



UC LEADS ANNUAL REPORT 2015-2016

PREPARING PROMISING SCHOLARS
FOR GRADUATE EDUCATION
IN SCIENCE, TECHNOLOGY, ENGINEERING
AND MATHEMATICS (STEM) SINCE 2000

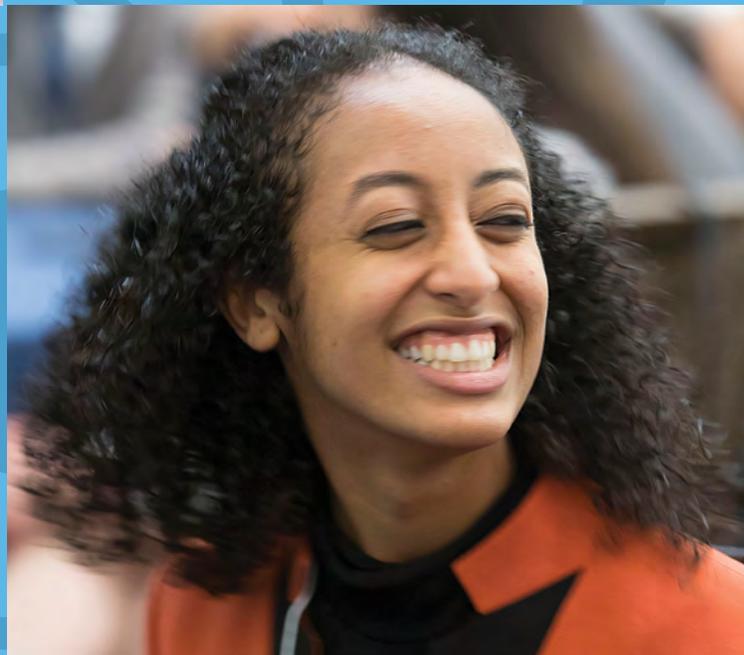


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A MESSAGE FROM THE UC LEADS STATEWIDE DIRECTOR

Since 2000, the University of California's Leadership Excellence through Advanced Degrees (UC LEADS) program has helped us discover hundreds of educationally or economically disadvantaged UC undergraduates in science, technology, engineering, and mathematics (STEM) with the potential to succeed in graduate school.

The scholars profiled in this year's annual report continue a sixteen-year tradition of building excellence and diversity in research, through UC LEADS projects and experiences. These educational experiences enhance our UC LEADS scholars' potential for success in graduate school and prepare them to assume leadership roles following completion of a doctoral degree.

I would like to recognize the UC staff who support our students and truly make this program a success. The UC LEADS Coordinators work hard to provide our scholars with the opportunities and tools to successfully matriculate into graduate programs and prepare for careers as our next generation of STEM scholars and leaders.



Sincerely,

Christian Villaseñor
Statewide Director, UC LEADS
Graduate Division Assistant Dean, UC Santa Barbara

UC LEADS EXECUTIVE STEERING COMMITTEE



Carol Genetti — Chair and Dean of Graduate Division, UC Santa Barbara

Christian Villaseñor — UC LEADS Statewide Director and Assistant Dean of Graduate Division, UC Santa Barbara

Michele Johnson — UC LEADS Statewide Assistant Director, UC Santa Barbara

NORTHERN CALIFORNIA

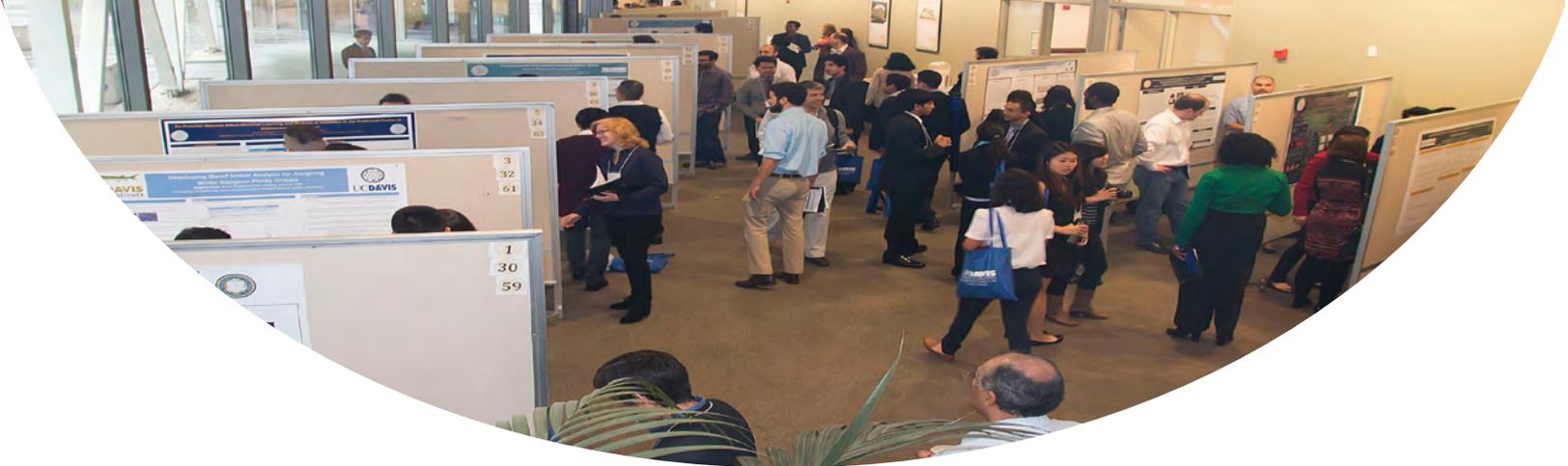
Rudy Ortiz — Northern California Faculty Representative, UC Merced

Julia Clark — Northern California UC LEADS Coordinator Representative, UC San Francisco

SOUTHERN CALIFORNIA

Olivia Graeve — Southern California Faculty Representative, UC San Diego

Christopher Murphy — Southern California UC LEADS Coordinator Representative, UC San Diego



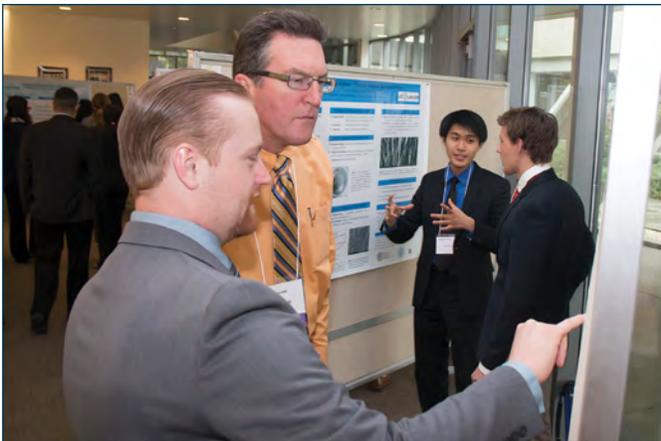
Poster Presentations at the 2016 UC LEADS Research and Leadership Symposium

THE 2016 UC LEADS RESEARCH AND LEADERSHIP SYMPOSIUM

March 5, 2016 // UC DAVIS

The 2016 UC LEADS Koret Research and Leadership Symposium at UC Davis featured engaging morning poster presentations by 84 Scholars followed by an afternoon Leadership Workshop. Students also enjoyed a presentation on olive oil research conducted at the host campus. A UC LEADS Alumni Panel spoke and answered scholar questions about graduate school and career trajectories, while Dr. John Matsui from UC Berkeley kicked off the evening awards ceremony with an inspiring keynote address.

In an effort to encourage faculty judges to stay and network with students at dinner, we also hosted an afternoon faculty appreciation event, which included a tour of the Robert Mondavi Institute for Wine and Food Science. Despite the stormy weather, the day was a great success.



UC LEADS Symposium, clockwise from top left: Scholars present research posters, Scholars prepare to present their research to faculty, a UC LEADS Alumni Panel speaks to Scholars, Scholars engage in a Leadership Activity



UC LEADS Scholars, 2015-2016 cohort

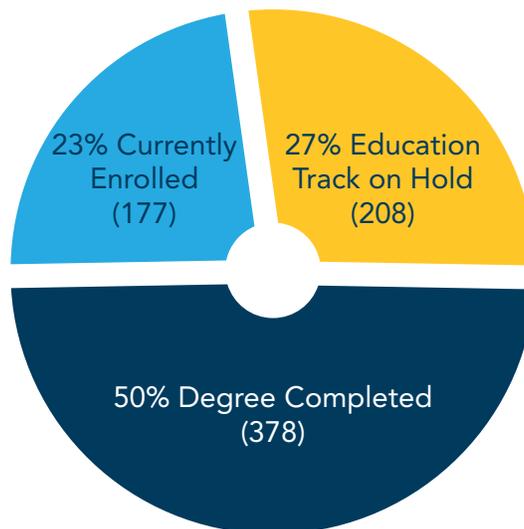
PROGRAM IMPACT SUMMARY

This year we performed an extensive audit of our UC LEADS database. We updated historical and new student information, and added alumni education and career data.

From 2000 to our most recent 2015-2016 cohort, a total of 868 UC Scholars have participated in the UC LEADS program. Women made up 49 percent of our total UC LEADS alumni population.

Of the 763 Scholars who have graduated, 555 (73 percent) are either currently enrolled in graduate school or have already earned degrees in a master's or doctoral program (Figure 1).

Figure 1. Graduate degree outcomes for UC LEADS Scholars

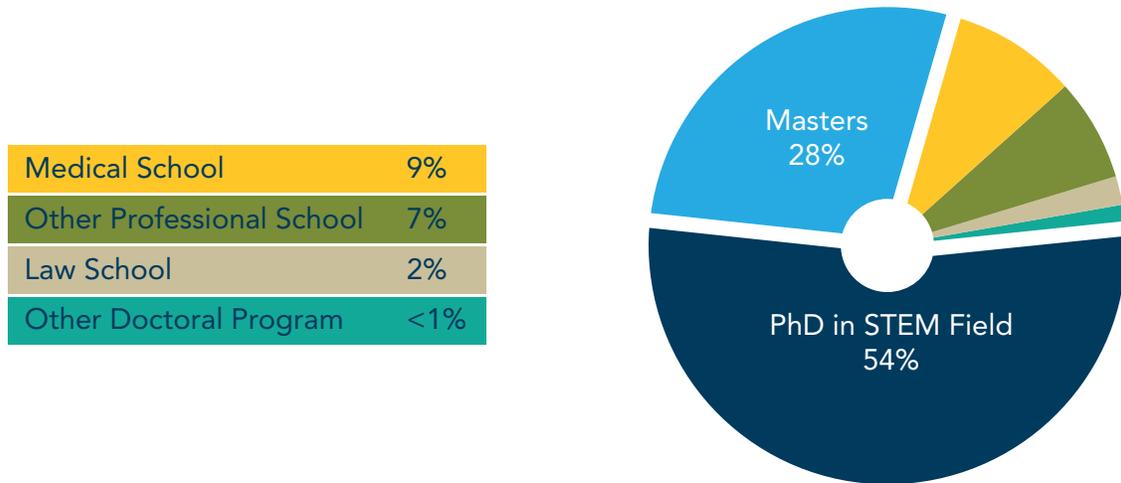


Of the 555 Scholars who matriculated into graduate school, 258 (46 percent) enrolled in a UC graduate program (Figure 2), and 297 (54 percent) enrolled in graduate programs outside of the UC (Figure 3).

Nineteen UC LEADS alumni are now working as tenure track faculty, including six within the UC system.

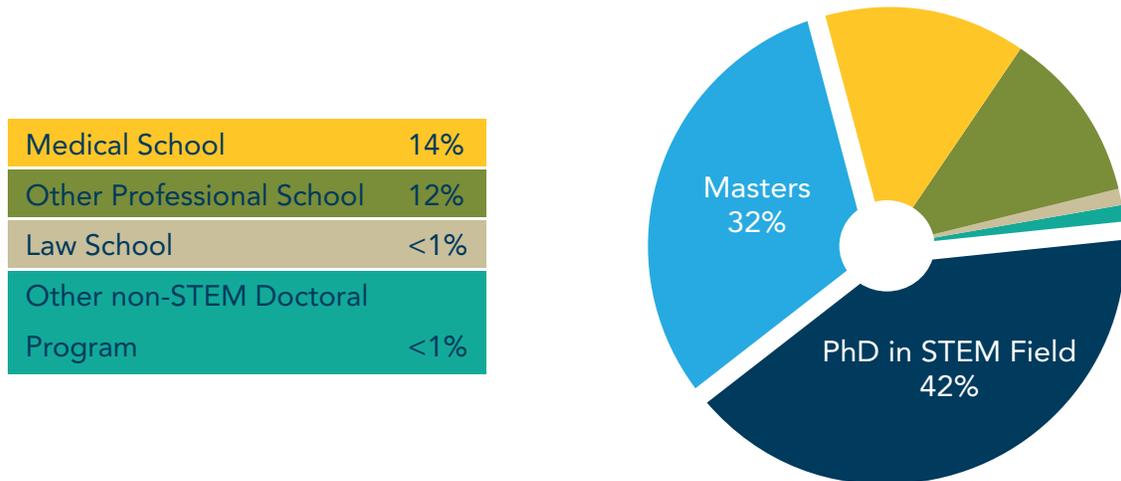
UC Graduate School Enrollment

Figure 2. UC LEADS alumni enrolled in UC graduate programs



Non-UC Graduate School Enrollment

Figure 3. UC LEADS alumni enrolled in graduate programs outside of the UC



LOOKING FORWARD

During the 2016-2017 academic year, we will be revising the **UC LEADS Coordinator Handbook and Calendar**. We hope to continue to foster connections between Scholars, alumni, faculty mentors, and UC LEADS staff through our UC LEADS LinkedIn group and email communication.

We also look forward to the **UC LEADS Research and Leadership Symposium at UC Los Angeles** in March 2017, where we will engage students in a hands-on leadership challenge and encourage student and faculty networking and recruiting.



ALUMNI SPOTLIGHTS

DESIREE SIGALA

UC LEADS 2009-2011

UC Merced

Bachelor of Science, Biological Science (2012)



“UC LEADS provided me with the opportunity to become an integral part of the scientific community. It was my foundation to getting into graduate school and becoming a successful graduate student.”

Sigala is currently a Ph.D. student in Nutritional Biology at UC Davis, working with Peter Havel and Kimber Stanhope in identifying the effects of sugar on lipid metabolism in humans.

KAVIT KUMAR

UC LEADS 2010-2012

UC Santa Cruz

Bachelor of Science, Electrical Engineering (2013)



“UC LEADS opened up various opportunities to work in challenging and diverse research environments. It also allowed me to evaluate areas of science that interested me and things I didn’t want to pursue. The experience gained at these labs provided a strong foundation not just for the work I did in graduate school, but also for my professional engineering career. I enjoyed my research in optics so much that I decided to make a career out of it.”

Kumar received a master’s degree in Electrical Engineering from Columbia University. After completing graduate studies, he moved to North Carolina for a year to pursue his interests in developing high-power semiconductor LEDs at CREE. He has since returned to California and works as an electronics engineer at Sandia National Laboratories.

FRANCISCO PONCE

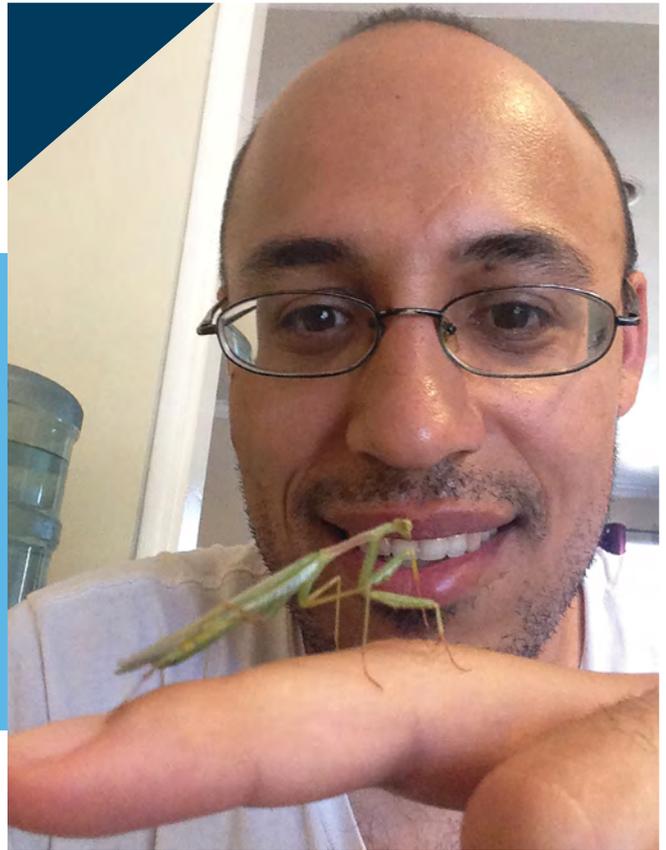
UC LEADS 2005-2007

UC Berkeley

Bachelor of Arts, Applied Mathematics
and Physics (2007)

“UC LEADS enabled me to explore research as a future career path by sponsoring me during the summer so that I did not have to look for work in some service industry instead. While in the program I was surrounded by similarly motivated individuals who pushed me to do better and keep me focused on school. Additionally, through the conferences I was able to attend due to UC LEADS sponsorship I learned the importance of networking to my future plans as a researcher and was able to use those skills to build my network and move from a Master’s program into a Ph.D. program.”

Ponce received a master’s degree in Physics from San Francisco State University (SFSU). He is currently pursuing his Ph.D. in Physics at UC Davis and working at Lawrence Livermore National Laboratory (LLNL).



JOSH YEE

UC LEADS 2009-2011

UC Irvine

Bachelor of Science, Materials Science and
Engineering, Mechanical Engineering (2011)

“UC LEADS was important in that it allowed me to participate in meaningful scientific research, and helped me discover my interests in research activities. The program was also significant to me because it exposed me to a diverse group of students who shared my interests in research. I very much appreciated the camaraderie that I developed with others who I met through the program, and continue to value their experiences and how it influenced them to who they are today. Today, I’ve found that appreciating and understanding colleagues’ diversity has greatly enhanced my experiences working on teams, especially as I have transitioned to working in an engineering company.”

After earning his master’s degree (2014) and doctorate (2015) at UC Davis, Yee went on to join the technical staff of Sandia National Laboratories in Livermore, California.



CAMPUS UPDATES

UC LEADS COORDINATOR

Diana Lizarraga

UC BERKELEY



UC BERKELEY UC LEADS FOCUSES ON THREE VITAL THINGS: COMMUNITY, RESEARCH, AND PROFESSIONAL DEVELOPMENT. Each of our Scholars receives a graduate school toolbox filled with resources to help prepare them for graduate school applications, plus custom advising sessions with a graduate school advisor and Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring award winner Dr. Sheila Humphreys. Our Scholars also have access to leadership training during their first summer with *Finding Your North* author Dr. Fred Moore and receive LinkedIn coaching with *Get the Job You Love* author Marjorie Weingrow. We also have opportunities for our Scholars to get a professional headshot taken, travel to research conferences/graduate school visits, and data science and computer code training (python, latex, R, SQL, etc.).

UC LEADS is housed in the Cal NERDS suite of programs and initiatives (calnerds.berkeley.edu) in the division of equity and inclusion. This allows our Scholars to have a large network of talented STEM undergraduate and graduate students which share our student center, a “home away from home,” which provides our student communities snacks, study space, and a small computer lab.

UC BERKELEY SECOND YEAR SCHOLARS

Jason Belling, majoring in Physics, did his second summer research at UC Los Angeles where he received a \$3,000 stipend. He graduated in 2015 and is now at the UC Los Angeles Chemistry Ph.D. program.

Carmen Conroy, majoring in Molecular and Cell Biology, did her second summer research at UC San Francisco. She received a \$4,000 stipend for her research on *Myeloid Cell Proliferation in Pneumonectomy-Induced Adult Murine Lung Regeneration*, which received top honors at the 2016 UC LEADS Symposium. She graduated in Spring 2016 and is currently enrolled at Yale University’s NIH Prep Scholarship, a two-year Post-Bac program at Yale University. After Yale, she hopes to join a medical or doctoral program.

Alejandro Cota, majoring in Mechanical Engineering, did his second summer research at UC San Diego. He

received a \$3,500 stipend for his summer research on *Size Optimization of YAG:Pr Nanoparticles Produced by Sol-Gel Synthesis for Biomedical Applications*. He graduated in Fall 2015 and now works as a test and quality engineer.

Alvaro Loya Villalpando, majoring in Physics, did his second summer research at the Stanford Linear Accelerator Center (SLAC). He received a \$3,500 stipend for his summer research. He graduated in Fall 2015 and is working in sales and customer service while applying to graduate programs.

Eli Mizrachi, majoring in Physics, did his second summer research at UC Davis. He received a \$3,000 stipend for his summer research on *Measuring the Absolute Electron Extraction Efficiency of Liquid Xenon*. After graduating in Fall 2015, he went on to work at Genentech in San Diego.



Newton Nguyen, majoring in Geophysics, is an undergraduate researcher at Lawrence Berkeley National Lab’s climate and ecosystem sciences division. He works on a NASA related project called Climate Absolute Radiance and Refractivity Observatory (CLARREO) mentored by Dr. Bill



UC Berkeley Scholars, 2015-2016

Collins. He did his second summer research at UC Santa Barbara. He received a \$4,500 stipend for his summer research titled *An Evaluation of Quadratic and Bilinear Interpolation Procedures on a Quadtree Data structure*. After he graduated in Spring 2016, Nguyen went on to work as a research associate at Lawrence Berkeley Lab and hopes to join an atmospheric science program. Nguyen is also a national paratriathlon champion and a marathon runner.

UC BERKELEY FIRST YEAR SCHOLARS

The following first year Scholars received a \$4,000 stipend for their summer research.

Jaime Sahagun is majoring in Physics. His research was titled *Statistical Properties of Dark Matter Halos in Fast Particle Mesh Simulations*.

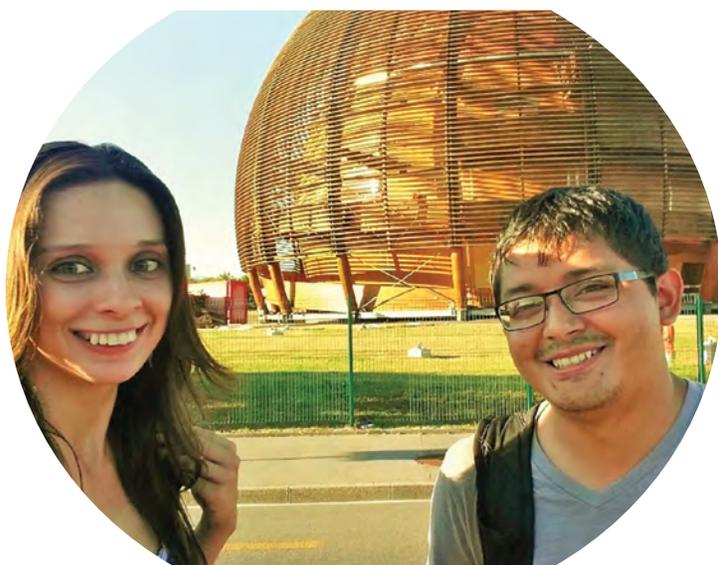
Delina Meharena is majoring in Cellular and Molecular Biology. Her research was titled *Albumin induces the upregulation of Lcn2 in astrocytes not in neurons*.

David Colby is majoring in Physics. His research was titled *Pebble Bed Heat Transfer Nuclear Fission Reactor Modeling Experiment*.

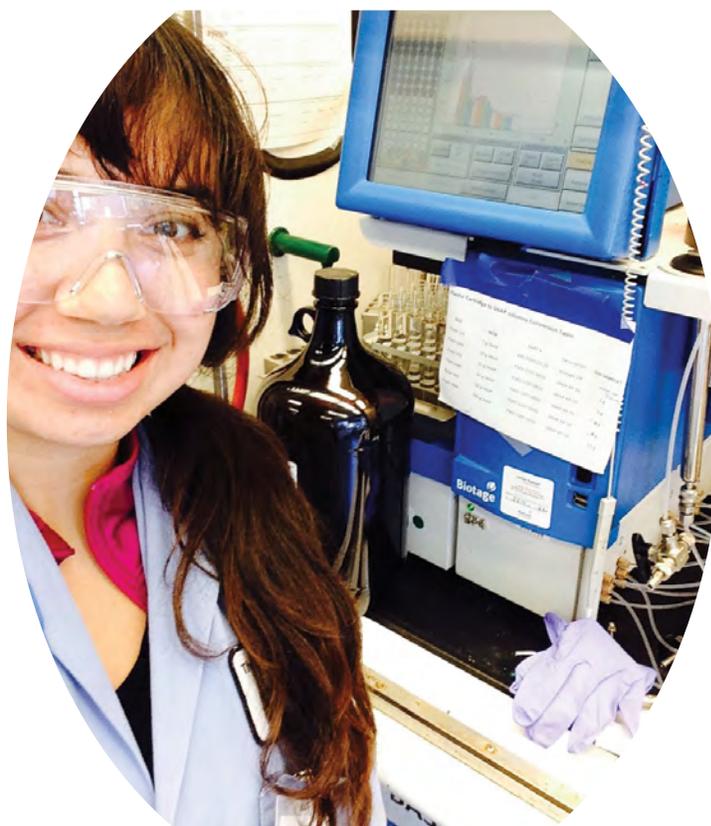
Carlos Sierra is majoring in Physics. His research, titled *Antihydrogen trapping in the ALPHA experiment*, received an honorable mention at the 2016 UC LEADS Symposium.

Cheyenne Nelson is a transfer student majoring in Physics. For the past two summers her mentor, Dr. Joel Fajans, has invited her to Geneva, Switzerland to continue her particle physics work at CERN. Her research involves spectroscopy of antihydrogen plasma and cryogenic electron plasma (titled *Towards Laser Spectroscopy of Anti-Hydrogen*). Nelson is also the co-president of the American Indian Science and Engineering Society (AISES) student club on campus.

Angelique Scheuermann is majoring in Chemistry. She works at Lawrence Berkeley National Laboratory. Her research involves synthetic chemistry regarding the conductive organic materials for lithium-sulfur (Li-S) batteries. Her project, titled *Development of Redox Mediators for Lithium-Sulfur Batteries*, received top honors at the 2016 UC LEADS Symposium. Scheuermann is the recipient of the Bergeron women in STEM Scholarship and has also taught a few lectures in the department of chemistry. Her chemistry graduate school aspirations involve synthesizing novel organic materials and developing novel polymerization methods. She has been applying to graduate school programs and has already received a few early acceptances.



Cheyenne Nelson and Carlos Sierra at CERN



Angelique Scheuermann

CAMPUS UPDATES

UC LEADS COORDINATOR

Lynne Arcangel

UC DAVIS



THIS PAST ACADEMIC YEAR BROUGHT LEADERSHIP AND EXPERIENTIAL LEARNING FOR MANY OF OUR SCHOLARS. Several of them pursued leadership roles and opportunities within their student clubs and organizations like CALESS (Chicanos and Latinos Engineers and Scientists Society) and the Veterinary Club. Two of our UC LEADS Scholars pursued tutoring jobs and shared their knowledge and skills in disciplines like chemistry, physics, mathematics and statistics with their peers. On campus, our Scholars were advocates for STEM undergraduate research and encouraged their peers to seek out these important opportunities during their college careers.

Three of our Scholars advanced their professional development goals by presenting their research at the MAES Latinos in Science and Engineering Symposium/Conference. One of our Scholars, who identifies as an AB540 student, was accepted to present her research at the NCRC (National Research Collegiate Conference) at Harvard in Winter 2016. She was thrilled to be given

the chance to travel and explore the Boston area and its local universities. Overall, 2015-2016 was a successful academic year for our UC Davis UC LEADS Scholars and we look forward to what 2016-2017 will bring to our program participants.

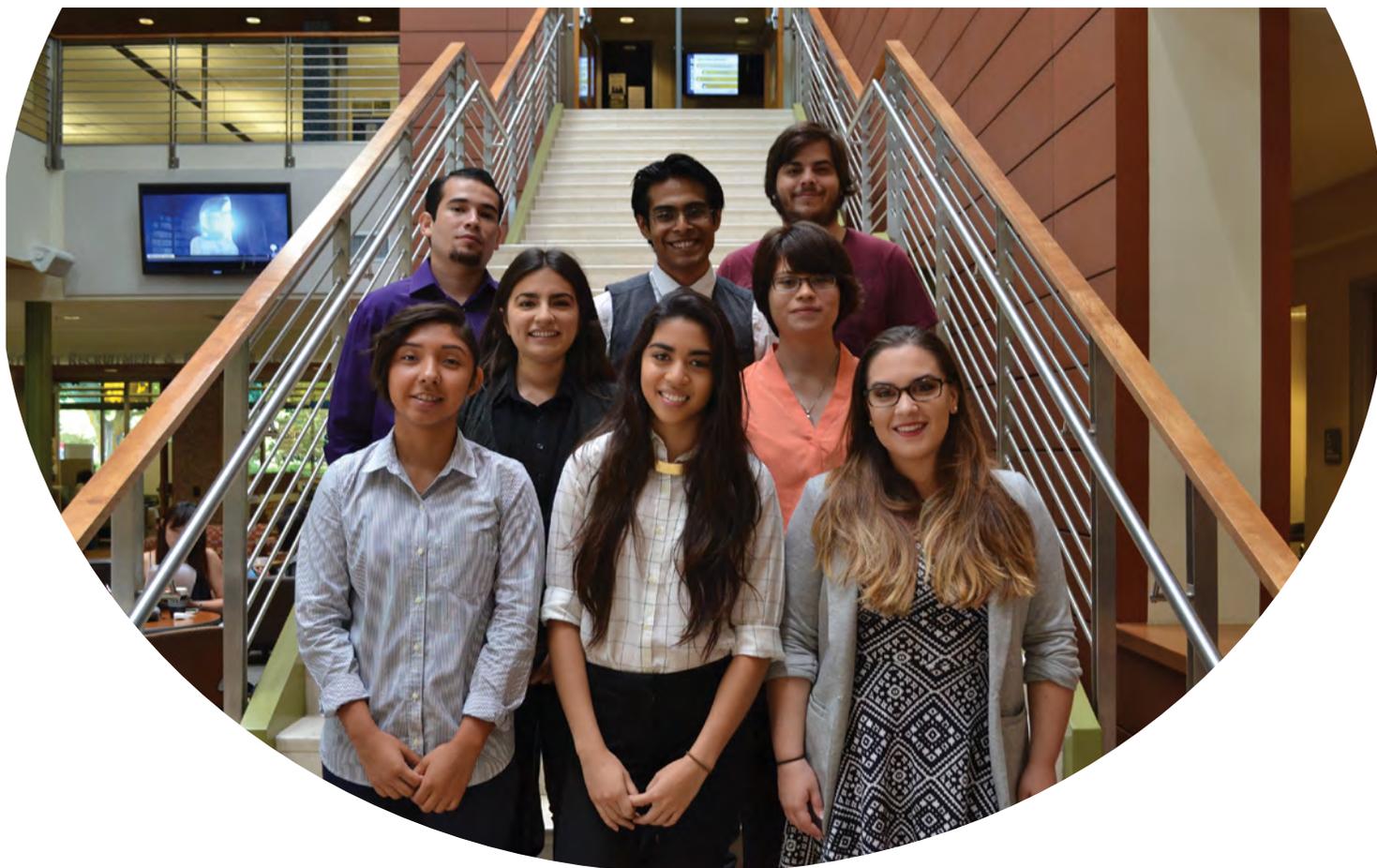
UC DAVIS SECOND YEAR SCHOLARS

The following second year Scholars received a \$4,000 stipend for their summer research.

Manuel Cisneros, majoring in Biomedical Engineering, did his second summer research at UC Los Angeles. He graduated in Fall 2015 and now works as a facilities engineer.

Kevin Enriquez is majoring in Chemical Engineering. His research was titled *Achieving a Reduction in Energy Usage by Lowering Sintering Temperatures of Porcelain and Magnesium Aluminate*. He plans to do his second summer research at UC Irvine in summer 2016 and will graduate in June 2017.

UC Davis Scholars, 2015-2016



Marisela Miramontes, majoring in Mechanical Engineering, did her second summer research at UC Irvine. Her research was titled *3D Printing Miniature Fuel Film Combustors*. She will be graduating in June 2017.

UC DAVIS FIRST YEAR SCHOLARS

The following first year Scholars received a \$3000 stipend for their summer research.

Reina Bassil is majoring in Biochemistry/Molecular Biology. Her research, titled *The role of proteolytic activity of fungal metalloprotease (Mpr1) in facilitating migration of Cryptococcus neoformans across the blood-brain barrier*, received top honors at the 2016 UC LEADS Symposium. She plans to do her second summer research at UC San Diego in summer 2016, and will graduate in June 2017.

Brigitte Clark is majoring in Animal Science. Her research was titled *Developing Blood Smear Analysis for Assigning White Sturgeon Ploidy Groups*. She plans to do her second summer research at her home campus, UC Davis, in summer 2016, and will graduate in June 2017.

Elsa Esparza is majoring in Nutrition. Her research was titled *Individual Metabolism and Physiology Signature Study: High Fat/Sugar Meal Challenge Induces*

Differential Effects in Heart Rate Variability. She plans to do her second summer research at UC San Francisco in summer 2016, and will graduate in June 2017.

Alicia Figueroa is majoring in Mathematics and Economics. Her research was titled *Analysis of Antarctic Microbial Mats through 3D Modeling*. She plans to do her second summer research at UC Los Angeles in summer 2016, and is expected to graduate in June 2018.

Pedro Garcia Carrillo is majoring in Mechanical Engineering. His research was titled *Dry Powder Loading and Measuring Device for Intratracheal Delivery Into Mice*. He participated in UC LEADS for one year and was expected to graduate June 2016, but decided to return to complete a Minor in Material Science Engineering. He will graduate in June 2017.

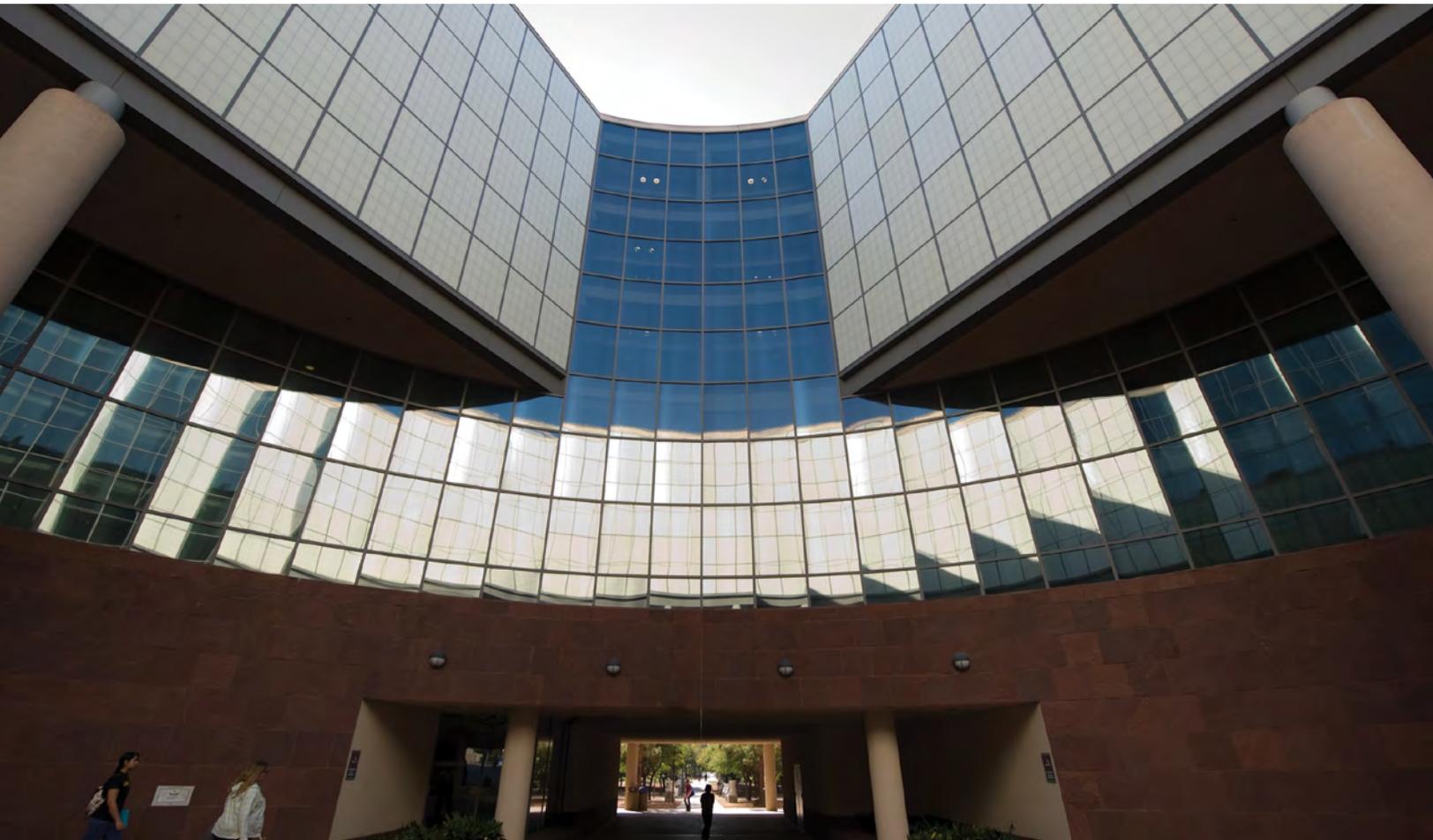
Susana Ramirez Perez is majoring in Mechanical Engineering. Her research was titled *Manufacturing Distortion of Aluminum Parts for Aerospace Application*. She plans to do her second summer research at UC Riverside in summer 2016, and is expected to graduate in June 2018.

CAMPUS UPDATES

UC LEADS COORDINATOR

Daniel Fabrega

UC IRVINE



EACH FALL, OUR STUDENTS PRESENT THEIR RESEARCH AT THE SACNAS NATIONAL CONFERENCE IN WASHINGTON, D.C. They are also required to attend a national discipline specific conference. This year's focus was leadership. The second year students served as mentors to the first year students. The mentors helped the first year students to find and secure a second summer mentor, construct their poster for the summer research symposium and led the How to Make the Most of an

Academic Conference

workshop. The theme of mentorship also continued with preparing the second year students for graduate school. For the first time recent UC LEADS alumni mentored the second year students. The alums served on a What No One Tells You About Applying to Graduate School panel and worked with the second year students on their graduate application essays, specifically their diversity statement.



UC Irvine Scholars, 2015-2016

UC IRVINE SECOND YEAR SCHOLARS

The following second year Scholars received a \$4000 stipend for their summer research.

Robert Gutierrez, majoring in Biomedical Engineering, did his second summer research at Duke University. His research, titled *Magneto-Acoustophoretic Enrichment in Microfluidic Systems*, received top honors at the 2016 UC LEADS Symposium. He graduated in Spring 2016 and is starting the Ph.D. program at Brown University.

Glen Junor, majoring in Chemistry, did his second summer research at UC San Diego. His research was titled *Cyclic(alkyl)(amino)carbene-Copper Complexes*

for *Catalysis*. He graduated in Spring 2016 and is starting the Inorganic Chemistry Ph.D. program at UC San Diego.

Katie Khuu, majoring in Computer Science, did her second summer research at UC Los Angeles. Her research, titled *Utility Analyses of a Bayesian Language Learning Model for Young Children*, received an honorable mention at the 2016 UC LEADS Symposium.

She is expected to graduate in Spring 2017.

Kim Phan, majoring in Mathematics, did her second summer research at UC Santa Barbara. Her research was titled *Triangulating Almost-Complete Graphs*. She graduated in Spring 2016 and is starting a Ph.D. program at UC Santa Barbara.

UC IRVINE FIRST YEAR SCHOLARS

The following first year Scholars received a \$3,000 stipend for their summer research.

Jenette Creso is majoring in Biomedical Engineering. Her research was titled *Employing CRISPR-Cas9 in *Saccharomyces cerevisiae* to Increase Levels of Acetyl-CoA Derived Biorenewable Chemicals*.

Nelson Moll is majoring in Mathematics. His research was titled *Stokes' Theorem in Multiple Dimensions*.

Manuel Torres is majoring in Computer Science and Mathematics. His research, titled *Knuthian Drawings of Series-Parallel Flowcharts*, received top honors at the 2016 UC LEADS Symposium.

Donald Trinh is majoring in Physics. His research was titled *Herschel Dust Measurements of SDSS Supernovae Host Galaxies*.

CAMPUS UPDATES

UC LEADS COORDINATORS
Devin Horton and Katie Cosby

UC LOS ANGELES



SINCE WE DESIGNATED UCLA'S UC LEADS AS A PROGRAM FOR PHYSICAL SCIENCE STUDENTS, THE PROGRAM HAS BEEN TRADITIONALLY MALE-DOMINATED. HOWEVER, BETWEEN 2015 AND 2016, TARGETED RECRUITMENT SIGNIFICANTLY INCREASED THE NUMBER OF WOMEN IN THE PROGRAM TO MORE THAN 50 PERCENT OF THE PROGRAM'S MOST RECENT COHORT. UCLA's UC LEADS program is uniquely designed as a two-year capstone experience in which all senior students submit a thesis proposal at the end of their tenure in the program. In 2016, all graduating seniors submitted a senior thesis on their UC LEADS-funded research, which had been conducted over the course of two years. Two junior Scholars applied for the NSF GRFP and the GEM Graduate Fellowship. We also successfully managed a seamless transition between Faculty Directors.

To encourage outreach, UC LEADS junior Scholars participated in an annual spring service project, partnering with the Early Academic Outreach Program (EAOP) and SACNAS student groups. Math and science workshops developed by UC LEADS Scholars were utilized to spark interest in science careers for 300 Los Angeles county high school students. Additionally, several students presented at major conferences: Jessica Tran and Tran Tsan both presented at the Joint Mathematics Meeting, Luis Chinchilla-Garcia at the American Astronomical Society, and Siara Fabbri presented at the Physics and Applications of High Brightness Beams in Havana, Cuba. Four out of five seniors graduated and three were accepted into top programs for their majors.

UC Los Angeles Scholars, 2015-2016



UC LOS ANGELES SECOND YEAR SCHOLARS

The following second year Scholars received a \$3,000 stipend for their summer research.

Andres Vargas, majoring in Aerospace Engineering, did his second summer research at UC Irvine. His research was titled *Periodic Partial Extinction in Acoustically Coupled Fuel Droplet Combustion*. He graduated in Spring 2016 and is starting the Aerospace Engineering Ph.D. program at UC Los Angeles.

Erick Garcia, majoring in Physics, did his second summer research at UC Los Angeles. His research on *Charge Transfer and Structural Deformation of Multi-cycled Electrochemically Intercalated Graphite*, received an honorable mention at the 2016 UC LEADS Symposium. He graduated in Spring 2016 and is starting the Physics Ph.D. program at Brown University.

Rodolfo Barranco, majoring in Mechanical Engineering, did his second summer research at UC Merced. His research was titled *Fatigue Fuse for Monitoring Metal Structure Fatigue Life*. He is expecting to graduate in 2017.

Winn Huynh, majoring in Chemistry and Material Science, did his second summer research at UC Berkeley. His research was titled *Wet-Spinning and Synthesis of Graphene / Polyaniline Composite Supercapacitor Fibers*. He graduated in Spring 2016 and is starting at the Chemistry/Material Science Ph.D. program at UC Riverside with a full Scholarship.

Jacob Bogdanov, majoring in Biochemistry, did his second summer research at UCLA. His research on *Lysophosphatidic Acid Mediates Fibrosis in Injured Joints by Regulating Collagen Type I Biosynthesis*, received an honorable mention at the 2016 UC LEADS Symposium. He graduated in Spring 2016 and is working as a research technician at Keck Medicine USC and hopes to join a medical or doctoral program.

UC LOS ANGELES FIRST YEAR SCHOLARS

The following first year Scholars received a \$3,000 stipend for their summer research.

Andrea Castro is majoring in Microbiology, Immunology, and Molecular Genetics. Her research was titled *Determining the Relationship Between cis-Somatic Mutations and Alternative Splicing in Cancer*.

Tran Tsan is majoring in Physics. Her research was titled *AGN Monitoring Project: Determining the sign of active galactic nuclei in interstellar objects*.

Siara Fabbri is majoring in Physics. Her research was titled *Streaking UED Beams with an RF Deflecting Cavity*.

Jessica Tran is majoring in Mathematics of Computing. Her research was titled *Identifying the Core Curriculum*. She did not continue with UC LEADS in 2016-2017.

Luis Chinchilla-Garcia is majoring in Astrophysics. His research was titled *Dust Temperatures in the Galactic Center Lobe*.

Lesly Lopez is majoring in Applied Mathematics. Her research was titled *Maintaining Biodiversity in an Ecosystem with a Non-Hierarchical Food Chain and Random Mobility as a Function of Position*.

CAMPUS UPDATES

UC LEADS COORDINATOR

Jorge Arroyo

UC MERCED



THE 2015-2016 ACADEMIC YEAR FOR OUR UC LEADS SCHOLARS CONTINUED ON THE GROWTH AND SUCCESS OF PREVIOUS YEARS. Of the six graduating seniors in this cohort, three have been employed in a STEM field, two are applying to medical schools, and one is applying to Ph.D. programs in STEM. The Scholars participated in a nine-week summer research institute for professional development, leadership skills, and graduate school preparation. (See the table below for a summary of the workshops).

SUMMARY OF UC MERCED UC LEADS WORKSHOPS

Date	Workshop Title	Topics/Activities
Week 1 June 1	Why Are You Here? Purpose and Goal Setting	Goal Setting workshop for students to better understand their purpose for research and pursuing graduate school
#1 June 8	Getting the Most Out of Your Research Experience	Advice from previous Scholars on time management, how to ask questions, and prepare for a great summer experience
#2 June 15	Graduate School Panel	Faculty panel will share their experiences in graduate school and how they got to where they are now
#3 June 22	Curriculum Vitae Workshop	Editing CV with peers and lead faculty member in student's research discipline
#4 June 29	Graduate School Admissions	Identifying and applying to graduate programs; Personal Statement; Letter of Recommendation
#5 July 6	Abstract Development and Review	Participatory workshop to edit research abstracts with assistance from faculty in their discipline
#6 July 13	Protectoral Fellowships	Preparing pre-doctoral fellowship proposals and successful proposals
#7 July 20	Communicating & Presenting Your Ideas	Workshop on preparing oral and poster presentations to communicate your research
#8 July 27	Career Planning	Career options for Ph.D.'s in academia, industry and public service
#9 August 5	UROC Summer Research Symposium	10-minute oral presentations & research poster exhibit

UC MERCED SECOND YEAR SCHOLARS

Hawi Gameda, majoring in Biological Sciences, did her second summer research at UC San Francisco. She received a \$4,500 stipend for her summer research, titled *Electroporation Transformation of Bacterial Cells using Microfluidic Lysis Device*. She graduated in Spring 2016.

Luis Silva, majoring in Computer Science & Engineering, did his second summer research at UC Berkeley. He received a \$3,500 stipend for his summer research, titled *Improving Student Learning by Comparing an Objective Evaluation Method to the Standard Heuristic Method when Evaluating Visualization Designs*. He graduated in Spring 2016 and is working as a cloud platforms operations analyst.

Jim Mendez Lopez, majoring in Mechanical Engineering, did his second summer research at UC Irvine. He received a \$3,500 stipend for his summer research, titled *Integration of the Grain Tracking Algorithm into Molecular Dynamics Program LAMMPS*. He graduated in Spring 2016.

Gema Rodriguez, majoring in Biological Sciences, did her second summer research in Japan. She received a \$4,500 stipend for her summer research, and she graduated in Fall 2015.

Jourdan Mason, majoring in Biological Sciences, did her second summer research at UC Irvine. She received a \$3,500 stipend for her summer research, titled *Imaging neurons in brain with in vivo down regulation of Netrin and UNC5*, which received an honorable mention at the 2016 UC LEADS Symposium. She graduated in Spring 2016 and is currently working as an EMT while applying to professional school.



UC Merced Scholars, 2015-2016

Markus Walker, majoring in Computer Science & Engineering, did his second summer research at UC Santa Barbara. He received a \$3500 stipend for his summer research, titled *Firefighting Training Transfer Study through Augmented Reality*. He graduated in Spring 2016 and is now working as a Software Technical Consultant Engineer at Intel.

UC MERCED FIRST YEAR SCHOLARS

Jose Rubalcava-Cruz is majoring in Mechanical Engineering. He received a \$3500 stipend for his summer research, titled *Property Characterization of Steam Activated Biochar*, which received an honorable mention at the 2016 UC LEADS Symposium.

Lourdes Diaz is majoring in Mechanical Engineering. She received a \$3500 stipend for her summer research, titled *Energy Consumption in Origami-based Sheet Metal Forming*.

Stephanie Gamboa is majoring in Public Health. She received a \$3500 stipend for her summer research, titled *West Nile Infection Rates in Culex Mosquito Species*, which received an honorable mention at the 2016 UC LEADS Symposium.

Jose Garcia is majoring in Human Biology. He received a \$3500 stipend for his summer research, titled *Angiotensin Receptor Blocker increases lipid mobilization and a high fat diet may ameliorate lipid mobilization in a rat model of metabolic syndrome*.

Marcos Lucero, majoring in Materials Chemistry, did his second summer research at University of Alabama, Birmingham. His research was titled *ETB receptors promote natriuresis in response to an acute salt load in mice*.

Iris Montes, majoring in Biological Sciences and minoring in Chemistry, did her second summer research at University of Alabama, Birmingham. Her research was titled *Role of Vascular Endothelial Endothelin-1 on Renal Damage with High Salt Diets: Assessing Sex Differences*.

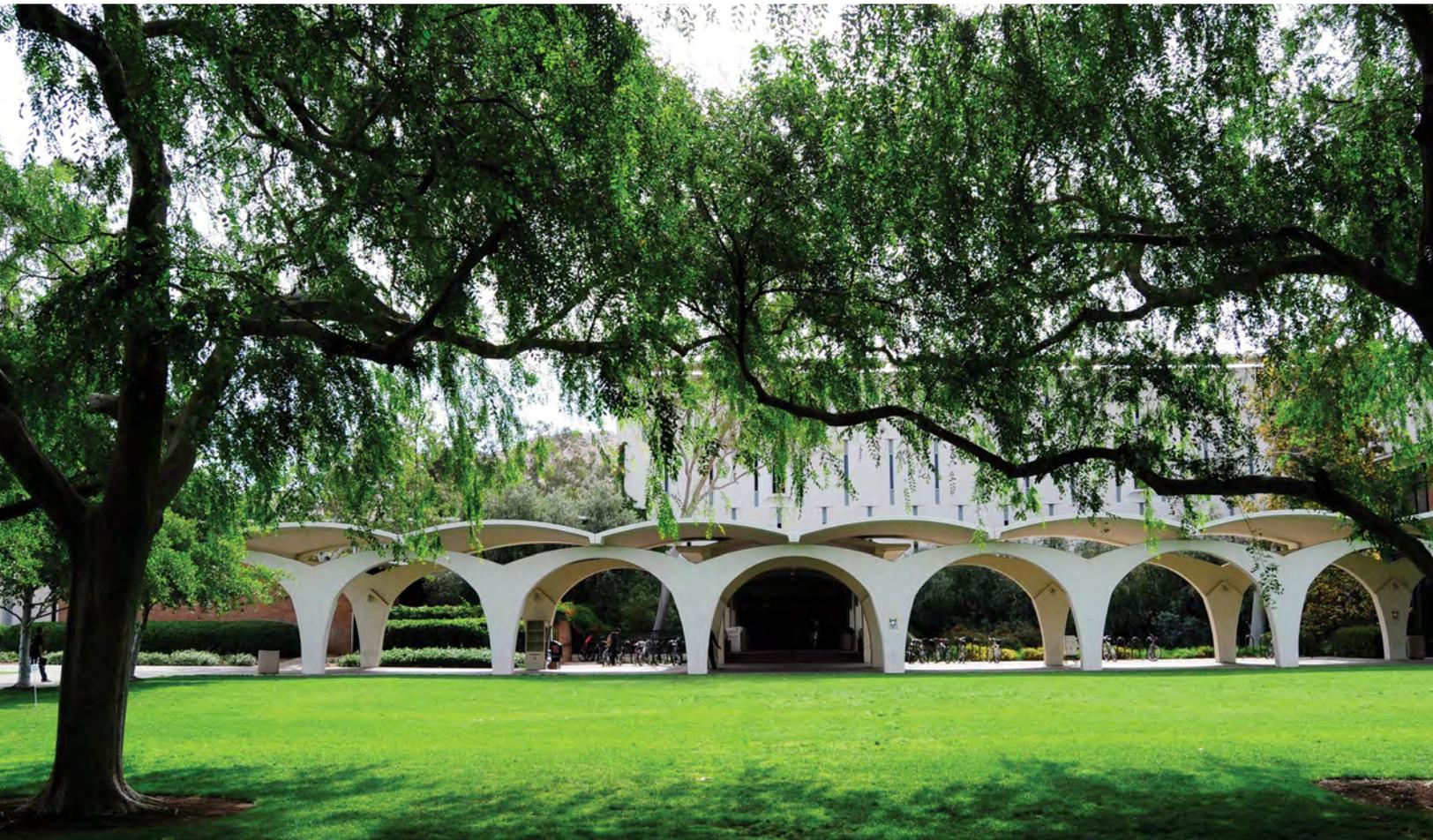
Jesus Partida, majoring in Bioengineering, did his second summer research at University of Alabama, Birmingham. His research was titled *New design of pneumatically powered MRI compatible device for stroke rehabilitation*.

CAMPUS UPDATES

UC LEADS COORDINATORS

Maria Franco-Gallardo and Nancy Cruz

UC RIVERSIDE



SUMMER 2015 THROUGH SPRING 2016 WAS VERY PRODUCTIVE FOR THE UC LEADS SCHOLARS IN TERMS OF GRADUATE SCHOOL ACCEPTANCES AND FELLOWSHIPS RECEIVED. Of the six graduating Scholars, three are now in Ph.D. programs at UC campuses and one in medical school at UC Riverside. Students strengthened their graduate school and fellowship applications by actively pursuing opportunities to present in their respective fields.

Outreach to peers is an important aspect of the UCR UC LEADS programs. Scholars advocated for the program and the key role it played in their decision to pursue a graduate degree. The UCR UC LEADS Scholar who elected to attend medical school did so with the intent to serve her community once she attains her degree.

UC RIVERSIDE THIRD YEAR SCHOLARS

Julienne Rolf, majoring in Environmental Engineering, remained with UC LEADS for a third year when she extended her graduation by a year. Julianne received a \$4,000 stipend to conduct research at UC Berkeley during her second summer as a UC LEADS Scholar under the direction of Dr. David Sedlak. Her research, titled *Stream Restoration by Regenerative Stormwater Conveyance to Improve Water Quality in the Chesapeake Bay*, received top honors at the 2016 UC LEADS Symposium. She graduated in Spring 2016 and is on an NSF Graduate Research Fellowship and a Fulbright Research Award in Germany. Rolf plans to attend Harvard for her doctoral studies.



UC Riverside Scholars, 2015-2016

UC RIVERSIDE SECOND YEAR SCHOLARS

Niusha Bavadian, majoring in Neuroscience, did her second summer research at UC Berkeley. She received a \$4,000 stipend for her summer research, titled *Do Pubertal Steroids Affect Reversal Learning and Markers of Inhibition in the Prefrontal Cortex of Adolescent Female Mice?* She graduated in Winter 2016 and is now enrolled at the UC Riverside School of Medicine.

Joshua Karam, majoring in Bioengineering and Biomedical Engineering, did his second summer research at UC Los Angeles. He received a \$4,600 stipend for his summer research, titled *Modulation of Akt Phosphorylation by Fluidic Agitation in a Stage-Specific Manner for Cardiomyocyte Differentiation*. He graduated in Spring 2016 and is now pursuing a Ph.D. in Bioengineering at UCLA.

Geoffrey Pronovost, majoring in Biochemistry, did his second summer research at UC Los Angeles. He received a \$4,600 stipend for his summer research, titled *Arrest of Amyloid Fibril Formation in k-Class Immunoglobulin Variable Light Chains by Site-Directed Mutagenesis and Small Molecule Inhibitors*, which received top honors at the 2016 UC LEADS Symposium. He graduated in Spring 2016 and is now pursuing a Ph.D. in Molecular Biology at UC Los Angeles.

UC RIVERSIDE FIRST YEAR SCHOLARS

Heather David is majoring in Microbiology. She received a \$4500 stipend for her summer research, titled *Effects of Connectivity and the Degree of Irregularity in Spatial Fragmentation on Microcosm Richness Sustainment*, which received top honors at the 2016 UC LEADS Symposium.

Johny Nguyen is majoring in Chemical Engineering. He received a \$3,000 stipend for his summer research, titled *Synthesis of Neuroprotective Limonoid Natural Products*, which received an honorable mention at the 2016 UC LEADS Symposium. Nguyen is at a semester at sea program covering 12 countries, 13 ports of call and four continents. The program offers participants a global education combining a traditional college experience with in-country experiences.

Connor Richards majored in Physics. He received a \$4,500 stipend for his summer research, titled *A Study of the Multijet Background for Inclusive, Hadronic Searches for Supersymmetry in the CMS Detector*. After a year in UC LEADS, Richards graduated in Spring 2016. He is currently at Cambridge University on a Gates Cambridge Scholarship, where he is pursuing a MAST. in Applied Math and Theoretical Physics at Churchill College.

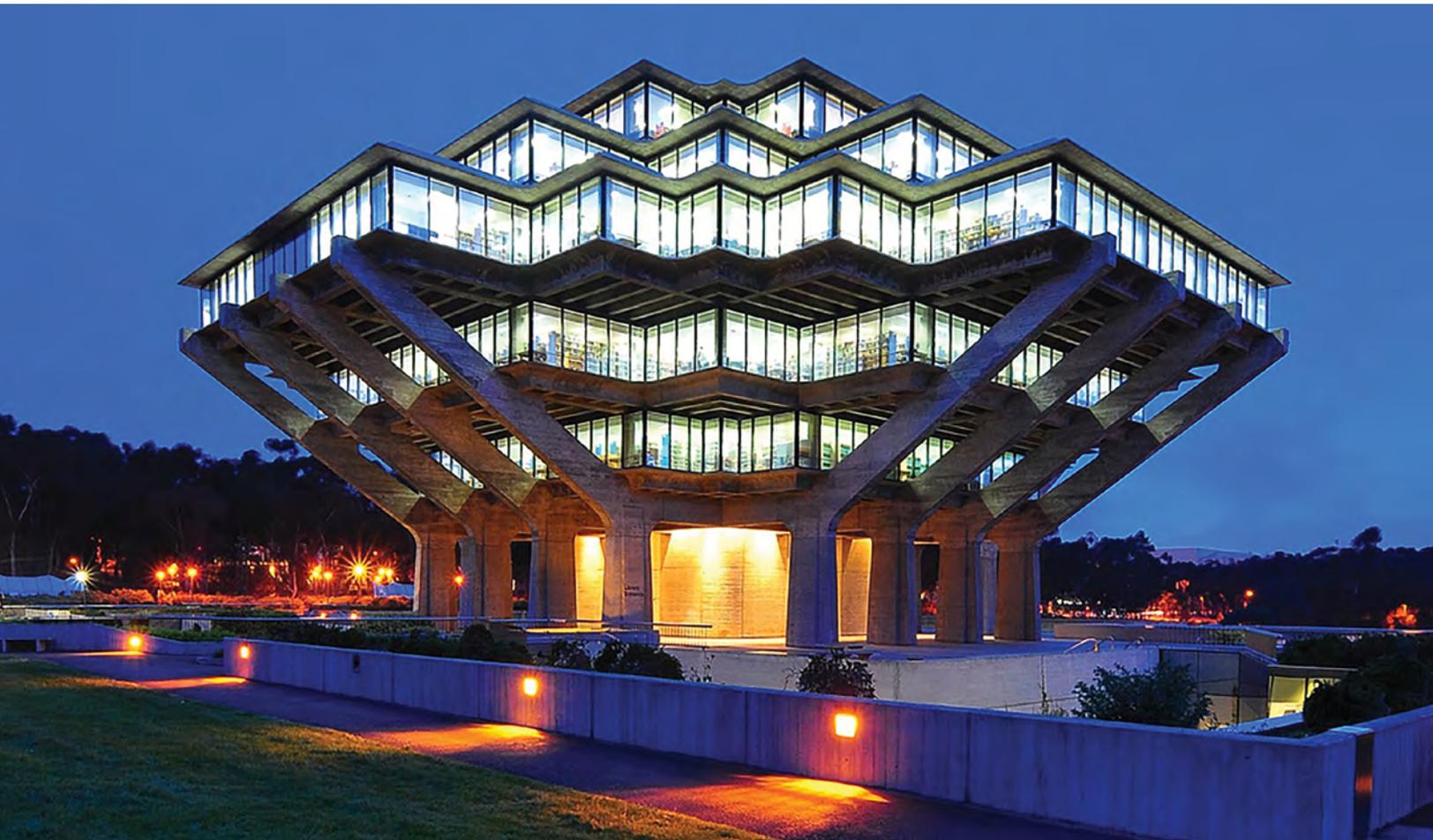
Juan Tamayo majored in Cell, Molecular, and Developmental Biology. He received a \$3,500 stipend for his summer research, titled *Quantifying Cells in CA1 of The Hippocampus during Autoimmune Epileptogenesis*. He graduated in Spring 2016, after one year in UC LEADS, and is currently enrolled in the Ph.D. program in Immunology at UC Davis.

CAMPUS UPDATES

UC LEADS COORDINATOR

Christopher Murphy

UC SAN DIEGO



THE COMPLETE COHORT FOR 2015-2016 STARTED WITH 10 STUDENTS: FIVE FIRST YEARS AND FIVE SECOND YEARS. The second year cohort, selected for 2014-2016, originally consisted of six members, but Angela Hinton left the university due to medical reasons and has not returned. UC San Diego hosted four visiting UC LEADS Scholars in Summer 2015.

During the academic year, the UC LEADS cohort meets four times each quarter with a meal, announcements, and one major topic to be discussed (including statement of purpose writing, poster presentations, securing second summer placements, cover letters and public speaking). Most meeting topics are presented by the second year students as part of their leadership development. In addition, a short retreat is held at the beginning of the academic year to allow all participants to reconnect with one another, especially for the

returning Second years who have been conducting research elsewhere. The final meeting of the year is located off campus at a restaurant and includes the newly selected incoming, continuing and outgoing Scholars. In addition to these scheduled meetings, we individually meet with those applying for graduate school (in this case, Henry Truong and Cindy Khuu) to monitor progress of their applications and to provide guidance as needed. Other meetings occurred organically throughout the year to discuss academics, professional development, or were entirely social in nature.

Each UC LEADS Scholar has an allocation of \$1,000 to put towards the cost of conference travel. Although most students use some of these travel funds, most don't use the full amount.

SUMMARY OF CONFERENCES

Conference	Location	Attended by
SACNAS	Washington, DC	Cindy Khuu, Ashley Chong, Levi Glenn Pilapil, Andrew Chiang, Moses Kodur and Karla Fernandez Ramirez
ABRCMS	Seattle, WA	Cindy Khuu and Ashley Chong
ACS	San Diego, CA	Levi Glenn Pilapil
LSMCE	Indianapolis, IN	Moses Kodur
GCURS	Houston, TX	Moses Kodur
Bay Area GPS	Berkeley, CA	Henry Truong

UC SAN DIEGO SECOND YEAR SCHOLARS

The following second year Scholars received a \$4,000 stipend for their summer research.

Julian Garcia, majoring in Bioengineering/Biotechnology, did his second summer research at UC San Diego. His research was titled *Quantifying Angiogenesis promoting components of a Myocardial Matrix Hydrogel*. He graduated in Fall 2016 and is working for a year while he applies to medical school and Ph.D. programs.

Imran Hussain, majoring in Biochemistry and Cell Biology, did his second summer research at UC San Diego. His research was titled *Fusarisetin A: Synthesis and Biological Investigation*. He still has a few courses

to complete before graduating but is applying to medical school for Fall 2017 admission.

Levi Glenn Pilapil, majoring in Biochemistry/Chemistry, did his second summer research at UC Berkeley. His research, titled *Utility of a Gold (I) ADC Complex in Asymmetric Formations of Functionalized Cyclobutane structures from Indole-3-Acetates*, received top honors at the 2016 UC LEADS Symposium. He graduated in Summer 2016 and is working for a year or two before applying to the Ph.D. program at UC Berkeley.

Henry Truong, majoring in Computer Science, did his second summer research at UC Irvine. His research was titled *Annotating Non-Protein-Coding Genes in Drosophila Willistoni*. He graduated in Spring 2016 and



UC San Diego Scholars, 2015-2016

is beginning his masters at University of Michigan, Ann Arbor and planning to pursue a Ph.D. as well.

Cindy Khuu, majoring in Molecular Biology, did her second summer research at UC Los Angeles. Her research, titled *Analyzing the interactions of speckle-type POZ protein (SPOP) and NUPA and NUPB*, received an honorable mention at the 2016 UC LEADS Symposium. She graduated in Spring 2016 and is beginning her Ph.D. program at UC Davis.

UC SAN DIEGO FIRST YEAR SCHOLARS

The following first year Scholars received a \$3,000 stipend for their summer research.

Ashley Chong is majoring in Biochemistry and Cell Biology. Her research was titled *Determining the Crystal Structure of the Ankyrin Repeat and SOCS Box Protein, ASB9, with Creatine Kinase*.

Cuong Lieu is majoring in Microbiology. His research was titled *Environmental Response Regulator RpaB's function in Microbial Circadian System*.

Moses Kodur is majoring in Chemical Engineering. His research, titled *Novel Cathode Material for Sodium-ion Batteries*, received top honors at the 2016 UC LEADS Symposium.

Shang-Chun (Andrew) Chiang is majoring in Chemical Engineering. His research was titled *Mechanical Properties of Semiconducting Thin-Film Polymers*.

Karla Fernandez Ramirez is majoring in Biochemistry and Cell Biology. Her research was titled *Acetylcholinesterase Localization and Function During Neurodevelopment in the Planarian *Dugesia japonica**.

CAMPUS UPDATES

UC LEADS COORDINATOR

Julia Clark

UC SAN FRANCISCO





UC San Francisco, Summer Research Training Program Presentations

UC SAN FRANCISCO'S EXCLUSIVE FOCUS ON HEALTH SCIENCES AT THE GRADUATE LEVEL DRIVES STRONG INTERDISCIPLINARY COLLABORATION AND INTENSE ENGAGEMENT ACROSS OUR PROGRAMS. Graduates of our highly ranked basic science programs are making groundbreaking discoveries and are transforming research and education in the health sciences.

UC LEADS Scholars have the opportunity to participate in our Summer Research Training Program (SRTP)

during their second summer of research, along with approximately 50 other participants from across the country.

In 2015, UC San Francisco supported three UC LEADS Scholars in the SRTP: Brandon Rose, a Cell and Developmental Biology major from UC Santa Barbara, Carmen Conroy, a Molecular and Cell Biology major from UC Berkeley and Hawi Gameda, a Biological Sciences major from UC Merced.



UC San Francisco Scholars, 2015-2016

CAMPUS UPDATES

UC LEADS COORDINATOR

Ethny Stewart

UC SANTA BARBARA



THE UC LEADS PROGRAM AT UC SANTA BARBARA HAS UNDERGONE SEVERAL TRANSITIONS IN THE LAST FEW YEARS. During Spring 2014, the UC LEADS program transferred to Graduate Division from the Center for Science and Engineering Partnerships (CSEP) in the California Nanosystems Institute (CNSI). Since rejoining the Graduate Division, the program has also transitioned between two coordinators. Our most recent coordinator has been with the program for just over a year.



UC Santa Barbara Scholars, 2015-2016

This year has been marked with great success for UCSB Scholars. The program supported 7 active participants this year, including 3 graduating seniors and 4 continuing Scholars. This year also marked our first complete new Scholar recruitment since the program rejoined Graduate Division. With a comprehensive recruitment campaign, we received a competitive pool of qualified Scholars to participate in their first summer experience as part of Graduate Division's Academic Research Consortium (ARC).

We look forward to building on the success of our program at UC Santa Barbara and continuing the legacy of the UC LEADS program. We are also honored and excited to host the 2018 UC LEADS Symposium.

UC SANTA BARBARA SECOND YEAR SCHOLARS

The following second year Scholars received a \$3,000 stipend for their summer research.

Brandon Rose, majoring in Molecular, Cellular and Developmental Biology, did his second summer research at UC San Francisco. His research was titled *An asthma discovery could help pulmonary arterial hypertension: $\alpha 5\beta 1$ integrin inhibition enhances proliferation in primary*

human smooth muscle cells. He graduated in Spring 2016 and is currently applying to medical schools.

Daniel Vong, majoring in Mechanical Engineering, did his second summer research at UC San Diego. His research was titled *DNA-Stabilized Silver Nanoclusters for Specific DNA Detection.* He graduated in Spring 2016 and is attending a one-year Post-Bac Engineering program at UC Santa Cruz.

Kuang Wei, majoring in Physics, did his second summer research at UC Santa Barbara. He graduated in Spring 2016 and is beginning a Ph.D. program in Physics at the University of Chicago.

UC SANTA BARBARA FIRST YEAR SCHOLARS

The following first year Scholars received a \$3,000 stipend for their summer research.

Gauree Chendke is majoring in Biology. Her research was titled *Breaching the Blood Brain Barrier by Exploiting Innate Transport Mechanisms with Non-spherical Nanoparticles.*

Kevin Dervishi is majoring in Biology. His research was titled *Investigating Tau Dimerization: The Implications of Tau Oligomers in Neurodegeneration.*

Brandon Hendrickson is majoring in Biology. His research, titled *Sex and aggression among males: does mating system influence the evolution of competitive behavior in the pollen of flowering plants?* received top honors at the 2016 UC LEADS Symposium.

Sarath Pathuri is majoring in Chemistry and Biochemistry. His research was titled *Functional and Structural Comparisons of E.coli and T4 Bacteriophage DNA Adenine Methyltransferases.*

CAMPUS UPDATES

UC LEADS COORDINATOR

Yulianna Ortega

UC SANTA CRUZ



THE UC LEADS PROGRAM AT UC SANTA CRUZ HAD SIGNIFICANT ACCOMPLISHMENTS IN THE 2015-2016 SCHOOL YEAR. Our graduating Scholars are going on to top institutions for graduate study. Our first year Scholars completed an intensive eight-week summer research program, successfully completing over 12 hours of research training and over five hours of lab safety training. All first year Scholars participated in biweekly professional development training on how to make a CV, Poster making, faculty research lectures, and weekly book club. During Fall 2016, four of our five-second year Scholars presented their research findings at the SACNAS and ABRCMS conferences. Three of our five first years received the SACNAS travel awards to go to their first national conference.

Hanh Truong, majoring in Biochemistry and Molecular Biology, did her second summer research at UC San Diego. She received a \$3,500 stipend for her summer research, titled *The Effects of Fatty Acid Metabolism on Pituitary Cell Stress*. She graduated in Spring 2016 and is pursuing a Ph.D. in Biological and Biomedical Sciences at the University of Michigan.

Osmar Aguirre, majoring in Cognitive Science and Bioengineering, did his second summer research at UC Davis. He received a \$4,000 stipend for his summer research, titled *Optogenetic Silencing of the Ventral Hippocampus during Memory Retrieval*. He graduated in Spring 2016 and is currently working as a tutor for Varsity Tutors and is seeking admittance into graduate programs. As a DACA student, he was unsuccessful



UC Santa Cruz Scholars, 2015-2016

UC SANTA CRUZ SECOND YEAR SCHOLARS

Cecilia Im, majoring in Neuroscience, was selected as a prestigious HHMI fellow and did her second summer research at UC San Francisco. She received a \$4,000 stipend for her summer research, titled *Characterizing a Mouse Model of Paroxysmal Kinesigenic Dyskinesia*. After she graduated in Spring 2016, she went on to work as a laboratory technician at UC Merced and has been accepted to the UC San Francisco School of Medicine for Fall 2017.

the last year and hopes to have strengthened his application this year.

Luz Lule Camargo, majoring in Electrical Engineering, did her second summer research at UC Berkeley. She received a \$3,500 stipend for her summer research, titled *A Wireless, Wearable Sensor mote for Human/Computer Interactions*, which received an honorable mention at the 2016 UC LEADS Symposium. She plans to graduate in Spring 2017.

Ian Weaver, majoring in Astrophysics, did his second summer research at UC Santa Cruz. He received a \$4,000 stipend for his summer research, titled *Applying a Hydrodynamical Treatment of Stream Flow and Accretion Disk Formation in WASP-12/b Exoplanetary System*. He graduated in Spring 2016 and is currently pursuing a Ph.D. in Astrophysics at Harvard University.

UC SANTA CRUZ FIRST YEAR SCHOLARS

The following first year Scholars received a \$3,500 stipend for their summer research.

Masuda Sharifi is majoring in Molecular, Cellular and Developmental Biology. Her research was titled *The Formation of the lysosome/vacuole: the role of the RAB-2 GTPase*. He is applying to research graduate programs for Fall 2017.

Emmanuel Kayede is majoring in Computer and Electrical Engineering. His research was titled *Printed Circuit Stators for Brushless Direct Current Motors*. He

is planning to stay on at UCSC for a 5th year to spread out his coursework and not have an impacted schedule.

Javier Ruiz is majoring in Computer Engineering and Cognitive Science. His research was titled *Control of Self-Balancing MinSeg Robot*. He is applying to research graduate programs for Fall 2017.

Georgia Sheppard is majoring in Biology. Her research was titled *Determining the Importance of LincCox2 in Host Defense In Vivo*. She is planning to apply to M.S. graduate programs this winter.

Nicolas Blanc is majoring in Physics. His research was titled *A High-pressure Infrared Spectroscopic Study of Chromium Pyrophosphate to 18 GPA*. He is applying to research graduate programs for Fall 2017.

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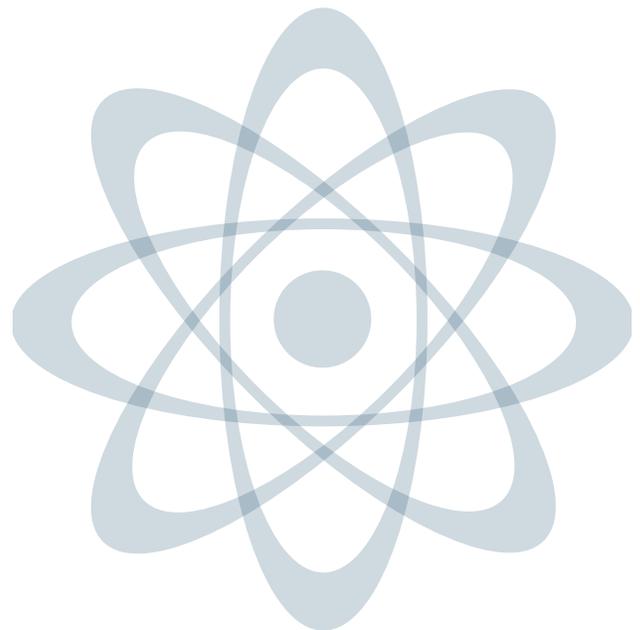
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