year by hosting our traditional student-led workshop where second-year scholars discuss the process of applying to graduate school from the student perspective. Second-year scholars that applied to graduate school will be enrolling in University of California doctoral programs this fall.



UC Irvine

Second-Year Scholars

Saira Cazarez (Biological Sciences) did her second summer research at UC Los Angeles. She exhibited exceptional leadership qualities during her time in UC LEADS and received the 2024 Graduate Deans' Leadership Award. She graduated in spring 2024 and is now a Biology PhD student at UC San Diego.

Cathy Dang (Pharmacology) did her second summer research at UC San Francisco. She graduated in spring 2024.

Vicky Lam (Biological Sciences) did her second summer research at UC San Francisco. She presented a poster at the 2024 UC LEADS Symposium titled Investigating Cell Death and Microglia within The Somatosensory Cortex of The Ts65dn Down Syndrome Mouse Model. She graduated in spring 2024.

Ulia Zaman (Computer Science) did her second summer research at UC San Diego. She graduated in fall 2023 and is a Computational Media PhD student at UC Santa Cruz.

First-Year Scholars

Joshuah Arellano (Biological Sciences) did his first summer research at UC Irvine. His poster titled Characterizing the Role of Lynx2 Following Chronic Mild Stress received an honorable mention at the 2024 UC LEADS Symposium. He plans to graduate in 2025.

John Arriola (Biology) did his first summer research at UC Irvine. He presented a poster at the 2024 UC LEADS Symposium titled Racial Differences of Inflammatory Profiles in Type 2 Diabetes. He plans to graduate in 2025.

Faith Faulyn Enriquez (Biological Sciences) did her first summer research at UC Irvine. She presented a poster at the 2024 UC LEADS Symposium titled The Role of pH Preference in Shaping Soil Microbial Communities: A Study on a Soil Abundant Bacteria. She plans to graduate in 2025.

Diego Guzman (Information Science) did his first summer research at UC Irvine. He presented a poster at the 2024 UC LEADS Symposium titled Using Large Language Models to Augment Reflective Thematic Analysis for Semi-Structured Interviews. He plans to graduate in 2025.

Alison Martinez (Aerospace Engineering) did her first summer research at UC Irvine. She presented a poster at the 2024 UC LEADS Symposium titled Modeling and Validating Aircraft Noise from Propellers: A Comparative Study of Blade Configurations. She plans to graduate in 2025.

Anjali Moore (Physics) did her first summer research at UC Irvine. She presented a poster at the 2024 UC LEADS Symposium titled Improving Exoplanet Detection by Predicting Stellar Variability in Low-Mass M Dwarfs. She plans to graduate in 2025.

Verenice Patino (Biology) did her first summer research at UC Irvine. She presented a poster at the 2024 UC LEADS Symposium titled Assessing Neutrophil Infiltration and Neutrophil-associated Demyelination During Acute Infection in an Aged, Viral-induced Model of MS. She plans to graduate in 2025.

Daniel Santos (Pharmacology) did his first summer research at UC Irvine. He presented a poster at the 2024 UC LEADS Symposium titled Phosphatidylserine-mediated Release of 11-cis-retinaldehyde from Cellular-retinaldehyde Binding Protein (CRALBP). He plans to graduate in 2025.

Nicole Sang Lav (Biological Sciences) did her first summer research at UC Irvine. She presented a poster at the 2024 UC LEADS Symposium titled Rapidly Assessing The Cellular Composition of Neural Stem and Progenitor Cell Populations using QRT-PCR. She plans to graduate in 2025.

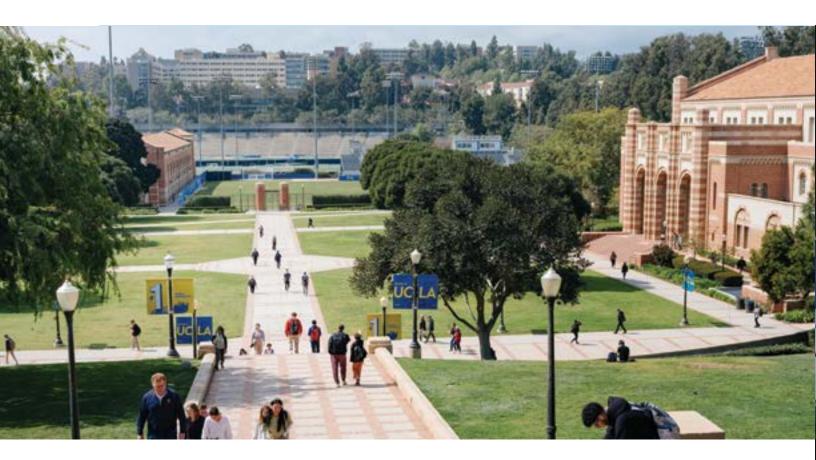


DANNY ATTIYAH UC LEADS 2018-2020 **Applied Physics**

Danny Attiyah received his BS in Applied Physics from UC Irvine. He stayed at UC Irvine to pursue his PhD in Physics. He has traveled all over the world to work on experiments studying laser matter interactions such as coherent X-ray generation and electron/proton acceleration for imaging to be used for science and medical purposes. He interned at Lawrence Livermore National Lab for two summers, where he was highlighted on their website for an experiment studying strong magnetic field generation. He recently finished an experiment creating and measuring a laser beam that spirals through space, and is currently working in Paris, France, on another experiment.



The presentations that I gave during my time with UC LEADS helped my science communication and networking skills, and the research experience at a different institution helped me learn how to collaborate with others on research projects.



UC Los Angeles | Year in Review

In summer 2023, we welcomed a new cohort of 6 incredible UCLA students to the UC LEADS program. Our second-year students had amazing research experiences at UC Irvine and UC Berkeley, while we hosted students from Irvine, Berkeley, Davis, and Riverside. All of the students, both on our campus and those visiting other UCs, were able to present their summer work in end of Summer Showcases. Overall, our students have accomplished tremendous things over the last year, and many of our graduating seniors are now working on their PhDs at top tier universities.

In the last year alone, our UC LEADS students have been authors on five different scientific articles and reviews, and they are working on four other manuscripts that will likely be published soon. In terms of publications, it may be our most productive year ever! It is really a testament to the hard work and talent of all of these amazing UC LEADs students.

We have also continued to expand and update upon our curriculum, including a brand-new course on Scientific Leadership and Ethics, which was first offered in Winter of 2024. This course, which was exclusively for students in the UC LEADS and Clare Boothe Luce Fellows programs, emphasized topics including authorship, reproducibility, intellectual property, and leadership styles. We look forward to continuing to build upon the successes of the 2023-2024 year and keep highlighting the groundbreaking work that our students are doing!



UC Los Angeles

Second-Year Scholars

Kevin Alfaro (Astrophysics) did his second summer research at UC Berkeley. He presented a poster at the 2024 UC LEADS Symposium titled Interpreting Neural Networks Using Images to Estimate Galaxy Distances. He graduated in winter 2024 and is working as a human resources support at Paragon Personnel.

Bezawit Danna (Biochemistry) did her second summer research at UC Berkeley. She presented a poster at the 2024 UC LEADS Symposium titled Measurements of De Novo Lipogenesis and their Application to Study Mechanisms Underlying Metabolic Disease. Bezawit also earned authorship on a scientific paper in the Journal of Biological Chemistry. She graduated in spring 2024 and is a Biology PhD student at UC San Francisco.

Justin Purnomo (Biochemistry) did his second summer research at UC Irvine. His poster titled Predicting Accurate Singlet-Triplet Energy Gaps of Aryl Carbenes with Local Hybrid Functionals received an honorable mention at the 2024 UC LEADS Symposium. Justin was also second author on a 2024 paper in the Journal of Physical Chemistry. He also exhibited exceptional leadership qualities during his time in UC LEADS and received the 2024 Campus Leadership Award. He graduated in spring 2024 and is a Chemistry PhD student at UC Berkeley.

Kimberly Vasquez (Chemistry) did her second summer research at UC Irvine. She presented a poster at the 2024 UC LEADS Symposium titled Synthesis of The Natural Product: Beauvericin. She graduated in spring 2024 and is a Chemistry PhD student at UC Santa Barbara.

First-Year Scholars

Adriann Brodeth (Bioengineering) did his first summer research at UC Los Angeles. His poster titled Developing a Drug Susceptibility Test for First-Line Drugs against Mycobacterium Tuberculosis received top honors at the 2024 UC LEADS Symposium. He plans to graduate in Fall of 2024.

Tim Duong (Chemistry) did his first summer research at UC Los Angeles. He presented a poster at the 2024 UC LEADS Symposium titled Time-Dependent Density Functional Theory with the Orthogonal Projector Augmented Wave Method. Tim also is the second author on a 2024 paper in the Journal of Chemical Physics. He plans to graduate in 2025.

Sonali Feeley (Neuroscience) did her first summer research at UC Los Angeles. She presented a poster at the 2024 UC LEADS Symposium titled Effects of Implanted Skeletal Muscle Progenitor Cells with Decellularized Extracellular Matrix Scaffolds on Muscle Regeneration in Volumetric Muscle Loss Mouse Models. Sonali was second author on a review article published in Current Reviews in Musculoskeletal Medicine. She plans to graduate in 2026.

Jack Lichterman (Physics) did his first summer research at UC Los Angeles. He presented a poster at the 2024 UC LEADS Symposium titled Chirality Induced Spin Selectivity In 2D Crystal Materials (Twisted Tungsten DiSelenide). He plans to graduate in 2025.

Breanna Remigio (Pre-Computational and Systems Biology) did her first summer research at UC Los Angeles. She presented a poster at the 2024 UC LEADS Symposium titled Using PARAFAC2 to Integrate Single-Cell Experiments. She plans to graduate in 2025.

Daniel Torres Pomares (Chemistry) did his first summer research at UC Los Angeles. He presented a poster at the 2024 UC LEADS Symposium titled Vertex-Differentiated Coso-Dodecaborane Clusters as Broadband Membrane Carriers. Daniel was also the third author on a paper published in Accounts of Chemical Research. He plans to graduate in 2025.



NONYE ALOZIE UC LEADS 2001-2003 **BS** Biology

Nonye Alozie received her BS in Biology from UC Los Angeles, where she discovered her passion for research in the natural sciences. During her time in UC LEADS, she took part in a lab focused on muscular dystrophy, sparking her interest in how scientific inquiry can address real-world challenges. She also took part in a plant genetics lab with Dr. Ann Hirsch, and completed an internship at UC Berkeley and the USDA. She went on to pursue a PhD in Science Education at the University of Michigan, where she also obtained an MS in Ecology and Evolutionary Biology. Today, she serves as the Deputy Director for STEM and Computer Science and Principal Education Research at SRI International, where she designs and develops teaching resources. She uses AI to capture human behavior and provide insights into how people learn and communicate while collaborating on problem solving. Her research is guided by her belief that in order for access and inclusion to be meaningful, systemic change is essential.



I gained the skills and knowledge to pursue higher education and conduct meaningful research. I've learned how to present my findings effectively, tailoring presentations to engage audiences and make complex ideas accessible.



UC Merced | Year in Review

The UC LEADS cohort at UC Merced experienced significant growth this year, with a record of 10 first-years who joined during the summer of 2023. This expansion was made possible through additional SAPEP funding and support from the UCSF STRETCH Program, which funded one scholar.

Scholars actively participated in conferences that enriched their academic and professional journeys. At the SACNAS National Diversity in STEM (NDiSTEM) Conference in Portland, 13 scholars attended, with six presenting their research. Scholars also benefited from alumni engagement, networking with UC LEADS and UROC graduates who shared insights about their experiences in Ph.D. programs. Additionally, two scholars showcased their work at the Emerging Researchers National (ERN) Conference in STEM in Washington, D.C., while four presented at the National Conference on Undergraduate Research (NCUR) in Long Beach.

The accomplishments of our scholars demonstrate the program's impact and commitment to increasing access to research opportunities for underrepresented students. Steven Umbarger earned Top Honors in Physical Sciences & Mathematics, and Mabel Espinoza received an Honorable Mention in Engineering & Computer Sciences at the 2024 UC LEADS Annual Symposium. Yumie Lee was recognized with a first-place undergraduate poster presentation award in Biological Sciences at ERN. In addition, she was honored with the UC Merced Bioengineering Department's Outstanding Student Award in Spring 2024.

This year also marked a bittersweet moment for the program as Jorge Arroyo, the previous UROC Director and UC LEADS program staff, departed UC Merced after 10 years. His leadership was instrumental in shaping the program's success and creating transformative opportunities for many scholars.



UC Merced

Second-Year Scholars

Gabriela Ceron (Biology, Microbiology and Immunology Emphasis) did her second summer research at UC San Diego. She graduated in fall 2023 and is working as a research associate for AlivaMab Biologics.

Yumie Lee (Bioengineering) did her second summer research at UC San Francisco. She presented a poster at the 2024 UC LEADS Symposium titled A Genome-Wide Knockdown Screen for Host Factors that Participate in CRISPR Adaptation Reveals Novel Factors Required for Spacer Acquisition. She was awarded a first-place poster presentation award at the 2024 Emerging Researchers National (ERN) Conference in STEM. She graduated in spring 2024 and will be starting the Bioengineering Ph.D. program at UC San Diego in fall 2024.

Maria Pimentel (Biology and Chemistry) did her second summer research at UC Santa Barbara. She presented a poster at the 2024 UC LEADS Symposium titled Intestinal and Tracheal Microbiomes Inhibit In Vitro Growth of Coccidioides Immitis. She also presented a poster titled Microbiome Protection Against Coccidioides Growth at the 2023 SACNAS National Diversity in STEM (NDiSTEM) Conference. She graduated in spring 2024.

Adelynne Wagner (Chemistry) did her second summer research at UC Davis. She presented a poster at the National Conference on Undergraduate Research (NCUR) 2024 titled Microwave Assisted Solid-State Synthesis and Characterization of RuMo5Se8 and Preliminary Proton Adsorption Studies. She plans to graduate in fall 2024.

First-Year Scholars

Logan Adrian (Physics) did his first summer research at UC Merced. He presented a poster at the 2024 UC LEADS Symposium and the 2023 NDiSTEM Conference titled Temperature-Dependent Quality Factor Measurements. He plans to graduate in spring 2025.

Maria Contreras-Chavez (Environmental Engineering) did her first summer research at UC Merced. She presented a poster at the 2024 UC LEADS Symposium titled Exploring The Physicochemical Relationship Between Soil Spectral Signatures And Biodiversity: A Comparative Study of Agriculture And Riparian Environments. She plans to graduate in fall 2024.

Jesus De La Mora Herrera (Mechanical Engineering) did his first summer research at UC Merced. He presented a poster at the 2024 UC LEADS Symposium titled The Phenomena of Tribology: Varnish Removal from Metal Surfaces in Mechanical Components. He plans to graduate in spring 2025.

Mabel Espinoza (Civil Engineering) did her first summer research at UC Merced. Her poster titled Social Life Cycle Assessment of Strawberry Production in California received an honorable mention at the 2024 UC LEADS Symposium and was awarded an undergraduate poster presentations award at the 2023 NDiSTEM Conference. She also presented the poster at NCUR 2024. She plans to graduate in spring 2026.

Rida Mirza (Biology) did her first summer research at UC Merced as a UC LEADS STRETCH Scholar. She presented a poster at the 2024 UC LEADS Symposium and at the 2024 ERN Conference in STEM titled Evidence of Accelerated Immune Aging and Cardiac Events within Sclerostin Deficient Mice. She plans to graduate in spring 2026.

Baldemar Motomochi Cedillo (Biology) did their first summer research at UC Merced. They presented a poster at the 2024 UC LEADS Symposium titled Measuring Density of Endoderm Cells During Epithelialization. They also presented their poster titled Validation and Functional Study of New Ciliary Candidate Proteins at the 2023 NDiSTEM Conference. They plan to graduate in fall 2024.

Aarthika Nagarajan (Chemistry, Biology Emphasis) did her first summer research at UC Merced. She presented a poster at the 2024 UC LEADS Symposium titled CRISPRi Enhanced T-Fox Mediated Natural Transformation in Vibrio Fischeri. She plans to graduate in spring 2025.

Patrick Park (Applied Math, Computer Science Emphasis) did his first summer research at UC Merced. He presented a poster at the 2024 UC LEADS Symposium and NCUR 2024 titled Equilibrium Surface Coverage for Reversible Adsorption of Dimers on Various Finite Lattice Structures. He was awarded an undergraduate poster presentations award at the 2023 NDiSTEM Conference for his poster titled Modeling Infectious Disease Spread: Comparison of the Agent-Based-Modeling and Differential-Equation Approaches. He plans to graduate in spring 2026.

Desiree Solis (Cognitive Science) did her first summer research at UC Merced. She presented a poster at the 2024 UC LEADS Symposium titled Parental Education is Linked to a Neural Index of Cognitive Control in Adults. She plans to graduate in spring 2025.

Steven Umbarger (Physics) did his first summer research at UC Merced. His poster titled Visualizing Star Cluster Evolution Within Giant Molecular Clouds Using FIRE-2 Galaxy Simulations received top honors at the 2024 UC LEADS Symposium. He also presented a poster titled Visualizing Giant Molecular Clouds and the Star Clusters That Form Within Them at the 2023 NDiSTEM and 2024 NCUR Conferences. He plans to graduate in spring 2025.



DAVID DELGADILLO

UC LEADS 2016-2017 BS Human Biology

David Delgadillo received his BS in Human Biology with a minor in Chemistry from UC Merced. He went on to receive his PhD in Biochemistry at UC Santa Cruz, where he encouraged students from underrepresented communities to apply to UC LEADS, MARC, and LSAMP fellowships—along with being awarded an ISMD fellowship that supported his research studying marine bacteria-derived natural products with selective toxicity against non-small cell lung cancer. His postdoctoral research at the California Institute of Technology focuses on developing electron diffraction-based screening platforms for natural product discovery.



The UC LEADS program allowed me to explore my scientific curiosities as an undergraduate, which ultimately helped me home in on the type of research I was truly passionate about— structural chemistry.



UC Riverside | Year in Review

In Summer 2023, we welcomed the largest group of incoming UC LEADS students to date, with eight students joining the program. These eight students formed part of a larger cohort of summer research participants at UC Riverside and benefited from networking with and learning from 50+ other students. Our first-year UC LEADS scholars benefited from fun group activities such as the ropes course, writing workshops, and weekly lectures on topics related to graduate school. Meanwhile, our second-year UC LEADS students found placements at UCLA, UCSD, UCSB, UCI, UCB, and UCSF. Although missed here at UC Riverside, these second-year scholars made us feel proud by representing our campus at other UCs and conducting impressive research. Our summer here at UCR culminated in an in-person research symposium in which students presented their research via oral or poster presentations. Mentors and lab mates attended to cheer on our talented developing scientists. The rest of the academic year included monthly check-in sessions to prepare for the Spring 2024 Symposium. We were immensely proud of second-year scholar Erik Hakopian for winning the Graduate Dean's Leadership Award and first-year scholar Andrew Abdala for winning an Honorable Mention in Engineering at the Symposium. We then ended the academic year with a "Senior Send-Off" party for our wonderful second-years in Spring 2024.



UC Riverside

Second-Year Scholars

Shamed Amani (Biology) completed his second summer research at UC Irvine. He presented a poster at the 2024 UC LEADS Symposium titled *Development of an In Vitro Model of Enterovirus A71 Infection Using Pseudoviruses*. He graduated in spring 2024.

Miriam Contreras Castillo (Bioengineering) completed her second summer research at UC Berkeley. She presented a poster at the 2024 UC LEADS Symposium titled Low Back Pain (LBP) Protocol Development: Integrating Inertial Measurement Units (IMUs), Markerless Motion Capture, and Pain Reports. She graduated in spring 2024.

Madeleine Haddad (Mathematics) completed her second summer research at UC Santa Barbara. She presented a poster at the 2024 UC LEADS Symposium titled *River Response* to *Deforestation in The Amazon Rainforest*. She graduated in spring 2024.

Erik Hakopian (Neuroscience) completed his second summer research at UC San Francisco. He presented a poster at the 2024 UC LEADS Symposium titled Exploring the Effects of MK-801 on Functional Connectivity of The Septo-Hippocampal Networks Via Machine Learning Algorithm Classification. He also exhibited exceptional leadership qualities during his time in UC LEADS and received the 2024 Graduate Deans' Leadership Award. He graduated in summer 2024.

Alexander Nguyen (Cell & Molecular Biology) completed his second summer research at UC Los Angeles. He presented a poster at the 2024 UC LEADS Symposium titled *Smooth Muscle Cell Piezo1 Modulates Small Bowel Contractility*. He plans to graduate in 2024.

An Truong (Chemistry) completed her second summer research at UC San Diego. She presented a poster at the 2024 UC LEADS Symposium titled *Exploring the Potential of Aryl Thianthrenium Salts for Pd-Catalyzed C–H Arylation Reactions*. She graduated in spring 2024.

| First-Year Scholars

Andrew Abdala (Chemical Engineering) completed his first summer research at UC Riverside. His poster titled Effect of Deficit Irrigation and Water Quality on The Water Content and Fate of Pharmaceutical and Personal Care Products (PPCPs) in Food Crops Irrigated with Recycled Water received an honorable mention at the 2024 UC LEADS Symposium. He plans to graduate in 2025.

Allison Hwang (Electrical Engineering) completed her first summer research at UC Riverside. She presented a poster at the 2024 UC LEADS Symposium titled *Quantifying the Water Footprint of Al Computing*. She plans to graduate in 2025.

Madhurima Kesaraju (Cell, Molecular, Developmental Biology) completed her first summer research at UC Riverside. She presented a poster at the 2024 UC LEADS Symposium titled Scrutinizing the Contribution of Neuromesodermal Progenitors on Neural Crest Cell Development. She plans to graduate in fall 2024.

Carolina Loera (Biology) completed her first summer research at UC Riverside. She presented a poster at the 2024 UC LEADS Symposium titled Reduction of Stereotypic Behavior in Mice Artificially Selected for Increased Wheel-Running. She plans to graduate in 2025.

Christian Macaluso (Bioengineering) completed his first summer research at UC Riverside. He presented a poster at the 2024 UC LEADS Symposium titled *Physical Models for Pediatric Rehabilitation*. He plans to graduate in 2026.

Aurchana Manickavasagan (Biochemistry) completed her first summer research at UC Riverside. She presented a poster at the 2024 UC LEADS Symposium titled *Using High Accuracy NMR Predictions to Improve Geometry Optimizations of Crystal Structures*. She plans to graduate in 2026.

Nandini Mannem (Neuroscience) completed her first summer research at UC Riverside. She presented a poster at the 2024 UC LEADS Symposium titled *Investigating The Function of The ShK Domains in S.csarpocapsae*. She plans to graduate in 2026.

Garrett Sakomizu (Microbiology) did his first summer research at UC Riverside. He presented a poster at the 2024 UC LEADS Symposium titled *In Vivo and In Vitro Drug Release Profiling Studies of Metal/Polymer-composite Drug Delivery Devices*. He plans to graduate in 2025.



JOSHUA KARAM UC LEADS 2014-2016 BS Bioengineering

Joshua Karam received his BS in Bioengineering from UC Riverside. He then went on to pursue his PhD in Bioengineering at UCLA in the lab of Dr. Stephanie Seidlits, whose lab he joined in his second summer research as a UC LEADS scholar. There, his research investigated how the molecular weight of hyaluronic acid affects the bioactivity of hyaluronic acid-based biomaterials. After graduating, he joined the labs of Dr. Aileen Anderson and Dr. Brian Cummings at UC Irvine as a postdoctoral scholar, where he developed a method of minimally invasive serial collection of cerebrospinal fluid in rodents, used to study the neuroinflammatory response after neurotrauma. He also founded the Scientists of Color and Ally Leadership (SoCAL) organization, that provides community and professional development events for scientists across all disciplines at UCI.



UC LEADS was invaluable as a resource for me, helping me navigate the pathway to obtaining my doctorate. Without the guidance and mentorship I received through UC LEADS, I am positive I would not be where I am today.



UC San Diego | Year in Review

This year, UC San Diego welcomed its largest cohort to date, with 10 new scholars. It was also a milestone year with intentional outreach to transfer students, which led to a significant increase in applications and resulted in 6 transfer students joining the final cohort. In the summer of 2023, the cohort engaged in research at UC San Diego, participated in graduate school preparation workshops, and enjoyed visits to the San Diego Zoo and the beach. Each scholar gained hands-on research experience by working alongside a faculty mentor and presented their findings at the summer's end. They valued the opportunity to connect with peers, build relationships, network, and hone their research skills. Our second-year scholars conducted research at UC Santa Barbara, UC Davis, UC Riverside, and UCSF, where they broadened their academic knowledge in structured programs, supported by dedicated mentors. Throughout the academic year, the program hosted discussions on topics of interest to the scholars and organized social outings to foster closer bonds. Many scholars received awards, fellowships, and scholarships to aid their graduate school and post-graduation pursuits. Additionally, they continued presenting their research, attending conferences, and taking on leadership roles, such as mentoring and executive positions in student organizations. UC San Diego employed a graduate mentor for the entire academic year who has been instrumental in providing phenomenal mentorship support and facilitating training workshops for the scholars.



UC San Diego

Second-Year Scholars

Vicky Chen (Biochemistry) did her second summer research at UC San Francisco. She presented a poster at the 2024 UC LEADS Symposium titled Characterization of RBMS3 as a Regulator of RNA Stability in Breast Cancer Metastasis. She also exhibited exceptional leadership qualities during her time in UC LEADS and received the 2024 Campus Leadership Award. She graduated in spring 2024 and is currently in the PhD program in Genetics at Stanford University.

Jessica De La Torre (Mechanical Engineering) did her second summer research at UC Santa Cruz. She presented a poster at the 2024 UC LEADS Symposium titled Metacognition in Putative Magno- and Parvocellular Vision. She plans to graduate in 2025.

Ali Kattee (Mechanical Engineering) did his second summer research at UC Riverside. He presented a poster at the 2024 UC LEADS Symposium titled Dynamic Shape Changing Terrain for Robotic Locomotion. He graduated in spring 2024 and is currently working as an aerospace engineer at Space Ocean. His plans are to re-apply to graduate programs in the future.

Andrew Oabel (Computer Science) did his second summer research at UC Santa Barbara. He presented a poster at the 2024 UC LEADS Symposium titled Measuring Emotion Bias in Large Language Models. He graduated in spring 2024 and is currently in the computer science Master's program at UC San Diego.

Claire Wellenkamp (Aquatic Biology) did her second summer research at UC Merced. She presented a poster at the 2024 UC LEADS Symposium titled Modeling The Metabolically Viable Habitats for Chinook Salmon in The San Francisco Bay-Delta Estuary. She graduated in spring 2024 and is currently in the Master's and Credential Program for Single Subject Science Teaching at UC Davis. She plans to be a middle or high school science teacher.

First-Year Scholars

Michelle Gomez (Cognitive Psychology) did her first summer research at UC San Diego. She presented a poster at the 2024 UC LEADS Symposium titled Hippocampal Subregions and Their Relationship to News Events Memory in Older Adults with Normal Cognition or Mild Cognitive Impairment. She plans to graduate in 2025.

Runpeng Jian (Computer Science) did his first summer research at UC San Diego. He presented a poster at the UC LEADS 2024 Symposium titled Diffusion Models: Exploring Methods for Inverse Problems. He graduated in summer 2024 and is currently in the computer science Master's program at UC San Diego.

Anna Nguyen (Mechanical Engineering) did her first summer research at UC San Diego. Her poster titled Taking 'L's in Mie Resonator Arrays for the Colorimetric Differentiation of Chiral Light received an honorable mention at the 2024 UC LEADS Symposium. She plans to graduate in 2025.

Tin Nguyen (Cell and Molecular Biology) did his first summer research at UC San Diego. His poster titled Enhance Mixing in Microdroplet with The Novel Omnidirectional Double Spiral Surface Acoustic Wave Device received top honors at the 2024 UC LEADS Symposium. He plans to graduate in 2025.

Julian Ramirez (Mechanical Engineering) did his first summer research at UC San Diego. His poster titled Geant4 Modeling and Experimental Demonstration of an Energy-Resolved Electron-Beam Profiler for Rep-Rated High-Energy-Density Physics Experiments received top honors at the 2024 UC LEADS Symposium. He plans to graduate in 2025.

Savannah Rhoades (Chemical Engineering) did her first summer research at UC San Diego. She graduated in spring 2024 and is working as an Associate Engineering Consultant at Sespe Consulting.

Leanna Rondon (Biology) did her first summer research at UC San Diego. She presented a poster at the 2024 UC LEADS Symposium titled The Functional Impacts of Mutant Pacs-1 on Neuronal Morphology. She graduated in spring 2024 and is currently in the biology Master's program at UC San Diego.

Edwin Ruiz (Neuroscience) did his first summer research at UC San Diego. He presented a poster at the 2024 UC LEADS Symposium titled Comparative Analysis of Machine Learning Classifiers on Biomedical Datasets. He plans to graduate in 2025.

Marissa Todesco (Neuroscience) did her first summer research at UC San Diego. Her poster titled The Neuroscience of Vocal Flexibility: Mapping Auditory-Motor Dynamics in Songbirds received top honors at the 2024 UC LEADS Symposium. She plans to graduate in 2025.

Alumni Spotlight



MOSES KODUR UC LEADS 2015-2017

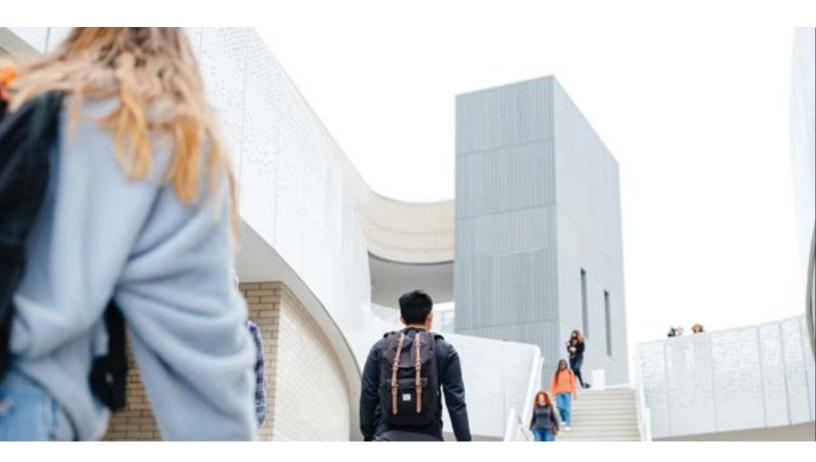
BS Chemical Engineering

Moses Kodur received his BS in Chemical Engineering from UC San Diego, where through the UC LEADS program, he contributed to two published studies on sodium-ion batteries. In his senior year, he joined the lab of Dr. Fenning in the UCSD Nanoengineering Department, where he began working on perovskite photovoltaics. In 2022, he defended his thesis at UC San Diego titled, "Addressing the Instability and Improving the Commercialization Prospects of Perovskite Photovoltaics Through a layer-by-layer Approach." Since then, he has been working as an Application Scientist at Surface Optics Corporation in Rancho Bernardo, CA. He provides technical support for reflectometers and hyperspectral imagers, collaborates with customers on their research initiatives, and serves as a project manager for new product development. His current projects include a low-cost, high-performance VNIR hyperspectral imaging system and a miniaturized, rugged camera designed for afterburner analysis.



The UC LEADS program helped me turn classroom knowledge into hands-on research experience, while exposing me to a wide range of scientific fields. Without the UC LEADS program, I likely would have stopped my education with a bachelor's degree and never participated in a research program.

Campus **Updates**



UC Santa Barbara | Year in Review

In summer 2023, 7 UC LEADS scholars from various campuses joined our Academic Research Consortium (ARC) program at UCSB. Collaborating with other summer research programs housed at UCSB, students experienced an array of productive and foundational skills workshops with the goals of demystifying graduate admissions and education, uncovering the hidden curricula, and providing professional development opportunities. We also had some fun at the local bowling alley, as well as braving the Santa Barbara Landshark, followed by a wonderful downtown dinner looking out at the Pacific Ocean. Scholars showcased their research at a symposium, demonstrating the advanced skill of distilling their research into five-minute talks. In our final week, UC LEADS scholars were amongst 75 students from STEM research programs across campus to present their research via poster sessions.

During the 2023-24 academic year, our second-year scholars joined a Science for the Common Good seminar. This seminar, open only to senior students in the UC LEADS, MARC, and Beckman programs, provides the "opportunity to explore how they can use their interest and training in the sciences and research to become leaders who make a difference and positively impact society and the planet." First-year scholars presented at NCUR. The influx of new SAPEP funds allowed us to support UC LEADS alumni in UCSB graduate programs and current scholars with academic year stipends for a second-year. Highlights included a successful Symposium at UC Berkeley, a dinner with scholars and alumni, and welcoming our largest incoming cohort of 7 scholars, including 2 incoming transfer students.



UC Santa Barbara

| Second-Year Scholars

Trey Dold (Physics) did his second summer research at UC Berkeley. He presented a poster at the 2024 UC LEADS Symposium titled Shape Analysis with the Package of Geomstats: Democratizing The Use of Geometric Statistics and Topological Machine Learning. He did his honors undergraduate senior thesis in the Geometric Intelligence Lab, contributing to a publication titled Learning from Landmarks, Curves, Surfaces, and Shapes in Geomstats, submitted to Transactions of Mathematical Software (TOMS) 2024. Trey graduated in spring 2024 and is currently taking a gap year.

Colby Fagan (CCS Biology) did his second summer research at UC San Diego. He presented a poster at the 2024 UC LEADS Symposium titled Modulating Neuroinflammation in Alzheimer's Disease: Targeting The LINE-1 Retrotransposon with a Nucleotide Reverse Transcriptase Inhibitor. He presented the same poster at the 2024 Canadian Neuroscience Meeting in Vancouver, BC. Colby graduated in summer 2024 and is now working as an English teaching assistant in Madrid, Spain, and applying to PhD programs for fall 2025.

Keryn Jung (CCS Physics) did her second summer research at UC Santa Barbara and gave a talk at the Academic Research Consortium Symposium titled A Step Towards Solving The Neutrino Mass Puzzle Through The Detection of Muon to Positron Conversion, as well as completed a Senior Honors Thesis on this topic. She graduated in summer 2024 and is applying to PhD programs for fall 2025.

Marie Karpinska (Computer Science/Psychology & Brain Sciences double major) did her second summer research at UC Irvine and gave a presentation titled Spatial Working Memory Capacity on Path Integration at their Summer Undergraduate Research Fellowship Symposium. She was a contributing author on a poster titled Evaluating Consistency in Path Integration Measures: Triangle Completion and Loop Closure, presented at the Psychonomic Society's 64th Annual Meeting in San Francisco, CA. Marie graduated in spring 2024 and is working on a data engineering project at a medical device company in San Jose, CA.

Kira Wallquist (Pharmacology) did her second summer research at UCSF. She presented a poster at the 2024 UC LEADS Symposium titled Investigating Serotonin Receptor Expression in Cross-hemispherically Projecting Parvalbumin Neurons. Kira is a contributing author on a paper titled Time to Choose: Impact of Inter-Trial Interval on Selecting Between Methamphetamine and Food Reinforcement in Male and Female Rats, submitted for publication. She also exhibited exceptional leadership qualities during her time in UC LEADS and received the 2024 Campus Leadership Award. Kira graduated in winter 2024 and is working in the UCSF Sohal Lab and applying to Pharmacy School for fall 2025.

First-Year Scholars

Jordan Brower (Chemistry) did her first summer research at UC Santa Barbara. She presented her poster titled *Investigating the Hydride Chemical Shift of a Copper Thallium Hydride Cluster* at the National Conference on Undergraduate Research in Long Beach, CA. She plans to graduate in 2025.

Rosie Manner (Zoology) did her first summer research at UC Santa Barbara. Her poster titled Noninvasive Survey Methods for Mammals at The Jack and Laura Dangermond Preserve: Integrating Scat Collection and Hair Snares to Explore Marine-Terrestrial Connectivity along The Gaviota Coast in California received an honorable mention at the 2024 UC LEADS Symposium. She plans to graduate in 2025.

Kate Saxen (Physics) did her first summer research at UC Santa Barbara. She presented a poster at the 2024 UC LEADS Symposium titled *Fiber Amplifiers for Directed Energy Systems*. She plans to graduate in 2025.

Alumni Spotlight



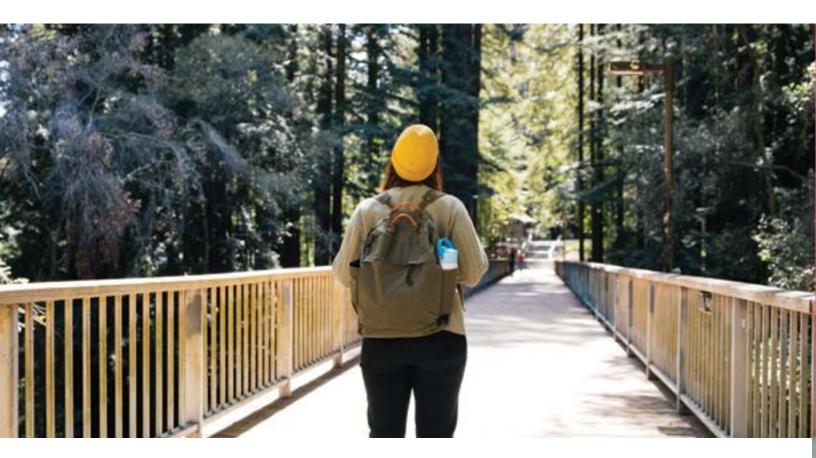
XIMENA GARCIA UC LEADS 2016-2018 **BS** Physics

Ximena Garcia received her BS in Physics from UC Santa Barbara. She went on to complete her PhD at UC San Diego, which is where she did her second UC LEADS summer research with Professor Elena Koslover-which was no coincidence. She attributes UC LEADS to helping her create a path towards her PhD and led her to be recruited to join the PhD program. Soon after defending, she jumped into a postdoctoral program at The Gladstone Institutes, which is affiliated with UC San Francisco. She was then accepted into the IRACDA postdoctoral fellowship program at UCSF, giving her the opportunity to teach at San Francisco State University alongside the co-director of the UCSF/SFSU program. She was able to switch into a lab at UCSF thanks to funding and support from IRACDA. She is currently a second-year postdoc, and a recent addition to the lab of Wallace Marshall, where she melds physics and biology every day. She has only ever chosen labs with fun people and good science, and good people and fun science!



People can only grow where they are welcome. Ethny and Michele from UC LEADS empowered me to believe in my potential as a burgeoning scientist and the good things came after.

Campus **Updates**



UC Santa Cruz | Year in Review

Our UC LEADS cohort had an exciting eight-week summer research program experience. We hosted professional development workshops, book club, ethics training, writing lectures and sessions, faculty research seminars, and social community-building events. We also had great outside speakers such as a career panel with Bayer and SACNAS national headquarters in-person presentations. In addition to professional development, scholars spent most of their time immersing themselves in the research environment along with large indoor and outdoor community events such as a BBQ at Natural Bridges State Park, game night, and poster making community sessions. 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 2023-2024, 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 2023, four scholars attended SACNAS, and two attended the ABRCMS conferences.

Four UC LEADS scholars graduated in the spring of 2024. One of the graduates is working as a medical assistant in Watsonville. Two graduates work in industry in the Bay Area as research associates, and one is a research associate at UC Santa Cruz to further their research training.



UC Santa Cruz

Second-Year Scholars

Chris Avila (Earth Sciences, Planetary Sciences Concentration) did his second summer research at UC Santa Cruz. Chris presented his research from Dr. McCarthy's lab on Validation of Stable Carbon and Nitrogen Isotope Proxies for Past Marine Ecosystem Change in Monterey Bay, CA at the SACNAS National Conference. He plans to graduate in 2025.

Melanie Jones (Chemistry) is a transfer student who did her second summer research at UC Berkeley in the laboratory of Dr. Andrea Gomez in the Department of Molecular and Cell Biology. Melanie attended and presented at both the SACNAS and ABRCMS conferences in the fall of 2023. Her poster titled Directed Evolution of Cyclase dsKabC: Transforming a Glutamate Receptor Agonist Producing Enzyme into an Antagonist Producer received top honors at the 2024 UC LEADS Symposium. She also received the 2024 Campus Leadership Award. Melanie graduated in spring 2024 and works as a communication aid in the Bay Area.

Caitlyn Nojiri (Astrophysics) is a transfer student and spent her second summer at UC Santa Cruz working with mentors Dr. Naomi Globus and Dr. Enrico Ramirez-Ruiz to secure a publication. Caitlyn presented at the SACNAS conference on her poster titled *Life in The Bubble: Modeling Cosmic Rays from Nearby Supernovae*, which received top honors at the 2024 UC LEADS Symposium. She graduated in the spring 2024 and works as a Jr. Specialist with Dr. Natalie Batalha at UC Santa Cruz.

First-Year Scholars

Brian Le (Neuroscience) is a first-generation STEM student and who works in biomedical research with Dr. Yi Zou on the impact of aging on sleep-related neural damage. He presented at both our 15th Annual Summer Symposium and the UC LEADS Symposium.

Camila Martinez (Astrophysics) is a first-generation STEM student who has worked on research and community outreach through the Seed Spoon Science program at UCSC. Her research with Dr. Alexie Leauthaud on Searching for the Turning Point: Visualization of Stellar MassDensity Differences Throughout Galactic Halo Radii was presented at both our 15th Annual Summer Symposium and the UC LEADS Symposium. She also attended the SACNAS National Conference.

Ashai Moreno (Astrophysics) did his summer and academic year research with Dr. Rebecca Jensen-Clem on the *Implementation* and Characterization of The Vector Vortex Coronagraph on The SEAL Testbed. He also works as a resource center assistant to help communicate about resources to his peers and communities. He presented at both the 15th Annual Summer Symposium and the 2024 UC LEADS Symposium, where he received top honors. Ashai

was also accepted to present at the SPIE Astronomical Telescopes + Instrumentation registration Conference in Tokyo, Japan.

Keegan Nguyen (Cell & Molecular Biology), a transfer student, participated in the Summer Research Experience SRI rotational program during summer 2023 and then joined the laboratory of Dr. Chad Saltikov, where he did research in *Biological Engineering of Bioflms from Molybdenum Ions for The Inhibition of Microbiologically Influenced Corrosion (MIC)* for the academic year. Keegan presented his findings at the 2024 UC LEADS Symposium. He graduated in the spring of 2024 and works at IgeneX as a laboratory assistant in the Bay Area.

Yesenia Puga (Computer Science) is a transfer student. She participated in summer and academic year research in the laboratory of Dr. Sri Kurniawan, and her research has focused on game development and tackling acculturative stress within Latine communities. Yesenia presented her research at our 15th Annual Summer Symposium, the SACNAS National Conference, and the 2024 UC LEADS Symposium, where her poster received an honorable mention. Yesenia also participated in a research experience to improve clarity, wrangling datasets and displaying them as track hubs on the UCSC Genome Browser.

Monica Rodriguez-Vazquez (Cell & Molecular Biology) is a transfer student from Monterey Peninsula College. Monica participated in the Summer Research Institute and worked in an academic year position with Dr. Manel Camps in microbiology. She presented a poster at the 2024 UC LEADS Symposium titled Elucidating The Genetic Basis of Antibiotic Resistance in Uropathogenic E.Coli (UPEC). Monica graduated in spring 2024 and is currently working as a medical assistant in Santa Cruz.

Yeison Samayoa (Biochemistry and Molecular Biology) did his summer and academic year research with Dr. Yat Li on Development of Doped Bismuth Ferrite for Photoelectrochemical Hydrogen Generation. Yeison has worked as an EOP mentor where he has been able to provide support for other first-generation students in STEM pathways. Yeison presented his research at the 15th Annual Summer Symposium and the 2024 UC LEADS Symposium, where his poster received an Honorable Mention.

Elizabeth Wang (Molecular, Cell & Developmental Biology) participated in the eight-week summer rotational program her first summer in UC LEADS, then in the fall of 2023, joined the lab of Dr. Peter Raimondi, where she did academic year research on the Effect of Tegula Brunnea Grazing on Microscopic Macrocystis Pyrifera. She presented her findings at the 2024 UC LEADS Symposium. Elizabeth began research in spring quarter with Dr. Manny Ares in Molecular, Cell, and Developmental Biology, where she investigates the mRNA splicing of introns in bacteria.

Alumni Spotlight



LESLIE SERAFIN UC LEADS 2020-2022 **BS Earth Science**

Leslie Serafin received her BS in Earth Science from UC Santa Cruz, where she worked in a Hydrogeology Lab, gaining experience working in the field, laboratory, and writing a senior thesis. After graduating, she attended UC Santa Barbara in pursuit of her Masters at the Bren School of Environmental Science and Management. She was a part of the MESM program (Master of Environmental Science and Management), which is a two-year professional degree with a focus on preparing students for careers outside of academia. While at the Bren school, Leslie specialized in Water Resources Management and did a summer internship at the water engineering consulting firm West Yost. She went to work for this firm since graduating. She is now learning and gaining experience as a consultant, doing field work, collecting water quality samples, downloading groundwater levels, processing data, and writing reports.



I learned the importance of having a good support system and community. I will forever be grateful for the friends and mentors I met as a UC LEADS scholar, as I was able to learn, grow, and lean on them for support and advice. I would not have been able to get to where I am today without the support of those I have met along the way. With this valuable lesson, it has led me to always seek connections, ask questions, and to continue to learn and grow as a person.

Campus **Updates**



UC San Francisco | Year in Review

In the second summer of in-person research since 2019, UCSF was thrilled that the 2023 summer UC LEADS program was able to participate in nearly all in-person activities for the first time since the start of the pandemic. UCSF welcomed seven incredible UC LEADS scholars that participated in a second summer of research as a part of a larger cohort of forty-three summer researchers. These seven scholars came from four different UCs. While conducting 7-10 weeks of research, these scholars gained access to UCSF's cutting-edge research; were mentored by faculty, postdocs, and graduate students; and experienced the culture and collegiality of being a member of a "lab group." To highlight the scholars' work, the scholars gave oral and poster presentations during a three-day symposium. Furthermore, the 2023 UCSF UC LEADS cohort rode together as a group on the Bay Area subway to attend the UC LEADS reunion at UC Berkeley, where they connected with alumni, other UC LEADS scholars, and program staff. UCSF is extremely proud of the 2023 UC LEADS scholars for leading the program with their world class research and engagement with the UCSF community. UCSF is excited for what the future has in store for these scholars!

Between September and March, Jessica Ip, Diversity Program and Assessment Specialist in the Graduate Division, served as the interim liaison for UC LEADS, following the departure of Zachary Smith. Jessica worked to communicate with ten students across five schools (UCLA, UCI, UCB, UCR, UCSD) who will participate in the 2024 Summer Research Training Program (SRTP). Yvonne Garcia is now the current UC LEADS liaison at UCSF; she started her position as Diversity and Outreach Program Manager in the Graduate Division on April 1.



| Second-Year Scholars

Vicky Chen (Biochemistry), from UC San Diego, did her second summer research at UC San Francisco. She presented a poster at the 2024 UC LEADS Symposium titled Characterization of RBMS3 as a Regulator of RNA Stability in Breast Cancer Metastasis. She also exhibited exceptional leadership qualities during her time in UC LEADS and received the 2024 Campus Leadership Award. She graduated in spring 2024.

Cathy Dang (Pharmacology), from UC Irvine, did her second summer research at UC San Francisco. She graduated in spring 2024

Janae Gayle (Pharmacology), from UC Santa Barbara, did her second summer research at UC San Francisco. She plans to graduate in 2025.

Erik Hakopian (Neuroscience), from UC Riverside, did his second summer research at UC San Francisco. He presented a poster at the 2024 UC LEADS Symposium titled Exploring The Effects of MK-801 on Functional Connectivity of The Septo-Hippocampal Networks Via Machine Learning Algorithm Classification. He also exhibited exceptional leadership qualities during his time in UC LEADS and received the 2024 Graduate Deans' Leadership Award. He graduated in summer 2024.

Vicky Lam (Biological Sciences), from UC Irvine, did her second summer research at UC San Francisco. She presented a poster at the 2024 UC LEADS Symposium titled Investigating Cell Death and Microglia within The Somatosensory Cortex of the Ts65dn Down Syndrome Mouse Model. She graduated in spring 2024.

Yumie Lee (Bioengineering), from UC Merced, did her second summer research at UC San Francisco. She presented a poster at the 2024 UC LEADS Symposium titled A Genome-Wide Knockdown Screen for Host Factors that Participate in CRISPR Adaptation Reveals Novel Factors Required for Spacer Acquisition. She plans to graduate in 2024.

Kira Wallquist (Pharmacology), from UC Santa Barbara, did her second summer research at UC San Francisco. She presented a poster at the 2024 UC LEADS Symposium titled Investigating Serotonin Receptor Expression in Cross-hemispherically Projecting Parvalbumin Neurons. She also exhibited exceptional leadership qualities during her time in UC LEADS and received the 2024 Campus Leadership Award. She graduated in winter 2024.

UC San Francisco Alumni Spotlight



YIMDRIUSKA MAGAN

UC LEADS 2008-2010 **BS** Biological Sciences

Yimdriuska Magan received her BS in Biological Sciences with an emphasis in Human Biology from UC Merced. She was a part of the first UC LEADS class at UC Merced. UC LEADS opened doors that she didn't know existed. She conducted cancer biology research at UCSF, sparking her passion for disease prevention and health equity. This experience inspired her to pursue a Master's in Public Health and continue her education at the UC Davis School of Medicine. Today she is a Family Medicine physician, leveraging technology to bridge health disparities and enhance patient care in underserved communities. By integrating digital health solutions, she is improving access and outcomes, bringing her passion for STEM and social impact full circle.



UC LEADS was more than just a research opportunity— it was the launchpad for my career. Today, as a physician using technology to transform healthcare, I carry forward the lessons and inspiration UC LEADS gave me.



2023-24 UC LEADS 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. Jean-Pierre Delplanque

Executive Steering Committee Chair Vice Provost and Dean of Graduate Studies UC DAVIS

Michele Johnson

UC LEADS Systemwide Director UC SANTA BARBARA

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.

NORTHERN CALIFORNIA

Dr. Alexei FilippenkoFaculty Representative
UC BERKELEY

Yuliana Ortega

UC LEADS Staff Representative UC SANTA CRUZ

SOUTHERN CALIFORNIA

Dr. Sonya NealFaculty Representative
UC SAN DIEGO

Mariela Menendez

UC LEADS Staff Representative UC IRVINE

Campus Contacts

UC Berkeley Diana Lizarraga and Christian Noble

calnerds.berkeley.edu

UC Davis Lynne Arcangel and Taylor Harris

gradstudies.ucdavis.edu

UC Irvine Mariela Menendez and Zitlaly Sanchez

grad.uci.edu

UC Los Angeles Dr. David Gray and RaShawna Williams

sciences.ugresearch.ucla.edu/programs-and-scholarships/uc-leads

UC Merced Valerie Anderson and Diana Hernandez Garcia

uroc.ucmerced.edu/uc-leads

UC Riverside Dr. Laura McGeehan, Karla Bonilla and Nicholas Hall

graduate.ucr.edu/graduate-prep-programs

UC San Diego Edgar Beas

grad.ucsd.edu/ucleads

UC San Francisco Yvonne Garcia

graduate.ucsf.edu

UC Santa Barbara Walter Boggan and Karen van Gool

graddiv.ucsb.edu/uc-leads

UC Santa Cruz Yulianna Ortega and Xingci Situ

stemdiv.ucsc.edu

Statewide Michele Johnson

UC LEADS Systemwide Director

ucleads.ucop.edu