

LEADERSHIP EXCELLENCE  
THROUGH ADVANCED DEGREES

UNIVERSITY  
OF  
CALIFORNIA



Annual Report

**21-22**

# Table of Contents

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4	Preparing Promising Scholars
6	The Year in Review
7	Leadership in Scholarship
8	2022 Virtual Koret Research and Leadership Symposium
10	Program Impact Summary
14	Campus Updates
14	UC Berkeley
18	UC Davis
22	UC Irvine
26	UC Los Angeles
30	UC Merced
34	UC Riverside
38	UC San Diego
42	UC Santa Barbara
46	UC Santa Cruz
50	UC San Francisco
53	2021-2022 Executive Steering Committee
54	Campus Contacts







## 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

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## A MESSAGE FROM THE DIRECTOR



**Michele Johnson**

UC LEADS Statewide Director

**This was a year of transitions.** Over the summer of 2021, research was back in person at most campuses, but workshops were still virtual. Based on feedback from 2020, we once again offered a Graduate Division Panel introducing scholars to outreach representatives from all 10 UC Graduate Divisions. The Scientific Writing Series taught by UCLA's Dr. Fernando Gomez was also offered again, as well as the Summer STEM Speaker Series offered by UC Berkeley's Diana Lizarraga and Christian Noble. It felt like we struck a good balance between in-person lab experience and a variety of online professional development offerings.

The UC LEADS team spent several months planning for an in-person Koret UC LEADS Research and Leadership Symposium at UC San Diego, but changing health guidelines lead us to move to a virtual Symposium in the last two months. The 22nd Annual Symposium was hosted virtually in March 2022. We kept the event relatively short, focusing on the most impactful aspects of the Symposium.

As you explore the following pages, we hope that you will find the analysis of historical data interesting. As in years past, we explore the diversity of the UC LEADS scholars. We also examine the success of UC LEADS in preparing scholars for graduate school and recruiting scholars to UC LEADS graduate programs, both as a whole program, and by campus. We also explore the career trajectories of UC LEADS alumni at these two levels. Finally, former UC San Diego UC LEADS Coordinator Dr. Christopher Murphy shares findings from his dissertation looking qualitatively at the impact of UC LEADS on the STEM doctoral experience.

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



# Leadership in Scholarship

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## IMPACT THROUGH SCHOLARLY CONTRIBUTIONS

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

### Vincent Cele Castillo / UC Davis

Croze ML, Flisher MF, Guillaume A, Tremblay C, Noguchi GM, Granziera S, Vivot K, **Castillo VC**, Campbell SC, Ghislain J, Huising MO and Poitout V. (2021). Free-Fatty Acid Receptor 4 Inhibitory Signaling in Delta Cells Regulates Islet Hormone Secretion in Mice. *Mol Metab.* 2021 Jan 20. doi: 10.1101/2020.07.17.208637

### Melissa Lepe / UC Irvine

Tomac I, Chavez de Rosas J, **Lepe M**, Movasat M, Ma W. (in progress). Across-Scale Geomechanical Evaluation of Rain Intensity, Slope and Sand Type on Post-wildfire Mudflow Composition and Onset Mechanism. *Earth and Space Science Open Archive*. Poster.

### Eduardo Montano / UC Irvine

**Montano EE**, and Peraza Hernandez EA. (2021). Kinematic Design of Deployable Structures with Low Actuation Requirements Based on Pop-Up Folding. *Proceedings of the ASME 2021 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*. Volume 8A: 45th Mechanisms and Robotics Conference (MR). Virtual, Online. August 17–19, 2021. V08AT08A031. ASME. <https://doi.org/10.1115/DETC2021-70026>

### Samanta Negrete / UC Irvine

**Negrete Munoz S**, Su T, Brown MQ. (2019). Evaluation of Natular T30, a Tablet Formulation of Spinosad, Against Culex Mosquito Larvae in Simulated Catch Basins. *Proceedings and Papers of the Mosquito and Vector Control Association of California*, 87(I), 179–183.

### Garrett Kukier / UC Santa Barbara

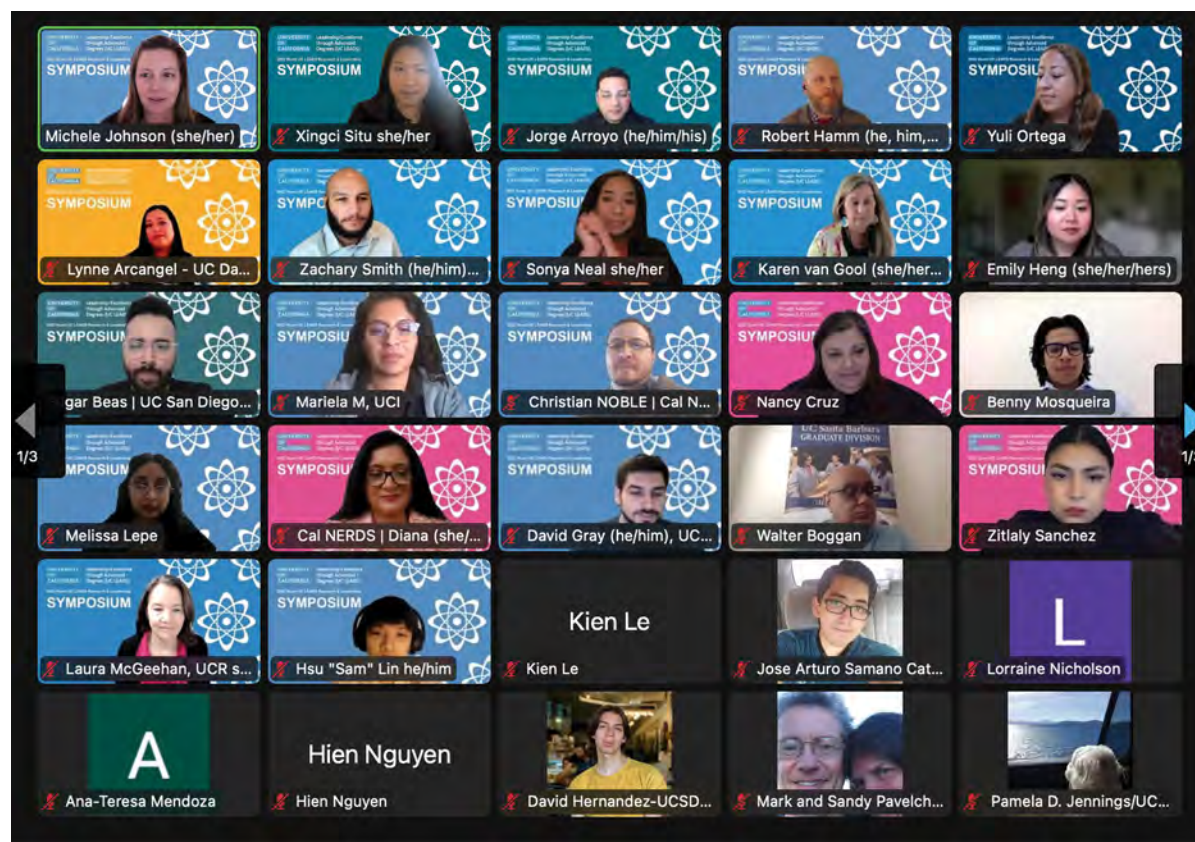
**Kukier GA**, Turlik A, Xue X-S, and Houk, KN. (2021). Violations: How Nature Circumvents the Woodward–Hoffmann Rules and Promotes the Forbidden Conrotatory  $4n + 2$  Electron Electrocyclization of Prinzbach’s Vinylogous Sesquifulvalene. *J. Am. Chem. Soc.* 143: 21694–21704.

### Benny Mosqueira / UC Santa Cruz

Robinson EK, Worthington A, Poscablo D, Shapleigh B, Salih MM, Halasz H, Seninge L, **Mosqueira B**, Smaliy V, Forsberg EC, Carpenter S. (2022). lincRNA-Cox2 Functions to Regulate Inflammation in Alveolar Macrophages during Acute Lung Injury. *J Immunol.* April 15 2022; 208 (8): 1886–1900. <https://doi.org/10.4049/jimmunol.2100743>

# 2022 Koret **Research and Leadership** Virtual Symposium

MARCH 5, 2022



The **22nd Annual Koret UC LEADS Research and Leadership Symposium** was originally planned as an in-person event at UC San Diego. Unfortunately, changing health guidelines lead us to move to the virtual format by mid-January. The Symposium was held virtually on Saturday, March 5, 2022, with research presentation judging occurring online Monday, February 28, through Wednesday, March 2. Fifty-three faculty and alumni judges met with fifty scholars during the online judging.

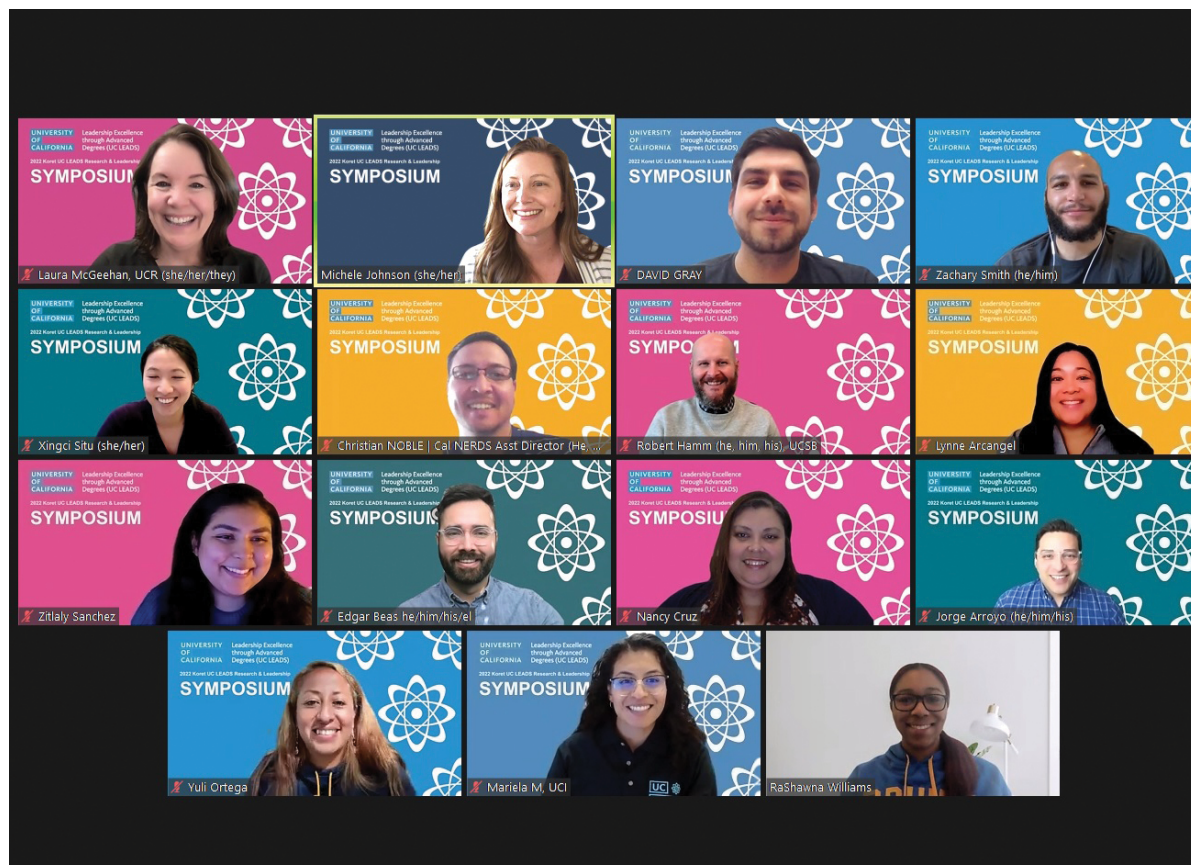
Sensitive to “Zoom fatigue” over a long pandemic, we opted to keep the Symposium short but meaningful. Sixty-four scholars presented their research at the Symposium to peers, friends, family, and PIs. Fifteen alumni broke into four rooms to speak on topic-specific alumni panels (Careers in Academia, Careers in STEM,

and two about Graduate School). The event wrapped with awards and a celebration of all the scholars’ hard work. The Research Presentation Awardees are listed on the opposite page.

The **Graduate Deans’ Leadership Award** was given to three scholars who exhibited extraordinary leadership during their tenure as UC LEADS scholars. Awards went to **Justin Burzachiello** from UC Riverside, **Ade Ilori** from UC Davis, and **Benny Mosqueira** from UC Santa Cruz. 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 **Toren D’Nelly-Warady** (UCB), **Samanta Negrete** (UCI), **Lorraine Nicholson** (UCLA), **Michele Campbell** (UCM), **Noah Gaitan** (UCSD), and **Tessa Chou** (UCSB).



# UC LEADS **Campus Leadership**



**UC LEADS Campus Leadership** (Left to Right): Laura McGeehan, Michele Johnson, David Gray, Zachary Smith, Christian Noble, Robert Hamm, Lynne Arcangel, Zitlaly Sanchez, Edgar Beas, Nancy Cruz, Jorge Arroyo, Yulianna Ortega, Mariela Menendez, and RaShawna Williams

## Research Presentation Award Winners

### *Biological Sciences*

Ricardo Espinosa Lima, UC Santa Barbara  
Wendy Su, UC Los Angeles  
Dustin Tran, UC Irvine

### *Engineering and Computer Sciences*

Stephany Alonso, UC Irvine  
Melissa Lepe, UC Irvine  
Queenie Xu, UC Riverside

### *Physical Sciences and Mathematics*

Garrett Kukier, UC Los Angeles  
Hsu Lin, UC San Diego  
Alfred Vargas, UC Berkeley

## Honorable Mentions

### *Biological Sciences*

Zachary Amador, UC Riverside  
Noah Gaitan, UC San Diego  
Natalie Laurie, UC Davis

### *Engineering and Computer Sciences*

Martin Beshara, UC Berkeley  
Ukamaka Ezimora, UC Merced  
Tanner Ragan, UC Merced  
Jim Solomon, UC Los Angeles

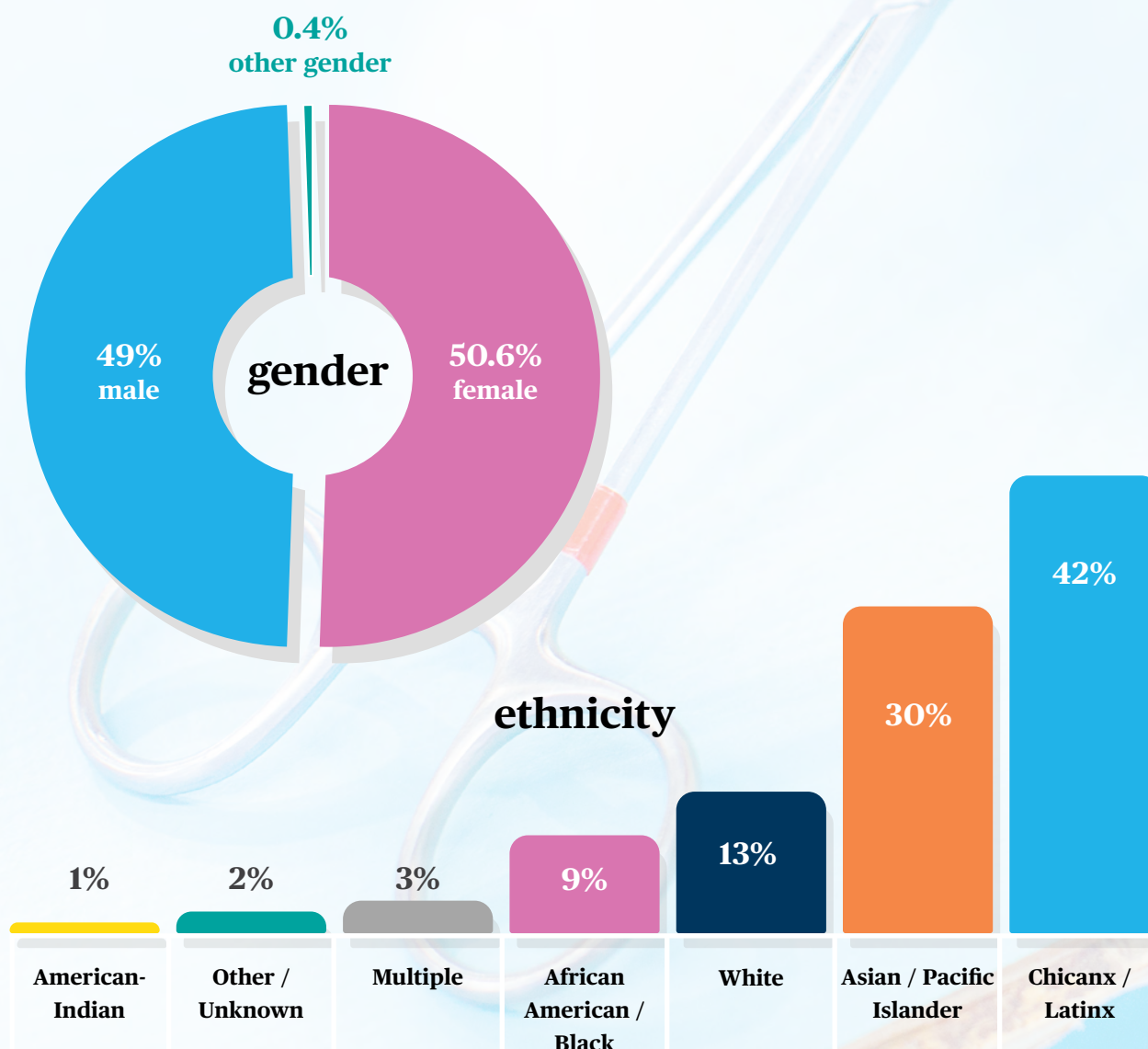
### *Physical Sciences and Mathematics*

Trung Kien Le, UC Santa Barbara  
Ana-Teresa Mendoza, UC Irvine  
Leslie Serafin, UC Santa Cruz

# Program **Impact** Summary

## UC LEADS in Diversity

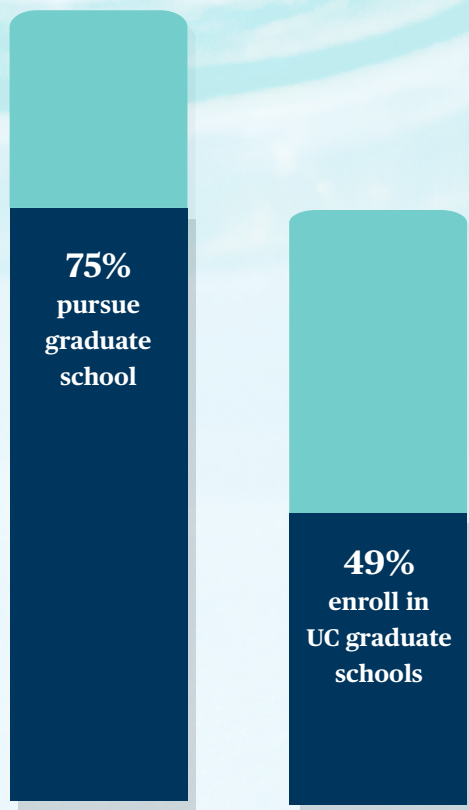
Over 22 years, UC LEADS has supported 1196 scholars. The program pursues its goal of diversifying graduate school and future STEM leadership by recruiting diverse scholars. The UC LEADS population is **82% first generation college students OR underrepresented minorities** (separately: 53% first generation college students, 52% underrepresented minorities). Males and females are represented almost equally in the program, and some scholars identifying as another gender have also joined. Pictured are the gender and ethnicity breakdowns for all 1196 scholars and alumni.





## Graduate School Bound

UC LEADS has an impressive 99% undergraduate graduation rate. One of the original programmatic visions for UC LEADS was that it increase graduate degree attainment. To that end, **75% of our diverse UC LEADS alumni are either currently enrolled in graduate school or have already earned degrees in a master's or doctoral program**, and 49% of these students go to a UC graduate program. We will look at the statistics throughout this report for each campus as well.

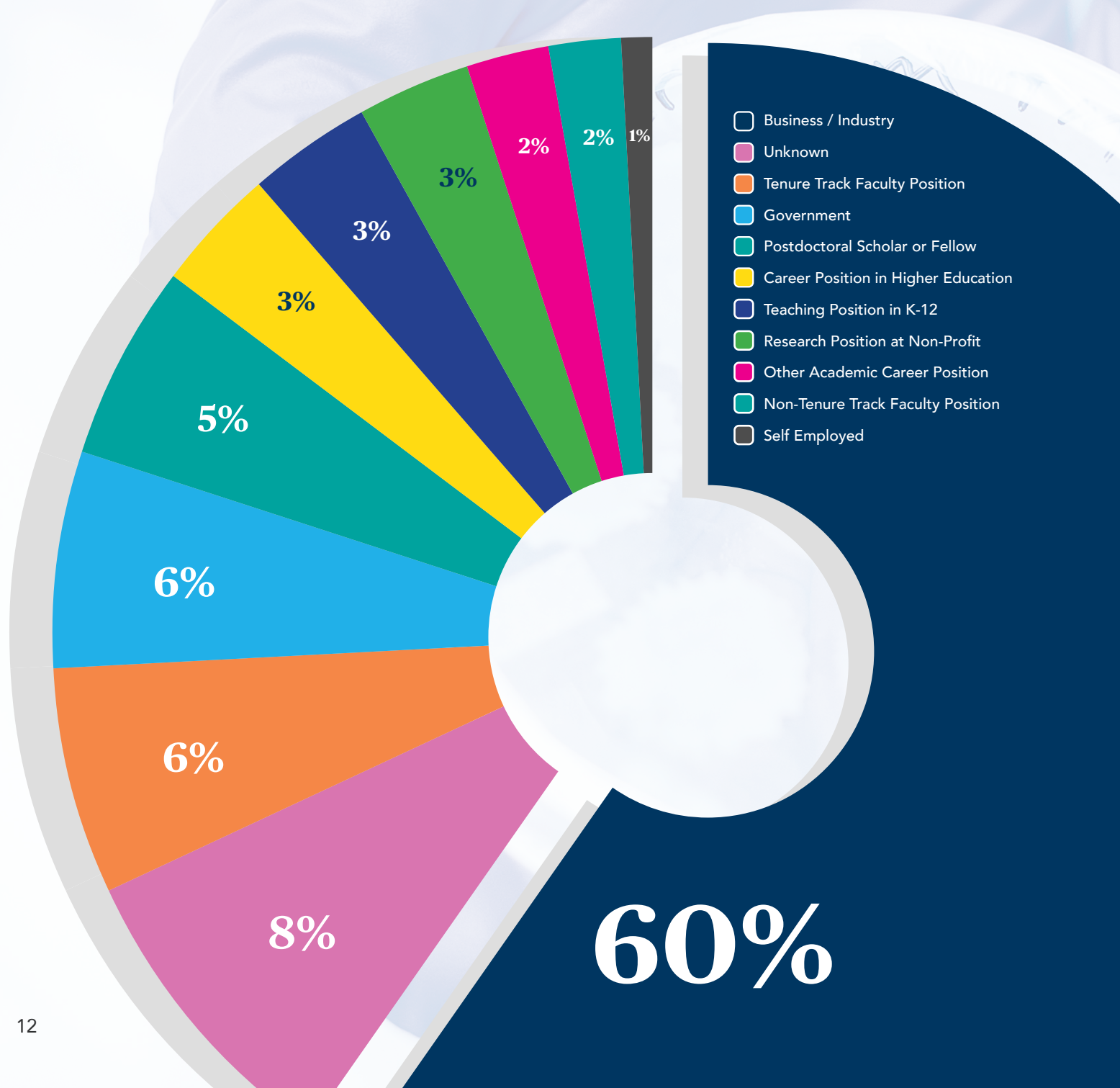


One aspect of the UC LEADS program that makes it so unique is the scholars' second summer at another UC campus. Surprisingly, **28% of scholars who enroll in a UC graduate program go to the school where they spent their second summer**, further illustrating just how impactful the relationships are that they build during this time.

# Program **Impact** Summary

## Post Graduate Degree Employment

Beyond UC graduate degree attainment, UC LEADS aims to prepare future leaders in academia, government, and industry. This year we take a closer look at the fields UC LEADS alumni go into after earning graduate degrees. We look at this overall (below), as well as by campus in the campus pages. Of the 36 alumni employed in tenure track faculty positions, 7 are at a UC.





## What Makes UC Leads so Successful?

The UC LEADS program was the dissertation topic of Dr. Christopher Murphy, a former UC LEADS coordinator. His qualitative research study looked at the influence of UC LEADS on the STEM doctoral experience as he reviewed annual reports, the UC LEADS website, and interviewed 7 UC LEADS alumni in STEM Ph.D. programs to answer the following questions:

1. What UC LEADS academic experiences influence the STEM doctoral experience?
2. What UC LEADS social experiences influence the STEM doctoral experience?
3. How do UC LEADS academic experiences influence the STEM doctoral experience?
4. How do UC LEADS social experiences influence the STEM doctoral experience?

The findings highlight important programmatic elements of the UC LEADS program that directly impact current Ph.D. students in STEM (see figure). Although they are all academic in nature, many have distinct social qualities. For example, while faculty mentorship is inherently academic, the relationship naturally evolves to include mutual respect and, often, friendship.

In addition to the academic and social duality of the UC LEADS program, community is central to the development of UC LEADS scholars. Notably, **the two-year experience creates a powerful and transformative space for the community to grow and thrive**. Despite the many academic, cultural, and social differences, strong kinships form as a result of shared histories and experiences that connect underrepresented and underserved communities.

UC LEADS is a model undergraduate research program that successfully promotes diversity, equity, and student success. This study is a first step to delve into its 22-year history to learn about how and why the program is so successful.

UC LEADS Impacts	Academic	Social	Research Questions
Academic year research	X		1
Advising and mentoring	X	X	1, 2
Development of social support	X	X	3, 4
Graduate school preparation	X		1, 3
GRE preparation	X		1
Participation in academic and scientific communities	X	X	3, 4
Professional development	X		1
Scientific meetings and conferences	X	X	1, 2
Summer research	X	X	1, 2
UC LEADS meetings	X	X	1, 2
UC LEADS symposium	X	X	1, 2

Dr. Murphy completed his Ed.D. in Educational Leadership at Fresno State University. His dissertation, titled Long Term Impacts of the UC LEADS Program on Ph.D. Students in STEM, can be found on ProQuest”

Murphy, C. P. (2022). Long term impacts of the UC LEADS program on Ph.D. students in STEM (Order No. 29328247). Available from ProQuest Dissertations & Theses A&I. (2704011631). Retrieved from [www.proquest.com/dissertations-theses/long-term-impacts-uc-leads-program-on-ph.d./docview/2704011631/se-2](http://www.proquest.com/dissertations-theses/long-term-impacts-uc-leads-program-on-ph.d./docview/2704011631/se-2)

# Campus Updates



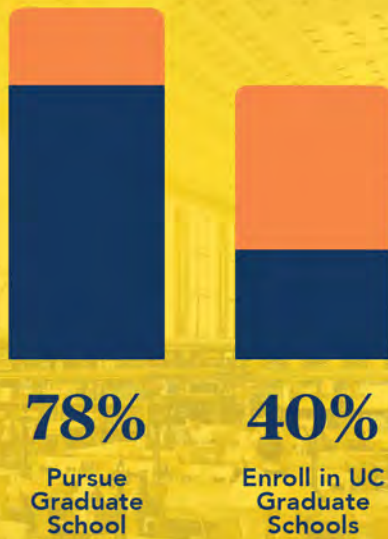
## UC Berkeley | Year in Review

At UC Berkeley, UC LEADS is housed in our Cal NERDS suite of programs. We continued our work to provide techno-inclusive virtual summer workshops to our UC LEADS statewide community. A few summer highlights included guest speakers from the University of Southern California, the HERTZ Foundation, Lawrence Berkeley National Lab, the School of Information focusing on STEM role models; graduate school application preparation; STEM pathways; and the sense of belonging. In addition, UC LEADS alum and UC Irvine Physics Professor Dr. Franklin Dollar gave an inspirational talk about his STEM journey and profession. Plus, we partnered with UC Irvine to have a virtual graduate school campus visit. We continued our focus on building computational skill sets by giving our “Introduction to Python Coding” virtual boot camps, reaching over 50 colleges (including 16 community colleges) in 13 states. We remained virtual for our summer 2021 program, having an end of summer Zoom research presentation showcase. With campus approval (and with COVID safety protocols in place), we were able to return to in-person events and activities in fall 2021 and re-open our Cal

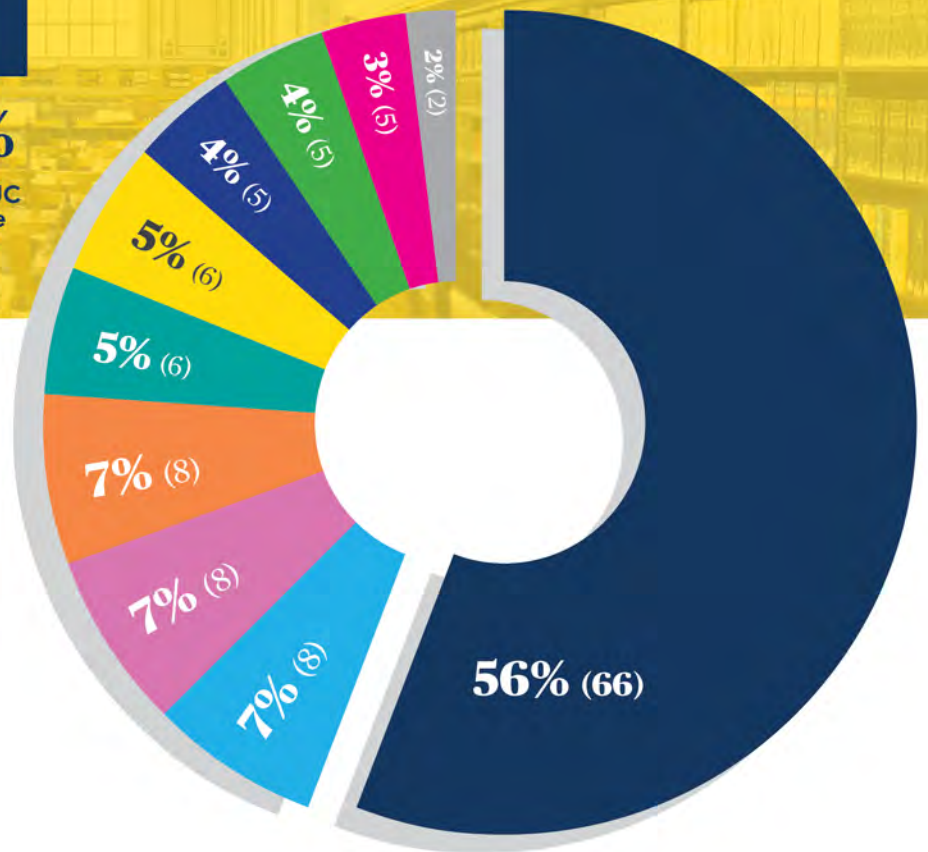
NERDS student center. We remained one of the few student centers that was open from morning to night. We hosted our first NERD PROM, which included dancing, networking, STEM experiments, and delicious food. We were able to provide weekly STEM networking luncheons, study space, re-open our micro-food pantry (which also provided COVID PPE), and provide graduate school application grants. Our graduate school coach, Dr. Sheila Humphreys, supported students who wanted help with their graduate school applications. We also hosted an in-person leadership institute with author Dr. Fredrick Moore, helping students learn about leadership and how to strengthen their confidence. We received awards from William Blair and a campus Student Technology Grant to purchase a fabric cloth poster printer. In addition, we continued our important work of running our STEM digital tool, [STAR.berkeley.edu](https://STAR.berkeley.edu). All of these achievements were made possible thanks to our team of staff and student directors, including Chemistry Graduate Student Anthony Garcia (former visiting second summer research scholar from UC Merced).



# Graduate School Bound



## Post Graduate Degree Employment



## | Second-Year Scholars

**Toren D’Nelly-Warady** did their second summer research at UC San Diego. They presented a poster at the 2022 UC LEADS Symposium titled *Geometric Decomposition of Abelian Varieties of Order 1*, and received a Campus Leadership Award. They graduated with their B.S. in December 2021 and they are now pursuing a Computer Science & Computational Math Ph.D. at UC San Diego.

**Jesus Martinez** (Astrophysics and Physics) did his second summer research at UC Riverside. He presented a poster at the 2022 UC LEADS Symposium titled *Finding the Members of Star Cluster G286.21+/-0.17*. He graduated in spring 2022 and is taking some time off to volunteer at his church. In addition, he works at Oxnard Union High School district as an AVID tutor.

**Claudia Renero** (Mechanical Engineering) did her second summer of research at UC Berkeley under the mentorship of Professor Hayden Taylor in the Mechanical Engineering Department, working on a project Layout Design for Steel Reinforced Concrete with Specific Loading Conditions. She presented a poster at the 2022 UC LEADS Symposium titled *Layout Design for Steel Reinforced Concrete with Specific Loading Conditions*. She plans to graduate in 2023 and take some time off before applying to STEM graduate programs.

**Wyatt Singh** (Applied Mathematics and Computer Science) did her second summer research at UC Berkeley. She presented a poster at the 2022 UC LEADS Symposium titled *The Influence of Fire on Soil Carbon Sequestration in Rangeland*. She finished her honors thesis *Benchmarking LinguaFranca* and graduated in spring 2022. She is currently a Computational & Applied Mathematics Ph.D. student at the University of Minnesota.

## | First-Year Scholars

**Martin Beshara** (Mechanical Engineering) did his first summer research at UC Berkeley. He received a research presentation honorable mention in Engineering award at the 2022 UC LEADS Symposium for his poster titled *The Influence of Fire on Soil Carbon Sequestration in Rangeland*. He plans to graduate in fall 2022.

**Thee Ho** (Computer Science) they did their first summer of research at UC Berkeley under the mentorship of Professor Marten Lohstroh in the Department of Electrical Engineering and Computer Science with a project entitled *Benchmarking LinguaFranca*. Thee graduated in Fall of 2022 and they decided to go into Tech Industry.

**Isaac Sloan** (Applied Mathematics & Modeling) completed his first summer of research at UC Berkeley under the direction of David Harding in the Department of Sociology with a project entitled *Analysis of Unenrollment Rates within the Foundations of Data Science Course* at UC Berkeley. He plans to graduate in May of 2023 and take a gap year working in the tech industry before applying to graduate school.

**Alfred Vargas** (Chemical & Biomolecular Engineering) completed his first summer research at UC Berkeley. He received a research presentation top honors in Physical Sciences and Mathematics award at the 2022 UC LEADS Leadership and Research Symposium for his poster titled *Understanding the Effect of Redox Additives on Gold Nanocrystal Transformations during Liquid Cell Transmission Electron Microscopy Experiments*. He plans to graduate in May of 2023.

**Padma Venkatraman** (Astrophysics & Data Science) completed her first summer of research at UC Berkeley under the direction of Professional Scientists Dr. Asti Bhatt and Dr. Leslie Lemarche at SRI International with a project entitled *Analyzing Traveling Ionospheric Disturbances and Building of the MANGO Image Processing Pipeline*. She plans to graduate in May of 2023.



### DR. IMARI WALKER

UC LEADS 2013-2015

B.A. Geological and Earth Sciences

After receiving a B.A. in Geological and Earth Sciences from UC Berkeley, Dr. Imari Walker earned her Ph.D. at Duke University in Environmental Engineering, focusing on the release, transformation, and effects of polymer associated chemicals within aquatic environments. As a scientist at Research Triangle International, she also shares information about plastic pollution, microplastics, and chemicals associated with consumer products on her [YouTube channel @imariwalker](#) which has over 2,000 followers.

“My mentors helped me see all the possibilities for my future and gave me the **encouragement** to go after anything I wanted. My mentors connected me with other great scientists as well.



# Campus Updates

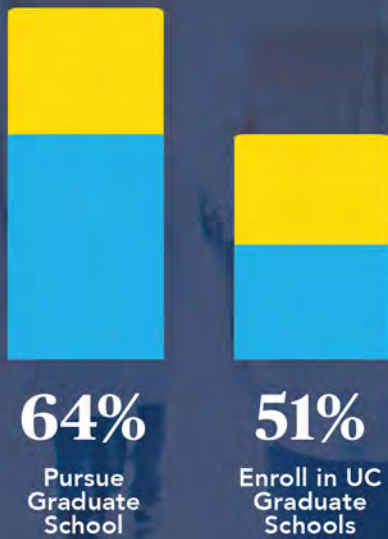


## UC Davis | Year in Review

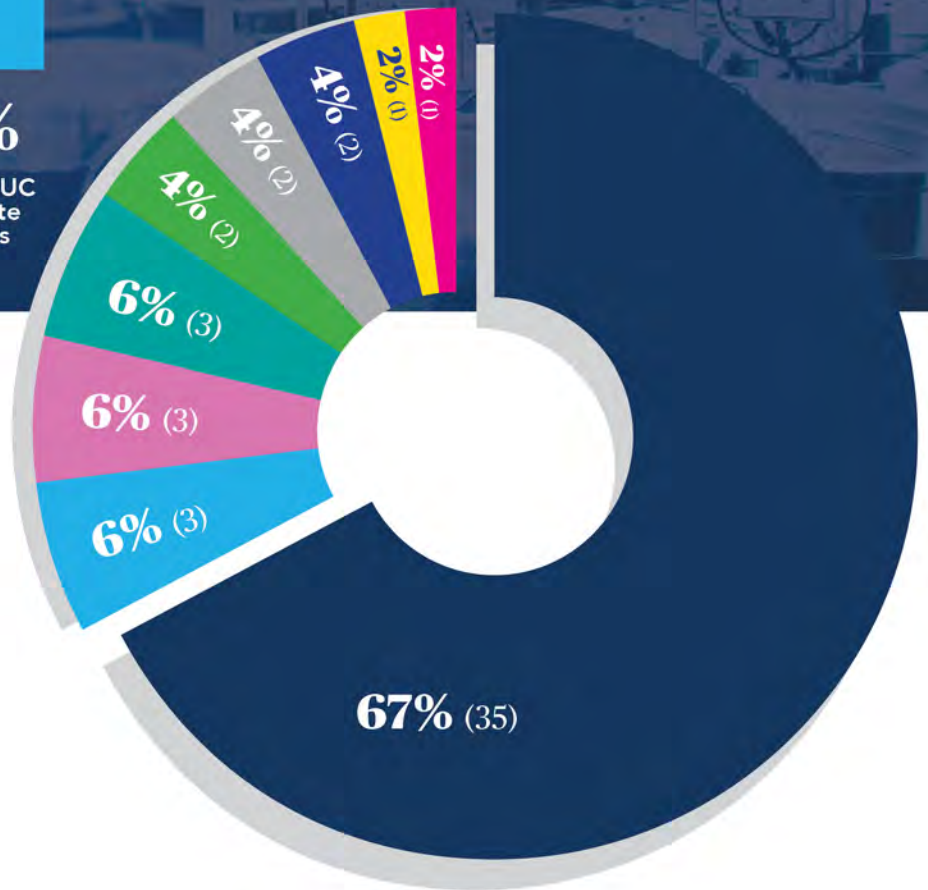
Once again, these scholars never cease to amaze me! Their drive and focus to achieve and accomplish each milestone was once again proven this past year. Given the ongoing challenges presented by the pandemic, the scholars honed in on their academic goals and persevered. Each scholar integrated different methods for managing academics, research, work, and self-care in order to achieve graduation. It was not with ease, and many detours were taken, though they utilized their support systems and fulfilled their goals.

The challenge of hybrid research had a major impact during part of this year, though their ability to develop positive mentee/mentor relationships with their advisors and grad students was incredibly effective. Frequent observations of leadership skills and professionalism were seen and applauded. Overall, the scholars had quite an eventful year filled with many successes and less desirable moments, however, they did so with conviction and determination – true examples of leaders!

# Graduate School Bound



## Post Graduate Degree Employment



## | Second-Year Scholars

**Vincent Cele Castillo** (Neurology, Physiology & Behavior) did his second summer research at UC Los Angeles. He presented a poster at the 2022 UC LEADS Symposium titled *The Role of Aging and Advanced Diabetes on Pancreatic Alpha Cell Responsiveness*. He graduated in spring 2022. As a first-generation college student, Vincent took advantage of numerous opportunities on campus outside of his major courses. He was involved in scientific research for most of his undergraduate career and participated in another program known as ADAR (Advanced Diversity in Aging Research).

**Adebade “Ade” Ilori** (Microbiology) did his second summer research at UC Davis. He presented a poster at the 2022 UC LEADS Symposium titled *Negative Effects of Caffeine on Collagen and Total Protein Synthesis*, and he received the Graduate Deans’ Leadership Award. He graduated in spring 2022 and is a Home Care Provider with Crosspoint Residential. As a first-generation college student who faced numerous challenges with family immigration to the US, adapting to schools and educational barriers, Ade has overcome many obstacles and continues to pursue his goals. He hopes to pursue an advanced degree in psychology in the near future.

**Aman Kaur** (Managerial Economics) did her second summer research at UC Los Angeles. She presented a poster at the 2022 UC LEADS Symposium titled *Executive Pay Cap: Evidence from Israel*. She graduated in spring 2022 and is a Marketing Intern at Oracle. As a first-generation college student, Aman was an active member of the UC Davis Guardian Scholars Program and worked for three years as a Financial Wellness Peer Advisor for the Financial Aid Office at UC Davis. Her campus involvement and activities kept her engaged and helped enhance her skills in project management and communications, which led to her leading the UC LEADS social media accounts for two quarters.

**Lilian Molina** (Electrical Engineering) did her second summer research at UC Santa Cruz. She presented a poster at the 2022 UC LEADS Symposium titled *Optimization for Timing Resolution in PET System*. She graduated in spring 2022 and is now an Electrical Engineering Ph.D. student at UC Davis. As a first-generation college transfer student, Lilian excelled in her LEADR (Leadership in Engineering Advancement, Diversity, and Retention) cohort. Her engagement in UC LEADS and LEADR provided numerous opportunities to network in spaces where she learned from alumni and professionals in industry, all of which heightened her motivation to pursue an advanced degree in engineering.

## | First-Year Scholars

**Natalie Laurie** (Neuroscience) did her first summer research at UC Davis. Her poster, *Phonological Priming Effects on Naturalistic Audiovisual Speech Recognition*, received an honorable mention at the 2022 UC LEADS Symposium. She plans to graduate in spring 2023.

**Qiaolin “Cherrie” Li** (Civil Engineering) did her first summer research at UC Davis. She presented a poster at the 2022 UC LEADS Symposium titled *Early-age Behavior of Concrete in Bridge Decks: Assessment of Shrinkage Cracking Behavior*. She plans to graduate in spring 2023.

**Jose Samano Catalan** (Neuroscience) did his first summer research at UC Davis. He presented a poster at the 2022 UC LEADS Symposium titled *Predicting Temporal Attention Through Pre-Cue EEG*. He plans to graduate in spring 2023.

**Alexandra Serna Godoy** (Cognitive Psychology) did her first summer research at UC Davis. She presented a poster at the 2022 UC LEADS Symposium titled *Effects of Pubertal Androgen Removal in Oxytocin Expression Associated with Anxiety-Related Behaviors*. She plans to graduate in spring 2023.





### KARIN NGUYEN

UC LEADS 2011-2013

B.S. Environmental Science and Management

Karin Nguyen received a B.S. in Environmental Science and Management at UC Davis before pursuing a M.S. in Soil Science at Oregon State University. After completing her studies, she joined the California Public Utilities Commission where she conducts policy research and analysis of power generating, electric, and communication facilities in California to ensure electrical safety for all Californians.

“Through the connections I made with peers, mentors, and support staff at UC LEADS, I gained a **community** that supported me in the sciences and in my pursuit of my scientific interests.

# Campus Updates

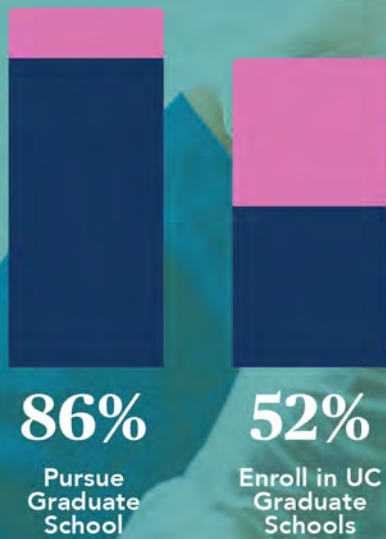


## UC Irvine | Year in Review

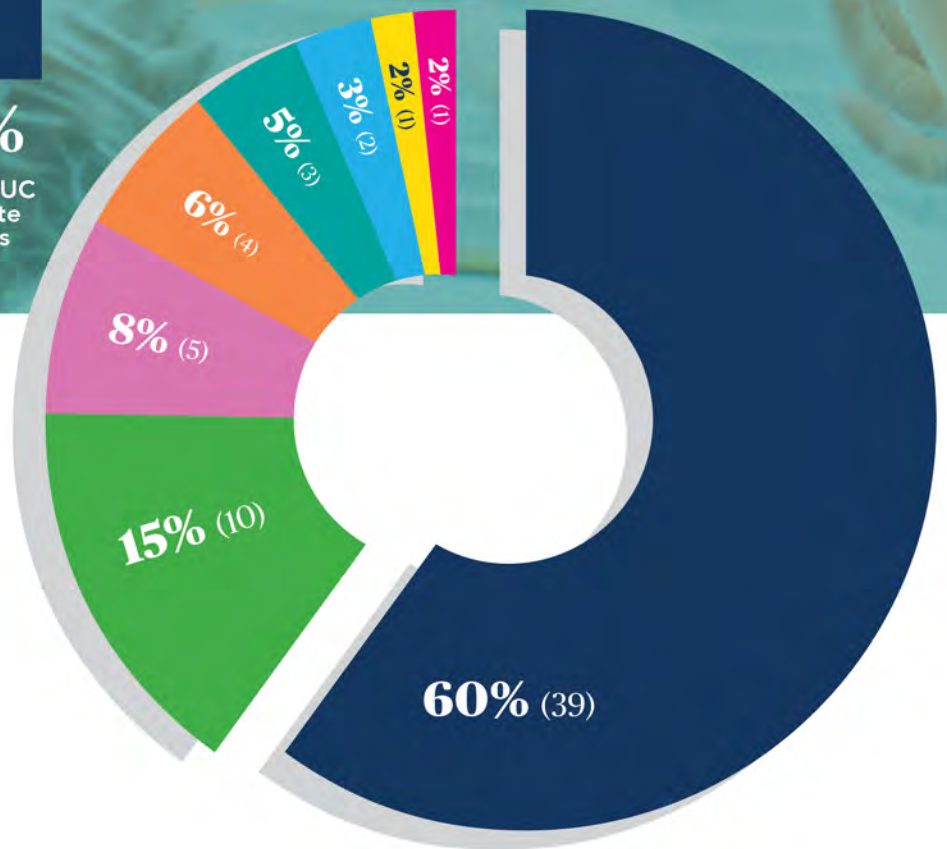
Scholars persevered in their research and graduate school goals despite the continuing challenges presented by the pandemic. In the winter, conferences slowly returned to in person and our scholars were able to travel to present their research. First-year scholars especially took advantage of this opportunity to present research they had conducted remotely at UC Irvine over the summer at conferences like the American Chemical Society. Scholars were recognized with outstanding poster awards. Our campus also resumed in person programming which gave us the opportunity to host professional development workshops, networking, enhancing communication, presentation skills, and team building activities.

In particular, scholars learned from one another how to best prepare for in-person summer research at different UCs and received advice on staying organized academically for the graduate application season. Scholars received mentorship from a lead graduate student and a writing mentor to support their writing of graduate school applications and extramural fellowships. Our second-year scholars gained publications as a result of their research projects and are now matriculating in University of California doctoral programs.

# Graduate School Bound



## Post Graduate Degree Employment





## | Second-Year Scholars

**Stephany Alonso** (Materials Science and Engineering) did her second summer research at UC San Diego. Her poster, *Novel Uterine Compression Suture Technique for Treatment of Postpartum Hemorrhage*, received top honors at the 2022 UC LEADS Symposium. She graduated in spring 2022 and is a Biomedical Engineering Ph.D. student at UC Irvine.

**Michael Guerra** (Nursing Science) did his second summer research at UC Los Angeles. He graduated in spring 2022.

**Melissa Lepe** (Aerospace Engineering) did her second summer research at UC San Diego. Her poster, *Hydrophobic Particle-Air-Water Mixtures in Post-Wildfire Mudflows*, received top honors at the 2022 UC LEADS Symposium. She graduated in spring 2022 and is a Mechanical & Aerospace Engineering Ph.D. student at UC Irvine.

**Eduardo Montano** (Aerospace Engineering) did his second summer research at UC San Diego. He presented a poster at the 2022 UC LEADS Symposium titled *Deployable Structures with a Single Degree of Freedom Inspired by Pop-up Origami*. He graduated in spring 2022 and is a Mechanical & Aerospace Engineering Ph.D. student at UC Irvine.

**Samanta Negrete** (Biomedical Engineering) did her second summer research at UC Berkeley. She presented a poster at the 2022 UC LEADS Symposium titled *Lateral Cavity Acoustic Transducer (LCAT) Platform for Studying Mechanical Properties of Cells*, and she received a Campus Leadership Award. She graduated in spring 2022 and is a Bioengineering Ph.D. student at UC Los Angeles.

## | First-Year Scholars

**Ivan Martin del Campo** (Chemistry) did his first summer research at UC Irvine. He presented a poster at the 2022 UC LEADS Symposium titled *Boronic Acid Containing Polymers through RAFT Polymerization*. He plans to graduate in spring 2023.

**Ana-Teresa Mendoza** (Chemistry) did her first summer research at UC Irvine. Her poster, *Efficiency of Different Nanostructures of MnS at Storing Sodium Ions*, received an honorable mention at the 2022 UC LEADS Symposium. She plans to graduate in spring 2023.

**Hien Nguyen** (Chemistry) did his first summer research at UC Irvine. He presented a poster at the 2022 UC LEADS Symposium titled *Understanding the Interaction between Rare Earth Metals and Vanadium Oxo Complexes*. He plans to graduate in spring 2023.

**Dustin Tran** (Biological Sciences) did his first summer research at UC Irvine. His poster, *Quantifying Energy Flow During a Frog Jump at Different Temperatures*, received top honors at the 2022 UC LEADS Symposium. He plans to graduate in spring 2023.



### DR. SALVADOR BADILLO-RIOS

UC LEADS 2012-2014

B.S. Mechanical Engineering; Aerospace Engineering

After receiving a B.S. in Mechanical Engineering from UC Irvine, Dr. Salvador Badillo-Rios pursued a graduate education at UCLA, receiving a M.S. then a Ph.D. in Aerospace Engineering. After working as an advisor for aerospace clients, he became an associate at National Security Innovation Capital, where he works today to fund U.S. startups and accelerates leading commercial technology adoption to support national security and defense.

“ From learning to sell myself through a personal statement to participating in research poster competitions and **explaining my contribution** to a research project and its importance, UC LEADS helped me learn to tailor my presentation to my audience.

# Campus Updates



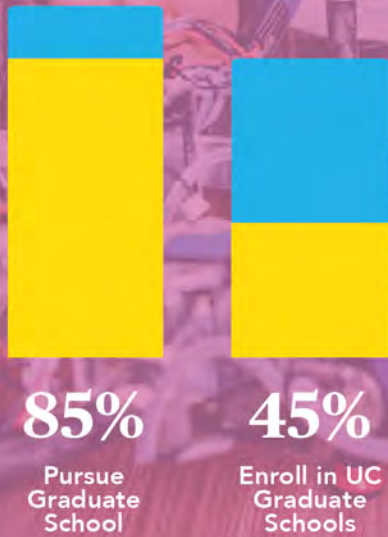
## UC Los Angeles | Year in Review

UCLA's UC LEADS program remains unique in its design as a two-year capstone experience in which all senior students submit a thesis proposal at the end of their tenure in the program. Between 2021 – 2022, five of our nine scholars graduated, and all of them are now attending phenomenal graduate programs. **Chris La** is attending UC Berkeley to for a Ph.D. in Chemistry. **Lorraine Nicholson** is at the University of Florida for her Astronomy Ph.D.. **Jessica Salguero** is working on her Masters in Bioinformatics and Genomics at the University of Oregon. **Francisco Galang** has started his Ph.D. in Chemical Engineering at UC Berkeley. **Garrett Kukier** published a first author paper on his undergraduate research and is now pursuing a Ph.D. in Theoretical Chemistry at Stanford.

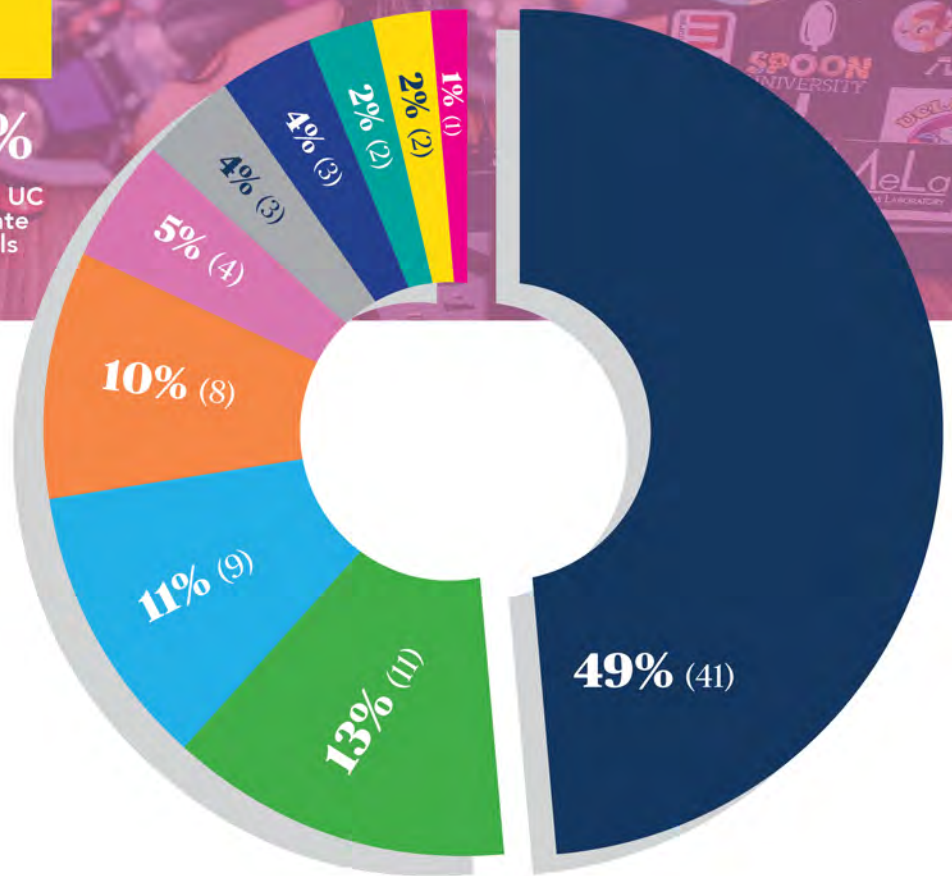
Our four first year scholars, **Yenifer Hernandez, Jim Solomon, Wendy Su,** and **Kylie Williams** have done exceptional work in the classroom and in their respective labs. Our students had the opportunity to present their research in conferences including the UCLA Undergraduate Research Showcase, the UC LEADS Symposium, ABRCMS, and the American Chemical Society (ACS) annual meeting. We are immensely proud of all our scholars' accomplishments and look forward to their future endeavors!



# Graduate School Bound



## Post Graduate Degree Employment



## | Second-Year Scholars

**Garrett Kukier** (Chemistry & Biochemistry) did his second summer research at UC Berkeley. His poster, *Violations. How Nature Circumvents the Woodward–Hoffmann Rules and Promotes the Forbidden Conrotatory  $4n + 2$  Electron Electrocyclization of Prinzbach's Vinylogous Sesquifulvalene*, received top honors at the 2022 UC LEADS Symposium. He graduated in winter 2022 and is a Theoretical Chemistry Ph.D. student at Stanford University.

**Chris La** (Atmospheric & Oceanic Sciences) did his second summer research at UC Berkeley. He presented a poster at the 2022 UC LEADS Symposium titled *Theoretical Design of a Brønsted Acid Catalyst for Asymmetric Ritter Reactions*. He graduated in spring 2022 and is a Chemistry Ph.D. student at UC Berkeley.

**Lorraine Nicholson** (Earth & Planetary Space Sciences) did her second summer research at UC Santa Cruz. She presented a poster at the 2022 UC LEADS Symposium titled *The Effect of Evolving Luminosity on the Evolution of Small Exoplanets*, and she received a Campus Leadership Award. She graduated in spring 2022 and is an Astronomy Ph.D. student at the University of Florida.

**Jessica Salguero** (Chemistry & Biochemistry) did her second summer research at UC Davis. She presented a poster at the 2022 UC LEADS Symposium titled *Investigating the Effect of Post-Translational Modification on Butyrate Oxidation in Syntrophomonas Wolfei*. She graduated in spring 2022 and is a Bioinformatics & Genomics Master's student at the University of Oregon.

## | First-Year Scholars

**Francisco Galang** (Chemical Engineering) did his summer research at UC Berkeley. He presented a poster at the 2022 UC LEADS Symposium titled *Design of Cu-Based MIS Photocathodes for CO<sub>2</sub> Reduction to C<sub>2</sub>+ Products*. Francisco was a transfer student and was able to graduate after just one year in UC LEADS. He graduated in spring 2022 and is a Chemical Engineering Ph.D. student at UC Berkeley.

**Yenifer Hernandez** (Biological Sciences) did her first summer research at UC Los Angeles. She presented a poster at the 2022 UC LEADS Symposium titled *Using Sample Similarity to Reweight Samples and Build a More Robust Method of Gene Specificity*. She plans to graduate in spring 2023.

**Jim Solomon** (Biological Sciences) did his first summer research at UC Los Angeles. His poster, *3D Reconstruction of Low Resolution LiDAR Data*, received an honorable mention at the 2022 UC LEADS Symposium. He plans to graduate in spring 2023.

**Wendy Su** (Biological Sciences) did her first summer research at UC Los Angeles. Her poster, *A Database of Nuclear Image Features Linked to the Biology of Ovarian Cancer Cell Lines*, received top honors at the 2022 UC LEADS Symposium. She plans to graduate in spring 2023.

**Kylie Williams** (Biochemistry) did her first summer research at UC Los Angeles. She presented a poster at the 2022 UC LEADS Symposium titled *Investigating the Effects of Age-Associated and Genetically-Induced Intestinal Barrier Dysfunction on Brain Health*. She plans to graduate in spring 2023.



### RONNIE GARCIA

UC LEADS 2016-2018

B.S. Chemistry and Material Science

Ronnie Garcia received a B.S. in Chemistry and Material Science from the University of California, Los Angeles before pursuing his doctoral studies in Materials Chemistry at UC Santa Barbara. As a National Science Foundation fellow, Ronnie is conducting research in the labs of Craig Hawker and Javier Read de Alaniz to synthesize and apply new biomaterials in 3D printing with the hope of pursuing a career in industry.

“ Thanks to UC LEADS, I was able to intern as an undergraduate in my current Ph.D. lab. I got first-hand experience working in the UCSB environment and fell in love with its rich collaborative environment.



# Campus Updates

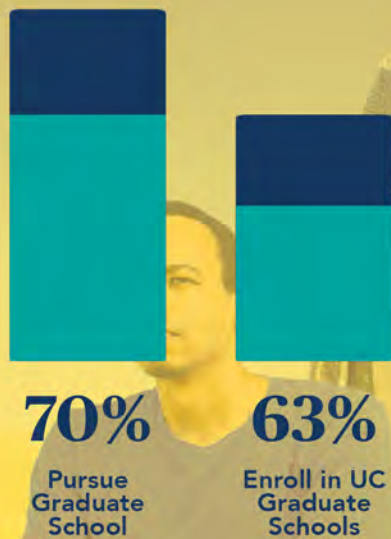


## UC Merced | Year in Review

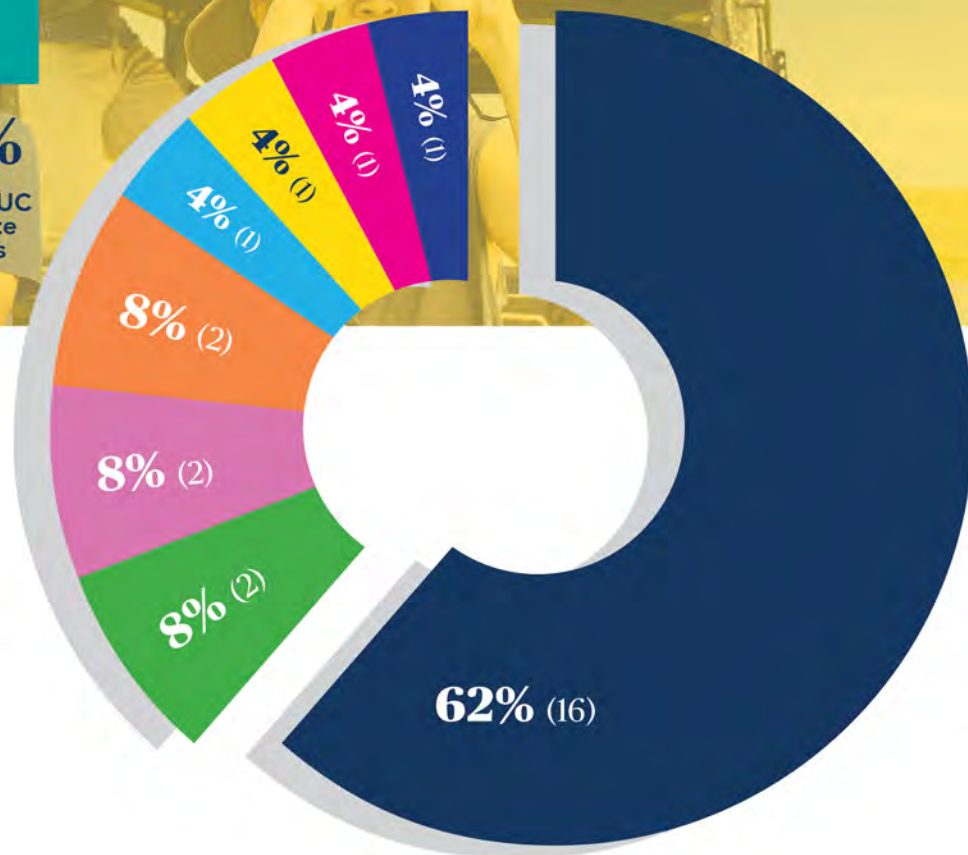
The UC LEADS Program continues as one of the only undergraduate research programs to guarantee two years of research at UC Merced. The scholars' accomplishments continue to highlight the great experiences in this program: **Tanner Ragan** and **Ukamaka Ezimora** received Honorable Mention in Engineering & Computer Sciences for their presentations at the 2022 UC LEADS Annual Symposium; Tanner Ragan accepted a research internship at Lawrence Livermore National Laboratory before he starts his Ph.D.

Program in Mechanical and Aerospace Engineering at UC Irvine; **Mary Louise "Mindy" Fernandez**, has been accepted to the Immunology Ph.D. Program at UC Davis; and **Michele Campbell** received the Campus Leadership Award at the 2022 UC LEADS Symposium and will apply to Ph.D. programs in the fall. The alumni stay involved with presentations, speaker panels for new scholars, and share their experiences with the campus community at events, both virtually and in person.

# Graduate School Bound



## Post Graduate Degree Employment



## | Second-Year Scholars

**Eberardo Camorlinga** (Material Science Engineering) did his second summer research at UC San Diego. He presented a poster at the 2022 UC LEADS Symposium titled *Tunable Photonic Multilayers and Core-Shell from Stimulus-Responsive Hydrogel*. He graduated in fall 2022.

**Michele Campbell** (Computer Science & Engineering) did her second summer research at UC Los Angeles. She presented a poster at the 2022 UC LEADS Symposium titled *Mechanically Adaptive Materials Selection for Bone Remodeling*, and she received a Campus Leadership Award. She graduated in fall 2022.

**Mary Eloise Fernandez** (Biological Sciences) did her second summer research at UC Riverside. She presented a poster at the 2022 UC LEADS Symposium titled *Cyst Formation and Neurochemical Changes Upon Chronic Toxoplasma Gondii Infection*. She graduated in spring 2022 and has accepted an offer to the Immunology Ph.D. program at UC Davis.

**Tanner Ragan** (Mechanical Engineering) did his second summer research at UC San Diego. His poster, *Flow Characterization of Plasma Actuated Flat Plate*, received an honorable mention at the 2022 UC LEADS Symposium. He graduated in fall 2021 and is a Mechanical and Aerospace Engineering Ph.D. student at UC Irvine.

**Win Teavir** (Biological Sciences) did his second summer research at UC Los Angeles. He presented a poster at the 2022 UC LEADS Symposium titled *Triboelectric Nanogenerator (TENG)*. He graduated in spring 2022 and is working in Oakland, California.

## | First-Year Scholars

**Ukamaka Ezimora** (Mechanical Engineering) did her first summer research at UC Merced. Her poster, *Analyzing HDPE Plastic Bag Polymer Material for “Plarn” Bag Applications*, received an honorable mention at the 2022 UC LEADS Symposium. She plans to graduate in spring 2024.

**Emily Gomez** (Civil Engineering) did her first summer research at UC Merced. She presented a poster at the 2022 UC LEADS Symposium titled *Potential for Automating Environmental Compliance by Farmers*. She plans to graduate in spring 2023.

**Brandon Lopez** (Biomedical Engineering) did his first summer research at UC Merced. He presented a poster at the 2022 UC LEADS Symposium titled *Formulation and Cure Behavior of Clear and Elastic Stereolithography Resins*. He plans to graduate in fall 2022 and is working in Los Angeles.

**Nicholas Maldonado** (Mechanical Engineering) did his first summer research at UC Merced. He presented a poster at the 2022 UC LEADS Symposium titled *Experimental Study on Ignition Behavior of Natural Fuel by Hot Metal Particles*. He graduated in fall 2022, and is working as a Propulsion Components Test Engineer at Virgin Orbit. He plans to apply for graduate school to begin in fall 2024.

**Clara Medina** (Civil Engineering) did her first summer research at UC Merced. She presented a poster at the 2022 UC LEADS Symposium titled *Equity of Wastewater Monitoring in California of SARS-CoV-2*. She plans to graduate in spring 2023.

**Tiffany Murga Duarte** (Biomedical Engineering) did her first summer research at UC Merced. She presented a poster at the 2022 UC LEADS Symposium titled *Optimization of ECM Ligand Patterning on Polyacrylamide Hydrogels*. She plans to graduate in spring 2023.

**Ashley Valdez** (Biology) did her first summer research at UC Merced. She presented a poster at the 2022 UC LEADS Symposium titled *Structural Biology of the Regulatory Mechanism of Biofilm Formation by Cyanobacteria*. She has served on the executive board for the campus SACNAS Chapter and plans to graduate in spring 2023.





## CHARLESICE GRABLE-HAWKINS

UC LEADS 2013-2015

B.S. Human Biology and Cognitive Science

Charlesice Grable-Hawkins received her B.S. in both Human Biology and Cognitive Science from UC Merced before pursuing a M.S. in Neuroscience from UC Irvine. After being accepted into the Undergraduate Scholarship Program at the National Institutes of Health, she decided to pursue a career with the NIH as a Program Analyst and Scientist Resource Specialist.

“ The UC LEADS staff and my peers were there to support **many firsts for me** – my first scientific presentation, my first poster, and my first conference. These are all things that I didn’t know existed before my acceptance into this program.



## UC Riverside | Year in Review

The 2021 summer of UC LEADS was our second year of a fully-online program. Our mentors used their creativity to provide our students with cutting-edge scientific projects that could be conducted in an online environment.

Together we met the challenges of the restrictions of the pandemic and created new friends and opportunities.

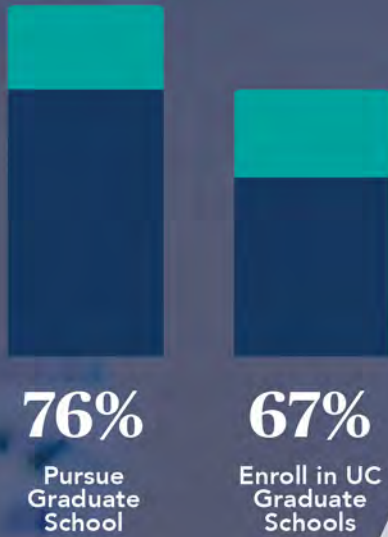
UCR Graduate Division Associate Dean and Professor of Biomedical Sciences **Dr. Emma Wilson** sponsored the creation of a Tech Talk workshop series for our summer programming that would supplement the students' online research projects. The idea was to provide virtual training in lab techniques for students working remotely, who would otherwise not be able to learn real-world lab skills. We assisted five of our local STEM graduate students to produce videos to help our participants receive remote training in a diverse set of laboratory techniques, from flow cyclometry to extracting RNA to measuring gas fluxes from soils. The graduate students presented their videos to the

participants in a virtual workshop series, and also served as mentors, answering questions about the labs and what life is like as a graduate student.

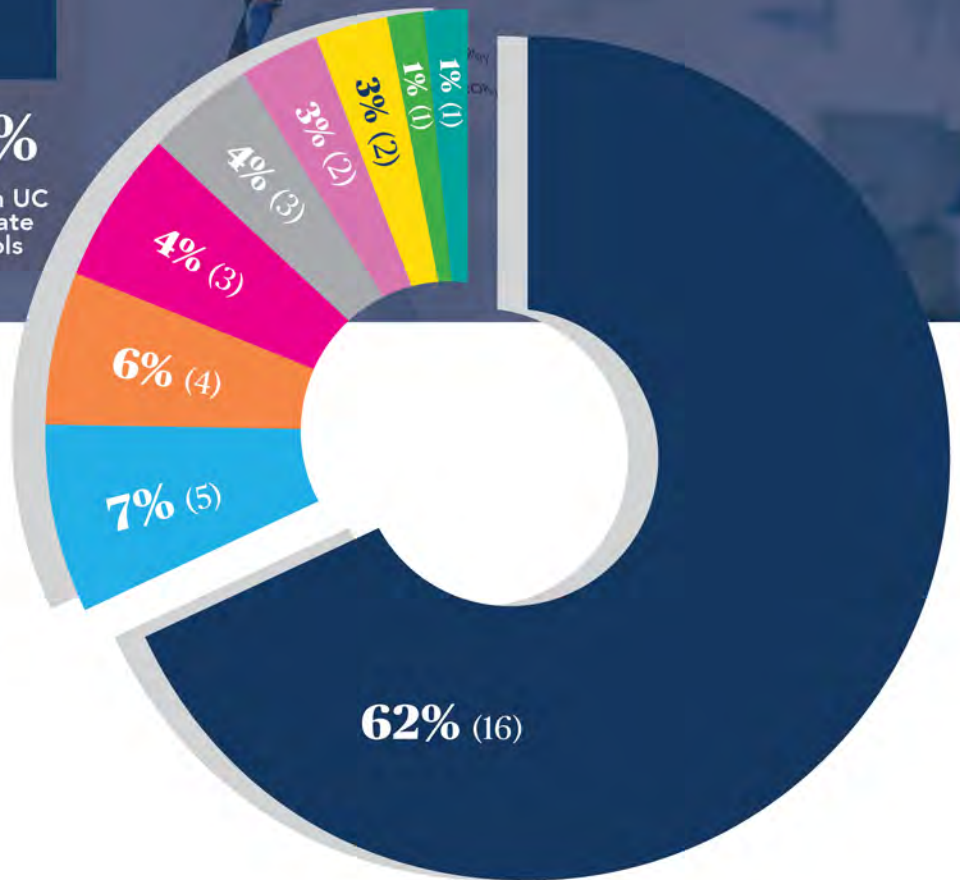
We also had a graduate student panel as part of our workshop series that included UC LEADS alumni. We cooperated with other UC LEADS campuses to enhance our summer programming, including giving access to the Cal NERDS 2021 virtual speakers, and the UCLA Scientific Writing Workshops.

As in past years, our students presented their scientific research at our online Virtual Symposium at the end of the summer. **Queenie Xu**, a first-year student, took top honors at our 2022 UC LEADS Symposium, with **Zachary Amador** earning an honorable mention. **Justin Burzachiello** received the Graduate Deans' Leadership Award to recognize the extraordinary leadership he exhibited during his tenure as a UC LEADS scholar.

# Graduate School Bound



## Post Graduate Degree Employment





## | Second-Year Scholars

**Sebastien Banales** (Chemical Engineering) completed his second summer research at the Georgia Institute of Technology. He presented a poster at the 2022 UC LEADS Symposium titled *Examining the Opportunities and Environmental Challenges Behind CO2 Capture Technologies*. He has four older brothers and three of them, as well as his father, are UCR alumni. While he was an undergraduate, he was a participant in the UCR Men's Water Polo program. He graduated in spring 2022 and is an Environmental Engineer at Ashworth Leining Group.

**Justin Burzachiello** (Physics) completed his second year summer research at UC San Diego. He presented a poster at the 2022 UC LEADS Symposium titled *Artificial Intelligence-Based Physics Discovery and Analysis*, and he received the Graduate Deans' Leadership Award. He also completed a Software Engineering internship at Oak Ridge National Laboratory and will graduate from UCR in the spring of 2023. He is currently applying to Ph.D. programs in physics and mathematics.

**Pedro De Allende** (Microbiology) completed his second year summer research at UC Davis. He presented a poster at the 2022 UC LEADS Symposium titled *The Validation of Novobiocin - A Potential Selective Polymerase Theta Inhibitor*. He graduated in spring 2022 and is a graduate student in Environmental Science at Cal State University San Bernardino.

**Pamodya Peiris** (Computer Engineering) completed her second summer research at UC Riverside. She presented a poster at the 2022 UC LEADS Symposium titled *Skeletal-Based Hand Detection and Tracking to Improve Infant Reaching Action Recognition*. She graduated in spring 2022.

## | First-Year Scholars

**Zachary Amador** (Cell & Molecular Biology) completed his first summer research at UC Riverside. His poster, *Determination of the Subcellular Localization of Nudix Hydrolases in Arabidopsis by Fluorescence Fusion Proteins*, received an honorable mention at the 2022 UC LEADS Symposium. He plans to graduate in spring 2023.

**Dannya Enriquez Barrundia** (Engineering) completed her first summer research at UC Riverside. She presented a poster at the 2022 UC LEADS Symposium titled *Developing a Wearable Device to Assist Infants with Reaching Actions: Contributions to Device Input*. She is a transfer student who plans to graduate in spring 2023.

**Peter Nguyen** (Materials Engineering) completed his first summer research at UC Riverside. He presented a poster at the 2022 UC LEADS Symposium titled *Agricultural and Plastic Waste Utilization Through Co-Pyrolysis*. He is the Co-President of Materials Research Society at UCR and Vice President of Bourns College Of Engineering Leadership Council. He plans to graduate in spring 2023.

**Queenie Lin** (Engineering) completed her first summer research at UC Riverside. Her poster, *Cytocompatibility of Yttria-Stabilized Zirconia Ceramics for Window to the Brain Applications*, received top honors at the 2022 UC LEADS Symposium. She is a Senior Advisor to the BioMedical Engineering Society at UCR and the Professional Development Chair for the UCR Society of Women Engineers. She plans to graduate in spring 2023.



### ELMER THOMAS

UC LEADS 2000-2002

B.S. Computer Engineering

Elmer Thomas completed a B.S. in Computer Engineering and a M.S. in Electrical Engineering at the University of California, Riverside. Since then, he has served on various boards to help foster local business growth in Riverside and Orange County and began service at SendGrid, an email API and service company. In 2019, the company was acquired by Twilio where he works today as a Staff Software Engineer while serving as Vice President of the Council for the Advancement of Black Engineers (CABE).

“Through UC LEADS, I was fortunate to have found Dr. Jay Farrell as my principal investigator, and Graduate Division counselors Marie Steward and Maria Franco-Gallardo. Together, they **formed the core** of my professional support system.

# Campus Updates



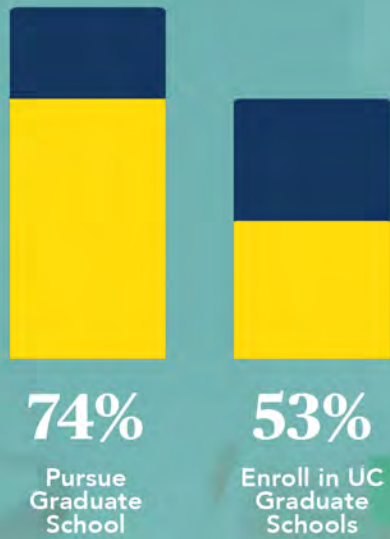
## UC San Diego | Year in Review

At UC San Diego, we focused on providing scholars with a safe and productive space for them to be able to tackle the challenges of the outside world. This year marked the transition to more in-person programming and to more on-campus activities. We hosted panels of UC LEADS alumni and workshops on topics like building a strong presence on LinkedIn. As a cohort, we organized bonding events like dinners, ice cream socials, and even a visit to the craft center to work with ceramics and clay. Scholars presented their research virtually and worked with their faculty mentors to do research in a remote format. We're very proud of the resiliency and adaptability our students showed during this year despite the challenges. Scholars began attending conferences in person and were encouraged to build relationships and expand their network whenever there was an opportunity.

Our second-year scholars completed their second summer research experiences at UC Los Angeles, UC San Diego, and UC San Francisco. During our academic year meetings, scholars discussed topics of interest to them and we had a set of team-building events to ensure our scholars could bond and become closer. We take the utmost pride in seeing what our students will be doing upon graduation. Many of our scholars received honorific 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.



# Graduate School Bound



## Post Graduate Degree Employment



## | Second-Year Scholars

**Joanne Chen** (Neuroscience) did her second summer research at UC San Francisco. Joanne is a first-generation college student and she graduated in spring 2022.

**Sylas Eckhart** (Environmental Systems) did his second summer research at UC San Diego. Sylas transferred from Santa Monica Community College to UC San Diego. He presented a poster at the 2022 UC LEADS Symposium titled *Genetic & Epigenetic Adaptations to High Altitude Hypoxia in Highland Populations*. He graduated in spring 2022.

**Noah Gaitan** (Biochemistry) is a first-generation college student and completed his second summer research at UC San Diego. His poster, *Comparative Analysis of HIV-1 RNA and Archived Proviral HIV-1 DNA Genotyping*, received an honorable mention at the 2022 UC LEADS Symposium, and he received a Campus Leadership Award. He graduated in fall 2021 and is a Biology Master's student at UC San Diego.

**David Hernandez** (Mathematics) did his second summer research at UC Los Angeles. He presented a poster at the 2022 UC LEADS Symposium titled *On the Exit Probability Distribution of a Lattice Random Walk on a Ladder Graph*. A first-generation college student, he graduated in spring 2022 after receiving the GEM Fellowship award and doing a summer internship at Georgia Tech Laboratory.

**Carolina Lopez** (Biochemistry) did her second summer research at UC San Diego. She presented a poster at the 2022 UC LEADS Symposium titled *The Effects of Compassion-Based Mental Training on Brain Mechanisms that Support Pain-Relief and the Cultivation of Empathy and Compassion*.

## | First-Year Scholars

**Wai Lam Hong** (Biology) is a first-generation student and she did her first summer research at UC San Diego. She presented a poster at the 2022 UC LEADS Symposium titled *Identifying Mutations of PPC3 in Arabidopsis Thaliana*. She plans to graduate in spring 2023.

**Athena Leisching** (Neuroscience) did her first summer research at UC San Diego. She presented a poster at the 2022 UC LEADS Symposium titled *Dynamic Dentate Gyrus Recruitment During the Formation of Distinct Associations*. As the first in her immediate and extended family to pursue higher education, Athena plans to complete her bachelor's degree in spring 2023.

**Hsu Lin** (Managerial Economics) did his first summer research at UC San Diego. His poster, *Searching for a Risk Parameter*, received top honors at the 2022 UC LEADS Symposium. He plans to graduate in spring 2023.

**Antonio Loaiza** (Biomedical Engineering) is a transfer student from San Diego City College. He did his first summer research at UC San Diego. He plans to graduate in spring 2023.

**Daniel Maldonado Naranjo** (Mechanical Engineering) is a first-generation college student. He completed his first summer research at UC San Diego. He presented a poster at the 2022 UC LEADS Symposium titled *Integrating Simulink Models to Reachability Analysis for Safe Control of Novel Aerial Vehicles*. He plans to graduate in spring 2023.



### JAMIREE HARRISON

UC LEADS 2017-2019

B.S. Applied Mathematics

Jamiree Harrison received his undergraduate degree in Applied Mathematics at UC San Diego. He is currently a fourth year Ph.D. student in the Mechanical Engineering Department at UC Santa Barbara. As a graduate researcher in the UCSB Biological Control Lab, he is working on designing DNA in order to control gene expression in bacteria.

“

The research skills that I learned as a UC LEADS scholar were obtained in the labs that I was a part of due to being in the program. I sharpened coding skills, algorithm development, and how to formulate research questions. I also **learned many skills** in the domain of scientific communication. I gave a number of poster presentations and research talks during my time in the program which helped me relay complex ideas in different formats.



# Campus Updates



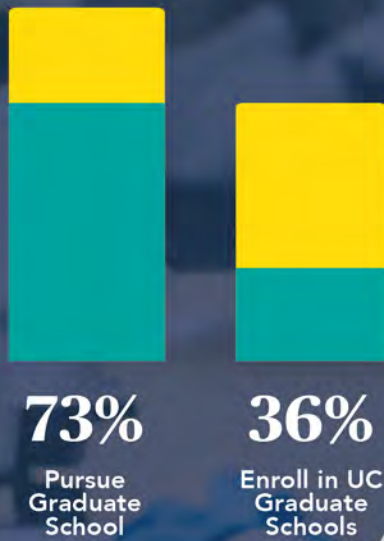
## UC Santa Barbara | Year in Review

For UC Santa Barbara, the 2021-22 school year proved that our UC LEADS Scholars are nimble, determined, and thoroughly capable of navigating an ever-changing academic environment to reach their goals. We saw all four second-year scholars matriculate in competitive Ph.D. programs across the US. We saw a return to conference attendance and more opportunities to engage in the greater research community. Locally we continued to foster a supportive and constructive environment for our scholars, especially enjoying a book club where we studied *Lead from the Outside* by Stacey Abrams.

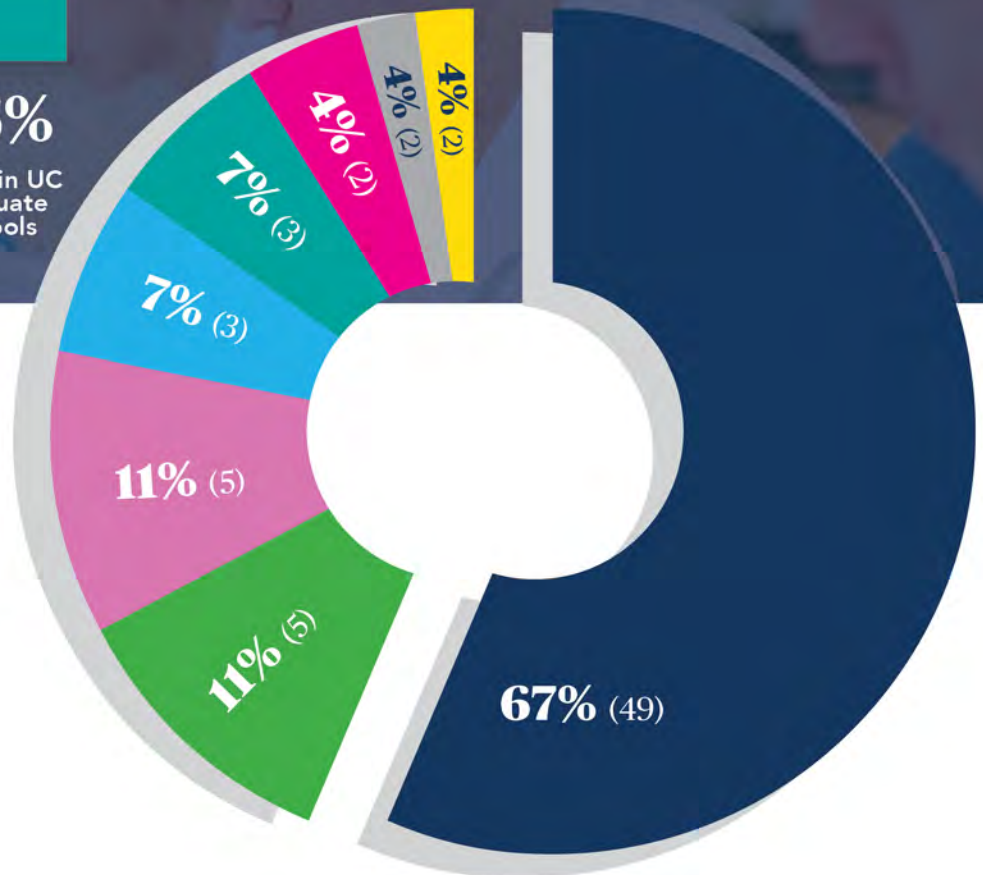
The year culminated in a warm and lively in person dinner where we congratulated our graduating seniors and welcomed our newest cohort for the 2022-23 school year.

We're very proud to see our scholars presenting at conferences such as SHPE and SACNAS, submit scholarly work for publication, win scholarships, grants, and honors, and continue to take on leadership positions with local and national organizations.

# Graduate School Bound



## Post Graduate Degree Employment



## | Second-Year Scholars

**Tessa Chou** (Biology) did her second summer research at UC Irvine. She presented a poster at the 2022 UC LEADS Symposium titled *RANBP2 Disruption During Enterovirus D68 Infection*, and received a Campus Leadership Award. Tessa presented her work *Antiviral Gene Stimulation of HSV-1 Infected Retinal Organoids* at SACNAS 2021, ABRCMS 2021, and the UCSB College of Creative Studies Research and Creative Activities Conference, winning a Microbiology poster award at ABRCMS. Tessa was also honored as an ASM Future Leaders Mentoring Fellow, a Jo Little Memorial Scholarship Recipient, and a UC Irvine Summer Program Fellowship Recipient. She served as President and a Peer Mentor for Breaching Biotech, as well as a Peer Mentor for the College of Creative Studies Mentorship Program. Tessa graduated in spring 2022 and is a Ph.D. student studying Cellular and Molecular Biosciences at UC Irvine.

**Ricardo Espinosa-Lima** (Biology - Creative Studies) did his second summer research at UC Los Angeles. After returning to UC Santa Barbara to finish his senior year, he joined Dr. Angela Pitenis' group, where he studied the role of frictional shear stress induced by commercially-available silicone implants on soft tissue. His contributions were published in the research paper *In Vitro Models of Soft Tissue Damage by Implant-Associated Frictional Shear*. Furthermore, he presented at the 2021 SACNAS Virtual Conference with his poster, *Characterization of Novel Photo-Switchable Proteins with Phase-Separating Capabilities*. He also presented his poster, *Activation of Synthetic Notch Gene Circuits Using Ligand-Conjugated Microparticles*, and received the Top Honors award at the 2022 UC LEADS Symposium. He graduated in spring 2022 and is a Developmental and Stem Cell Biology (DSCB) Ph.D. student in the school of Medicine at UC San Francisco.

**Benito Gonzalez** (Physics) did his second summer research at UC Davis. He presented a poster at the 2022 UC LEADS Symposium titled *Investigation of Magnetic Dilution in the Spin Liquid Candidate NaYbO<sub>2</sub> by Lu Substitution*. He graduated in summer 2022 and is an Applied Physics Ph.D. student at Stanford University.

**Vivian Hoang** (Biology - Creative Studies) did her second summer research at UC Davis. She presented a poster at the 2022 UC LEADS Symposium titled *Role of ANKLE2 in ZIKV Infection in JEG-3 Cells*. She graduated in spring 2022 and is a Ph.D. student at the University of Pennsylvania.

## | First-Year Scholars

**Charlotte Chen** (Biological Sciences) did her first summer research at UC Santa Barbara. She presented a poster at the 2022 UC LEADS Symposium titled *Identification of Kinases and Phosphatases in eIF2  $\alpha$  Regulation*. Charlotte received a UCSB Undergraduate Research and Creative Activities (UCRA) grant for 2022 for her work titled *Investigating Host Immunity on Individual Measles Virus Viral Proteins*. She plans to graduate in spring 2023.

**Jorge Gutierrez** (Electrical Engineering) did his first summer research at UC Santa Barbara. He presented a poster at the 2022 UC LEADS Symposium titled *A Human Hand Model to Elucidate the Role of Waves in the Skin for Tactile Sensing*. He served as the SHPE/MAES UCSB Los Ingenieros Internal Vice President (2021-2022) and received the SHPE SB ScholarSHPE award. At the SHPE National Convention 2021 in Orlando, Florida, Nov. 10-13, 2021, Jorge was accepted to present his paper titled *A Robotic Hand Informed by Human Biomechanics and Tactile Sensing*. In addition, he won a Karl Storz Imaging Scholarship and an HP Scholarship. He plans to graduate in spring 2023.

**Marie Karpinska** (Psychology) did her first summer research at UC Santa Barbara. She presented a poster at the 2022 UC LEADS Symposium titled *Segmentation and Classification of Dendritic Spines Using Deep Learning*. Marie has been awarded UCSB Dean's Honors, Letters & Science Honors, and Engineering Honors for her academic achievements and holds a General Board Executive leadership position with UCSB's Excursion Club. She plans to graduate in spring 2023.

**Trung Kien Le** (Physics) did his first summer research at UC Santa Barbara. His poster, *Quantum Photonic Integrated Circuit with AlGaAs*, received an honorable mention at the 2022 UC LEADS Symposium. He also served as club officer for the Society of Physics Students (SPS) Graduate Application Workshop and SPS Undergraduate Journal Club. He plans to graduate in spring 2023.

**Imanol Ulloa** (Aquatic Biology) did his first summer research at UC Santa Barbara. He presented a poster at the 2022 UC LEADS Symposium titled *Sulfurization and Organic Matter Preservation of Lipids in Marine Sediments*. Imanol was selected as a UCSB Bentson Scholar for 2019-2023. He plans to graduate in spring 2023.





### ANTHONY LINAREZ

UC LEADS 2009-2011

B.S. Ecology, Evolution, & Marine Biology

Anthony Linarez completed his undergraduate education at UC Santa Barbara with a B.S. in Ecology, Evolution, & Marine Biology before receiving a M.S. in Environmental Science from the University of Illinois Springfield. Using his experience as a research intern, he served the greater California Sierra region by inspecting, identifying, and evaluating trees and brush along utility electric lines. He is currently employed by the California Department of Water Resources as an Environmental Scientist to support the Fish Restoration Program.

“ UC LEADS was instrumental in my knowledge of real-world science and how to find and synthesize data. My **experience** as a research intern was imperative to the development of my skills that I use every day at my job with the state.

# Campus Updates



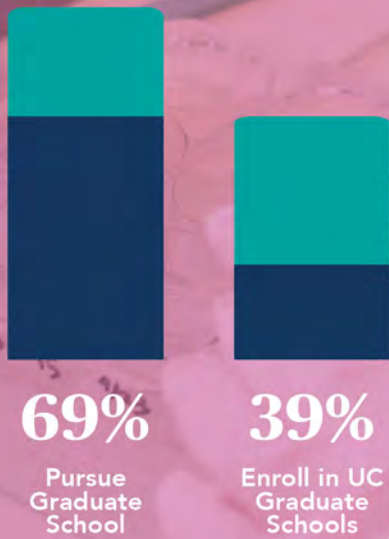
## UC Santa Cruz | Year in Review

Our UC LEADS program had significant accomplishments for our 2021-2022 academic year. As we returned to in-person instruction, our graduating scholars are continuing their educational journey in graduate study and research associate positions, getting more research experience, and planning on applying to graduate programs in a year or two. Five of our UC LEADS scholars participated in a summer-away research program at UCLA, Lawrence Livermore National Laboratory, and in industry.

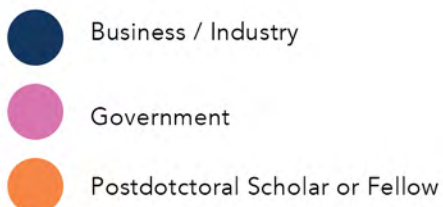
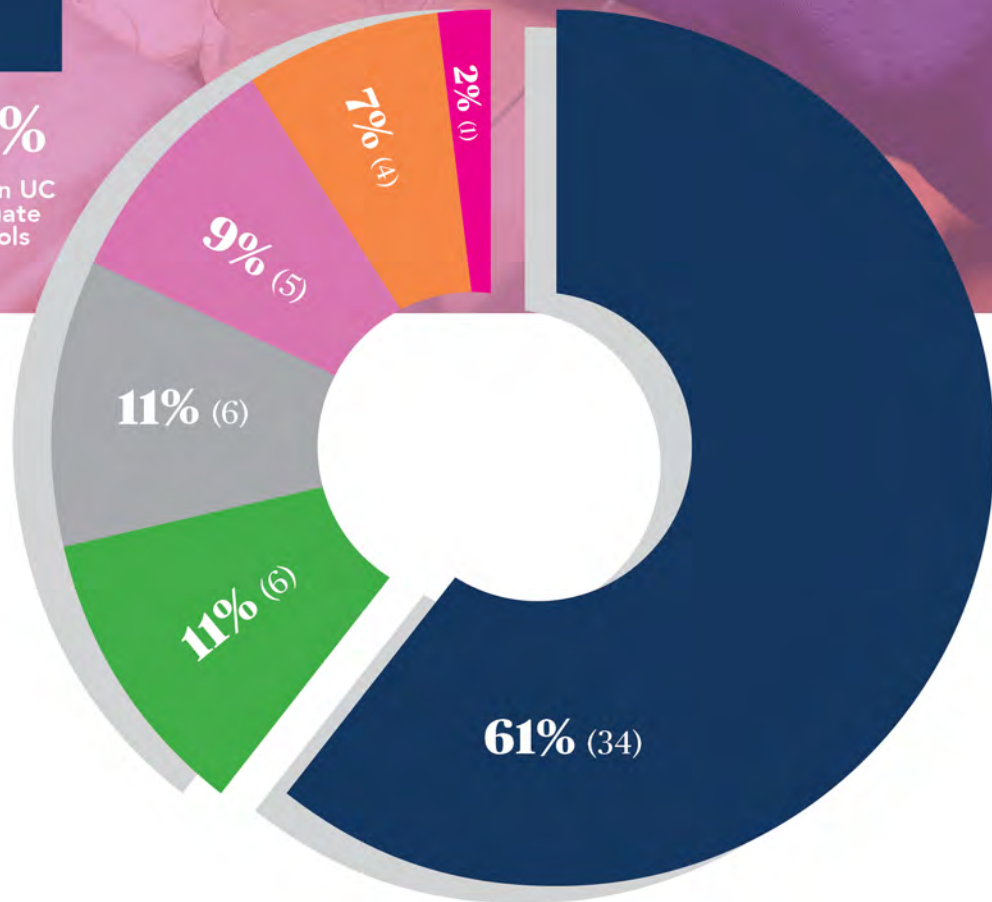
The summer program for 2021 was hybrid. We held professional development workshops virtually while hosting in-person faculty social seminars to create networking opportunities for the students. To ensure scholars gained research skills and professional development training, we continued some virtual activities developed from the previous summer, including NSF Graduate Fellowship writing, professional writing lectures, and a programming/data analysis short course in Python. Scholars joined other

UC campus programming and workshops remotely. They also met graduate representatives and alumni panels organized by the UC LEADS headquarters. In addition, they participated in Scientific Writing hosted by UCLA and a Python Bootcamp by UC Berkeley. Our scholars completed an intensive, eight-week, full-time virtual summer research training, including 12 hours of research ethics and 15 hours of professional development. All scholars participated in our in-person end-of-the-summer poster symposium showcasing their summer research. The scholars were thrilled to share their research in person after two years of remote learning and limited in-person research. During the academic year of 2021-2022, 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 2021, three scholars attended SACNAS, and one attended the ABRCMS national conferences.

# Graduate School Bound



## Post Graduate Degree Employment





## | Second-Year Scholars

**Frances Li** (Chemistry) did her second summer research at the Lawrence Livermore Research Center. Frances is from Fremont, CA, and worked in the lab of Dr. Scott Oliver studying materials chemistry to replace current methods of treating wastewater contaminated by toxic species. She graduated in winter 2022 and is a Formulation Technician at Thermo Fisher Scientific.

**Benjamin Mosqueira** (Human Biology) did his second summer research at UC Los Angeles. He presented a poster at the 2022 UC LEADS Symposium titled *Long Non-Coding RNAs in Resident and Recruited Alveolar Macrophages*, and received the Graduate Deans' Leadership Award. Benny is a first-generation college student from Los Angeles Area. As the undergraduate representative, he served in the Physical and Biological Sciences Division Diversity, Equity, and Inclusion committee and contributed to different projects. He graduated in spring 2022 and is a Research Assistant at UC Los Angeles.

**Angelly Perez Alvarez** (Chemistry) did her second summer research at UC Santa Cruz. She presented a poster at the 2022 UC LEADS Symposium titled *Cis-Interaction Involvement in Edocytosis Assays of Prion Protein Mutant*. Angelly is a first-generation transfer student from Evergreen Valley College. She served as the undergraduate representative for the Diversity, Equity, and Inclusion committee in the Chemistry Department. She graduated in spring 2022 and is working as a chemist in the Bay Area.

**Leslie Serafin** (Earth Sciences) did her second summer research at UC Santa Cruz. Her poster, *The Influence of Carbon Amendments on Nitrogen and Trace Metals Cycling During Infiltration During Managed Aquifer Recharge*, received an honorable mention at the 2022 UC LEADS symposium. Leslie also presented her research at the Advancing Earth and Space Science Fall 2021 meeting at New Orleans. She graduated in spring 2022 and is a Master's student in the Bren School of Environmental Science and Management at UC Santa Barbara.

## | First-Year Scholars

**Katheryn Anderson** (Environmental Sciences) was a UC LEADS Scholar for one year. She was a transfer student from Los Medanos College. She presented a poster at the 2022 UC LEADS Symposium titled *Predictability of Marine Heatwaves Using Random Forests*. She graduated in spring 2022 and is an Instruction Lab Coordinator at Los Medanos College. She plans to apply to graduate school in fall 2023.

**Valeria Galindo-Eguiarte** (Environmental Sciences) did her first summer research at UC Santa Cruz. Valeria is a first-generation college student. She works in Dr. Adina Payton's research lab, and her research focuses on determining alkalinity and dissolved inorganic carbon (DIC) using pore water extracted using anaerobic rhizons in the Elkhorn Slough. She plans to graduate in spring 2023.

**Jovita Martinez** (Computer Engineering) did her summer internship as an engineer intern at Discord. She works in Dr. Ricardo Sanfelice's hybrid systems lab. Her work is to help research the intricacies of self-driving cars. She plans to graduate in summer 2022.

**Alejandro Medina Enciso** (Cell & Molecular Biology) did his first summer research at UC Santa Cruz. Alejandro is a first-generation college student and a transfer student from Riverside City College. He plans to graduate in spring 2023.

**Emely Mejia** (Electrical Engineering) did her first summer research at UC Santa Cruz. She works in Dr. David Lee's lab. Her research is on social computing. She plans to graduate in spring 2023.

**Bonifacio Miranda** (Mathematics) did his first summer research at UC Santa Cruz. Bonifacio is working on Dr. Zouheir Rezki's wireless communications research. He plans to graduate in spring 2023.

**Lucia Suarez** (Cell & Molecular Biology) did her first summer research at UC Santa Cruz. She presented a poster at the 2022 UC LEADS Symposium titled *Single Cell Dynamics of E2f1 Induced Transition from Quiescent to the Proliferative State*. Lucy is from Modesto, CA, and is the first in her family to attend college. She plans to graduate in spring 2023.



### ANDREA REYES-ORTIZ

UC LEADS 2012-2014

B.S. Bioengineering

Andrea received a B.S. in Bioengineering with a minor in Bioinformatics from UC Santa Cruz. At UCSC, Andrea generated induced pluripotent stem cells (iPSCs) from orangutan cells to understand the regulatory mechanisms of early brain development across Great Apes. Andrea then went on to receive her Ph.D. in Biomedical Sciences from UC Irvine, where her research focused on patient stem cell-derived glial cells in neurodegenerative diseases. She now works as an R&D Portfolio Strategy Manager at Genentech.

“ UC LEADS enabled me to tackle scientific questions alongside a mentor, present my findings to the community, and **gain exposure** to innovative research. My first summer in UC LEADS led to a decade of working in molecular and cellular biology labs across three UC campuses.

# Campus Updates



## UC San Francisco | Year in Review

After being on hiatus during the summer of 2020, UCSF was once again thrilled to host four wonderful second summer UC LEADS Scholars. Due to health and safety concerns of COVID-19, UCSF decided to conduct nine weeks of summer research virtually. As such, the virtual programming included computational workshops, research area group meetings, community building activities, professional development, and poster presentations at the symposium. Keeping those circumstances in mind, UC LEADS Scholars demonstrated creativity, innovation, and adaptability by conducting research in a virtual environment. One example of this adaptability was that the Scholars participated in the first ever computational workshop facilitated by UCSF faculty and postdoctoral scholars.

During the workshops, Scholars gained firsthand experience in new tools to analyze research and incorporated these tools in their summer projects. Additionally, another highlight of the summer was that the scholars were able to engage with a UC LEADS alumnus during a virtual professional development panel. Both experiences showcased the desire of the Scholars to engage in the scientific community in new ways. UCSF was very fortunate to host these Scholars and we are excited for their bright futures ahead!



## Graduate School Bound

## Post Graduate Degree Employment



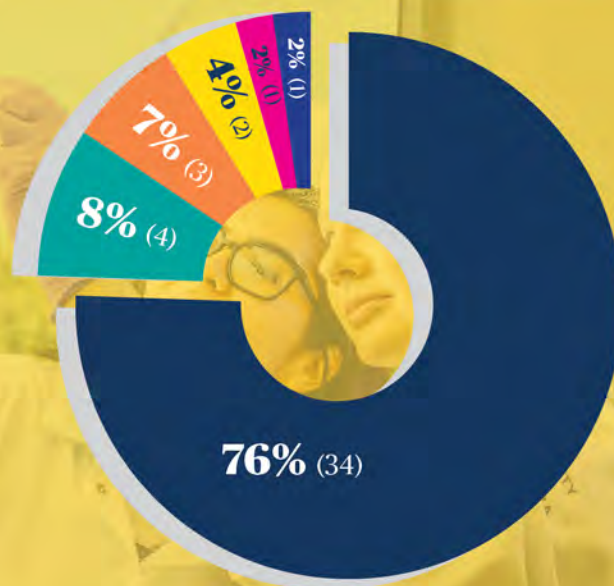
**75%**

Pursue Graduate School



**51%**

Enroll in UC Graduate Schools



Business / Industry



Non-tenure Track Faculty



Research Position at a Non-profit



Non-academic Career Position in Higher Education



Postdoctoral Scholar or Fellow



Other Academic Career

## | Second-Year Scholars

**Kelly Chau** (Biotechnology) was a UC Davis scholar who did post-graduate summer research at UC San Francisco. She presented a poster at the 2021 UC LEADS Symposium titled *Predicting Cell-Type Specific MicroRNAs from Single Cell Chromatin Accessibility Data*. Kelly also received a Campus Leadership Award that year. She graduated in spring 2021 and was accepted as an Integrative Genetics and Genomics Ph.D. student at UC Davis.

**Joanne Chen** (Neuroscience) was a second summer scholar from UC San Diego. She graduated in spring 2022.

**Andy Nguyen** (Biochemistry) was a UC Los Angeles scholar who did post-graduate summer research at UC San Francisco. His poster, *Investigating the Binding of Spire/Myosin-V in Drosophila Melanogaster*, received an honorable mention at the 2021 UC LEADS Symposium. He graduated in spring 2021 and is now pursuing a Biochemistry and Molecular Biophysics Ph.D. at the University of Pennsylvania.

**Lay Heng Teng** (Biomedical Engineering) was a UC Davis scholar who did post-graduate summer research at UC San Francisco. She presented a poster at the 2021 UC LEADS Symposium titled *Computational Simulations of Dry Aerosol Drug Delivery in the Avian Respiratory System*. She graduated in spring 2021 and she is currently working as a Research Specialist at Emory University.



### DR. DAVID NGUYEN

UC LEADS 2004-2006

B.A. Molecular and Cell Biology

Dr. David Nguyen received his B.A. in Molecular & Cell Biology from UC Berkeley, where he chose to stay and pursue a Ph.D. in Endocrinology. He participated in the UC LEADS program through UC San Francisco. After graduating, he continued to teach at the college level and would later go on to develop novel pattern recognition algorithms, one of which was the basis for BrainScanology, Inc, a software startup. Today, he remains the CEO of BrainScanology while continuing to develop algorithms and prepare college students for biomedical research.

“ UC LEADS helped me get into graduate school, where I gained the advanced training and career connections that I needed to solve challenging scientific problems for society. Each level was made possible because it was built upon the fruits of the previous stage. The training and opportunities I received as a UC LEADS scholar changed the trajectory of my career.

# 2021-22 UC LEADS Executive Steering Committee

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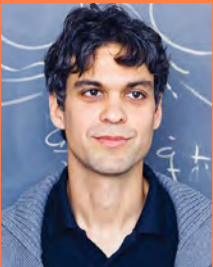
**Dr. Robert Hamm**  
Executive Steering  
Committee Interim Chair  
Assistant Dean  
Graduate Division  
**UC Santa Barbara**



**Michele Johnson**  
UC LEADS Statewide Director  
**UC Santa Barbara**

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## NORTHERN CALIFORNIA



**Dr. Enrico Ramirez-Ruiz**  
Faculty Representative  
**UC Santa Cruz**



**Dr. Sonya Neal**  
Faculty Representative  
**UC San Diego**



**Dr. Jorge Arroyo**  
UC LEADS  
Staff Representative  
**UC Merced**



**Mariela Menendez**  
UC LEADS  
Staff Representative  
**UC Irvine**



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Statewide	Michele Johnson UC LEADS Systemwide Director  <a href="https://ucleads.ucop.edu">ucleads.ucop.edu</a>