CALIFORNIA STATE UNIVERSITY LOUIS STOKES ALLIANCE FOR MINORITY PARTICIPATION

November 2021 | Vol. 8

# P R O U D

## Program Recognizing Outstanding Undergraduate Distinction

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# INTRODUCTION

Welcome to the seventh edition of CSU-LSAMP PROUD, the annual publication of the California State University Louis Stoke Alliance for Minority Participation. CSU-LSAMP PROUD recognizes the outstanding academic, research, and service achievements of students and alumni from throughout our alliance. Each year, the CSU-LSAMP coordinators at each of our alliance campuses nominate students to be recognized through our Program Recognizing Outstanding Undergraduate Distinction (PROUD). Our PROUD scholars have distinguished themselves in so many ways - in the classroom, in the laboratory, and in the community - and the success of CSU-LSAMP is truly written in their stories, which are featured in this publication.

As with much of all of our lives, the production of the publication was impacted by the COVID-19 pandemic and comes to you later than usual. All 23 of our campuses had to pivot to virtual instruction in March, 2020 and most have remained in dominantly virtual mode since then. This has impacted our ability to offer some of our signature programs, most notably our international research opportunities in Costa Rica and Uzbekistan, and some laboratory-based research programs. Our LSAMP community was also very much impacted by the 2020 summer of racial reckoning and the events surrounding the 2020 election. In this year's publication, we feature the initial results of surveys we conducted with our students to assess the impact of the pandemic on them. We also feature the emergence of our own Associate Project Director, Semarhy Quinones-Soto, who has emerged as a talented artist who creates images of diverse women in science. And of course, this publication features our 2020 PROUD scholars. It is a publication like this that reminds us of the achievements of the CSU-LSAMP students and their incredible potential for success, despite challenging times. I hope you enjoy reading it as much as we have enjoyed producing it and that you find in it the hope for a better future that I do.

Lisa Hammersley, Ph.D.

Lead Project Director, CSU-LSAMP

Dean, College of Natural Sciences & Mathematics, California State University, Sacramento



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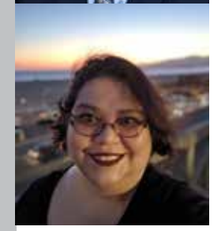

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# CONTENT










SPARA UPDATE

# CSU-LSAMP STEM PATHWAYS AND RESEARCH ALLIANCE: LONGITUDINAL DATA

Funded by the National Science Foundation and the Chancellor's Office of the California State University, the CSU-LSAMP Alliance is a coordinated and comprehensive program dedicated to broadening participation in STEM. Over its 28-year history, the CSU-LSAMP Alliance has grown to include all 23 campuses of the CSU, has served 28,521 students, with 23,810 (83%) of these students were from underrepresented minority (URM) groups, and the annual number of participants has increased from 641in 1994 to 2,593 in 2020. The primary goal of CSU-LSAMP is to enhance the academic and professional preparation of CSU-LSAMP participants for careers in STEM. Currently, our project is on its fourth year of our sixth five-year cycle of funding, known to us as the STEM Pathways and Research Alliance (SPaRA).

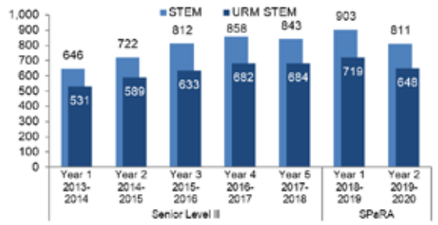
Overall Effectiveness, 1994-2020

- Served 28,521 CSU-LSAMP participants, including 23,810 URM students
- CSU URM-STEM undergraduate enrollment increased 338%
- CSU URM-STEM baccalaureate degree production increased 736%
- Participants were 1.3-1.8 times more likely than non-participants to remain enrolled in STEM disciplines
- Participants were 1.8 times more likely than non-participants to graduate with STEM degrees within six years
- 73% of participants were awarded a bachelor's degree, and 76% of these degrees were in STEM disci plines
- 48% of Phase III, Senior Level I, Senior Level II, and SPaRA graduates persisted at the post-baccalaureate level
- 22% of Phase III, Senior Level I, Senior Level II, and SPaRA participants earned master's degrees, 8% earned doctorates, and 26% remain enrolled

A. Profile of CSU-LSAMP Participants

Since its inception in 1994, the CSU-LSAMP program has served 28,521 students, 23,810 of who were URM students. The following figures are provided by the Institute for Social Research (ISR) at Sacramento State. ISR has been tracking CSU-LSAMP students for the past 17 years, providing longitudinal data for the alliance as a whole. We have chosen to highlight some of the figures from the June 2021 'CSU-LSAMP STEM Pathways and Research Alliance, Year Three Report'.

Figure 1. Estimated Number STEM and URM STEM Graduates, Senior Level II, and SPaRA CSU-LSAMP Participants through 2019-2020




Source: WebAMP participant data matched to CSU ERS and NSC records.

Since these estimates include all Senior Level II and SPaRA participants, not just those participating during a specific year, they are notably higher than the number of graduates reported in WebAMP for all years. Some students who "drop out" of the CSU-LSAMP program move into non-STEM disciplines.

Figure 2: CSU-LSAMP Participant Racial/Ethnic Composition, 1994-2020

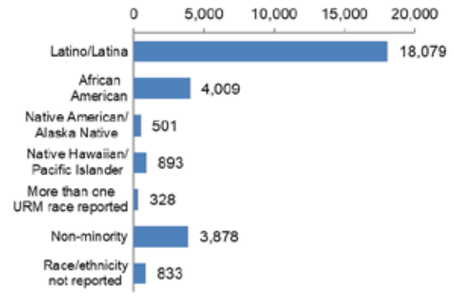
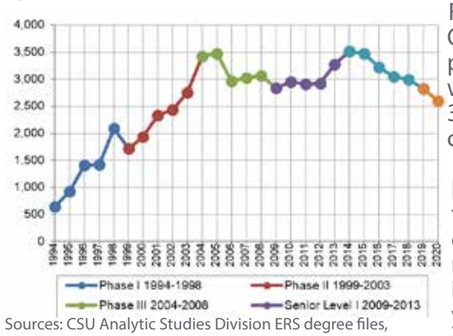



Figure 2 describes the racial and ethnic composition of participants. Latino/Latina students were the largest group (63%), followed by African American students, (14%) and students who are not members of underrepresented minority groups (14%). There were slightly more male (54%) than female participants, and more students entered the program as lower division students (57%) (Figure 2). Participants were most likely to be majoring in engineering or biological sciences (32% and 31%, respectively). The number of participants from each campus varied widely, from a high of 4,163 for CSU Los Angeles (15%), to a low of 114 for the newest alliance campus, California Maritime Academy (0.4%).

Source: Longitudinal CSU-LSAMP participant database constructed from WebAMP records.

Figure 3: Annual Number of CSU-LSAMP Participants, 1994-2020




Sources: CSU Analytic Studies Division ERS degree files, WebAMP Reverse Site Reports, and WebAMP ExACT Reports. Excludes degrees awarded to non-resident aliens.

Figure 3 shows the annual number of CSU-LSAMP participants Over the CSU-LSAMP program's 27 years, the annual number of participants has quadrupled. In the first year of CSU-LSAMP, there were 641 participants and the number of participants peaked at 3,520 in the first year of Senior Level II. The largest increases occurred during the first 11 years.

During the Phases I and II, the program included mostly group activities for lower division students. Beginning in Phase III, the program added an emphasis on engaging upper division students in mentored research and preparation for graduate study. This shift in emphasis brought the average number of participants, per year, to approximately 3,092. During the most recent year of data, the second year of SPaRA, there were 2,593 participants.

Figure 4: Annual Number of Baccalaureate STEM Degrees Awarded by All CSU Campuses to URM Students, 1993-1994 through 2019-2020

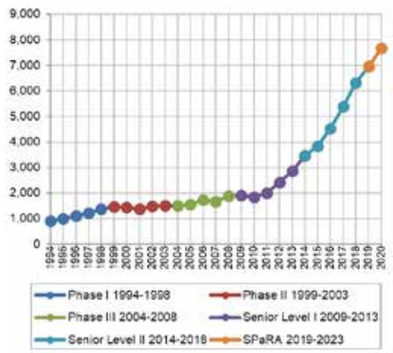



Figure 4 displays the annual number baccalaureate STEM degrees awarded by all CSU Campuses to URM students. Appendix Table 8 provides additional detail. From the beginning of Phase I, to the second year of the SPaRA project, annual URM-STEM baccalaureate degree production increased by 736 percent, from 917 in 1994 to 7,667 in 2019-2020.

From 1993-1994 through 2019-2020, the CSU awarded 70,404 STEM baccalaureate degrees to URM students. During the same period, overall STEM baccalaureate degree production increased by 153 percent. Baccalaureate STEM degrees awarded by the CSU to non-URM students increased by 75 percent during the same period.

Sources: CSU Analytic Studies Division ERS degree files, WebAMP Reverse Site Reports, and WebAMP ExACT Reports. Excludes degrees awarded to non-resident aliens.

# LSAMP TURNS 30:

## INNOVATORS & TRAILBLAZERS

In early 2020, the National Science Foundation asked all of the LSAMP alliances to submit information on the academic and career successes of previously funded LSAMP students across the USA. All of those students served to show the impressive impact of the Louis Stokes Alliance for Minority Participation across the country. As LSAMP hits 30 years of funding, the program has made quite an impact across the country, including:

- There are more than 50 LSAMP Alliances
- More than 600 campuses across the US are affiliated with LSAMP
- In the last 30 years, over 800,000 underrepresented minority students have received Bacchalaureate Degrees in STEM

For 27 years, the CSU-LSAMP Alliance has grown to include all 23 campuses of the California State University, served 28,521 students, significantly increased persistence and graduation rates for underrepresented minorities in STEM, closed opportunity gaps, and hosted 16 LSAMP Bridge to the Doctorate cohorts. CSU-LSAMP contributed to the 2021 LSAMP Magazine, by featuring a number of our own Innovators and Trailblazers. Here are a sample of some of our amazing students.

**Ameer Thompson, Ph.D.**
**Dean; Natural, Social, and Applied Sciences; Contra Costa College**

Dr. Ameer Thompson is a strong advocate for equity and inclusion in the sciences, which started with his leadership of the Multicultural Organization of Science Students when he was a CSU-LSAMP student at Sacramento State. After earning his bachelor's degree in Biological Sciences, Dr. Thompson was supported by a National Science Foundation Graduate Research Program (NSF-GRFP) Fellowship as he pursued and earned his Ph.D. in Physiology, Biophysics and Systems Biology from Cornell University. His advocacy work continued throughout his graduate and post-doctoral education, where he provided mentorship and academic support for low-income, underrepresented students, in addition to coordinating an educational and life-skills program for K-12 students through the Harlem Junior Tennis and Education Program. He returned to California to work at St. Mary's College of California, where he was the founding Director of Caminos a las Ciencia, providing leadership, strategic direction, coordination, and resource management of a strengths-based program that promotes inclusive excellence for Latinx, first-generation, and low-income students.
Dr. Thompson continues to be a leader in the community as the Dean of Natural, Social, and Applied Sciences at Contra Costa College. Additionally, he is on the board of numerous local and regional scholarship and training programs whose goal is to ensure diversity and inclusion in the sciences. One such cause is the establishment of a scholarship within the Sacramento State Science Educational Equity Program. The de la Porte, Johnson, Thompson Endowed Scholarship supports science students who advocate for women in the sciences.

**George A. Brusch IV, Ph.D., Biology, Arizona State**
Alliance Institution: Cal Poly, San Luis Obispo
Current Position: Assistant Professor in Animal Physiology at Oklahoma State University
Accomplishments: Ph.D. from Carnegie Melon. NSF Graduate Research Fellowship, NSF EAPSI Fellowship, ASU School of Life Sciences Outstanding Graduate Award, Faculty Women's Association Distinguished Graduate Student Award, 13 peer-reviewed publications, over $250,000 in competitive grants and fellowships, former Postdoctoral Scientist at the French National Center for Scientific Research in Chizé, France

**Temet McMichael, Ph.D., Viral Immunology, Ohio State**
Alliance Institution: CSU San Marcos
Current Position: CDC Epidemic Intelligence Service (EIS) Officer; Communicable diseases, Epidemiology, and Immunization Branch.
Accomplishments: Ph.D. from The Ohio State University in microbial parthenogenesis. ASM Robert D Watkins fellowship; HHMI Gilliam fellowship; CDC EIS officer. 13 publications. First Native American with doctorate from the La Jolla band of Luiseno Indians.

**Carlos Gonzalez, Ph.D., Chemical & Systems Biology, Stanford University, School of Medicine**
Alliance Institution: CSU San Marcos
Current Position: Postdoctoral Fellow, University of California San Diego. Studying host microbiome interactions using multiple 'omic' technologies
Accomplishments: Ph.D. from Stanford University in Chemical and Systems Biology. NSF Graduate Research Fellowship; HHMI Gilliam Fellowship Recipient; Stanford Graduate Fellowship; UCSD IRACDA Fellowship. Currently five publications with four more in the pipeline.

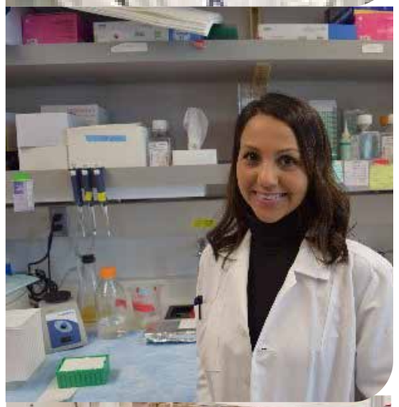
**Monica A. Kapil, Ph.D., Bioengineering, UC Berkeley**
Alliance Institution: San Jose State
Current Position: Device Engineer, The Janssen Pharmaceutical Companies of Johnson & Johnson
Accomplishments: CSU Chancellor's Doctoral Incentive Program; National Science Foundation Graduate Research Fellowship; University of California Dissertation –Year Fellow; the College of Engineering Graduate Student Research Fellowship, UC Berkeley. She also received the Scott T. Axline Memorial Student Award for Excellence in Service (2009). She has four publications and is part of three professional organizations.

**Josh Casara, Ph.D., Physics, UC Merced**
Alliance Institution: Stanislaus State
Current Position: Product Engineer, Lam Research Corp.
Accomplishments: Recipient of the President's Dissertation Year Fellowship, MACES Summer Graduate Student Research Fellowship, and Graduate Student Summer Research Fellowship. Contributed toward 5 publications in various Scientific Journals. Now the product lead on various projects aimed towards the development of next generation hardware for plasma etch chambers.

**Monica Delgado Moreno, Ph.D., Immunology, UC Davis**
Alliance Institution: Cal State LA
Current Position: Scientist, xCella Biosciences
Accomplishments: Monica was a postdoctoral scholar at Stanford University, where she studied myelin repair and neuroinflammation in multiple sclerosis. During her career, she has 10 publications. While at Stanford, she twice received a T32 training grant. She is currently working on the development of therapies to improve anti-tumor immune responses in patients.

**Edward Steven Jimenez, Ph.D., Applied Mathematics, University of Arizona**
Alliance Institution: San Diego State
Current Position: Principal Optical Engineer and Scientist at Sandia National Laboratories
Accomplishments: 2019 National Academy of Engineers Frontiers of Engineering Conference Attendee (100 invitations for early-career scientists); 2 Lab Directed Research and Development grants ($2M total); 2014 Great Minds in STEM HENAAC Awardee for Most Promising Scientist – Ph.D.; Inventor for the world's first Hyperspectral Computed Tomography for Industrial and Security applications; 43 Patent disclosures in review; 39 Peer-reviewed publications.

**Diana Azurdia, Ph.D., Molecular Biology & Biochemistry, UCLA**
Alliance Institution: Cal State LA
Current Position: Director for Recruitment & Inclusion for Graduate Programs in Bioscience
Accomplishments: Leads the development and implementation of a strategic plan to enhance diversity in the biomedical graduate student population. Dr. Azurdia uses her platform as a National Research Mentoring Network (NRMN) Master Facilitator to promote inclusive mentoring practices at UCLA where she is the Director of the UCLA Entering Mentoring Training Program. Howard Hughes Science Education Fellow. Board of Directors for the SACNAS.





**Corey Baker, Ph.D., Electrical & Computer Engineering, University of Florida, Gainesville**
Alliance Institution: San Jose State
Current Position: Assistant Professor, Dept. of Computer Science, University of Kentucky
Accomplishments: Recipient of the UC President's Postdoctoral Fellowship at UCSD, GEM PhD Fellowship, Intel Scholarship, McKnight Dissertation Fellowship, and the NSF LSAMP BD Fellowship. Corey has served on the board of directors of the National Society of Black Engineers (NSBE) numerous times as a two term National Treasurer and CFO, two term National Treasurer Emeritus, and as the Region 6 Chairperson.

**Cindy Pham, Ph.D., Chemistry, UC Davis**
Alliance Institution: CSU Long Beach
Current Position: Senior Systems Integration & Test Engineer, Lockheed Martin Corporation
Accomplishments: Dr. Pham received the Graduate Assistant in Areas of National Need Fellowship at UCD. After receiving her Ph.D. in Chemistry from UCD, she received a Postdoctoral Fellowship in Molecular Biophysics & Integrated Bioimaging at the Lawrence Berkeley National Laboratory in the Yano/Yachandra Group. She has 10 publications listed, and works in the Missiles and Fire Control Department at Lockheed Martin.

**Pingdewinde Sam, Ph.D., Cellular & Molecular Physiology, Johns Hopkins University School of Medicine**
Alliance Institution: San Francisco State University
Current Position: Consultant, Boston Consulting Group & Founder/President, Teebo
Accomplishments: NSF Graduate Research Fellowship (2016); Founder & Executive Director for Teebo.org, U.S.-based nonprofit organization focused on eliminating poverty and hunger, providing clean water, and improving health for Burkinabés. Co-founder of the EDEN school that advocates for STEM education of boys and girls in Burkina Faso.

**Juan Mendoza, Ph.D., Molecular Biophysics, UT Southwestern Medical Center**
Alliance Institution: San Francisco State
Current Position: Assistant Professor, Dept. of Molecular Engineering & Dept. of Biochemistry & Molecular Biology, University of Chicago
Accomplishments: As a postdoctoral scholar at Stanford University, his honors included a National Institutes of Health (NIH) National Cancer Institute Career Development Award, and prestigious fellowships from the Helen Hay Whitney Foundation and the Damon Runyon Cancer Research Foundation.

Channel Islands
CALIFORNIA STATE UNIVERSITY

## OUTSTANDING GROWTH & PERSEVERANCE
### KORENNA ESTES · BIOLOGY

Korenna Estes graduated with a B.S. in biology and is currently a student in the Bridge to Doctorate program at Fresno State. During her time at CSUCI, she was one of three students selected to attend an 18-day research expedition on a Swedish-icebreaker funded by the NSF! By working with NSF staff and scientists, she gained curiosity, confidence, and felt a sense of pride and impact in knowing that the data she and the others collected would contribute to better understanding climate change on microscopic communities in the Canadian Arctic. The expedition was broadcasted to live audiences in several museums and in the documentary, Frozen Obsession. Korenna explored other biological fields, joined a neuroscience lab, and investigated the G-proteins in C. elegans. Currently, she is studying Alzheimer's disease using the model organism, Drosophila melanogaster. As a first-generation Hispanic woman, Korenna says, "My end goal is to get my Ph.D. in neuroscience and have a broader impact to encourage all generations about the positive impacts science has. I would like to continue to work with neurodegenerative diseases to contribute our understanding of how we can advance therapeutic medicinal practices and methods to those who are suffering from progressive diseases in memory."

## OUTSTANDING GROWTH & PERSEVERANCE
### PATRICIO RUANO · BIOLOGY & GLOBAL STUDIES

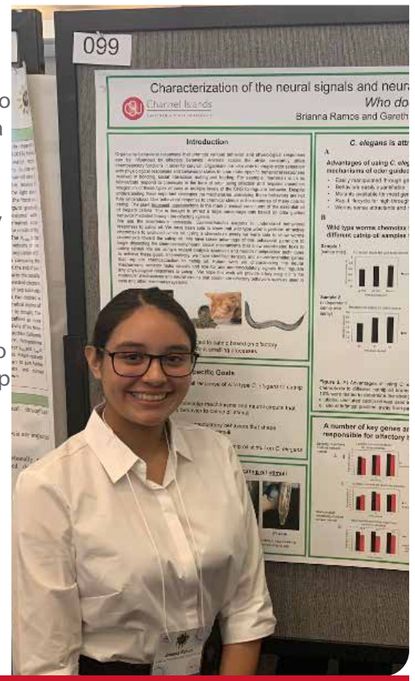
Patricio Ruano graduated with a B.S. and B.A. in biology and global studies, respectively, and is attending medical school at Michigan State University at Grand Rapids. While he started his undergraduate studies ill-prepared, his hard work and persistence led to growth and success. As a Guatemalan and Salvadoran, Patricio would visit his parent's hometowns which were so remote that it was a miracle that a doctor was in the vicinity. Luckily, there was one when his father suffered a heart attack. The experience was traumatic, but it served as the seed for his aspirations of becoming a physician. Acknowledging that there are parts of the world where medical assistance is scarce or non-existent, he intends to step into nations and local communities suffering from health disparities. Patricio has managed academics, multiple jobs, and multiple student support roles, like the Peer Academic Success Coach and Learning Leader, to cultivate a more open mind and worldview as his studies in Global Studies has helped him appreciate. He credits adopting a growth mindset in helping him overcome feelings of insecurity and inadequacy that stemmed from his high school results. Patricio also researched focusing on artificial sweeteners with Dr. Nitika Parmar. The research appealed to his interest in interdisciplinarity as it relates human cell responses to a disease affecting people of color and low-income communities.



## OUTSTANDING ACADEMIC
### MERAI DANDOUCH · BIOLOGY

One of two recipients of the CSUCI Biology Department's Honors Award, Merai Dandouch complemented her B.S. degree in Biology and minor in Computer Science. By attending the Bioinformatics program at Boston University, she will expand her skills to study global pollution models to help communities in developing regions. As an undergraduate, Merai worked in a marine toxicology lab studying various marine organisms. One project on sea spiders led to a publication with researchers from the University of Wisconsin-Madison. She has also studied environmental stressors on the rocky intertidal species, Mytilus californianus, which can actively acclimate to their environment that is constantly in flux with steep variations in temperature, air exposure duration, oxygen concentration and microplastics ingestion. She has presented her research at conferences such as the Emerging Researchers National Conference. Seeing the impact of environmental changes on ecosystems, she aims to conduct research that will one day combat climate change. Having left Syria when she was four years old, Merai faced financial, social and education hurdles. While at CSUCI, she was an instructional student assistant and a member of the Computer Science Club. Overcoming various challenges, Merai has developed the grit and perseverance to excel in academia and research and in the future to enact global change for underserved communities both here and abroad.

## OUTSTANDING RESEARCH IN STEM
### BRIANNA RAMOS · BIOLOGY




Brianna Ramos never imagined herself explaining the olfactory system to her mom at her local panadería. Working in a neuroscience lab, Brianna wanted to understand sensorimotor circuits and the control of sensory-dependent locomotory behavior. She is a co-author on a publication and expects to submit another before moving to the University of Michigan, Ann Arbor for her Ph.D. in the Neuroscience Graduate Program. Brianna worked to understand behaviors involved in mammalian sensed attractive and repulsive olfactory cues using C. elegans as a model organism because of their ability to distinguish smells and measurable behavioral response. Using a chemotaxis assay, Brianna demonstrated that C. elegans responds to mammalian-sensed cues and discovered a novel attractive stimulus to catnip oil and an avoidance behavior to cat repellent. To understand these behaviors, she investigated the mechanisms by which the worm brain processes catnip oil odor by looking at G-proteins, ion channels, sensory neurons, interneurons, and neurotransmitters using a mutant analysis approach. Brianna, a student president of the CI Neuroscience Society, said, "Through these research investigations, I have learned the importance of mechanisms that coordinate olfactory guided behavior, but more significantly recognize that by characterizing the neural circuitry involved with olfactory behavior, it can bring us one step closer to understanding mammalian behavior, odor preference, and disorders associated with defects in olfactory mechanisms."

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# CALIFORNIA STATE UNIVERSITY, CHICO

## OUTSTANDING WELL-ROUNDED STUDENT
### AILEEN ESCOBELL · CIVIL ENGINEERING & APPLIED MATHEMATICS

During her time at Chico State, Aileen Escobell faced financial challenges as a double major in civil engineering and applied mathematics. She worked hard to excel academically to obtain scholarships and summer internships to pay for college expenses. Aileen was recognized as the MESA Engineering Program Freshman of the Year, was awarded the MESA Scholarship, was on the Dean's List, and was a member of the Tau Beta Pi Engineering Honor Society. She served as the secretary for the Design-Build Institute of America CSU Chico Chapter and was a member of Latinos in Technical Careers. Her proudest achievement has been recruiting high school students to Chico State. For the past four years, she attended higher education fairs and made phone calls to students to share her experiences and discuss the various student opportunities available. As part of the 2018 summer Chico STEM Connections Collaborative Undergraduate Research Program, Aileen worked with Dr. Curt Haselton and Dr. Jared Debock on identifying irregularities generated by a seismic performance program. Her role was to make different combinations of parameters and properties to see how different buildings performed in the event of an earthquake. Aileen is attending UCLA to pursue a master's degree in civil engineering. Her goal is to become a licensed structural engineer.

## OUTSTANDING DETERMINATION & RESILIENCE
### NAYELLI BARRAGAN-MEJIA · BIOCHEMISTRY

Nayellie Barragan-Mejia is studying biochemistry at CSU, Chico. Her passion for chemistry began during her freshman year of high school when she researched in electrochemistry with her AP chemistry teacher. Early during her undergraduate studies, she encountered a setback due to personal, familial, and medical challenges, and withdrew from her classes. Determined to be successful and reach her goal of becoming a doctor or a researcher, she enrolled in classes once again and is slowly making progress towards her degree. She is a member of the CSU Chico Pre-Medical Association and Student Affiliates of the American Chemical Society. During the summer of 2020, Nayellie researched with Dr. Kristen Gorman studying the underlying biology of idiopathic scoliosis, the most common form of human scoliosis. Nayellie was selected to participate in the 2021 Chico STEM Connections Collaborative Undergraduate Research Program. Under the mentorship of Dr. Gerald Cobian, she investigated the role endophytes play in the community composition of decomposing leaves. By combining both culture and molecular based techniques, Nayellie will determine the extent to which fungal communities associated with fresh green leaves overlap with microbial communities associated with decomposing leaves.



## OUTSTANDING RESEARCH IN STEM
### JOSE LUIS LEON · MECHATRONIC ENGINEERING

Jose Luis Leon discovered his passion for helping others while working at a hospital at the age of 16. He became interested in mechanical systems while working with his dad on welding projects and met a man complaining about the pain associated with his prosthetic legs. He was determined to help design ergonomic devices to help people with disabilities. He worked with Dr. Ozgul Yasar-Inceoglu on bone tissue regeneration. As a participant of the 2020 Chico STEM Connections Collaborative Undergraduate Research Program, Jose modeled trabecular bone tissue to improve scaffolding methods for femur bone wound healing. Due to the COVID-19 pandemic, he adapted to work remotely by purchasing a cow's rib to analyze the optimum pore shape and size for trabecular and cortical bone tissue. With a 3D printer, he made a 10x scaffold model to verify the physical properties matched a scaffold for trabecular bone. He served as vice-president and treasurer of Latinos in Technical Careers, treasurer of the Materials Research Society, a physics tutor, and a facilitator for the math AEW's. He is a founding member of the Bioengineering, Biomedical Engineering and Biotechnology student club and a member of the 3D printing club and American Institute of Mechatronics Engineers. His goals include pursuing a graduate degree in biomedical engineering or biophysics and serving his community.

## OUTSTANDING DETERMINATION
### STEPHANIE DUARTE-AMEZCUA · CELLULAR & MOLECULAR BIOLOGY

Stephanie Duarte-Amezcua's motivation to succeed academically is deeply rooted in her appreciation for the sacrifices her parents made to ensure she has access to educational opportunities they never had. Stephanie was born in Las Vegas, Nevada, and attended school through the 7th grade in Mexico. She moved in with her grandparents to attend school in the US. She faced learning a new language and was teased by her classmates. Stephanie worked hard and within two years she was designated proficient in English. As a sophomore, she decided that she wanted to live with her parents in Mexico, and through her senior year, Stephanie began her day at 4 AM to cross the border from Mexico to the US to attend high school. She graduated summa cum laude from high school. As a freshman, Stephanie secured a research position with Dr. Kristen Gorman to study the genetic and cellular cause of idiopathic scoliosis. Stephanie was selected to participate in the 2021 Chico STEM Connections Collaborative Undergraduate Research Program to develope a novel transgenic tool for the study of scoliosis. She has presented her research at the Adelante Investigación and the Department of Biological Sciences Open House. She has been a Dean's List recipient, a CSU-LSAMP Student Research Scholar, and is a member of the Pre-Medical Association student club.

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California State University
# DOMINGUEZ HILLS

## OUTSTANDING ACADEMIC
### KARLEE RIVERA · EARTH SCIENCE

Karlee Rivera majored in Earth Science and graduated in spring 2021. She was a McNair and CSU-LSAMP Scholar at CSU Dominguez Hills, and she received the Athletic Hall of Fame award for student athletes with high achievements for athletic performance and academic work from Santa Ana College. Karlee grew up Southern California, so earthquakes have always been a hazard and interest in her life. She was drawn towards earthquake-inspired research which sparked her interest even further. As an undergraduate, she took part in multiple research experiences through independent research projects, directed research courses, conference presentations, and internships. She was a SOURCES Intern at Southern California Earthquake Center (SCEC) from summer 2020 to spring 2021, where she worked on the Basin Amplification Seismic INvestigation (BASIN) project with Dr. Patricia Persaud. She presented her work at the 2020 SCEC Annual Meeting. At CSU Dominguez Hills, she worked with Dr. Chhetri to elevate the relationship between fault lines and property values in the Los Angeles Area. Karlee is attending the Ph.D. Geological Science program at University of California, Riverside with the Dean's Distinguished Fellowship Award. She will continue research and hopes to advance seismic techniques to further understand earthquakes science.

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## OUTSTANDING RESEARCH IN STEM
### NATALYA CARDONA · CELL & MOLECULAR BIOLOGY

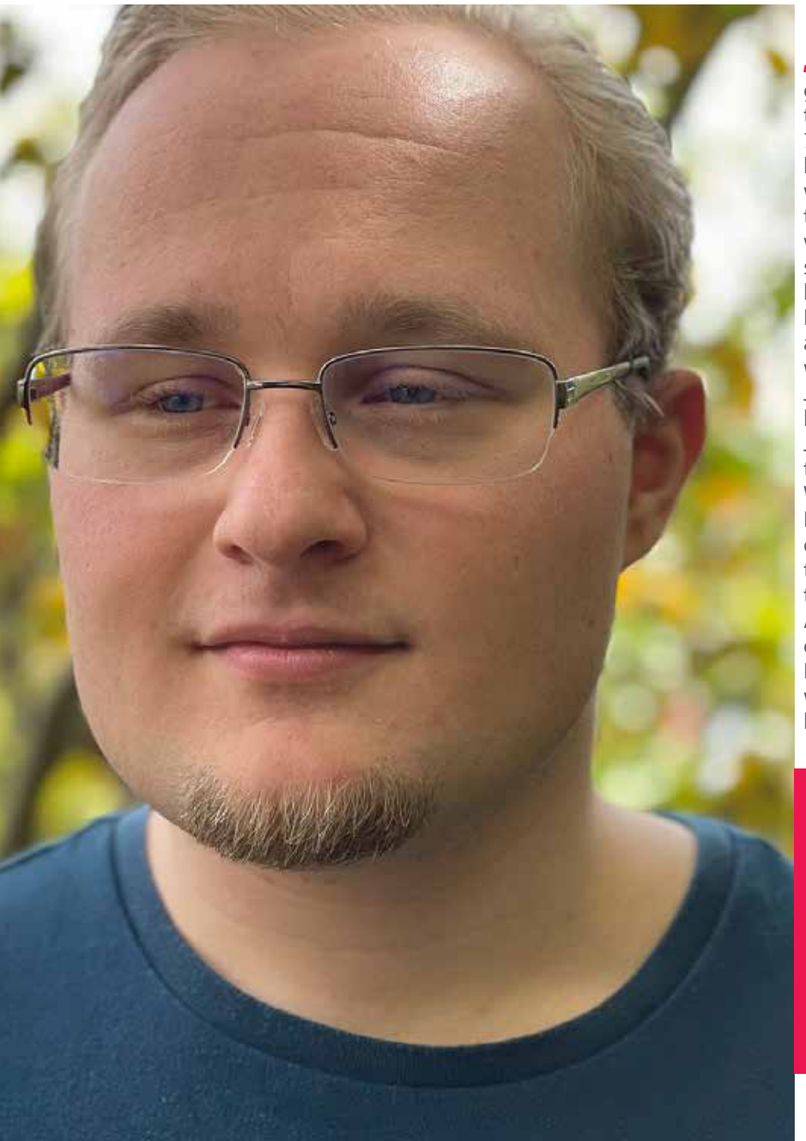
Originally from El Salvador, Natalya Cardona moved to the US to learn English at East Los Angeles College. Upon transferring to CSU Dominguez Hills, she was awarded the prestigious Presidential Scholarship, the Marcie Stewart Scholarship, was a semifinalist in the NIH – Undergraduate Scholarship Program, was a MARC U-STAR, and a Sally Casanova Pre-Doctoral Scholar. In the summer of 2019, she participated in the California Pre-Doctoral Program Summer Research Opportunity at UCLA, where she quantified how the optimal temperature for bacterial growth changed in response to drug concentration to explore whether antibiotics can affect temperature response curves. The project resulted in a joint publication in the Journal of the American Society for Microbiology. As a RISE Scholar, Natalya screened, purified, and extracted secondary metabolites from marine fungi to identify novel natural products with important pharmaceutical activity. Natalia began her graduate studies at the Lundquist Institute's Ph.D. Program in Translational Research. Natalya's plans include becoming a biotechnology entrepreneur, with the goal of improving health outcomes at economically viable prices. She also plans to become a professor with the goal of supporting the future generation of diverse-minded scientists and develop programs to facilitate opportunities for underrepresented students.

## OUTSTANDING RESEARCH IN STEM
### ELIZABETH SOLIS · BIOLOGY

Elizabeth Solis majored in biology with a minor in biochemistry. She worked with Dr. Sonal Singhal for 2.5 years on computational genetics focusing in understanding the patterns of diversity and biogeographic history of Australian skinks, Ctenotus, a group of lizards vulnerable to land conversion due to land mining. Her work on natural selection against hybridization in the desert shrub, Encelia, was published in the Proceedings of the National Academy of Sciences. Elizabeth has participated in summer REUs, including a project in Costa Rica focusing on collaborative research and field work, and another one where she studied disease ecology in the Duffy Lab at the University of Michigan. Elizabeth was awarded a research grant for spring 2021 from Edison STEM-NET, and a scholarship from Promega Diversification of Our Research Scientists (D.O.O.R.S.) in fall 2020. Elizabeth has presented at several conferences, including the Southern California Conference for Undergraduate Research (SCCUR), Edison STEM-NET Student Research Symposium, and Promega D.O.O.R.S. Elizabeth began her Ph.D. in the Biology Graduate Program at the University of New Mexico, where she will be studying venom evolution in parasitoid wasps. Her goal is to become a biology professor and an academic leader for students with a similar background as herself. Elizabeth would like to mentor students who, like herself, are self-supporting, first-generation, minority, or underprivileged.

# CALIFORNIA STATE UNIVERSITY
# EAST BAY

## OUTSTANDING DETERMINATION & RESILIENCE
## JULIAN DAVIS
## PHYSICS



Julian Davis' biggest challenge has been getting an education. Diagnosed with learning differences (LD), by 6th grade he couldn't multiply or write a sentence. He fought for a change and started 7th grade at a school for LD students and, by 9th grade, he was learning algebra and writing essays. His high school biology teacher, Ms. Mele Santini, opened the world of science to him. He finished high school as class valedictorian. In September of 2016, Julian entered CSUEB as a Biological Sciences major and a year later, as part of the biological sciences coursework, he took a Newtonian physics course. Julian was so captivated by physics that he switched majors in the fall of 2018. Julian is currently working in collaboration with the ATLAS Radiation Simulation Working Group and CERN. The team uses ROOT and PYTHIA to generate histograms of simulated signals and background trying to account for unexpected radiation damage discovered when comparing ATLAS predictive modeling and actual experimentation. Julian plans to pursue a Ph.D. in physics. He hopes that one day he will be able to give back. Julian aspires to help others learn in the face of obstacles.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## OUTSTANDING SERVICE & LEADERSHIP
## NATISHA PRASAD · BIOLOGICAL SCIENCES


Natisha Prasad found the Center for Student Research (CSR) and the CSU-LSAMP at Cal State East Bay program in her sophomore year. In the CSR, Natisha quickly rose through the ranks of its gamified student-researcher professional development program, the Scholar's Program, earning the designation of Forever Pioneer Scholar (FPS) during her second year in the program. A promotion to FPS requires compelling evidence of significant professional growth, meaningful research contributions, and a unanimous vote-to-promote from the CSR staff. As a FPS, Natisha blossomed, specifically as a leader and role model to, and advocate for, students and the student-researcher experience. Natisha has also devoted significant effort towards contributing to the sense of community on the CSR Slack workspace and serves as the Center's Social Media Specialist. Her skills have increased the Center's followership and most importantly, have increased student engagement with the CSR on social media, as well as during Center events. Among her peers, Natisha is viewed as supportive, a highly skilled, knowledgeable, and very entertaining speaker, and a student leader in the push for more funding, resources, and support for student-researchers, scholars, and creative artists at Cal State East Bay.

FRESNO STATE

Discovery. Diversity. Distinction.

## OUTSTANDING RESEARCH IN STEM
### JOANNA DE LA PENA · BIOLOGY

Joanna de la Pena completed her M.S. in biology in May 2021 and her bachelor's degree in biology and minor in physical science in May 2019, both at Fresno State. During her community college experience, she was a chemistry lab volunteer, served on student government, as a tutor for students in K-12 grade, and interned with the Lymphoma and Leukemia Society. At Fresno State, her passion for research led her to a position with the CSU- LSAMP Fresno State Research Program and was able to experience research in several labs, including working with Dr. Alejandro Calderon-Urrea focusing on determining the axial polarization of *Meloidogyne incognita*. Joanna also worked as a lab aide at the USDA Agricultural Research Services in Parlier, California. She also assisted Dr. Lindsey Burbank in the development of novel amplification targets for rapid detection in the plant pathogen, *Xyllela fastiodosa*. As a master level student in a neuroscience lab with Dr. David Lent, she led the Ant Navigation Project, she focused on determining saccade-like turns refinement of Harvester Ants. Joanna is continuing her education in a Pharmacology and Toxicology Ph.D. Program at UC Davis with Dr. Colleen Sweeney focusing on breast cancer research, where she is pursuing her passion to serve as an advocate in disease prevention.


## OUTSTANDING RESEARCH IN STEM
### CIRENIO HISASAGA · AGRICULTURAL SCIENCES

Cirenio Hisasaga received his M.S. in agricultural sciences in May of 2021 after completing his B.S. in animal science with a minor in Spanish in May 2019, both at Fresno State. Cirenio's parents' determination to advance in life motivated him to take advantage of every opportunity available. Cirenio graduated with an undergraduate GPA of 3.97 and was awarded the Undergraduate Dean's Medal from the Jordan College of Agricultural Sciences and Technology. As an undergraduate, Cirenio served as a CSU-LSAMP Peer Mentor for incoming freshmen and incoming transfer students. Cirenio's research focused on analyzing the quality of designer eggs in the consumer market with Dr. Katy Tarrant. Cirenio had the opportunity to present his work at several conferences, including the International Poultry Scientific Forum, the Central California Research Symposium, and the Pacific Egg and Poultry Association Conference, where he won an award for his presentation. As a master level student, he focused on the evaluation of mitochondria values and its association to woody breast severity. Cirenio is furthering his education as a Ph.D. student in the Animal Biology Graduate Group at UC Davis. Cirenio aspires to become a professor and to strive for a better learning environment for all students.

## OUTSTANDING RESEARCH IN STEM
### DAISY PACHECO · BIOLOGY

Daisy Pacheco earned her B.S. in biology and minor in physical science from Fresno State in May 2020. Her research interests led her to participate in CSU-LSAMP at Fresno State early in her undergraduate career. Daisy's research experiences in Course-based Undergraduate Research Experience (CURE) and participation in CURE symposiums led her to join Dr. Hwan Youn's research group and work with the model organism, *Escherichia coli,* to study bacterial transcriptional factors homologous to cAMP receptor protein (CRP). Daisy was able to analyze various CRP mutants generated via site-directed mutagenesis. Her research contributed to the understanding of CRP's allosteric transition from inactive to active forms upon cAMP binding. Daisy's motivation to pursue a Ph.D. was further elevated by her participation in the NIH Bridges to Doctorate program as a master level student in Dr. Youn's lab. Daisy's goal is to purse a Ph.D. in microbiology and molecular biology and aspires to become a professor, serving as a research mentor for underrepresented and disadvantaged students.

## OUTSTANDING RESEARCH IN STEM
### MICHAEL CASTRO · BIOLOGY

Michael Castro received his M.S. in biology and completed his B.S. in biology, both at Fresno State, after transferring from a local community college. During his undergraduate career, Michael became involved with CSU-LSAMP after changing his major to biology. His interest in research grew as he became more involved in a microbiology research lab with Dr. Tricia Van Laar. Michael's active undergraduate research involvement helped him obtain a publication in Genome Announcements. He presented at several conferences, including Society for Advancement of Chicanos and Native Americans in Science, the Annual Biomedical Research Conference for Minority Students, Central California Research Symposium, and the American Ornithology Society. With the support of faculty and CSU-LSAMP, Michael was encouraged to continue his M.S. degree at Fresno State as a NIH Bridge to Doctorate Fellow.. Despite the challenges faced by COVID-19, Michael adjusted his master's research and studied the transcriptome data of a pathogenic bacterium in agriculture. Michael is pursuing his Ph.D. at the University of Utah in the Molecular Biosciences program.

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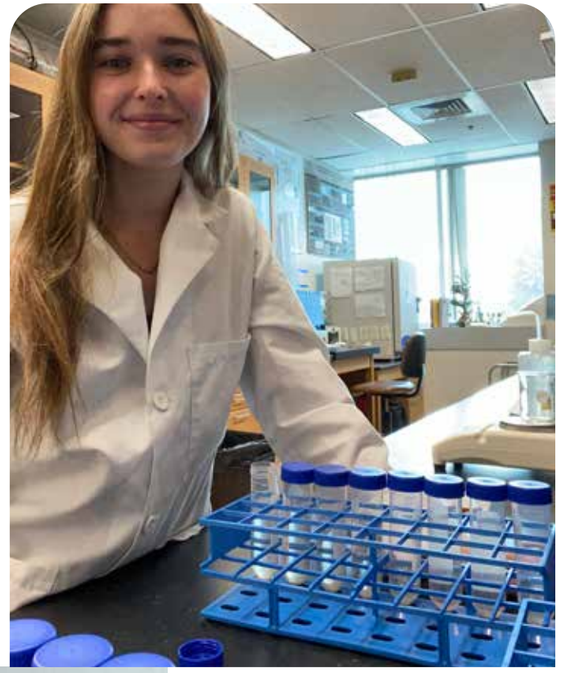
CALIFORNIA STATE UNIVERSITY
# FULLERTON™

## OUTSTANDING SERVICE & LEADERSHIP
### KATYA BEENER
### GEOLOGY

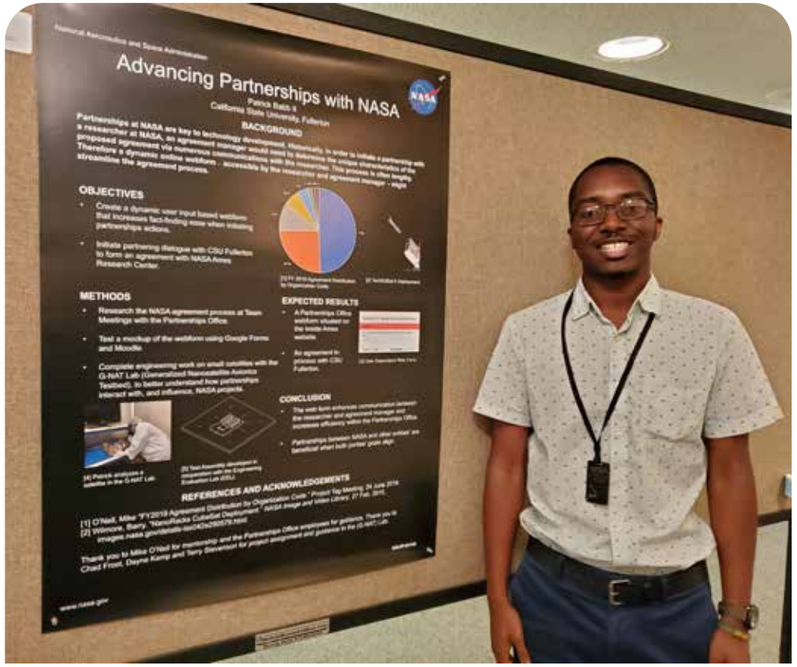


Katya Beener is a senior undergraduate Geology major at California State University, Fullerton. This is her second year participating in the LSAMP program. Katya has been working under Dr. Joseph Carlin studying coastal and marine Geology for two years. Katya's thesis involves comparing core samples taken from the Monterey Bay Continental Shelf to source samples taken from beaches and rivers in the same area. The intent of this project is to examine how the source of sediment to the Monterey Bay has changed in the past 150 years. This research is important to her, because she is passionate preventing human induced climate change and mitigating negative human effects on the environment. She will return to California State University, Fullerton in the fall of 2021 to begin her master's degree of science in Geology. Her long-term goal is to conduct climate related research in coastal and marine environments in a professional lab. Throughout her career, she hopes to make geoscience research more accessible to the public, and foster diversity in science disciplines.

## OUTSTANDING ACADEMIC
### CALEB PEÑA
### MATHEMATICS

Caleb Peña graduated from Cal State Fullerton in Fall 2020 with a bachelor's degree in Mathematics: Probability and Statistics. As an LSAMP scholar, he worked with Dr. Sam Behseta to apply machine learning algorithms to model the relationship between human mobility trends and the spread of COVID-19. His interests include causal inference, data visualization, and sports analytics. He recently concluded in internship with the Seattle Kraken building models in anticipation of the upcoming draft. In Fall 2021, Caleb begins his Masters of Statistical Practice at Carnegie Mellon University.

## OUTSTANDING RESEARCH IN STEM
### PATRICK BABB
### MECHANICAL ENGINEERING




Patrick obtained his Bachelor of Science degree in Mechanical Engineering at California State University, Fullerton in May 2021 and plans to obtain a doctoral degree in Mechanical Engineering. He aspires to join or create an organization that focuses on the intersection of autonomous systems and water sanitation to provide "open-source water" to the world. Patrick is an LSAMP Scholar and a Sally Casanova Pre-Doctoral Scholar. Additionally, Patrick is also a mentor for a Junior level McNair Scholar and a mentor for a Patti Grace Smith Fellowship Scholar as well. Patrick entered the Mechanical Engineering PhD program at the University of California, Santa Barbara in Fall 2021.

## OUTSTANDING RESEARCH IN STEM
### TERESITA RAMIREZ · PHYSICS

Teresita Ramirez Aguilar is a senior majoring in Physics at California State University, Fullerton. She has been conducting research with Dr. Geoffrey Lovelace at the Nicholas & Lee Begovich Gravitational Physics and Astronomy Center since Spring 2017. Teresita also contributed code to SpEC, where she is also working with black hole-neutron star mergers to model the creation of heavy elements. In addition, Teresita is also contributing code to Spectra, a next-generation numerical-relativity code that aims to operate efficiently on much larger supercomputers than SpEC can. Teresita would like to become a professor at a 4-year university and continue to do research. She graduated with a B.S in Physics in May 2021 and started a Physics Ph.D. Program at Northwestern University in Fall 2021.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# HUMBOLDT STATE UNIVERSITY

## OUTSTANDING RESEARCH IN STEM, & SERVICE/LEADERSHIP
### ANA SAMMEL · APPLIED MATHEMATICS (PHYSICS MINOR)

Ana Sammel is a senior majoring in applied mathematics and minoring in physics. Ana participated in several undergraduate research programs, including the Research Experiences for Undergraduates in Mathematical Sciences at Georgia Institute of Technology with Dr. Doron Lubinsky. This work resulted in the publication of a multi-authored work and presentation at the American Mathematical Society conference, On Lower Bounds for Erdos Szekeres Products. Ana also worked with Dr. Kamila Larripa on the interaction between COVID-19 and the immune system. The team presented their findings, Mathematical Modeling of the Immune Response to Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2): Implications for Pathology and Treatment, at the Preparing Undergraduates through Mentoring towards PhDs. (PUMP) Symposium. Ana also participated in the Vanderbilt Physics and Astronomy REU Program with Dr. Keivan Stassun, where she studied star formation. Ana participated in FUTURE Ignited and placed first in an International Mathematical Contest in Modeling with her team. In addition, Ana worked in the HSU Learning Center teaching calculus and supporting her peers as a math tutor. Ana plans to pursue a Ph.D. and aspires to be a professor, and to inspire women, Latinx, and other marginalized groups to pursue STEM careers while conducting her own applied mathematics research.

## OUTSTANDING ACADEMIC, RESEARCH IN STEM, & SERVICE/LEADERSHIP
### ALBERT OCHOA CASTILLO · CHEMISTRY

Albert Ochoa Castillo is a senior chemistry major, who immigrated to the US from Chihuahua, Mexico when he was four years old. As a first-generation student, Albert became interested in research after taking upper division chemistry classes. Albert conducted organic and computational chemistry research with Dr. Joshua Smith focusing on designing possible organic photovoltaic (OPV) compounds and running theoretical calculations on the Comet Supercomputer through the San Diego Supercomputer Center. Albert presented this work at Humboldt State University Ideafest and at the SACNAS National Diversity in STEM conference. Albert also engaged in research through the Summer REU Program in Sustainable Materials at UC Santa Cruz and through the Humboldt State Marine Mammal Education and Research Program with Dr. Dawn Goley. In addition to research, Albert was a Lead Mentor for the Retention through Academic Mentoring Program. As a Lead Mentor and paraprofessional staff member, Albert supervised a pod of Academic Mentors, facilitated and organized components of Mentor Education, and provided support, resources, and guidance to other mentors. Albert will pursue a Ph.D. in chemistry with the end goal of becoming a professor, focus on teaching chemistry, and facilitating undergraduate research.



## OUTSTANDING RESEARCH IN STEM & SERVICE/LEADERSHIP
### CHRISTOPHER VILLARRUEL · FORESTRY (HYDROLOGY)

Christopher Villarruel, a member of the Ajumawi Band of The Pit River Nation, is a senior in forestry (hydrology Option) major with a minor in geospatial analysis. Chris interned through Redwoods Rising performing team work to meet sustainable forest management goals. Chris also participated in TREX to train in prescription fire methods, assisting in burning and clearing areas near the tribal community of Weitchpec. Chris set fire to the ground with the Cultural Fire Management Council and the Yurok Tribe to revitalize this traditional practice. Chris worked as Assistant Silviculturist for Hoopa Tribal Forestry carrying out tan oak stand improvement projects and performed inventory work for Six Rivers National Forest while learning the finer points of tribal forestry and stewardship. Chris researched at the National Center for Earth-surface Dynamics St. Anthony Falls Laboratory at the University of Minnesota studying Manoomin, or wild rice, through the Sustainable Land and Water Resources Research Experience for Undergraduates. Under the direction of Drs. Michael Dockry and Crystal Ng, and the Fond du Lac band of Lake Superior Chippewa, the partnership prioritizes Indigenous knowledge to study and learn from wild rice, a sacred food and medicine. Chris served as an American Indian College Fund Ambassador, spreading awareness of scholarships and higher education to tribal students back home, on campus, and across the nation. Through this program, he garnered a Ford C3 grant and created community events for the youth back home.

## OUTSTANDING ACADEMIC, RESEARCH IN STEM & SERVICE/LEADERSHIP
### KAMAYA KILLEBREW · CELLULAR & MOLECULAR BIOLOGY

Kamaya Killebrew is a senior cellular and molecular biology major. Spurred by her father's frequent hospitalizations, she found her passion for the medical field through biomedical and emergency medicine courses in high school. Kamaya decided to one day be able to assist individuals with health issues to recover and achieve positive long-term outcomes. Therefore, Kamaya fully dedicated herself to achieving her goal of pursuing a medical career. During her sophomore year, Kamaya was awarded a CSU-LSAMP Student Research Scholar Award and conducted research with Dr. Amy Sprowles focusing on characterizing how cancer manifests in the brains of mice through different signaling pathways. Kamaya worked closely with her research team to analyze brain tissue images previously collected at Stanford University. Kamaya also participated in the Population Health track of the Summer Undergraduate Research Experience at the Keck Graduate Institute focusing on population health statistics and analytics. Kamaya worked for the Humboldt County Office of Education through Cal-SOAP, a tutoring program that focuses on leading young students on the right path towards academic success. In addition, she worked as a caregiver to housebound patients during the COVID-19 pandemic. After graduation, Kamaya plans to conduct biomedical research, earn a graduate degree, and help people.

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# CALIFORNIA STATE UNIVERSITY **LONG BEACH**


## OUTSTANDING ACADEMIC, RESEARCH IN STEM, & SERVICE/LEADERSHIP

### CALUM SHELDEN · PHYSICS

Calum Shelden graduated magna cum laude with a B.S. in physics. He was nominated for departmental honors by the Physics department and was on the President's List in his junior and senior years. Calum was a CSU-LSAMP Fellow and researched on renewable energy with Dr. Hadi Tavassol. Calum also ventured into chemistry, where he investigated the catalytic enhancement of hydrogen evolution in an electrochemical cell mediated by chemicomechanically-stressed Ni thin film surfaces. He employed a custom optical setup to measure surface stress in situ on thin-film surfaces. He presented his findings at the Materials Research Society Spring Meeting and is currently preparing a manuscript. Calum received the prestigious NSF Graduate Research Fellowship and is enrolled in a Ph.D. program in Electrical and Computer Engineering at UC Davis engineering the quantum vacuum with potential applications in nanophotonics, nanomechanics and chemistry. In addition to research, Calum is involved in outreach programs such as the STEM Outreach Collective, the Social Scientist and Letters to a Pre-Scientist, where STEM professionals present their research to middle and high school students with the goal of humanizing and demystifying science, removing barriers, and increasing diversity in STEM.


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# CAL STATE LA

CALIFORNIA STATE UNIVERSITY, LOS ANGELES

## OUTSTANDING SERVICE/LEADERSHIP
## STEPHANIE CASARRUBIAS · NATURAL SCIENCE
## (INTERDISCIPLINARY OPTION IN BIOLOGY)

Stephanie Casarrubias has maintained a 3.09 GPA while committing herself to service and leadership activities. Stephanie volunteers at Cal State LA and its surrounding community, including volunteering for the Silver Angel Program at Kaiser Permanente. She helps 65+ patients stay connected with their family or spends time with them individually to ensure their happiness and wellbeing. Additionally, Stephanie volunteers weekly in the emergency room. As an ER volunteer, Stephanie helps the doctors and patients, as well as spend time with the patients to make sure their needs are met. Stephanie is also a member of the CSU-LSAMP at Cal State LA Student Advisory Council (SAC). As a member of the SAC, Stephanie helps provide a student voice in the planning of CSU-LSAMP events, which is critical to ensure our program provides beneficial and effective academic and professional development programming to its participants. Stephanie also serves as a peer mentor and is a great resource for our incoming students. She sat on multiple panels to describe her experiences at Cal State LA and as a CSU-LSAMP participant for informational and orientation sessions. Stephanie's commitment to service is the primary reason why she is CSU-LSAMP PROUD student.


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## OUTSTANDING ALUMNUS
## JOEL RAMIREZ · EXERCISE SCIENCE

Joel Ramirez is a first-generation Mexican American student who transferred from Rio Hondo to Cal State LA where he graduated magna cum laude. Joel faced challenges throughout his education, including full time employment and school, battling with dyslexia and ADHD. Forced to drop out of college, he concentrated on work but faced discrimination and emotional harassment. Joel returned to college to "re-engage" with society. Joel's excellence in research led to presentations at conferences for the American College of Sports Medicine and the Society for Neuroscience, and publications in the European Journal of Applied Physiology and in the Journal of Vascular Health and Risk Management. Joel received a DREAM project fellowship and the Sally Casanova Pre-Doctoral Scholarship, the Rosser Fellowship, and the Alumni Scholarship. Joel served the Latinx community, Los Angeles community, the spinal cord injury community, and the veteran community (FitVet) by educating them in health and wellness. He led extracurricular journal clubs for upper-division undergraduates and graduate students and served on the Equity, Diversity, and Inclusion task force at Cal State LA and an advisory committee at Rio Hondo to help with student success rates. Joel began a PhD program at Harvard University in fall 2021.

## OUTSTANDING ACADEMIC, RESEARCH IN STEM, & SERVICE/LEADERSHIP
## BLISS TAFOLLA-AGUIRRE · BIOCHEMISTRY

As a biochemistry major, Bliss Tafolla-Aguirre achieved academic excellence and was named to the Dean's List with a cumulative GPA of 3.969 every semester. Bliss also strived for excellence in research and service. Bliss conducted research with Dr. Mathias Selke determining the effectiveness of resveratrol and its derivatives as antioxidants and investigate their interaction and ability to scavenge singlet oxygen molecules. Bliss has completed one research internship at the University of Iowa, attended and presented at 3 different conferences, including SACNAS, ABRCMS, and ACS. Bliss was named a 2021 Goldwater Scholar. Bliss also demonstrates a deep commitment to service. She serves in a leadership role for three different organizations on campus, as well as an active supporting role in another organization. All four organizations focus on helping fellow Cal State LA students achieve academic and professional development success or raising awareness for different health problems in society, such as cancer, mental health, etc. Bliss plans to pursue a Ph.D. in biochemistry.

CAL MARITIME


## OUTSTANDING ACADEMIC, & RESEARCH IN STEM
### JACOB FLORES
### MECHANICAL ENGINEERING

Jacob Flores graduated with a B.S. in mechanical engineering and a minor in mathematics. As a four-year CSU-LSAMP student, Jacob helped contribute to the CSU-LSAMP community by bringing awareness of the program, helping to recruit new students and mentor those in the program. Jacob was elected to the campus' student government organization, the Associated Students of California Maritime Academy (ASCMA). During his sophomore year, he represented the under-class engineering students as the Engineering Senator, addressing his colleagues' concerns and issues about campus life to the student government board. Jacob was re-elected to this position in his junior year. For Jacob's senior capstone project, he worked with a team of seven mechanical engineering students to design and manufacture a functional 30 lb. combat robot. While issues of the COVID-19 pandemic cancelled the competition, their team was still able to demonstrate the robot's power on campus within a self-built arena. Jacob will work at Aquamor, LLC upon graduation, assisting the company with creating automated functions to increase their manufacturing and product testing efficiency.

## OUTSTANDING ACADEMIC, & SERVICE/ LEADERSHIP
### EDUARDO ALCANTAR
### MECHANICAL ENGINEERING


Eduardo Josue Alcantar received his degree in mechanical engineering with a minor in mathematics in May 2021. Throughout his four years at Maritime, Eduardo made major contributions through the Office of Community Engagement, logging an impressive number of hours giving back to local communities. Eduardo believes that providing service to others during immense challenges, like the pandemic, is a selfless and meaningful act that attests to the true strength of humanity when we all work together and support each other. Eduardo accumulated over 300 hours of community service by participating at different service events and projects. In addition, his dedication to serving others also included reaching out to his peers, and working with friends and classmates to support them academically. While maintaining his academic load and excelling in coursework, Eduardo would help a variety of students with their classes. He truly believes each act of service comes from a passion for helping others and supporting his community in any way that he can.



## OUTSTANDING ACADEMIC, RESEARCH IN STEM, & SERVICE/LEADERHIP
### ALEXANDRA ROSENBERGER · MECHANICAL ENGINEERING

Alexandra Rosenberger graduated with a B.S. in mechanical engineering and a minor in mathematics in May 2021. Alex's hands-on engineering experience first took her to the South Pacific Ocean after her freshman year where she worked on the TSGB with her peers, and to the Gulf of Mexico in 2019 on a diesel electric Offshore Supply Vessel traveling between Port Fourchon and contracted oil rigs. She joined the US Dept. of Energy's Collegiate Wind Competition, where she served as the aerodynamics and blade Design Engineer. With the rest of her team, Alex worked to develop and manufacture a fully functioning variable pitch wind turbine with a customized generator for the 2021 competition. Alex also worked with the Housing and Residential Life office as a Residence Hall Officer for three years, where she assisted students in adapting to college life and gained a variety of perspectives from numerous residents about their time in undergrad. Additionally, Alex received grant funding through CSUPERB and STEMNET to work as an Undergraduate Research Assistant with Dr. Julie Simons, a Mathematics Professor who specializes in biology-related applications. Conducting this extracurricular research has inspired Alex to seek out graduate study opportunities in mathematics-related fields.

## OUTSTANDING ACADEMIC, RESEARCH IN STEM, & SERVICE/LEADERHIP
### LEONARDO JEFFERSON · MECHANICAL ENGINEERING

Leonardo Jefferson graduated with a B.S. in mechanical engineering with his Third Assistant Engineer license with the US Coast Guard in May 2021. Leo was exposed to the world of design and the real-world applications of the engineering concepts learned in the classroom. His summer work included training cruises on the Training Ship Golden Bear, as well as a position as a cadet intern on the engineering team aboard Alaska Tanker Company's vessel, Alaskan Legend in his sophomore year. For his senior design project, Leo was the Project Lead and manufactured a 30 lb. "Battlebot". Leo served as a squad leader, operations officer, and a Residence Hall Officer. Leo was an active member of the Strategic Sealift Officer Program, which commissions Coast Guard licensed individuals as reserve duty members of the United States Navy. While in the unit, Leonardo served as an Academic Officer, Platoon leader, and, during his Senior year, as the Executive Officer in charge of the unit. Leo is working towards receiving a commission as a Naval Nuclear Officer, managing nuclear plants aboard naval vessels.

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California State University
# MONTEREY BAY
Extraordinary Opportunity

## OUTSTANDING SERVICE/LEADERSHIP
### ANNABELLE MCCARTHY · BIOLOGY

Annabelle McCarthy is a biology major, concentrating on ecological, evolutionary, and organismal biology at CSU Monterey Bay. Before transferring to CSU Monterey Bay, Annabelle participated in two summer Research Experiences for Undergraduates in ecology. In 2020, Annabelle was accepted into the CSU-LSAMP at CSU Monterey Bay Rising Researchers program and conducted research on how vegetation is related to the nesting success of Oak Titmice in nest boxes within urban greenspaces. Not only a passionate researcher, Annabelle dedicated herself to outreach in her community. At College of the Sequoias, she volunteered at STEM events at a local elementary school district to engage students in the sciences, facilitated chemistry sessions as a Supplemental Instruction Leader, and assisted students in coursework as a MESA Center Academic Tutor. At CSU Monterey Bay, she virtually mentored high school students in research during the COVID-19 pandemic, led Earth Day workshops about sustainable agriculture to the Central Valley area, and worked with high school and middle school youth to develop a workshop focus on climate change to present at a local land trust. After graduation, she plans to pursue a career in conservation in the Central Valley.

## OUTSTANDING ACADEMIC
### AHTZIRI CARRANZA MEDRANO · ENVIRONMENTAL STUDIES

Ahtziri Carranza Medrano is an environmental studies major at CSU Monterey Bay. During the summer of 2020, Ahtziri joined the Undergraduate Research Opportunities Center Researchers (UROC) and CSU-LSAMP program, and later became a Ronald E. McNair Postbaccalaureate Achievement Program Scholar. Ahtziri has conducted research with Dr. Victoria Derr on analyzing local farmer views of climate change in Pajaro Valley. She also worked with the Environmental Protection Agency Office of Pesticides. While conducting undergraduate research, she has maintained a GPA greater than 3.7 and has been on the CSUMB Dean's list consistently since Spring 2018. This past summer, she traveled to the University of Massachusetts Boston to work under the guidance of Dr. Lorena Estrada-Martinez researching how people on the island of Vieques, Puerto Rico have been impacted by the US Navy's previous occupation and use of the island as a bombing testing site. Once she graduates from CSUMB, she would like to pursue a Ph.D. in Environmental Health. Her ultimate career goal is to work as a researcher who explores how environmental hazards affect human health.



## OUTSTANDING ACADEMIC
### DEVYNN GATELY· MARINE SCIENCE

Devynn Gately is a sophomore majoring in marine science at CSU Monterey Bay. Devynn's passion for marine research started by participating in annual shore surveys through the Cabrillo Marine Aquarium to study how the population of ships within the port of Los Angeles affect intertidal organisms in Southern California. She also served at the Marine Mammal Care Center in Los Angeles where she learned about issues that marine mammals face in the environment. In fall 2020, she was accepted into the Undergraduate Research Opportunities Center (UROC) Researchers program and conducts research with Dr. Sherry Palacios using ArcGIS to analyze drone imaging maps of Elkhorn Slough to assess current conditions of seagrass. Devynn also served as the secretary and vice president of the CSU Monterey Bay Marine Science club and was on the Dean's list in fall 2020. Most recently, she was awarded the NOAA Educational Partnership Program with Minority Serving Institutions (EPP-MSI) Undergraduate Scholarship Program. This program will provide her with financial support for her junior and senior year as well as participation in two summer research internships. After graduating from CSUMB, she would like to earn her Ph.D. and work as a scientist on board a NOAA research vessel.

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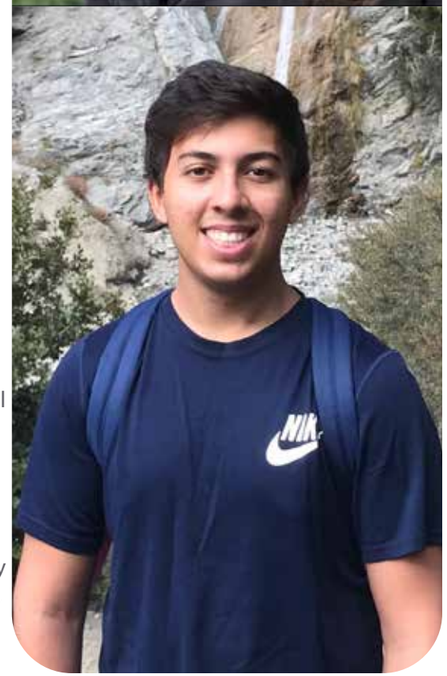
# CAL POLY POMONA

## OUTSTANDING RESEARCH IN STEM
### KASSANDRA LOPEZ · BIOLOGICAL SCIENCES

Kassandra Lopez graduated Summa Cum Laude with a B.S. in biological sciences in spring 2021. As a first-generation Latina student, Kassandra was determined to excel in her academics and become involved with research. She began her research journey at the City of Hope Cancer Center working with Dr. Teresa Ku examining how the WNT signaling pathway impacts self-renewal of adult murine pancreatic progenitor cells. She was co-author in the paper entitled, "A GLIS3–CD133–WNT-signaling axis regulates the self-renewal of adult murine pancreatic progenitor-like cells in colonies and organoids," published in the Journal of Biological Chemistry. Next, she worked with Dr. Frances Mercer and received the 2021 Doris A. Howell Foundation - CSUPERB Research Scholar Award for her project entitled, "Investigating the role of CD64 in the neutrophil mediated killing of Trichomonas vaginalis via trogocytosis." Kassandra was a strong advocate for transfer students. In her role as Student Admin Lead/Peer Mentor for the PolyTransfer program and ASI Officer of Transfer Engagement, she brought visibility and administrative changes to benefit transfer students. She was also the community service chair for the Hermanas Unidas club and provided members with various opportunities to give back to the community. Kassandra began a Ph.D. in biological sciences at City of Hope's Irell & Manella Graduate School.

## OUTSTANDING ACADEMIC
### RITU RAJ · CHEMICAL ENGINEERING



Ritu Raj graduated Summa Cum Laude with a B.S. in chemical engineering and a minor in materials engineering. Ritu was the president of the International Society for Pharmaceutical Engineering, where he led the chapter to increase engineering student's exposure to the Biotechnology and Pharmaceutical Industries. He has been involved in Maximizing Engineering Potential, where his passion for mentoring and educating developed. He provided supplemental instruction for three different undergraduate courses. Ritu has also been involved in research with Dr. Laila Jallo. He has worked on both the development and theoretical modelling of patches for transdermal drug delivery. He worked with a team of undergraduate students to develop a transdermal patch for aspirin delivery to assist people who take aspirin chronically. He also worked on modelling and computational simulation of transdermal patches to make transdermal delivery a commercially viable drug delivery method. Motivated by a strong desire to educate the next generation of engineers and develop technologies with the aim of improving lives, Ritu decided to pursue a career in academia. He is currently pursuing his Ph.D. in chemical engineering at the University of Colorado, Boulder. He hopes to use his education and engineering background to increase exposure of underrepresented students to STEM.



## OUTSTANDING RESEARCH IN STEM
### MERI OKORIE · BIOTECHNOLOGY

Meri Okorie is a first-generation student who graduated Summa Cum Laude with a B.S. in biotechnology. As an immigrant from Japan, her determination to pursue a STEM career path was strengthened by the challenging experience she faced growing up in Japan with a half-Nigerian and half-Japanese identity. Meri worked at the NASA-CPP Business Startup Program as part of the biology group to develop a non-clinical system to measure serum albumin levels in humans. She researched at the Summer Undergraduate Research Program at the University of Pittsburgh with Dr. Naoki Yoshimura and was a co-author for a manuscript. Meri worked with Dr. Ertan Salik's where she gained knowledge of optical waves in relation to protein-ligand interactions and developed the skills to operate an optical spectrum analyzer for transmission spectrum measurements and perform Igor Pro data analysis. Meri also worked at Silver Lake Research Corporations as a Research and Development intern to widen her industry experience. Meri presented at six conferences, has one peer-reviewed publication, was on the Dean's and President's Honor list, became a Kellogg Honors College student, and participated in the McNair Scholars Program and the NSF SPIRES fellowship program. Meri began her Ph.D. in pharmaceutical sciences and pharmacogenomics with a focus on neuropharmacology at UC San Francisco. She hopes to become a successful researcher and promote science to students who share similar backgrounds as hers, especially first-generation college students, immigrants, and those from underrepresented groups.

## OUTSTANDING ACADEMIC
### ALESSANDRO PEREYRA · CHEMICAL ENGINEERING

Alessandro Pereyra graduated Summa Cum Laude with a B.S. in chemical engineering and a minor in materials engineering. He was on the Dean's Honor List every semester and the President's Honor List every year. Alessandro's interest in materials science research sparked at the Naval Surface Warfare Center (NSWC) Corona Division under the Naval Research Enterprise Internship Program (NREIP), where he worked in optical materials and spectroscopy applications. He joined Dr. Vilupanur Ravi's corrosion research group exploring the deleterious effects of Microbially Influenced Corrosion (MIC) on novel materials utilized in the aerospace industry. Alessandro published three peer-reviewed papers and presented his research at conferences, including the National Association of Corrosion Engineering (NACE) and the American Society of Materials (ASM International). Alessandro also pursued a research experience for undergraduates at Northwestern University focusing on computational physics-based analysis of essential material parameters to optimize thermoelectric materials for future alternative energy applications. As a first-generation Mexican American, Alessandro felt a responsibility to participate in his community and promote diversity. He was the secretary and scheduler for the ASM and NACE clubs and volunteered at the Foundation Institute for Neurological Diseases (Findcures). Alessandro is currently pursuing a Ph.D. in materials science and engineering at Northwestern University continuing his semiconductor research. His goal is to pursue innovative cross-cutting materials science research and work at a national laboratory.

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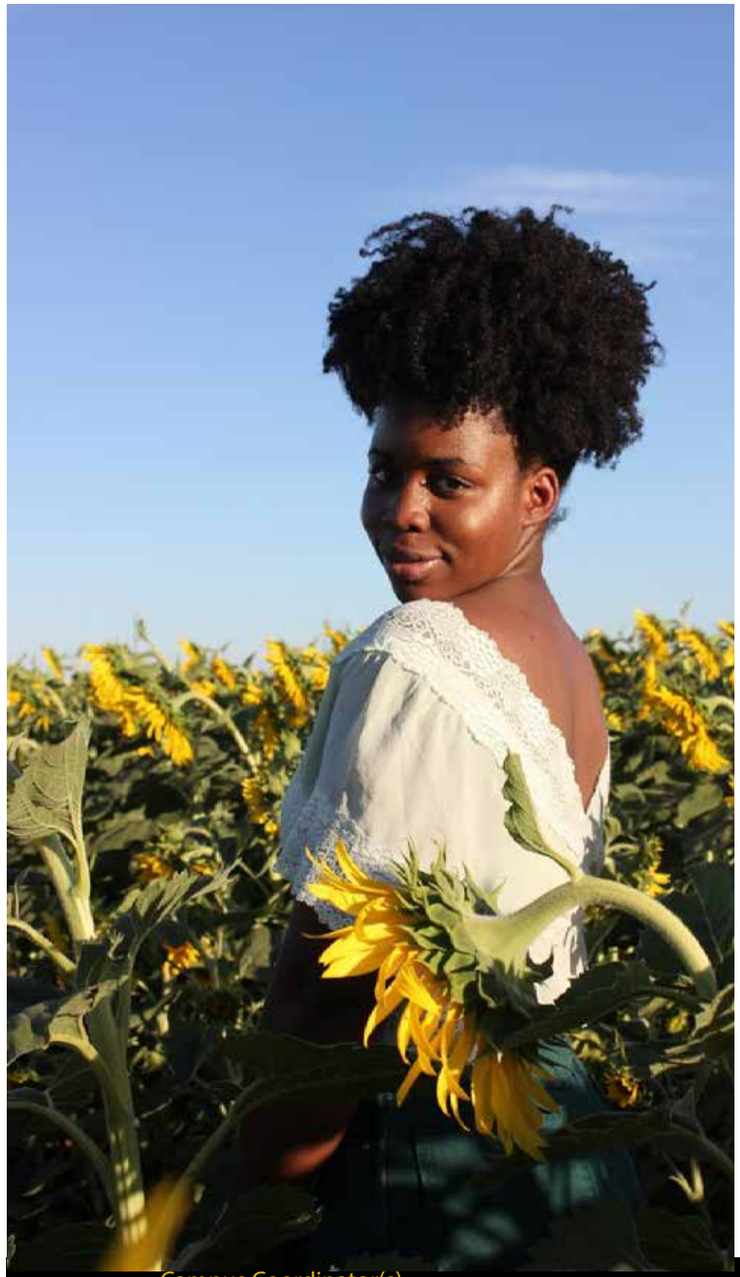
# SACRAMENTO STATE

## OUTSTANDING SERVICE/LEADERSHIP
### CARLA CAMPOS · BIOLOGICAL SCIENCES


While undeclared for two years, Carla excelled in her classes, showing her integrity for learning. For three years she served as a migrant tutor under CSUS Mini-Corps Migrant Program, tutoring K-4 students and performed as a traveling puppeteer delivering bilingual educational puppet shows to migrant centers and summer school programs. After joining the Biology Department, she initiated a change in career path and found her calling in biology. She became a Peer Assisted Learning (PAL) Facilitator and a CSU-LSAMP/RISE Scholar. She worked with Dr. Clint Collins analyzing the original and regenerated tails of California Alligator Lizards to understand the contrast in morphology. Carla was also the Chapter President for SACNAS at Sac State Chapter for two years, where she promoted her passion for equity, inclusion, diversity, and equality in STEM and education. She attended two SACNAS Conferences and presented at the 2021 virtual conference, along with presenting at the Fall and Spring Symposiums at Sacramento State, and at the Society for Integrative and Comparative Biology (SICB) Conference. During her final semester, she interned at the SMUD Museum of Science and Curiosity teaching virtual lessons on fossils to local Sacramento 2nd graders. Carla is currently attending a PREP program at UC Davis, and she hopes to work as a museum scientist in her future.



## OUTSTANDING RESEARCH IN STEM
### ALIYAH PENN · BIOLOGICAL SCIENCES



Aliyah Penn was born and raised in Sacramento, CA. She graduated from John F. Kennedy High school in Spring 2017 and enrolled at Sacramento State in Fall 2017 as a Biology pre-major. During her first semester of college, she joined the Science Educational Equity Program. During the Summer of 2018, she was awarded an NIH RISE Scholarship and introduced to scientific research in the lab of Dr. Kimberly Mulligan at Sacramento State. In the lab, she merged neuroscience and cellular biology to investigate the molecular basis of neurodevelopmental disorders (NDD), like autism spectrum disorder (ASD). Aliyah presented at the annual 2019 College of Natural Sciences & Mathematics Poster Forum and at the campus-wide 2019 Fall Forum at Sacramento State. She also had the opportunity to participate in national conferences, including the SACNAS Conference in Fall 2019 and Fall 2020 and the 44th Annual West Coast Biological Sciences Undergraduate Research Conference (WCBSURC). At WBSURC—which had participating student scientists from across the state and from large R1 universities—Aliyah won the best poster presentation award in Neurobiology. She also presented her work at the 2021 Student Research & Creative Activity Spring Symposium at Sacramento State, where she was awarded first place in her category. She was selected to represent Sacramento State at the 35th annual CSU systemwide research conference, where she won first place. As Aliyah enters her final year as an undergraduate, she looks forward to advancing further toward her goal of becoming a scientist in for the next generation of curious scientists.

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# San Diego State University

## OUTSTANDING SERVICE/:EADERSHIP
### CORINA LARD · MECHANICAL ENGINEERING

Corina Lard graduated with a B.S. in mechanical engineering in spring 2021. Corina began her academic journey at the 2015 CSU-LSAMP 5-week summer bootcamp. Corina's love of STEM led her to volunteer at the San Diego State University's "Build It" 3D Print Shop Makerspace. There, she dedicated her time to educate students on 3D printing technology and virtual reality through free workshops. She also volunteered her time in the Advanced Materials Processing Lab, where she worked as the lab machinist and was funded by NSF to perform research on nickel aluminide composites. Corina was selected as the San Diego STEM Rising Star by the Black Political Association San Diego. She became an advocate for her classmates as a Career Peer in Career Services. She mentored her peers and pinpointed how she could better reach underserved student populations. Corina would go on to lead the Career Care Café program which brought career services directly to students. As president of the National Society of Black Engineers, she helped organize their annual career fair and dining event, Engineers Giving Opportunities, connecting 200 students with 14 local engineering companies. Corina was awarded the Daniel P. Goodrich Award for her service to San Diego State and its student body. Corina works as an Operations Leadership Development Program Participant at Thermo Fisher Scientific.

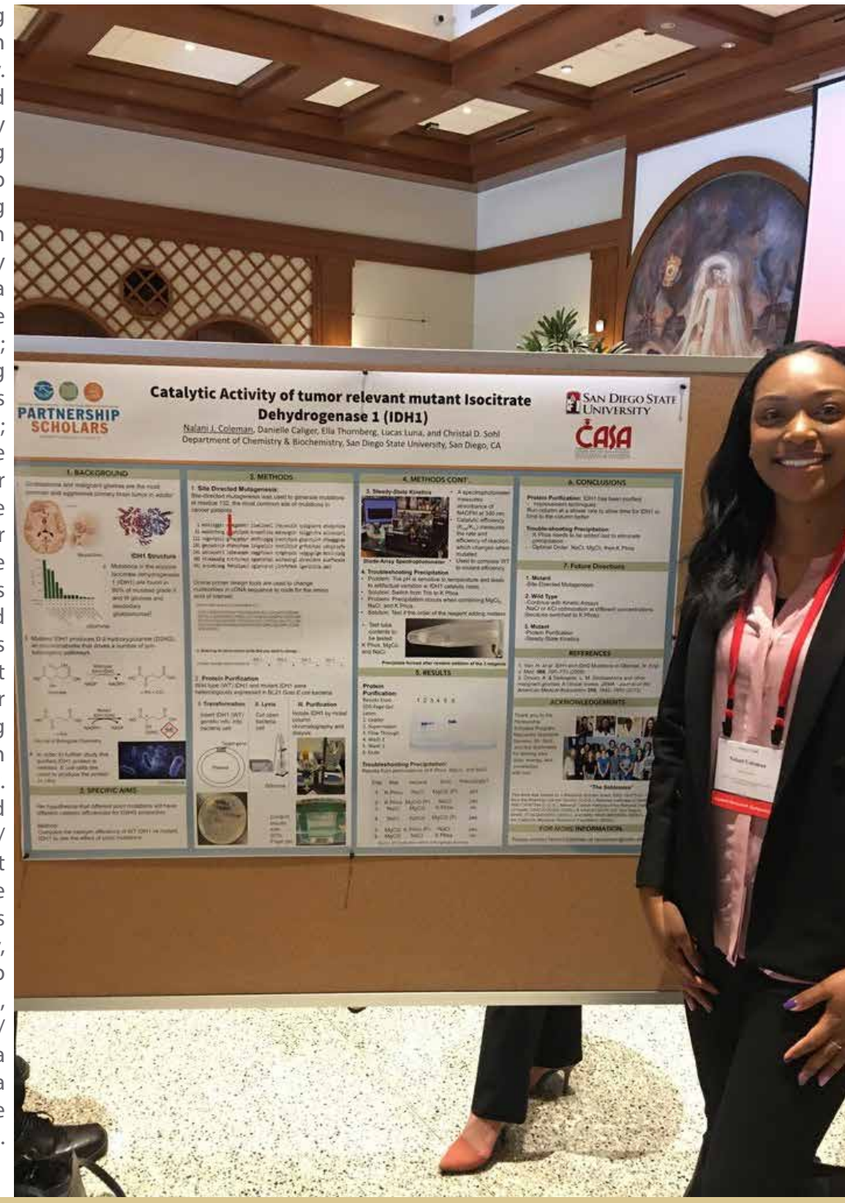
## OUTSTANDING ACADEMIC
### WESLEY PHUNG · COMPUTER SCIENCE

Wesley Phung is a graduating senior studying computer science. As a first-generation student, Wesley began his academic journey at SDSU with CSU-LSAMP's summer program which helped strengthen his understanding of mathematics and ultimately the fundamentals of computer science. With his academic proactivity and active involvement, Wesley was recommended for the Future Scholars Award and a part-time position in the EOP office as an IT Support Assistant. His exceptional academic performance was also recognized when he received an endowed scholarship sponsored by William R. Wade. Working as an IT assistant elevated his customer service experience, punctuality, and adaptability. As a MESA member, Wesley has participated in MESA Day where he helped facilitate and proctor STEM-related competitions for middle and high school students. Both CSU-LSAMP and MESA fostered his growth as an individual and acknowledged his academic success, maintaining a cumulative GPA of 3.80 thus placing him on the Director's List as well as awarding him the MESA Scholarship. Wesley has been consistently placed on the Dean's List since his first semester. Wanting to strike a balance between obtaining a secure future and his interest in technology, Wesley declared a minor in statistics. Recognizing that society is constantly generating data more than ever, Wesley aspires to work in manipulating and analyzing big data.



## OUTSTANDING SERVICE & LEADERSHIP
### NALANI COLEMAN · CHEMISTRY

Nalani Coleman is a graduating senior studying chemistry with an emphasis in biochemistry. Nalani has consistently volunteered and served the community in a variety of roles, including an SI Leader creating and facilitating study sessions to help students gain a deeper understanding of general chemistry; Women in Science Society Diversity Advocacy Group Representative where she and a partner pitched ideas to the executive board on topics surrounding diversity; Resident Advisor ensuring a safe living community for freshmen students while serving as a resource and mentor; during the COVID-19 pandemic, she participated as a Chemistry Instructor in a pilot program for the Black Resource Center Summer Bridge Experience, for incoming Black freshmen; and as the Black Student Science Organization's Alumni Liaison, where she connected BSSO undergraduate members with BSSO alumni through different mentorship opportunities to foster valuable relationships via networking workshops for students to connect with alumni during the COVID-19 pandemic. Nalani continues her leadership and outreach by serving as a chemistry/math tutor and a Community Assistant in the Residential Education Office working with second year students to ensure a safe living community, provide programming and mentorship focused community building, networking, and transition into career/graduate school opportunities. As a MARC scholar, Nalani hopes to enter a Ph.D. program in fall 2022, where she will undoubtedly continue giving back.

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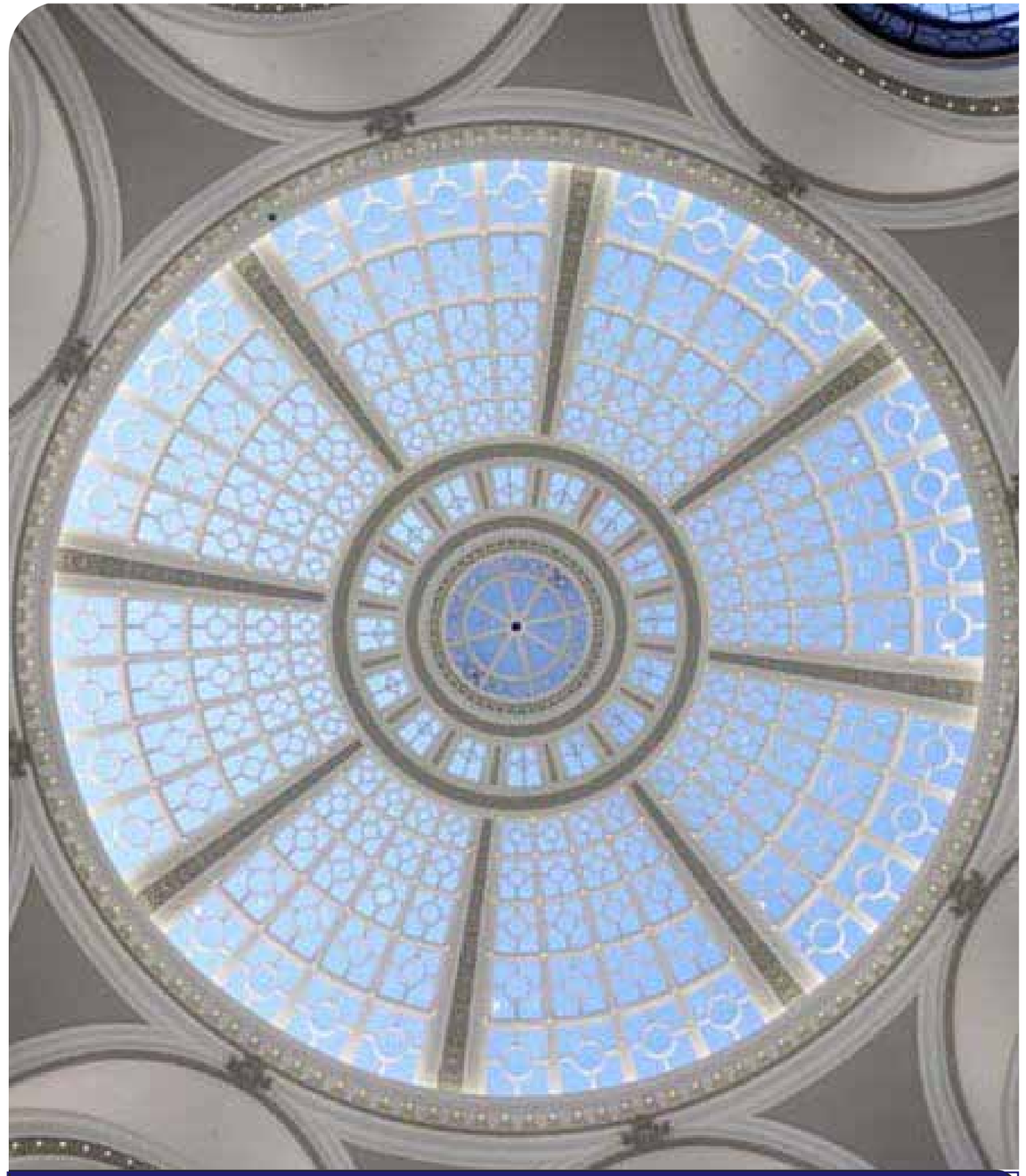
# San Francisco State University

## Outstanding Alumna & Compelling Personal Story
### Lelahiwat Legesse · Cell & Molecular Biology


Lelahiwat (Lela) Legesse immigrated to Oakland, CA from Ethiopia when she was three years old. Growing up in Oakland was difficult as she found herself surrounded by violence, drugs, and poverty. She understood early on that the only way to escape her surroundings was through education. In her senior year of high school, Lela experienced several unexplained physical problems that often made it difficult to even get out of bed or move her arms and legs. Even so, Lela performed well in school, graduated in the top five percent of her class, and decided she wanted to pursue an M.D./Ph.D. in cardiothoracic surgery. However, the physical problems persisted. After visiting fourteen doctors, she was finally diagnosed with Chiari 1 Malformation, an incurable brain disorder that causes cerebral tonsils to herniate down the spinal cord, causing major debilitating headaches and paralysis. Even with this diagnosis, Lela did not give up. Instead of complaining, Lela has grown as an individual, a student and a scientist. Lela is currently in the M.S. program in biology at San Francisco State where she is president of the Black Excellence in STEM and a Bristol-Myers Squibb Fellow. Lela hopes to purse an M.D./Ph.D. in hopes of one day giving back to her community and give hope to others.





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# SJSU SAN JOSÉ STATE UNIVERSITY

## OUTSTANDING ACADEMIC & SERVICE/ LEADERSHIP
### CHRISTOPHER BRAVO
### BIOLOGICAL SCIENCES

Christopher Bravo is a senior pursuing a B.S. in biological sciences with a concentration in molecular biology and minors in chemistry and bioinformatics. His first experience with research started in San Jose City College exploring chemicals that could be polluting lakes in Northern California. At SJCC he cofounded the school's chapter SACNAS. Chris enlisted in the Marine Corps and, after serving our country for five years, he returned to college. Chris started at SJSU in fall 2019, where he has distinguished himself by obtaining a 3.55 GPA. He joined Dr. Cleber Ouverney's microbiology research lab, focusing on the characterization of an uncultured novel bacterium called TM7 found in the oral microbiome. Chris' work focuses on the purification and analysis of TM7's P-galactosidase enzyme. He uses bioinformatics to help characterize the enzyme to understand both the enzymatic mechanism and ancestral relationship of the protein. After graduation, he will pursue his Ph.D. at UC San Francisco and plans to focus on cell developmental biology and its association with disease, and to continue using bioinformatics as a research tool.

## OUTSTANDING ACADEMIC, RESEARCH IN STEM, & SERVICE/LEADERSHIP
### DANITZA CHELINE
### BIOLOGICAL SCIENCES

Danitza Cheline is senior pursuing a B.S. in biological sciences with a concentration in systems physiology. Danitza has joined the RISE program and has been an active member in Dr. Wilkinson's neurophysiology lab for 2 years. Her research focuses on developing an optogenetic technique to stimulate the gamma motor neurons found in muscle spindles, which are important for proprioception and motor control. Her goal is to develop a tool to look for gamma motor neuron dysfunction in neuromuscular disease models. Danitza presented her work at ABRCMS, where she received a poster award, and at the Experimental Biology Conference. Danitza also serves as a peer educator for biology and organic chemistry classes facilitating group discussion and guiding students through problem sets. She is also an active board member, soon to be Vice President, of the Biology Students Association club where she helps biology majors learn more about different career and educational opportunities. Danitza has maintained a 3.7 GPA and was awarded the Albert and Dorothy Ellis Scholarship in fall 2021. She hopes to one day have a career as a physician scientist helping to serve underrepresented communities.



## OUTSTANDING ACADEMIC
### GUSTAVO GARAY
### MECHANICAL ENGINEERING

Gustavo Garay is a senior pursuing a B.S. in mechanical engineering with a minor in Chicanx studies. As a first-generation student, he has overcome many challenges and has excelled in his college course work maintaining a 3.6 GPA. He worked on a project for his mechatronics course that implements environmental sensors in a hydroponic agriculture system to help make it more accessible and viable for the average user. Gustavo has been involved with Spartan Racing, SJSU's chapter of Formula SAE, where he worked on a project to redesign the team's pit cart. He has also worked closely under the Brakes Designer and hopes to take over the responsibility for the next season of Spartan Racing. Gustavo became a member of the Society of Latina/o Engineers and Scientists and plans to get more involved with the organization to empower and encourage other Latinx students in STEM. Gustavo wishes to pursue an M.S. in mechanical engineering and start a career in environmental sustainability, renewable energy, agriculture, or automotive design. He wants to lead a new wave of diverse, nonconforming, environmentally conscious, ethical, and intersectional engineers.

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## OUTSTANDING ACADEMIC
### NATHAN ABEGAZRAY
### SOFTWARE ENGINEER

Nathan Abegaz is pursuing a B.S. in software engineering with a current 3.55 GPA. Nathan worked on campus as an IT student help desk assistant, helping individuals on campus with technical issues. He has also been part of the Dean's list and a member of Tau Beta Pi Engineering Honor Society. During the summer of 2020, Nathan worked at Cisco as a Software Engineer Intern, where he gained real-world experience building a front-end tool for Cisco. Nathan is currently completing his senior project entitled, Skill Lab, a web application focused on building a mentorship community by connecting users to mentors within their field of interest. Nathan aspires to continue working and learning in the field of software engineering and building impactful software applications.

# Cal Poly

## SAN LUIS OBISPO

### OUTSTANDING RESEARCH IN STEM

**HANNAH HEATH · NUTRITION SCIENCE**

Hannah Heath is a nutrition science major who transferred from MiraCosta community college in fall of 2019. She began working as a research assistant with Dr. Michael La Frano, where she discovered a love for metabolomics and nutrient metabolism. She received the Doris A. Howell Foundation's CSUPERB Research Scholar Award for her investigation of gestational diabetes prevention via improvement of metabolic markers. Her research has made her passionate about pursuing a career in academia and continue engaging in the study of metabolomics. As a disabled student, Hannah is passionate about increasing accessibility and disability inclusion in academia. She founded the Disability Resource Center Student Advisory Committee dedicated to improving accessibility within the DRC and beyond. As head of the committee, she worked to provide student-led accessibility trainings for Orientation and ASI Student Government. She also launched a successful campaign to instate a Secretary of Accessibility office within the Executive Board of ASI to ensure that students with disabilities are represented in student government. She is a proud member of the SciAccess Working Group, the Disability Studies Society, and Cal Poly's Inclusive Design Champions and is excited to continue supporting and celebrating students with disabilities throughout her academic career. Her goal is to obtain a Ph.D. in biochemical and molecular nutrition, become a professor and researcher of nutrient metabolism.

### OUTSTANDING COMMITMENT TO CREATING A MORE EQUITABLE WORLD THROUGH RESEARCH

**AMMAN ASFAW · ELECTRICAL ENGINEERING**


Amman Asfaw graduated with a B.S. and M.S. in electrical engineering in 2020 and 2021, respectively. He is a first-generation student and Ethiopian-American raised in Thousand Oaks, CA. Amman went from a 2.7 GPA his freshman year to a 3.0 GPA his senior year and finished with a 3.7 GPA in his fifth and final year. Amman invented, researched, and published The CAR Strategy, a framework for driving out exclusionary terminologies in engineering education. Amman taught two quarters of Cal Poly's undergraduate Electric Circuits laboratory, and he authored his own column, Gen Z(eal), in the American Society for Engineering Education's Prism magazine. Amman's involvements included the Cal Poly's National Society of Black Engineers, Black Student Union, and Sigma Nu Fraternity. Amman served on the City of San Luis Obispo's Diversity, Equity & Inclusion (DE&I) Task Force which lobbied the City Council to elect DE&I as one of its five Major City Goals for 2021-23. Amman travelled to 11 states, 10 countries and hosted a live streamed event with then-orbiting astronaut, Victor Glover. Amman is a small business owner of his own brand, AMMAN LLC, with the vision: first, apparel to get the wheel turning; next, an autoethnography to get the brain churning; then investment to save Earth from burning. Amman works as a subcontracting engineer in the Bay Area.



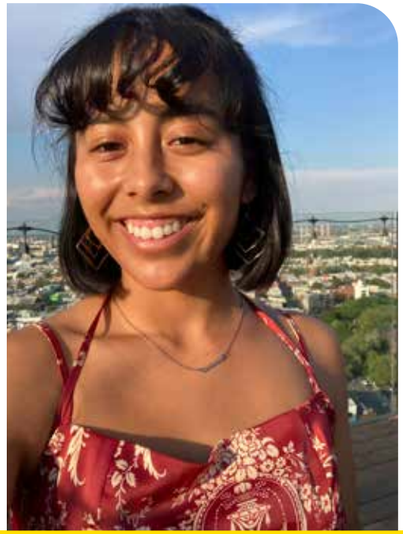
### OUTSTANDING SERVICE/LEADERSHIP

**TEDMAN TRẦN · ELECTRICAL ENGINEERING**

Tedmon Trần graduated with a B.S. in electrical engineering and a B.A. in music with minors in Asian studies and ethnic studies in 2021. Trần is a first-generation student who actively participated in and helped found various professional organizations, music ensembles, and mentorship programs. During the pandemic and virtual learning, Trần served as an instructional student assistant for electrical engineering, mechanical engineering, and history courses. After assisting underrepresented high school students in ethnic studies courses at UC Berkeley, Trần traveled abroad to investigate the role of music and identity in Vietnam and in the Vietnamese diaspora. Trần completed a project through the Summer Undergraduate Research Program on the role of race, capitalism, modernity, and identity among Vietnamese women in French-colonized Vietnam. Trần also participated in the STAR program which empowers future teacher-researchers. Trần helped develop alternative acoustical methods to detect minke whales with the NOAA Fisheries Southwest Acoustic Ecology Lab. Trần received several awards, including the Asian Pacific Islander Faculty and Staff Association Student Scholarship and the President's Diversity Award nomination for continually strengthening the AAPI communities in San Luis Obispo and in the SF Bay Area. Trần received the Service to the Arts award as well as two scholarships related to inclusive and equitable K-12 STEM teaching—the School of Education Scholarship from the Center for Engineering, Science, and Mathematics Education and the Noyce Fostering Integrated Responsive Science Teaching Scholarship. Trần started the single-subject teaching credential in physics program at Cal Poly in fall 2021.

### OUTSTANDING COMMITMENT TO CREATING A BETTER WORLD THROUGH RESEARCH

**ADA TADEO · BIOMEDICAL ENGINEERING**



Ada Tadeo is a first-generation student who graduated with a B.S. in biomedical engineering. She was employed as a co-op at Edwards LifeSciences where she trained clinical specialists on a device that is used to treat patients with tricuspid valve Ada has conducted various research studies with the Microcirculation and Vascular Regeneration laboratory on campus, investigating impacts of cardiac diseases on vascular function to discover alternative methods of treatment for patients experiencing chronic ischemia. She earned the grand prize at the Society of Hispanic Professional Engineers's Engineering Science Symposium, as well as an outstanding research presentation award at SACNAS. Ada was also selected to participate in the 2019 LSAMP Summer Research Expedition in Costa Rica where she contributed to ongoing research of biodiverse ecosystems and environmental sustainability. Ada has become passionately active in multiple outreach efforts with Edwards LifeSciences, SHPE, and Cal Poly's Engineering Possibilities in College summer program. She served as a counselor, mentor, and teacher to young students from underserved communities to inspire and offer advice in pursuing higher education in engineering and STEM. She hopes that sharing her experiences will guide the next generation of BIPOC students to successful academic careers.

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California State University
SAN MARCOS

## OUTSTANDING ACADEMIC, & RESEARCH IN STEM
### CLARISSA GARCIA · MOLECULAR & CELLULAR BIOLOGY


Clarissa Garcia is a Cellular and Molecular Biology major and a student athlete at CSUSM. She became a scholar in CSU-LSAMP Program in the fall of 2018 and joined the Cultural Perinatal Mental Health Laboratory under the direction of Dr. D'Anna-Hernandez. During this time, she studied acculturative stress in Hispanic mothers and how it affects the stress biology of the mother and baby during the perinatal period. In 2019, Clarissa worked as a summer intern at The George Washington University Cancer Center with Dr. Eduardo Sotomayor. Through this work she found her passion for cell biology and human diseases and returned to CSUSM to join the laboratory of Dr. Jane Kim where she investigates the mechanisms of DNA mutations using S. cerevisiae. This past year, Clarissa utilized publicly available databases to investigate the relationship between genomic stressors and mutation rates in S. cerevisiae. Her dedication to science and academic excellence led to an invitation to join the very competitive U-RISE program at CSUSM in 2020. Clarissa has presented her research at multiple scientific conferences and was one of ten students selected to represent CSUSM at the 35th annual CSU Statewide Student Research Competition. Clarissa remains academically competitive, with a 3.80 GPA. In the summer of 2021, Clarissa performed research at the University of Colorado Cancer Center's REU where she worked with Dr. Joaquin Espinosa investigating how gene networks control cell behavior in homeostasis and human disease. She plans to pursue a PhD after obtaining her bachelor's degree in 2022.

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## OUTSTANDING RESEARCH IN STEM
### YESENIA MORA · BIOLOGICAL SCIENCES

Yesenia Aurora Mora is an undergraduate student majoring in biology. Shortly after beginning her freshman year, Yesenia began research with Dr. Diego Sustaita, where she has worked diligently for four years investigating wing-flashing behavior, performed during hunting in Loggerhead Shrikes, a predatory bird. The research is aimed at determining the role of the behavior in predator/prey interactions. Yesenia has presented her work at several conferences and was selected in 2019 and 2020 to represent CSUSM at the California State University Statewide Research Competition. Due to Yesenia's academic and research excellence, she was invited to join the U-RISE Program. In spring 2021, Yesenia made the Dean's List in the College of Science and Mathematics. She plans to pursue a Ph.D. after graduating with a B.S. in biology in spring 2022.

## OUTSTANDING RESEARCH IN STEM
### ANAY OCHOA · BIOLOGICAL SCIENCES

Anay Ochoa is a first-generation, third-year biological sciences major. She transferred to CSUSM from Palomar College, where she was a Bridges to the Baccalaureate Scholar. She was accepted into the U-RISE and the CSU-LSAMP programs. She has been engaged in research with Dr. John Eme, where she has assisted in reptilian and fish research. Her focus is on reptilian research investigating the effect of egg mass, hatchling size and clutch on growth in female American alligators, Alligator mississippiensis. She presented her work at the 2021 CSUSM Symposium on Student Research, Creative Activities, & Innovation and was selected to represent the campus at the CSU Statewide Student Research Competition. She also presented her research at the Experimental Biology meeting. Anay was accepted into the UC Berkeley NSF REU for Summer 2021 where she worked in the fish speciation laboratory with Dr. Christopher Martin. She plans to pursue a Ph.D. after obtaining her bachelor's degree in 2022. Anay has a passion for scientific research and for promoting diversity, equity, and inclusion in the sciences.

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## OUTSTANDING RESEARCH IN STEM

### THERESE AZEVEDO · STATISTICS

Therese Azevedo is a first-generation student who grew up in California's Central Valley. She learned to navigate college on her own and has been able to find and develop a community for herself and others. Due to math anxiety, Therese had no interest in either mathematics or statistics during most of her secondary education; however, in her high school statistics course, Therese noticed that she learned just as much from her failures as she did from her successes, and she learned to embrace those challenges as an integral part of the learning process. Subsequently, Therese began to see that mathematics and statistics had many practical applications, which sparked an instantaneous passion for the subjects and an interest in research related to these fields. Inevitably, research has been a critical component to her undergraduate journey. At Purdue University, through the Summer Research Opportunities Program, she conducted research on people's experiences with math to examine math anxiety. She also used data science to examine societal attitudes toward the COVID-19 pandemic in a summer research opportunity through the Rutgers University Center for Discrete Mathematics and Theoretical Computer Science. Additionally, Therese conducted statistical modeling research at Sonoma State University. Therese has actively supported her peers through various on-campus leadership roles, including being a mathematics and statistics tutor, peer mentor, and resident advisor. Therese is currently embarking on a new research endeavor connected to data science and predictive analytics with a focus on social impact and plans to pursue a graduate degree in a related field.



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# California State University | Stanislaus

## OUTSTANDING RESEARCH IN STEM
### TRE MCCLENNAN · BIOLOGY

Tre McClellan is a first-generation student and is the oldest child in his family. Tre was recruited by Dr. Cooper to join her research team to study California ground squirrels, using the species as a model to address questions in evolution, genetics, ecology, and behavior. Tre is primarily interested in animal behavior, and he developed an independent research project to address how ground squirrel foraging behavior is influenced by the risk of predation. Tre's study utilized an experimental approach, in which a captured squirrel was introduced into an arena and its foraging behavior was observed in the presence of a scent cue: coyote urine (experimental) or white-tail deer urine (control). Tre hypothesized that squirrels would forage less and be more vigilant in the presence of the predator scent cue compared to the control cue, as an evolved anti-predator behavioral strategy. He also proposed that the body condition of the squirrel would influence its behavior, with under-nourished squirrels foraging more in the presence of the predator scent compared to squirrels in good body condition. After graduating with a degree in biological sciences and a chemistry minor, Tre will go to graduate school to continue his research into animal behavior and evolution.

## OUTSTANDING ACADEMIC & RESEARCH IN STEM
### DARCY BRUNK · MATHEMATICS

Darcy Brunk is a first generation college student with an inquisitive nature that showed from the moment she learned to talk. That questioning spirit has led her on a journey to becoming a mathematician who is constantly seeking new questions and new answers. As a math major at California State University, Stanislaus, she has maintained a 3.95 GPA along with participating in research. During summer 2020, Darcy was a research intern for the Lawrence Berkeley National Laboratory, working on creating a hypergraph-based image segmentation algorithm. This project allowed her to expand both her skills and knowledge base, as it was based on graph theory concepts and their applications, while using the coding language C++. She has presented this research at national conferences and local Math Club events. Her academic achievements include being on the Dean's List for multiple years both at Modesto Junior College and CSU Stanislaus, and being selected by the CSU Stanislaus Mathematics department for the 2021 Dean's Award of Excellence. She also has been inducted into the Phi Kappa Phi and Tri-Alpha Honor Societies. Darcy's career goal is to become a researcher at the National Security Agency or a national laboratory. She has dreams to inspire other young women to pursue careers in STEM fields. After graduation in May 2021, Darcy plans to attend graduate school, with the end goal of receiving a PhD in mathematics.



## OUTSTANDING RESEARCH IN STEM
### MARLEN MARTINEZ-LOPEZ · COMPUTER SCIENCE & COGNITIVE STUDIES

Marlen Martinez-Lopez is first-generation student double majoring in computer science and cognitive studies. She has participated in a variety of research projects including AI, medical big data analysis, and computer science education. Marlen has been working with Dr. Daehee Kim conducting research with the goal of helping medical researchers better analyze patient data. She is a co-author of a paper, Medical Big Data Analysis System to Discover Associations between Genetic Variants and Diseases, which she presented at the IEEE International Conference on Communications. She also presented this research at the Stan State Honors Capstone Conference. Marlen is part of the NSF research team led by Dr. Cueponcaxochitl Moreno Sandoval constructing a framework to understand how computer science education intersects with ancestral knowledge systems towards sustainability for students who are underrepresented in the field of computer science. Her research experience led to a software engineer internship at Northrop Grumman. In fall 2020, she was a User Research and User Experience Designer Intern for the Library of Congress. In summer 2021, she participated in Carnegie Mellon University's Human Computer Interaction Institute Research Program. Marlen is a McNair Scholar and plans to go to graduate school to obtain her masters.

## OUTSTANDING ACADEMIC
### RYAN DE LOS SANTOS · PHYSICS

Ryan De Los Santos is a first-generation student who graduated Summa Cum Laude with a B.S. in physics. He enjoyed being a math, chemistry, and physics peer tutor, which sparked his desire to become a physics professor upon completing his Ph.D. Ryan maintained an exemplary academic record, from studying in the honors program, to being honored with the Dean's Award in Physics for the 2019-20 school year and getting accepted into the Cal-Bridge Scholars program. Ryan was invited into Dr. Brian Morsony's research group, where he honed his programming skills to take part in a project simulating short gamma ray bursts. He then applied these skills to develop his own research for the honors program, in which he studied solar panel cleaning methods and their application in Stanislaus County. Ryan simulated cleaning a solar panel with an electrodynamic screen to study the benefits of such a feature for homeowners. Following graduation, Ryan started a remote research internship for CERN. Ryan has been accepted into the Ph.D. program for particle physics at the Ohio State University.

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