CONTENTS

4 LESLIE ALBERT
Seminar Series: Data Science for All

5 DANIEL BRINKMAN
Solar Cell Behavior

6 MATTHEW CAPRIOTTI
SJSU to Zero: Combating HIV Stigma

7 BENJAMIN CARTER
Studying Climate Change with Plant Diversity Data

8 LIONEL CHERUZEL
Light-Driven Biocatalysts

9 SEN CHIAO
Precipitation Prediction Products

10 CHRIS DONLAY AND ROULA SVOROU
Preserving Endangered Languages

11 JERRY GAO
Advancing Mass Warning Capabilities

12 CLAIRE KOMIVES
Developing Snake Antivenom

13 LAURA MILLER CONRAD
Fighting Hospital-Acquired Infections

14 KIMBERLY NULL
Researching Runoff, Weighing in on Water

15 ALBERTO RASCÓN
Inhibiting Mosquito Egg Production

16 VIMAL VISWANATHAN
A Teaching Tool for Free Body Diagram Drawing

17 KATHERINE WILKINSON
A Sense of Position: Motor Behavior

18 STUDENT RESEARCH COMPETITION FINALISTS
Representing SJSU at the Statewide CSU Competition

19 EARLY CAREER INVESTIGATOR AWARDS
Minghui Diao and Susan Snyderski

20 GRANT AND CONTRACT AWARDS
Fiscal Year 2017–2018

26 STATEMENT OF ACTIVITIES
Fiscal Year 2017–2018

MESSAGES

JOAN FICKE
President, Research Foundation
Board of Directors
Interim Provost and Senior Vice President for Academic Affairs, SJSU

Public higher education has seen a decided shift nationally, as more institutions and their faculty seek ways to nurture their scholarly roots, and to do so while teaching students for whom the challenges of past preparation and future commitments prevail. Therefore, at San José State University our professional opportunities for faculty (specifically our Research, Scholarship, Creative Activity Program) broadens academic reach across Colleges which reflects disciplinary expectations and is connected to our vibrant location in Silicon Valley. SJSU is already, by reputation, a significant research university given the volume and nature of faculty grant and scholarly activity. Moreover, SJSU has always played a leading role in providing unparalleled care for its aspiring and first generation students. Now, this nexus of faculty scholarly developmental achievement is coupled with the evolving preparatory needs for our students and for their futures.
PAMELA C. STACKS
Vice President, Research
Foundation Board of Directors
Associate Vice President for
Research, SJSU

I have the pleasure of reviewing the
proposals that SJSU faculty submit
to external agencies. To discover
their passions as they seek to add to
the body of scientific and scholarly
knowledge is a gift. Whether pursuing
funding for research endeavors,
seeking support for community
advocacy, or launching industry
partnerships, their work is superb.

I also truly value the Office of Research
partnership with our colleagues at the
SJSU Research Foundation. They
provide collaborative support to our
faculty, continually strive to streamline
operations, and address the array
of technical issues that emerge
throughout the proposal, award, and
project management processes. Their
dedication to the SJSU research
enterprise is unwavering.

RAJNESH PRASAD
Executive Director,
SJSU Research Foundation

The Research Foundation team
is fully committed to serving San
José State University by providing a
complete array of support services
to all of those who are engaged in
research, scholarship, and creative
activity. As new faculty arrive at
SJSU, our team seeks to guide
them through the complex proposal
process for externally sponsored
funding. We also provide an array
of resources for veteran faculty
researchers as sponsored project
compliance demands evolve and
change.

On behalf of all of us at the
Research Foundation, I would like
to express our sincere admiration
for the work conducted by SJSU
faculty, staff, and students who
bring their diverse expertise to bear
on the challenges confronting the
community and the world.
Leslie Albert’s interest in data science grew out of interactions with cybersecurity industry partners at SJSU’s Center for Organizational Resilience. This led Albert, who teaches courses in Information Security and Assurance Management, and three colleagues to expand data science knowledge among SJSU students through a series of free “Data Science for All” seminars.

The team developed and delivered eight seminars during the spring 2019 semester, including Statistical Foundations for data science (Subhankar Dhar), Python Foundations for data science (Esperanza Huerta), Spark & Jupyter Notebooks (Scott Jensen), and Exploring Graphs in Neo4j (Scott Jensen). They also hosted a seminar titled Demystifying AI, presented by special guest Harlan Findley, Director of Consulting and Strategy at Google.

“We developed the seminars so that students could explore the topic in a fun and non-threatening environment,” Albert explains. “Our goal is to pique the curiosity of all students, regardless of major, about data science and provide them with some basic, but highly sought after, data science skills.”

Any community college or four-year institution can adopt the seminar series by accessing the materials developed by the team, including student bundles, seminar lessons, and pre- and post-seminar exercises hosted on Merlot and GitHub.

The seminar series will be presented again in the upcoming fall and spring semesters, with expanded offerings.

SPONSOR
National Science Foundation
Daniel Brinkman was interested in electronics from a very young age. “I think I was the only kindergartner who listed ‘electrical engineer’ as my future job,” he says. Later in his academic career, with guidance from research supervisors Peter Olver at the University of Minnesota and Peter Markowich at the University of Cambridge, he discovered that his favorite part of engineering was physics, and that his favorite part of physics was math. “Without their support and guidance,” he says, “I would not be where I am today.”

Today, Brinkman is integrating math, engineering, and technology in his research into solar cell behavior. Collaborating with Arizona State University students and faculty, and with First Solar, a prominent manufacturer of solar panels, he seeks to predict how well solar cells will perform over vastly different time scales. The team has developed mathematically driven physical models to understand the cells’ behavior, rather than relying solely on the statistical analysis of expensive data.

This current project is coming to a close, but Brinkman is looking ahead to the possibility of exploring how one solar cell technology might be more valuable than another in a specific location, or how to optimize the characteristics of different solar cell devices for specific installations.

“Renewable energy is the future and there are many opportunities for researchers to apply mathematics to industrial applications in ways that will reduce costs and improve efficiency.”

**SPONSOR**
U.S. Department of Energy
SJSU TO ZERO: COMBATING HIV STIGMA

MATTHEW CAPRIOTTI
Psychology
College of Social Sciences

JSU to Zero is the university’s first formal campaign to focus on both HIV prevention and HIV stigma reduction. Its message promotes the availability of screening for HIV and other sexually transmitted infections at the Student Health Center and at off-campus locations throughout Santa Clara County.

Led by Matthew Capriotti and Director of SJSU’s PRIDE Center and Gender Equity Center Bonnie Sugiyama, the campaign also seeks to create an environment where students feel at ease communicating about their sexual health.

“If our students are comfortable with hearing about and talking about HIV, it destigmatizes the disease and they are more likely to seek out testing and treatment,” explains Sugiyama.

SJSU to Zero student health educators spearhead the project. They table on 7th Street Paseo to educate students one-on-one, collaborate with other campuses to conduct joint events, and partner with SJSU instructors to create innovative assignments that infuse HIV education into course curricula.

Capriotti’s research focuses on the health and well-being of LGBTQ+ individuals, as well as on the delivery of evidence-based treatments for Tourette Syndrome and other tic disorders. Yet it is seeing his students become excited about this field of study that is the most rewarding part of his work.

“Our students genuinely care about this project. They enthusiastically engage in the day-to-day work of getting out there on campus and have turned our campaign from an idea to a reality.”

SPONSOR
The Health Trust
The Carl W. Sharsmith on-campus herbarium, tucked away in Duncan Hall, is a little known SJSU treasure that houses preserved plant specimens, along with data including when and where the specimens were collected. Sharing this information across many herbaria is critical to the field, leading to a better understanding of which species are threatened by habitat destruction or climate change.

Benjamin Carter and his students are leveraging this unique trove of information by generating a specimen image database that will be folded into the UC Berkeley California Consortium of Herbaria. The resulting compilation of images will be accessible to anyone in the world. Researchers—and the broader public—will be able to contribute to climate change research by collecting data from these images.

Carter’s interest in plant diversity began during his undergraduate studies at California Polytechnic State University, San Luis Obispo, where he was heavily influenced by his botany professor, David Keil. “He has an absolutely encyclopedic understanding of California plants—their names, where each one lives, their particular preferences for different kinds of habitats—but he has retained his sense of wonder at discovering new things. He taught me the importance and also the rewards of building a deep personal knowledge of the natural world.”

SPONSOR
National Science Foundation

INFORMATION
sjsu.edu/herbarium

Ilbert Bourang, '19 Biology (concentration in Systems Physiology), places a plant specimen in a custom-built lightbox that will capture a high resolution image of the specimen for use in climate change research.
Lionel Cheruzel is looking to expand the toolbox of organic chemistry reactions. His research is centered around the use of hybrid P450 biocatalysts and their activation by visible light to produce chemicals that are difficult to obtain using traditional methods.

In the last two decades, biocatalysis has emerged as an important technology in the production of pharmaceuticals, flavors, fragrances, and beyond.

“Ultimately,” he says, “this work will find applications in the economically and environmentally friendly synthesis of new chemical compounds and potential drugs.” Developing new synthetic routes has been made possible through Cheruzel’s work combining chemical catalysis with the light-driven biocatalysis.

Cheruzel’s credits his postdoctoral mentor, Harry B. Gray at Caltech, for instilling in him a passion for chemistry. “He had such an impact on me both personally and intellectually,” he says. Cheruzel himself has supervised more than 130 undergraduate and graduate students in the lab since joining SJSU in 2009. His students have gone on to great success, working for companies including Boehringer Ingelheim, Cytokinetics, and Genentech, and pursuing Ph.D. degrees at UC Berkeley, UC San Francisco, UC Santa Cruz, University of Illinois Urbana-Champaign, and University of Michigan.

“Watching students develop as scientists and succeed in their endeavors has been personally rewarding and continues to motivate my mentoring efforts.”

SPONSORS
National Institutes of Health
National Science Foundation
SEN CHIAO
Meteorology and Climate Science
College of Science

Sen Chiao experienced more than 300 rainy days each year while growing up in Keelung, Taiwan, one of the wettest and gloomiest cities in the world, which likely led to his interest in studying the weather. “I wanted to learn more about rain and its impacts,” says Chiao, director of SJSU’s Center of Applied Atmospheric Research and Education, which is funded by a Minority University Research and Education Project grant from NASA.

Chiao’s research addresses weather, climate risk, and preparedness, with the goal of better understanding Earth’s water cycles as well as how climate will impact local storms. To that end, Chiao and his students have been developing precipitation prediction “products,” which are hourly precipitation forecasts, in several different formats for the Santa Clara Valley Water District. The forecasts are developed using raw data collected from 46 rain gauge sites in the Santa Clara Valley and Santa Cruz mountains, raster data from watersheds, and images from the web. The water district uses the forecasts for early weather warnings and for their own research.

“Our goal is to build a reliable modeling framework that is refreshed four times per day to account for changing weather during a storm, particularly if that storm could cause flooding.”

Chiao hopes to expand the distribution of these prediction capabilities to additional water districts.

SPONSOR
Santa Clara Valley Water District

Dalton Behringer, ’19 MS Meteorology, prepares a ceilometer (a device for measuring and recording the height of clouds) to be installed on the roof of Duncan Hall.

Dalton will start his Ph.D. in Atmospheric Science this fall at the University of Wyoming.
PRESERVING ENDANGERED LANGUAGES

CHRIS DONLAY
ROULA SVOROU

Linguistics & Language Development
College of Humanities and the Arts

Partnering with colleagues at the University of Azad Jammu and Kashmir, Roula Svorou and Chris Donlay are successfully working toward the preservation of Domaaki, a severely endangered language spoken only in northern Pakistan. As with many endangered languages, Domaaki has no written system, so the Pakistani team captures the language, area history, stories, songs, and recipes in audio and video recordings. They then collaborate remotely with their SJSU counterparts to analyze the data and develop a digital compilation of the language.

Svorou’s intrigue with language began with a fascination for the systematicity of Greek and Latin grammar, and after a single linguistics course in college she was hooked. Donlay left a successful corporate career to pursue the field, became a language documentation specialist, and hasn’t looked back.

Linguists have studied only a fraction of the world’s languages, which is of concern to both Svorou and Donlay.

“Encouraging speakers to keep endangered languages alive preserves information about customs, social institutions, and local environments,” explains Svorou. “Language is inextricably intertwined with one’s identity and culture,” adds Donlay. “Helping communities preserve their languages is important on a humanitarian level.”

SPONSOR
National Science Foundation
An interdisciplinary team of SJSU professors and students have conducted a comprehensive analysis of mass warning systems in major cities worldwide in order to deliver a study to the City of San José. Led by Jerry Gao (Computer Engineering), both David Anastasiu (Computer Engineering) and Subhankar Dhar (Management Information Systems) supervised the students’ research and then developed recommendations for a public warning and notification system.

“Our project identified new technologies that can be used to reduce the time from detection or prediction of an emergency to sending alerts to the affected population,” explains Anastasiu.

Dhar, who works on multiple Smart City projects with San José, notes that the city requested recommendations for a tiered public warning and notification system, e.g. a combination of sirens, text alerts, landline calls, and public address announcements.

“As San José is one of the largest cities in the U.S. and at the center of Silicon Valley, we are looking at an all-inclusive array of approaches to communications.”

The team has delivered its final report and anticipates that follow-up projects will be undertaken in the near future.

“We learned a great deal from this project, but it is clear that additional innovative solutions and technologies are needed for San José and all cities to build a safe living environment for the public,” says Gao.

SPONSOR
City of San José
DEVELOPING SNAKE ANTIVENOM

CLAIRE KOMIVES
Chemical Engineering, Charles W. Davidson College of Engineering

Does the idea of a snake bite—possibly poisonous—make you shudder? During a sabbatical spent at the Indian Institute of Technology Delhi, Claire Komives began developing an effective antivenom that may have a major impact in the areas of the world where poisonous bites are most prevalent.

Inspired by researcher Binie V. Lipps, who discovered a protein in opossums that makes them immune to snake bites, Dr. Komives has created a low-cost method for synthesizing and testing peptides found in that protein and is applying them to the creation of a new snake antivenom.

“We have been able to answer questions about the activity of a peptide to neutralize venom from Indian snakes,” she explains. She intends to seek additional funding to further develop the peptide so that it has a longer half-life in the body.

Komives was recently awarded a Fulbright scholarship—her second—to share active, project-based learning models that have proven to be successful at SJSU with universities across India. She will work with the faculty and administrators of engineering colleges to try to improve the quality of teaching there, as many institutions limit their methods to lectures.

Being in India will also allow her to continue to collaborate with an Indian pharmaceutical company for the development of the low-cost antivenom.

SPONSOR
National Institutes of Health

Israel Juarez-Contreras, ’19 MS
Chemical Engineering, inspects an assembled bioreactor containing growth media before it is autoclaved (sterilized). After sterilization, yeast (Pichia Pastoris) engineered for antivenom production is grown in the bioreactor.

Israel has been accepted into the biochemistry and biophysics Ph.D. program at UC San Diego.
GROWING UP, LAURA MILLER CONRAD was in awe of medicine’s power to cure disease, which inspired her to study organic chemistry and conduct chemistry research in search of disease treatments. This work led to her present day pursuit: blocking antibiotic resistant pathways in bacteria that cause hospital-acquired infections.

“The antibiotic colistin is one drug that has effectively treated these types of infections, caused by multidrug-resistant Pseudomonas aeruginosa, but we are now encountering colistin resistance,” she explains. “However, our lab has identified a class of small molecules that make P. aeruginosa more susceptible to colistin-mediated eradication.”

Undergraduate and master’s degree students from Chemistry, Biology, Biomedical Engineering, and Chemical Engineering conduct the research on the project, from the synthesis of the small molecules to microbiological assays to in vitro kinetics. They apply concepts from their academic studies while learning the skills needed to conduct research independently.

“In the long term, we hope that these small molecules may eventually be used in clinical settings to help save the lives of those infected with this bacterium,” says Dr. Miller Conrad. “At the same time, we are trying to develop even more potent drugs to battle hospital-acquired infections.”

SPONSOR
National Institutes of Health
It may seem odd to think of nutrients as pollution, but excessive nutrients from farm fertilization and irrigation, and the resulting runoff, can negatively impact surface water and groundwater quality. To better understand these impacts, and in an effort to improve water quality in the Central Coast’s agricultural regions, Kimberly Null and her students are conducting weekly field campaigns on multiple farm parcels to take direct measurements of water quality.

Null and her students aren’t afraid to get muddy. Sample collection requires digging pits down to the water table. Surface water, groundwater, and tile drain water samples are then brought back to Moss Landing Marine Laboratories, where they are analyzed to capture nutrient variability during different seasons, irrigation events, and crop rotation.

Null’s passion for H$_2$O took hold in the 8th grade. “I’ve always loved the outdoors, but my 8th grade science teacher really piqued my interest in the environment. I learned the importance of protecting our water resources, and it just stuck with me.”

Through her research, Null hopes to provide new knowledge to growers and policymakers about the best nutrient mitigation strategies for the Monterey Bay region.

**SPONSOR**
California Sea Grant
We may consider mosquitos a simple nuisance, but these tiny insects are responsible for the transmission of the Zika, Dengue, Yellow Fever, and Chikungunya viruses. Alberto Rascón and his student researchers are determined to limit the mosquito population, and in turn, minimize the viruses spread.

Rascón’s team focuses on digestive enzymes known as proteases. Feeding on an (infected) human host provides the mosquito with proteins needed for reproduction. Proteases break down those proteins into peptides needed for egg laying. The team’s goal is to inhibit the protease’s process to limit egg production, thereby minimizing the mosquito population, and in turn minimizing virus transmission.

During his five and a half years at SJSU, more than 20 of Rascón’s undergraduate students have gone on to optometry, dental, pharmacy, and medical schools, as well as to Ph.D. programs. He credits them with his lab’s success.

“Without my students, our research lab would not be as successful in securing federal funding. Their work has led to submissions of manuscripts for publication and presentations at local and national conferences (both orally or poster), giving them the confidence to discuss science with peers and with science faculty.”

SPONSOR
National Institutes of Health

Research Assistant Saira Montemoso works with Alberto Rascón to install a 50-mL superloop into the AKTA Fast Protein Liquid Chromatography protein purification system.

Saira graduated in 2017 with a double major in Chemistry (concentration in Biochemistry) and Computer Science. She has been working in Dr. Rascón’s lab since 2016. Saira will start work on her Ph.D. at the University of Pennsylvania this summer.
VIMAL VISWANATHAN
Mechanical Engineering, Charles W. Davidson College of Engineering

Vimal Viswanathan is striving to change traditional classroom instruction with a focus on design thinking and design theory. His current project, Mechanix, is a virtual teaching assistant that provides real-time feedback to mechanical engineering students drawing free body diagrams, illustrations that demonstrate the force exerted when two bodies come into contact.

Free body diagrams are crucial tools, but many students are unable to accurately draw them. Due to classroom size, time restraints and an extensive curriculum, instructors are not always able to sit with individual students to provide direct and immediate feedback.

This is where Mechanix comes in. Mechanix uses a sketch recognition algorithm to detect the shape that a student draws on a touchscreen interface. After comparing the student’s work with the accurate answer, Mechanix’s virtual tutor provides immediate alerts for any incorrect forces or missing information in a student’s drawing. Rather than penalizing the student for errors, the virtual TA creates the space and dialogue for correction in real-time, resulting in a better understanding of how to solve the problem.

“I am very excited about this research as I get to see the results and improvements in my classroom. When the students find the tools and techniques that I develop useful in learning new concepts, it gives me the motivation to continue developing new ones and improving the existing ones.”

SPONSOR
National Science Foundation
A SENSE OF POSITION: MOTOR BEHAVIOR

KATHERINE WILKINSON
Biological Sciences
College of Science

Human motor behaviors are complex. We require a perpetual sense of how our bodies are positioned in space to coordinate our movements. Specialized neurons in muscles sense length and movement, thus creating movement awareness, or proprioception.

Katherine Wilkinson studies sensory input during proper proprioception, as well as conditions leading to problems with balance and movement, and her research has made progress on both fronts. In collaboration with the Patapoutian Lab at the Scripps Research Institute, she pinpointed a mechanically sensitive ion channel that is necessary for stretch sensitivity.

“These findings could help identify therapeutics for proprioceptive disorders, and help develop better sensors for prosthetic limbs or robots.”

Wilkinson’s lab is operated entirely by students. Four of her former students are in Ph.D. programs, and two more have accepted offers to start in the fall. Her lab alum have gone on to medical, pharmacy, and dental schools, as well as to careers in biotech companies.

Wilkinson expresses gratitude for her own mentors. “I was encouraged to pursue undergraduate research by my freshman biology professor, and given a chance in my physiology professor’s lab,” she says. Her postdoctoral mentor was especially helpful, working with her “to develop a technique and research agenda that I could implement successfully at SJSU.”

SPONSOR
National Institutes of Health

< Alexandra Salazar, ’20 Molecular Biology, Sarah Chu, ’20 Microbiology, and Nikola Klier, ’20 Molecular Biology, at work preparing for an experiment. Sarah (center) is dissecting the muscle and nerve that will be used to record sensory neuron firing rates in response to stretch. Alex (front) and Nikola (back) are taking notes in the lab notebook and preparing the rigs for the experiment.>
SJSU undergraduate and graduate research students, listed below, presented their work at the 2018 CSU Student Research Competition, held at California State University, Sacramento on May 4-5, 2018.

Israel Juarez Contreras
Charles W. Davidson College of Engineering
Mentor: Claire Komives
“Expression of Snake Antivenom Peptide Chain in Pichia Pastoris”
Israel Juarez Contreras was awarded first place in the 2018 CSU Student Research Competition.

Kelly Cricchio
College of Social Sciences
Mentor: Matthew Holian
“Invisible Women: The Casa delle Zitelle and Female Patronage in Early Modern Venice”

Vijay Lalith Cuppala
Charles W. Davidson College of Engineering
Mentor: Burford Furman
“An Investigation into the Deformation Properties of Clamped Concrete Filled Steel Tubes”

Simon Jarrar
College of Social Sciences
Mentor: A.J. Faas
“Lost Legacies: An Evaluation of the Impact of Gentrification on LGBTQ Elderly Communities in the Bay Area”

Vandana Kannan
College of Social Sciences
Mentor: A.J. Faas
“Text to Image Synthesis”

Khiem Pham
College of Science
Mentor: Sami Khuri
“An Approximate Algorithm for Spectral Clustering based on the Bipartite Graph Model”

Unnikrishnan Sreekumar, Revathy Devaraj, and Qi Li
Charles W. Davidson College of Engineering
Mentor: Kaikai Liu
“Real-time Traffic Pattern Collection and Analysis Model (TCPAM)”

Jeffrey Tseng
College of Social Sciences
Mentor: Matthew Holian
“Radiology Resident Selection and Performance Prediction: Can We Do Better?”

2019

The following SJSU undergraduate and graduate research students will present their work at the annual CSU Student Research Competition, April 26-27, 2019, at CSU Fullerton.

Eric Anderson
Charles W. Davidson College of Engineering
Mentor: Ozgur Keles
“Can 3D Printing Compete with Mass Production: A mechanical reliability approach”

Richard D. Bridges Jr.
College of Health and Human Sciences
Mentor: Monica Allen
“Tertiary Treatment of Hepatitis C as Prevention for End Stage Liver Disease: A Qualitative Study Examining the Barriers and Facilitators to Treatment of Chronic HCV Among Current and Former Intravenous Drug Users”

Blake DuPriest
College of Science
Mentor: Bree Grillo-Hill
“A new paradigm for regulation of cell death by intracellular pH dynamics in the fly eye”

Sky Eurich
Charles W. Davidson College of Engineering
Mentor: Francesca Favaro
“Takeover Response Times Following Disengagements in Semi-Autonomous Vehicles”

Avni Gulati
Charles W. Davidson College of Engineering
Mentor: Magdalini Eirinaki
“Social Recommendation Systems”

Sambhav Gupta
Lucas College of Business
Mentor: Yu Chen
“Artificially Intelligent (AI) Tutors in the classroom: A Need Assessment Study of Designing Chatbots to Support Student Success”

Vanshika Gupta
College of Science
Mentor: Madalyn Radlauer
“Investigating Macromolecular Structures for the Transformation of Greenhouse Gasses into Liquid Fuels”

Kauionalani Kekuawela
College of Health and Human Sciences
Mentor: Areum Jensen
“Differential Cardiovascular Responses to Acute Exercise in Children”

Sarah Ortega
Charles W. Davidson College of Engineering
Mentor: Nikos Mourtos
“Exploring a Hybrid Design for a Short to Medium Range Transport Aircraft”

Noe Vidales
College of Science
Mentor: Cristina Tortora
“Clustering Mixed Type Data Sets Using Probability Distance Clustering and Gower’s Metric”
MINGHUI DIAO, SUSAN SNYCERSKI NAMED ECIA WINNERS

Minghui Diao from the Department of Meteorology and Climate Science, College of Science and Susan Snycerski from the Department of Psychology, College of Social Sciences, have received the 2018 Early Career Investigator Awards.

Minghui Diao's research focuses on the impact of clouds and aerosols on global climate change and regional air quality. Her work includes aircraft-based field campaigns to study regions as remote as Antarctica and the Southern Ocean, high precision laser instrument development, and computational global model simulations for comparisons with aircraft-based measurements and satellite remote sensing data. Since arriving at SJSU in 2015, she has secured a substantial amount of extramural sponsored funding for her research, primarily from the National Science Foundation and NASA. Dr. Diao's engagement of students in her research is significant. One graduate student was the lead author on a published paper, and is now pursuing his Ph.D. in the School of Meteorology at the University of Oklahoma. She brought graduate and undergraduate students with her to the National Center for Atmospheric Research to do summer research with aircraft instruments and global climate model simulations in 2016 and 2018, and since 2016, her students have given five oral presentations at AMS and AGU annual meetings.

Susan Snycerski serves as the Principal Investigator of a previously awarded cooperative agreement that funds advanced rotorcraft research in collaboration with scientists from the U.S. Army Aviation Development Directorate. In the last year, she has significantly increased extramural sponsored funding for SJSU's human factors and aerospace engineering research at NASA's Ames Research Center at Moffett Field. This research has resulted in technological advances in the areas of adaptive autonomy, future lift systems, and human-centered display design.

In 2018, Dr. Snycerski was awarded a new cooperative agreement at NASA Ames. This three-year agreement funds research conducted entirely by students working at NASA's Arc Jet Complex at Moffett Field, where materials that can withstand the heat environments to which spacecraft will be exposed are extensively tested. Such tests are imperative for NASA's Journey to Mars mission, as well as other space travel missions. Both undergraduate and graduate students will apply the science of macroergonomics (a subdiscipline of human factors/ergonomics) to the complex research processes and tasks conducted at this facility.

A complete description of the awardees’ accomplishments is available at sjsu.edu/researchfoundation.
GRANT AND CONTRACT AWARDS 
FY2017–2018

COLLEGE OF BUSINESS

Dean’s Office
Frances L. Edwards and Karen Philbrick
MTI’s Emergency Management Training for VTA
Santa Clara Valley Transportation Authority: $27,309

Dan Moshavi and Hilary K. Nixon
Housing and Mobility Best Practices (County of San Mateo)
San Mateo County: $95,000

Dan Moshavi and Karen E. Philbrick
CSUTC - California State University Transportation Consortium – Senate Bill 1 (CSU Lead Center) - Year 1
California State University System: $2,000,000

Environmental & Economic Benefits of Small Electric Vehicles with Focus on Electric Motorcycles
Zero Motorcycles: $11,116

Mineta Consortium for Transportation Mobility (MCTM)
California Department of Transportation: $3,645,720

Mineta Consortium for Transportation Mobility (MCTM)
Department of Transportation: $1,416,900

MTI Database on Terrorist and Serious Criminal Attacks against Public Surface Transportation

MTI Transportation Research, Technology Transfer, and Workforce Development Training Metropolitan Transportation Commission: $200,000

National Summer Transportation Institute Program FY2018
California Department of Transportation: $72,590

Specialized Services in the Area of Workforce Development, Education, Research and Other Transportation Related Services
Bay Area Rapid Transit: $300,000

COLLEGE OF EDUCATION

Communicative Disorders and Sciences
Wendy Quach and June McCullough
Project EPICS - Educating Pacific Island Clinicians in Speech
Department of Education: $250,000

Counselor Education
Michele C. Burns
In-Custody Education Services
Santa Clara County: $16,250

Teacher Education
Katya Aguilar
San Jose State University Single Subject Intern 2017-2018
Milpitas Unified School: $80,535

COLLEGE OF ENGINEERING

Dean’s Office
Jinny Rhee and Blanca Sanchez-Cruz
Google Cascade the Code Project at SJSU
Regents of the University of California: $7,692

2017-2018 MESA Engineering Program (MEP) @ SJSU
Regents of the University of California: $10,000

Aerospace Engineering
Nikos J. Mourtos
NASA MUREP Scholarship-Cameron Young
NASA: $5,700

Biomedical Engineering
Alessandro Bellofiore, Sang-Joon John Lee, and Kathryn Gosselin
MRI: Acquisition of a High-Speed Particle Image Velocimetry
National Science Foundation: $450,274

Melinda Simon
Isolation of DNA from Single Cells in Microdroplets
Lawrence Livermore National Laboratory: $30,000

Guna Selvaduray
Design and Testing of New eSheath Implant Solutions: $90,460

Chemical and Materials Engineering
Claire F. Komives
Development of a Low-Cost Therapy for Biological Toxins for Rural India
Department of Health and Human Services: $103,480

Anand Ramasubramanian
Systems Biology Based Tools for Modeling Platelet Storage Lesion for Optimal Blood Transfusions
CFD Research Corporation: $120,000

Anand Ramasubramanian and Amit Kumas Saha
Novel Antivirulence Peptides from Functional Metagenomics using Nano culture Microarrays
Department of Health and Human Services: $420,115

Civil and Environmental Engineering
Akthem Al-Manaseer
CSULB and SJSU Joint Training & Certification Program for Caltrans and Industry
CSU Long Beach Foundation: $241,456

Computer Engineering
Jerry Gao, Subhankar Dhar, and David Anastasiu
Mass Warning Study for City of San Jose
City of San Jose: $42,000

Ronald Mak
NSF Student Travel Grant for the 2018 CGO/HPCA/PPoPP Symposia
National Science Foundation: $30,000

NASA Ames ISRDS-2 Internships
Stinger Ghaffarian Technologies: $89,162

Younghue Park and Xiao Su
SaTC: EDU: Collab: Enhancing Security Education through Transiting Research
National Science Foundation: $120,832

Electrical Engineering
Essam A. Marouf
Investigation of Saturn’s Rings By Cassini Radio Occultation: Cassini Equinox
Jet Propulsion Laboratory: $232,000
GRANT AND CONTRACT AWARDS
FY2017–2018

Industrial and Systems Engineering
Hongrui Liu
Proposal to Test/Research Market Clearing Systems for ISO New England
ISO New England: $54,670

Dan Nathan-Roberts
Proposal for Human Factors Research and Development Guidance of Operating Room Graphical User Interface For STERIS
Steris Corporation: $50,000
Stanford LPCH OB OR Layout and Design
Stanford University: $27,413

Mechanical Engineering
Saeid Bashash
High-Efficiency, Low-Volume, Space-Qualified Cryogenic-Coolers
CU Aerospace: $28,400

Vimal Viswanathan
Collaborative Research: Changing Homework Achievement with Mechanix Pedagogy (CHAMP)
National Science Foundation: $75,155

COLLEGE OF HEALTH AND HUMAN SCIENCE

Journalism and Mass Communications
Diane Guerrazzi-Martinet
Media Educational Program
Department of State: $250,000

Justice Studies
Edith Kinney
SJSU Transient Project - Transience and Homelessness among PC 290 Registrants
California Department of Corrections and Rehabilitation: $25,000

Margaret Stevenson
Record Clearance Project - Path to Expungement
Santa Clara County: $50,000

The Record Clearance Project (RCP) at SJSU- Adult Reentry Services
Santa Clara County: $80,000

Nutrition & Food Science
Lucy McProud and Ashwini Wagle
Cal-Pro-Net Center 2017-2018
California Department of Education: $44,965

School of Information
Sandra Hirsh and Susan W. Alman
Investigation of Possible Uses of Blockchain Technology by Libraries-Information Centers to Support City – Community Goals
Institute of Museum and Library Services: $100,000

Lili Luo
Institute for Research Design in Librarianship (IRDL)
Loyola Marymount University: $19,318

School of Nursing
Deepika Goyal
ADN to BSN RN Bridge Program - TVSON/EVC Collaborative - AY 2017-19
San José Evergreen Community College District: $151,255

Colleen O’Leary-Kelley and Tamara H. McKinnon
All of Us in Santa Cruz County
American Association of Colleges of Nursing: $10,000

School of Social Work
Edward Cohen
2015 SAMHSA/BJA MH Superior Court of CA, County of Santa Clara: $60,000

Laurie Drabble
Sexual Orientation Differences: Prevalence & Correlates of Substance Use & Abuse
Public Health Institute: $54,772

Effects of Marriage Recognition on Substance Abuse and Health for Women
Public Health Institute: $67,915

Peter Allen Lee
Title IV-E Child Welfare Training 2017-2018
UC Berkeley: $1,834,897

San José State University BASW Mental Health Scholarship Program (MHSP)
Santa Clara County: $300,000

BHWET Integrated Behavioral Health MSW Stipend Program
UC Berkeley: $48,004

COLLEGE OF HUMANITIES & THE ARTS

English and Comparative Literature
Jonathan H. Lovell
San Jose Writing Project 2017-2018 – CSMP
The Regents of UC, Office of the President: $27,662

San Jose Writing Project 2017-2018 - NCLB14
The Regents of UC, Office of the President: $32,557

Cathleen Miller
Center for Literary Art Program Funding 2017-18
City of San Jose: $10,470

Susan Shillinglaw
John Steinbeck: Social Critic and Ecologist
National Endowment for the Humanities: $192,571

Anne Simonson
The California Arts Project- CSMP 2017-2018
The Regents of UC, Office of the President: $36,028

NCLB14 The California Arts Project
The Regents of UC, Office of the President: $8,972

Linguistics and Language Development
Roula Svorou and Chris Donlay
Documenting Domai (dmk), a Severely Endangered Indo-Aryan Language
National Science Foundation: $70,032

TV, Radio, Films & Theatre
Amy Glazer Connolly
Guest Artist Series
The Kanbar Charitable Trust: $5,000
GRANT AND CONTRACT AWARDS
FY2017–2018

COLLEGE OF SCIENCE

Dean's Office

Elaine D. Collins
SJSU MESA School Programs SJUSD Agreement (Partner School Site: Lincoln High School & Gunderson)
San Jose Unified School District: $4,200

SJSU MESA Schools Program - Bridges Academy (of Franklin McKinley School District)
Franklin-McKinley School District: $4,200

SJSU MESA Schools Program ARUESD Agreement
Franklin-McKinley School District: $50,400

SJSU MESA Schools Program LCPA (Latino College Preparatory Academy)
Agreement 17-18
Latino College Preparatory Academy: $4,410

SJSU MESA Schools Program CUSD Campbell Union School District: $5,750

SJSU Mesa Schools Program (MSP) Academic Year 2017-2018
Regents of the University of California: $180,000

SJSU MESA Schools Program - Downtown College Prep
Downtown College Preparatory: $8,400

SJSU MESA Schools Program ESUHSD Agreement
East Side Union High School District: $44,410

SJSU MESA SCHOOLS PROGRAM RCLA (Roberto Cruz Leadership Academy)
Agreement 17-18
Roberto Cruz Learning Academy: $4,410

SJSU MESA Schools Program - Bridges Academy (of Franklin McKinley School District)
Franklin-McKinley School District: $4,410

SJSU MESA Schools Program ESUHSD Agreement
East Side Union High School District: $46,305

Marc d’Alarcao
Duncan Hall NS Security Project
Sandia National Laboratories: $156,524

Biological Sciences

Benjamin Carter
Digitization TCN: Collaborative: Capturing California’s Flowers: Using Digital Images to Investigate Phenological Change in a Biodiversity Hotspot
National Science Foundation: $20,791

Luke Miller
Collaborative Research: Effects of Multiple Aspects of Climate Change or Marine Biodiversity and Ecosystem
National Science Foundation: $99,965

Collaborative Research: Context-dependency of Top-down vs. Bottom-up Effects on Herbivorous on Marine Primary Producers
National Science Foundation: $123,567

Cleber C. Ooverney
MARC U*STAR at SJSU 2017-2018
Department of Health and Human Services: $273,371

Elizabeth Skovran
I-Corps Site: A Biological Sciences Site for the CSU (J. Grace)
San Diego State University Foundation: $2,500

Julio Soto, Miri K. VanHoven
REU Site: Research by Undergraduate using Molecular Biology Applications (RUMBA)
National Science Foundation: $124,747

Katherine Wilkinson
Control of Muscle Proprioceptor Sensitivity
Department of Health and Human Services: $108,375

Chemistry

Lionel E. Cheruzel
RL(II) Dimine Labeled P450 Mutants for Selective Hydroxylation of Substrate c-h Bond using Innovative Photo-Oxidative
Department of Health and Human Services: $108,375

Laura Miller Conrad
Blocking Cationic Antimicrobial Peptide-Resistance in Pseudomonas Aeruginosa
Department of Health and Human Services: $108,375

Alberto A. Rascón, Jr.
Vector Control Strategy Through Inhibition of Aedes aegypti Midgut Proteases
Department of Health and Human Services: $108,375

Karen A. Singmaster
CSU SJSU LSAMP Program
CSU, Sacramento: $40,000

SJSU LSAMP Program
CSU, Sacramento: $30,000

Karen A. Singmaster
San José State University Rise Program
Department of Health and Human Services: $563,811

Annalise L. Van Wyngarden
Undergraduate Summer School in Nuclear and Radiochemistry
University of Missouri: $97,043

Computer Science

Sam Khuri
Support SJSU Students by Providing a “Real-World” Experience Working in a Business Start-up
Alum Rock Unified Elementary School District: $50,400

Geology

Kimberly Blisniuk
Re-Evaluating Fault Geometry and Activity within the Left Bend of the Mission Creek Fault
University of Southern California: $50,000

Determining the Distribution of Slip Across the Northern San Andreas fault System: Through Long Term Fault Slip Rates
Department of Interior: $69,623

Mathematics and Statistics

Daniel Brinkman
Solution for Predictive Physical Modeling in CCDTE and Other Thin-Film PV Technologies
Arizona State University: $114,394

Joanne Rossi Becker
UT Dana Center Project of 5th Grade Video Project with SJSURF
University of Texas at Austin: $5,000
<table>
<thead>
<tr>
<th>Name</th>
<th>Project Details</th>
<th>Amount</th>
<th>Funding Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joanne Rossi Becker and Cheryl D. Roddick</td>
<td>Santa Clara Valley Mathematics Project (NCLB14)</td>
<td>$24,224</td>
<td>Regents of the University of California</td>
</tr>
<tr>
<td>Julie S. Spitzer, Jordan Schettler, and Cheryl D. Roddick</td>
<td>Santa Clara Valley Mathematics Project (CSMP - State)</td>
<td>$20,000</td>
<td>Regents of the University of California</td>
</tr>
<tr>
<td>Slobodan Simic and Guangliang Chen</td>
<td>Verizon + CAMCOS Proof of Concept (2018)</td>
<td>$32,940</td>
<td>National Science Foundation</td>
</tr>
<tr>
<td>Sen Chiao, Craig B. Clements, Patrick Hamill, and Alison F.C. Bridger</td>
<td>Center for Applied Atmospheric Research and Education (CAARE)</td>
<td>$2,776</td>
<td>National Science Foundation</td>
</tr>
<tr>
<td>Minghui Diao</td>
<td>Collaborative Research: Ice Supersaturation over the Southern Ocean and Antarctica, and its Role in Climate</td>
<td>$1,890,084</td>
<td>National Science Foundation</td>
</tr>
<tr>
<td>Minghui Diao and Sen Chiao</td>
<td>ROSES-2015/Health and Air Quality Applied Sciences Team</td>
<td>$266,728</td>
<td>National Science Foundation</td>
</tr>
<tr>
<td>Neil Lareau</td>
<td>Boundary Layer Controls on the Shallow-to-Deep Cumulus Transition</td>
<td>$114,784</td>
<td>National Science Foundation</td>
</tr>
<tr>
<td>Craig B. Clements and Minghui Diao</td>
<td>MRI: Acquisition of a Multi-Purpose Cloud Radar</td>
<td>$266,728</td>
<td>National Science Foundation</td>
</tr>
<tr>
<td>Sen Chiao</td>
<td>The NOAA Cooperative Science Center in Atmospheric Sciences and Meteorology</td>
<td>$121,906</td>
<td>Howard University</td>
</tr>
<tr>
<td>Thomas Connolly, Kenneth H. Coale, and Jason G. Smith</td>
<td>CeNCOOS: Long-Term Monitoring of Environmental Conditions in Support of Marine Area Management in Central &amp; Northern CA</td>
<td>$55,000</td>
<td>National Science Foundation</td>
</tr>
<tr>
<td>Ross Clark</td>
<td>North Monterey County High School Habitat Enhancement Project</td>
<td>$85,697</td>
<td>Resource Conservation District of Santa Cruz County</td>
</tr>
<tr>
<td>Colleen Andrea Durkin</td>
<td>Linking Sinking Particle Chemistry &amp; Biology w/ Changes in the Magnitude and Efficiency of Carbon Export into Deep Ocean</td>
<td>$8,200</td>
<td>San Francisco Estuary Institute</td>
</tr>
<tr>
<td>Russell Fairey</td>
<td>SWRCB Agreement Number: 17-045-270</td>
<td>$711,993</td>
<td>California State Water Resources Control Board</td>
</tr>
<tr>
<td>H. Gary Greene and Joseph J. Bizzarro</td>
<td>Biological and Essential Fish Habitats Assessments of Marine Fauna in the Vicinity of the Monterey Bay Aquarium Seawater Intake Pipelines</td>
<td>$300,000</td>
<td>California Department of Fish and Wildlife</td>
</tr>
<tr>
<td>Jonathan Geller</td>
<td>MISP: Molecular Detection and Monitoring of Marine Invasive Species in California</td>
<td>$34,172</td>
<td>Monterey Bay Aquarium Research Institute</td>
</tr>
<tr>
<td>Thomas Connolly, Kenneth H. Coale, and Jonathan Geller</td>
<td>Metagenetic Analysis of Zooplankton of Port Valdez Alaska</td>
<td>$7,866</td>
<td>Prince William Sound Regional Citizens’ Advisory Council</td>
</tr>
</tbody>
</table>
### GRANT AND CONTRACT AWARDS

**FY2017–2018**

<table>
<thead>
<tr>
<th>Contract No.</th>
<th>Institution and Project Details</th>
<th>Funding Amount(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1287</td>
<td>San Francisco Estuary Institute/Aquatic</td>
<td>$424,484</td>
</tr>
<tr>
<td>17-023-270</td>
<td>California State Water Resources Control Board</td>
<td>$1,896,712</td>
</tr>
<tr>
<td>16-058-160</td>
<td>California State Water Resources Control Board</td>
<td>$80,000</td>
</tr>
<tr>
<td>1287</td>
<td>San Francisco Estuary Institute/Aquatic</td>
<td>$424,484</td>
</tr>
<tr>
<td>17-023-270</td>
<td>California State Water Resources Control Board</td>
<td>$1,896,712</td>
</tr>
<tr>
<td>16-058-160</td>
<td>California State Water Resources Control Board</td>
<td>$80,000</td>
</tr>
<tr>
<td>1287</td>
<td>San Francisco Estuary Institute/Aquatic</td>
<td>$424,484</td>
</tr>
<tr>
<td>17-023-270</td>
<td>California State Water Resources Control Board</td>
<td>$1,896,712</td>
</tr>
<tr>
<td>16-058-160</td>
<td>California State Water Resources Control Board</td>
<td>$80,000</td>
</tr>
<tr>
<td>1287</td>
<td>San Francisco Estuary Institute/Aquatic</td>
<td>$424,484</td>
</tr>
<tr>
<td>17-023-270</td>
<td>California State Water Resources Control Board</td>
<td>$1,896,712</td>
</tr>
<tr>
<td>16-058-160</td>
<td>California State Water Resources Control Board</td>
<td>$80,000</td>
</tr>
<tr>
<td>1287</td>
<td>San Francisco Estuary Institute/Aquatic</td>
<td>$424,484</td>
</tr>
<tr>
<td>17-023-270</td>
<td>California State Water Resources Control Board</td>
<td>$1,896,712</td>
</tr>
<tr>
<td>16-058-160</td>
<td>California State Water Resources Control Board</td>
<td>$80,000</td>
</tr>
<tr>
<td>1287</td>
<td>San Francisco Estuary Institute/Aquatic</td>
<td>$424,484</td>
</tr>
<tr>
<td>17-023-270</td>
<td>California State Water Resources Control Board</td>
<td>$1,896,712</td>
</tr>
<tr>
<td>16-058-160</td>
<td>California State Water Resources Control Board</td>
<td>$80,000</td>
</tr>
<tr>
<td>1287</td>
<td>San Francisco Estuary Institute/Aquatic</td>
<td>$424,484</td>
</tr>
<tr>
<td>17-023-270</td>
<td>California State Water Resources Control Board</td>
<td>$1,896,712</td>
</tr>
<tr>
<td>16-058-160</td>
<td>California State Water Resources Control Board</td>
<td>$80,000</td>
</tr>
<tr>
<td>1287</td>
<td>San Francisco Estuary Institute/Aquatic</td>
<td>$424,484</td>
</tr>
<tr>
<td>17-023-270</td>
<td>California State Water Resources Control Board</td>
<td>$1,896,712</td>
</tr>
<tr>
<td>16-058-160</td>
<td>California State Water Resources Control Board</td>
<td>$80,000</td>
</tr>
<tr>
<td>1287</td>
<td>San Francisco Estuary Institute/Aquatic</td>
<td>$424,484</td>
</tr>
<tr>
<td>17-023-270</td>
<td>California State Water Resources Control Board</td>
<td>$1,896,712</td>
</tr>
<tr>
<td>16-058-160</td>
<td>California State Water Resources Control Board</td>
<td>$80,000</td>
</tr>
</tbody>
</table>

**Wesley A. Heim and Autumn L. Bonnema**

- **Contract No:** 1287 - San Francisco Estuary Institute/Aquatic
- **San Francisco Estuary Institute:** $424,484
- **SWRCB Region 6 Discretionary - Agreement #16-058-160**
- **California State Water Resources Control Board:** $80,000

**SFEI Contract - 2018 S&T Bird Eggs Monitoring**

- **San Francisco Estuary Institute:** $10,164

**James Harvey**

- **Estuarine Wetland and Nearshore Ecology Studies along the Pacific Flyway.** United States Geological Survey: $96,998
- **P1775028 - Biohazardous Waste Disposal Services**
- **California Department of Fish and Wildlife - CMSF-BeachCOMBERS Contract**
- **California Marine Sanctuary Foundation:** $13,500
- **COOPERATIVE AGREEMENT: Waterfowl Research Studies in the Suisun Marsh, CA**
- **Department of Interior:** $84,842

**James Harvey and Jonathan M. Prince**

- **Auxiliary General Purpose Oceanographic Research (AGOR) Support Services**
- **Office of Naval Research:** $192,773

**James Harvey and Murray Stein**

- **Research Vessel Use for Monthly Water Sampling**
- **Applied Marine Sciences, Inc.:** $20,000

**Scott L. Hamilton**

- **Solving Impediments to the Co-Culture of Seaweeds and Shellfish**
- **UC San Diego:** $132,084

**Birgitte McDonald**

- **Coll. Res.: At-Sea Experimental Disturbances to Characterize Physiological Plasticity in Diving Northern Elephant Seals**
- **National Science Foundation:** $146,575
- **Large Whale Readiness and Response in Central and Northern California**
- **Department of Commerce:** $91,458
- **Enhanced Stranding Response and a Continued Response Partnership Between the Long Marine Lab and Moss Landing Stranding**
- **UC Santa Cruz:** $26,623

**Timothy P. Stanton**

- **Collaborative Research: Thermodynamic and Dynamic Drivers of the Arctic Sea-Ice Mass Budget at MOSAiC**
- **National Science Foundation:** $952,498

**Alison Stimpert**

- **Project Support for the Southern California Behavioral Response Study: Effects of Naval Sonar on Marine Mammals**
- **Cascadia Research Collective:** $23,178

**Qing Wang and Kenneth H. Coale**

- **Toward Improving Coastal Fog Prediction (C-FOG)**
- **University of Notre Dame:** $600,000

**Nicholas Welschmeyer**

- **DNVGL Envirocleanse Ballast Project**
- **California Maritime Academy:** $140,960

**Nicholas Welschmeyer**

- **CMA -Panasonic Ballast Treatment**
- **University of Notre Dame:** $484,420

**Diana L. Steller**

- **Minimizing Disturbance Impacts by California Vessel Mooring Systems on Living Rhodolith Benthos in Catalina MPAs: an Experimental Assessment**
- **UC San Diego:** $46,803

**Physics and Astronomy**

**Alejandro L. Garcia**

- **Stochastic and Hybrid Models and Algorithms for Fluids**
- **Lawrence Berkeley National Laboratories:** $107,274

**Michael J. Kaufman**

- **A GREAT Map in M20: [[O I] and [C II]] Emission From a Young Star Forming Region**
- **Universities Space Research Association:** $36,700

**Using the Astronomical Infrared Bands as Calibrated Probes of Astrophysical Conditions with the NASA AMES PAH IR**
- **NASA:** $269,279
## GRANT AND CONTRACT AWARDS
### FY2017–2018

### COLLEGE OF SOCIAL SCIENCES

#### Environmental Studies

**Bruce Olszewski**  
**Environmental Careers**  
West Valley-Mission Community College  
District: $30,000  
TAC Projects  
Santa Clara County: $5,000  
Environmental Careers  
West Valley-Mission Community College  
District: $20,000  

**Bruce Olszewski and Lynne Trulio**  
**SJSU Move Out: Illegal Dumping Prevention**  
City of San Jose: $10,000  

#### History

**Margo McBane**  
“Cannery Workers, Cannery Lives”  
California Humanities: $5,000  

#### Political Science

**Frances L. Edwards**  
**ICS Training for Field Level TTT Workshops**  
The National Academy of Sciences: $150,000  

**Garrick Percival**  
**IPACE Internship Program**  
Jim Beall’s Office: $2,961  

#### Psychology

**Vernol Battiste**  
**OPL Study Cost**  
CSU Long Beach Foundation: $31,056  

**Dorrit Billman**  
**Training for Generalizable Skills & Knowledge: Integrating Principles and Procedures**  
NASA: $200,000  

### University Programs

#### Associated Students

**Heather Vise**  
**CCAMPIS - Child Care Access Means Parents in School**  
Department of Education: $256,155  

#### Office of Research

**James L. Wayman**  
**Consultancy Support to the NCSC Biometrics Test Programme**  
National Cyber Security Center: $62,438  
Consultancy Support to the NCSC Biometrics Test Programme  
National Cyber Security Center: $59,258  

#### Provost Office

**Stacy Gleixner**  
**Transforming College Teaching: Statewide Implementation of the Faculty Learning Program to Improve STEM Undergraduate**  
UC Berkeley: $66,618  

#### Student Academic Success Services

**Patricia R. Backer**  
**Project Succeed: 2013 Title III Strengthening Institutions Program**  
Department of Education: $449,902  

**Maria E. Cruz**  
**The Ronald E. McNair Postbaccalaureate Achievement Program**  
Department of Education: $256,547  

#### University Library

**Kathy Blackmer and Emily Chan**  
**The Ronald E. McNair Postbaccalaureate Before Silicon Valley: Revealing the Race/Ethnic Histories of SJSU and Santa Clara Region**  
CALIFA: $9,992  

#### VP for Student Services

**Debra Griffith**  
**Walter S. Johnson Foundation Grant**  
CSU, Monterey Bay: $82,000
## STATEMENT OF ACTIVITIES
### FY2017–2018

### REVENUE & SUPPORT

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Contracts and Grants</td>
<td>$23,963,674</td>
</tr>
<tr>
<td>State Contracts and Grants</td>
<td>$7,488,104</td>
</tr>
<tr>
<td>Other Contracts and Grants</td>
<td>$6,733,734</td>
</tr>
<tr>
<td>Indirect Cost Recovery–C&amp;G</td>
<td>$7,883,869</td>
</tr>
<tr>
<td>Administrative and Program Fees</td>
<td>$587,048</td>
</tr>
<tr>
<td>Gifts</td>
<td>$756,539</td>
</tr>
<tr>
<td>Investment Income</td>
<td>$1,158,964</td>
</tr>
<tr>
<td>Other Revenue and Support</td>
<td>$6,419,789</td>
</tr>
<tr>
<td><strong>TOTAL REVENUE</strong></td>
<td><strong>$54,991,721</strong></td>
</tr>
</tbody>
</table>

### EXPENSES

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsored Programs</td>
<td>$37,460,825</td>
</tr>
<tr>
<td>Board Designated Programs</td>
<td>$1,536,137</td>
</tr>
<tr>
<td>Campus Organization Expenditures</td>
<td>$9,135,561</td>
</tr>
<tr>
<td>Support Activities-Management and General</td>
<td>$8,218,190</td>
</tr>
<tr>
<td>Other Expenses and Transfers</td>
<td>$780,000</td>
</tr>
<tr>
<td><strong>TOTAL EXPENSES</strong></td>
<td><strong>$57,130,713</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Position - beginning of year</td>
<td>$17,819,675</td>
</tr>
<tr>
<td>Net Position - end of year</td>
<td>$16,232,271</td>
</tr>
</tbody>
</table>

### BY THE NUMBERS

- **Ranked #2 out of 23 CSU campuses in terms of extramurally funded sponsored grants and contracts (San Diego State is first).**
- **Provided $1.1 million** in indirect revenue and strategic investment into the campus community.
- **Submitted 290 proposals** valued at more than $94 million.
- **Received 244 awards** valued at more than $54 million.
- **Managed more than 300 grants and contracts.**
- **Employed 433 students** on sponsored research projects.
- **Engaged 176 faculty members** on sponsored grants or research projects.
FROM THE SJSU ADMINISTRATION

Joan Ficke
Board President, SJSU Research Foundation
Interim Provost and Senior Vice President for Academic Affairs, SJSU

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

Charlie Faas
Board Treasurer, SJSU Research Foundation
Vice President of Administration and Finance/CFO, SJSU

FROM THE SJSU FACULTY

Marc d’Alarcao
Interim Dean, College of Graduate Studies

Amy D’Andrade
Professor, College of Health and Human Sciences

James Harvey
Director, Moss Landing Marine Laboratories

Walter R. Jacobs
Dean, College of Social Sciences

Michael Kaufman
Dean, College of Science

Essam Marouf
Associate Dean, Graduate Studies and Research, College of Engineering

Matthew Spangler
Professor, Department of Communication Studies, College of Social Sciences

FROM THE SJSU STUDENT BODY

Chloe Gore
Meteorology & Climate Science, College of Science

FROM THE COMMUNITY

Daniel Harris
Senior Vice President, Civic Entertainment Group

William F. Wiles
CEO, WFW International

FROM THE SJSU RESEARCH FOUNDATION

Rajnesh Prasad
Board Secretary, SJSU Research Foundation
Executive Director, SJSU Research Foundation

CORPORATE COUNSEL

Nancy McGlamery
Adler & Colvin

EXECUTIVE DIRECTOR

Rajnesh Prasad
SJSU Research Foundation

EDITOR

Marilyn Dion
SJSU Research Foundation

CONTRIBUTORS

Melissa Anderson
San José State University

Robert Bain
San José State University

Peter Caravalho
’97 Graphic Design, ’MFA Creative Writing
San José State University

Michelle Frey
San José State University

Alyssa Gapuz
’14 Kinesiology
SJSU Research Foundation

Saroyan Humphrey
saroyanhumphrey.com

James Knutila
jamesknutila.com

Lavanyalakshmi Lokadolalu
’20 MS Engineering Management
SJSU Research Foundation

Yanni Ma
’20 BFA Graphic Design
San José State University

Bonnie Rae Mills
bonnierae millsphoto.com

Brenda Swann
SJSU Research Foundation

For more information:
sjsu.edu/researchfoundation/annualreport

COVER: Mina Nguyen, ’20 Chemistry with a concentration in Biochemistry, studies purified biocatalyst (enzyme) in the lab of Lionel Cheruzel.
Dalton Behringer, '19 MS Meteorology, atop Duncan Hall with an OTT Parsivel2 Disdrometer, which can determine the full raindrop size distribution, rainfall rate, accumulated rainfall, hydrometeor type, and the scattering properties of drops (to simulate radar variables). This information is used to gain information about the microphysical properties of rainfall.