COVER: Holly Bowers, Research Faculty with SJSU Moss Landing Marine Labs, is using a handheld qPCR instrument that can detect DNA from target HAB species. More on page 16.

THIS PAGE: SJSU Research Foundation Early Career Investigator Award winner and Assistant Professor Ellen Middaugh interacts with students in her Sweeney Hall classroom on September 26, 2018. More on page 21. (Photo: Jim Gensheimer)
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The SJSU Research Foundation is a non-profit 501(c)3 California corporation that operates solely for the benefit of San José State University. It is an “auxiliary” of San José State University.

Auxiliary organizations at the California State University (CSU) are non-profit organizations and separate legal entities. They operate pursuant to written operating agreement with the CSU Board of Trustees, have separate governing boards with close connections to a campus and follow all legal and policy rules established by the CSU system and the respective campus administration. Auxiliary organizations were created to perform essential functions associated with a postsecondary educational institution, which under California law were difficult, cumbersome or legally restricted for the university and were not supported by state funding.

The entire team at the SJSU Research Foundation continues to be inspired by the endeavors and accomplishments of SJSU researchers. We are committed to supporting their efforts through our dedication to providing streamlined, robust, and efficient research administration systems and services.

ABOVE: Students are experiencing models of different types of galaxies thanks to Thomas Madura, SJSU Research Foundation Early Career Investigator Award winner and Assistant Professor of Physics and Astronomy at SJSU. Madura leads a $1.5 million NSF Innovative Technology Experiences for Students and Teachers grant that uses 3D printing technologies to help motivate students with blindness/visual impairments to pursue a higher education and career in a STEM (Science, Technology, Engineering, Mathematics) field. See more on page 21.
The 2019-20 fiscal year represented a period of contrast for the San José State University Research Foundation. More than $56 million in research grants were awarded to SJSU faculty and project staff during the period - then near the end of the year, continuing that work in the face of a global pandemic presented unforeseen challenges for everyone involved.

No one could have predicted the impact and length of the barriers to continuing research activity during COVID-19 office and campus access restrictions. Research administration was forced to adapt along with the rest of our community, but with teamwork and flexibility the principal investigators, staff, and students have continued to pursue their research across a broad range of academic disciplines.

We continue to engage more faculty each year in grant applications and increase student involvement in awarded projects. As we embark on a phase of ambitious growth for the SJSU research and innovation enterprise, the Research Foundation is focused on building scale for increased sponsored program activity and strengthening our relationships with stakeholders on and off campus. It is through these programs and relationships that SJSU researchers contribute to our communities with work that improves lives and serves society.

Through this annual report we recognize and congratulate the SJSU faculty and students whose important work has wide-ranging impact at the local, national and international levels. While measuring the numbers is an important exercise, the profiles contained in this annual report give a face and a story to the millions of dollars infused into the SJSU research enterprise and highlight the importance and impact of these research projects.

We hope you enjoy learning about their work as much as we enjoy helping them make it happen.
NUMBERS
SJSU Research Foundation numbers for Fiscal Year 2019-20, which ended on June 30th, 2020

232 Awards received valued at more than $56 Million

303 Proposals submitted valued at more than $100 Million (214 faculty)

$50.6 Million Dollars in research expenditures across 453 active projects

154 SJSU Faculty Engaged in sponsored research projects, grants or contracts managed by the Research Foundation

275 SJSU Students Engaged in sponsored research projects, grants or contracts managed by the Research Foundation

65 SJSU Project Staff Engaged in sponsored research projects, grants or contracts managed by the Research Foundation

$2.1 Million Dollars Returned to San José State University in indirect revenue and strategic investment to the campus (50% increase over prior year)
Research and Development (R&D) expenditures at selected institutions of higher education have steadily increased over the past 3 years. From FY2018-19 to FY2019-20, research expenditures increased 5.7%, with a 6.3% increase in Federal dollars.


Research expenditures at SJSU increased from $48.9M in FY2018-19 to $50.6M in FY2019-20. This represents a 3.4% increase in expenditures on sponsored programs for this year, and a trend of an approximately 3.3% increase in research expenditures for each of the prior three years. This was also accompanied by a 7% increase in the number of personnel engaged in research, which increased from 747 to 803 in FY2019-20.
Karen Philbrick and Hilary Nixon  
Mineta Transportation Institute

On the first day of Karen Philbrick’s doctoral program in psychology, a professor walked into the classroom and asked if anyone was interested in joining a large-scale project as a research assistant. Philbrick tentatively raised a hand.

She soon found herself in Richmond, Virginia, working with locomotive engineers and conductors at a Class I freight rail carrier. Her assignment: collect data on sleep hygiene and the impact of scheduling on safety. “As I sat in a yard office in steel-toed boots at 3 a.m., collecting data,” Philbrick says, “I realized I was hooked.” Transportation research held the promise of affecting change on a broad-scale, she discovered, and the field quickly became her focus.

Today, as executive director at the Mineta Transportation Institute at SJSU (MTI), she leads an organization with significant impact. MTI’s mission is “to increase mobility for all, by improving the safety, efficiency, accessibility, and convenience of our nation’s transportation system.” To that end, MTI leads two multi-university consortiums, securing over 23.6 million dollars in state and federal funding over the last five years and launching 196 research projects. MTI’s research areas include active transportation, planning and policy, security and counterterrorism, sustainable transportation, and transit & passenger rail. The institute’s critical research consists of the Database on Terrorist and Serious Criminal Attacks against Public Surface Transportation, used by transit officials, policymakers, and the Department of Homeland Security to identify transportation threats and attack trends.

MTI leads a multitude of education and workforce development programs, with the goal of developing a new cohort of transportation professionals ready to lead a more diverse, inclusive, and equitable transportation industry. One such project delivers elementary, middle and high-school students programs to stimulate interest in careers in transportation.

At the university level, all MTI-funded research projects involve university student research, offering real-world problem-solving opportunities to hundreds of students. “Developing a transportation workforce with the skills needed to plan, design, deploy, operate and maintain transportation systems that may not even exist today presents a unique and exciting challenge,” Philbrick says. “Educators must engage with industry leaders on an ongoing basis to identify emerging career pathways, continually review and revise their offerings, find creative ways to attract potential entrants, and not only provide students with the skills they need today but inspire them to lead the way into the future.”
Cassandra Paul and Tammie Visintainer
Transforming Undergraduate Teaching and Learning

The first two years of college can be a challenging time for many undergraduates. For first-generation students and those from underrepresented racial and ethnic groups, it can be especially challenging. A new project, led by Dr. Cassandra Paul, Associate Professor of Physics and Astronomy, and Dr. Tammie Visintainer, Assistant Professor of Teacher/Science Education, seeks to support these undergraduate students’ sense of belonging and ultimately increase success, retention and graduation rates.

Over the course of five years, the project will explore ways to transform the teaching and learning experiences of introductory science courses by cultivating a culture of community development, sense of belonging, and academic inclusivity. To establish a foundation for research and program activities, the first year will focus on understanding students’ science experiences. SJSU students will be involved throughout the process. Undergraduate students will be selected to serve on the advisory board, and students from the Science Education MA program will be central members of the project research team.

The project was inspired by Dr. Paul’s work in physics course reform and Dr. Visintainer’s research exploring intersections of race, identity, and learning in science education. Dr. Paul worked with innovative approaches to introductory physics course design as part of a research and teaching team at the University of California, Davis. She brought this expertise with her to SJSU and adapted the approach to radically transform physics courses. Dr. Visintainer engaged with issues of equity in science education during her doctoral program at the University of California, Berkeley, where she explored the science experiences of high school students of color and first-generation undergraduate students.

“SJSU students will be involved throughout the process.”
- Cassandra Paul and Tammie Visintainer
Assistant Professor, Physics & Astronomy with the College of Science
Assistant Professor, Teacher Education with the Lurie College of Education

FROM LEFT: Cassandra Paul & Tammie Visintainer
BELOW: David (DJ) Soriano in his SJSU stole, which signifies him as “a first-generation, Latinx, LGBTQ, STEM major” and a “proud nerd.”
Over the past 20 years, the process of conducting and sharing research has been transformed by new technologies and increasingly democratic models. Emily Chan, Associate Dean for Research & Scholarship at SJSU, believes that academic libraries are well-positioned to meet faculty’s evolving needs. Chan believes libraries can strengthen their ability to support research in all stages, from planning and publishing, to preserving and discovery.

Chan has been active in the area of scholarly communication, working to develop research programs that can make a difference. In August 2019, SJSU and Sacramento State University were awarded an Institute of Museum and Library Services National Forum grant to assess scholarly communication programs at M1 public institutions. The project involved librarian focus groups, campus stakeholder interviews, and discussions between librarians, campus stakeholders, and other experts at the virtual Scholarly Communication Assessment Forum in May 2020.

Considering the input from these wide user groups, Chan states: “We hope to create flexible rubrics that academic libraries can utilize in measuring and reporting their successes in meeting local campus scholarly communication needs. Ultimately, this will help libraries demonstrate their expertise and overall value to the academic institution.”

Chan sees this work as a benefit to not only academic researchers, but everyone in the campus community — and beyond. “Everyone is a content creator today,” Chan says. “Understanding your rights, responsibilities, and the parameters of what and how you can share and consume media and information is more important than ever. As libraries formalize and assess their activities in this arena, devising common quantitative and qualitative criteria that all libraries can use will be helpful.”

“Everyone is a content creator today.”

- Emily Chan
  Associate Dean for Research & Scholarship,
  Dr. Martin Luther King, Jr. Library
Selena Anderson, professor of fiction and literature at SJSU, comes from a family of readers. “Everyone valued books,” she says. “My grandmother was a librarian, and she’d read everything — even the bible cover to cover, three times that I know of. I wanted to read like her.”

From this love for reading, writing was a natural extension. Anderson’s stories have appeared in Oxford American, BOMB and American Short Fiction and reprinted in Best American Short Stories and elsewhere. “I write stories about people who want to win,” she says. “My characters are hardly ever passive, especially in situations where they lack control. They are often pushed to a point of taking a big risk. That’s when the world around them peels back and reveals itself in odd ways.”

As director of the local arts grant-supported Center for Literary Arts, Anderson shares her passion for reading and writing with the San José community. The program offers workshops that serve seniors, youth who’ve experienced housing insecurity and general community members who are interested in writing fiction, poetry, or nonfiction. The series has drawn a number of notable speakers, including award-winning authors Viet Thanh Nguyen, Tommy Orange, Paul Beatty, Carmen Maria Machado and Naomi Shihab Nye.

SJSU students are deeply involved in the Center for Literary Arts. “I have a small and exceptionally dedicated team of student assistants who help present these readings, as well as the book club, craft lecture series, writing workshops, and growing social media presence. They show such promise and will go on to graduate school and work in arts administration and publishing. They’ll write too. I’m really proud of the work we do.”

“I have a small and exceptionally dedicated team of student assistants who help present these readings, as well as the book club, craft lecture series, writing workshops, and growing social media presence. They show such promise and will go on to graduate school and work in arts administration and publishing. They’ll write too. I’m really proud of the work we do.”

- Selena Anderson
Creative Writing Assistant Professor, English
Existing research on trans and genderqueer (TGQ) young people tends to focus on the negative experiences they may face— their deficits, their struggles, their pain. Robert Marx, assistant professor of education at SJSU, found it familiar emotional territory. “Growing up a queer, Jewish person in the American South,” he says, “I was constantly bombarded with messages that I was wrong, immoral, or strange.”

Marx entered academia determined to create research that told a more complete story: “Research that centers queer youth as the authors of their own stories,” Marx says, “and positions them as gifted, complex people with strength and hope.” Marx’s current project, The Trans Resilience Project: Understanding Trans Youth Resilience in Communities of Color, is a partnership with undergraduate student Frank J. Peña that aims to do just that. “Our research explores the sources of strength and support TGQ youth of color find in their families, schools, and communities,” Marx says, “hoping to both highlight the many ways in which TGQ youth of color are thriving in a world not set up for their success and to provide recommendations for how youth-serving organizations, teachers, and parents can best support them.”

A manuscript is currently in progress for an academic audience. “In the future, we hope to turn these findings into user-friendly, accessible resources for those who want to support, love, or work with TGQ youth of color: infographics and easily shared documents to distribute to schools, non-profits, clinicians, and family resource centers that draw on our findings to offer practical suggestions for offering support to TGQ youth of color.”

The work would not be possible without SJSU student Frank J. Peña. “To the foundation of the research, he brings 10 years of experience working with TGQ youth, as well as his lived experience as a transman of color. In addition, he was invaluable in the recruitment of participants and conducting and coding interviews.” As Frank himself says, “it’s incredibly validating and important to finally see research that reflects and is informed by my own lived identity.”

“It’s incredibly validating and important to finally see research that reflects and is informed by my own lived identity.”

-Frank Peña ’21 Sociology
Wei-Chien Lee
Improving the Mental Health of all San José State University Students

Each year, more than 3,000 SJSU students, or about 10 percent of the student population, report that they have seriously considered suicide. Surveys also reveal that many more students have experienced depression, anxiety or stress — significantly impacting their learning, relationships and overall health. The Garrett Lee Smith Campus Suicide Prevention Grant, a program led by clinical psychologist Dr. Wei-Chien Lee, works to improve this picture of SJSU student mental health.

The grant supports a range of training programs, community engagement and outreach. Programs include mental health and substance use screenings, peer outreach, promotion of the National Suicide Prevention Lifeline and assessments of current campus suicide prevention and interventions. In every aspect of the work, SJSU students are integral. “Currently we have 22 students working on this project,” Lee says. “They have helped to provide outreach, inform campus, collect information and provide presentations on mental health issues.”

The program is in the final year of a three-year run. “10,000 people, 10,000 hopes is our end goal,” Lee says, “to create a campus full of people who have information, are aware of resources and are ready to help people who might have been experiencing mental health issues.” Many life events and mentors have inspired Lee throughout her career, but nothing inspires her more than the students she works with. “I could spend 30 days just sharing with you how amazing our students are,” Lee says, “and how much I have enjoyed supporting each of them to thrive, learn to trust themselves and know how wonderful and capable they are. I love seeing students’ smiles and I am grateful that I always received hugs from students when I walked through campus.”

“10,000 people, 10,000 hopes is our end goal,”

- Wei-Chien Lee
Counseling & Psychological Services

IF YOU ARE IN AN SJSU CLASS OF 50 PEOPLE, WITHIN THE LAST 12 MONTHS

<table>
<thead>
<tr>
<th></th>
<th>Of them had seriously considered suicide</th>
<th>Felt things were hopeless</th>
<th>Felt exhausted (not from physical activities)</th>
<th>Felt overwhelmed by all you have to do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Of them had attempted suicide</td>
<td>6</td>
<td>25</td>
<td>40</td>
<td>41</td>
</tr>
<tr>
<td>Of them had intentionally injured themselves</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What Can You do? Share the following information with all your students and community members:
National lifeline: 800-273-8255 National crisis text line: 741741
SJSU Counseling and Psychological Services (CAPS) 408-924-5910
“2018 Spring American College Health Association-National College Health Assessment” (or “2018 Spring ACHA-NCHA”)
The Ronald E. McNair Postbaccalaureate Achievement Program helps first-generation, low-income and underrepresented students develop research and apply to Ph.D. programs across the nation. The program has served more than 300 SJSU students over 25 years at SJSU; this success is due in large part to the passion of leaders like Dr. Maria Cruz, Director of the McNair program since 2017. Dr. Cruz’s career is a model for a McNair scholar. A descendent of the Wixáritari (Huichol indigenous Mexican Nation), she is the first in her family to graduate from college and the first to receive a Ph.D. Today, as a socio-cultural anthropologist at SJSU, her research explores the Testimonio Oral Tradition and History (Vansina 1985; Menchaca 2001) of both women and men who identify as first-generation Chic anx, Mexican American, or Indigenous and their experience as college students in the U.S.-Mexico Borderlands.

By staying active in her research, Dr. Cruz is able to stay abreast of the research world and better guide students to finish their work and continue on to graduate school. “I am dedicated to helping all of our McNair Scholars create and develop groundbreaking research so that they have the confidence to apply to Ph.D. Programs across the nation,” she says.

“They are also the first in their families to go to college but are also the first to go on to higher education and become professors in their prospective fields such as anthropology, biomedical, sociology, psychology, etc.,” Cruz says. “Our students have benefited by reaching their goals and dreams of becoming professors, or are leaders in local communities or the private sector, and are now mentors themselves.”

“Our students have benefited by reaching their goals and dreams of becoming professors, or are leaders in local communities or the private sector, and are now mentors themselves.”

-Maria Cruz
Aspire-McNair Director, Lecturer for Chicana Chicano Studies

TOP: Director Aspire-McNair Scholars Programs, Lecturer Mexican Studies, Chicana and Chicano Studies with the College of Social Sciences
ABOVE: The McNair Scholars 2018 Cohort.
SJSU’s Title IV-E Child Welfare Program has developed an advanced course that allows students to integrate social work theory, knowledge, skills, and values in simulated scenarios.

“I am very excited about this child welfare simulation training and how it will prepare us for opportunities to use simulation in other aspects of our curriculum,” says Dr. Peter Lee, Director of the School of Social Work.

In collaboration with the Valley Foundation School of Nursing, Lee, along with Pnina Green, Title IV-E Project Coordinator, Professor Meekyung Han, Professor Coleen Kohtz, Professor James Ramoni, and Professor Barbara Watkins, successfully turned the pilot seminar from the 2017-2018 academic year into an official course.

“The two-and-a-half-hour session of each simulation exercise allows each student to participate in the role of ‘social worker’ in a scene,” explains Han.

“Simulation training allows students preparing for professional child welfare social work a safe space to practice their clinical case management skills through real-life child welfare case examples,” adds Green, “And to receive immediate constructive feedback from facilitators to apply in their field practice.”

The course is part of the School’s two and three-year Title IV-E programs. After graduation, students go on to apply their skills and serve communities by working for public county child welfare services.
Holly Bowers, Ross Clark, Kevin O’Connor
Evaluating Agricultural Management Practices Benefiting the Monterey Bay

In the central coast region of California, farm-derived nutrient runoff is a widely-known problem. In Monterey Bay, runoff contributes to the growth of offshore algal blooms, which produce harmful effects on virtually all marine life. Hundreds of millions of dollars have been spent in attempts to address this issue, but how effective are these investments? How can they be made more efficient, and implemented more widely to restore our watersheds?

At Moss Landing Marine Laboratories, a team of SJSU scientists, including Ross Clark, Dr. Holly Bowers and Kevin O’Connor, seek to find and implement solutions. A new research grant strengthens a partnership between the Central Coast Wetlands Group and the Environmental Biotechnology Lab, combining systems to reduce agricultural nutrient run-off with expertise in harmful algae monitoring and detection capabilities.

The team hopes to accomplish several ambitious goals. By expanding watershed monitoring systems and estimating how much removal is needed to reduce algae in Monterey Bay, they will demonstrate exactly how farm runoff treatment systems reduce nutrient discharges into waterways. Developing recommendations for nutrient management practices, and working with industry, coastal resource managers and the state to integrate findings into regulations and industry practices, they will create a blueprint for water quality treatment systems across the agricultural watersheds of Monterey Bay.

SJSU students studying at the Moss Landing Marine Laboratories working with the team are given an extraordinary opportunity to take part in the research — an arrangement that is mutually beneficial. “By hiring SJSU graduate students,” says Kevin O’Connor, “we are able to support high quality graduate education and scientific research, while benefiting from the scientific findings that result from these students’ research.”

“By hiring SJSU graduate students, we are able to support high quality graduate education and scientific research, while benefiting from the scientific findings that result from these students’ research.”

-Kevin O’Connor
Program Manager, SJSU Moss Landing Marine Labs
Miri VanHoven
The Effect of Sleep on Neural Circuit Connections.

Miri VanHoven, Associate Dean of Research and Professor of Biological Sciences, has long been fascinated by the tiny cells that power our ability to learn and remember. In these small cells, she sees the potential for research that can ultimately lead to a better understanding of neurological disorders, such as autism, schizophrenia and dementia.

A new project, “The Effect of Sleep on Neural Circuit Connections,” explores these types of applications, using the microscopic round worm C. elegans, whose nervous system is similar to that of humans at the cellular and molecular levels. “We use a combination of molecular, genetic, behavioral and imaging experiments to understand how synapses form,” she says, “and how they are affected by sleep.”

This research has yielded several new discoveries. “We have collaborated with Dr. Noelle L’Etoile’s laboratory at UCSF to discover that synaptic structures are altered by sleep in C. elegans,” she says. “We hope to further unravel the molecular pathways by which these two processes occur, so that we can make inferences into human physiology.”

SJSU research students play an integral role in all of her laboratory’s experiments. “These experiences help them to become the next generation of scientists and medical professionals,” she says, “and many of my students have gone on to top graduate, medical and pharmacy schools, as well as careers in biotechnology.”

“potential for research that can ultimately lead to a better understanding of neurological disorders, such as autism, schizophrenia, and dementia.”

– Miri VanHoven, Associate Dean of Research and Professor of Biological Sciences, College of Science
Wilson Yuan
San José Neighborhood Crime Survey

Many crimes and victimization experiences go unreported in immigrant and marginalized communities. How can we better the relationship between these communities and the criminal justice system, and other resources? Wilson Yuan’s work explores how an immigrant’s status is associated with victimization and how immigrants of different racial and ethnic groups mobilize formal and informal resources in response to crime.

With his current project, “San José Neighborhood Crime Survey: An Examination of the Relationship between Immigration and Victimization,” Yuan examines different types of victimization — including domestic violence, assault, and burglary — across subgroups of Latino and Asian immigrants.

Wilson’s research has yielded many concrete contributions to his field. “I have published eight articles in top journals in Criminal Justice and Criminology in the past three years,” he says, as well as “ongoing research projects that will produce several high impact journal articles, book chapters, and conference presentations.”

Both undergraduate and graduate SJSU students are heavily involved in Wilson’s ongoing research. Yuan and his undergraduate and graduate students are launching an extensive mixed-methods city-level study focused on San José, California. “Through my recently funded grant by the National Institute of Justice,” he says, “Several students will be hired to conduct qualitative interviews among crime victims and apply methodologies learned in class to real-life examples.”

“Undergraduate and graduate students are launching an extensive mixed-methods city-level study focused on San José, California.”

- Wilson Yuan
Assistant Professor, Justice Studies Department with the College of Social Sciences
SELF-SUPPORT PROGRAMS

In addition to sponsored program funding, SJSU Research Foundation also operates several self-support programs related to the Student Research, Scholarship, and Creative Activity (RSCA) activities.

Timpany Center
Physical Health and Wellness

The Timpany Center is a non-profit educational and therapeutic center. Operated as a non-profit partnership with Santa Clara County and the SJSU Research Foundation since 2009, the center promotes physical health and wellness in individuals with disabilities, obesity and advanced age.

International House
An Intercultural Home

The International House offers an intercultural home to approximately 70 U.S. and international students attending San José State University. It was founded by alumni of SJSU, Alan and Phyllis Simpkins, who bought, remodeled, and furnished the building in 1978.

International Gateways
English Language Programs

Since the early 1980s, International Gateways has partnered with the SJSU Research Foundation to offer high-quality English language programs, cultural experiences, and support services to international students, professionals, and visitors who want to develop communication skills and strategies for success in a global community.

RIGHT: International Gateways students participating in the yearly Silicon Valley Innovation Challenge.
35TH ANNUAL CSU STUDENT RESEARCH COMPETITION

The California State University Student Research Competition is held annually to promote excellence in undergraduate and graduate scholarly research and creative activity. It recognizes outstanding student accomplishments from throughout the twenty-three campuses of the CSU. Each year San José State University holds its own Student Research, Scholarship, and Creative Activity (RSCA) Competition, and the finalists go on to represent SJSU at the CSU-wide event. One of SJSU’s finalists, Gurpreet Klar, received second place at the 34th Annual CSU Student Research Competition hosted virtually by Cal State East Bay (CSUEB) in 2020.

Gurpreet Klar
23 Chemical Engineering
Second Prize
“Development of a microfluidic approach for rapid and continuous detection of pathogens in food and water samples”
Mentors: Dr. Liat Rosenfeld, Dr. Crystal Han
Department of Chemical Engineering
Department of Mechanical Engineering

2021 SJSU STUDENT RESEARCH, SCHOLARSHIP, AND CREATIVE ACTIVITY (RSCA) COMPETITION FINALIST

These eight students will represent SJSU at the 35th Annual CSU Student Research Competition:

Victor Lui
Faculty Mentors: Younghee Park and Nima Karimian
Computer Engineering, Charles W. Davidson College of Engineering
“Secure Biometric Key Generation Scheme Using ECG”

Terri Lee
Faculty Mentor: Yu Chen
Information and Systems Technology, Lucas College and Graduate School of Business
“Learning Artificial Intelligence with a Chatbot: A Study Among Business Undergraduate Students”

Aeowynn Coakley
Faculty Mentor: Frank Huynh
Biological Sciences, College of Science
“Novel Roles of Sirtuin 4 in Testes Revealed Using an Unbiased Bioinformatics Approach”

Muhammad Khan
Faculty Mentor: Alberto A. Rascón Jr.
Biological Sciences, College of Science
“Mutagenesis and Recombinant Expression of Aedes aegypti Serine Protease I (AaSPI), a Possible N-Terminal Nucleophile (Ntn) Hydrolase”

Nicholas Roubineau
Faculty Mentor: Madalyn Radlauer
Chemistry, College of Science
“Copolymerization of Styrene and Alkene-Modified Pincer Ligands to Support Iridium Catalysts for Alkane Dehydrogenation”

Hung Tong
Faculty Mentor: Cristina Tortora
Mathematics and Statistics, College of Science
“A Mixture of Multivariate Contaminated Normal Distributions with Missing Information”

Tomasz Lewicki
Faculty Mentor: Kaikai Liu
Computer Engineering, Charles W. Davidson College of Engineering
“Autonomous Drones for Wildfire Detection”

Alaysia Palmer
Faculty Mentor: Cara Maffini
Child and Adolescent Development, Connie L. Lurie College of Education
“Growing Up with a Sibling with Autism: College Students’ Perspectives”

Gurpreet Klar
23 Chemical Engineering
Second Prize
“Development of a microfluidic approach for rapid and continuous detection of pathogens in food and water samples”
Mentors: Dr. Liat Rosenfeld, Dr. Crystal Han
Department of Chemical Engineering
Department of Mechanical Engineering
Dr. Ellen Middaugh’s work is guided by a very timely question: How do youth become informed, ethical and effective advocates for themselves and their communities in the digital age?

Middaugh, Assistant Professor of Child & Adolescent Development SJSU, became interested in civic engagement from an early age. “Growing up in Charleston, South Carolina, I was surrounded by an enormous amount of racial and gender inequality and saw how it was embedded in our institutions,” she says. “I didn’t have language to talk about this or a sense that I could do anything about it. My own civic education didn’t give me that.”

Today, young people have access to a far more dynamic and fluid public sphere.

Middaugh’s research explores the ways in which we learn about, discuss and exercise public voice on civic issues, and how we can inform a new approach to civic education.

“I have been fortunate to be able to share this work with teachers and collaborate with them to change their classroom practices to align with engagement with our democracy as it exists today,” she says. “In the future, I hope to accomplish the development of a comprehensive curriculum that can be used by teachers in any context to support youth to be informed, empowered, and ethical civic actors.”

A theoretical and computational astrophysicist, Thomas Madura specializes in the study of massive stars, specifically their late-stage evolution and how these stars lose mass before exploding as powerful supernovae.

Madura, Assistant Professor of Physics and Astronomy at SJSU, leads a $1.5 million NSF Innovative Technology Experiences for Students and Teachers grant that uses 3D printing technologies to help motivate students with blindness/visual impairments to pursue a higher education and career in a STEM (Science, Technology, Engineering, Mathematics) field.

This idea for the project began at NASA’s Goddard Space Flight Center, where Madura worked with colleague Ken Silberman. “Ken is an engineer and registered patent attorney who is completely blind,” Madura says. “His enthusiasm and passion helped motivate me to pursue these ideas, which eventually culminated in our recent NSF grant award.”

“I hope that my work will help inspire all students to pursue an education and career in STEM,” Madura says. “I also hope that my work will inspire other researchers and educators to make their work more accessible, especially to individuals with disabilities.”

SJSU RESEARCH FOUNDATION EARLY CAREER INVESTIGATOR AWARD

2020 ECIA Winners: Ellen Middaugh and Thomas Madura
STATEMENT OF ACTIVITIES: FISCAL YEAR ENDING 06/30/2020

<table>
<thead>
<tr>
<th>REVENUE AND SUPPORT</th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>Federal Contracts and Grants</td>
<td>$25,124,366</td>
</tr>
<tr>
<td>State Contracts and Grants</td>
<td>$9,805,350</td>
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<tr>
<td>Other Contracts and Grants</td>
<td>$7,322,368</td>
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<tr>
<td>Indirect Cost Recovery-C&amp;G</td>
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<td>Other Revenue and Support</td>
<td>$742,989</td>
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<tr>
<td><strong>Total Revenue</strong></td>
<td><strong>$58,060,953</strong></td>
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<table>
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<tr>
<th>EXPENSES</th>
<th>Amount</th>
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<td>Program Activities</td>
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<tr>
<td>Sponsored Programs</td>
<td>$41,751,641</td>
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<td>Board Designated Programs</td>
<td>$1,297,857</td>
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<td>Campus Organization Expenditures</td>
<td>$5,574,648</td>
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<tr>
<td>Support Activities-Management and General</td>
<td>$8,596,282</td>
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<td>Transfers to SJSU and Tower Foundation</td>
<td>$1,000,000</td>
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<tr>
<td><strong>Total Expenses</strong></td>
<td><strong>$58,220,428</strong></td>
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<th>CHANGE IN NET POSITION</th>
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<tr>
<td>Net Position at beginning of year</td>
<td>$16,954,278</td>
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<tr>
<td>Net Position at end of year</td>
<td>$16,794,803</td>
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<td><strong>Change in Net Position</strong></td>
<td><strong>$(159,475)</strong></td>
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**Revenues $58,060,953**

- Federal Contracts and Grants, $25,124,366
- State Contracts and Grants, $9,805,350
- Other Contracts and Grants, $7,322,368
- Indirect Cost Recovery-C&G, $8,408,250
- Other Revenue and Support, $742,989
### GRANTS AND CONTRACTS FISCAL YEAR 2019-20

#### College of Business
**Dean’s Office**

- **Dan Moshavi and Karen E. Philbrick**  
  National Summer Transportation Institute Program FY2019  
  CA State, Dept of Transportation  
  $6,600

- **Dan Moshavi and Karen E. Philbrick**  
  MTC Leadership Academy Training  
  Metropolitan Transportation Commission  
  $100,000

- **Dan Moshavi and Karen E. Philbrick**  
  MTI Database on Terrorist and Serious Criminal Attacks against Public Surface Transportation  
  U.S. Dept of Homeland Security  
  $142,829

- **Dan Moshavi and Karen E. Philbrick**  
  Mineta Consortium for Transportation Mobility (MCTM)  
  Department of Transportation  
  $1,420,000

- **Dan Moshavi and Karen E. Philbrick**  
  Mineta Consortium for Transportation Mobility (MCTM)  
  Department of Transportation  
  $1,427,900

- **Dan Moshavi and Karen E. Philbrick**  
  Mineta Consortium for Transportation Mobility (MCTM)  
  Department of Transportation  
  $1,427,900

- **Dan Moshavi and Karen E. Philbrick**  
  Mineta Consortium for Transportation Mobility (MCTM)  
  Department of Transportation  
  $420,000

- **Dan Moshavi and Karen E. Philbrick**  
  Mineta Consortium for Transportation Mobility (MCTM)  
  Department of Transportation  
  $1,420,000

#### College of Education
**Child & Adolescent Development**

- **Robert Marx**  
  The Trans Resilience Project: Understanding Trans Youth Resilience in Communities of Color  
  Society for Research in Child Development  
  $7,290

#### Communicative Disorders & Sciences

- **Wendy Quach and Pei-Tzu Tsai**  
  Project Tapestry: Preparing Culturally Competent Speech-Language Pathologists to Deliver High Quality Services to Children with Disabilities  
  Department of Education  
  $250,000

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

- **Wendy Quach**  
  19th Biennial Conference of the International Society for Augmentative and Alternative Communication (ISAAC)  
  Oregon Health Sciences University  
  $37,884

#### Education, Dean’s Office

- **Heather Lattimer**  
  Better Together: California Teacher Summit: The California State University  
  CSU Fullerton  
  $11,700

#### Special Education

- **Emily Slusser**  
  Early Childhood STEM Education: Training and Ambassador Program  
  Santa Clara Co Office of Ed  
  $7,000

#### Teacher Education

- **Katya Aguilar**  
  San Jose State University Single Subject Intern Program 2019-2020  
  Milpitas Unified School District  
  $80,542

- **Katya Aguilar**  
  San Jose State University Single Subject Intern Program 2020-2021  
  Milpitas Unified School District  
  $80,535

#### College of Engineering
**Dean’s Office**

- **Kacey Beddoes**  
  Collaborative Research: Research: Characterizing Engineering Student Mental Wellness and its Role in Predicting Attrition  
  National Science Foundation  
  $174,001

- **Tina Panontin**  
  Systems Engineering Subject Matter Expertise/Research  
  Metis Flight Research Associates  
  $152,707

- **Jinny Rhee and Blanca Sanchez-Cruz**  
  2017-2018 MESA Engineering Program (MEP) @ SJSU  
  Regents of The Univ of California  
  $10,000

#### Aerospace Engineering

- **Nikos Mourtos**  
  Scan Drawings from Unitary Wing Tunnels  
  Jacobs, Inc.  
  $30,911

#### Biomedical Engineering

- **Alessandro Bellofiore**  
  A Comprehensive Testing Platform for Mechanical Heart Valves to Propel Innovation towards Anticoagulant-Independence  
  Dept of Health & Human Services  
  $336,326

#### Chemical & Materials Engineering

- **Ozgur Keles, Birsen Sirkeci, Raymond Yee and David Yan**  
  Acquisition of a Metal Additive Manufacturing System for Multi-Disciplinary Research and Education at a Minority-Serving Institution  
  National Science Foundation  
  $326,960

- **Anand Ramasubramanian**  
  Erythrocyte Biomechanics in Chronic Fatigue Syndrome  
  Open Medicine Foundation  
  $35,620

#### Civil & Environmental Engineering

- **Akthem Al-Manaseer**  
  SJSU/CSULB Asphalt and Aggregates Research and Certification  
  CSU, Long Beach Foundation  
  $238,620

#### Computer Engineering

- **Jerry Gao**  
  Smart City Research Project for Just Light Technology, Inc. - Project #1  
  Just Light Technology  
  $16,957

- **Jerry Gao**  
  Smart City Research Project for Just Light Technology, Inc. - Project #2  
  Just Light Technology  
  $16,957
GRANTS AND CONTRACTS

**Industrial & Systems Engineering**

**Hyeon Jeon**  
NSF Student Travel Support for the 5th Career Workshop for Women and Minorities in Computer Architecture  
National Science Foundation  
$16,000

**Ronald Mak**  
Intelligent Systems Research and Development Support-3 (ISRDS-3)  
KBR Wyle Services, LLC  
$50,012

**Younghie Park and Xiao Su**  
SaTC: EDU:Collab: Enhancing Security Education through Transiting Research Integration on Security in Emerging Network  
National Science Foundation  
$14,400

**Electrical Engineering**

**Mohamed Badawy**  
Power Electronic Converters for Data Center Applications (48V to 12V DC-DC Converter)  
Facebook, Inc.  
$119,299

**Essam Marouf**  
Investigation of Saturn’s Rings By Cassini Radio Occulsion: Cassini Equinox Mission to Saturn Jet Propulsion Laboratory  
$38,485

**Huu Yung Wong**  
Chip Design for Self-Healing Electronics  
NASA  
$50,000

**Huu Yung Wong**  
Development of Low-Cost Graduate Course with Virtual Fab and Hands-on Circuit Lab Experience  
North Carolina State University  
$49,585

**Huu Yung Wong**  
Modeling and Simulation of MST  
Atomera  
$27,520

**Huu Yung Wong**  
Materials Modeling Research Project  
Synopsys Inc.  
$30,000

**Juzi Zhao**  
NeTS: Small: Collaborative Research: Design and Provisioning for Inter-Datacenter Multigranular Flexible Optical Networks  
National Science Foundation  
$8,000

**College of Health and Human Sciences**

**Justice Studies**

**Yue Wilson Yuan**  
San Jose Neighborhood Crime Survey: An Examination of the Relationship between Immigration and Victimization  
Department of Justice  
$1,020,679

**Kinesiology**

**Jennifer Schachner**  
Older Americans Act Funding - Title III D, Disease Prevention and Health Promotion Sourcewise Community Grant  
Sourcewise  
$59,273

**School of Social Work**

**Laurie Drabble**  
Age, Gender, and Substance Use: Prevalence & Correlates of Substance Use & Abuse  
Public Health Institute  
$8,000

**Laurie Drabble**  
Effects of Marriage Recognition on Substance Abuse and Health for Women  
Public Health Institute  
$19,590

**Peter Allen Lee**  
Title IV-E Child Welfare Training 2019-2020  
UC, Berkeley  
$1,734,815

**Peter Allen Lee**  
San Jose State University/BASW Mental Health Scholarship Program (MHSP) 2019-2021  
Santa Clara County  
$300,000

**Peter Allen Lee**  
BHWET Integrated Behavioral Health MSW Stipend Program  
UC, Berkeley  
$85,000

**College of Humanities and the Arts**

**Art & Art History**

**Anne Simonson**  
Bay Area California Arts Project (BayCAP) 2019-2020 - CSMP/ESSA Federal Funds  
Regents of the University of California  
$20,000

**Design**

**Diana Seah**  
New Generation Work Place and User-Experiences  
Panasonic Industrial Sales Company of America  
$14,200

**English & Comparative Literature**

**Selena Anderson**  
Center for Literary Arts Program Funding 2019-2020  
City of San Jose  
$15,000

**Revathi Krishnaswamy**  
Deep Humanities & Arts for Socially Responsible Technology  
New England Foundation for the Arts  
$4,000
### Humanities

**Susan Shillinglaw**  
*John Steinbeck: Social Critic and Ecologist*  
National Endowment for the Humanities  
$181,977

**Roohi Vora and Jennifer K. Johnson**  
San Jose Area Writing Project 2019-2020 - CSMP/ESSA Federal Funds  
Regents of The University of California  
$25,698

**Shannon Wright**  
The California Arts Project - CSMP 2017-2018  
Regents of The University of California  
$3,218

### Linguistics & Language Development

**Roula Svorou and Chris Donlay**  
Documenting Domaaki (dmk), a Severely Endangered Indo-Aryan  
National Science Foundation  
$17,887

### School of Music and Dance

**Heather Cooper**  
School of Music and Dance Presents Sean Dorsey Dance  
New England Foundation for the Arts  
$4,000

### College of Science

**Elaine D. Collins**  
SJSU MESA Schools Program RCLA (Roberto Cruz Leadership Academy) Agreement 2019-20  
Roberto Cruz Learning Academy  
$4,862

**Elaine D. Collins**  
SJSU MESA Schools Program - Bridges Academy (of Franklin McKinley School District)  
Franklin-McKinley School District  
$4,631

**Elaine D. Collins**  
SJSU MESA Schools Program ARUESD Agreement  
Alum Rock Unified Elem School Dist  
$23,940

**Michael J. Kaufman**  
Using the Astronomical Infrared Bands as Calibrated Probes of Astrophysical Conditions with the NASA Ames PAH IR  
NASA  
$277,064

**Michael J. Kaufman**  
An upGREAT Map in M20: [OI] and [CII] Emission from a Young Star Forming Region  
University Space Research Association  
$19,700

**Madalyn Radlauer, Chester Simocko and Melanie A. McNeil**  
MRI: Acquisition of a Gel Permeation Chromatograph with Multiple Detectors to Expand Capabilities for Macromolecular Characterization  
National Science Foundation  
$116,295

**Madalyn Radlauer**  
Metallopolymers as Functional Metalloprotein Mimics with Secondary Coordination Sphere Interactions  
U.S. Department of Health & Human Services  
$439,458

**Karen A. Singmaster**  
CSU, Sacramento  
$20,000
<table>
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<tr>
<th>Project Title</th>
<th>PI(s)</th>
<th>Funding Agency</th>
<th>Funding Amount</th>
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<tbody>
<tr>
<td>Detailed Quantitative Precipitation Forecasts for Santa Clara Valley Water District</td>
<td>Sen Chiao</td>
<td>Santa Clara Valley Water District</td>
<td>$24,962</td>
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<tr>
<td>The NOAA Cooperative Science Center in Atmospheric Sciences and Meteorology</td>
<td>Craig B. Clements</td>
<td>Howard University</td>
<td>$100,000</td>
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<td>Collaborative Proposal: Sundowner Winds Experiment in Santa Barbara, CA (SWEX)</td>
<td>Craig B. Clements</td>
<td>National Science Foundation</td>
<td>$185,089</td>
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<tr>
<td>Fluorescent Enhancement of the Nitrogen Vacancy Center in Nanoscale Diamond for Bioimaging Applications</td>
<td>Abraham Wolcott</td>
<td>U.S. Department of Health &amp; Human Services</td>
<td>$108,375</td>
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<td>Intramolecular Allosteric Regulation of SIRT1 Deacetylase Activity by the N-terminal Domain</td>
<td>Ningkun Wang</td>
<td>U.S. Department of Health &amp; Human Services</td>
<td>$138,960</td>
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<td>Fundamental Surface Science of Nanoscale Diamond and their Interaction with Biological Surfaces</td>
<td>Abraham Wolcott</td>
<td>Department of Defense</td>
<td>$20,000</td>
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<tr>
<td>Geology</td>
<td>Robert B. Miller</td>
<td>EDMAP: Construction and Structure of Major Cretaceous Intrusive Suites, Lake Alpine Area, North-Central Sierra Nevada, California Department of Interior</td>
<td>$17,471</td>
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<tr>
<td>Collaborative Research: Mass Extinction Ecological Response and Recovery in the Cretaceous/Paleogene Gulf Coastal Plain National Science Foundation</td>
<td>Carlie Pietsch</td>
<td>California Department of Interior</td>
<td>$175,988</td>
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<tr>
<td>Mathematics &amp; Statistics</td>
<td>Roger C. Alperin</td>
<td>EFRI-ODISSEI: Origami and Assembly Techniques for Human-Tissue-Engineering (OATH)</td>
<td>$125,000</td>
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<td>Electronic Transport in High Energy-Density Matter</td>
<td>Liam Stanton</td>
<td>Michigan State University</td>
<td>$16,035</td>
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<td>Fundamental Surface Science of Nanoscale Diamond and their Interaction with Biological Surfaces</td>
<td>Abraham Wolcott</td>
<td>Lawrence Livermore National Laboratory</td>
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<td>Hong Zhang</td>
<td>Lawrence Livermore National Laboratory</td>
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<td>Guangliang Chen</td>
<td>Finite Rank Kernels</td>
<td>$27,791</td>
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<td>Dashiell Fryer and Yan Zhang</td>
<td>Game-Theory Research for Blockchain Rewards Ethereum Foundation</td>
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<td>Electronic Transport in High Energy-Density Matter</td>
<td>Dustin Carroll</td>
<td>ECCO-Darwin Model Exploration of Physical and Biogeochemical Interactions in the Land-Sea Continuum Jet Propulsion Laboratory</td>
<td>$35,648</td>
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<td>Mathematics &amp; Statistics</td>
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<td>Developing Riparian Management Goals through Validation of Assessment Tools Environmental Protection Agency</td>
<td>$249,286</td>
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<td>Mathematics &amp; Statistics</td>
<td>Ross P. Clark</td>
<td>Conservation Innovation Grant (USDA) Project Resource Conservation District of Monterey County</td>
<td>$77,701</td>
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Ross P. Clark  
RCD 319h Bioreactors  
Resource Conservation District of Monterey County  
$75,000

Ross P. Clark  
Planning for Predicted Sea Level Rise  
Within the Salinas Valley  
Coastal Conservation & Research  
$144,791

Ross P. Clark and Kevin C. O’Connor  
A Framework for Condition Assessment and Monitoring of Estuary MPAs in California  
CA Natural Resources Agency  
$1,037,219

Colleen A. Durkin  
Linking Sinking Particle Chemistry and Biology w/Changes in the Magnitude and Efficiency of Carbon Export into Deep Ocean  
Skidmore College  
$72,473

Luke Gardner  
White Abalone Restoration Research and Production  
Department of Commerce  
$52,609

Luke Gardner, Scott L. Hamilton and Michael Graham  
Development of Rock Scallop Hatchery for California’s Aquaculture Industry  
Pacific States Marine Fisheries  
$123,000

Jonathan B. Geller  
ARI System: The Genomics of Pesticide Remediating Microbes Relevant to Agricultural Specialty Crops Grown on California’s Central Coast  
CSU, Monterey Bay  
$10,996

Michael Graham  
MLML15 Tank Setup & Seaweed Growth Testing  
Google, Inc.  
$3,000

Michael Graham and Scott L. Hamilton  
Trainee Support - Solving Impediments to the Co-Culture of Seaweeds and Shellfish  
UC, San Diego  
$3,600

Maxime Grand  
Collaborative Research: Automated Nutrient and Trace Metal Determinations based on Programmable Flow Injection  
National Science Foundation  
$467,624

Scott L. Hamilton  
Validating Age and Growth of Captive Fishes from Mexican Waters at the Monterey Bay Aquarium  
Monterey Bay Aquarium  
$9,926

Scott L. Hamilton and Michael Graham  
Development of Techniques for the Cultivation of Monkeyface Pricklebacks as a Sustainable Alternative to Unagi  
UC San Diego  
$50,847

Scott L. Hamilton  
CA Sea Grant Fellowship (Katherine Neylan): Eat Your Greens: Evaluating Microalgae Supplemented Feeds for Sablefish Nutrition and Growth  
UC, San Diego  
$39,925

James Harvey and Scott Benson  
Upwell Turtles Contract  
Upwell Turtless  
$116,315

James Harvey  
Estuarine Wetland and Nearshore Ecology Studies along the Pacific Flyway  
Department of Interior  
$80,000

James Harvey and Murray Stein  
Research Vessel Use for Monthly Water Sampling  
Applied Marine Sciences, Inc.  
$20,000

James Harvey and Jonathan Mike Prince  
Auxiliary General Purpose Oceanographic Research (AGOR) Support Services  
Office of Naval Research  
$180,722

Wesley A. Heim  
Lake Hodges Fish Collection  
City of San Diego  
$24,999

Wesley A. Heim and Autumn L. Bonnema  
Contract No: 1287 - San Francisco Estuary Institute/Aquatic  
San Francisco Estuary Institute  
$236,754

Brigitte McDonald  
Surface Water Ambient Monitoring Program (SWAMP) Bioassessment Field Work for up to 9 Sites  
CSU, Chico  
$59,000

Brigitte McDonald  
At-Sea Experimental Disturbances to Characterize Physiological Plasticity in Diving Northern Elephant Seals  
California Collaborative Fisheries Research Program North and South Coast Monitoring  
CA State, Department of Fish & Wildlife  
$26,677

Brigitte McDonald  
Support for California Sea Lion Unusual Mortality Event  
UC, Davis  
$84,492

Zachariah Peery  
Developing a Scientific Basis for Barred Owl and Northern Spotted Owl Management in the Coastal Redwood Region of California  
CA State, Department of Fish & Wildlife  
$274,645

Zachariah Peery  
Effectiveness and Optimization of Forest Fuels Reductions for Biodiversity Conservation in a Changing Sierra Nevada  
California Department of Forestry & Fire Protection  
$250,113

Marco A. Sigala  
Bioassessment Studies to Monitor Stream Health and Response  
Sierra Pacific Industries  
$276,889

Marco A. Sigala  
Transfer and Restore the CCAMP Wiki Server and Data Navigator at Moss Landing Marine Labs  
Bay Foundation of Morro Bay  
$20,590
## GRANTS AND CONTRACTS

### Marco A. Sigala
- **National Coastal Condition Assessment (NCCA) 2020**  
  Great Lakes Environmental Center  
  $217,618

### Jason G. Smith
- **The Alliance for Coastal Technologies (ACT): National-Scale Efforts Toward Verification and Validation of Observing**  
  University of Maryland Center for Environmental Science  
  $30,000

### Timothy P. Stanton
- **Ice Shelf Ocean Cavity Instrumentation**  
  Jet Propulsion Laboratory  
  $15,174

### Timothy P. Stanton
- **Long Term Observations of Inertial Waves and Turbulent Diffusivity in the Upper Pycnocline of the Beaufort and Chukchi Seas**  
  Office of Naval Research  
  $41,656

### Richard M. Starr
- **Subaward from CSUMB - James Lindholm Contract with Navy**  
  CSU, Monterey Bay  
  $11,900

### Alison Stimpert
- **Soundscape Characterization in the National Marine Sanctuaries using Passive Acoustic Monitoring**  
  Naval Postgraduate School  
  $100,000

### Edward Thornton
- **Coastal Land-Air-Sea Interaction - Thornton Portion**  
  Office of Naval Research  
  $39,500

### Nicholas A. Welshmeyer
- **PIA-Evoqua Ballast Project**  
  California Maritime Academy  
  $94,614

### Nicholas A. Welshmeyer
- **DNV GL Kurita Ballast Project**  
  California Maritime Academy  
  $10,000

### Mark Yarbrough
- **Marine Optical Buoy (MOBY) Operations and Technology Refresh**  
  University of Miami  
  $435,978

### Jennifer Zeligs
- **Investigating Sea Lion Locomotion**  
  Westchester University  
  $15,000

### Physics & Astronomy

#### Alejandro L. Garcia
- **Hybrid Models and Algorithms**  
  Lawrence Berkeley National Laboratories  
  $365,435

#### Hilary Hurst and Ehsan Khatami
- **QLCI-CG: The Open Quantum Frontier Institute Colorado School of Mines**  
  $27,608

### Thomas Madura
- **Eta Carinae: Taking the Plunge**  
  Space Telescope Science Institute  
  $26,524

### Cassandra A. Paul, Tammie Visintainer, Marcos Pizarro and Katherine Wilkinson
- **Transforming Undergraduate Teaching and Learning Through Culturally Sustaining, Active, and Asset-Based Approaches to Introductory Science Courses**  
  National Science Foundation  
  $1,699,743

### Gina Quan
- **Collaborative Research: Expanding Access: Furthering a Network of Diversity Focused Programs in the Physical Sciences**  
  University of Colorado, Boulder  
  $30,715

### Christopher Smallwood
- **RUI: Coherent Spectroscopy of Defects in Solids**  
  National Science Foundation  
  $328,216

### College of Social Sciences

### Communication Studies

#### Matthew Spangler
- **The Immigrant Experience in California through Literature and History**  
  Natl Endowment for the Humanities  
  $155,203

### Political Science

#### Frances Edwards
- **ICS Training for Field Level TTT Workshops**  
  The National Academy of Sciences  
  $300,000

### Psychology

#### Alan Hobbs
- **San Francisco Bar Pilot Fatigue Study**  
  Board of Pilot Commissioners  
  $75,000

### Sean P. Laraway
- **Human Systems Integration: Collaborative Human Factors Research to Improve Safety, Efficiency, and Reliability of NASA’s Aeronautics and Space Missions**  
  NASA  
  $20,725,485
Sean P. Laraway
Test Subject Recruitment Office
ASRC Federal
$138,346

Sean P. Laraway
Test Subject Recruitment Office Task 7
ASRC Federal
$293,837

David Schuster
CAREER: Understanding the Cognitive Processes of Computer Network Defense
National Science Foundation
$117,660

Susan M. Snycerski
Advanced Rotorcraft Research: Adaptive Autonomy, Future Lift Systems, and Human-Centered Display Design
NASA
$326,578

Susan M. Snycerski
Implementing Macroergonomics for Increasing the Safe, Effective, and Efficient Operation of the Entry Systems and Technology Division’s High Enthalpy Facilities
NASA
$226,000

Susan M. Snycerski
Future Vertical Lift: Collaborative Research on Flight Control, Autonomous Rotorcraft, and Human-Systems Interface Design
NASA
$1,450,280

Urban & Regional Planning
Laxmi Ramasubramanian
Conferences: Training and Retaining Leaders in STEM Geospatial Sciences
University of Maine
$10,636

University Programs
Associated Students
Heather Vise
CCAMPIS - Child Care Access Means Parents in School
U.S. Department of Education
$512,310

Career Center
Catherine Voss Plaxton and Anita Manuel
Badge to Hire
Education Design Lab
$50,000

Catherine Voss Plaxton
California Complete Count - Census 2020
California State University System
$17,281

Curriculum and Assessment
Elena Klaw and Andrea Tully
AmeriCorps Civic Engagement (ACE) Fellows at San Jose State University
CaliforniaVolunteers
$75,000

Provost’s Office
Maria E. Cruz
ASPIRE (Student Support Services) - San Jose State University
Department of Education
$492,537

Maria E. Cruz
The Ronald E. McNair Postbaccalaureate Achievement Program
Department of Education
$279,485

Student Affairs Counseling Services
Wei-Chien Lee
Outcome Study of the Garrett Lee Smith (GLS) Campus Suicide Prevention Grant
Dept of Health & Human Services
$96,610

University Library
Emily K. Chan and Lili Luo
National Forum on the Assessment of Scholarly Communication
CSU, Sacramento
$11,970

Office Of Research
Mohamed Abousalem
The City of San Jose 2019 Resident Survey - SJSU
Silicon Valley Community Foundation
$13,134
BOARD OF DIRECTORS
(as of December 2020)

From the SJSU Administration
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Vice President for Research and Innovation, SJSU
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Vice President, SJSU Research Foundation
Associate Vice President for Research, SJSU
Charlie Faas
Treasurer, SJSU Research Foundation
Vice President, Administration and Finance/CFO, SJSU
Vincent J. Del Casino, Jr.
Provost and Senior Vice President for Academic Affairs, SJSU

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Dean, College of Graduate Studies
Michael Kaufman
Dean, College of Science
Heather Lattimer
Dean, Connie L. Lurie College of Education
Ivano Aiello
Professor and Chair, Moss Landing Marine Laboratories
College of Science
Jason Aleksander
Professor, Philosophy and Associate Dean of Faculty Success and Research
College of Humanities and the Arts
Laurie Drabble
Professor, Social Work and Associate Dean of Research
College of Health and Human Sciences
Katy Kao
Associate Professor, Chemical Engineering
College of Engineering
Matthew Spangler
Professor, Department of Communication Studies
College of Social Sciences

From the SJSU Student Body
Sai Kiran Byri, Biological Sciences Major

From the Community
Cindy Chavez
President, Santa Clara County Board of Supervisors
John Boothroyd
Professor, Department of Microbiology and Immunology and Associate Vice Provost for Graduate Education and Postdoctoral Affairs
Stanford University
Holger Schmidt
Professor and Associate Dean for Research
Jack Baskin School of Engineering
University California, Santa Cruz

From the SJSU Research Foundation
Andrew Exner
Executive Director, SJSU Research Foundation
Nancy McGlamery
Corporate Counsel, Adler & Colvin

ANNUAL REPORT

Editor
Shavon Collins
Executive Assistant, SJSU Research Foundation

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