

UNIVERSITY
OF
CALIFORNIA

Leadership Excellence
through Advanced
Degrees (UC LEADS)

ANNUAL REPORT 2016-2017



Preparing Promising Scholars for Graduate Education in
Science, Technology, Engineering and Mathematics (STEM)
Since 2000

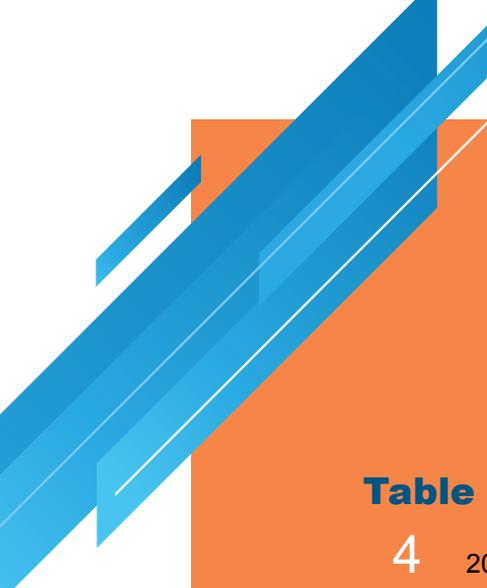
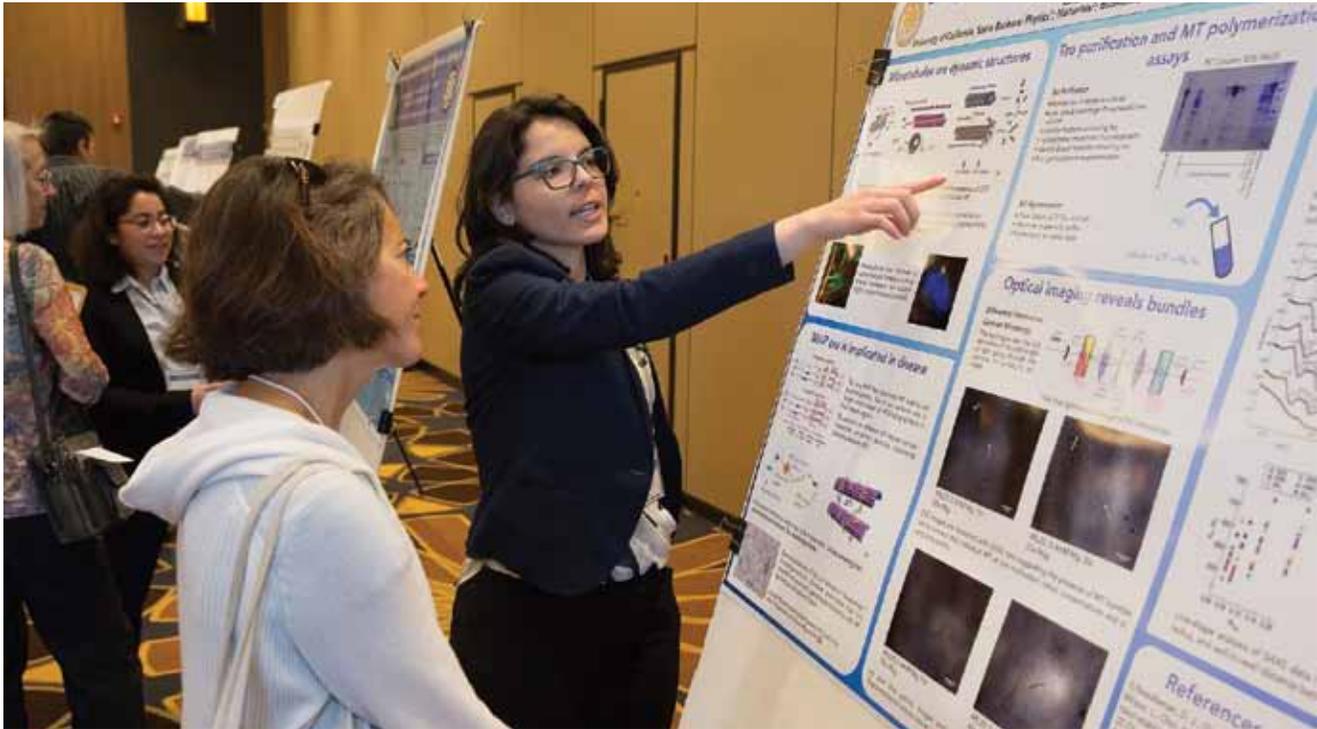


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A FOCUS ON LEADERSHIP

SCHOLARS IN THE UNIVERSITY OF CALIFORNIA Leadership Excellence through Advanced DegreeS (UC LEADS) program fulfill leadership roles in various academic, cultural, and professional networking organizations, and serve as ambassadors for the UC LEADS program at campus events, conferences, and resource fairs. They also provide academic and research mentorship to high school and junior high school students. The UC LEADS program enhances the leadership potential of our undergraduate scholars through professional development, advising, workshops, and certification opportunities. By actively engaging in public outreach, community service, and professional development opportunities through the UC LEADS program, our scholars are not only building their own STEM careers, but are also honing their potential as leaders in research, education, and outreach for communities throughout California and beyond.

2016-2017 UC LEADS EXECUTIVE STEERING COMMITTEE

Dr. 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

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Dr. Rudy Ortiz

Northern California Faculty Representative
UC Merced

Diana Lizarraga

Northern California UC LEADS Coordinator Representative
UC Berkeley

SOUTHERN CALIFORNIA

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UC Los Angeles



2017 UC LEADS Koret Research and Leadership Symposium

March 11, 2017 // UC LOS ANGELES

The 2017 UC LEADS Koret Research and Leadership Symposium was held at the new UC Los Angeles Meyer and Renee Luskin Conference Center. As always, the highlight of the day were the morning poster presentations from our 85 UC LEADS Scholars. These students impressed this year's faculty judges with their preparation and confidence. In return, the scholars appreciated the helpful and constructive feedback they received on their presentations.

The agenda featured a welcome address from UCLA Graduate Division Dean Dr. Robin Garrell, and an opening keynote address by UCLA Chemistry & Biochemistry Faculty Dr. Miguel Garcia-Garibay. Our lunchtime keynote address was delivered by Dr. Jesse Zamudio, an alumnus of the

UC LEADS program who serves on the faculty of the UCLA Molecular, Cell, and Developmental Biology Department. His department colleague Dr. Tracy Johnson was the final featured speaker of the day.

Judges mingled at the Kerckhoff Art Gallery during the afternoon faculty appreciation event, while students worked in teams to compete in a campus-wide Amazing Race-themed scavenger hunt led by Feet First. The evening awards ceremony capped the day with great excitement and a celebration of the team spirit fostered at the symposium.

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Program Impact Summary

To date, 965 Scholars have participated in the UC LEADS program. This population is made up of 50% women, 52% first generation college students (15% unknown), and 51% underrepresented minorities (Figure 1).

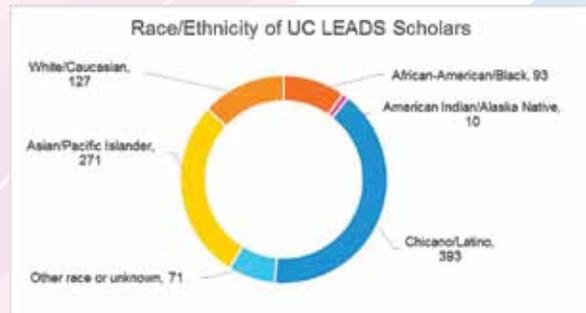


Figure 1. Race/ethnicity of UC LEADS Scholars

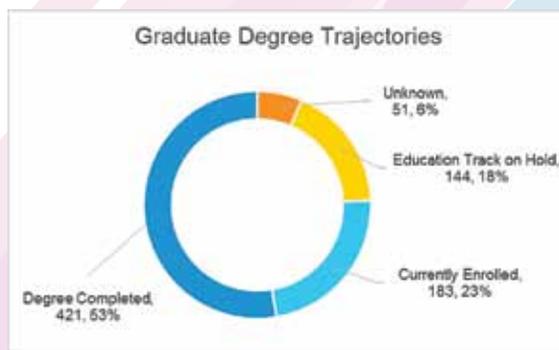


Figure 2. Graduate degree trajectories for UC LEADS Scholars

Of the 799 Scholars who have graduated, 604 (76%) are either currently enrolled in graduate school or have already earned degrees in a master's or doctoral program (Figure 2).

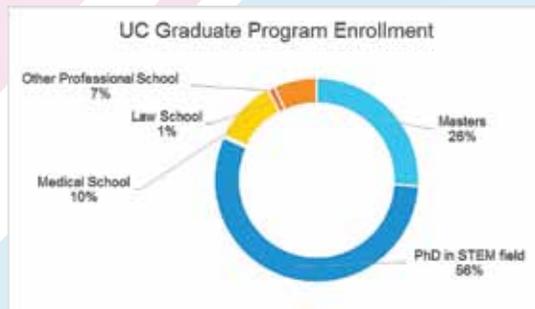


Figure 3. UC LEADS alumni enrolled in UC graduate programs

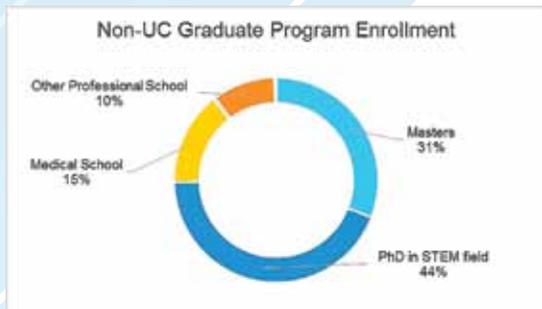


Figure 4. UC LEADS alumni enrolled in graduate programs outside of the UC

Of the 604 Scholars who matriculated into graduate school, 281 (47%) enrolled in a UC graduate program (Figure 3), and 323 (53%) enrolled in graduate programs outside of the UC (Figure 4).

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

Looking Forward

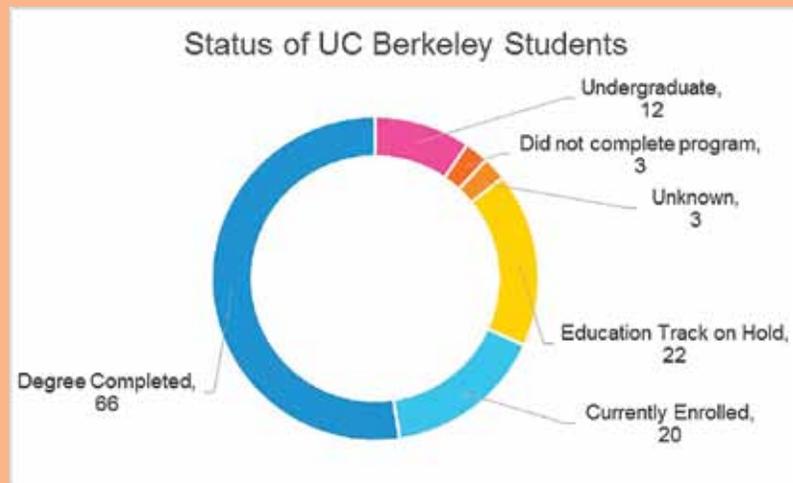


During the 2017-2018 academic year, Michele Johnson will be stepping in as the new UC LEADS Statewide Director. Michele is looking forward to building engagement with our UC LEADS alumni, and tapping into their expertise and knowledge for the benefit of our current scholars and more recent graduates. We plan to do this through a Facebook page, and the help of a scholar Communications Committee consisting of students from each campus. We also want to raise funds for our scholars for professional-wear, and catalogue more of our cross-campus procedures (like for the Symposium).

We look forward to the UC LEADS Research and Leadership Symposium at UC Santa Barbara in March 2018, where we will engage our UC LEADS Scholars in workshops about professional networking and overcoming imposter syndrome.

THE YEAR IN REVIEW

This past year we have been providing a slew of opportunity through our direct program offerings related to professional development, graduate school, leadership, coding, and data science. Scholars had the opportunity to take professional headshots, learn how to craft an elevator pitch, polish their networking skills, and develop a LinkedIn profile. In addition, they were able to connect with various tech companies (LinkedIn, Pandora, Uber, Dropbox, etc.) through workshops and industry tours. They also had access to two coding boot camps (Python and Intro to Data Science with R). We hosted two leadership development opportunities with low-income/first-generation high school students from Jesse Bethel High School in Vallejo and St. Hope High School in Sacramento. Each Scholar was given a graduate school toolbox and participated in our how to apply to graduate school workshop series and provided a graduate school coach, Dr. Sheila Humphreys. In addition, we partnered with our Latino Association for Graduate Students in Engineering and Science for a graduate student mentoring experience. Students also had access to research poster design workshops and were taught how to print their own research posters. Lastly, also included were a few mental health and wellness experiences for students to learn more about self-care.





UC Berkeley Faculty, Scholars and Staff at the 2017 UC LEADS Symposium

Alumni Spotlight



JON LO KIM LIN
UC LEADS 2008-2010
B.A., Mathematics (2010)

Jon Lo Kim Lin earned his Ph.D. in Applied Mathematics from UC Santa Barbara in 2016. He is now a postdoc working on a machine learning/Radiomics project in the Radiology/Medical Oncology Division of Stanford University, through the Department of Veterans Affairs Big Data-Scientist Training Enhancement Program (BD-STEP) program.

“ UC LEADS is the main reason I pursued my doctorate. The Symposium allowed me to network and I met the person who would later fight for me to attend UCSB for my Ph.D. I encourage all people to get to as many conferences as possible. As a transfer student, UC LEADS and Cal NERDS introduced me to their programs right away, and they offered tutoring, which was initially what drew me in. Another reason the program is so successful at Cal is the ability to get full course credit for research. I was able to pursue independent research not just over the summer, and that allowed me to continue my research and get it published. ”

Second Year Scholars

The following second year scholars received a \$4,500 stipend for their summer research.

David Colby (Physics) did his second summer research at UC San Diego. He presented a poster at the 2017 UC LEADS Symposium titled *Super Massive Stars and Supernovae*. He will graduate in 2018.

Delina Meharena (Cellular and Molecular Biology) did her second summer research at UC Berkeley. Her poster, titled *Effects of natural variation in maternal care on the association of extracellular matrix with GABAergic interneurons in rats*, received an honorable mention at the 2017 UC LEADS Symposium. She plans to graduate in the fall of 2017.

Cheyenne Nelson (Physics) is a transfer student. She did her second summer research with CERN's ALPHA group in Geneva, Switzerland. She presented a poster at the 2017 UC LEADS Symposium titled *Temperature Analysis and Optimization of Antiproton Plasmas Using A New Numerical Algorithm*. She graduated in spring 2017 and has been working at Lawrence Berkeley National Lab in their internship program.

Newton Nguyen (Geophysics) did his second summer research at UC Santa Barbara. He presented a poster at the 2017 UC LEADS Symposium titled *Observational System Simulation Experiments in the Detection of Climate Change Forcing*. He graduated in spring 2017 and was accepted as a computational physics PhD student at Cal Tech.

Kenia Pina (Applied Mathematics) did her second summer research at UC Berkeley. She presented a poster at the 2017 UC LEADS Symposium titled *Neural Models of Occlusion*. She graduated in spring 2017 and currently works as a Business Systems Analyst at Data Analysis, Inc.

Angelique Scheuermann (Chemistry) did her second summer research at UC Irvine. She graduated in spring 2017 and was awarded a National Science Foundation Graduate Research Fellowship to pursue a PhD in Chemistry at UC Santa Barbara.

Carlos Sierra (Physics) did his second summer research with the ALPHA group at CERN in Geneva, Switzerland.

His poster, titled *Operation of a photomultiplier for improved temperature diagnostics in non-neutral plasmas*, received top honors at the 2017 UC LEADS Symposium. He graduated in fall 2016 and is now pursuing a PhD in Physics at the University of Michigan.

First Year Scholars

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

Jacob Bryon (Physics) did research at UC Berkeley and presented a poster at the 2017 UC LEADS Symposium titled *Search for Sliding Charge Density Wave in Niobium Diselenide*. He plans to graduate in 2018.

Ahyeon Hwang (Computer Science & Cognitive Science) did research at UC Berkeley and presented a poster at the 2017 UC LEADS Symposium titled *Regularizing Deep Networks for Brain-Machine Interfaces Using Data from Multiple Subjects*. She plans to graduate in 2018.

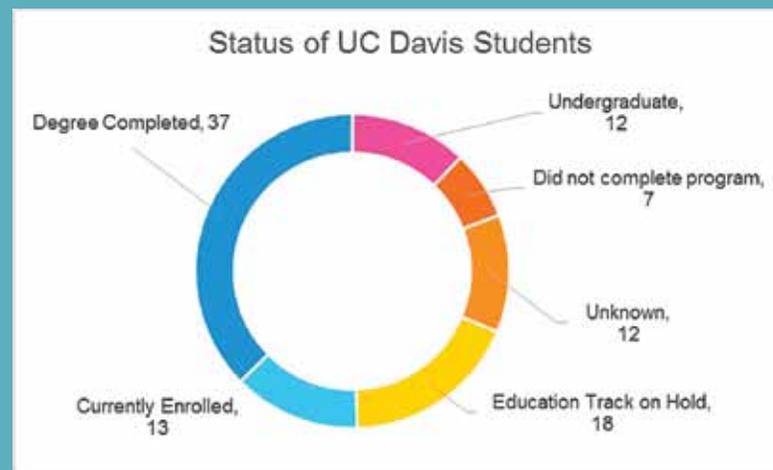
Edgar Ibarra (Physics) did research at UC Berkeley and presented a poster at the 2017 UC LEADS Symposium titled *Synthesis and Characterization of Tungsten Diselenide Using a Chemical Vapor Deposition Method*. He plans to graduate in 2018.

Alexander Nguyen (Physics) completed a year of research and presented a poster at the 2017 UC LEADS Symposium titled *Face-to-Face with Graphene*. He graduated in spring 2017 and was accepted as a Physics PhD student at Monash University in Australia.

Anthony Salazar (Material Science and Engineering) did research at UC Berkeley and presented a poster at the 2017 UC LEADS Symposium titled *Strain-Engineering of Monolayer WSe₂*. He plans to graduate in fall 2017 and apply to graduate school.

THE YEAR IN REVIEW

This academic year was rich with leadership and advocacy from several of our scholars, not only on campus but in the community of Davis. For example, it was so exciting to see Alex San Pablo pursue her passion to advocate on behalf of AB540/DACA/Dreamer students at UC Davis by way of her important role as the Student Assistant to the Chancellor. In this role, Alex was determined to develop a program of emergency housing for low-income students, and work with S.P.E.A.K. (Scholars Promoting Education, Awareness and Knowledge) to help organize its Family Day event during S.P.E.A.K. Week, making it possible to bring more families so they, too, can participate. She continues to advocate for undocumented students, and help bring awareness to the community to create more resources for them. Alex's cohort peers also pursued similar efforts by seeking leadership/officer roles in student organizations such as CALESS (Chicanos and Latinos in Engineering and Science Society) and ASHRAE (American Society of Heating, Refrigeration, and Air-Conditioning Engineers), in addition to holding part-time jobs as tutors on campus and/or within the Davis Joint Unified School District. Once again, this academic year was a success and we look forward to what 2017-2018 will bring to our program participants.





UC Davis Faculty, Scholars and Staff at the 2017 UC LEADS Symposium

Alumni Spotlight



LAUREN LUI
UC LEADS 2004-2006
B.S., Mathematical and Scientific
Computation with Biology Emphasis (2007)

Lauren Lui received her Ph.D. in Biomolecular Engineering and Bioinformatics from UC Santa Cruz in 2015. She is now a postdoctoral fellow at Lawrence Berkeley National Laboratory, in the lab of UC Berkeley Professor Adam Arkin. Lauren is studying the role of microbial communities in the environment and how these communities are impacted by human activities.

“ My experiences in UC LEADS influenced my entire career and gave me the opportunity to do scientific research instead of working to support my way through college. UC LEADS made it possible for me to work in a bioinformatics lab at UC Santa Cruz during my second summer in the program, and I decided to do my Ph.D. there. My experiences in UC LEADS laid a foundation for the interdisciplinary and collaborative work I do now. UC LEADS also provided me with skills I needed for applying for grad school and conducting research. I didn't realize the advantages that I had until I started mentoring undergraduates and advised them as they applied for graduate programs. My experiences in UC LEADS also impressed upon me the importance of community and awareness of diversity issues in higher education. I have been active in diversity groups through my entire career to help other scientists facing diversity issues. ”

Second Year Scholars

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

Reina Bassil (Biochemistry/Molecular Biology) did her second summer research at UC San Diego. Her poster, titled *Dissecting the Role of BRD4 in Mutant p53 Driven Chronic Inflammation-Induced Colon Cancer*, received top honors at the 2017 UC LEADS Symposium. She graduated in spring 2017 and is now a Research Intern at Genentech.

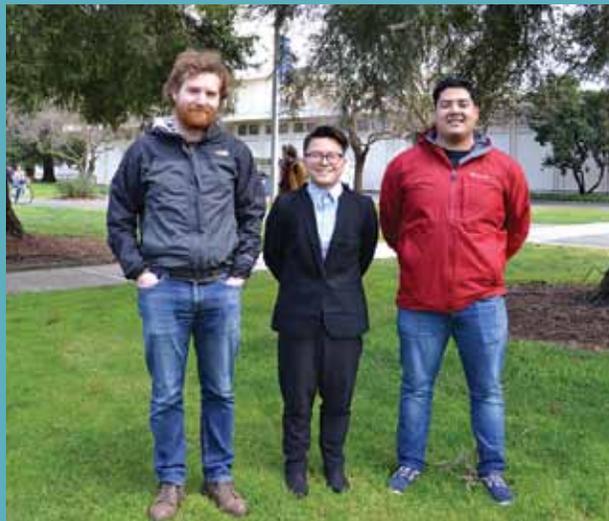
Brigitte Clark (Animal Science) did her second summer research at her home campus of UC Davis. She presented a poster at the 2017 UC LEADS Symposium titled *Predicting and Assessing the Stress and Immunity Responses of Different Ploidy White Sturgeon under Warming Conditions*. She graduated in summer 2017.

Kevin Enriquez (Chemical Engineering) did his second summer research at UC Irvine. She presented a poster at the 2017 UC LEADS Symposium titled *Synthesizing and Characterizing of Nanocrystalline Three-Phase Ceramic*. He graduated in summer 2017.

Elsa Esparza (Nutrition) did her second summer research at UC San Francisco. Her poster, titled *The Healthy Beverage Initiative: An Early View of the Metabolic Substudy*, received an honorable mention at the 2017 UC LEADS Symposium. She graduated in spring 2017 and is now pursuing a Dietetics Certification from CSU Sacramento.

Alicia Figueroa (Mathematics and Economics) did her second summer research at UC Los Angeles. She presented a poster at the 2017 UC LEADS Symposium titled *Children's Empathy, Perspective Taking Skills, and Beliefs about Individuals in Poverty*. She graduated in summer 2017.

Susana Ramirez Perez (Mechanical Engineering) did her second summer research at UC Riverside. She presented a poster at the 2017 UC LEADS Symposium titled *Convection Optimization in Consecutive Variable Cross-Sectional Cooling Channel for Thermal Management in Electronics*. She plans to graduate in 2018.



Left to Right: David Maginnis – Alexandra San Pablo, Tomas Torres, Garcia. Not pictured – Ilse Pastor and Daisy Guitron

First Year Scholars

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

Daisy Guitron (Civil Engineering - Environmental) did research at UC Davis and presented a poster at the 2017 UC LEADS Symposium titled *Rio Grande/Rio Bravo Water Management Atlas and Streamflow Analysis in California*. She plans to graduate in 2018.

David Maginnis (Chemical Engineering) did research at UC Davis and presented a poster at the 2017 UC LEADS Symposium titled *Models for Vibration Induced Patterns in Carbopol Gel*. He plans to graduate in 2018.

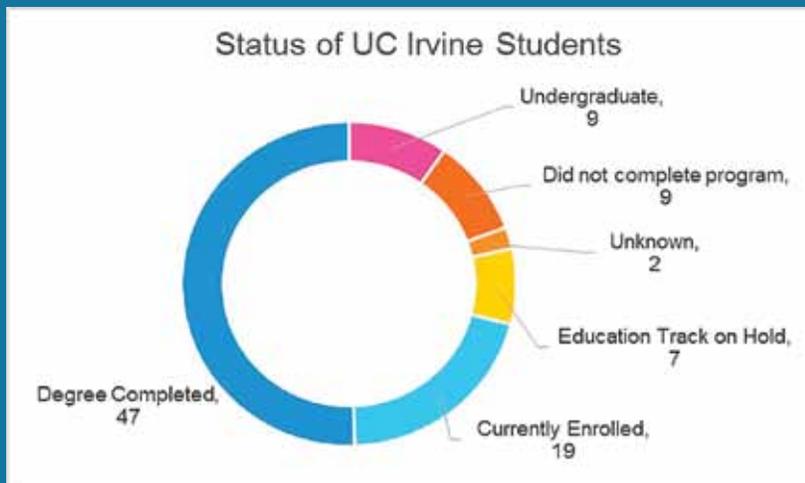
Ilse Pastor (Neuroscience) did research at UC Davis and presented a poster at the 2017 UC LEADS Symposium titled *Managing cell phone distractions in the classroom: Can tech breaks help?*, which received top honors. She plans to graduate in 2018.

Alexandra Camille San Pablo (Civil Engineering - Geotechnical) did research at UC Davis and presented a poster at the 2017 UC LEADS Symposium titled *Microbially-Induced Calcite Precipitation for Improvement of Heterogeneous Soils*, which received top honors. She plans to graduate in 2018.

Tomas Torres-Garcia (Mechanical & Aerospace Engineering) did research at UC Davis and presented a poster at the 2017 UC LEADS Symposium titled *Evaporatively-Cooled Condensing Units: Aqua-Chill*. He plans to graduate in 2018.

THE YEAR IN REVIEW

Each fall the scholars present their research at the SACNAS National Conference, which was in Long Beach this year, and three UC Irvine UC LEADS Scholars won poster prizes. One of the graduating students, Manuel Torres, received the National Science Foundation Graduate Research Fellowship. This year the leadership aspect of UC LEADS was expanded, with the second year scholars leading many workshops during the year, including tips for finding a second summer, how to create a winning poster, and they also sat in on the interviews for the new cohort of scholars.





UC Irvine Faculty, Scholars and Staff at the 2017 UC LEADS Symposium

ALUMNI SPOTLIGHT



RICARDO KOMAI
UC LEADS 2008-2010
B.A., Materials Science and
Engineering AND Mechanical
Engineering (2010)

Ricardo Komai received both a National Science Foundation Graduate Research Fellowship and a GEM doctoral fellowship as an undergraduate student double majoring in Materials Science and Engineering and Mechanical

Engineering at UC Irvine. As a result of his GEM fellowship, Ricardo was able to pursue an extended internship at 3M Unitek in Monrovia, where he worked on orthodontic materials for the dental industry. After he earned his Ph.D. in Materials Science and Engineering from Northwestern University in 2015, Ricardo went on to serve as a postdoctoral fellow at the Center for Hierarchical Materials Design (CHiMaD), a newly funded NIST Center of Excellence. He now works as a materials design engineer at QuesTek Innovations LLC in Evanston, Illinois, and currently serves as a visiting researcher at Northwestern's CHiMaD Center.

“ UC LEADS is the main reason I pursued my doctorate. The Symposium allowed me to network and I met the person who would later fight for me to attend UCSB for my Ph.D. I encourage all people to get to as many conferences as possible. As a transfer student, UC LEADS and Cal NERDS introduced me to their programs right away, and they offered tutoring, which was initially what drew me in. Another reason the program is so successful at Cal is the ability to get full course credit for research. I was able to pursue independent research not just over the summer, and that allowed me to continue my research and get it published. ”

Second Year Scholars

The following second year scholars received a \$4,500 stipend for their summer research.

Jenette Creso (Biomolecular Engineering) did her second summer research at UC Los Angeles. She presented a poster at the 2017 UC LEADS Symposium titled *Metabolic engineering of yeast using CRISPR/Cas9 for the increased production of geraniol*. She graduated in spring 2017 and is now pursuing a PhD in Bioengineering and Biomedical Engineering at Yale University.

Nelson Moll (Mathematics) did his second summer research at UC Los Angeles. He presented a poster at the 2017 UC LEADS Symposium titled *Generalized Lefschetz Fixed Point Theorem*. He graduated in spring 2017 and will be applying for doctoral programs for fall 2018 admission.

Manuel Torres (Computer Science and Mathematics) did his second summer research at UC Berkeley. He presented a poster at the 2017 UC LEADS Symposium titled *Heuristic Algorithm for the Colorful Connected Subgraph Problem*, received an honorable mention. He graduated in spring 2017 and is now pursuing a PhD in Computer Science at University of Illinois - Urbana Champaign with a National Science Foundation Graduate Research Fellowship.

Donald Trinh (Physics) did his second summer research at UC Los Angeles. He presented a poster at the 2017 UC LEADS Symposium titled *Cosmic Dawn: Simulating Sources of X-Ray Heating*. He will be graduating in spring 2018 after doing a year of study abroad in Norway.

First Year Scholars

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

Kenny Huynh (Material Science and Engineering) did research at UC Irvine and presented a poster at the 2017 UC LEADS Symposium titled *Measuring thermal conductivity of bulk ceramics using 3ω* . His second summer research will be at UC San Diego and he plans to graduate in 2018.

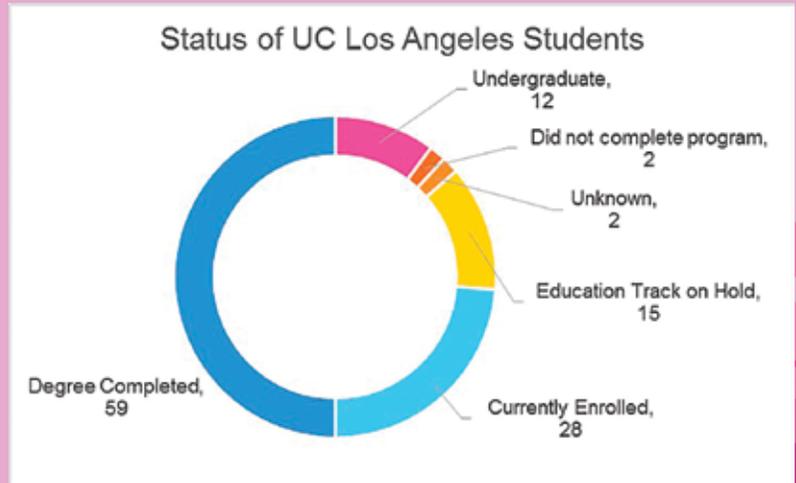
Kirolos Kelada (Chemical Engineering) did research at UC Irvine and presented a poster at the 2017 UC LEADS Symposium titled *Genetically Engineered Macrophages for Glioblastoma Therapeutics*. His second summer research will be at UC Santa Barbara and he plans to graduate in 2018.

Aylin Mojica (Mechanical Engineering) did research at UC Irvine and presented a poster at the 2017 UC LEADS Symposium titled *Kempe's Theorem: Understanding Linkages*. Her second summer research will be at UC Los Angeles and she plans to graduate in 2018.

Jordyn Rodwell (Chemical Engineering) did research at UC Irvine, but left the program after the first summer.

THE YEAR IN REVIEW

UCLA's UC LEADS program remains unique in its design as a two-year capstone experience in which all senior students submit a thesis proposal at the end of their tenure in the program. Between 2016 and 2017, the scholars presented at conferences and, during the winter UC LEADS Leadership course, scholars worked in teams to create experimental curricula for UCLA's SACNAS/EAOP Math/Science Academy that was held in the spring. The spring event is designed to expose high school students from underperforming schools to STEM as a viable career option. The UC LEADS Scholars worked tirelessly in their groups to ensure that students had a memorable experience.





UC Los Angeles Faculty, Scholars and Staff at the 2017 UC LEADS Symposium

ALUMNI SPOTLIGHT



MARICELA MALDONADO
UC LEADS
2009-20011
B.S., Chemical Engineering (2011)

Maricela Maldonado received the Bridge to the Doctorate Fellowship to support her first two years of graduate school in the Bioengineering Department at UC Riverside. In 2013, she received the NSF GRFP fellowship to support her last three years of graduate studies. A year after she graduated with her Ph.D. in Bioengineering from UC Riverside in 2016, she joined City of Hope as a postdoctoral fellow in the Department of Translational Research and Cellular Therapeutics.

“ UC LEADS gave me the foundation for critical thinking and exploring potential research areas for my future career path. It was very helpful to attend two different universities to gain research experience and develop my passion for a specific research field. Looking back, there are various areas where the UC LEADS program aided in my growth and development as a researcher. For example, participating in journal club helped improve my presentation and critical thinking skills. The various workshops and GRE prep helped my transition from undergraduate to graduate student researcher. Additionally, UC LEADS gave me the opportunity to network with students and professors from various universities which will help me in my next steps as I apply for a tenure track faculty position. ”

Second Year Scholars

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

Andrea Castro (Microbiology, Immunology, & Molecular Genetics) did her second summer research at UC San Diego. She presented a poster at the 2017 UC LEADS Symposium titled *Integration of Protein Network Analysis in Machine Learning Classification of GOF and LOF Mutations in Cancer*. She graduated in spring 2017 and is now pursuing a PhD in Bioinformatics at UC San Diego.

Luis Chinchilla-Garcia (Astrophysics) did his second summer research at UC Berkeley. He plans to graduate in spring 2018.

Siara Fabbri (Physics) did her second summer research at UC Berkeley. She presented a poster at the 2017 UC LEADS Symposium titled *Streaking UED Beams with an RF Deflecting Cavity*. She graduated in spring 2017 and is now pursuing a PhD at the University of Manchester.

Lesly Lopez (Applied Mathematics) did her second summer research at UC Merced. She presented a poster at the 2017 UC LEADS Symposium titled *A Population Genetic Analysis of Variation in the X Chromosome*. She graduated in spring 2017 and is now pursuing a PhD in Quantitative & Systems Biology at UC Merced.

Jessica Tran (Mathematics of Computing) rejoined UC LEADS in 2016-2017. She presented a poster at the Symposium titled *Predicting Student Drop Out in Mathematics*, which received an honorable mention. She graduated in spring 2017 and is now working for Amazon Fresh as a Software Development Engineer.

Tran Tsan (Physics) did her second summer research at UC San Diego. She presented a poster at the 2017 UC LEADS Symposium titled *A New Infrared Method for Discovering Active Galactic Nuclei (AGN): Lick Spectroscopy of New Seyfert 1's in the Kepler Fields*. She graduated in spring 2017 and is now pursuing a PhD in Physics at UC San Diego.

First Year Scholars

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

Karen Ekeruche (Mechanical Engineering) did research at UC Los Angeles and presented a poster at the 2017 UC LEADS Symposium titled *Effect of Varying Outer Cylinder Diameter on a Novel Rheometer Probe Geometry*, which received an honorable mention. Karen left the UC LEADS program after the first summer. She continued to participate during the quarterly journal clubs, but did not continue beyond spring 2017. She plans to graduate in 2018 and will enter business school at UCLA.

Ronnie Garcia (Chemistry & Biochemistry) did research at UC Los Angeles and presented a poster at the 2017 UC LEADS Symposium titled *Efficient Synthesis of Pentiptycene: Symmetric Organic Building Blocks for New Material*, which received top honors. Ronnie also won a poster presentation award at ABRCMS in 2018 and he plans to graduate in 2019.

Alejandra Gonzalez (Chemistry & Biochemistry) did research at UC Los Angeles and presented a poster at the 2017 UC LEADS Symposium titled *New Methods for Electrophilic Alkylation of ortho-Carborane*, which received top honors. Alejandra also won a poster presentation award at ABRCMS in 2018 and she plans to graduate in 2018.

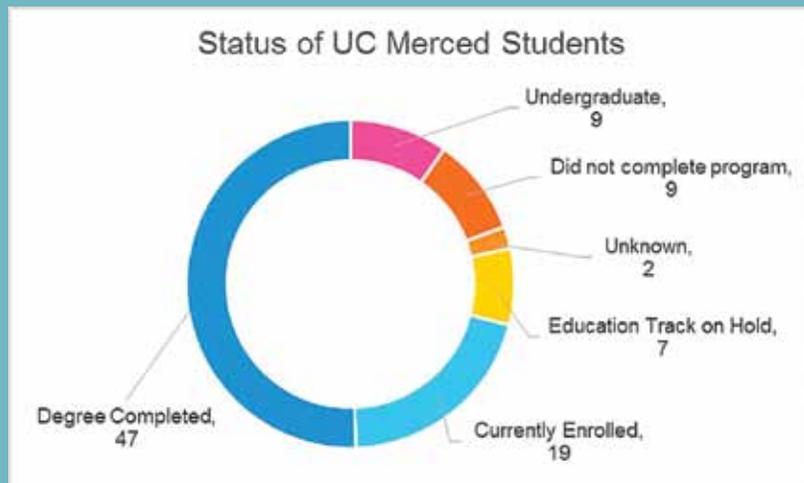
Bonnie Lam (Electrical Engineering) did research at UC Los Angeles and presented a poster at the 2017 UC LEADS Symposium titled *Implementing a Built-in Solution Generator Using Liquid State Machines*. She will graduate in 2018 and then attend UC Berkeley, where she will study bioengineering. Bonnie is also a recipient of the National Science Foundation Graduate Research Fellowship.

Liya Oster (Chemistry & Biochemistry) did research at UC Los Angeles and presented a poster at the 2017 UC LEADS Symposium titled *RNA Compaction in the Presence of Polyvalent Cations*, which received an honorable mention. She will graduate in 2018 and then attend UC Berkeley, where she will study biophysics. Liya is also a recipient of the National Science Foundation Graduate Research Fellowship.

Alice Tang (Bioengineering) did research at UC Los Angeles and presented a poster at the 2017 UC LEADS Symposium titled *Quantitative Changes in Cerebral Perfusion Parameters Improves Current Methods to Evaluate Endovascular Treatment for Neurovascular Disorders*. She plans to graduate in 2018 and then enter into the Medical Scientist Training Program (MSTP) at UCSF.

THE YEAR IN REVIEW

The Undergraduate Research Opportunities Center (UROC) at UC Merced coordinates undergraduate fellowship programs, including UC LEADS, and due to the campus expansion with increased student enrollment, will continue to provide more opportunities for students. The UROC Summer Undergraduate Research Institute (SURI), in which all UC LEADS Scholars participate, has new partner programs to align other campus initiatives with the UC LEADS program through partnerships with Lawrence Berkeley National Labs, University of Alabama-Birmingham, and new partner programs through NSF, NIH, and NASA. Summer researchers now have broader networks to pursue graduate school and careers in industry.





UC Merced Faculty, Scholars and Staff at the 2017 UC LEADS Symposium

Alumni Spotlight



YURIANA AGUILAR
UC LEADS
2009-2011
B.S., Biological
Sciences (2011)

Yuriana Aguilar volunteered in Dr. Ariel Escobar's lab a year before she graduated from UC Merced. In

2012, she worked as a Ph.D. student researcher with Dr. Escobar's team, focusing on cardiac research. Since she received her doctorate in 2016, Yuriana now pursues research in calcium signaling, single channel recordings, inositol triphosphate receptor, and ryanodine receptor conduct as a Postdoctoral Fellow in the Department of Physiology and Biophysics at Rush University Medical Center in Chicago, Illinois.

“ UC LEADS was the best undergraduate research program I could have ever been a part of. It not only made me look like a qualified applicant for many things to come because it improved my resume and CV, but it also developed me academically and scientifically. I have always been a very shy individual so speaking up in front of others (one-on-one or for presentations) had been difficult. UC LEADS equipped me with the tools and confidence I needed to step out of my shell and share scientific knowledge on all platforms. The extensive mentoring empowered me to feel capable of going beyond the expectations of a first-generation student that felt a B.S was more than enough, but to pursue a Ph.D. Now, as a scientist, I continue to present my research like I was taught by UC LEADS. And despite being a minority in the sciences as a Hispanic, immigrant, and female researcher, I know that I am capable of accomplishing much more and have not lowered my standards. ”

Second Year Scholars

Lourdes Diaz (Mechanical Engineering) did her second summer research at UC Irvine and received \$3,500. She presented a poster at the 2017 Symposium titled *Towards Integration of Robust and Repeatable Self-Healing in Engineered Cementitious Composites*. She plans to graduate in spring 2018.

David Delgadillo (Chemistry) did his second summer research at UC Davis and received \$3,500. He presented a poster at the 2017 Symposium titled *Investigation of Expressed Multi-Copper Oxidase Mnx-G Containing Protein Complex*. He graduated in spring 2017 and will attend UC Santa Cruz for a Chemistry PhD.

Stephanie Gamboa (Public Health) did her second summer research at UC Los Angeles. She presented a poster at the 2017 Symposium titled *Mutagenesis Synergy: in Cancer Drug Combinations*. She graduated in spring 2017 and is now an Environmental Health Technician for Merced County.

Jose Garcia (Human Biology) did his second summer research at UC San Francisco and received \$3,500. He presented a poster at the 2017 Symposium titled *PAX3-FOXO1 fusion oncogene increases dependence on amino acid activation of mTOR*. He graduated in spring 2017 and will attend Kansas City University Medical School.

Marcos Lucero (Materials Chemistry) did his second summer research at UC Santa Cruz and received \$3,500. He presented a poster at the 2017 Symposium titled *Effect of Surfactant Chain Length & Head Groups on Conjugated Polyelectrolyte Surfactant Complexes*. He graduated in spring 2017 and will pursue a Chemical Engineering PhD at Oregon State University.

Iris Montes (Biology Major/ Minor Chemistry) did her second summer research at Stanford University. She presented a poster at the 2017 Symposium titled *Characterizing Splice Variants of Glial Fibrillary Acid Protein Following Stroke in Mice*. She graduated in fall 2017 and will be in the Biomedical Sciences Masters program at Tufts University.

Jesus Partida (Bio-engineering) did his second summer research at UC Merced and received \$4,000. He presented a poster at the 2017 Symposium titled *Preliminary Design for a Polydimethylsiloxane (PDMS) Based Microfluidic*

PoC Device. He plans to graduate in spring 2018 and has been offered a position at Lawrence Livermore National Laboratory.

Jose Rubalcava-Cruz (Mechanical Engineering) did his second summer research at UC Los Angeles and received \$3,500. He presented a poster at the 2017 Symposium titled *Effective thermal expansion of three-component core-shell-matrix composites*. He plans to graduate in spring 2018.

First Year Scholars

The following first year scholars received a \$3,500 stipend for their summer research at UC Merced.

Jesus Campos Gatica (Applied Mathematics) presented a poster at the 2017 UC LEADS Symposium titled *Positive Natural Selection in the X Chromosome*. He plans to graduate in spring 2018.

Ramces Gonzales (Chemistry) presented a poster at the 2017 UC LEADS Symposium titled *Improving Signal-to-Noise Ratio of DNA-Based Biosensors through the Increase of Electrode Surface Roughness*. He plans to graduate in spring 2018.

Ebelin Hernandez (Bioengineering) presented a poster at the 2017 UC LEADS Symposium titled *Thermal Management System for Lithium-Ion Batteries in EVs and HEVs Using Minichannel Tubes*. She plans to graduate in spring 2018.

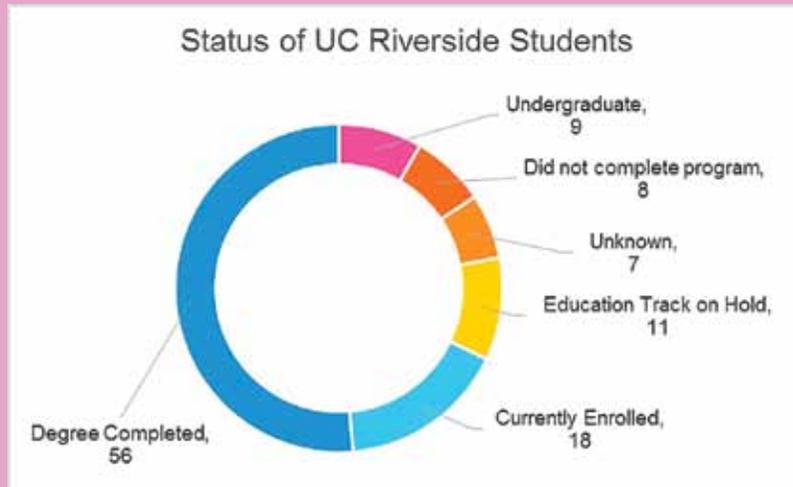
Victor Hernandez (Materials Engineering) presented a poster at the 2017 UC LEADS Symposium titled *Micro-Patterning Lipid Bilayers on Nanofibrillated Cellulose*. He plans to graduate in spring 2018.

Daniel Sanchez Garrido (Mechanical Engineering) presented a poster at the 2017 UC LEADS Symposium titled *Tribology, Lubricant Performance and Additive Effectiveness*, which received an honorable mention. He is graduating in spring 2018.

Tanya Tafolla (Applied Mathematics) presented a poster at the 2017 UC LEADS Symposium titled *Continuous Model of Penguin Huddle Dynamics*, which received an honorable mention. She plans to graduate in spring 2018.

THE YEAR IN REVIEW

Present, Present, Present! Our UC LEADS scholars were very active and took advantage of funding provided by the program to present their research on campus, locally and out of state. The group represented UCR well at the annual Southern California Conference for Undergraduate Research (SCCUR) which took place on November 18, 2017 at Cal Poly Pomona. Additionally, Crysthal Alvarez, a first year scholar, attended and presented her work at the SPIE Photonics West Conference in San Francisco, CA. Crysthal presented the research she has been conducting with her mentor, Dr. Guillermo Aguilar, on “Antibacterial Studies of ZnO Nanoparticle Coatings on Nanocrystalline YSZ Irradiated with Femtosecond Laser Light”. A second year scholar, Rosa McGuire, attended the 2017 Society for the Advancement of Chicanos/ Hispanics and Native American in Science (SACNAS) in Salt Lake City, Utah, October 19-21, 2017, where she received the award in Ecology/Evolutionary Biology for the work she has conducted under the mentorship of her UCR mentor, Dr. Curt Anderson, on “Assessing the Dynamics of a Generalist Predator/Prey Model Across Differential Spatial Configurations”.





UC Riverside Faculty, Scholars and Staff at the 2017 UC LEADS Symposium

ALUMNI SPOTLIGHT



DARREN BANKS
UC LEADS 2008-2010
B.S., Mechanical Engineering (2010)

Darren Banks worked at the lab of Dr. Guillermo Aguilar as an undergraduate majoring in Mechanical Engineering. While he completed his Ph.D. in mechanical engineering at UC Riverside, Darren helped mentor scholars from UC LEADS and several other undergrad research program scholars. After he completed his doctoral degree, he worked with Dr. Aguilar as a postdoc before accepting his current position as assistant professor at Cal State Fullerton's Department of Mechanical Engineering.

“ UC LEADS was a huge part of my success and motivation for grad school. The writing and presentation skills that we worked on were immediately helpful for getting conference presentations and journal publications going, and the support to work on my research during the summers put me ahead of the game relative to my graduate cohort. UCLEADS was a fantastic foundation for my academic career, up to and including today as an assistant professor. ”



From left to right: Robert Espinoza, Sonia Gomez, Mariah Gomez, Rosa McGuire, Vaishnavi Malipeddi, Crysthal Alvarez and Georgette Sabbah. Missing: Felix Marcia and Richard Martirosia

Second Year Scholars

Heather David (Microbiology) did her second summer research at UC Riverside and received a \$3,000 stipend. She graduated in summer 2017 and will pursue a career in Clinical Medical Assisting.

Johnny Nguyen (Chemical Engineering) did his second summer research at UC Berkeley and received a \$3,500 stipend. He presented a poster at the 2017 UC LEADS Symposium titled *Toward the Total Synthesis of Taxagifine: Early Diastereoselective Oxygenation at C5*. He graduated in summer 2017 and a Gates Millennium Scholar pursuing a PhD in Chemistry at Vanderbilt University.

First Year Scholars

The following first year scholars received a \$4,500 stipend for their summer research.

Vaishnavi Malipeddi (Neuroscience) did research at UC Riverside and presented a poster at the 2017 UC LEADS Symposium titled *Quantification of Glial Activation through Immunohistochemical staining of GFAP and Iba1 for 3 and 7 days post TBI*, which received top honors. She plans to graduate in spring 2018.

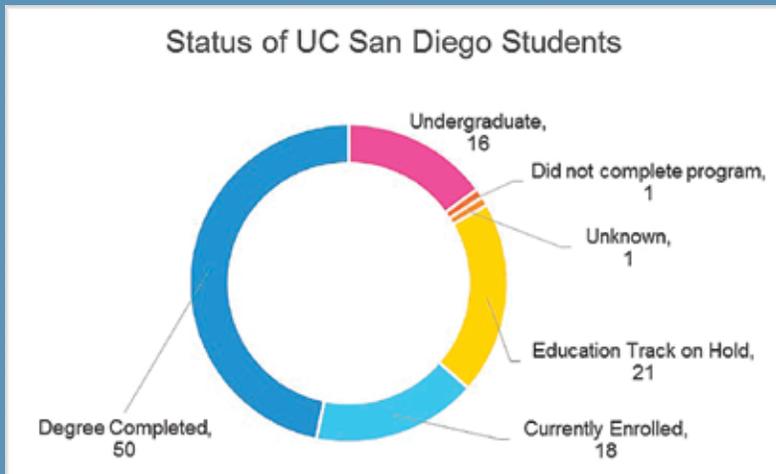
Felix Marcia (Physics) did research at UC Riverside and presented a poster at the 2017 UC LEADS Symposium titled *Searching for Supersymmetry in Multi Jet Topology at CMS Detector at $\sqrt{s} = 13$ TeV*. He plans to graduate in 2018.

Richard Marirosian (Neuroscience) did research at UC Riverside and presented a poster at the 2017 UC LEADS Symposium titled *The Effect of Ozone on Hypothalamic Glucoregulatory Circuits*. He plans to graduate in 2018.

Rosa McGuire (Ecology/Evolutionary Biology) did research at UC Riverside and presented a poster at the 2017 UC LEADS Symposium titled *Assessing the Dynamics of a Generalist Predator/Prey Model across Different Spatial Configurations*. She plans to graduate in spring 2018.

THE YEAR IN REVIEW

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. 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 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 also has an allocation of \$1,000 to put towards the cost of conference travel.





UC San Diego Faculty, Scholars and Staff at the 2017 UC LEADS Symposium

ALUMNI SPOTLIGHT



SONYA NEAL
UC LEADS 2005-2007
B.S., Chemistry and Biochemistry (2007)

Sonya Neal obtained her Ph.D. in Biochemistry and Molecular Biology at UCLA in 2013. After earning her doctorate, she returned to her undergraduate alma mater UC San Diego to join

Randolph Hampton's lab as a postdoctoral researcher. She is currently interviewing with several institutions for an assistant professor position.

“ I was the 2nd cohort of the UC LEADS program at UCSD. The professor I did my summer research with actually became my PI in graduate school at UCLA. In fact, because of the summer research program, it helped me get into the UCLA Ph.D. program. UC LEADS provided me the knowledge of what research opportunities were out there. Prior to joining UC LEADS, I had no idea about Ph.D. programs in the STEM fields (I am a first generation college student). By having the opportunity to work in several labs at UCSD, I gained research and bench skills and found my passion in research (something I would have never realized if I didn't do any research). Also, by being able to attend the UC LEADS symposium, I learned valuable communication and presentation skills. Hence, all of these skills are what I continuously use today in being a successful researcher. ”

UC SAN DIEGO

Second Year Scholars

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

Shang-Chun (Andrew) Chiang (Chemical Engineering) did his second summer research at UC San Diego. He presented a poster at the 2017 UC LEADS Symposium titled *Mechanical Properties of Semiconducting Polymers*. He graduated in spring 2017 and is now pursuing a PhD in Macromolecular Science and Engineering at the University of Michigan.

Karla Fernandez Ramirez (Biochemistry and Cell Biology) did her second summer research at UC Los Angeles. She presented a poster at the 2017 UC LEADS Symposium which received an honorable mention. She graduated in fall 2017.

Moses Kodur (Chemical Engineering) did his second summer research at UC San Diego. He presented a poster at the 2017 UC LEADS Symposium titled *ALD Coating for Sodium-ion Batteries*, which received top honors. He graduated in spring 2017 and is now pursuing a PhD in Chemical Engineering at UC San Diego.

Cuong Lieu (Microbiology) did his second summer research at UC San Diego. He presented a poster at the 2017 UC LEADS Symposium titled *Identification of Signaling Network Interactions of the Cyanobacterial Circadian Clock*. He graduated in spring 2017.

First Year Scholars

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

Rachel Miller (NanoEngineering) did research at UC San Diego and presented a poster at the 2017 UC LEADS Symposium titled *The Language of Glove: Low-Power, Flexible and Stretchable Wireless Gesture Decoder*, which received an honorable mention. She plans to graduate in 2018.

Carlos Osuna (Physics-Biophysics) did research at UC San Diego and presented a poster at the 2017 UC LEADS Symposium titled *Three-Point Bending: A Biomechanical Approach to Analyzing an Osteoporotic Mouse Model*. He plans to graduate in 2018.

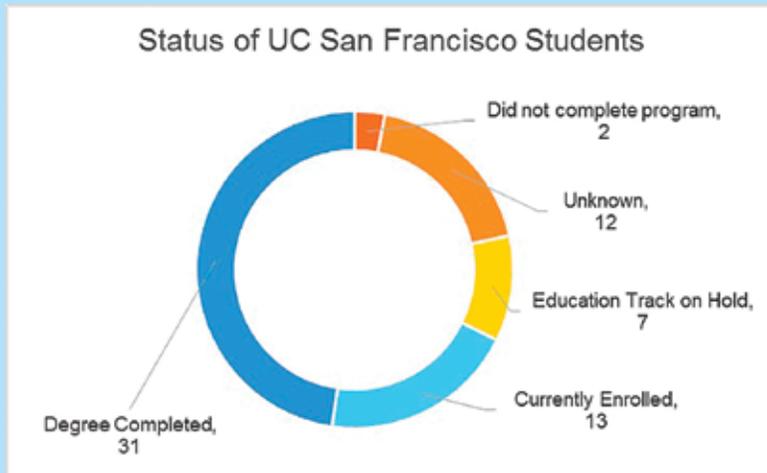
Ester Park (NanoEngineering) did research at UC San Diego and presented a poster at the 2017 UC LEADS Symposium titled *Multistage Quantum Photonic Band-Stop Filter Embedded System*. She plans to graduate in 2018.

Christine Rahal (Biochemistry/Chemistry) did research at UC San Diego and presented a poster at the 2017 UC LEADS Symposium titled *Identification of the Rad5 DNA Helicase in Exo1-Independent DNA Mismatch Repair*, which received top honors. She plans to graduate in 2018.

Mu-Po (Bryan) Yang (Computer Science) did research at UC San Diego and presented a poster at the 2017 UC LEADS Symposium titled *Integration of Sliding Mode Controller with Auto-Tuning PID Controller for Quad-copters*. He plans to graduate in 2018.

THE YEAR IN REVIEW

The UCSF 2016 Summer Research Training Program (SRTTP) was comprised of 56 students from around the country that included 4 UC LEADS scholars. Scholars have access to UCSF's cutting edge research facilities, are mentored by faculty, postdocs, and graduate students, experience the culture and collegiality of being a member of a "lab group", and receive training that emphasizes UCSF's unique, multi and interdisciplinary research. Students are encouraged to be creative and are given considerable independence in the design and direction of their research projects.





UC San Francisco Summer 2016 Program Participants

Second Year Scholars

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

Gauree Chendke (Biology – College of Creative Studies) was a second year scholar from UC Santa Barbara. She presented a poster at the 2017 UC LEADS Symposium titled *Encasing Pancreatic Islets in Polycaprolactone Scaffold to Preserve Cell Function for Islet Transplantation*. Gauree graduated in winter 2017 and is now a Laboratory Manager/Research Associate at UC San Francisco with the Desai Lab.

Kevin Dervishi (Biology - College of Creative Studies) was a second year scholar from UC Santa Barbara. He presented a poster at the 2017 UC LEADS Symposium titled *Investigating tau dimerization: the implications of tau oligomers in neurodegeneration*, which received an honorable mention. Kevin graduated in spring 2017 and is now pursuing a PhD in Biological and Biomedical Science at Harvard University.

Elsa Esparza (Nutrition) was a second year scholar from UC Davis. Her poster, titled *The Healthy Beverage Initiative: An Early View of the Metabolic Substudy*, received an honorable mention at the 2017 UC LEADS Symposium. She graduated in spring 2017 and is now pursuing a Dietetics Certification from CSU Sacramento.

Jose Garcia (Human Biology) was a second year scholar from UC Merced. He presented a poster at the 2017 UC LEADS Symposium titled *PAX3-FOXO1 fusion oncogene increases dependence on amino acid activation of mTOR*. He graduated in spring 2017 and is now applying to medical schools.

ALUMNI SPOTLIGHT



MICHAEL OLIVEIRA
UCSF UC LEADS 2007-2009
UC MERCED B.S., Bioengineering (2009)

Michael Oliveira graduate with a doctoral degree in Bioengineering from UC Riverside in 2014. His dissertation focused on the development of biomedical optical imaging systems and custom multi-dimensional image and video data analysis software for multi-scale anatomical and physiological exploration of the mouse nervous system. As a graduate student, he was selected as a fellow of the UCR National Science Foundation Integrative Graduate Education, Research and Training (NSF IGERT) Program in Video Bioinformatics. The program and training grant exposed him to the field of computer vision-based image and video analysis of dynamic biological systems. The fellowship also provided him the opportunity to work with Modulated Imaging Inc., a small medical device startup company incubating at the UC Irvine Beckman Laser Institute. During his 2013 summer tenure, he managed and actively developed the first release of the MI-VIS product; a multi-dimensional data visualization software application for an optical imaging technology called spatial frequency domain imaging (SFDI). Michael now works as a senior biomedical systems engineer at Acutus Medical, Inc., where he focuses on research and development of an intra-cardiac catheter-based 3D electrophysiological mapping system for improved diagnostics and treatment of complex cardiac arrhythmias.

“ My experience with UC LEADS instilled in me a strong sense of what it means to do scientific research. I’ve built my career on a strong foundation comprised of the rigorous application of the scientific method for solving problems, the diligent documentation of experimental protocols for reproducibility, and the clear and concise communication of results and findings to a broad audience by publication in the scientific literature or platform or poster presentation at international symposia. As a senior engineer on the R&D team of a startup medical device company, I’m constantly testing new concepts and product improvements, documenting my experimental details and results in test protocols and reports, and communicating those results to key stakeholders within the company. I’m confident I will continue to be served well by the solid foundation in scientific research, documentation, and communication that I built during my UC LEADS experience. ”

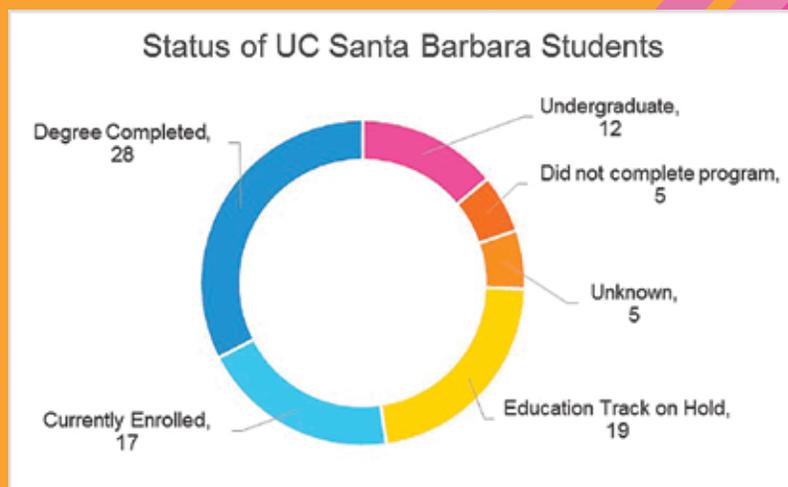
Campus Updates UC SANTA BARBARA

THE YEAR IN REVIEW

UC Santa Barbara UC LEADS program focuses on a well-rounded, academically and professionally prepared, UC LEADS Scholars cohort. As such, we continue to build our program through programmatic support, networking, professional development, mentorship, and research experiences to ensure our scholars are able to enter and be successful in graduate school.

For the 2016-2017 academic year, a total of nine UC LEADS Scholars (4-2nd year and 5-1st year scholars) representing the diverse campus composition: socioeconomic, familial, disciplinary, and research backgrounds participated in our program. Each scholar brought a wealth of knowledge and experience that significantly contributed to the overall UC LEADS experience. Our program continues to support a number of scholars from the College of Creative Studies - "The graduate school for undergraduates"; however, our first-year scholar cohort represents a balance of disciplinary backgrounds. As noted below, all of our second-year scholars have moved on to engage in research experiences at the professional and graduate school level. Three of the second-year scholars have continued their experiences at another University of California campus.

Looking to the future, we are excited to recruit a new cohort of diverse scholars to enter and succeed in their desired field of study or profession. As the campus host for the 2018 UC LEADS Symposium, we look forward to having the University of California community (scholars, faculty, staff, alumni, and community members) visit UC Santa Barbara and engage with our exceptional students, research facilities and the surrounding scenic campus life.





UC-Santa Barbara Faculty, Scholars and Staff at the 2017 UC LEADS Symposium

ALUMNI SPOTLIGHT



**AMANDA
HILDEBRAND**
UC LEADS 2003-2005
**B.S., Chemical
Engineering (2005)**

Amanda Hildebrand worked in industry for five years as a process development/fermentation engineer before completing her Ph.D. in biological

systems engineering in 2015 at UC Davis. She now works as a research scientist at DuPont, where she researches and develops yeast strains and enzymes for the fuel ethanol industry.

“ UC LEADS gave me good insight on grad school, what to expect, and how to be successful. My experience in UC LEADS opened doors for me and also helped me be successful in graduate school. It gave me knowledge on how research is funded, a mindset which helped me full fund my graduate school with outside fellowships and allow me to fully focus on my grad school studies. It also gave me experience in breaking down complex problems into actionable research to start building an understanding of how to solve those problems. It gave me a solid foundation on literature review and how to critically survey the available literature. This is a key component of research. ”

UC SANTA BARBARA

Second Year Scholars

The following second year scholars received a \$3,500 stipend from UCSB or a \$4000 stipend from UCSF for their summer research.

Gauree Chendke (Biology – College of Creative Studies) completed her second summer research at UC San Francisco. She presented a poster at the 2017 UC LEADS Symposium titled *Encasing Pancreatic Islets in Polycaprolactone Scaffold to Preserve Cell Function for Islet Transplantation*. Gauree graduated in winter 2017 and is now a Laboratory Manager/Research Associate at UC San Francisco with the Desai Lab.

Kevin Dervishi (Biology - College of Creative Studies) completed his second summer research at UC San Francisco. He presented a poster at the 2017 UC LEADS Symposium titled *Investigating tau dimerization: the implications of tau oligomers in neurodegeneration*, which received an honorable mention. While at UC Santa Barbara, Kevin was awarded the 2016 Barry Goldwater Scholarship and won first place for the 2016 UC Santa Barbara Undergraduate Research Slam. Kevin graduated in spring 2017 and is now pursuing a PhD in Biological and Biomedical Science at Harvard University.

Brandon Hendrickson (Biology) completed his second summer research at UC San Diego. Brandon presented a poster at the 2017 UC LEADS Symposium titled *Optical Flow Information Processing and Memory Updating in the European Honey Bee, Apis Mellifera*. While at UC Santa Barbara, Brandon was awarded the Ecology, Evolution and Marine Biology distinction in the major for outstanding undergraduate work. Brandon graduated in spring 2017 and is now pursuing a PhD in Environmental Systems at UC Merced.

Sarath Pathuri (Chemistry and Biochemistry - College of Creative Studies) completed his second summer research at UC Santa Barbara. He presented a poster at the 2017 UC LEADS Symposium titled *Comparative proteomic analysis of Aggregatibacter Actinomycetemcomitans: the role of DNA adenine methylation*. Sarath transitioned to the BS/MS in Biomolecular Science and Engineering at UC Santa Barbara last year and will graduate with his master's degree in 2018.

First Year Scholars

The following first year scholars received a \$3,900 stipend for their summer research at UC Santa Barbara.

Omar Curiel (Mechanical Engineering) is a first-generation scholar. He presented a poster at the 2017 UC LEADS Symposium titled *Experimental Analysis of Fine Sediment Dynamics on the International Space Station*. He is an ESTEEM (Enhancing Success in Transfer Education for Engineering Majors) scholarship awardee. Omar plans to graduate in 2018.

Ximena Garcia (Physics) is a first-generation scholar. She presented a poster at the 2017 UC LEADS Symposium titled *Effects of Counterions and Tau proteins on Microtubule Dynamic Instability*. Ximena plans to graduate in 2018.

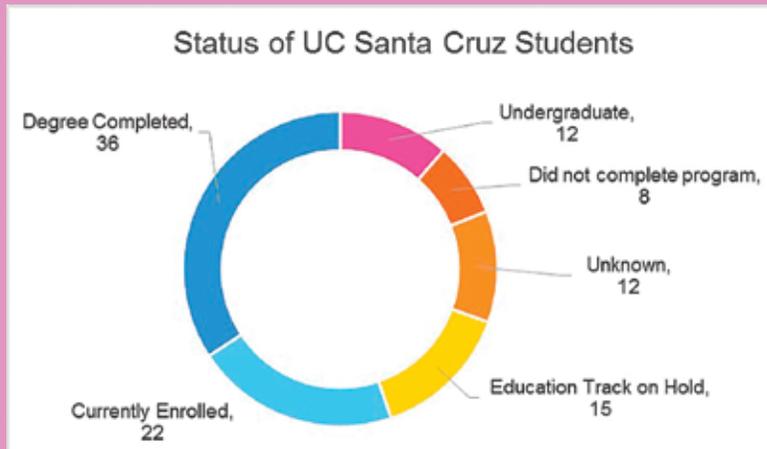
Shannon Grossman (Biochemistry) presented a poster at the 2017 UC LEADS Symposium titled *A Potential New Tool to Assess Phenotypic Change Arising from Hypomethylation*. Shannon plans to graduate in 2018.

Rachel Liu (Biology - College of Creative Studies) presented a poster at the 2017 UC LEADS Symposium titled *Feeding Marine Microbes: Toluene Biodegradation in the Gulf of Mexico*, which received an honorable mention. Rachel plans to graduate in 2018.

David Lowe (Biology - College of Creative Studies) presented a poster at the 2017 UC LEADS Symposium titled *Anastasis: a potential role in reversal of chemotherapy induced apoptosis*, which received top honors. He plans to graduate in 2019.

THE YEAR IN REVIEW

The UC LEADS program at UC Santa Cruz had significant accomplishments in the 2016-2017 school year. Our graduating Scholars are going on to top institutions for graduate study, including UC Berkeley, UC Davis, and UC San Diego. 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. Two scholars received the SACNAS and one received ABRCMAS travel.





UC Santa Cruz Faculty, Scholars and Staff at the 2017 UC LEADS Symposium

ALUMNI SPOTLIGHT



VANESSA ENRIQUEZ-RIOS
UC LEADS 2001-2002
B.S., Chemistry (2004)

Vanessa Enriquez-Rios graduated with a Ph.D. in in Cancer & Developmental Biology from the University of Tennessee Health Science Center/St. Jude Children's Research Hospital in 2015. As a graduate student researcher, she managed strategic crosses of murine genetic lines, including the creation of triple and quadruple knockouts, to evaluate how these kinases transduce appropriate responses to genotoxic stress to prevent neurologic disease during development within a biological context. She also monitored the effects of IR-induced DNA damage with respect to spatiotemporal cell cycle progression in developing murine cortices using neuropathological and biochemical analyses.

“ The UC LEADS summer financial support allowed me to significantly contribute to a research project that led to my first co-publication while an undergraduate. The mentorship I received from my advisor Dr. Bakthan Singaram and his graduate students prepared me extremely well to be competitive in all future career endeavors. ”

Second Year Scholars

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

Nicolas Blanc (Physics) did his second summer research at UC Santa Cruz and now has two first author publications in review. Nicolas had the opportunity to attend two national SACNAS conferences, winning a best poster presentation award at his first conference in 2015. He also presented his research at the COMPRES conference and American Geological Union conference in 2016. He graduated in fall 2016 and is now pursuing a PhD at the Institute of Geophysics and Planetary Physics at UC San Diego.

Emmanuel Kayede (Computer Engineering/Electrical Engineering) did his second summer research at UC Santa Barbara. He presented a poster at the 2017 UC LEADS Symposium titled *Atomic Layer Deposition for Transistor Scaling*, which received top honors. He will graduate in spring 2018 and start a Ph.D in fall 2018, as a NSF Bridge to the Doctorate fellow at UC Santa Barbara in the department of Electrical Engineering.

Javier Ruiz (Computer Engineering/Cognitive Science) did his second summer research at UC San Diego. He presented a poster at the 2017 UC LEADS Symposium titled *Control of Self-Balancing MinSeg Robot*. He graduated in spring 2017 and is now pursuing a PhD in Electrical Engineering at UC San Diego.

Masuda Sharifi (Molecular, Cellular and Developmental Biology) did her second summer research at UC Davis. She presented a poster at the 2016 SACNAS National Conference and the 2017 UC LEADS Symposium titled *The Formation of the Lysosome/Vacuole: The Role of the RAB-7 GTPase*. She graduated in spring 2017 and is now pursuing a PhD in Molecular, Cell and developmental Biology at UC Davis.

Georgia Sheppard (Biology) did her second summer research at UC Berkeley. She presented a poster at the 2016 SACNAS National Conference and the 2017 UC LEADS Symposium titled *Determining if overexpression of lincRNA-Cox2 impacts host defense against infection in vivo*. Georgia will be graduating this spring and will be teaching in Japan through the English Adventure program.

First Year Scholars

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

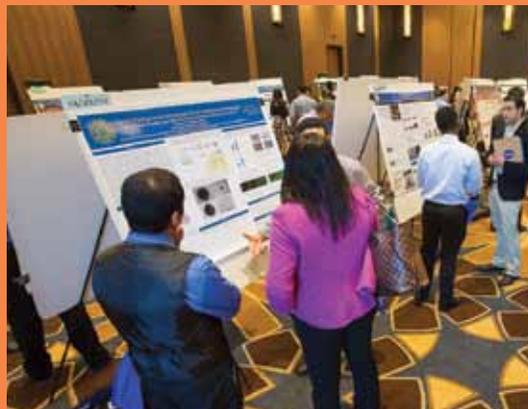
Melvin Abzun (Electrical Engineering) did research at UC Santa Cruz and presented a poster at the 2017 UC LEADS Symposium titled *Creating a Hands-on Demonstration Bench to Teach Basic Optics and Optical Systems Design*. He plans to graduate in 2018.

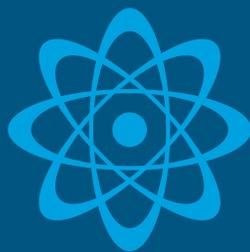
Jesse Cisneros Solis (Physics) did research at UC Santa Cruz. He presented a poster at the 2016 SACNAS National Conference and the 2017 UC LEADS Symposium titled *Adaptive Optics enhance in-vivo functional imaging of Drosophilla melanogaster mushroom bodies*. He plans to graduate in 2018.

Maria Gonzalez (Biochemistry and Molecular Biology) did research at UC San Francisco and presented a poster at the 2017 UC LEADS Symposium titled *Determining whether the loss of sister chromatid cohesion is responsible for decreased gamete viability in telomere mutants during meiosis*. She also presented at the SACNAS and ABRCMS national conferences. She plans to graduate in 2018.

Diana Lucas Baca (Chemistry) did research at UC Santa Cruz. She presented a poster at the 2016 SACNAS National Conference and the 2017 UC LEADS Symposium titled *Synthesis and Biophysical Techniques for Alzheimer's AB42 Peptide*. She plans to graduate in 2018.

Valentin Urena Baltazar (Physics) did research at UC Santa Cruz in the field of condensed matter. He presented a poster at the 2016 SACNAS National Conference and the 2017 UC LEADS Symposium titled *Analysis of Local Structure in Tetrahedrite using Extended X-ray Absorption Fine Structure (EXAFS) Spectroscopy*. He plans to graduate in 2018.





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