



San José State University Research Foundation

Annual Report 2016



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Cover Photos

Top left: Moss Landing Marine Labs' Graduate Student Holly Chiswell analyzes nutrients in water samples on a flow injection analysis system in the lab of Kimberly Null. Measuring nutrient concentrations is important for understanding water quality impairments, especially in agricultural watersheds along the central California coast.

Top right: SJSU Undergraduate Student Jaspal Sandhu is using a dissecting microscope to collect virgin female fruit flies in order to set up a genetic cross in the lab of Rachael French, Department of Biological Sciences.

Bottom: SJSU-NASA Researcher Martine Godfroy-Cooper instructs a participant in the NASA ACD laboratory. The participant is wearing head- and eye-trackers and is performing an auditory localization task.

Portraits from Top:

Ferdinand Rivera
Miranda Worthen
Michael Kaufman
Blanca Sanchez-Cruz
Ivano Aiello
Rachael French

Page 8: Image credit: Copyright © 2015 R. Jay GaBany (Cosmotography.com), Zachary Jennings (University of California, Santa Cruz), and National Astronomical Observatory of Japan (NAOJ).

M20, The Trifid Nebula in Sagittarius
Luminance from the Subaru Telescope (NAOJ)
Central detail from the Hubble Space Telescope
Color Data for outer nebula: Martin Pugh
Narrowband Mapped Color Image: SII, H-alpha:
OIIIImage assembly and processing: Robert Gendler

Messages



Andrew Hale Feinstein
Provost & Senior Vice President for
Academic Affairs, SJSU
President, Research Foundation
Board of Directors

San José State University remains steadfastly focused on providing a world-class education for our students. Participation in hands-on research, scholarship and creative activity is an essential component of learning that helps students gain skills for their future careers, prepares them for graduate-level work if they choose to pursue a higher degree, and fosters strong bonds with faculty mentors and peers.

In the heart of the Silicon Valley, SJSU has many mutually beneficial associations with industry partners, government offices and nonprofits. SJSU's faculty, students and staff are involved in creating innovative solutions that enhance the quality of life in the Bay Area. From developing transportation solutions for the future to supporting K-12 education to making far-off celestial discoveries, participants from all disciplines are engaged in inventive research, scholarship and creative activity. I am strongly committed to supporting the expansion of these opportunities for faculty and students.

A stylized, handwritten signature in black ink.



Pamela C. Stacks
Associate Vice President
Office of Research, SJSU
Vice President, Research Foundation
Board of Directors

Congratulations to the SJSU community and the SJSU Research Foundation team for ongoing accomplishments this year. It takes strong partnership between our Principal Investigators (PIs) and the Research Foundation team to succeed in the complex and sophisticated grants arena. Many are unaware of the behind-the-scenes efforts required to submit proposals, and when funded, the business management of grants and contracts. The Research Foundation team in partnership with the Office of Research seek to inform, facilitate and support the sponsored program activities of our PIs.

We are extremely proud of the array of work SJSU PIs accomplish, from basic and applied research to work that contributes to the local community and supports underserved populations across the country. These programs provide opportunities for student engagement that enriches their university experience.

A handwritten signature in black ink that reads "Pamela C. Stacks".



Sandeep Muju
Executive Director
SJSU Research Foundation
Secretary, Research Foundation
Board of Directors

Featured in this edition of the Annual Report are researchers spread across the Research Foundation, from NASA Ames at Moffett Field, to Moss Landing, Rancho Cordova, and Hawaii, and to the main SJSU campus. They are investigating wide ranging topics, from human interactions with technology to issues affecting our local and national communities. They are examining the effects of climate change on marine life as well as investigating deep space. Featured also are the Research Foundation early career investigator award recipients and the SJSU student research competition finalists for the year.

At the Research Foundation we have successfully implemented new initiatives to support and help advance the University's research enterprise in meaningful ways. We see opportunities for continued growth, both in traditional sponsored research programs as well as industry research programs.

In partnership with the larger University community, the Research Foundation is always striving to drive continuous improvement and value creation for faculty, students, research affiliates, and all of our stakeholders.

A handwritten signature in black ink that reads "Sandeep Muju".



SJSU-NASA Human Factors Partnership

Victoria Dulchinos

Human Factors:

Over the past 30 years, faculty in the SJSU Department of Psychology have partnered with scientists at NASA Ames Research Center to conduct collaborative human factors research: the study of the capabilities and limitations of people as they interact with their environment, and the application of this knowledge to the design of human-centered systems and products. The goals are to improve functioning, efficiency, reliability, and safety, increase satisfaction, and reduce risk and error.

“We are trying to minimize delay by releasing flights from the gate at the optimal time for scheduling flights into the overhead stream, allowing the air traffic controller to hold and release planes from the gate in an optimal way based on schedules combined with real time information.”

Victoria Dulchinos

Victoria Dulchinos is explaining her work in the air traffic control simulation facility at NASA Ames, where a 360' out the window view tower simulator replicates the view from the tower at the Charlotte Douglas International Airport in North Carolina. Dulchinos and her colleagues are developing sophisticated algorithms and a set of tools for use by airline ramp personnel as well as Air Traffic Controllers in the future management of gate scheduling for arriving and departing flights. Their research and the resulting logistical improvements could eventually reduce air traffic congestion, fuel emissions and on-board waiting times for passengers after their flights arrive.

“Basically, we’re trying to make something useful happen for everybody.”



“These unmanned aircraft carry sensors that can pick up the position of nearby traffic, which allows on-ground human pilot to safely maneuver their aircraft around potential conflicts using an electronic display of traffic information.”

Conrad Rorie

Conrad Rorie investigates ways to integrate unmanned aircraft—also called drones—into the same airspace as manned aircraft. His research is not about small drones that might one day drop a package at your door. Rather, he focuses on large aircraft like Global Hawks and Reapers, which typically fly at 60,000 feet (versus commercial aircraft flying at 28,000 to 35,000 feet) and travel longer distances.

In addition to their military applications, unmanned aircraft are used for cargo transport, aerial photography, agriculture surveys, and border security. They also perform reconnaissance over fires and hurricanes in support of emergency responders.

Martine Godfroy-Cooper

In NASA’s Advanced Controls and Displays laboratory, Martine Godfroy-Cooper focuses on developing and prototyping multimodal human-machine interfaces for Army helicopter pilots operating in degraded visual environments.

Godfroy-Cooper is working on the integration of spatial sound into the cockpit displays of Black Hawk utility helicopters, to complement or substitute for visual cues provided by the sensors.

Using spatialized sonifications (sounds that convey information relative to the nature or the status of an object) will increase overall situation awareness and enhance obstacle detection and avoidance mechanisms, particularly when the helicopters are hovering or flying in brownout conditions. Other applications include communications segregation, hostile fire warning, and landing aids.



“Integration of three modalities in human-machine interface—visual, auditory and tactile—enhances human perception and performance. It also reduces workload and improves safety in critical environments.”



“We are looking at how performance is affected by the physiological effects of sleep loss. How many days in a row should a pilot work? How much rest is needed between shifts? And for what length of time is it safe for them to work?”

Kevin Gregory

Fatigue management research examines how sleep loss, changes to the body clock and duty, and rest hours affect safety in high-performance work settings. At NASA Ames, this research focuses on pilots and astronauts and their ability to obtain optimal rest during operations.

In a lab equipped with darkened experimental bedrooms, Kevin Gregory conducts performance tests on human subjects to determine the effects of fatigue on the human brain. Sleep-wake cycles are tracked using scientific-grade wrist-worn devices, caps with sensors measure brain activity, and reaction times are evaluated.

Gregory and his team explore these questions with the goal of developing practical strategies for increasing safety and improving performance in round-the-clock work.

In the Community

San José State University faculty, staff, and students demonstrate Spartan Spirit every day, supporting students here in our own SJSU community, and exploring solutions to contemporary challenges across the county, the state, and the nation.

MESA for SJSU Engineering

Jinny Rhee, Blanca Sanchez-Cruz



“I found MESA to be beneficial in terms of professional development, with mock interviews, networking nights, and prepping us for going into industry.”

— SJSU Student
Diego Marquez



On the third floor of the College of Engineering building are brightly lit study rooms and meeting facilities full of students. The area is home to the MESA (Mathematics Engineering Science Achievement) program, which supports educationally or economically disadvantaged undergrads pursuing degrees in engineering and computer science.

“For me, it is about leveling the playing field,” explains Assistant Director for Student Support Programs Blanca Sanchez-Cruz, describing her passion for the program. “We engage our MESA students with peer support, academic support, industry mentors, and career coaching.”

Having worked with underserved, low-income, first generation students throughout her career, and having herself been a MESA student in middle school, Sanchez-Cruz is particularly committed to facilitating success for this student population.

“Through MESA we hope to increase the number of high caliber engineering and computer science graduates from disadvantaged backgrounds,” says Associate Dean Jinny Rhee. “We are providing a platform of support that will help them complete degrees and enter industry.”

Grant funding: University of California

SJSU's Record Clearance Project

Peggy Stevenson



“Undergrads can do many of the same things that law students do. So why not expand their educational opportunities and benefit the community at the same time?”

SJSU undergrads Angelica Viscarra and Jose Rojo review paperwork with an RCP client.



What started as a project in a Courts and Society class evolved into an engaging internship program known as the SJSU Record Clearance Project (RCP). Undergraduates inform the community about their legal rights and apply practical legal skills to help expunge the criminal records of eligible clients.

“By setting up a two-course sequence we can first teach legal skills in Justice Studies 140 and then develop those skills in an internship in Justice Studies 141,” explains RCP founder, attorney, and SJSU Professor Peggy Stevenson.

Under attorney supervision, RCP students give presentations on expungement law at community sites, provide individualized reviews of “rap sheets” at drop-in advice sessions to determine clients’ legal options, and prepare clients’ petitions for court.

Prior to joining SJSU in 2007, Stevenson taught students at Stanford and Santa Clara law schools to provide legal assistance to low-income communities, developing innovative approaches to teaching students to meet clients’ legal needs. Now she brings her guidance and vision to SJSU. “The RCP students’ enthusiasm for their work and openness to new ideas is deeply gratifying,” says Stevenson. “Teaching them to use their talents to assist others is a joy.”

Grant funding: County of Santa Clara, City of San José, private donors

Nutrition for Children: SJSU's Cal-Pro-NET Center

Ashwini Wagle, Linda Sweeney, Lucy McProud

Lucy McProud has devoted her career to child nutrition and school food service education. Early on she became committed to sharing the discipline with her students as a career option as well as with professionals seeking to expand their knowledge in the field.

"It is important that school food service directors receive high quality training—they have the crucial responsibility of feeding school children nutritious meals at an affordable price," she explains.

Through McProud's efforts, SJSU became one of the few colleges in the state selected to partner with the California Professional Nutrition Education and Training Center (Cal-Pro-NET), resulting in the creation of the San José State University Cal-Pro-NET Center. The SJSU center provides professional development and training to California's child nutrition professionals, primarily at management levels. Since the program's inception in 1997 it has been



awarded nearly \$3 million by the California State Department of Education.

Along with Ashwini Wagle, director of SJSU's Didactic Program in Dietetics, and Program Coordinator Linda Sweeney, McProud has been awarded extensive grant funding for the Cal-Pro-NET Center to develop and deliver relevant training modules and lead live professional development courses for over 1,300 California school districts and agencies on National School Meal Programs.

McProud serves as chair of SJSU's Department of Nutrition, Food Science and Packaging, and both Wagle and Sweeney continue to teach while man-

aging the program. It is worth noting that SJSU is home to the first nutrition program in the CSU system, established as part of the Home Economics Department in 1911.

Grant Funding:

California State Department of Education, Nutrition Division

Exploring Health Risk and Resiliency among Sexual Minority Women

Laurie Drabble



Scientific studies indicate that rates of alcohol consumption and use of tobacco and illicit drugs are higher among sexual minority women compared to heterosexual populations.

"Research has documented the concept of 'minority stress,'" explains Laurie Drabble. "Experiences of discrimination and marginalization create chronic stress among lesbians, bisexual women, and same-sex attracted women."

Drabble is conducting research to determine moderators or mediators of substance abuse for this population, and to identify resilience factors that are particularly relevant to sexual minorities. Her findings will extend scientific knowledge about practices that may protect against their alcohol- and drug-related problems.

Using respondent-driven sampling, where survey participants refer other interviewees in their social network to participate, Drabble and her colleagues will be able to acquire a large oversample of sexual minority women as an extension of the National Alcohol Survey of 2015.

Drabble will also examine how changes in marriage laws and public policy are affecting sexual minority women.

"We want to learn how shifts in cultural values and a greater sense of societal acceptance are impacting this population."

Grant Funding: National Institutes of Health, Alcohol Research Group, Public Health Institute

Physics & Astronomy



Michael Kaufman

Along with managing the administrative responsibilities that accompany his position as department chair, Michael Kaufman actively pursues research relating to newly formed stars. With a recently awarded grant from NASA, Kaufman will be exploring a region of space where a very young star is shining ultraviolet radiation into its environment.

Much of his research will be done aboard the Stratospheric Observatory for Infrared Astronomy (SOFIA), a customized 747 housing a telescope with a diameter of 100 inches. This airborne observatory flies at 45,000 feet, above most of the water vapor in the Earth's atmosphere, which allows it to peer into the dusty molecular clouds where stars form.

In flight, the airplane is a busy place, says Kaufman. "There are people managing the flight and people managing the science and people running the instruments and pointing the telescope and so on."

"The unique capabilities of this telescope allow us to detect atoms and molecules like oxygen, carbon, and water in order to understand the chemistry and physics that go on in the star-forming environment."

Grant funding: NASA/SOFIA Program at NASA Ames Research Center

Monika Kress

Early in her career, Monika Kress took up the challenging research field of dust grain activity in the chemical reactions that take place in star-forming regions. The fact that her Ph.D. advisor warned her it was an exceptionally demanding topic merely inspired her to go forward.

"I've always been drawn to difficult problems," she explains.

In addition to conducting her research, Kress also became active in the Virtual Planetary Laboratory, a NASA Astrobiology Institute pursuing the overarching scientific question, "How would we determine whether an extrasolar planet is able to support life, or had life on it?" That research examines planets' interactions with their parent stars using discoveries and data gathered by NASA's Kepler mission.

More recently Kress has been focusing on student success, particularly among beginning engineering majors.

"We need students to pursue STEM disciplines, but we also need to make sure they get through their majors and don't leave without a degree," she explains. "Our goal is to reach those students with quality teaching and coordinated support."

*Grant funding:
Virtual Planetary Laboratory, University of Washington*



For researchers in the Department of Physics and Astronomy, the sky is never the limit. They are exploring cosmic dust, galaxies, and things that matter – both visible and invisible. Here’s a telescopic view of a few of SJSU’s own stars.

Cassandra Paul

Seeking to help students understand physics, Cassandra Paul is implementing new tools for the study of classroom exchanges between students and instructors, particularly in the context of science courses. The computerized Real-Time Instructor Observing Tool (RIOT) assists faculty by providing them with data on student behavior and student-instructor interactions.



As Paul explains, “The tool allows an observer to measure and categorize what happens in the classroom. What are the students doing?

Are they participating in group work? Are the students asking questions? Is the instructor asking questions?”

Some of Paul’s research also examines student-instructor exchanges that take place through assessments, written feedback and grading, and looks at whether students use the feedback they receive.

“We are interested in the implications of our findings for curricular reform and professional development. RIOT is not an assessment—rather, it allows us to investigate the ways in which learners and instructors interact productively when learning about physics in formal and informal settings. It’s just about what happens.”

Paul’s work also concentrates on reforming labs, workshops, and discussion sessions that are taught by TAs, as these are the most interactive settings for students.

“I’m focused on research and practices that help all students understand physics. Many find it scary and intimidating, but I believe that anyone can do physics.”

Grant funding: National Science Foundation

Aaron Romanowsky

All the visible matter we see in the sky—stars, gas, and dust—makes up just ten percent of the substance in the universe. The rest, “dark matter,” fills the invisible space between the stars, and is the subject of Aaron Romanowsky’s research.

“Dark matter is comprised of materials of a nature still quite unknown,” states Romanowsky, who also studies galaxies and smaller clusters of stars.

A prolific researcher, Romanowsky engages both undergraduate and graduate students in his work. Especially noteworthy are the accomplishments of two of his undergraduate students, Richard Vo and Michael Sandoval, who made historic discoveries in 2014 when they each found—within weeks of one other—a previously undetected ultra compact dwarf galaxy. Both have since gone on to graduate school in astrophysics.

Today his students’ interests include supermassive black holes, “fluffy” galaxies, which are almost too tenuous to see, and machine learning methods that teach computers to automatically classify celestial objects. Romanowsky expresses confidence in their determination and abilities, adding, “I’m looking forward to their discoveries.”



Aaron Romanowsky’s current students: Stephanie Striegel, Vakini Santhana-Krishnan, Romanowsky, Angelica-Lorraine Lee, Alex Colebaugh, Maria Stone

Grant funding: National Science Foundation, NASA

Supporting K-12 Education



SJSU faculty and staff are sharing rich professional development opportunities and rigorous curriculum designs with local K-12 educators. These partnerships contribute to academic success, open doors to applied learning, and introduce students to the world of work. Thanks to these dedicated Spartans, Silicon Valley's underserved students will be better prepared for college.

Katya Aguilar, Mark Felton

Katya Karathanos Aguilar and Mark Felton share a commitment to advancing academic literacy for English learners. In creating the Trio project these professors have built a consortium between SJSU, partner school districts and local schools, one where shared knowledge between new and veteran teachers supports the academic needs of high-school-age English learners.

"What is unique about our program is that our 'clinical residency teams' consist of one SJSU student teacher, a veteran mentor teacher, university supervisors, and content-area facilitators, working together to advance academic language development," explains Aguilar. "Our student teachers bring the latest research and strategies they have acquired in SJSU's student teaching program to the partnership, and the mentor teachers at the high schools share their classroom expertise."

The resulting teams jointly participate in university-based professional development and instructional coaching that is aligned with school district curriculum. The trio then co-plan and implement curriculum, observe one another's lessons, and map student progress.

"It is a collaborative learning process for beginning and veteran teachers," adds Felton. "The program richly enhances teachers' professional skills, but ultimately benefits the students."

Grant Funding: U.S. Department of Education

Ferdinand Rivera

Ferdinand Rivera's partnership with the Franklin-McKinley Union School District (FMSD) has resulted in a rigorous math curriculum that engages 3rd to 6th grade students, particularly those who are English learners. Putting the program into place are teams of SJSU student teachers and veteran FMSD teachers. They have implemented data-driven instructional plans that incorporate Rivera's research on integrating mathematics instruction with literacy.

"My research is about mathematical curriculum changes that impact underrepresented minority students," Rivera explains. "Whenever I develop research problems that affect students, I take into account the issues they have with academic language and connect them with math. One cannot separate English-learner needs and mathematical content needs."

Rivera's research specifically focuses on the acquisition of algebra skills, and teaching algebraic concepts in the early grades. "There is a strong correlation between algebra performance in the early grades and later success in high school, college, and careers." *Grant funding: National Science Foundation*



Susan Arias, Elaine Collins

The SJSU Mathematics, Engineering, Science Achievement (MESA) program introduces educationally disadvantaged and first-generation middle- and high-school students to science, technology, engineering and mathematics (STEM) careers

using a combination of school site programs, activities at SJSU, and visits to technology partner sites like NASA, IBM, and GE.

"When kids use math and science to build something tangible, they find the subjects to be compelling and fun," explains Director Susan Arias, who works with College of Science Associate Dean Elaine Collins to administer the program.

MESA-trained teachers also introduce the students to the college admission process, and working Silicon Valley engineers and scientists take part in their projects and events.

"Our goal is to increase the number of historically underrepresented K-12 students studying STEM subjects in college," says Collins. "We want them to earn STEM degrees so that they can work in those professions in Silicon Valley."

Grant funding: University of California



Karen Philbrick & the Mineta Transportation Institute



“Developing a robust workforce starts with educating young citizens about transportation careers. To that end, we founded the MTI Summer Transportation Institute.”

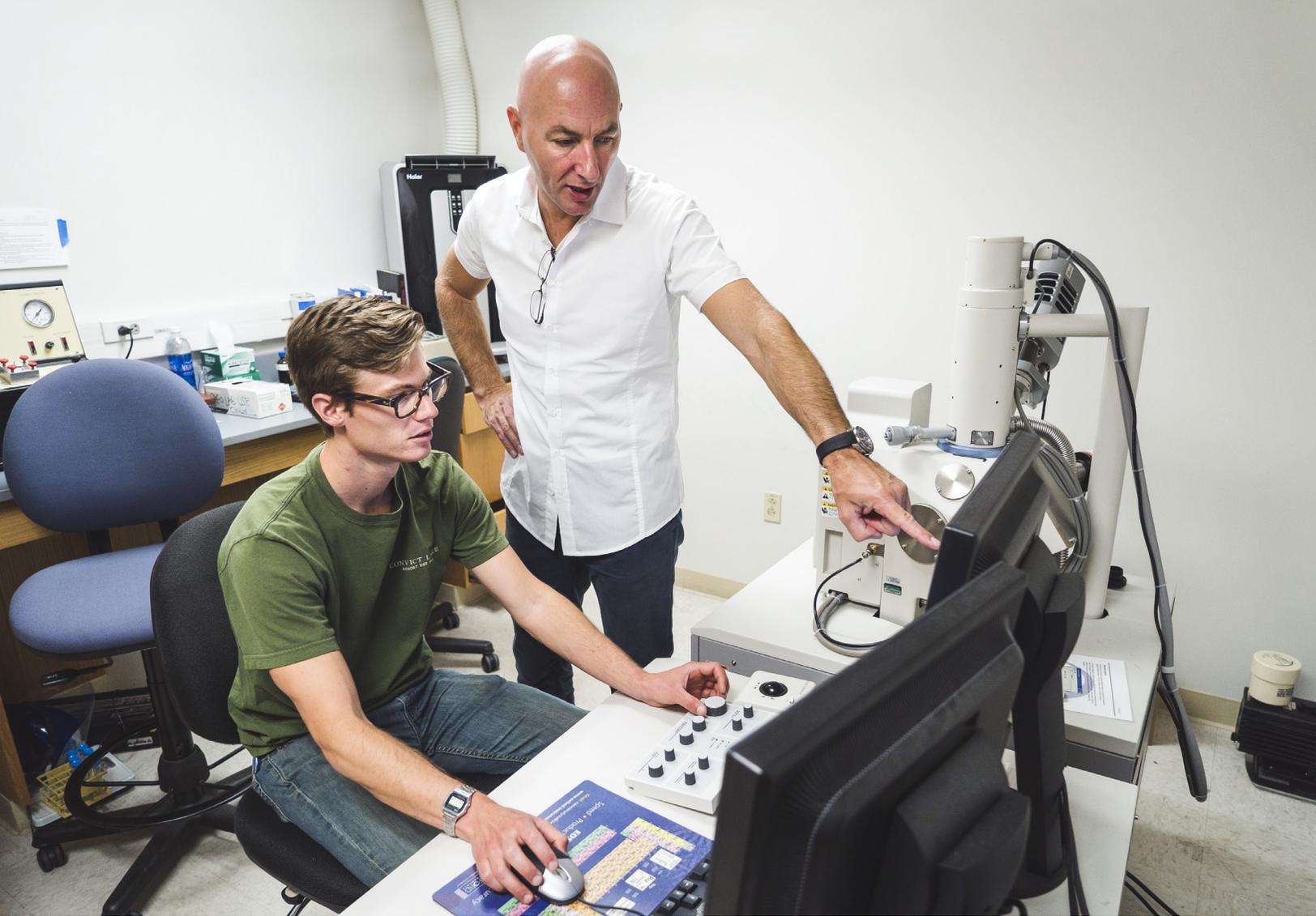
Grant funding: U.S. Department of Transportation, University Transportation Centers Program (grant number DTRT12-G-UTC21)

According to a joint report released by the U.S. Departments of Labor, Education, and Transportation, 4.6 million transportation workers will be needed between 2012 and 2022 to fill vacancies in the workforce. SJSU's Mineta Transportation Institute (MTI), in the Lucas College and Graduate School of Business, is addressing this need in a practical way: by introducing high school students to careers in the industry through the Summer Transportation Institute (STI).

The institute consists of three weeks of classroom study at SJSU, augmented by work-based learning experiences. A job-shadowing field trip to United Airlines at SFO introduced the students to careers in air traffic control, piloting, baggage handling and security. Participants also earned three units of college credit from SJSU's Department of Environmental Studies.

The STI program will be offered again in Summer 2017. Interested high school students can contact MTI Director of Research and Technology Transfer Hilary Nixon (hilary.nixon@sjsu.edu) for more information.





Exploring Moss Landing Marine Labs

Meet a few of the researchers from the world-renowned laboratories.

Above: Graduate student Tyler Barnes analyzes sand particles from Moss Landing Beach using a Scanning Electron Microscope (SEM) equipped with an X-ray microprobe (EDX) as part of his thesis project on monitoring changes in beach volume and composition along the shores of the Monterey Bay. The equipment was purchased with funds from a research grant awarded to Ivano Aiello by NSF-Major Research Instrumentation.

Grant funding: Elkhorn Slough Foundation; International Ocean Discovery Program; University of North Carolina, Chapel Hill; UC San Diego

Ivano Aiello

Ivano Aiello has traveled the world's seas in pursuit of knowledge about what lies underneath the ocean. He recently returned from a research cruise through the equatorial Indian and Pacific Oceans and the Indonesian seaway. He and a crew performed scientific drilling on the sea floor, collecting core sediments from hundreds of meters below the sea floor surface. Those sediment samples, which he brought back to Moss Landing Marine Labs (MLML) for study, will provide clues to the earth's climate history.

A professor of Geological Oceanography, Aiello's research also includes exploration of local coastal environments, including Elkhorn Slough and Monterey Bay beaches and sea cliffs. He and his students conduct analyses of erosion, elevation, and sedimentation in those areas, assessing small-scale geomorphologic change. Their data will also contribute to local wetland restoration.

"The Central California coastal environment is changing rapidly," he explains. "What we learn in the Monterey Bay can be translated to other areas along California's shoreline, and may eventually help us to mitigate the effects of sea level and climate changes."

Wesley Heim



“People who catch fish in the delta and eat them are ingesting mercury.”

So explains Wes Heim, director of the Marine Pollution Studies Laboratory at Moss Landing Marine Labs. Widely used in gold mining operations in the 1800s, mercury dispersed into the Sierra watershed. Over time it moved through the state’s rivers and creeks and ended up in the San Francisco Bay-Delta. Identifying ways to reduce the mercury burden is his team’s goal.

Heim and MLML graduate students are examining how mercury in the Delta is impacting nearby agriculture, pasture land, and the climate, and are researching processes by which the mercury could bypass the Delta and decrease the burden on the fish there.

A graduate of the SJSU Master’s degree program at MLML himself, Wes both encourages and depends on student field study.

“Our students are making genuine contributions to MLML research. They are prepared to pursue Ph.D. degrees or engage in field studies anywhere in the world.”

Grant funding: California Department of Water Resources

A renowned expert on zooplankton, notably larval fish and Antarctic krill, Valerie Loeb has spent much of her career deciphering the impact of climate variability on marine ecosystems. Her research efforts have spanned from the north Pacific to Chile and South Africa. She began research off the Antarctic Peninsula in 1984 and was a contract scientist with the NOAA Antarctic Marine Living Resources Program from 1987 to 2010, heading the zooplankton component during annual research cruises. Working with colleagues in physical oceanography and primary productivity, she examined ecosystem variability on seasonal, annual, and longer time scales.

Loeb recently conducted a National Science Foundation (NSF) funded research effort across Drake Passage, examining zooplankton species assemblages with relation to physical oceanographic conditions between South America and Antarctica.

While her research accomplishments are vast, Loeb is also a committed advisor and mentor who enthusiastically engages students in research.

“The wonderful thing here at Moss Landing Marine Labs is the diverse array of topics for graduate students,” she says. “We offer marine-related classes plus courses covering statistics, molecular techniques, and scientific writing.”

Valerie Loeb



*Grant funding:
NSF Office of Polar Programs Grant No. 1347911*



Ross Clark, Kevin O'Connor

A team of researchers at Moss Landing Marine Labs has built a working laboratory to investigate a highly effective technology, called a wood-chip bioreactor, to remove nitrates from agricultural runoff water.

“Wood chip bioreactors have been shown to remove nitrates from water in pilot settings, but now we’ve installed one at-scale in a true working environment,” explains Ross Clark, an MLML researcher, director of the Central Coast Wetlands Group (CCWG), and expert on wetland restoration.

The bioreactor laboratory consists of 12 parallel trenches. Three different treatments will be investigated, in partnership with researchers at Cal State Monterey Bay, to determine the most effective type of wood chip bioreactors for our coastal climate. Located in Moro Cojo Slough, it is the first of its kind to be put into operation in California. Drainage water is routed through the trenches, and the bacteria in the wood chips consumes up to 50% of the nitrates.

“An essential component of the project is comprehensive documentation,” says Kevin O’Connor, the CCWG program manager. “Documenting our accomplishments will allow us to work with other coastal communities to reproduce what we have done.”

Grant funding: California Department of Food and Agriculture

Early Career Investigator Awards

The SJSU Research Foundation Early Career Investigator Award recognizes tenure-track faculty who have excelled in areas of research, scholarship or creative activity as evidenced by their success in securing funds for research, publishing in peer-reviewed journals, and carrying out other important scholarly and creative activities at an early or beginning point in their careers at SJSU. Rachael French and Miranda Worthen received the 2016 awards.

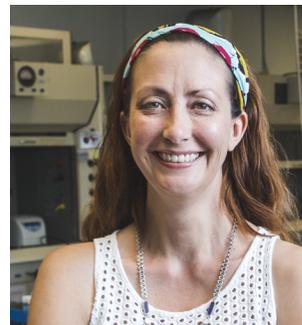
Miranda Worthen



Miranda Worthen's research examines the psychosocial experiences of vulnerable populations that have undergone high levels of trauma, with an emphasis on those who have participated in armed forces or have been impacted by exposure to war. Her publication track record is lengthy and impressive, with many of her articles having

been published in high impact factor journals. Dr. Worthen has been awarded external funding for her work with the Native American Health Center on suicide prevention and youth empowerment and on tobacco use reduction among urban Native youth. She frequently presents at conferences throughout the United States and in Europe.

Rachael French



Rachael French has been awarded in excess of \$1.2 million in external research funding, either as a PI or Co-PI. Using the common fruit fly (*Drosophila*) as a research model, her lab seeks to identify the neurodevelopmental pathways that are altered by exposure to alcohol during development, and the genes underlying those pathways. Understanding these pathways

may lead to future therapeutics to treat fetal alcohol syndrome. Dr. French mentors both undergraduate and graduate students, and students from her lab have achieved exceptional levels of success, winning awards for outstanding presentations and going on to promising academic careers of their own.

CSU Student Research Competition

The SJSU Student Research Competition takes place annually during the spring semester. Finalists go on to participate in the annual CSU Student Research Competition.

2016 SJSU Student Research Competition Finalists

Student Researcher(s)	Title of Presentation	College	Faculty Mentor
Michael Balderrama	Bioengineering an Alternative, Cheap, and Reliable Anti-venom: The LTNF-11 Peptide	Engineering	Claire Komives
Wilson Florero-Salinas, Dan Li	Efficient and Accurate kNN Based Parameter Tuning for SVM	Science	Guangliang Chen
Angela Gates	"A (Blind) Woman's Place is (Teaching) in the Home": The Life of Kate Foley (1873-1940)	Applied Sciences & Arts	Debra Hansen
Evelynn Henry	Immobilization of Light-Driven P450 Biocatalysts Using Cross-Linked Enzyme Aggregates (CLEAs)	Science	Lionel Cheruzel
Sushmitha Kasturi	Why is it Riskier for Microfinance Institutions to Lend Loans to the Women in India than Women in Bangladesh?	Social Sciences	Colleen Haight
Aneesha Kulkarni	Modeling Endothelial Cells to Study Inflammatory Responses in a Bordetella Pertussis Infection	Science	Tzvia Abramson

Management Discussion

Supporting and helping enhance the SJSU Research Enterprise is our core mission and a strategic endeavor. Collaborative research experience is a high-impact practice improving student engagement, increasing the likelihood that students will graduate on time, and positions our students to better meet the needs of their future employers. Funded research allows faculty to pursue scholarly goals, bring the state-of-the-art to the classroom, and creates brand value for the institution. It also contributes extramural resources for the university's operations. The Research Foundation is proud to contribute to San José State University's success in such meaningful ways.

By all accounts FY 2015-16 has been a very dynamic year for the Research Foundation. We started the year on a low note with operating revenues sharply lower than forecasted while costs had simultaneously increased. To address that imbalance we implemented key strategic business process improvement initiatives that enabled not only improvement in business services but also significant cost efficiencies. We ended the year on a high note, delivering about \$1.1M towards research, scholarship and creative activities (RSCA) reinvestment to the academic units, a 2.4X increase from what was previously forecasted.

We implemented several business improvement initiatives in key areas of strategic need, including, (a) sponsored program proposals growth (proposal routing process improvements, Cayuse424 based electronic proposal routing, project administration guide, and project life cycle services brochure), (b) post-award operational processes (electronic time card implementation, P-card for grant funded purchases, cloud based upgrade of accounting system), and (c) organizational development and training (voice of the customer training, Insights Discovery training, human resources policies and procedures enhancements).

We are continuing to see weakness in sponsored program revenues, in part due to reductions in tenured faculty over past several years. However, the campus has been bringing new faculty on board and we have been working with various academic units to spur extramural grant propos-



We are working on furthering all the key building blocks for broader success and longer-term resiliency in extramurally funded RSCA.

al writing activities and also providing training for new and existing faculty regarding extramural research.

We have also kickstarted an industry research growth initiative to attract industry research and partnerships to our campus. We are showing signs of great early success and we are looking forward to presenting success stories in the coming year. As shown in the pictorial, we are building on the existing foundation of federal sponsored programs, and we are working on furthering all the key building blocks for broader success and longer-term resiliency in extramurally funded research.

As we embark upon a new year, we see several opportunities for continued positive momentum. Both traditional sponsored programs and pen-

etration into industry research projects are poised to improve in coming years as our new business initiatives take hold.

Thank you for your interest and support of our mutual future. We are committed to creating value every day, and are confident that we will execute on our objectives with your help in a transparent and shared governance fashion. With a great strategy and vision, support and partnership from the larger university community, and a strong execution, we are driving continued improvements and value creation for all our stakeholders for many years to come.

Sincerely,

Sandeep Muju
Executive Director

Statement of Activities

Fiscal Year ending 06/30/2016 (Unaudited)

Revenue and Support

Federal Contracts and Grants	\$22,938,300
State Contracts and Grants	10,969,688
Other Contracts and Grants	7,155,485
Indirect Cost Recovery-C&G	7,814,318
Administrative and Program Fees	505,326
Gifts and Pledges	1,042,524
Investment Income	63,698
Other Revenue and Support	239,450
Campus Organization Other Revenue and Support	8,137,027
Total Revenue	\$58,865,816

Expenses

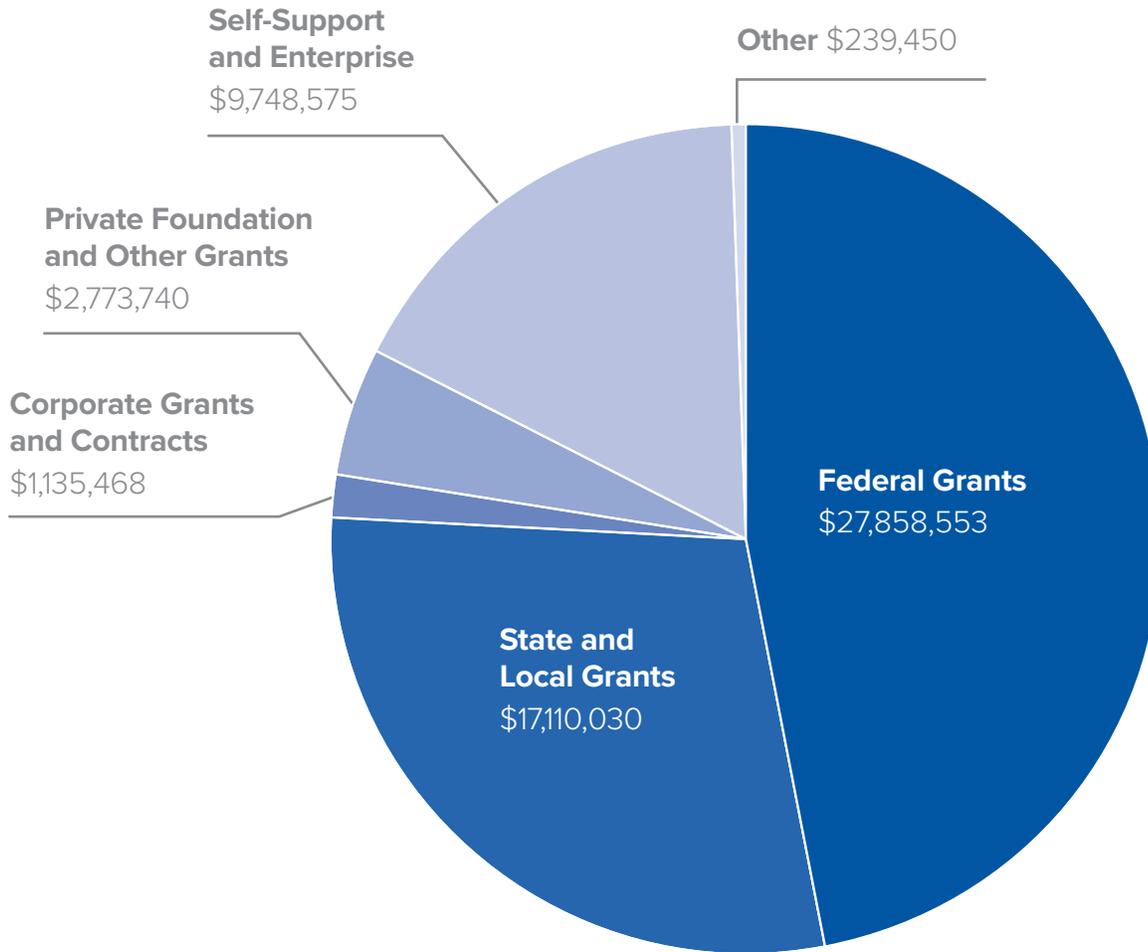
Program Activities	
Sponsored Programs	\$41,520,565
Board Designated Programs	676,991
Campus Organization Expenditures	7,775,065
Support Activities-Management and General	7,202,684
Other Expenses and Transfers	35,107
Total Expenses	\$57,210,412

Change in Net Position	1,655,404
Net Position - beginning of year	14,716,812
Net Position - end of year	\$16,372,216

Financial Summary

Fiscal Year ending 06/30/2016 (Unaudited)

Revenues FY 2015 –16, \$58,865,816



Fiscal & Audit Management (\$ Million) FY 15 –16

Active grants portfolio ¹	\$259.4 M
Closed ² grants in prior 3 years: FY 12-13; 13-14; 14-15	\$58.0 M
SJSURF owned properties	\$9.8 M
Total	\$327.2 M

1. Fiscal Management of active grants, and remain open for audit by any agency at any time.

2. Grants that closed in the past three years must remain available for audit by any agency at any time.

Contract & Grant Awards FY2015–16

College of Applied Sciences & Arts

Health Science and Recreation

Joshua Baur

Identifying Trends in Landscape Preferences among Homeless and Non-Recreational Campers
U.S. Forest Service, \$14,000.00

Van Ta

Culturally Tailored Program to Reduce Stress among Vietnamese Caregivers
Alzheimer's Association, \$150,000.00

Hospitality Management

Yinghua Huang, Tsu-Hong Yen, and Michelle Chen

Big Data Applications in Hospitality and Tourism Industries
Beijing Yanchang Petrochemical Products, \$50,000.00

Justice Studies

Danielle Arlanda Harris and Edith Kinney

Survey of Sex Offenders under the Supervision of the CDCR and CASOMB
California Department of Corrections and Rehabilitation, \$200,000

Margaret E. Stevenson

Record Clearance Project - CalGRIP
City of San José, \$55,000

William Armaline and Edith Kinney

DACA and DAPA Immigration Services in Santa Clara County
Sacred Heart Community Service, \$88,200.00

Kinesiology

Nancy Megginson

Timpany Center: Diabetes Prevention in Urban American Indians
Stanford University, \$477,991.00

Tamar Semerjian and Jennifer Schachner

2015-2016 Community Benefit Grant Program of El Camino Hospital
El Camino Hospital, \$70,000.00
SVHAP: The Silicon Valley Healthy Aging Partnership 2015-2016
The Health Trust, \$17,500.00

Nursing

Deepika Goyal

Associate Degree in Nursing to Bachelor's Degree
San José-Evergreen Community College District, \$106,794.00

Nutrition, Food Science & Packaging

Lucy McProud and Ashwini Wagle

Cal-Pro-Net Center 2015-2016
California Department of Education, \$222,098.77

School of Information

Lili Luo and Michael Stephens

Institute for Research Design in Librarianship (IRDL)
Loyola Marymount University, \$25,427.00

School of Social Work

Edward Cohen

Evaluation of Santa Clara County's Dual Diagnosis Juvenile Treatment Court
Superior Court of California, County Santa Clara, \$43,344.00

Jack C. Wall

California Department of Mental Health Educational Stipend Program - 2014-2015
University of California, Berkeley, \$6,875.00
Title IV-E Child Welfare Training 2015-2016
University of California, Berkeley, \$1,593,756.00

Laurie Drabble

Sexual Orientation Differences: Prevalence & Correlates of Substance Use & Abuse
Public Health Institute, \$49,231.00
Trauma-Informed Practice Curriculum Resource
University of California, Berkeley, \$8,000.00

Nicole Dubus

Syrian Refugee Families in Iceland
National Science Foundation, \$38,852.00

Sadhna Diwan

Senior Peer Coaching Program Evaluation
City of Fremont, \$7,500.00

Lucas College & Graduate School of Business

Dean's Office

David M. Steele and Rod Diridon

Update of the MTI Database on Terrorist and Serious Criminal Attacks Against Public Surface Transportation
University of Connecticut, \$97,020.00

Frances Edwards and Karen Philbrick

MTI's Emergency Management Training for VTA
Santa Clara Valley Transportation Authority, \$192,783.00

Marlene E. Turner and Karen Philbrick

MTI Transportation Research, Technology Transfer, and Workforce Development Training
Metropolitan Transportation Commission, \$250,000.00

Peter Haas

Summer Transportation Institute 2016
California Department of Transportation, \$54,224.00

School of Global Innovation & Leadership

Taeho Park, Jae-Ho Pyeon, and Ming Zhou

Global Innovation Workshop
Ministry of Personnel Management, Korea, \$67,000.00

Taeho Park, Jongwook Sung, and Yeonki No

2016 KISTI-SJSU Collaborative Research Project
Korea Institute of Science & Technology Information, \$40,000.00

Contract & Grant Awards FY2015–16

Connie L. Lurie College of Education

Dean's Office

Elaine Chin and David Whitenack

Preparing a New Generation of Educators for California
California State University System, \$55,000.00

Communicative Disorders and Sciences

June McCullough and Gloria Weddington

Combined Priority for Personnel Development
Department of Education, \$250,000.00

Wendy Quach

Optimal AAC Technology for Individuals with Severe Communication Disabilities
University of Wisconsin, Milwaukee, \$49,789.00

Wendy Quach and Gloria Weddington

Project AACES (AAC in Educational Settings) - Preparing Speech-Language Pathologists in AAC Service Delivery
U.S. Department of Education, \$250,000.00

Wendy Quach and June McCullough

Project EPICS - Educating Pacific Island Clinicians in Speech
U.S. Department of Education, \$250,000.00

Elementary Education

Ferdinand Rivera

Franklin-McKinley - SJSU California Elementary Mathematics Professional Learning Initiative
California Department of Education, \$247,811.00

Roxana Marachi

SESAP-School Engagement and Suspension Alternatives Project/SCCPDO
County of Santa Clara, \$12,404.00

Secondary Education

Katya Aguilar

SJSU Single Subject Intern Program 2015-2016
Milpitas Unified School District, \$80,535.00

Katya Aguilar and Mark Felton

The Trio Project: Addressing Academic Language Development across the Teacher Continuum
U.S. Department of Education, \$346,642.00

Charles W. Davidson College of Engineering

Dean's Office

Jinny Rhee and Blanca Sanchez-Cruz

2014-2015 MESA Engineering Program (MEP)
Regents of the University of California, \$10,000.00

Aerospace Engineering

Nikos J. Mourtos

NASA MUREP Scholarship- Cameron Young
NASA, \$8,208.00

Biomedical, Chemical & Materials Engineering

Claire F. Komives

I-Corps Site: A Biological Sciences Site for the CSU-Komives
San Diego State University Foundation, \$2,500.00

Folarin Erogbogbo

I-Corps Site: A Biological Sciences Site for the CSU
San Diego State University Foundation, \$7,500.00

Civil & Environmental Engineering

Akthem Al-Manaseer

In-situ Comprehensive Strength of Precast Concrete Bridges Girders in California
California, Department of Transportation, \$230,176.00

Computer Engineering

Simon Shim and Chang Choo

2015 Silicon Valley Summer Training Workshop for Korean Software Developer
National IT Industry Promotion Agency, \$135,958.00

Younghee Park

Data Privacy Protection in Internet of Things (IoT)
GKim-e System, \$50,000.00

Electrical Engineering

Essam Marouf

Investigation of Saturn's Rings by Cassini Radio Occultation: Cassini Equinox Mission to Saturn
Jet Propulsion Laboratory, \$239,250.00

Youngsoo Kim and Chang Choo

High Performance Computing for Radar Signal Processing Acceleration
Department of Defense, \$87,069.00

Industrial & Systems Engineering

Yasser Dessouky and Ayca Erdogan

VA-CASE Professional Development CPAC LEAN/Lean Six Sigma (LSS)
Veterans Administration, \$8,618.55

Yasser Dessouky, Ayca Erdogan, and Minnie Patel

Risky States
Veterans Administration, \$55,902.60

Mechanical Engineering

Saeid Bashash

Design, Analysis, and Prototype Development for an Interactive Wireless Water Conservation System
FLOWE.green, \$28,875.00

Contract & Grant Awards FY2015–16

College of Humanities & the Arts

Art and Art History

Anne Simonson

The Bay Area California Arts Project - NCLB12
CSU, San Bernardino, \$26,926.00

The California Arts Project- CSMP
Regents of the University of California, \$23,074.00

Design

Joshua Nelson

Medical Device Grant
Spirometrix, \$17,876.00

English and Comparative Literature

Cathleen Miller

FY 2015-2016 Take pART Grant (Center for Literary Arts Program)
City of San José, \$12,500.00

Jonathan H. Lovell

2014-2016 SEED Teacher Leadership Development Grant
National Writing Project, \$10,000.00

San José Area Writing Project 2014-2015 CSMP
Regents of the University of California, \$35,116.50

San José Area Writing Project 2015-2016 NCLB12
University of California, Berkeley, \$24,691.00

San José Area Writing Project NWP 2016-2017 SEED Grant
National Writing Project, \$15,000.00

Susan Shillinglaw

*John Steinbeck: Social Critic and Ecologist,
A Summer Institute for 4th-12th School Teachers*
National Endowment for the Humanities, \$184,471.00

Linguistics and Language Development

Hahn Koo

*Annotation of a Speech Database Collected from
Chinese, Japanese, Korean Learners*
Naver Corporation, \$355,713.00

TV, Radio, Film, and Theatre

Amy Glazer Connolly

Guest Artist Series
The Kanbar Charitable Trust, \$5,000.00

College of Science

Dean's Office

Elaine D. Collins

Boston Scientific Foundation Grant
Boston Scientific Foundation, \$30,000.00

MESA Program Plan 2015-2016
Regents of the University of California, \$180,000.00

Silicon Valley Engineering Tech Pathways (SVETP)
San José-Evergreen Community College District, \$165,000.00

*SJSU MESA School Programs SJUSD Agreement
(Partner School Site: Lincoln High School)*
San José Unified School District, \$4,000.00

*SJSU MESA Schools Program -
Bridges Academy (of Franklin McKinley School District)*
Franklin McKinley School District, \$4,000.00

SJSU MESA Schools Program - Downtown College Prep
Downtown College Preparatory, \$8,000.00

SJSU MESA Schools Program ARUEDSD Agreement
Alum Rock Unified Elementary School District, \$24,000.00

SJSU MESA Schools Program CUSD
Campbell Union School District, \$5,750.00

SJSU MESA Schools Program ESUHSD Agreement
East Side Union High School District, \$40,000.00

*STEM Magnet: Improving Pathways for
Hispanic/Low-Income Students*
Gavilan Joint Community College District, \$196,993.00

SJSU MESA Schools Program ESUHSD Agreement
East Side Union High School District, \$40,000.00

*STEM Magnet: Improving Pathways for
Hispanic/Low-Income Students*
Gavilan Joint Community College District, \$196,993.00

Biological Sciences

Joseph Brandon White and Roy K. Okuda

*Purification & Characterization of Compound(s) from Walnut
Kernel Extracts that Induce Cytotoxicity Human Breast Cancer*
California Walnut Commission, \$7,150.00

Julio Soto

*Program Director for the Improving Undergraduate STEM
Education (IUSE) Program*
National Science Foundation, \$175,395.00

Leslee A. Parr

*MARC U*STAR at SJSU 2016-2017*
Department of Health and Human Services, \$276,056.00

Miri Van Hoven

Molecular Mechanisms of Neural Circuit Formation
Department of Health and Human Services, \$107,550.00

*The Effects of Normal and Prolonged Sensory Activity on
Neural Circuits*
University of California, San Francisco, \$156,845.00

Contract & Grant Awards FY2015–16

Biological Sciences (con't)

Rachael French

Genetic & Molecular Mechanisms of Ethanol-Induced Developmental Defects

Department of Health and Human Services, \$107,550.00

*Neurobehavioral Analysis of the Regulation of Courtship Initiation in *Drosophila Melanogaster**

National Science Foundation, \$428,789.00

Tzvia Abramson

SJSU Stem Cell Internships in Laboratory-Based Learning (SCILL)

California Institute for Regenerative Medicine, \$3,045,000.00

Chemistry

Annalise Van Wyngarden

Organic Layers on Surfaces

NASA, \$18,982.00

Undergraduate Summer School in Nuclear and Radiochemistry

University of Missouri, \$73,835.00

Gilles Muller

Chiroptical Induced CPL-Based Tool as a Probe of Biological Substrates

Department of Health and Human Services, \$107,550.00

Alberto A. Rascon, Jr.

*Vector Control Strategy through Inhibition of *Aedes Aegypti* Midgut Proteases*

Department of Health and Human Services, \$91,768.00

Karen A. Singmaster

SJSU LSAMP Program

CSU, Sacramento, \$70,000

Karen A. Singmaster and Herbert B. Silber

San José State University Undergraduate MBRS Rise Program

Department of Health and Human Services, \$451,468.00

Laura Miller-Conrad

*Blocking Cationic Antimicrobial Peptide-Resistance in *Pseudomonas Aeruginosa**

Department of Health and Human Services, \$96,672.00

Leon Yengoyan

Organo-Metallic Ligand Chemistry for Nickel, Lead, and Mercury

Electric Power Research Institute, \$93,675.00

Lionel Cheruzel

RU(II) Diimine Labeled P450 Mutants for Selective Hydroxylation of Substrate C-H Bond Using Innovative Photo-Oxidative

Department of Health and Human Services, \$108,375.00

RU: Light-Driven Biocatalysts for the Selective Functionalization of Substrate C-H Bonds

National Science Foundation, \$341,920.00

Resa Kelly

Collaborative Research: Developing a Visualization Framework for Chemical Reactions

National Science Foundation, \$265,924.00

Computer Science

Ronald Mak

Student Travel Support for the CGO 2016/HPCA 2016/PPoPP 2016 Symposia Co-located in Barcelona, Spain

National Science Foundation, \$45,000.00

Mathematics

Joanne Rossi Becker

Silicon Valley Mathematics Initiative 16-17

Silicon Valley Community Foundation, \$100,000.00

UT Dana Center Project of 5th Grade Video Project with SJSURF

University of Texas at Austin, \$12,500.00

Joanne Rossi Becker and Cheryl Becker

Santa Clara Valley Mathematics Project - CSMP

Regents of the University of California, \$20,000.00

Santa Clara Valley Mathematics Project (NCLB12)

Regents of the University of California, \$27,000.00

Roger Alperin

EFRI-ODISSEI: Origami and Assembly Techniques for Human-Tissue-Engineering (OATH)

Northeastern University, \$70,033.00

Meteorology & Climate Science

Craig B. Clements

CAREER: Towards a Better Understanding of Wildfire-Atmosphere Interactions-Integrating Fire Weather Research & Education

National Science Foundation, \$103,340.00

FASMEE Plume Study Plan Development

U.S. Forest Service, \$36,435.00

Weather Support for Unmanned Vehicle Systems

Traffic Flow Management

NASA, \$50,084.00

Eugene Cordero

I-Corps: Green Ninja Curriculum for STEM Education

National Science Foundation, \$50,000.00

Eugene Cordero, David Chai, Ellen Metzger, and Grinnell Smith

The Green Ninja Film Academy

National Science Foundation, \$1,099,567.00

Sen Chiao and Craig B. Clements

Improved Understanding of the Magnitude of Trans-Pacific Long Range Transported Ozone Aloft at California's Coast

CA State, Air Resources Board, \$281,699.00

Sen Chiao, Craig B. Clements, Patrick Hamill, and Alison Bridger

Center for Applied Atmospheric Research and Education (CAARE)

NASA, \$2,739,586.00

Contract & Grant Awards FY2015–16

Moss Landing Marine Laboratories

Alison Stimpert

Project Support for the Southern California Behavioral Response Study: Effects of Naval Sonar on Marine Mammals
Cascadia Research Collective, \$70,024.00

G. Jason Smith

Alliance for Coastal Technologies (ACT): National-Scale Efforts toward Verification & Validation of Observing Tech
University of Maryland, \$180,000.00

Phase X Part3, Test Methods and Compliance Monitoring of Ballast Water Discharge Regulations

University of Maryland Center for Environmental Science
\$20,000.00

Ivano W. Aiello

Characterizing Subseafloor Life and Environments in the Guaymas Basin

University of North Carolina at Chapel Hill, \$10,180.00

GHG: MLML GIS 2015- Minho Restoration Site -

Elkhorn Slough Foundation

Elkhorn Slough Foundation, \$39,131.00

James Harvey

Alaska Department of Fish and Game: Sport Fish Division
Alaska Department of Fish and Game, \$10,330.00

BeachCOMBERS South Coast Chapter

U.S. Fish and Wildlife Service, \$34,948.00

CBEC Eco Engineering - Elk Grove Dry Well Project (OEHA)

CBEC Inc., Eco Engineering, \$3,316.99

CDFW Silver King and Lake Davis

CA State, Department of Fish and Wildlife, \$8,668.80

City of Santa Cruz - Water Analyses by WPCL PO 65-16069

City of Santa Cruz, \$8,000.00

Development and Evaluation of the BeachCOMBERS Database
Department of Commerce, \$26,756.00

Enhanced Stranding Response and a Continued Response Partnership between the Long Marine Lab and

Moss Landing Stranding

University of California, Santa Cruz, \$28,898.00

Estuarine Wetland and Near Shore Ecology Studies along the Pacific Flyway

U.S. Geological Survey, \$120,000.00

Karuk Tribe Water Sampling: PO 20151057

Karuk Tribe, \$5,200.00

Microcystins and Anatoxin-a Water Sample ELISA Analyses-WPCL - Sonoma County Environmental Health Department
County of Sonoma, Environmental Health & Safety, \$41,562.00

Refugio Beach Incident Fisheries Closure

CA State, Department of Fish and Wildlife, \$59,956.59

Refugio Beach Incident NRDA

CA State, Department of Fish and Wildlife, \$248,425.00

State of Alaska DF&G- Rotenone and Rotenolone Analysis - WPCL-2015

Alaska Department of Fish and Game, \$6,875.00

State of New Mexico, Game and Fish Dept. PO 51600-0000049497

New Mexico, Department of Fish and Game, \$10,944.00

SWRCB-SWAMP-WPCL

CA State, Water Resources Control Board, \$2,671,300.00

The Bay Foundation of Morro Bay: PO FY16-1 CCAM

Bay Foundation of Morro Bay, \$810.00

Urgency Response Contract - URC 2015-4

CA State, Department of Fish and Wildlife, \$52,998.10

Yurok Tribe - Klamath Water Quality Project- PO # 41415

Yurok Tribe, \$4,718.00

James Harvey and G. Jason Smith

CeNCOOS Expression of Interest: MLML Shore Station Funding FY15

Monterey Bay Aquarium Research Institute, \$64,000.00

James Harvey and Jonathan M. Prince

Office of Naval Research (ONR) Service Requirement AGOR Support

Office of Naval Research, \$5,462.00

James Harvey and Murray Stein

Research Vessel Use for Monthly Water Sampling

Applied Marine Sciences, Inc., \$10,853.00

James Harvey and Wesley Heim

2014 RMP S&T Sportfish - 1086

San Francisco Estuary Institute, \$6,936.00

Analysis of 248 Marine Water and Storm Water Samples

Applied Marine Sciences, Inc., \$20,871.00

Jonathan Geller

Japanese Tsunami Marine Debris (JTMD) and Alien Species

Invasions: PICES Year 3: Continued Interception, Acquisition

Williams College, \$127,348.00

Pire: Understanding Marine Biodiversity Along Geographic and Anthropogenic Stress Gradients

San Diego State University Foundation, \$142,090.00

Kenneth H. Coale

In Situ Sampling of Thermodynamics and Fog at the Air-Sea Interface

Naval Postgraduate School, \$129,683.00

Kenneth H. Coale and Wesley Heim

Collaborative Research: Investigations on Cycling of Mercury from the Ocean to Fog and Deposition to Land in Coastal CA

National Science Foundation, \$9,090.00

Mark Yarbrough

Developing a MOBY-NET Instrument, Suitable for a Federation Network for Vicarious Calibration of Ocean Color Satellites

University of Miami, \$225,939.00

Marine Optical Buoy (MOBY) Operations and Technology Refresh

University of Miami, \$3,432,299.00

MOBY - Off Campus

University of Miami, \$2,153,500.00

Contract & Grant Awards FY2015–16

Michael Graham

Development of a Strategic Plan for Aquaculture Research and Education at the California State University
Regents of the University of California, \$10,000.00

Nick Welschmeyer

CMA-Project Juliet: EcoChlor, Inc.
California Maritime Academy, \$70,797.00

Panasia: Shipboard Ballast Water Treatment Tests. Setup, Preliminary Tests
California Maritime Academy, \$304,955.00

Richard Starr

Collaboration with Marine Applied Research and Exploration
University of California, San Diego, \$19,693.00

Improving the Data Available for Stock Assessments & Management of West Coast Groundfish Through Collaborative Research
Cal Poly Corporation, \$135,547.00

Research on Use of Visual Technologies for Fisheries and MPA Assessments
The Tower Foundation of San José State University, \$39,353.00

Species Distribution Models for Management of Fisheries and MPAs: Innovative Approaches to Cost-Effective Data Collection
University of California, San Diego, \$40,802.00

Statewide MPA Monitoring
California Natural Resources Agency, \$187,202.00

Ross Clark

Guidance for Management of Bar-Built Estuaries (Lagoons) in California
Pacific States Marine Fisheries, \$23,320.00

Russell Fairey

CEDEN-2015-SWRCB Agreement 14-076-270
CA State, Water Resources Control Board, \$160,000.00

Quality Assurance Consulting Services for CDFW
CA State, Department of Fish and Wildlife, \$200,000.00

SWAMP 7
CA State, Water Resources Control Board, \$4,423,801.02

Russell Fairey and James Harvey

Refugio Oil Spill Data Review
CA State, Department of Fish and Wildlife: \$75,000.00

Scott Hamilton

Effects of Climate Change Induced Ocean Acidification and Hypoxia on Reproduction of Rockfishes
University of California, San Diego, \$61,489.00

Using Habitat-Specific, Spatial Demographic Information to Improve Stock Assessments of Ground Fishes
Department of Commerce, \$45,613.00

Scott Hamilton and Richard Starr

2015 East Bay Bridge Demolition Fish Surveys - ESA
Environmental Science Associates, \$81,539.00

Stacy Kim

SPINDLE- STONE AEROSPACE /PSC, INC. (SAS)
Stone Aerospace, \$26,736.00

Thomas Connolly

Along-shelf Transport and Cross-shelf Exchange Driven by Surface Waves on the Inner Continental Shelf
National Science Foundation, \$125,618.00

Wesley Heim

Reference Systems Microbial Water Quality Sampling - SFEI
San Francisco Estuary Institute, \$63,000.00

SWRCB-SWAMP MPSL Year 3

CA State, Water Resources Control Board, \$2,357,742.00

Wesley Heim and Autumn Bonnema

Seal Beach Mussels N62473-15-2-0014- MPSL
Department of the Navy, \$16,428.00

Support for RMP Status and Trends Monitoring: Lab Analysis of 2016 Bird Eggs
San Francisco Estuary Institute, \$30,766.00

SWRCB- Agreement 15-047-150 --Management Practices for Methylmercury in Reservoirs
CA State, Water Resources Control Board, \$200,000.00

Physics & Astronomy

Aaron Romanowsky

Collaborative Research: Rethinking the Fundamentals of Massive Star Clusters
National Science Foundation, \$13,567.00

Alejandro L. Garcia

Stochastic and Hybrid Models and Algorithms for Fluids
Lawrence Berkeley National Laboratories, \$99,876.00

Ignacio Mosqueira

The Thermal Evolution of Icy Primordial Planetesimals
NASA, \$92,011.00

Michael Kaufman

Developing the Astronomical Infrared Bands into Calibrated Probes of Astrophysical Conditions Using the NASA Ames PAH IR
NASA, \$91,034.00

Student Funding Task II-S

Regents of the University of California, \$27,358.00

System Teaching Institute (STI) Students Task 56-S
Regents of the University of California, \$27,358.00

Systems Teaching Institute (Summer Student Tasks)
Regents of the University of California, \$63,169.00

Why are Outflows Under-Producing Water?
Smithsonian Institution, \$19,586.00

Monika Kress

The Virtual Planetary Laboratory
University of Washington, \$21,982.00

Patrick Hamill

Interpreting the Cratering Record of the Saturnian Satellites
Southwest Research Institute, \$18,346.00

Contract & Grant Awards FY2015–16

College of Social Sciences

Communication Studies

Matthew Spangler and David Kahn

The Immigrant Experience in Cal through Literature and Theatre
National Endowment for the Humanities, \$168,632.00

Economics

Colleen Haight and Annette Nellen

Evaluation of a Consumption Tax for California
CSU, Sacramento, \$24,993.00

Environmental Studies

Bruce Olszewski

Household Hazardous Waste Hotline
County of Santa Clara, \$35,000.00

Recycling Hotline

County of Santa Clara, \$65,000.00

SJSU Move-Out: Illegal Dumping Prevention

City of San José, \$7,000.00

Web Enhancement

County of Santa Clara, \$20,000.00

Jason Dehaan

Illegal Dumping Baseline Assessment and Public Outreach
City of San José, \$39,803.00

Mexican American Studies

Julia Curry E. Rodriguez and Andrew Feinstein

IME-BECAS Juntos Podemos Program
Parents Alliance, \$40,000.00

Political Science

Garrick Percival

IPACE Internship Program
Senate Committee on Rules, \$4,573.00

Psychology

Alan Hobbs

San Francisco Bar Pilot Fatigue Study
Board of Pilot Commissioners, \$359,186.00

Audra Ruthruff

Test Subject Recruitment Office
ASRC Federal, \$500,058.32

David Schuster

CAREER: Understanding the Cognitive Processes of Computer Network Defense
National Science Foundation, \$217,308.00

Dorrit Billman

Quantifying and Developing Counter Measures for the Effect of Fatigue-related Stressors on Automation Use and Trust
National Space Biomedical Research Institute, \$209,823.00

Training for Generalizable Skills & Knowledge: Integrating Principles and Procedures
NASA, \$200,000.00

Kevin Gregory

SF Bar Pilots Fatigue Training
California Maritime Academy, \$2,000.00

Kevin Jordan

Autonomous Flight, Future Vertical Lift Systems, and Human Systems Integration
NASA, \$1,578,511.47

Sean Laraway

A Proposal to Conduct Collaborative Human Systems Integration Research between NASA Ames Research Center and SJSU
NASA, \$6,993,192.26

IPA - Paul Lee

NASA, \$2,957.00

IPA Assignment - Steven Hillenius

NASA, \$413,340.00

IPA Assignment- Brian Gore

NASA, \$451,213.00

Single Pilot Understand through Distributed Simulation (SPUDS)

CSU, Long Beach Foundation, \$32,000.00

Sociology and Interdisciplinary Social Sciences

Scott Myers-Lipton

Social Impact Internship Program
County of Santa Clara, \$16,200.00

Urban and Regional Planning

Dayana Salazar

Community Leadership Development Program
City of San José, \$50,000.00

CommUniverCity: Money Matters

Wells Fargo, \$25,000.00

CommUniverCity: Community Services Program

City of San José, \$100,000.00

CommUniverCity: Joven Noble

City of San José, \$43,000.00

SSI Grant

City of San José, \$7,500.00

Contract & Grant Awards FY2015–16

University Programs

Career Center

Jeannine Slater

ASPIRE (Student Support Services) - San José State University
Department of Education, \$428,238.00

Office of Research

James L. Wayman

Consultancy Support to the CESG Biometrics Test Programme
Communications-Electronics Security Group, \$116,265.00

Strengthening the Underpinnings of Speaker Recognition Technology in Forensic Science to Enhance Admissibility
West Virginia University Research Corporation, \$155,700.00

Strengthening the Underpinnings of Speaker Recognition Technology in Forensic Science to Enhance Admissibility
West Virginia University Research Corporation
\$168,619.00

Provost Office

Andrew Feinstein and Laura Sullivan-Green

Promoting Active Learning Strategies through the Flipped Class Model in STEM Courses at SJSU, CSULA and Cal Poly Pomona
Department of Education, \$3,000,000.00

SJSU Research Foundation

Jeanne Dittman

Design, Delivery, & Management of a Programme to Support Technology Client Companies of Enterprise Ireland to Accelerate Enterprise Ireland, \$130,574.33

Sandeep Muju

Research Administrative Resources for the Space Research Directorate
Wyle Laboratories, \$82,191

Student Academic Success Services

Maureen A. Scharberg

Project Succeed: 2013 Title III Strengthening Institutions Program
Department of Education, \$449,983.00

The Ronald E. McNair Post Baccalaureate Achievement Program
Department of Education, \$243,000.00

Patricia Backer

Improving Writing Skills of Asian American and High Need Students at San José State University
Department of Education, \$442,279.25

University Library

Rebecca Kohn

Japanese American Digitization Project
CSU, Dominguez Hills Foundation, \$14,000.00

Principal Investigators with Highest Dollars Received

FY 2015 – 16 (July 1, 2015 – June 30, 2016)

Name	Department	Amount
1. Sean Laraway	Psychology	\$7,860,702
2. Mark Yarbrough	Moss Landing Marine Laboratories	\$5,811,738
3. Russell Fairey	Moss Landing Marine Laboratories	\$4,783,801
4. James Harvey	Moss Landing Marine Laboratories	\$3,406,937
5. Tzvia Abramson	Biological Sciences	\$3,033,250
6. Andrew Feinstein and Laura Sullivan-Green	Provost Office	\$3,000,000
7. Sen Chiao, Craig B. Clements, Patrick Hamill, and Alison Bridger	Meteorology & Climate Science	\$2,739,586
8. Wesley Heim	Moss Landing Marine Laboratories	\$2,420,742
9. Jack C. Wall	School of Social Work	\$1,600,631
10. Kevin Jordan	Psychology	\$1,578,511
11. Eugene Cordero, David Chai, Ellen Metzger, and Grinell Smith	Meteorology & Climate Science	\$1,099,567
12. Maureen A. Scharberg	Student Academic Success Services	\$692,983
13. Elaine D. Collins	College of Science – Dean's Office	\$657,743
14. Rachael French	Biological Sciences	\$536,339
15. Nancy Megginson	Kinesiology	\$477,991
16. Karen A. Singmaster and Herbert B. Silber	Chemistry	\$451,468
17. Lionel Cheruzel	Chemistry	\$450,295
18. Patricia Backer	Student Academic Success Services	\$442,279
19. James L. Wayman	Office of Research	\$440,584

An SJSU student research success story

Sushmitha Kasturi '16 Economics



“The SJSU Economics Department has wonderful resources, with the support provided by the professors themselves being the most valuable resource. I also feel SJSU’s diversity has a huge role to play in ensuring student success. With people from such varied cultural backgrounds we have access to global perspectives that enhance our classroom learning experience.”

Sushmitha Kasturi has been busy since her December 2015 graduation from San José State University. An SJSU delegate to the 2015 CSU Research Competition, she is now back in her native country of India where she continues to conduct research relating to the topic she presented at the competition: “Why is it riskier for microfinance institutions to lend to the women in India than women in Bangladesh?”

“I interned over summer at a microfinance company: BFIL Microfinance,” she explains. “I worked on an independent project relating to risks associated with the microfinance industry, examining how microfinance can be used as a tool to alleviate poverty if risks are mitigated.”

As a part of the internship, Sushmitha traveled to villages across India and gained exposure to real poverty. She interacted with women borrowers and learned how microfinance helped them improve their lives. The women

described how they achieve more independence and experience less domestic abuse, as they do not have to depend on husbands and instead are contributing to the household income.

Sushmitha attributes much of her success to her professors in the SJSU Department of Economics, to whom she refers as “enterprising” and “brilliant.”

“I met Dr. Colleen Haight in Spring 2015 and explained that I wanted to do more than just academics—I wanted to do research and present papers. She included me in her research working group, where I developed my microfinance research. Another professor, Mike Jerbic, trained me to become a certified Factor Analysis of Information Risk (FAIR) analyst. This was an extremely important step, because I use FAIR tools for all my research projects.”

Sushmitha is now exploring options for graduate school.

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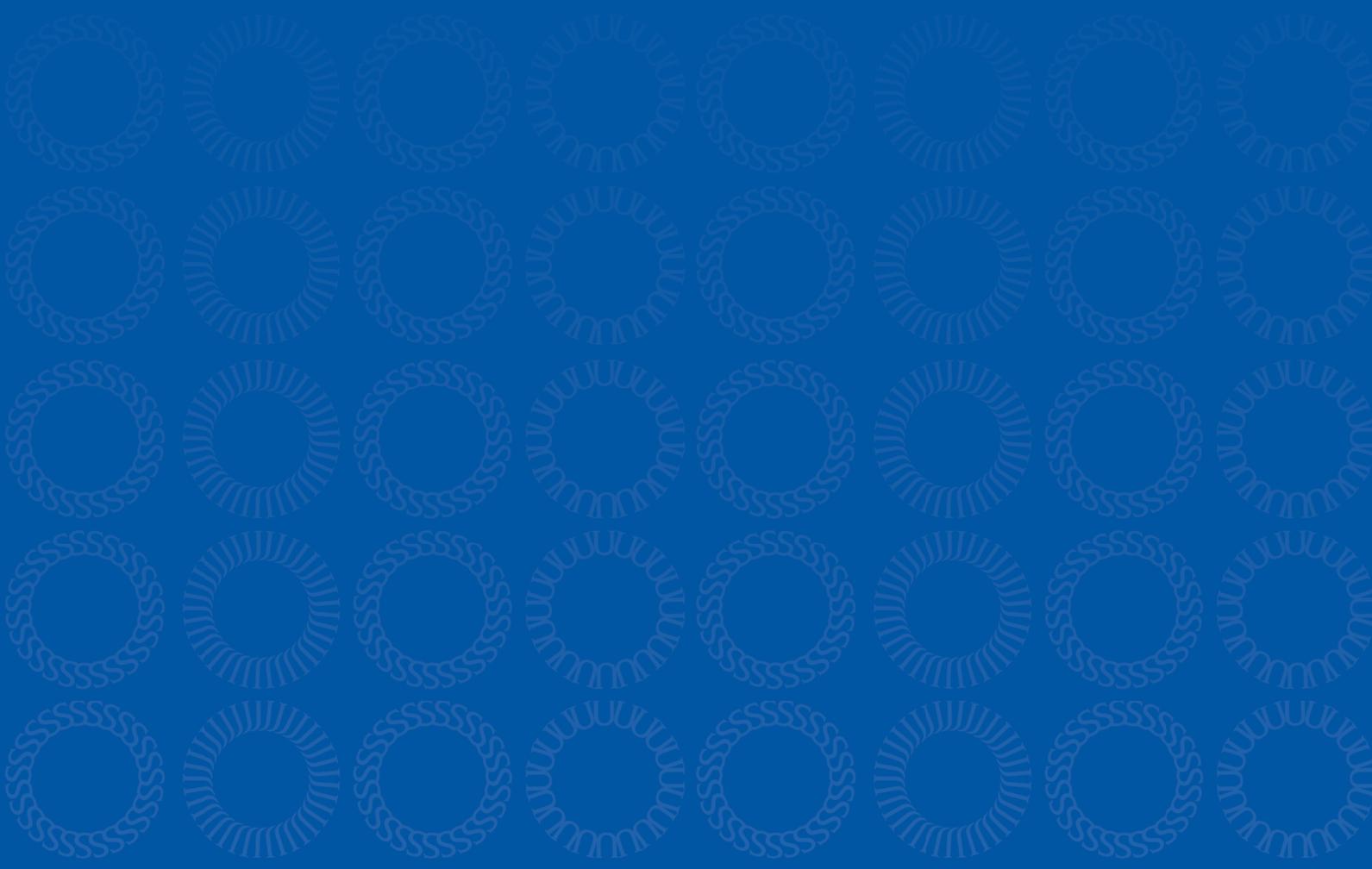
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