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# CSU-LSAMP 30 YEARS PROUD

## PROGRAM RECOGNIZING OUTSTANDING UNDERGRADUATE DISTINCTION

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INTRODUCTION



Welcome to the ninth edition of our CSU-LSAMP PROUD, the annual publication of the California State University (CSU) Louis Stoke Alliance for Minority Participation (LSAMP) where we recognize the outstanding achievements of our student participants and alumni across our Alliance!

Each year, the CSU-LSAMP Coordinators at each of our campus partners nominate students from their programs to be celebrated as a Program Recognizing Outstanding Undergraduate Distinction (PROUD) Scholars. These PROUD Scholars have distinguished themselves academically, in research, and in service to their communities, and their successes are featured in this publication.

In this year’s publication, we celebrate thirty years since the inception of CSU-LSAMP! We are thrilled to celebrate two of our former Lead Project Directors, Dr. Juanita Barrena and Dr. Lisa Hammersley, highlight three of our long-standing Campus Coordinators, and highlight CSU-LSAMP effectiveness through its 30 years existence. We also feature CSU-LSAMP’s new research publication. As a well-established Alliance, CSU-LSAMP belongs to the National Sciences Foundation’s STEM Pathways and Research Alliances (SPRA) with the aim of producing new scholarly research on broadening participation. Here, we summarize our findings on the positive impact undergraduate research experiences have on our student participants progress to STEM career pathways.

As the new Lead Project Director, I am hopeful we will continue to do our work. As a former LSAMP student participant, I am PROUD to be part of the LSAMP family, and I look forward to the future achievements of CSU-LSAMP.

Semarhy Quiñones Soto, PhD  
Lead Project Director, CSU-LSAMP SPRA  
Co-Coordinator, CSU-LSAMP at Sacramento State  
Lecturer, Biological Sciences

CSU-LSAMP STATEWIDE OFFICE



PRINCIPAL INVESTIGATOR  
Luke Wood, Ph.D.  
President, California State University, Sacramento



CO-PI, LEAD PROJECT DIRECTOR  
Semarhy Quiñones-Soto, Ph.D.  
Lecturer, Biology



CO-PI, ASSOCIATE PROJECT DIRECTOR  
Kelly McDonald  
Professor, Biological Sciences  
Director, Center for Science and Mathematics Success  
California State University, Sacramento

CO-PI, PROJECT ADVISOR  
Lisa Hammersley, Ph.D.  
Dean, College of NSM  
CO-PI, PROJECT ADVISOR  
Shannon Williams, Ph.D.  
Executive Director, Institute for Social Research

PROJECT MANAGER  
Nicole Campos



LEAD AUTHORS & EDITORS

Semarhy Quiñones-Soto, Ph.D.

AUTHOR & DESIGN EDITOR  
Nicole Campos

COVER ART  
Semarhy Quiñones-Soto, Ph.D.

ADDITIONAL CONTRIBUTORS  
CSU-LSAMP Campus Coordinators  
Sacramento State Institute for Social Research

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# CSU-LSAMP: A STEM PATHWAYS AND RESEARCH ALLIANCE

## NEWS FROM THE CSU-LSAMP STATEWIDE OFFICE



CSU-LSAMP's new Principal Investigator, President Luke Wood. Prior to his appointment as president at Sacramento State in May 2023, Dr. Wood served as a key leader driving transformational change in the areas of student success, enrollment and campus diversity at San Diego State, as the University's Chief Diversity Officer and Vice President for Student Affairs and Campus Diversity.

CSU-LSAMP's new co-Principal Investigator and Assistant Project Director, Dr. Kelly McDonald, Professor of Biological Sciences and Director of the Center for Science and Mathematics Success at Sacramento State. Dr. McDonald will lead our Research Team in producing new scholarly work on broadening participation.



With support from the National Science Foundation - Louis Stokes Alliances for Minority Participation (LSAMP) and the Chancellor's Office of the California State University (CSU), this CSU-LSAMP STEM Pathways and Research Alliance (SPRA) is a comprehensive program dedicated to broadening participation in STEM at all 23 campuses of the CSU system, and is coordinated from the lead institution at Sacramento State,

Since its inception in 1993-94, CSU-LSAMP has served close to 30,000 CSU students where 83% are from racial and ethnic groups historically underrepresented (UR) in STEM. By engaging approximately 2,000 participants annually, CSU-LSAMP will continue to have a significant impact on increasing overall STEM student persistence and the number of undergraduate and graduate STEM degrees awarded to UR students. The specific aims of CSU-LSAMP are to (1) increase the number of UR students graduating with STEM degrees, and (2) to contribute to the production of scholarly research in broadening participation in STEM.

In fall 2023, CSU-LSAMP published a study in broadening participation that showed increased rates of graduation and completion of STEM graduate degrees for LSAMP students who participated in undergraduate research experiences.

Moving forward, CSU-LSAMP will continue to prepare highly competitive students leading to increases in baccalaureate and graduate STEM degrees from UR populations across the CSU system, and to leverage its large size, varied institutions, and coordinated structure to produce new knowledge on the impact of inclusive mentoring practices on the academic success of undergraduate researchers.

As a STEM Research Alliance, in broadening participation, CSU-LSAMP research results indicated that undergraduate research experiences are strongly and independently associated with greater rates of graduation in STEM, greater post-baccalaureate enrollment, and increased post baccalaureate graduation in STEM

As a STEM Pathways Alliance, CSU-LSAMP aims to advance CSU students from underrepresented groups pursuing careers in STEM by

(i) enhancing their academic and professional preparation,

(ii) improving their persistence and graduation rates,

(iii) increasing the aggregate production of STEM degrees, and

(iv) increasing the number of students who advance to, and complete STEM graduate studies.



## A BRIEF HISTORY

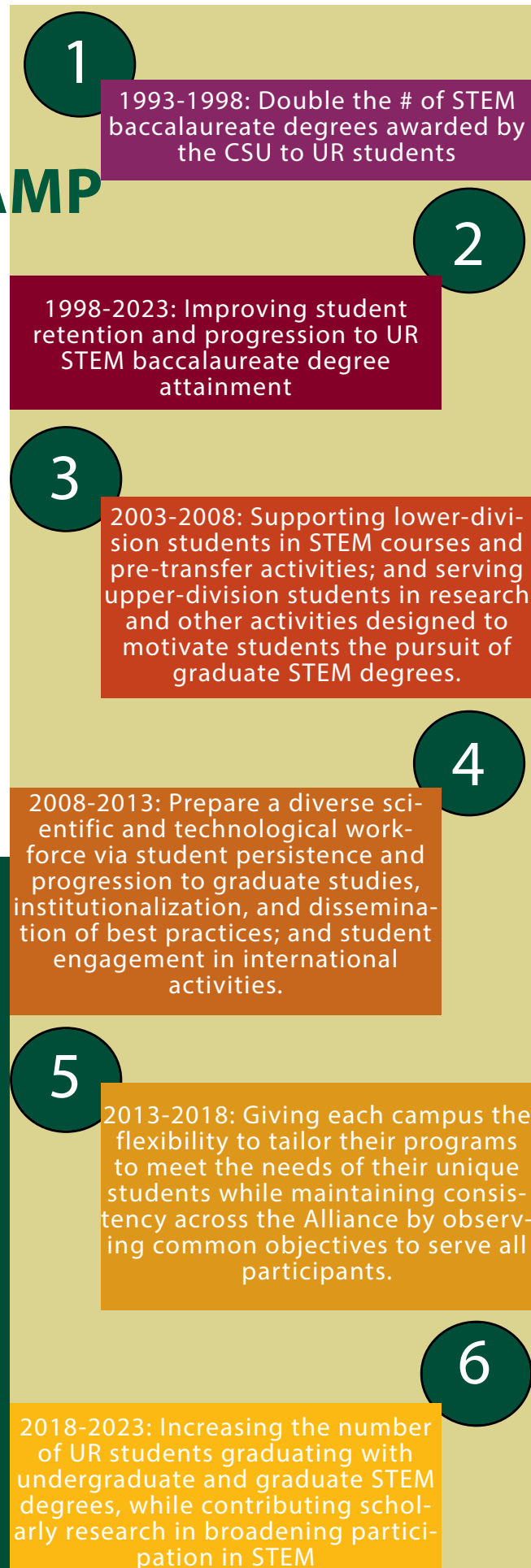
# 30 YEARS OF CSU-LSAMP

CSU-LSAMP has brought all 23 campuses of the CSU system together to offer a comprehensive program to increase the number of baccalaureate and graduate STEM degrees awarded to students from historically underrepresented (UR) groups. Its objectives and programmatic emphasis have evolved through six five-year project periods, building upon the accomplishments of the preceding phase.

Since its inception, CSU-LSAMP has served 29,782 students, of which 83% are from UR groups, with the annual number of participants increasing more than three-fold, from 641 in 1993-94 to >2,000 in 2022-23. The number of UR students enrolled in STEM disciplines at CSU campuses increased more than four-fold, from 10,580 in 1994 to 48,358 in 2021; and the annual attainment of CSU UR STEM baccalaureate degrees increased more than eight-fold, from 917 in 1994 to 7,936 in 2022. Close to 500 CSU-LSAMP participants presented research at local, state and national events, with an annual average of 10 co-authors on peer-reviewed publications in 2023.

### CSU-LSAMP Effectiveness:

- \* CSU-LSAMP participants are 1.3 - 1.8 times more likely than non-participants to remain in enrolled in STEM disciplines
- \* CSU-LSAMP participants are 1.7 times more likely than non-participants to graduate with STEM degrees within six years
- \* 40% of phase 3, 4, 5, and 6 graduates persisted at the post-baccalaureate level, where 19% earned master's degrees, 5% earned doctorates, and 15% remain enrolled.



## SPRA: PUBLICATION

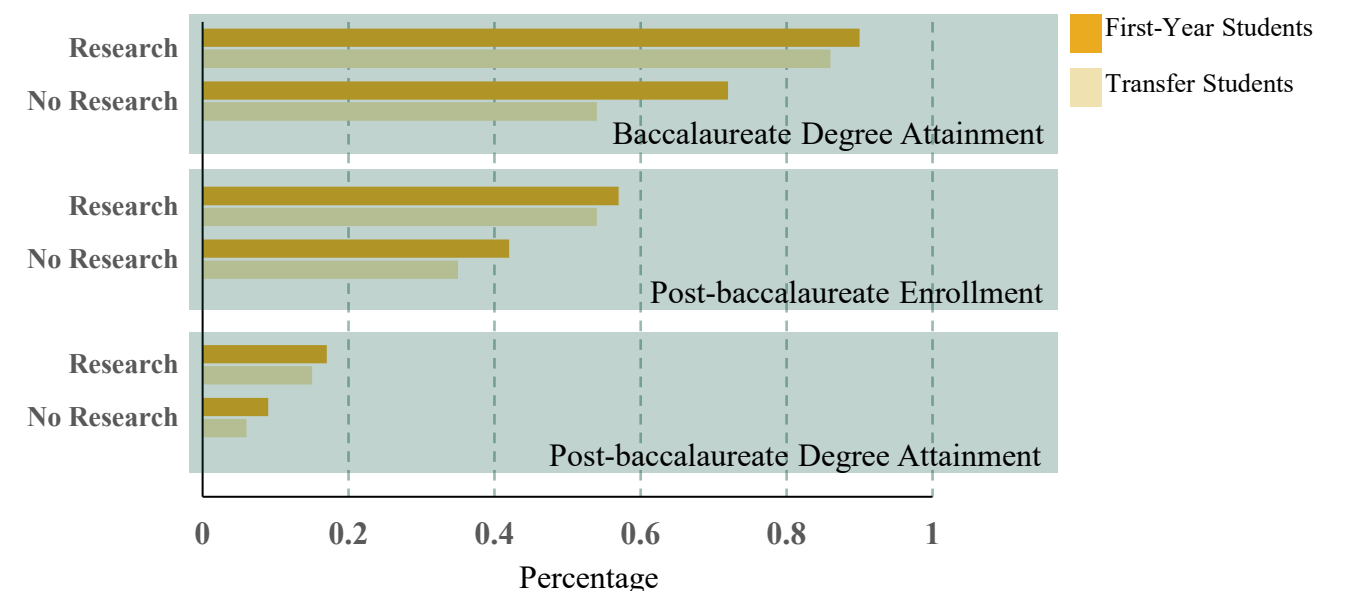
### CSU-LSAMP: RESEARCH COMPONENT

As a Stem Pathways and Research Alliance, CSU-LSAMP met the national need for producing and disseminating new research on broadening participation in STEM. The CSU-LSAMP Research Team, made up of social scientists and program evaluators, and with the support of the CSU-LSAMP leadership, sought out to find the link between undergraduate research experiences (URE) and student progression and successful completion of STEM graduate studies.

**When compared to LSAMP students who never participated in URE, LSAMP students who participated in URE were more likely to complete their STEM bachelor's degrees, enter graduate programs and earn graduate degrees. - Barker, et al. 2023**

UREs have been described as high impact practices that lead to student success leading to increased persistence and the pursuit of STEM graduate studies. However, the current literature lacked sufficient rigor to establish a direct connection between URE and graduate STEM enrollment and completion. While previous studies focus on students' stated intent to obtain graduate degrees, there is good evidence that differences in stated intent to enroll and actual matriculation are substantial.

The CSU-LSAMP Research Team analyzed the degree to which URE foster persistence in STEM among students from UR groups by conducting a large-scale quasi-experimental study of over 10,000 LSAMP participants between 2004 and 2019 for whom we obtained post-graduation information (from both the National Student Clearinghouse and the CSU's Enrollment Reporting System). Thanks to our unique institutional data, we obtained a real measure of graduate enrollment and completion of graduate degrees.





# LOOKING BACK ON CSU-LSAMP

After 30 years, it seemed the time to let previous a couple of Lead Project Director and, several coordinators give some insights into their time and experience with CSU-LSAMP.

*When you think about your time with CSU-LSAMP, what is the first thing that comes to mind?*



**Juanita Barrena, Ph.D.**  
Lead Project Director  
(2003-2013)



**Lisa Hammersley, Ph.D.**  
Lead Project Director  
(2013-2023)

**JB:** When I reflect on my time with CSU-LSAMP both as a campus program director at Sacramento State and as Lead Project Director for the California State University, I think about the thousands of CSU students from groups traditionally underrepresented in STEM who participated in the program and their awe-inspiring academic achievements. I also very fondly and with great gratitude think about the faculty and staff who selflessly led the campus-based programs with great passion and dedication to the mission of broadening participation in STEM.

**LH:** Two things come to mind – the wonderful people I had the honor of working with across the CSU and the amazing students we served.

*What do you feel was your most valuable contribution to the project or what are you most proud of during your tenure as Lead Project Director?*

**JB:** I actually think that my most valuable contribution as Lead Project Director was being a thorn in everyone's side, locally, system-wide, and nationally. However, there are a few other things I can think of. One accomplishment was increasing the number of CSU campuses in CSU-LSAMP from 16 in 1993-94 to all 23 in 2013-2014, making CSU-LSAMP truly a comprehensive effort of the CSU to broaden participation in STEM. Since the beginning of my tenure as Lead Project Coordinator coincided with what then known as "Phase III" and continued through "Phase IV, I was also involved in leading the transition from a program that focused primarily on retention of students in STEM to advancement to graduate programs in STEM as well as the Bridge to the Doctorate Program. I also served as Executive Producer/Principal Investigator for the NSF video titled "LSAMP: Aiming High & Making a Difference."

**LH:** This is such a difficult question to answer because CSU-LSAMP is an Alliance, a team effort. I saw my role as bringing in the funding and managing the grants so the campus coordinators could do the important work serving students. I wanted to ensure individual campus programs had the flexibility to meet the needs of their students but also make sure we held together as a cohesive statewide program. I think what I've always been most proud of is the fact that we can point to data and show that CSU-LSAMP makes a real and measurable difference to students. I'm also proud of PROUD – that was a good idea and at the same time, one that was made better after pitching it to the campus coordinators statewide meetings.

*What are your hopes for the future of CSU-LSAMP?*

**JB:** It has long been my hope that there would be greater funding of CSU-LSAMP from the campuses, the system, and the NSF in recognition of both program effectiveness and the number of students served. Unfortunately, it appears that with each iteration of the NSF's LSAMP Program Announcement, new requirements are added without an increase in award levels. Although I understand the NSF's interest in "institutionalization and/or sustainability" for "Well Established Alliances," it would seem to me that it would also be useful to invest additional resources in Alliances that enable them to increase (rather than merely "continue") production of highly competitive STEM students at the undergraduate level leading to increases in STEM baccalaureate degrees from underrepresented minority populations and entry into graduate school. So, that's my hope for CSU-LSAMP.

**LH:** I'd love to see CSU-LSAMP become fully institutionalized, not as a series of campus-funded activities, but as a true system-wide program that continues to adapt and change to meet the needs of its students.

*'What are your hopes for the future of CSU-LSAMP?' seemed like such a good question, we reached out to coordinators from across the program and asked them, too.*

**Enid Gonzalez-Orta (Sacramento State):** My hope for the CSU-LSAMP program in the future is continued commitment to fostering camaraderie between campus programs and to continue to serve as a model program for student success.

**Alexander Stanoyevitch (Cal State Dominguez Hills):** I hope that the NSF will continue to fund the LSAMP program for many, many years to come, with appropriate increases in the budget. It is such an important, worthwhile, and successful program in enabling and encouraging URM students to pursue research and graduate work in STEM areas. With the increasing attention being paid now throughout academia on DEI, the program is more important now than it ever was in the past.

**Rita Juting (Cal State Northridge):** CSUN's input is our hope of CSU-LSAMP could be to further help foster research environments attractive to underrepresented and minority STEM students.

**Thelma Chavez (San Diego State):** My hopes for CSU-LSAMP (having been with it since 1993 AMP days, lol) I that there is a time that CSU-LSAMP and programs like these are not needed to promote diversity, equity and inclusion in STEM

**Jessica Bautista (Cal State Monterey Bay):** We hope to continue to support our undergraduate students with student research opportunities and graduate school preparedness.

**Steve Alas (Cal Poly Pomona):** To instill the professional skills not found in curriculum into our scholars and prepare them for the STEM workforce.

## THEN & NOW

# CSU-LSAMP: SPOTLIGHT

Some of our Campus Coordinators have been with CSU-LSAMP through several phases. Others have joined and made great contributions to the alliance. We checked in with a few.



**Karen Singmaster, Ph.D.**  
CSU-LSAMP at San Jose State  
Campus Coordinator  
(2001-present)



**John Banks, Ph.D.**  
CSU-LSAMP at CSU Monterey Bay  
Campus Coordinator (2015-present)  
Program Oversight Committee  
Member (2017-present)



**Estralita Martin, Ph.D.**  
CSU-LSAMP at San Diego State  
Campus Co-Coordinator  
(2003-present)  
Program Oversight Committee  
Member (2013-present)

*What do you feel was your most valuable contribution to the project or what are you most proud of during your tenure with CSU-LSAMP?*

**KS:** LSAMP created the AEW workshops in the 1990s. These continued for many years after that and, in some cases, we were able to start funding them through each campus. For courses like Chemistry and Math, these workshops have been invaluable for 1000s of students. The facilitators have often moved on to PhD and MD degrees because the experience of teaching made them better, more knowledgeable, confident applicants for postgraduate degree programs. The faculty member benefits from extra support for their students and the university benefits from better passing rates in STEM courses and retention in STEM.

We can provide some financial support for LSAMP students to become active in research early in their college career. This allows them to work on campus for a small amount of money, and gain experience in STEM as well as learn how to do research. This encourages these students to continue to advanced degrees.

**JB:** As director of our campus undergraduate research center, I'm proud of the amazing things I see our LSAMP participants achieving - they are really taking full advantage of the opportunities afforded to them. I'm also very proud of the Costa Rica Research Expedition that we have been able to provide over the years - I'm a strong believer in "stacking" high-impact practices such as undergraduate research and global learning. And of course, it's great to see what the participants go on to achieve after their international field research experience!

**EM:** I am most happy that Thelma is here. I'm most proud of how the program overall and on our campus has evolved from being a summer math program only to including 1) research opportunities and internships on and off campus, 2) travel to and from local, regional and national conferences, and 3) provide information to expand their horizons by attending international programs. I'm glad my portion of the POC funds have been incorporated into these activities. The utmost enjoyment comes when watching students, whose talents and potential may have been overlooked during their college tenure, walk across the stage at commencement proudly wearing an CSU-LSAMP medallion.

*What are your hopes for the future of CSU-LSAMP?*

**KS:** The last few years programs like NIH MARC and RISE have cut back support to many CSUs so they are no longer funded to the same level as they had been in the past. I would hope LSAMP would continue to support students with stipends for working in faculty research labs and maybe grow that aspect of the program. Without some level of financial support many of these students can't afford to take the time to do research.

**JB:** My fondest hope is that we continue to be a nimble, dynamic group, responding to student/campus needs as higher education evolves. And I'd love to see the alliance be able to continue providing rich international research experiences!

**EM:** The diversity this program brings to the various scientific communities is invaluable. Therefore, our hope is for the CSU-LSAMP program and its legacy to continue until all future scientific communities are so inundated with diverse individuals that they are asking why we needed these types of programs.

## CSU-LSAMP NSF NATIONAL GRADUATE RESEARCH FELLOWSHIP AWARDEES 2023

**Serena Blais (Sac State)**  
Life Sciences - Biology  
University of Memphis

**Teresita Ramirez Aguilar (CSUF)**  
Physics - Astronomy and Astrophysics  
Northwestern University

**Jose Chacon (CSUN)**  
Life Sciences - Developmental Biology  
University of California, San Diego

**Alexandra Salazar (SJSU)**  
Life Sciences - Structural Biology  
Scripps Research Institute

**Jasmine Garcia (SJSU)**  
Life Sciences - Cell Biology  
Harvard University

**Y. Ivy Wang (CPP)**  
Chemistry - Chemical Catalysis  
University of California, Irvine

**Mayra J. Hernandez (CSUDH)**  
Life Sciences - Ecology  
University of California, Davis

**Spencer Winter (CSUMB)**  
Engineering - Bioengineering  
California Institute of Technology

**Ritu Raj (CPP)**  
Engineering - Chemical Engineering  
University of Colorado, Boulder



# CSU-LSAMP COSTA RICA RESEARCH EXPEDITION PROGRAM



In January 2023, CSU-LSAMP students participated in a 2.5 week Expedition focused on a group research project in the village of Mastatal (population 150), learning about ecology, experimental design, statistical methods, and field techniques for sampling, sorting, and cataloguing arthropods. The expedition was bookended by a few days learning about sustainable coffee production and the coastal environment.

The first part of the expedition took place in Santa Maria de Dota, a small town in the coffee highlands in the world-famous Tarrazú region. Activities included a tour of the nearby CoopeDota production facilities (including coffee tasting, or “cupping”) along with lectures and discussions that served as an introduction to ecological concepts pertaining to sustainable coffee as well as a refresher/introduction to some statistics. The visit also featured a visit to a working coffee farm to collect some data on bean yields; the group then analyzed the data using some of the statistical methods we learned in order to test hypotheses about coffee pollination and habitat diversity.

The main phase of the expedition took place in the small rural village of Mastatal where we conducted a group research project in the shadow of La Cangreja National Park. The project, a follow-up of a data collected with students in the same sites nearly 20 years ago, aims to compare the relative contribution of farmland and forests to arthropod biodiversity. For the winter 2023 group this entailed spending six days of setting pitfall traps, characterizing ground vegetation and canopy cover, and collecting, sorting, photographing and measuring the body sizes of beetle and spider specimens from several sites around the region. We used specialized software to analyze the specimen photographs, measuring body and leg sizes of the beetles and spiders in order to better understand traits like mobility and predator size as potential drivers of abundance and diversity patterns. At the end of the expedition, specimens were delivered to taxonomic specialists in San José for further identification. Data from this expedition are being combined with data from last year’s expedition, to be analyzed and included in a peer-reviewed journal article.

River crossings, steep hillsides, and the usual assortment of biting insects along with the occasional torrential downpour were among the challenges the group faced; all came through with flying colors and emerged with some hard-won tropical field ecology experience. In between the hard work in the field and lab, students enjoyed playing soccer, touring a local family-run cacao farm and chocolate producer, learning about medicinal plants from an indigenous medicine man, eating dinner at the village “soda” (small restaurant), and hiking to local waterfalls. The expedition wrapped up with a visit to the coast, where the group enjoyed a guided wildlife tour of Manuel Antonio National Park, and explored nearby mangroves via kayak.



# CSU-LSAMP INTERNATIONAL PROGRAMS

## IRES IN UZBEKISTAN



### CSU-LSAMP RESEARCH EXPERIENCE IN UZBEKISTAN

The IRES in Uzbekistan program is hosted by California State University (CSU), Fullerton in partnership with the Institute of Mathematics of the Uzbekistan Academy of Sciences, and supports international research experiences for U.S. students. The program is funded by the IRES program at the National Science Foundation, and gives U.S. students a 10-week summer research experience in Uzbekistan, the birthplace of algebra, under the mentorship of world-renowned mathematicians Shavkat Alimov, Shavkat Ayupov and Utkir Rozikov. In collaboration with their Uzbek peers and mentors, U.S. students conducted cutting-edge research in Leibniz Algebras (structure of derivations on operator algebras, derivations and automorphisms groups on algebras of unbounded operators on Hilbert spaces, structural theory of Leibniz algebras and superalgebras), Harmonic Analysis (numerical methods, Fourier transformation, spectral theory) and Mathematical Biology (DNA, Holliday junction, Cayley tree, Gibbs measure).

Summer 2023 was our sixth LSAMP-IRES in Uzbekistan program funded by CSU-LSAMP. We had seven CSU-LSAMP students participate in the program that was held at Urgench State University on May 27 – July 21, 2023. Three students (Monte Davityan, Jonathan Covarrubias and Rumeysa Gurler) were recruited from Fullerton, two students (Desiree Salcedo Quilenderino and Faviola Sanchez) were recruited from Sonoma, one student (Berenice Jimenez Galindo) was recruited from Fresno and one student (Claire Jueco) was recruited from Stanislaus. Four biology majors and three computer science major. Both research and cultural components were successful. Students conducted research with their Uzbek mentors and peers, and as part of their cultural program, traveled to the silk road cities of Khiva, Bukhara, Samarkand and Tashkent.



*"The cultural experiences in Uzbekistan were nice to experience and provided us with many interactions with locals, students, and the historical stories of Uzbekistan. I really had a good time and made so many great memories especially with the places and people there. Overall, a really enjoyable experience that I would do again in a heartbeat."* -Monte Davityan

*"Uzbekistan was an exceptional experience from start to finish; it began as a country unbeknown to me and ended as one I will never forget. The people we became familiar with accepted us as foreigners and treated us as guests throughout our trip."* -Jonathan Covarrubias

*"Uzbekistan exposed me to great culture where I got to learn more about the history of the silk road. Personally, I had a good time with my cohort and the translators as they were all great people. Overall, the research was fun and educational. I loved the mentors and my cohort, and I wish we could have more time all together."* -Rumeysa Gurler

*"The LSAMP-IRES program in Uzbekistan was truly an unforgettable experience. I valued learning a completely different culture from my own and getting to build close connections with my cohort, students at the university and faculty. Overall, if I were to do the program all over again, I would not hesitate. The amazing friendships, knowledge and research skills I obtained in this short period of time is of incredible value. I would definitely recommend this program to others and share my amazing experiences with them."* -Faviola Sanchez

*"It was amazing to see the cultural differences in food, environment, housing, and mannerism as we moved to different cities in Uzbekistan such as Bukhara, Samarkand, and Tashkent. We were able to see the cultural difference between each city and compare it to the location we were living in, Urgench. Overall, I want to say thanks to everyone in the program and the director for allowing me to participate in this wonderful program and letting me be in an awesome group during my stay in Urgench."* -Bernice Jimenez Galindo





Campus Coordinator:  
Christine Herrera, Ph.D.  
Associate Professor, Mathematics  
(530) 898-5492  
caherrera@csuchico.edu

**OUTSTANDING FIRST-YEAR STUDENT**  
**NATALIE GONZALEZ • MECHATRONIC ENGINEERING**



**A**s a first-year mechatronic engineering major at CSU Chico, Natalie Gonzalez excelled in academics, flourished in research, and stood out as a leader among her peers. Prior to her first semester, Natalie participated in the 2022 CSU-LSAMP Summer Calculus Boot Camp, where she thrived academically, and voluntarily mentored and tutored her peers. She earned the 2022 Spartan Award for her dedication to teamwork and willingness to uplift those around her. Natalie’s academic excellence continued throughout the academic year, being on the Dean’s List, both semesters, and achieving an overall GPA of 3.96. Natalie served as the Deputy Treasurer for the Society of Women Engineers and was a proud member of Latinos in Technical Careers (LTC). In addition to Natalie’s exemplary academic achievement and leadership, Natalie participated in the 2023 CSU-LSAMP Costa Rica Winter Research Expedition, as the youngest and only engineering student in the group, where she collected, recorded, and prepared over 700 specimens for identification. This life-altering research experience provided Natalie her first opportunity to travel abroad and gain “research experience that has inspired me to look into how I can incorporate my coursework in engineering for environmental purposes”. As a person, who has a passion for learning and sharing knowledge, Natalie ended her first year as a tutor for the 2023 CSU-LSAMP Summer Calculus Boot Camp, where she had the opportunity to mentor and guide the new incoming CSU-LSAMP students.





# California State University DOMINGUEZ HILLS

## OUTSTANDING RESEARCH IN STEM MELISSA AVILA BRIONES • CHEMISTRY



**M**elissa Avila Briones was a chemistry major and a physics minor at CSU Dominguez Hills. Despite facing personal challenges, she graduated in spring 2023 with her bachelor's in science. Melissa began her research experience through CSU-LSAMP in fall 2022 working with Dr. Erin McCauley identifying fungal natural products with novel chemical structures that exhibit cytotoxicity towards a brain cancer cell line to be used as drug leads in future research. She presented her research at the CSU Dominguez Hills Student Research Conference. After graduation Melissa plans to pursue her PhD in chemistry at UC Riverside, specializing in analytical chemistry. As part of her offer of admission, she was awarded the Dean's Distinguished Fellowship for the duration of her time at UC Riverside.

Campus Coordinator:  
Alexander Stanoyevitch  
Professor of Mathematics  
(310) 243-3905  
astanoyevitch@gmail.com

## OUTSTANDING RESEARCH IN STEM ALEJANDRA ARJON • MATHEMATICS



**A**lejandra Arjon is a mathematics major who graduated last year from CSU Dominguez Hills. Before attending CSU Dominguez Hills, Alejandra transferred from Fullerton College after obtaining her associate degree in mathematics. There, she worked in theoretical mathematics research with Dr. Dana Clahane and gave an oral presentation at the Mathematics Research Experiences in Community Colleges Conference (MREC<sup>3</sup>) entitled "When is  $\tan(n) > n$ ?" In the summer of 2021, she attended the Research for Undergraduates Summer Institute of Statistics (RUSIS) REU, where she had the opportunity to do research with Dr. Javier Rojo. Her research group worked on test statistics used to test data sets that follow Benford's Law. After transferring to CSU Dominguez Hills in 2021, she joined the CSU-LSAMP program to continue her research and to obtain more guidance in her pursuit of graduate school. In summer 2022, Alejandra obtained a CSU-LSAMP research grant to work with Dr. Yi (Grace) Wang. Their research consisted of the correlation between the different methods of dividing the heart used in diagnosis, and cardiac sarcoidosis using machine learning methods. Alejandra was a wonderful student. Professors very much enjoyed having her in their classes and she also made many insightful comments and observations in department colloquia. Alejandra was accepted into UCLA's Statistics PhD program and was awarded a 2023-24 Eugene V. Cota-Robles Fellowship. Her career plans are to work as a statistician at a national lab, or government agency.

## OUTSTANDING ACADEMIC VICTOR TEMESVARY • CELLULAR & MOLECULAR BIOLOGY

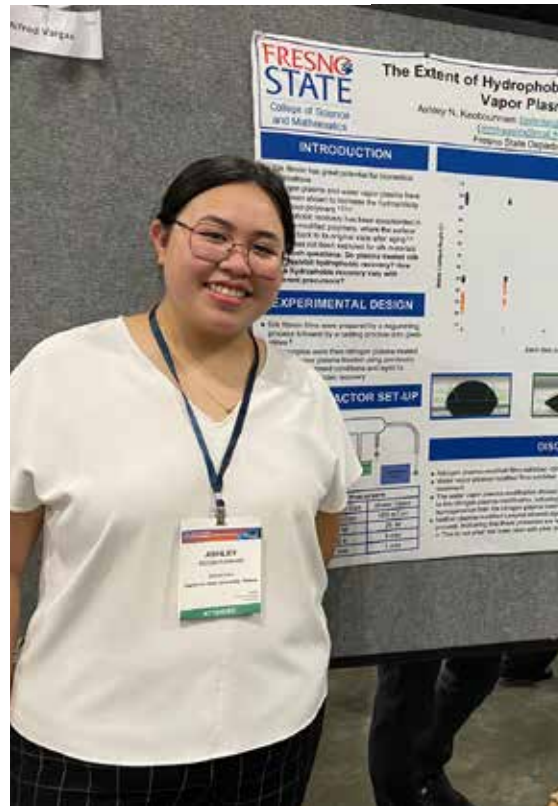
**V**incent Temesvary is currently attending CSU Dominguez Hills, where he is majoring in cellular and molecular biology with a minor in biochemistry. Vincent has been an honor student throughout his entire career at CSU Dominguez Hills, maintaining a cumulative GPA of 3.914. He was a recipient of the Robert Sprague STEM award in the 2021-22 academic year due to his high academic achievement and postgraduate ambitions. He is currently participating in undergraduate research with Dr. Fang Wang. Vincent's research study uses zebrafish to study the development of skin cells and their interactions with other types of cells, such as somatosensory neurons. When there are genetic defects in the skin cells and/or somatosensory neurons this can lead to a long list of ailments and damage later in life, including peripheral neuropathies. He aims to graduate in the 2024-25 academic year and is excited to pursue postgraduate studies in the medical sciences. Not only is Vincent an exemplary student but he is also a part of the CSU Dominguez Hills baseball team. He had recently been nominated to the CCAA All-Conference 2nd team as well as the NCBWA All Region 2nd team. Vincent finished the 2023 season in the top 5 of multiple offensive categories for the CCAA conference.





## OUTSTANDING ACADEMIC & RESEARCH IN STEM ASHLEY KEOBOUNNAM • BIOCHEMISTRY

Ashley Keobounnam completed her bachelor's degree in biology and minor in chemistry from Fresno State in May 2023 with magna cum laude honors. Her time at Fresno State was marked by engaging research projects and active participation in prestigious programs. Early in her undergraduate career, Ashley was introduced to research in the College of Science and Mathematics BOND program, where she evaluated the effectiveness of different waste and recycling management plans on Fresno State's campus. Her commitment to excellence led her to participate in programs such as CSU-LSAMP and RISE. Through these programs, she received invaluable support, hands-on research experience, and professional development opportunities, fostering her growth as a scholar and researcher. Ashley's independent research project with Dr. Morgan Hawker focused on using oxygen plasma to immobilize antioxidants on chitosan films as a means of treatment for burn injuries. Ashley presented at numerous local and international conferences. Ashley will be continuing her educational journey in a PhD program in Chemical and Biomolecular Engineering at the University of California, Los Angeles where she hopes to lead and mentor individuals from underrepresented groups in scientific research.



## OUTSTANDING RESEARCH IN STEM ESVEIDY OCEGUERA BIOCHEMISTRY

Esveidy Oceguela completed her bachelor's of science in biochemistry from Fresno State in May 2022 and is expected to receive her master's degree in chemistry from Fresno State in May 2024. Esveidy's undergraduate research career began in May 2020 when she joined Dr. Qiao-Hong Chen's bio-organic and medicinal chemistry research group. During her undergraduate research experience, Esveidy received support from various programs, including CSU-LSAMP and NIH RISE. Esveidy also received the 2021 CSUPERB Howell Research Scholar Award, where she began her project titled, "Licochalcone A target analogs for the potential treatment of Triple-Negative Breast Cancer" and co-authored a research article. During Esveidy's graduate school journey, she was a recipient of the ASP 2022 Summer Research Fellowship and participant in the NIH-Bridges to Doctorate Scholars program, where she focused on synthesizing and evaluating natural product analogs against various cancer cell lines. Esveidy aims to continue her cancer research in a PhD program in hopes of becoming a professor at a university to serve communities from underrepresented groups and inspire new generations of Hispanic women toward pursuing a STEM career.

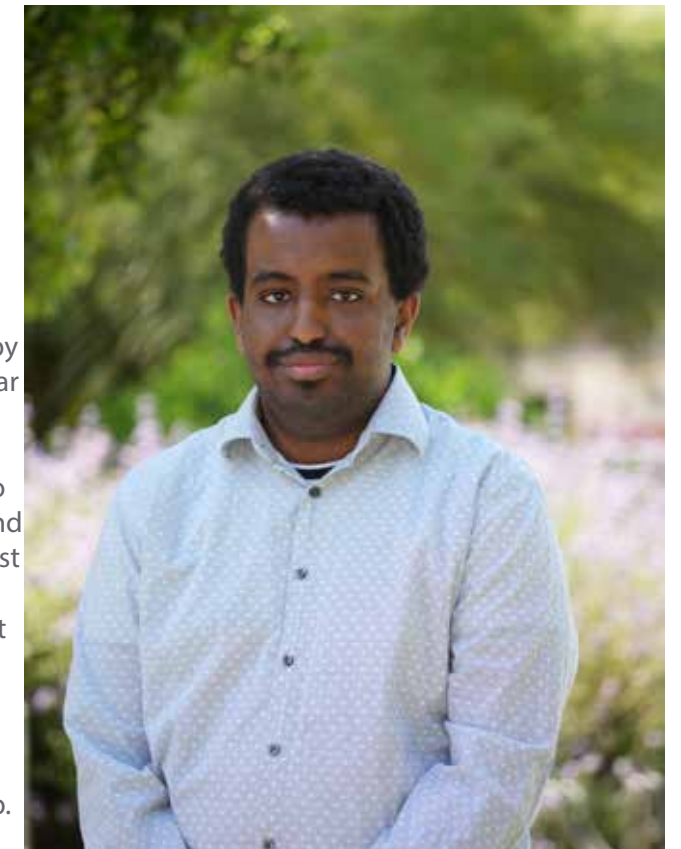


## OUTSTANDING RESEARCH IN STEM KHAMYL COOKSEY • BIOCHEMISTRY

Khamyl Cooksey completed his bachelor's of science in biochemistry from Fresno State in May 2023. As a first-generation college student, he participated in the College of Science and Mathematics BOND program where he explored an early introduction to research. His research with Dr. Qiao-Hong Chen centered around bio-organics and medicinal chemistry using novel androgen receptor-based Proteolysis Targeting Chimeras (PROTACs) to combat prostate cancer. As Khamyl found a passion for research, he joined various STEM-related programs including CSU-LSAMP and RISE. Through these programs, Khamyl participated in a summer fellowship program at Princeton University where he constructed his senior project. Through synthesizing a library of tetracyclic bis-piperidine alkaloids as anti-cancer agents, he also participated in an Inaugural Visiting Faculty Program (VFRP) at Princeton University that collaborated with moderate-to-small research institutions that serve historically underrepresented communities to establish concrete and memorable connections through established research projects. Khamyl participated in various conferences, where he presented oral and poster presentations including ABRCMS, LANS, SACNAS, and CSUPERB, where he received an ACS Honorable Award for his Undergraduate Presentation. Khamyl will continue his research and academic journey at the University of California, Merced where he pursues his PhD in organic and organometallic synthesis.

## OUTSTANDING RESEARCH IN STEM KIRUBEL MAMO • BIOCHEMISTRY

Kirubel Mamo completed his bachelor's of science in biochemistry at Fresno State in May 2023. His academic journey began as a participant in the College of Science and Mathematics BOND program working with fellow classmates in analysing the energy consumption of the university and developed a proposal to achieve energy efficiency standards. Kirubel gave back to the BOND program by serving as an instructional student assistant mentoring first-year students throughout his undergraduate career. Kirubel joined Dr. Hubert Muchalski's organic synthesis research laboratory working on the gold catalyzed synthesis of benzofuran. He also had the opportunity to conduct research in green chemistry and was introduced to the field of micellar catalysis. Kirubel's interest in research continued to flourish, and with the support of CSU-LSAMP and RISE, he was able to present his research findings at numerous conferences including SACNAS, ABRCMS, and ACS. Kirubel is pursuing his PhD in chemistry at the University of California, Santa Barbara where he hopes to contribute to the field of green chemistry. He aspires for a career in academia, where he will combine his passion for research and mentorship.



Campus Coordinators:

Lilia De La Cerda, M.P.H.  
Coordinator/Director, CSU-LSAMP  
(559) 278-4748  
liliad@csufresno.edu

Joy Goto, Ph.D.  
Professor, Chemistry & Biochemistry  
(559) 278-2103  
jgoto@csufresno.edu





# CALIFORNIA STATE UNIVERSITY FULLERTON™

## OUTSTANDING ACADEMIC & RESEARCH IN STEM MONTE DAVITYAN MATHEMATICS & COMPUTER SCIENCE

**M**onte Davityan graduated from California State University, Fullerton in summer of 2023 with a bachelor's degree in both computer science and mathematics with a concentration in probability & statistics with an overall GPA of 3.83. Monte conducted research in biostatistics with Dr. Valerie Poynor in a survival analysis study to determine if ethnicity plays a role in survival rates among cancer patients. He participated in a UC Irvine Data Science summer program where he worked with a team to analyze symptom burden of patients with Myeloproliferative Neoplasms (MPN) cancer, with an assigned diet change. He also participated in the CSU-LSAMP-IRES program at Urgench State University in Uzbekistan, conducting research in machine learning. Monte was accepted to the graduate program at the University of California, Santa Barbara where he pursues his PhD degree in statistics.



## OUTSTANDING RESEARCH IN STEM ANDREA CEJA • PHYSICS

**A**ndrea Ceja is a first-generation student who began her California State University, Fullerton journey as a business major but graduated with a bachelor's of science in physics. She is a Ronald E. McNair Scholar, a CSU-LSAMP participant, and a CSU Pre-Doctoral Sally Casanova scholar. Her research focused on using supercomputers to calculate gravitational waves for merging black holes alongside Dr. Geoffrey Lovelace. She also completed a summer research project at Cornell, where she helped enable SpECTRE, a next-generation numerical relativity code, to calculate the recoil of the black hole left behind after two black holes merge. She has presented her research at Cornell, the Northwestern LIGO-Virgo-Kagra Collaboration meeting, the 39th Pacific Coast Gravity Meeting at Caltech, and the American Physical Society conference in Minnesota. In addition, she led the post pandemic revitalization of our Society of Physics Students chapter as president. Andrea is pursuing a PhD in physics at Northwestern University in hopes of becoming a professor at a minority-serving institution, teaching and contributing to research in gravitational waves, and training the next generation of physicists.



## OUTSTANDING RESEARCH IN STEM KIM YUMUL • BIOLOGICAL SCIENCES



**K**im Yumul completed her bachelor's degree in biological sciences with a concentration in marine biology. She worked with Dr. Danielle Zacherl on the effects of a non-native bryozoan on the abundance and percent cover of the native Olympia oyster, *Ostrea lurida*. The purpose of her project was to investigate if and how a non-native and highly invasive bryozoan affect the only native oyster species in the U.S. West Coast. Kim presented her research findings at conferences, such as the Western Society of Naturalists (WSN), the National Conference for Undergraduate Research (NCUR), and the Southern California Academy of Science (SCAS). She participated in a Research Experience for Undergraduates (REU) program at the University of Hawai'i, Hilo, which sparked her interest in tropical fish ecology. Working on various research projects as an undergraduate has taught Kim the value of incorporating local communities and outreach in environmental conservation. Kim's future goal is to get her PhD in tropical ecology and build a career in research and community outreach. She hopes to one day conduct research in the Philippines, where she was born and raised as a kid.

## OUTSTANDING ACADEMIC ANNABELLE RECINOS • CIVIL ENGINEERING

**A**nnabelle Recinos is a senior undergraduate civil engineering major at California State University, Fullerton. Throughout her undergraduate studies, Annabelle demonstrated academic excellence maintaining a 4.0 GPA. She won the prestigious Barry Goldwater Scholarship. Her research project focused on developing a robust initiation service life model for reinforced concrete structures comparing deterministic models to new probabilistic models. Her research included various durable and sustainable materials, helping to bridge the gap in current service life models. Annabelle presented her research at multiple conferences, including SCCUR, CSU Fullerton SCAR Day, NCUR, CSU-SRC, and the ECS Student Project Innovation Expo, where she won for "Best Project in Civil and Environmental Engineering" award. She co-authored a paper on "Computation of corrosion initiation time with HPC mixtures and high-quality rebars" (doi.org/10.1016/j.matpr.2023.04.066). Research provided Annabelle with invaluable experiences, and she looks forward to furthering her project by including the propagation time of the service life model. In her final year at CSU Fullerton, she will apply to doctoral programs, a milestone toward her career goal of being an independent researcher in the field of transportation to improve infrastructure materials.



Campus Coordinator:  
Zair Ibragimov, Ph.D.  
Professor of Mathematics  
657-278-2741  
zibragimov@fullerton.edu



# Cal Poly Humboldt.

## OUTSTANDING RESEARCH IN STEM CRISTINA PORTILLO • WILDLIFE CONSERVATION & ECOLOGY



Cristina Portillo is a wildlife major at Cal Poly Humboldt. She is a first-generation college student and a member of the Indian Natural Resources, Science, and Engineering Program (INRSEP). Before transferring to Cal Poly Humboldt, Cristina attended several community colleges in the greater Los Angeles area. Cristina has contributed to multiple research projects focused on wildlife conservation and ecology during her time at Cal Poly Humboldt, and is particularly passionate about birds and bird ecology. In fall 2022, Cristina contributed to a research project focused on better understanding bat ecology in northern California using trail cameras and acoustic monitoring techniques with Dr. Nicholas Kerhoulas. She also conducted research in collaboration with the Ecological Forecasting Initiative with PhD student, Cazimir Kowalski, and Dr. Jason McLachlan from the University of Notre Dame. Cristina then worked with in Dr. Matthew Johnson's Habitat Ecology Lab investigating nest tree selection of Red-tailed Hawks and Swainson's Hawks in Butte Valley, California through the CSU-LSAMP Summer Research Experience at Cal Poly Humboldt. The project sought to understand whether Swainson's Hawks and Red-tailed Hawks prefer trees with older, more complex nest tree characteristics, and what microhabitat features drive such preferences.

## OUTSTANDING RESEARCH IN STEM BRIANNA RENNARD • ZOOLOGY



Brianna Rennard is a zoology major at Cal Poly Humboldt. She is a member of the Indian Natural Resources, Science, and Engineering Program (INRSEP). Before transferring to Cal Poly Humboldt, Brianna earned an AA degree at Pasadena Community College. Brianna enjoys working with animals and would like to be a zookeeper or work in wildlife rehabilitation. She conducted research on marine mammal strandings through the Marine Mammal Education and Research Project (MMERP) with Dr. Dawn Goley. Surveying marine mammal strandings are important to understanding the health of our environment and ocean. Brianna examined how stranding location, carcass size, level of decomposition, tide, human interaction, scavenging, and wind speed affect the persistence of marine mammals. This study successfully established a protocol for research in marine mammal persistence. Observational data is reported to the National Oceanographic and Atmospheric Administration (NOAA) and National Marine Fisheries Service (NMFS) jointly coordinated National Marine Mammal Health and Stranding Response Program (NMMSRP). Brianna will present her work at the SAC-NAS national conference in Portland, Oregon.

## OUTSTANDING RESEARCH IN STEM

### KAYAH RAY • GEOLOGY



Kayah Ray is a geology major with an emphasis on geospatial science and a minor in Native American studies at Cal Poly Humboldt. Kayah is an enrolled Yurok tribal citizen, a first-generation college student, and a Full Circle Scholar. Kayah participated in research at Lawrence Livermore National Lab with Dr. Susan Zimmerman investigating carbon in soils as a result of fire in conjunction with the Karuk tribe. The team worked to understand how Native American burning practices help to reduce catastrophic wildfires, and to understand how different fire regimes affect carbon in soils. In a separate project, Kayah worked with Dr. Mark Hemphill-Haley, Professor Emeritus for Cal Poly Humboldt, Jennifer Curtis, Research Geologist for the USGS, David Bandrowski, Engineer for the Yurok Tribe, and Keith Parker, Senior Fisheries Biologist for the Yurok Tribe, to characterize features in a mass wasting event at the Vesa Creek watershed on the Klamath River that is a result of the McKinney fire and an August thunderstorm. The team conducted an analysis of the erosional features in the watershed, and how the mass wasting event played a role in the fish kill. In addition to her research, Kayah worked as an assistant for the Indian Teacher and Educational Personnel Program (ITEPP) and is a member of the Indian Natural Resources, Science & Engineering Program (INRSEP). Kayah plans to pursue a graduate degree in geomorphology, climate change, and hydrology. Kayah plans on working with tribes on their natural resources and watersheds.

## OUTSTANDING ACADEMIC & RESEARCH IN STEM COLTON BOYD • COMPUTER SCIENCE

Colton Boyd is a computer science major with a 3.95 cumulative GPA at Cal Poly Humboldt. He is an enrolled member of the Cherokee Nation and a member of the Indian Natural Resources, Science, and Engineering Program (INRSEP). He is a first-generation college student, the youngest of three siblings, and the first to attend college. Before transferring to Cal Poly Humboldt, Colton earned an AS degree at the College of the Redwoods. Colton loves technology and enjoys coding. Colton participated in research through the CSU-LSAMP Summer Research Experience at Cal Poly Humboldt. Colton worked remotely with graduate student Sean Dorr [Mille Lacs Band of Ojibwe] of the Interactive Visualization Lab, Department of Computer Science and Engineering, University of Minnesota Twin Cities. The research was developed in collaboration with members of the Ecological Forecasting Initiative (EFI) and leveraged an existing interdisciplinary team of researchers and Anishinaabe co-authors led by Dr. Michael Dockry, Dr. Daniel Keefe, and Dr. Vicente Diaz. The project investigated the implications of centering traditionally grounded Indigenous-making processes (such as beading, quillwork, quilting, and canoe making) in the creation of computing software applications, specifically in the context of data visualization, by addressing the research questions: a) to what extent does changing the visual language of western scientific data visualizations make the content relevant and useful for Indigenous communities?, and b) in what ways does the Indigenizing of this process create opportunities for rethinking traditional computer science topics such as data structures and algorithms, software engineering, and human-computer interaction?



Campus Coordinator:  
Nievita Bueno-Watts, Ph.D.  
Director, INRSEP & Diversity in STEM Program  
(707) 826-5641  
[nievita.bueno.watts@humboldt.edu](mailto:nievita.bueno.watts@humboldt.edu)



# CALIFORNIA STATE UNIVERSITY LONG BEACH



**OUTSTANDING ACADEMIC, RESEARCH IN STEM**  
ANDREA OROZCO • BIOLOGY

Andrea Isabel Orozco graduated as a biology major at California State University, Long Beach in May 2023. She excelled in academia and was named in the 2022-23 Dean’s list. She was accepted to the CSU-LSAMP Fellows program in 2022. Andrea’s research work focused on the regulatory gene network for leaf senescence in *Arabidopsis thaliana* in Dr. Judy Brusslan’s research group. She had the opportunity to travel to Costa Rica with the CSU-LSAMP Costa Rica Winter Research Training Expedition to study tropical ecology. She and her team started off in Santa Maria de Dota with an introduction to inquiry-based research and research methodology. There, they determined whether coffee plantations closest to the rainforest produced more coffee berries than those further away. Then, they moved to the secluded town of Mastatal, where they spent 2 weeks setting 225 insect traps to analyze the diversity of spiders and beetles. Besides research work, she had a truly exciting time with birding walks, hiking, swimming, and kayaking through the mangroves in Baru, where she was able to see the famous 300-years old giant Chilamate Ficus tree. Her immersive research experience in plant science and her trip to Costa Rica served to further solidify Andrea’s passion for ecology and wildlife conservation and her dream of becoming a conservation botanist. She is currently applying to graduate school.

**OUTSTANDING ACADEMIC, RESEARCH IN STEM**  
ETHAN LUCSIK • BIOCHEMISTRY



Ethan Lucsik is a junior majoring in biochemistry at California State University, Long Beach. He excels in academia and has been recognized for his academic achievements by several awards, including the 2022-23 President’s honors list. He was accepted to the CSU-LSAMP Fellows program in 2022. Ethan embarked on his research journey as a freshman in the Department of Chemistry and Biochemistry in Dr. Fangyuan Tian’s group working on electrophoretic deposition of Metal Organic Frameworks (MOF) onto stainless steel mesh of stents used in balloon angioplasty to aid in drug delivery. Ethan studied iron-based MOF with unique drug loading capabilities for treating late stent thrombosis. His contributions earned him a co-authorship in *Langmuir*, a publication by the American Chemical Society (ACS). Ethan received the ACS Division of Colloid & Surface Chemistry Student Award which afforded the opportunity to give an oral presentation at the upcoming ACS National conference held in San Francisco in August 2023. Ethan received the SoCalGas STEM-NET Student Research Fellowship which supported his research work. In May 2023, Ethan was recruited to the NIH U-RISE program at CSU Long Beach. In summer 2023, Ethan participated in an NSF REU Program at UC San Diego researching MOFs in the Materials Research Science and Engineering Center. Ethan’s experience as an undergraduate researcher is preparing him to advance his professional and academic career and to enter graduate school upon graduation in 2025.

Campus Coordinators:  
Vasanthy Narayanaswami, Ph.D., FAHA  
Professor, Biochemistry  
(562) 985-4953  
vas.narayanaswami@csulb.edu





# CAL STATE LA

CALIFORNIA STATE UNIVERSITY, LOS ANGELES



## OUTSTANDING ALUMNA

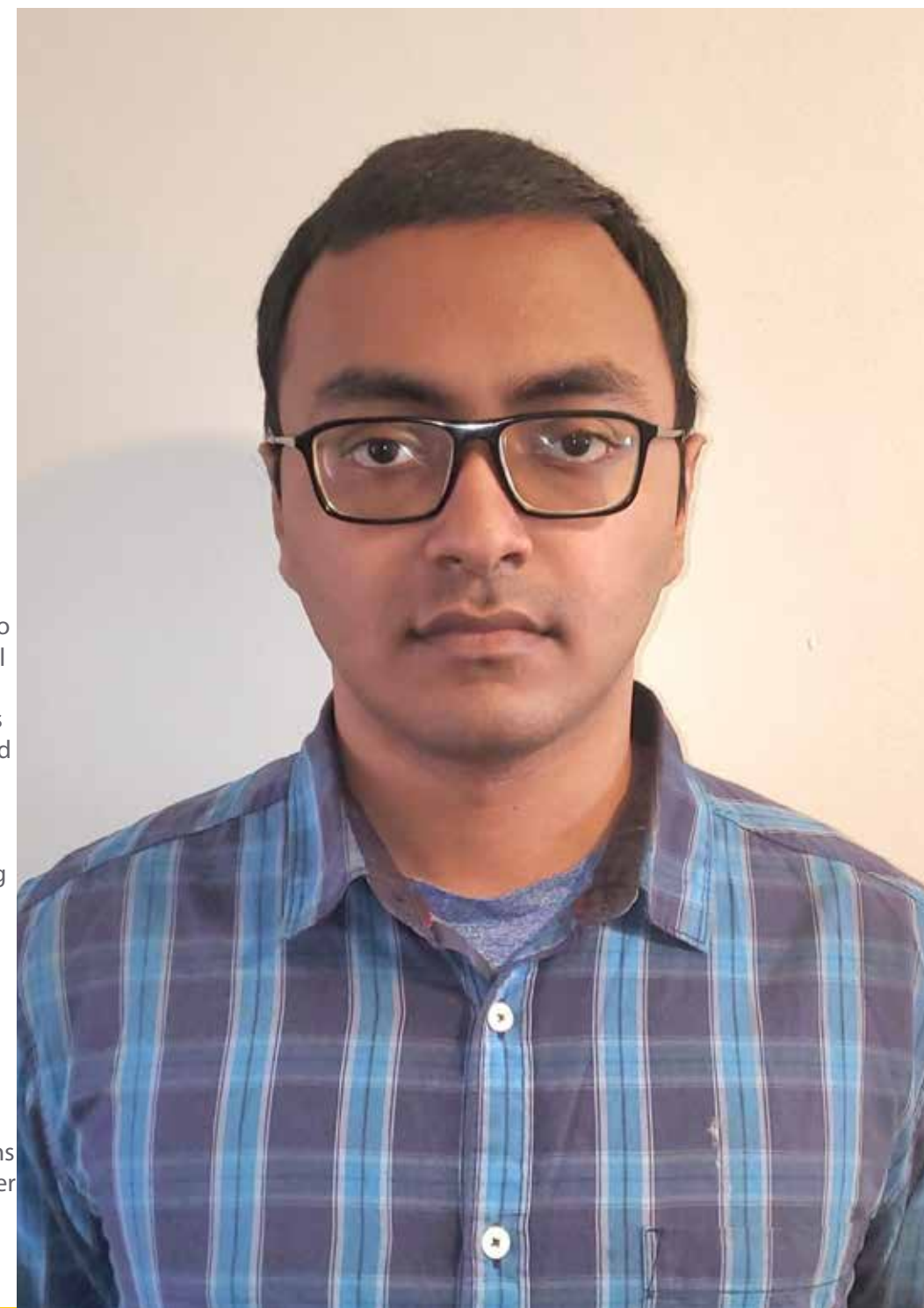
ALEJANDRA RIOS, PH.D. • BIOCHEMISTRY & BIOPHYSICS

Alejandra Rios graduated with a B.S. in biochemistry and biophysics with a GPA of 3.024 from Cal State LA in May 2014. While she began her academic career as a kinesiology major in fall of 2007, Alejandra explored opportunities outside the traditional healthcare path. She switched her major to biochemistry late in her undergraduate career and began pursuing research as part of the CSU-LSAMP and MORE programs. To build her academic and research experience, Alejandra entered Cal State LA's physics graduate program in fall 2014. In spring 2016, Alejandra completed her graduate program in physics with a GPA 3.730 and entered a PhD program in Physics and Biology in Medicine at the University of California, Los Angeles. Alejandra's research productivity has led to 18 publications and multiple presentations. Upon completion of her PhD program in 2022, Alejandra was accepted as a California Council on Science & Technology Policy Fellow with the California Energy Commission in the office of Chair David Hochschild.

## OUTSTANDING ACADEMIC & RESEARCH IN STEM

ROHAN CHATTERJEE • COMPUTER SCIENCE

Rohan Chatterjee graduated Summa Cum Laude with a major in computer science and minors in both mathematics and biomedical engineering, and with a GPA of 3.94 in May of 2023. Rohan started his academic career in fall 2018 at Cal State LA, where he has served as an instructional teaching assistant for the College of Engineering, Computer Science and Technology, a mentor for students in the Biomedical Engineering Women Innovators Program, and a tutor at the Center for Academic Success. He was also named in the Dean's List for all five consecutive years of his undergraduate career and has worked in research in Dr. Navid Amini's Machine Learning and Sensing Lab. His research focused on the design and development of deep learning algorithm that machine learning model, specifically, a deep neural network, can consistently and correctly detect large vessel occlusion and brain reperfusion from a patient's brain 3D CTA scan while providing probabilistic confidence scores. Rohan plans on pursuing a PhD in computer science and focus on research related to machine learning and medical technology.



## Campus Coordinators:

Edith Porter, M.D.  
Professor of Microbiology & Immunology  
(323) 343-6353  
eporter@exchange.calstatela.edu

Deborah Won, Ph.D.  
Professor of Electrical & Computer Engineering  
(323) 343-5908  
dwon@calstatela.edu





### OUTSTANDING ACADEMIC CAPRI VALDEZ MARINE TRANSPORTATION

Capri Valdez graduated Cum Laude with a B.S. in Marine Transportation from Cal Maritime and a 3rd Mate Unlimited license from the US Coast Guard in May 2023. Capri also double minored in Business and Naval Science. Before transferring into Cal Maritime, Capri studied abroad with CSU International Programs in Florence, Italy. While attending Cal Maritime, Capri served in the Strategic Sealift Officers Program which allowed her to commission into the US Navy. She also sailed with Military Sealift Command on a tanker ship from Japan to the coast of California. When learning about CSU-LSAMP from an upperclassman, she immediately sought the opportunity to join. CSU-LSAMP provided her a strong foundation in her studies and a vibrant community for students. Now, commissioned as an Ensign in the US Naval Reserves, Capri plans to sail on third mate license.

### OUTSTANDING PERSISTENCE & LEADERSHIP SIDENIN CORDOBA • FACILITIES ENGINEERING TECHNOLOGY

Sidenin (Sid) Cordoba graduated with a B.S. in facilities engineering technology from Cal Maritime in May 2023. During his time at Cal Maritime, he found great support from programs like CSU-LSAMP and the Educational Opportunity Program (EOP). As both CSU-LSAMP and EOP mentor, Sid's vision was to embody mentoring as a way to bring awareness about these programs to other members from underrepresented communities. Sid rose to be chosen as the Lead Peer Mentor for EOP in his senior year, and along the way helped equip first-generation incoming first-years and transfers with the tools and knowledge needed to adapt to the rigorous academic culture at Cal Maritime. Such leadership roles have allowed him to grow professionally and develop real-world skills. Sid remembers the phrase "Leadership is not a position but a process", which helped him navigate many of his personal and professional challenges. Sid will begin his professional career with Amazon Web Services in Santa Clara, CA. He hopes to return to Cal Maritime to get his master's degree in transportation and engineering management after gaining years of work experience.

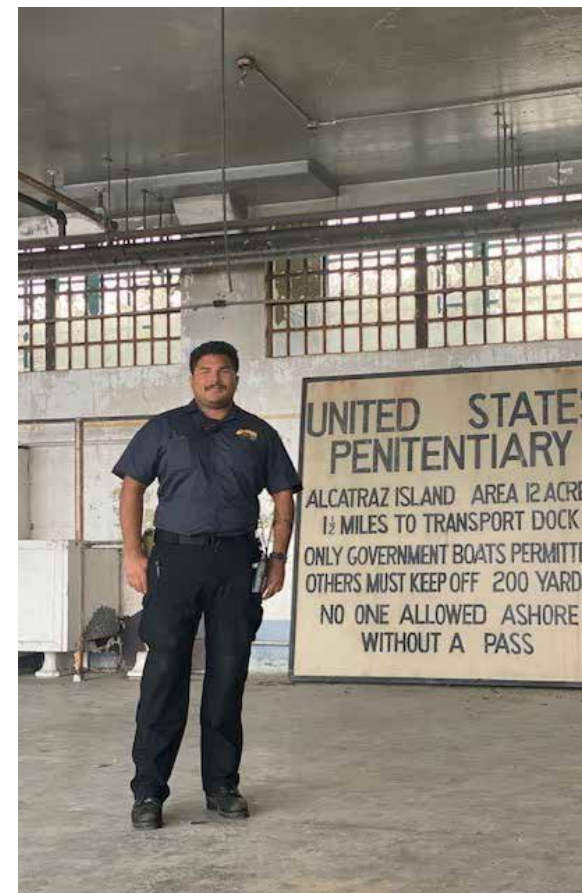


### OUTSTANDING ACADEMIC & SERVICE/LEADERSHIP DILLON MENDOZA • MARINE ENGINEERING TECHNOLOGY



Dillon Mendoza graduated with a degree in marine engineering technology from Cal Maritime and also earned a 3rd Engineer license credential from the US Coast Guard in May 2023. As a first generation Mexican-American university student from Compton, CA, Dillon rose to the challenges and is now the first from his family to not only graduate from college, but he's also the first to do so in engineering, a fact for which Dillon is extremely proud. In addition to his rigorous coursework, Dillon participated in student government (ASCMA), having served as a judicial advocate. While at Cal Maritime, Dillon considers himself fortunate to have sailed over 10,000 nautical miles learning marine engineering and getting to visit different ports, including Iceland, New York City, Portugal, and Hawai'i. Dillon's mentorship work for CSU-LSAMP was substantial and helped many students in cohorts below his, as he himself benefited from CSU-LSAMP guidance when he was a first-year student. Dillon plans to work in the marine engineering field and sail frequently with his union out of Southern California Los Angeles, but then plans to move shoreside after a few years of sea work to work in engineering.

### OUTSTANDING PERSISTENCE IN STEM TY GUEVARA • MECHANICAL ENGINEERING



Ty Guevara graduated with a B.S. in mechanical engineering from Cal Maritime and a 3rd Assistant Engineering license from the U.S. Coast Guard in May 2023. Over the course of his undergraduate studies, Ty served as an Academic Training Officer, leading underclass students in their familiarization of shipboard engineered systems. Ty also served as one of several Executive Officers on Cal Maritime's training ship for one of the school's annual training cruises. In these capacities, and as a CSU-LSAMP participant, he was proud to help other students find success in their academic careers, foster leadership opportunities, and promote life-long learning. In his three summer semesters working at sea, Ty enjoyed the rigors and rewards of life as a Marine Engineer. Ty plans to pursue a career at sea, joining the marine engineering industry aboard commercial vessels sailing around the world, as well as furthering his education in professional welding disciplines. Ty would like those considering joining the CSU and CSU-LSAMP family to know, "College and higher education is achievable for us all. Never limit your options. Explore every avenue of education, whether it be four-year institutions, community college, professional trade schools, or any other entity that imparts knowledge for your own needs and interests. Never stop learning."

Campus Coordinator:  
Frank Yip, Ph.D.  
Professor of Chemistry  
(707) 654-1723  
fyip@csum.edu





# California State University MONTEREY BAY

Extraordinary Opportunity

## OUTSTANDING RESEARCH IN STEM & SERVICE/LEADERSHIP MONICA URIAS • ENVIRONMENTAL SCIENCE, TECHNOLOGY & POLICY

Monica Urias is a senior majoring in environmental science, technology & policy with a minor in biology at CSU Monterey Bay. Monica has participated in several course-based and independent research projects that have broadened her understanding of research in the biological and natural sciences. In 2020, Monica was accepted into CSU-LSAMP through the Undergraduate Research Opportunities Center (UROC) participating in multiple research programs. Through the Koret Scholars program, she explored the perspectives of women on the effects of climate change. As a UROC Researcher, she studied the evolutionary history of Chelaethiops fishes, an African freshwater species found in the Congo. In addition to research, Monica is an instructional student writing assistant for the CSU Monterey Bay Cooperative Learning Center, and a UROC writing fellow. As a Hispanic and first-generation college student, Monica aims to be a role model for those interested in pursuing a career in STEM. She is currently pursuing her PhD at UC Davis' Ecology Program, where she will be studying colonial tunicates in the genus Botryllus to better understand the mechanisms of stress-induced evolution. She wishes to acquire cellular and molecular techniques to explore how organisms respond to stress while exploring the intersections between evolutionary biology, ecological genomics, and wildlife conservation. Upon completing her dissertation, she plans to continue conducting research as a postdoctoral fellow, ultimately working towards a career in evolutionary ecology.



## OUTSTANDING ACADEMIC & RESEARCH IN STEM SPENCER WINTER • BIOLOGY

Spencer Winter is a double major in biology and human development & family science at CSU Monterey Bay. After completing his Associate's degree, Spencer transferred to CSU Monterey Bay in the hope of finding better job prospects, but instead found a passion for research. In the spring of 2021, he joined the Undergraduate Research Opportunities Center (UROC) Scholars program and CSU-LSAMP. Spencer participated in diverse research experiences at CSU Monterey Bay, UC Davis and Caltech. While working at Caltech with Dr. Lulu Qian, Spencer solidified his research interests on the improvement of catalytic function in DNA circuits that are the basis for molecular computers. Coming from a disadvantaged background, Spencer developed a passion for helping others find success by leading many on-campus workshops, and started a campus publication, Creative Scientists: Art in STEM at CSUMB, that takes art submissions from students to encourage new perspectives in STEM while expanding the meaning behind scientific communication. Spencer has earned several prestigious awards while, including the Sally Casanova scholarship, the CSU Trustees Scholarship, the Barry Goldwater Scholarship, and the Provost's Award for Exemplary Academic Achievement. Spencer returned to Caltech for his PhD in bioengineering funded by the National Science Foundation Graduate Research Fellowship (NSF-GRFP) award. Spencer hopes to return to the CSU system as a professor to continue encouraging students in their STEM pathways.



## OUTSTANDING SERVICE/LEADERSHIP HANNAH KIM • MARINE SCIENCE



Hannah Kim is a recent CSU Monterey Bay graduate, double majoring in marine science and visual & public arts. Growing up, she worked at her family-owned exotic pet store, where she began understanding and communicating the interconnectivity between humans and the environment to the public. Her curiosity led Hannah to join the Undergraduate Research Opportunities Center (UROC) in the fall of 2021 conducting research in freshwater, marine, and tropical ecology labs. In the summer of 2022, Hannah participated in the CSU-LSAMP Costa Rica Summer Research Expedition and later served as the research assistant for the January 2023 CSU-LSAMP Costa Rica Winter Expedition. Beyond research, Hannah is also a talented artist combining her passions of art and science, contributing to projects nationwide, CSU Monterey Bay classroom field guides of local flora and fauna, curated art exhibitions, and murals throughout the campus. Hannah learned how ecosystems work and how to effectively convey the interconnectivity of humans and the environment through her art. As a multifaceted researcher, educator, and science illustrator, she created HEKpaintings, a small business dedicated to conservation and environmental education. Hannah continues her educational journey at Eastern Washington University's Master of Science in Biology Program, where she will investigate the potential for frog skin microbes to combat infectious amphibian diseases. Hannah's future plans are to work at a national academic institution to develop curricula and accessible research materials in order to increase public awareness and engagement in STEM.

Campus Coordinators:

John Banks, Ph.D.  
Director, UROC  
(831) 582-3576  
jebanks@csumb.edu

Jessica Bautista, Ph.D.  
Research Associate, UROC  
jbautista@csumb.edu

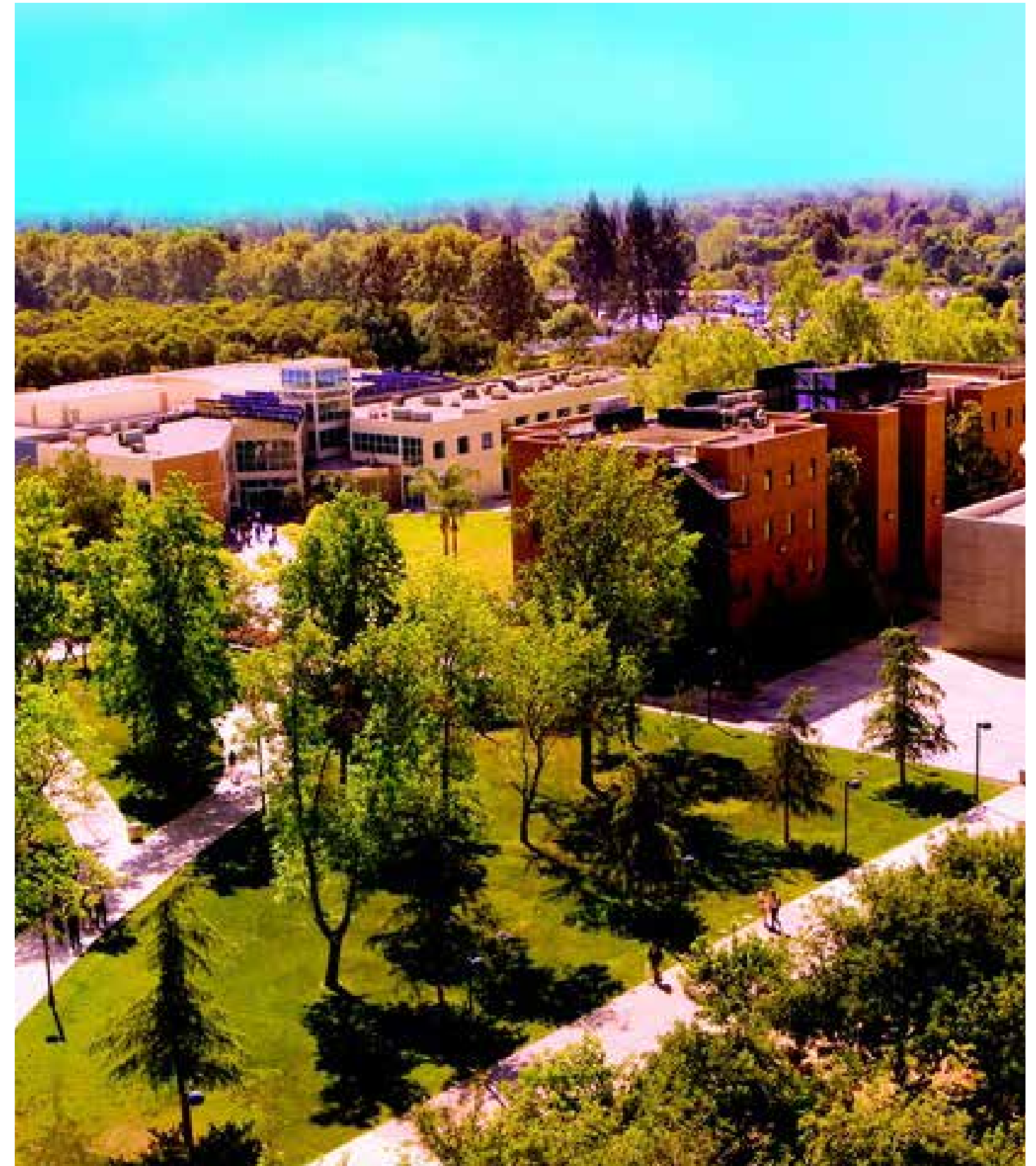


# California State University Northridge



## OUTSTANDING RESEARCH IN STEM BRANNAN SHEPHERD • CIVIL ENGINEERING

Brannan Shepherd majored in civil engineering at CSU Northridge. Brannan conducted research with Dr. Tadeh Zirakian focusing on the buckling stability of columns. He carried out rigorous experimental and analytical studies on the effective-length factors of wood column specimens tested by the Instron Testing Machine at CSU Northridge's Mechanics Laboratory. He applied the fragility methodology, a robust probabilistic approach for reliable prediction of the columns' effective-length values. Brannan's high academic performance, hard-work, diligence, and meticulousness resulted in international recognition and publication of his research work in the Journal of Building Material Science.



### Campus Coordinator(s):

Houssam Toutanji, Ph.D., P.E.  
Dean, College of Engineering  
(818) 677-4501  
houssam.toutanji@csun.edu

Xudong Jia, Ph.D., P.E.  
Associate Dean, College of Engineering  
(818) 677-2183  
xudong.jia@csun.edu



# CAL POLY POMONA

## OUTSTANDING ACADEMIC CRISTIÁN JIMÉNEZ • BIOLOGY

Cristián Jiménez is a fourth-year biology student at Cal Poly Pomona. Since his freshman year, he has been named to the Dean's List every term and to the President's List four times. He has been involved in research as part of the NSF-funded SPIRES program. With an interest in biomedical research and a curiosity for the intricacies of the natural world, Cristián embarked on his academic journey balancing work, academics, research and engaging with his community through volunteer work. Cristián began his research experience studying adipogenesis in human adult stem cells with Dr. Ansel Zhao. Funded through an NSF grant for two years, he has been studying how Metformin, a common diabetes drug, affects the proliferation and differentiation of adult stem cells into fat and bone cells. Combining his academic interest and his passion of service, he aspires to pursue a career as a clinical researcher dedicated to his community. Driven by his desire to make a positive impact, Cristián actively engaged with his community through volunteer work providing academic support to local elementary students, delivering groceries to households for a local food bank, and volunteered at local hospital. Cristián has also served as a peer-mentor and has helped first-year students acclimate to college life. By merging his passion for learning and his genuine desire to help others, he strives to make a positive difference in the lives of individuals in need.



## OUTSTANDING RESEARCH IN STEM EMILIANO GONZALEZ • GEOLOGICAL SCIENCES

Emiliano Gonzalez is currently a geological sciences major at Cal Poly Pomona set to graduate in the fall of 2023. As an NSF-funded scholar, and in collaboration with Dr. Mathieu Lapotre and Dr. Nils Prieur in the Earth and Planetary Surfaces Processes lab at Stanford University, Emiliano researched whether target lithology strongly influenced impact boulder generation and degradation on the lunar surface. Emiliano's results suggested that the lunar Highland lithology generated more and larger boulders upon initial impact but potentially degraded faster compared to the Mare lithology. He used the data collected during his research to aid Dr. Prieur in creating an automatic boulder detection algorithm that will aid the research of future planetary scientists. He presented the findings of his research at the American Geophysical Union Fall 2022 meeting in Chicago to an audience of NASA and academic planetary scientists. Prior to this research experience, Emiliano participated in an internship with the United States Geological Survey and co-authored a published paper with Dr. Devin McPhillips. Emiliano surveyed for fragile geological features in the Pacific Northwest that could provide geological constraints to the intensity of prior earthquake shaking in Oregon and Washington. Emiliano has been awarded the Margret Van Buskrik Memorial Scholarship and the Cheetos Deja Tu Huella Scholarship. He plans on advancing his education by pursuing a PhD in planetary science and hopes to inspire the future generation of Hispanic scientists to pursue careers in the geosciences.



## OUTSTANDING RESEARCH IN STEM IVY WANG • CHEMISTRY

Ivy Ying Wang graduated Summa Cum Laude with a B.S. in chemistry and double-major in nutrition science from Cal Poly Pomona in spring 2023. As a first-generation immigrant and first-generation college student, Ivy is grateful for the guidance that Cal Poly Pomona faculty have provided in her journey. Her research experience started in Prof. Alex John's organic chemistry lab where she synthesized novel molybdenum catalysts for their application in critical chemical transformations. She spent a summer at Northeastern University studying the use of corn protein scaffolds in artificial meat fabrication. Ivy has presented eight times at regional and national conferences, and received the American Chemical Society Undergraduate Poster Award. Ivy also participated in a fall internship at Abstrax Tech where she worked as a Research & Development intern. Outside of research, Ivy served as Treasurer, and then President, of Science Council, the organization overseeing all clubs under the College of Science, as well as a Student Representative in the Dean's Circle. Ivy was a CSU Leader in Science awardee, a Dr. Goldstein Distinguished Research awardee, a McNair Scholar, and a President's Scholar. Ivy was accepted into 7 PhD programs and is attending UC Irvine as a National Science Foundation Graduate Research Fellowship Program (NSF GRFP) recipient to pursue a PhD in inorganic chemistry. Her goal is to become an adaptable and innovative researcher that can motivate other scientists from underrepresented groups to pursue their ambitions.

## OUTSTANDING RESEARCH IN STEM TIMMY NGUYEN • CHEMISTRY

Timmy Nguyen graduated Summa Cum Laude with a double B.S. in chemistry and biotechnology, and a minor in physiology. As a first-generation Vietnamese-American student, Timmy's determination to pursue a career within STEM was strengthened by his passions in research and mentoring. In 2021, he began his research journey with Dr. Thomas Osberger, leading the efforts to create a synthetic library of substituted isatin derivatives as potential antibacterial agents applying organic techniques to synthesize novel compounds. Over the course of two years, he presented his research findings at eight regional conferences and two national conferences. He participated in the Summer NSF Research Experiences for Undergraduates Program at the University of Minnesota in 2022 with Dr. Christy Haynes on optimizing the substrate design of Surface-Enhanced Raman Spectroscopy (SERS) for rapid virus detection. He was awarded the 2023 ACS I.M. Kolthoff Enrichment Award and first place for Undergraduate Research Posters at two national conferences. Aside from research, Timmy was also a strong advocate for science communication amongst the community in his efforts as president of the Student Members of the American Chemical Society (SMACS), leading outreach events at the local children's daycare center to cultivate a new generation of scientists. Timmy is currently pursuing a PhD in chemistry with a focus in analytical chemistry at the University of Minnesota, continuing his research in SERS for improved virus detection. He aims to continue advocating for improvements in diversity, equity, and inclusivity in STEM.



Campus Coordinator:

Steve Alas, Ph.D.  
Professor, Biological Science  
(909) 869-4546  
alas@copp.edu





# SACRAMENTO STATE

## OUTSTANDING ACADEMIC & RESEARCH IN STEM ABIGAIL MCINNES • BIOCHEMISTRY

**A**bigail McInnes graduated Summa Cum Laude with a double major in biochemistry and biological sciences, and a 4.0 GPA from Sacramento State in May 2023. Abigail received the Outstanding Graduate awards for the Department of Chemistry and the College of Natural Sciences and Mathematics. Abigail is a first-generation college student who supported herself throughout her time in college. After transferring to Sacramento State from Cosumnes River College, she joined CSU-LSAMP and Sacramento State RISE, which allowed her to focus full-time on her studies and research. She joined Dr. Johannes Bauer research lab where she took the lead on analyzing data from prior experiments. Her work turned into a published peer-reviewed manuscript on which Abigail is a co-author. Abigail then became the lead on a project focused on characterizing a strain of hyper-aggressive *Drosophila* fruit flies. She presented her work at several events, including the SACNAS National Diversity in STEM Conference. She won several presentation awards, including first place for her oral presentation at the Annual Sacramento State Spring Research Competition. She also served as the Vice President of the SACNAS at Sac State chapter and the Women in STEM club. Abigail plans to pursue a PhD to conduct research associated with human health, and she hopes to one day give back, inspire, and support others the way that she was supported throughout her time in college.



## OUTSTANDING RESEARCH IN STEM XONG VUE • BIOCHEMISTRY

**X**ong Vue graduated with a bachelor's degree in biochemistry in spring of 2023. Xong is a first-generation Hmong student. He transferred to Sacramento State after graduating from Cosumnes River College with an associate degree in biological sciences in 2020. At Sacramento State, he was a CSU-LSAMP research scholar in Dr. Enid Gonzalez-Orta's lab investigating soil microbes and their secondary metabolites with antibiotic potential. He also participated in the UC Davis Biology Graduate Admission Pathway summer program measuring oxidative stress markers in the detoxification and energy metabolism pathways of mice liver tissues. After the summer ended, he continued his research project at UC Davis as a Sacramento State RISE trainee. He presented his research at the Annual Sacramento State Spring Research Competition where he won first place. He is pursuing his PhD in chemistry and chemical biology at UC Davis.



## OUTSTANDING RESEARCH IN STEM RASHEL JACOBO • BIOCHEMISTRY

**R**ashel Jacobo is a first-generation Mexican American student who graduated Magna Cum Laude from Sacramento State in spring of 2023 with a B.S. in biochemistry. After her first year at Sacramento State, she became a CSU-LSAMP scholar and began research with Dr. Katherine McReynolds. Her research centered around click-glycopolymer synthesis for broad anti-viral applications with a focus on HIV. During the COVID-19 pandemic, her research goals broadened for her compounds to serve as SARS-CoV-2 antagonists. Rashel then joined Sacramento State RISE and continued honing her research skills. Rashel also participated in the 2022 Bioscience Scholars Program at UC Los Angeles, where she worked with Dr. Steve Dubinett on the molecular mechanism of all-trans retinoic acid as a combination treatment option for non-small cell lung cancer. She presented her research at multiple national conferences, such as the 2023 American Chemical Society and the 2022 ABRCMS conferences; and won awards, including first place at the Annual Sacramento State Spring Research Competition and second place at the 35th CSU Systemwide Research Competition. Beyond her research, Rashel was treasurer for the SACNAS at Sac State chapter for 2 years. Her achievements led her to receive five graduate program acceptances, ultimately deciding to pursue a PhD in molecular pharmacology at UC Los Angeles.



## OUTSTANDING RESEARCH IN STEM STACI ROCCO • BIOLOGICAL SCIENCE

**S**taci Rocco obtained her B.S. in biological sciences with a concentration in cell and molecular biology and a minor in chemistry from Sacramento State in the spring of 2023. As a first-generation student, she began her college journey at a local community college. While attending classes and working full-time, she raised her younger brother. After transferring to Sacramento State, she joined the Science Equity Education (SEE), CSU-LSAMP, and Sacramento State RISE programs, allowing her to conduct research with Drs. Andrew Reams and Semarhy Quiñones. Her research and innovative thinking contributed to understanding the origins of gene amplifications and discovering the underlying mechanisms of these mutations. She presented her research at the Annual Sacramento State Spring Research Competition, where she won first prize. Staci is also co-author in a peer-reviewed publication. Her accomplishments and passion for research led to her acceptance into a neuroscience PhD program at the University of Rochester School of Medicine and Dentistry. She looks forward to continuing her education and contributing to the world through her research and future discoveries.



**Campus Coordinator(s):**  
Enid Gonzalez-Orta, Ph.D.  
Professor, Biological Sciences  
(916) 278-6519  
gonzalezorta@csus.edu

Semarhy Quiñones-Soto, Ph.D.  
Lecturer, Biological Sciences  
(916) 278-3838  
e.quinones-soto@csus.edu





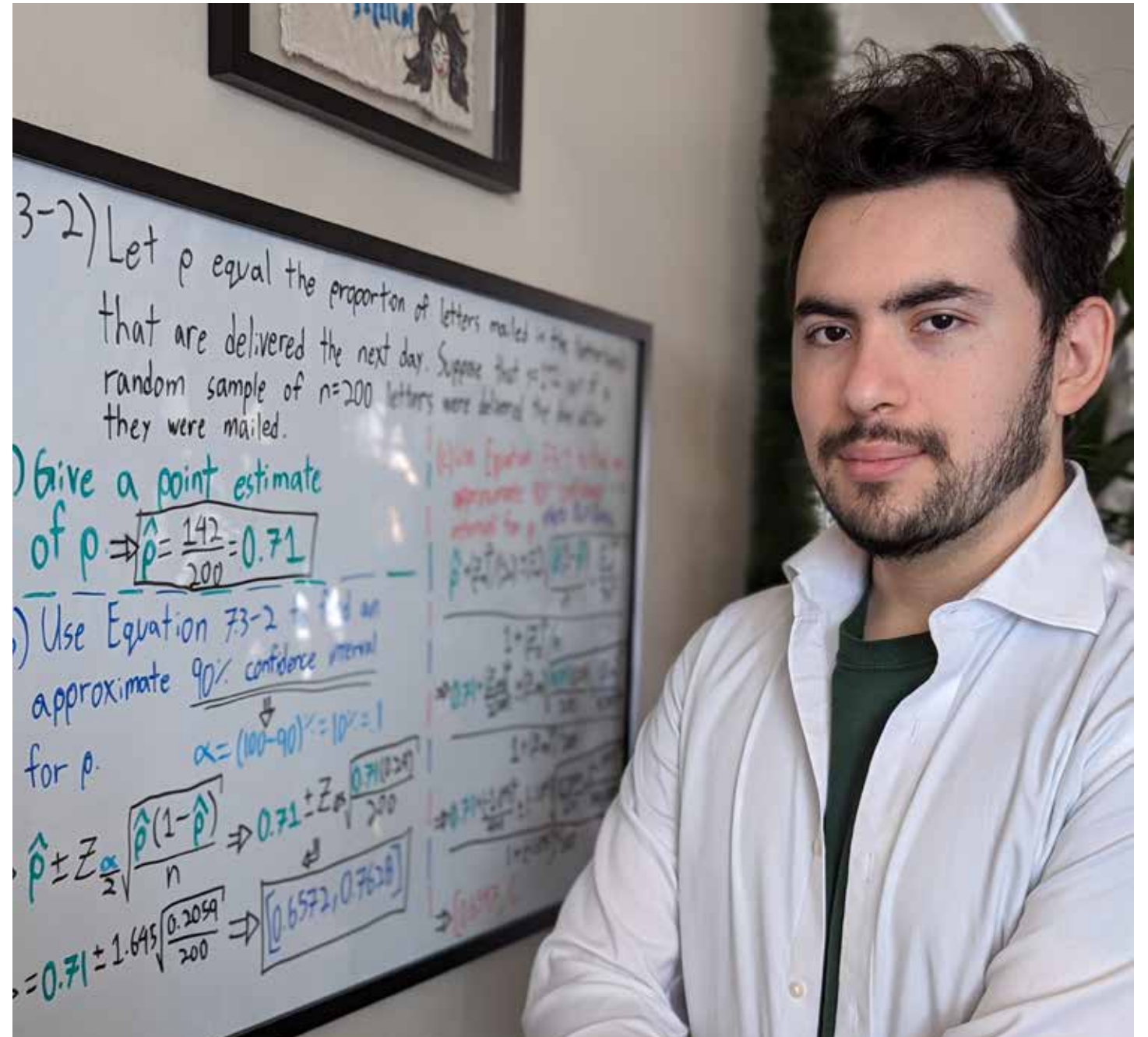
OUTSTANDING SERVICE/LEADERSHIP  
YADIRA OLVERA • MATHEMATICS



Yadira Olvera graduated from California State University San Bernardino in Spring 2022 with a Bachelor of Science in Mathematics and a Minor in Economics. As an undergraduate at CSUSB, she obtained a paid internship in the San Bernardino school district as a tutor and translator for English learners and she worked on campus with the International Admissions Office. At the same time, she was placed on the Dean's List for her outstanding academic performance in multiple semesters. She is currently pursuing a Master's degree in Mathematics at Cal Poly Pomona where she enjoys doing research in probability theory. She also works for a charter school where she continues to help English learners and newcomers overcome the language barrier and to provide guidance to continue their education. In the future, Yadira plans to consider Ph.D. programs as well as science careers where she feels she's making a difference in people's lives.

OUTSTANDING ACADEMIC & SERVICE/LEADERSHIP  
JOSÉ GARCIA • MATHEMATICS

José Garcia graduated from California State University San Bernardino in Spring 2023 with a Bachelor of Science in Mathematics with an Applied Concentration. As an undergraduate at CSUSB, he received the Dean's Letter of Recognition for his outstanding academic performance in multiple semesters. As an LSAMP scholar, José served as a peer facilitator of LSAMP Academic Enrichment Workshops for two full academic years as well as a summer. During this time, he was invaluable to the CSU-LSAMP @ San Bernardino program in informing new students about the benefits of the LSAMP program as well as helping students strengthen their preparation in their first-year mathematics courses. José plans to apply to Master's and Ph.D. programs in the upcoming year.

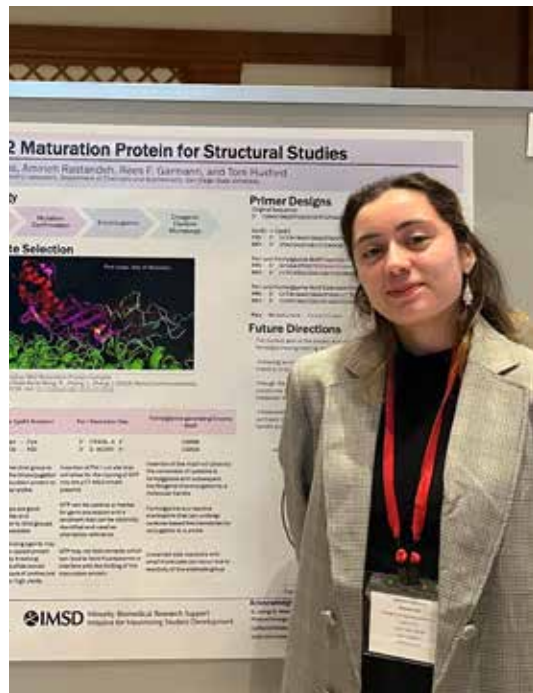


Campus Coordinator(s):

Lynn Scow, Ph.D.  
Associate Professor, Mathematics  
(909) 537-5373  
lynn.scow@csusb.edu

Joseph Heras, Ph.D.  
Professor, Biological Sciences  
(909) 537-5315  
joseph.heras@csusb.edu





## OUTSTANDING ACADEMIC GABRIELA CONTRERAS • BIOCHEMISTRY

**G**abriela Andrea Contreras completed her fourth year as a biochemistry major at San Diego State University and will graduate in December 2023. She has maintained a high GPA throughout her education. With the exception of the semester that she studied abroad in South Korea, Gabriela made the Dean's List every semester. Gabriela is a researcher in Dr. Tom Huxford's Structural Biochemistry Laboratory. She is in charge of her own research project titled "Engineering MS2 Maturation Protein for Structural Studies" in collaboration with the Physical Virology Laboratory. Gabriela also worked with students in the Physical Virology Laboratory crystallizing and imaging newly discovered virus particles. Outside of her research, she has been learning how to use computational chemistry programs and tools, such as VMD, Qchem, and AMBER, in order to support her benchwork with the mentorship of Dr. Yuezhi Mao. In addition to her participation in CSU-LSAMP, Gabriela was accepted into the Initiative for Maximizing Student Development (IMSD) program in the summer of 2022. Gabriela plans to pursue either a Master's or doctoral degree in biochemistry and molecular biology.

## OUTSTANDING SERVICE & LEADERSHIP BRIANNA ANTUNEZ • BIOCHEMISTRY

**B**rianna Antunez completed her fourth year as a biochemistry major at San Diego State University, where she actively participated in various organizations. Serving as president of the SDSU SACNAS Chapter, Brianna gained invaluable insights into effective leadership and developed a profound passion for assisting others in the field of STEM. Without Brianna's leadership and determination, the SDSU SACNAS Chapter would have ceased to exist. Through her involvement with the Latinx Student Union, Brianna found a meaningful connection to her cultural heritage, which deepened her understanding of her own interests and aspirations. Guided by her personal values and interests, she dedicated herself to giving back to underrepresented communities in San Diego County, particularly by encouraging and supporting young individuals to pursue careers in STEM. Brianna created strong relationships with mentors in the Chemistry Department as well as with undergraduate and graduate students who are also actively involved in organizations. These connections provided her with valuable guidance and support as she navigates her academic and professional journey. Thanks to CSU-LSAMP, Brianna continued her research pursuits in the biochemistry lab of Dr. Youngkwang Lee. This experience not only highlighted the significance of research but it also underscored the importance of mentorship in fostering personal and intellectual growth.



## OUTSTANDING PERSISTENCE & PERSEVERANCE MARIEL ROSALES • MICROBIOLOGY

**M**ariel Rosales graduated with a B.S. in microbiology with an emphasis in clinical laboratory science graduating with a 3.28 GPA from San Diego State University in May 2023. The road to graduation was long and arduous as she decided to take on the challenge of chasing dreams while raising two children. She witnessed her parents make it in America, yet the environment she grew up in made it difficult to reach what they were trying to achieve. Mariel is grateful to have had parents that exemplify hard work and dedication. Their experiences motivated her and helped her realize her potential. She applied that potential to her career goals. Most importantly, she wanted to be a role model for her daughters. Entering the university, Mariel was unsure if she was "science material" or had what it took to be a scientist. Through CSU-LSAMP, Mariel explored research by joining Dr. Anca Segall's lab as a research assistant focusing on the microbiota of patients diagnosed with an inflammatory bowel disease – the IBD Project. Mariel worked on isolating and purifying bacteria and their associated bacteriophages with the goal of characterizing phages associated with the dysbiosis causing IBD. In addition to academics, research, and raising two daughters, Mariel was eager to advance her skills and apply concepts during her final semester. So, she took on a part-time job at a biotech company where she continues to work today.



## CAMPUS COORDINATORS

Estralita Martin, Ph.D.  
Assistant Dean for Student Affairs  
College of Sciences  
Director of CASA  
(619) 594-4009  
esmartin@sdsu.edu

Thelma Chavez  
Coordinator, LSAMP-MARC-MESA  
College of the Sciences  
(619) 594-7195  
thelma.chavez@sdsu.edu





# SAN FRANCISCO STATE UNIVERSITY

OUTSTANDING RESEARCH IN STEM  
PHELAN GLENN • BIOCHEMISTRY



**P**helan Glenn graduated with a biochemistry degree from San Francisco State University. She pursued a biochemistry degree because she appreciated both biology and chemistry, and had a passion for understanding how science affects people. Her high school biology and chemistry teachers fostered her enthusiasm for science as she had two women who encouraged her to continue her science education and apply herself through research. Even though she struggled with imposter syndrome and some courses at her city college, while commuting large distances with an unsustainable work-life balance, she transferred to San Francisco State University in 2020. She then joined Dr. Misty Kuhn's research lab. During the pandemic, she cared for her grandfather who was diagnosed with Alzheimer's and learned computational research techniques to apply to in vitro experiments. Her hard work was recognized through the CSU-LSAMP award and a full NIH-MARC fellowship. She was then awarded the Genentech PINC Scholars Program fellowship for participating in the computational research analysis program, Promoting Inclusivity in Computation (PINC). This fresh interest in coding led her to Dr. Pleuni Penning's lab where she has been developing predictive modeling of Alzheimer's disease data, merging her life experiences with her interest in how science can affect people. She is currently pursuing her PhD in the Neuroscience Interdepartmental Program at UC Los Angeles.

OUTSTANDING RESEARCH IN STEM  
CHRISTIAN CAMAÑO • MATHEMATICS



**C**hristian Camano is a senior majoring in mathematics for advanced study and computer science at San Francisco State University. He is an independent first-generation student who experienced homelessness and exposure to domestic and substance abuse as a child, but clearly rose above that, as acknowledged by his substantial research experiences and his receipt of numerous awards, including the CSU-LSAMP. Over the past two years, he conducted research at the Berkeley National Laboratory, investigating optimization schemes for numerical linear algorithms such as iterative eigen solvers through randomized matrix theory and tensor train decomposition (TTD). These methods aim to resolve issues with time and space complexity when working with very large Hamiltonian matrices originating from problems in material science, electronic structure theory, and more. Christian also focused on exploiting the topological properties of higher dimensional manifolds to develop more robust dimensionality reduction schemes for qualitatively analyzing large data sets. His most recent research has focused on Stien Variational Gradient Descent for training concurrent Bayesian neural networks. This work is currently under review for publication. In summer 2023, he worked on exploring tensor decomposition algorithms at Caltech and planned to write a paper on experimental randomized tensor network contraction schemes.

Campus Coordinator:  
Megumi Fuse  
Professor, Biology  
Director of Student Enrichment Opportunities  
(415) 405-0728  
fuse@sfsu.edu



# SJSU SAN JOSÉ STATE UNIVERSITY



## OUTSTANDING ACADEMICS & RESEARCH IN STEM ESMERALDA MENDOZA CORRALES BIOLOGICAL SCIENCES

**E**smeralda Mendoza Corrales is a senior majoring in biological sciences with a concentration in microbiology. Esmeralda is part of the RISE and McNair Scholars programs, both of which have supported her pursuit continuing to a graduate school degree. She has been an active research student in Dr. Van Wyngarden's atmospheric chemistry lab for two years. In the clouds project, she studies the speciation of glyoxal and methylglyoxal, common species found in atmospheric aerosols, during cloud formation as water activity and pH change drastically. She uses high-resolution quadrupole mass spectrometry to measure chemical composition and observe kinetic behavior. Understanding the effects of cloud formation on the speciation of organic aerosols will contribute to the creation of more accurate climate models. She presented her research at the American Chemical Society conference. She participated in the UC San Francisco summer research training program, where she conducted biomolecular research focusing

on the autoregulatory role the juxtamembrane plays in MET, a receptor tyrosine kinase. Esmeralda is part of Breakthrough Silicon Valley's peer mentor program and serves as a mentor to first-year students by helping them adjust to college. Esmeralda has maintained a 3.8 GPA and will graduate in fall of 2023. She plans to apply to graduate schools and hopes to pursue a PhD in a biology or chemistry related field.

## OUTSTANDING RESEARCH IN STEM ESTEBAN ESPINOZA CHEMICAL ENGINEERING

**E**steban Espinoza graduated with a B.S. in chemical engineering with a GPA of 3.1. Since June of 2022, he has performed research with Dr. Nicholas Esker in the area of nuclear targetry. This field involves the use of thin films made of isotopically enriched materials as a target for a particle accelerator beam. Esteban was the lead lab group member in simulating the heat transfer of a target as energy is provided by the beam, performed using Python script and ANSYS finite element analysis software, as well as planning and pricing out a process for the reduction of titanium dioxide with calcium hydride in a tube furnace. Esteban also assisted in the production of bismuth targets using resistive thermal evaporation and high-density polyethylene using solvent casting. In addition, targets produced were characterized using alpha spectroscopy, optical microscopy, and infrared spectroscopy. Esteban included his work for his senior project, created and presented a poster at the SJSU chemical engineering department's Graduate Research and Senior Projects day. Esteban is also a tuba player in the Azores Band of Escalon, a Portuguese band that performs at various religious traditional Portuguese events throughout central California. He will be traveling with this group to the Azores island of Portugal to perform in a music festival. Esteban will continue his education at Oregon State University pursuing a PhD in nuclear engineering, researching lanthanide ceramics in molten salt synthesis.



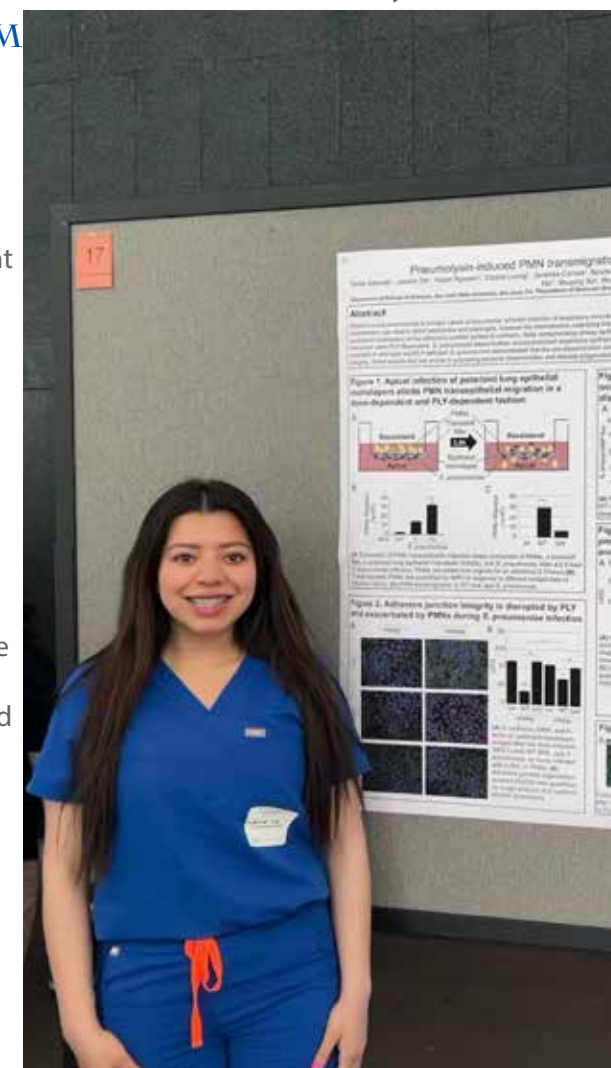
## OUTSTANDING ACADEMICS & RESEARCH IN STEM ABIGAIL RAMIREZ CHEMISTRY

**A**bigail Ramirez graduated with a B.S. in chemistry with a concentration in biochemistry from San Jose State University in spring 2023. In fall 2021, she transferred from Mission College and shortly thereafter started research with Prof. Madalyn Radlauer on the design and synthesis of copper catalysts tethered to organic polymers as functional enzyme mimics. She became part of CSU-LSAMP and RISE in spring 2022. Abigail presented her work at national conferences, including ABCRMS and ACS, where she networked with industry and academic professionals. Through all these interactions, she explored various career paths through the point of view of professionals who have followed traditional and nontraditional paths. Abigail remained an active member in Prof. Radlauer's research lab while also serving as an instructional student assistant for several biochemistry courses and maintaining a 3.7 GPA. She was also awarded the 2022 ACS Division of Analytical Chemistry Undergraduate Award in Analytical Chemistry. Abigail plans to pursue a PhD in chemistry after exploring the biotech industry. Her career goals are to become a medicinal chemist and to empower women of color in the STEM community.

## OUTSTANDING ACADEMIC, RESEARCH IN STEM & SERVICE/LEADERSHIP KATHERINE COLL BIOLOGICAL SCIENCES

**K**atherine Coll is a senior majoring in biological sciences with a concentration in physiology. Katherine has excelled academically, maintaining a rigorous schedule with consistent A's in her biology classes and has been an active member of the Dr. Walter Adams lab since 2019. She was selected to the McNair Scholars Program to continue her research on how lung structure and function is impacted by respiratory infections and immune responses. Katherine plans to connect her passion for research and medicine by pursuing an MD/PhD. Her passion for her future career has inspired her to give back to the community through volunteer work at the Stanford Blood Center Clinic, the Second Harvest Food Bank, and Kyo Care. Additionally, Katherine has demonstrated leadership skills by being an active member of various organizations on campus and serving as president and vice president of the San Jose State University SACNAS chapter. As a teacher's assistant for the human cadaver lab, Katherine has helped educate her peers and hopes to positively impact their academic experiences. Her academic accomplishments and leadership on campus throughout her undergraduate career has earned her the Outstanding Senior Award for the graduating class of 2023.

Campus Coordinator:  
Karen Singmaster, Ph.D.  
Professor of Chemistry  
(408) 924-4980  
karen.singmaster@sjsu.edu





# CAL POLY

SAN LUIS OBISPO

OUTSTANDING ACADEMIC  
DANIEL MALDONADO • CIVIL ENGINEERING



Daniel Maldonado's life has been shaped by his determination to overcome challenges and create a better future for himself and his family. Daniel's parents worked hard to provide for their family. Despite the personal/financial hardships they encountered, they instilled in Daniel a strong work ethic and a belief in the power of education. Throughout his academic journey, Daniel faced various obstacles, he would stumble and fall but he would get up, his perseverance remained unwavering. Despite experiencing personal difficulties, such as his parents' divorce, his father's deportation, and subsequent financial instability, he was able to earn his diploma. After a few years balancing full-time employment and college, Daniel embarked on a different path and gained valuable work experience in the Ironworker trade alongside his older brothers. This allowed him to be financially stable and develop important skills in a demanding field. However, driven by his desire for personal growth and a passion for learning, Daniel made the decision to return to college. He enrolled at Allan Hancock College, where he committed himself to his studies and demonstrated remarkable improvement. He was chosen to be part of the NSF S-STEM ENGAGE scholarship program, and with their support he was able to flourish. Daniel's perseverance paid off, and he successfully completed his coursework, earning the opportunity to transfer to Cal Poly, SLO. Motivated to make a positive impact, Daniel is attending Stanford University to obtain his M.S. in civil engineering. He aims to utilize his education and skills to create opportunities for marginalized communities.

Campus Coordinator:

Jane Lehr, Ph.D.  
Professor, Ethnic Studies  
(805) 756-2875  
jlehr@calpoly.edu

OUTSTANDING RESEARCHER IN STEM AND SERVICE/LEADERSHIP  
REGINA HOCKERT • KINESIOLOGY



Regina Hockert received their B.S. in kinesiology with minors in dance and women's and gender studies. During their undergraduate education, Regina became highly involved with a Plain Language Communication and accessible information dissemination research lab, working with Dr. Jafra Thomas. They focused this research on accessibility and ensuring other underrepresented people are being considered in the creation, design, and implementation of research and the knowledge gleaned from it. Through this, they became involved in CSU-LSAMP and had the opportunity to present their research at conferences, including the Western Society of Kinesiology (receiving the 2021 Robert Carlson Award for Outstanding Review of Literature), Southwest American College of Sports Medicine, and the Society of Behavioral Medicine (receiving a Meritorious Abstract Award). In addition to their scientific research, they spent all four years of their undergraduate degree doing disability advocacy, including writing Cal Poly Student Government legislation to create a permanent ASI Secretary of Accessibility position that advocates for fellow disabled college students, a position they served in for two years. They also helped found the only current club on Cal Poly SLO's campus created for and by disabled students, hosted multiple cross-identity events, and brought in disabled speakers such as the late Judy Heumann. As a queer, trans, disabled, first-generation college graduate, Regina has worked through countless barriers to complete their undergraduate education and plans to continue pursuing higher education in disability studies and kinesiology. They are pursuing a career that combines their passion for dance, advocacy, kinesiology, and education by helping shape the experience of young athletes and those with disabilities.

OUTSTANDING RESEARCHER IN STEM AND SERVICE/LEADERSHIP  
VANESSA CERVANTES • ANIMAL SCIENCE

Vanessa Janet Cervantes is an Animal Science major. In her two years spent at Cal Poly to date she has achieved 1,000 + veterinary and research hours. She has explored a variety of clubs ranging from Dressage Team, the Zoo & Exotic Animals Careers (ZEAC) club, and the Cal Poly Barbell Club (CPB). Vanessa has made great efforts to stay involved within her major and college via her mentored research activities, including research projects on Bull fertility, microbiome, and behavior, Layer Egg quality, and bovine reproduction research. She is also a member of the Animal Science & Dairy Science (ASCI/DSCI) Board. She participated as a speaker in the Fresh Tracks First-Generation 2023 panel regarding low-income first-generation minorities in agriculture and environmental sciences. Vanessa was featured in the Cultivate magazine published by the Cal Poly College of Agriculture, Food & Environmental Sciences (CAFES) after being interviewed by Anya G. Rehon discussing her experience as a first-generation student at Cal Poly. Vanessa has traveled all around the world in hopes of assisting conservation centers with marine and wildlife rehabilitation and research. She has traveled through Costa Rica, Australia, and South Africa where she sought to leave her mark and find herself a little more. Most recently, Vanessa developed a partnership with Mary Beth Glass, Director of Admissions at Loop Abroad, so that other Cal Poly students could join her in Australia to achieve hands-on experience working with veterinarians from all around the world and assisting endangered species.



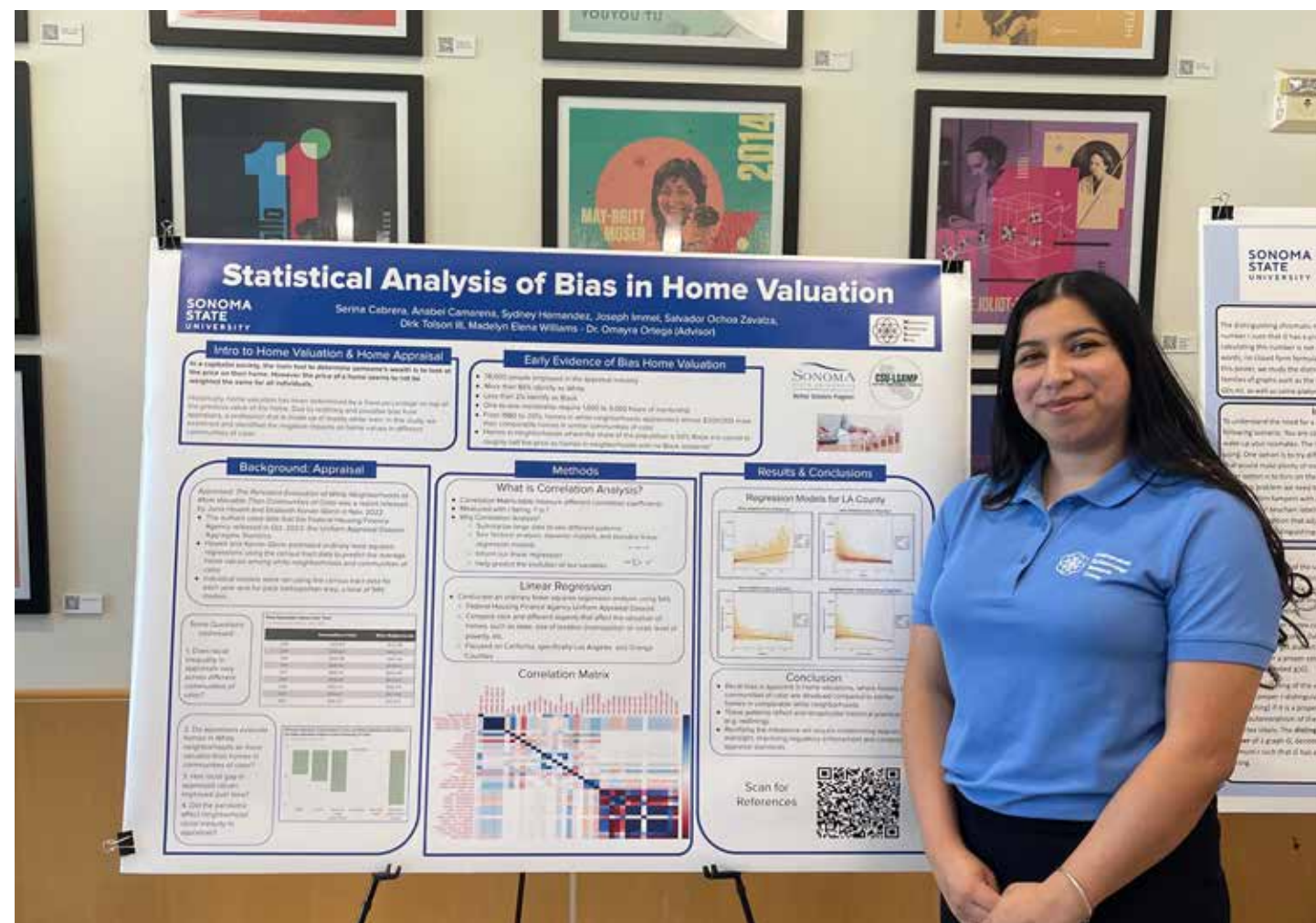
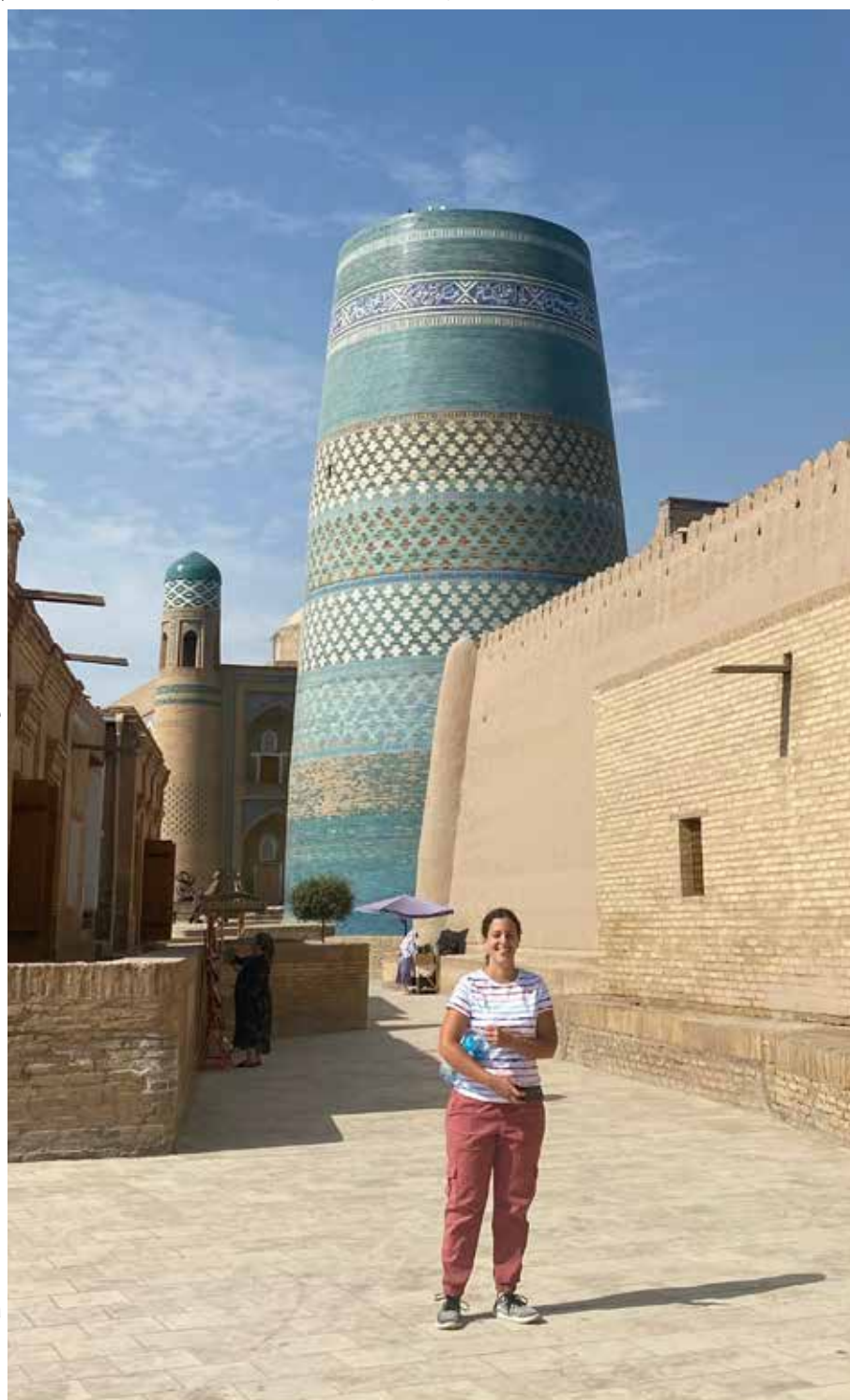




## COMPELLING PERSONAL STORY

### CAMILA CARMONA • STATISTICS

Camila Carmona graduated with a B.S. in statistics, a B.A. in philosophy, and a minor in mathematics in May 2023. Having recently moved from El Salvador, Camila's journey began at Santa Rosa Junior College (SRJC). Growing up, Camila struggled in school and was frustrated that her grades did not reflect her persistent efforts. She found out years later that she simply learned and processed things differently. She eventually found comfort in math and philosophy classes, and joy in exploring the interrelatedness between the two. Working on math problems had a special way of calming her mind while expanding her curiosity and boosting her self-confidence. Working as a tutor, and simultaneously receiving tutoring for her own classes, Camila gained a deeper understanding of mathematical concepts. She is very proud to have graduated from SRJC with Highest Honors. At Sonoma State University, Camila joined CSU-LSAMP, and in the summer of 2022, she participated in the IRES in Uzbekistan program, where she attended lectures in mathematical physics. In January of 2023, she participated in the CSU-LSAMP Costa Rica Winter Expedition, where she collected samples of spiders and beetles for biodiversity research in ecology. These experiences allowed her to make friends from different STEM fields and gain insight in how a statistics degree might be used across disciplines and countries, all while learning about and appreciating the rich cultural, historical, and natural beauties of Uzbekistan and Costa Rica. She is thankful for the support and research experiences that helped her accomplish her goals, and have inspired her to pursue a master's degree in biostatistics.



## COMPELLING PERSONAL STORY

### ANABEL CAMARENA • APPLIED MATHEMATICS

Anabel Camarena graduated with a B.S. in mathematics (with Distinction) in May 2023. Anabel enrolled at CSU Long Beach in 2011 while she was supporting and raising her two siblings. In 2014, she became a single mother and was forced to drop out of school to work and provide for her family. Her five-year experience in the staffing industry allowed her to work her way up to management and provided her with skills that she could use to establish a foundation for her academic success. After her son began attending Kindergarten, Anabel returned to school and graduate from San Bernardino Valley College in 2021 with a good GPA, but her cumulative GPA was low, resulting in rejections from the five CSUs in Southern California. To pursue her academic goals, she moved nearly 500 miles away into a homeless shelter to continue her education at Sonoma State. During her first semester, Anabel fell in love with mathematical modeling and realized her desire to pursue further education in graduate school. She became a Cal-Bridge and McNair Scholar, joined MESA, and the Math Club, where she became President in 2022, and the Mathematical Epidemiology Research Group (MERG). In summer 2022, she participated in a program at the Advanced Studies Institute of Mathematical Physics at Urgench University in Uzbekistan. This experience exposed her to graduate-level mathematics, including advanced modeling techniques. Her research in MERG focused on identifying racial bias in home valuation by investigating whether there is evidence of gentrification using linear regression models in SAS programming with Census tract data from 2017 to 2021. Anabel is attending UC Irvine's PhD program in mathematics and she hopes to serve her community and be a mentor to others facing similar challenges.

Campus Coordinator:  
N. Sam Brannen, Ph.D.  
Professor, Mathematics  
(707) 664-2591  
brannen@sonoma.edu



# California State University | Stanislaus

## OUTSTANDING RESEARCH IN STEM & SERVICE/LEADERSHIP SHERLY YAGHOUBI • COMPUTER SCIENCE

Sherly Yaghoubi graduated Summa Cum Laude with B.S. degrees in computer science and mathematics in spring 2023. She is the first in her family to go to college and supported herself by working for the Educational Opportunity Program (EOP) and for the Mathematics Department. In addition, she has received scholarship support, including the Cal-Bridge CS Scholars program. As an ambassador for EOP, Sherly has been a valuable mentor for other incoming first-generation students by helping them adjust to college and succeed in their courses. She was consistently involved in many clubs at Stanislaus State, serving as the President of the Computer Science club and the Public Relations Representative for the Math club. As part of the Computer Science club, she organized Leetcode workshops to help students improve their interviewing skills and arranged for multiple speakers to share their experiences with Stanislaus State students. Sherly conducted research with Dr. Jessica De Silva in mathematics studying the success rate of first-generation students in upper division math classes during the 2020-21 academic year. In the summer of 2021, she participated in a research project on a higher-order image segmentation algorithm at Lawrence Berkeley National Laboratory. During the following summer, she conducted research on a Molecular Electronics microchip at the Institute for Pure and Applied Mathematics at UC Los Angeles. In fall 2023, Sherly started her M.S. in computer science at UC Los Angeles with full funding through the Deepmind Fellowship.



## OUTSTANDING RESEARCH IN STEM & SERVICE/LEADERSHIP AUSTIN HOACH • MATHEMATICS



Austin Hoach graduated Summa Cum Laude with a B.A. in mathematics from Stanislaus State in spring 2023. While studying full time to obtain his degree, he juggled work, participated in many extracurricular activities, and did research with Dr. Curtis Pro. On campus, he worked for the University Police Department serving and protecting the safety of the students and faculty at Stanislaus State. In addition, he was a student-athlete on the men's cross country and track and field teams, serving as team captain during his senior year. While balancing his academics, work schedule, and practices, he was also very involved in his research. Austin worked on the Delaunay Graph of Epsilon-Gromov Sets. Additionally, in the summer of 2022, he participated in the CSU-LSAMP IRES program in Uzbekistan to research Parabolic Riemann Surfaces with Dr. Alimardon Atamuratov at the Uzbekistan Academic of Sciences. Aside from his research achievements, he also helped to improve the quality of many undergraduate student experiences. He was the Math Club Treasurer during his junior year and the President in his senior year. Moreover, he was the Pi Mu Epsilon Chapter president and organized the first Stanislaus State's Integral Bee. In fall 2023, Austin started his PhD studies in pure mathematics at the University of Illinois-Chicago working in geometry and topology.

## OUTSTANDING RESEARCH IN STEM & SERVICE/LEADERSHIP LYNN BREITHAUPT • BIOLOGY



Lynn Breithaupt graduated with a B.S. in biology from CSU Stanislaus in May 2023. As an outstanding student, Lynn excelled in academics, campus leadership, and research. While consistently on the Dean's List, Lynn was a leader in the Biology Student Association and the Plant Diversity club. Guided by her love of botany, she led volunteer and teaching opportunities for the clubs, as well as doing plant sales to support the campus greenhouse. She has spent a considerable amount of volunteer time on the Trans California Pathway, a campus transect that simulates the various plant communities from the Central Valley to the Sierra Nevada. As a conservation advocate, Lynn worked with her community to support a Narrowleaf Milkweed project, where she successfully germinated and replanted 500 Milkweed plants on the Trans California Pathway. This replanting was done with K-12 students from the Turlock community and was used as an opportunity to teach kids about Milkweed and how it helps the endangered Monarch Butterfly. After transferring to CSU Stanislaus, Lynn began research, working in a group with graduate students on the molecular genetics of the California ground squirrel. She then did an internship with the non-profit, River Partners, which laid the foundation for her own research at California's newest state park, Dos Rios Ranch Preserve. There she studied the long-term successional changes occurring in a restored floodplain. A first-generation college graduate, Lynn has started working on a PhD at UC Merced in the quantitative system biology program with an ecology and evolution concentration.

## OUTSTANDING RESEARCH IN STEM & SERVICE/LEADERSHIP ARELI TLAPELPA • CHEMISTRY

Areli Tlatelpa completed her B.S. in chemistry with a concentration in biochemistry in spring 2023. She was part of Dr. Gönül Schara's research group, and her most notable achievement was co-authoring a research article in Applied and Environmental Microbiology, a major journal of the American Society for Microbiology. In this project, Areli tested the ability of toluene o-xylene monooxygenase enzyme to clean up chlorobenzene and convert this harmful chemical into valuable products. In performing these experiments, she learned various scientific skills ranging from basic pipetting techniques to the utilization of instruments such as HPLC (High Performance Liquid Chromatography). Areli presented her research work at the CSUPERB Symposium and at ABRCMS. She was awarded several travel grants, enabling her to present her research at these conferences. Areli was also a member of the student organization Warriors Chemistry Club (WCC). As President and officer of the WCC, she led the preparation and organization of many activities to help and encourage young students to continue studies in science and to motivate undergraduate students to succeed in their academic career. The club received prestigious awards from the university as well as from the American Chemical Society and Areli was a big part of this success. She participated in various educational and outreach events at Stanislaus State and in K-12 schools in the region. Areli has worked extremely hard to be a role model for future scientists, to be a leader in science, and to become an excellent researcher.



Campus Coordinators:

Elvin Aleman, Ph.D.  
Professor, Chemistry  
(209) 667-3783  
ealeman@csustan.edu

Melanie Martin, Ph.D.  
Professor, Computer Science  
(209) 667-3787  
mmartin@csustan.edu







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# CSU-LSAMP STATEWIDE OFFICE

6000 J Street, Sequoia Hall 226  
Sacramento, CA 95819-6124  
(916) 278-3838  
[csus.edu/csus-lsamp](https://csus.edu/csus-lsamp)