The San José State University community recognizes the unceded indigenous Muwekma Ohlone Tribe, with an enrolled population of over 350, as comprised of all of the known surviving decendants or tribespeople affiliated to the San Francisco Bay region who trace their ancestry through the Mission Santa Clara, San José, and Dolores, during the advent of the Hispanic/European empire into Alta California; and who are the successors and living members of the sovereign, historic, and pre-1850 federally recognized Ohlone Band of Alameda County.

Furthermore, the San José State University community recognizes that this university is established within the Thámien Ohlone-speaking tribal ethnohistoric territory, which is established within the Thámien Ohlone-speaking ethnohistoric territory, which is comprised of the unceded ancestral territory whose ancestors had affiliation with Mission Santa Clara.

The San José State University community also recognizes the importance of the land to the indigenous Muwekma Ohlone people of this region, and commits to our principles of community and identity shifts to be good stewards of this shared space, acknowledging the Muwekma Ohlone Tribe whose land we occupy.

We Are Muwekma Ohlone, Akkoy Mak-Warep, Manne Mak Hiswi! Mákkin Mak Muwekma,
The San José State University Research Foundation is a nonprofit 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 nonprofit organizations and separate legal entities. They operate pursuant to written operating agreements 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 post-secondary 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.

ABOUT
The San José State University Research Foundation continued its upward growth in the 2022-23 fiscal year. We are pleased to report nearly $52 million in total research expenditures at the San José State University Research Foundation, thanks to the hard work of our faculty, staff, students, and researchers. This represents a six percent increase over the previous year. Total research expenditures across the institution grew to $83.4M in the same year, representing a 16% increase over the previous year.

While we continue to measure those numbers and take pride in reporting them, the real impact of this growth comes in the impact these funds have on our faculty, students, and broader community. Furthermore, when considering SJSU’s designation as a federally-recognized minority-serving institution (both as a Hispanic-Serving Institution ‘HSI’ and an Asian American and Native American Pacific Islander ‘AANAPISI’), with 28% first-generation college students, RSCA growth at SJSU has an outsized impact on creating pathways for equity and justice. SJSU is also ranked first in the nation in research activity among all non-PhD granting institutions. One of our focuses is on the student experience and giving our students every opportunity to engage in research while supporting the professional development of our faculty through scholarship, research, and creative activities.

We continue to drive RSCA activities (and expect more growth) as we engage more faculty and concentrate our efforts on research clusters that promote interdisciplinary ventures in Artificial Intelligence (AI)/Machine Learning (ML), semiconductors, healthcare, climate change and coastal resilience, along with social justice. Many examples of externally funded projects in these focus areas are reflected in the pages ahead. We look forward to working in these and other areas of growth and strength across the SJSU RSCA enterprise.

Our support for the SJSU Office of Innovation is expanding as it grows the size of the SJSU intellectual property portfolio. The SJSU SpartUp entrepreneurship support program has also grown by leaps and bounds, and the Research Foundation is proud to host the Silicon Valley Small Business Development Center, which engaged with hundreds of clients and supported tens of millions of dollars in economic activity for the region this past fiscal year.

We continue to leverage our status as an auxiliary organization within the California State University system to provide service to SJSU in the areas of grant proposal and award management, competitive faculty fellowships, RSCA-related agreements, intellectual property support, and academic self-support programs. Our culture of service to SJSU faculty, student, and staff researchers, our employees, and external partners is helping ensure the public impact of SJSU’s Research and Innovation enterprise in our local and global communities.

As you read through the annual highlights for the SJSU Research Foundation and explore the social, economic, and environmental aspects of these projects, we hope you gain a great sense of their incredible impact, which we have the privilege of administering on behalf of SJSU.

LEADERSHIP
Mohamed Abousalem
President
SJSU Research Foundation
Board of Directors
Vice President
Research and Innovation
San José State University

Richard Mocarski
Vice President
SJSU Research Foundation
Board of Directors
Associate Vice President
Research
San José State University

Andrew Exner
Executive Director
SJSU Research Foundation
Board Secretary
SJSU Research Foundation
Board of Directors

The San José State University (SJSU) research, scholarship, and creative activities (RSCA) enterprise continued its upward growth in the 2022-23 fiscal year. We are pleased to report nearly $52 million in total research expenditures at the San José State University Research Foundation, thanks to the hard work of our faculty, staff, students, and researchers. This represents a six percent increase over the previous year. Total research expenditures across the institution grew to $83.4M in the same year, representing a 16% increase over the previous year.

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SJSU Research Foundation numbers for Fiscal Year 2022–23, which ended on June 30, 2023

**266 Awards**
- received valued at more than $63 MILLION

**356 Proposals**
- submitted valued at more than $194 MILLION (238 FACULTY)

**$52 Million**
- in research expenditures across 551 active projects.

**$2.04 Million**
- returned to San José State University in indirect revenue.

**224 SJSU Faculty**
- engaged in sponsored research projects, grants, or contracts, managed by the Research Foundation.

**624 SJSU Students**
- engaged in sponsored research projects, grants, or contracts managed by the Research Foundation.

**357 SJSU Project Staff**
- engaged in sponsored research projects, grants, or contracts, managed by the Research Foundation.

**FISCAL YEAR 2022-2023 AWARDS**

- Federal: $37,254,310
- Industry: $2,007,617
- Non-profit: $7,732,349
- State: $14,041,764
- Other: $2,439,348

**Sponsored Programs Expenditures**
- 2021: $47,082,196
- 2022: $48,792,317
- 2023: $51,661,813

**Number of Awards**
- 2021: 457
- 2022: 504
- 2023: 551
Anthony Chow
Fostering a Love of Reading Through Books and Libraries in Native American Communities

Dr. Anthony Chow, Associate Professor and Director of the School of Information at the Lucas College and Graduate School of Business, is working with five tribes across four Native American communities to increase reading proficiency from kindergarten to 4th grade, promote reading and literacy in Native American households, and encourage the use of libraries in areas where Native families live.

“Our SJSU students help gather and analyze data, work with members of the tribes and serve as the heart and soul of the project through their hard work and dedication,” he adds. Working on funded research projects contributes to the quality of education for our students. A strong team comprised of faculty and students are working together to develop book ecosystems that help create the conditions for sustainable streams of books and library services that lead to a cascading waterfall of culturally relevant books for Native American children.

“Dr. Chow’s father, Dr. Chak Chow, unexpectedly passed away during the writing of this article. During a July 2021 visit to the Eastern Band of Cherokee Indians in Cherokee, NC, from this visit alone, over 150 books were distributed to the children in the community.”

A Geographic Information Services (GIS) map showing the number of Free Little Libraries near the SJSU campus. Find a Free Little Library near you at Wunderlibrarian.org

A QR code for the Little Free Library of the Eastern Band of Cherokee Indians. Scan this QR code with the camera on your phone.

Areum Jensen
Examining the Link Between Autism Spectrum Disorder and Cardiovascular Health

Dr. Areum Jensen is intrigued by a baffling medical question: Why do individuals with neurological disorders, like autism spectrum disorder (ASD), experience a higher incidence of hypertension and cardiovascular disease than the general population?

She is an Associate Professor in Clinical Exercise Physiology in the Department of Kinesiology at the College of Health and Human Sciences: A recent U.S. National Institute of Health (NIH) research grant is providing her and her SJSU student researchers with the opportunity to find answers to this perplexing question.

“We hope to identify pathophysiology of early hypertension and cardiovascular disease in individuals with ASD. This will form the basis for future experimental and clinical studies to determine an effective therapeutic target, enable improved patient care and ultimately enhance the quality of life for individuals with ASD.”

“For Dr. Jensen and her student researchers, this is not about exploring some abstract concept. It’s an urgent question to be answered. ASD is one of the fastest-growing pediatric disorders, occurring in approximately 1 in 36 children according to Centers for Disease Control and Prevention.”

As principal investigator, she mentors her student researchers on how to properly use equipment, measure variables correctly, conduct experiments, follow specific protocols, write abstracts, compile literature, and present final results in a professional manner.

For Dr. Jensen and her student researchers, this is not about exploring some abstract concept. It’s an urgent question to be answered. ASD is one of the fastest-growing pediatric disorders, occurring in approximately 1 in 36 children according to Centers for Disease Control and Prevention.

The Role of Sympathetic Nervous System Activity on Blood Pressure Regulation in Individuals with Autism Spectrum Disorder
National Institute of Health
Award(s): $279,250
as of January 19, 2024

Dr. Areum Jensen, with her student researcher Jacob Savers, ’23 Kinesiology, conducted the NIH-funded study on blood pressure regulation. Dr. Jensen is shown with fellow student researcher Jacob Savers, ’23 Kinesiology, using the lab’s lower body negative pressure chamber, which simulates gravitational stress on the body.

Dr. Jensen is an Associate Professor of Clinical Exercise Physiology in the Department of Kinesiology at the College of Health and Human Sciences. She explores why individuals with neurological disorders, like autism spectrum disorder (ASD), experience a higher incidence of hypertension and cardiovascular disease than the general population.
Bo Yang
UAV Mapping for Seagrass and Coastal Conservation in Northern California

Dr. Bo Yang and his team would like everyone to appreciate how important seagrass is to the Northern California coastal environment. With support from the National Science Foundation, he and his team of student researchers are using Unmanned Aerial Vehicle (UAV, or drone) mapping to gather the data needed to protect these vital ocean ecosystems.

Yang is an assistant professor in the Department of Urban and Regional Planning at the College of Social Sciences. “We are using advanced UAV mapping, along with a machine learning algorithm to calculate variations in the health of the seagrass, and then building a cloud-based data hub to manage the data we collect,” he says.

Over several summers, he has led teams to map multiple sites along the U.S. West Coast. They have gathered an impressive collection of more than 20 thousand UAV remote-sensing images of intertidal areas. Their field research has ranged from Mission Bay in San Diego, California all the way north to Alaska’s Prince of Wales Island.

“SJSU students have benefited by working alongside faculty and gaining experience in drone flight data collection, as well as GIS analysis,” he says. “Such fieldwork demands patience, persistence, and focus. Students gain cutting-edge technology skills and in-depth understanding of operating drones, mapping, and coastal science. This hands-on education not only prepares them for careers in science, but it also contributes to better coastal management and seagrass conservation.”

Cara Maffini
Ensuring Quality Healthcare Services for Families in the San José Community

One look at Dr. Cara Maffini’s professional titles, you begin to appreciate the broad scope of her work. She is an associate professor in the Department of Child and Adolescent Development of the Connie L. Lurie College of Education and the faculty director at the Healthy Development Community Clinic, Oak Grove High School in the East Side Union High School District in San José, CA.

Dr. Maffini’s work focuses on ensuring quality healthcare services for families in the San José community. A current project, “Culturally-Responsive Wellness and Communication Interventions: Healthy Development Community Clinic,” fits this profile. It was made possible with support from the Santa Clara Family Health Plan.

“SJSU’s Healthy Development Community Clinic (HDCC) provides services that support holistic wellness for children, youth, and families,” Dr. Maffini says. This includes vital screening, short-term interventions, and referral services to address the behavioral, health, speech, and language needs for many community residents.

Dr. Maffini points to the active involvement of SJSU student project assistants who work closely with faculty to deliver services and conduct research for HDCC. Faculty includes her HDCC co-founders and partners Dr. Nidhi Mahendra, associate professor, of the Department of Communicative Disorders and Sciences in the Connie L. Lurie College of Education, and Dr. Matthew Capriotti, associate professor of the Department of Psychology in the College of Social Sciences at SJSU.
Dr. Christopher Luna-Mega is an Assistant Professor of Composition, Theory, and Electronic Music at the School of Music and Dance at the College of Humanities and the Arts. His work focuses on instrumental and electronic music that derives from acoustic features of environmental sound, as well as from patterns of environmental data, resulting in translation, transcription, and orchestration of natural and anthropogenic sound and data.

Christopher Luna-Mega
Learning to Appreciate Soundscape Ecology in an Urban World

Dr. Christopher Luna-Mega is an assistant professor in composition, electronic music, and theory in the School of Music of the College of Humanities and the Arts. His work invites us to appreciate the sublime quality of the soundscapes that surround us every day as we go about our daily routines.

“I describe my work as environmental sonic translation,” Professor Luna-Mega explains. “It is instrumental and electronic music that derives from acoustic features of environmental sound and patterns of environmental data. It results in translation, transcription, and orchestration of natural sound and data into music.”

His avant-garde approach to composing with the sounds that surround us was on display at a recent, one-day event — Downtown Soundscapes — held in San José, CA. The music event combined a sound installation (composed collaboratively by his Electronic Music II students under his direction) with live instrumental performance on behalf of four faculty members from the School of Music. The majority of the electronic and instrumental sounds were derived from the students’ audio recordings of the soundscape in downtown San José, such as the sounds of the light rail, traffic noise, skateboards, conversations, construction, birds, etc. The event was held at the Paseo de San Antonio, where an immersive four-channel speaker system surrounded the audience and pedestrians walking through the space.

Professor Luna-Mega also points to the active involvement of his students in his Music Technology and Composition students with environmental sound and data as the source material for compositions performed at events he has produced in the San José community. “These events have introduced our music students to new, cutting-edge ideas about music, sound, and interdisciplinary collaboration.

Farzan Kazemifar
Helping California Manufacturing Facilities Reduce Their Energy Costs and Carbon Footprint

Farzan Kazemifar, Associate Professor, Department of Mechanical Engineering, Charles W. Davidson College of Engineering, has an ambitious energy reduction approach. Dr. Kazemifar and his engineering students engage California business owners with manufacturing sites in an effort to help them reduce energy costs and carbon footprint.

The effort is part of a project funded by the U.S. Department of Energy. “Our goal was to establish an Industrial Assessment Center at SJSU,” Professor Kazemifar says. The center trains SJSU students to be energy engineers trained to do on-site assessments to help manufacturing businesses reduce energy consumption and costs and carbon footprint.

“My team at the SJSU Industrial Assessment Center includes Dr. Crystal Han from the Department of Mechanical Engineering and Dr. Anil Kumar from the Department of Industrial Systems Engineering. They serve as associate directors for the Center.”

Professor Kazemifar and his team have conducted energy audits at 13 manufacturing facilities to date.

Dr. Kazemifar notes that since no two manufacturing facilities are the same, every site brings a unique set of challenges for the team to solve using real-world engineering knowledge and experience.

He credits the campus Central Plant staff as a resource for training students on the large mechanical equipment they’ll see during site visits.

Their efforts have yielded real results. Professor Kazemifar’s team has identified $1M+ of potential energy savings to date, which is all part of the effort to reduce energy costs and carbon footprints at manufacturing sites in Northern and Central California, so factories can operate more efficiently and improve overall air quality.

Pictured is part of the maze of equipment at SJSU’s Central Plant, where Dr. Kazemifar studies the mechanical systems and energy consumption of the Engineering Building to identify energy-saving opportunities. Students from the Industrial Assessment Center and similar sites throughout California, where they gain real-world experience by working directly with clients, participate in energy audits, collecting data, conducting engineering analyses, and furnishing written reports on findings.

Establishing an Industrial Assessment Center at San José State University
Award(s): $1,399,940 as of January 19, 2024
**Gheorgi Guzun**

Taking on the Challenge of Making Artificial Intelligence Processing More Efficient

Dr. Gheorgi Guzun is taking on the challenge of making artificial intelligence data processing more efficient and less costly in terms of time spent and energy consumed. He is an Assistant Professor of Computer Engineering in the Department of Computer Engineering at the Charles W. Davidson College of Engineering. His research is at the intersection of data management and machine learning, which includes algorithm optimization for machine learning, energy efficiency in data-intensive applications, data compression and quantization. The efficiencies and optimizations he discovers lead to energy and time savings — including the generation of new applications.

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**Kate Wilkin**

Rekindling the Lost Art and Science of Prescribed Fires

The science of prescribed burns on natural lands is not widely understood, especially due to changes in land management and climate change. Management practices that worked more than 50 years ago may no longer work due to how much natural areas have changed. Consequently, the question is how do we move forward: what are good land management practices to use to accomplish goals. Dr. Kate Wilkin would like to help land managers understand how to move forward.

As an Assistant Professor of Fire Ecology in the Department of Biological Sciences at the College of Science, Dr. Wilkin proposes, “One solution to California’s wildfire problem is to burn the fuel under favorable conditions like prescribed fires. We want to understand if prescribed fires are removing fuels and promoting natural beneﬁts.”

Dr. Kate Wilkin, Assistant Professor of Fire Ecology, in the Wildfire Interdisciplinary Research Center (WIRC) at the College of Science, with some of the gear used to initiate, monitor, and study the effectiveness of prescribed burns. The WIRC Research Lab provides student researchers the opportunity to collaborate with land management experts, who share their expertise in wildfire science, management and modeling, remote sensing, combustion, and meteorology.

Benefits such as restoring critical coastal prairie habitat. "Having studied this for years, I understand how fire is a critical process that sustains ecosystems here in California and where I grew up in Appalachia," Wilkin says. “Furthermore, I’m excited to help rekindle the lost art and science of prescribed fires.”

The Wilkin project, Prescribed Fire Monitoring and Research Program in the Central Coast, is funded by the California Department of Forestry and Fire Protection. One goal of the project is to promote the active involvement of students traditionally underrepresented in natural resource management.

In the Wilkin Lab, seventeen student researchers collaborate with experts in the field of land management. They share expertise in wildfire science, management and modeling, remote sensing, combustion and meteorology. Moreover, they assist in rekindling the ancient art of controlled burning, restoring forests, and cultural burning practices.

Dr. Kate Wilkin (second from the left) and a portion of the Central Coast Prescribed Fire Monitoring Program 20-person team on a recent prescribed burn at Wilder Ranch State Park in Santa Cruz, CA, as California State Parks starts the prescribed burn Mondays later, the behavior and weather teams jumped into action to collect data. Photo courtesy of Henri Birken and a cinematic drone used to study the effectiveness of prescribed burns.

**Scalable and Adaptable Sparsity-driven Methods for More Efficient AI Systems**

**National Science Foundation**

Award(s): $211,590

as of January 19, 2024

**SJSU Prescribed Fire Monitoring and Research Program in the Central Coast**

California Department of Forestry and Fire Protection

Award(s): $396,601

as of January 19, 2024

A timeline describing the methods and stages of a prescribed burn over the course of four years.
Kezban Yagci Sokat
Thwarting Human Trafficking
Using Analytics

Dr. Kezban Yagci Sokat believes in the power of business analytics to reduce the incidence of human trafficking in urban areas and to gain a greater understanding of how citizens and transit departments can be more effective in helping law enforcement.

As an assistant professor in the Department of Marketing and Business Analytics, Sokat’s research explores methods to mitigate human trafficking. Her partnership with the Valley Transportation Authority and the Mineta Transportation Institute aims to give riders a mechanism to report suspected human trafficking.

One of Yagci Sokat’s research endeavors aims to make a difference in the lives of human trafficking victims: a collaborative effort involving the Valley Transit Authority (VTA), which is integrating guidelines from the Homeland Security Exercise and Evaluation Program to thwart human trafficking on its public transportation system, and the Mineta Transportation Institute (MTI), a research institute specializing in the intricacies of multimodal surface transportation policy and management. Dr. Hilary Nixon, deputy executive director at MTI, spearheads this research initiative as the principal investigator (PI), while Dr. Yagci Sokat, Co-PI, contributes extensive expertise in the analytics of human trafficking.

“The Homeland Security Exercise and Evaluation Program guidelines are used to evaluate the effectiveness of VTA’s human trafficking prevention programs,” Dr. Yagci Sokat says. “SJSU students are participating in exercises designed to simulate transit ridership activity in instances where passengers utilize the VTA’s mobile app to report suspected human trafficking.”

The idea is to measure the effectiveness of communication campaigns designed to raise passenger awareness, how riders respond using the VTA’s mobile app to report suspected human trafficking.

Not on Transit (NoT) Project
Santa Clara Valley Transportation Authority
Award(s): $159,998
as of January 19, 2024

Mantra Roy, Jane Dodge, Carlie Lowe, Ann Agee, Michele Villagran, Karla Alvarez, Vidya Kilambi, Sylvia Ruiz, Hyokyung (Carrie) Hwang

Responding to the Lack of Diversity in the Librarian Profession

In 2022, only 4.3 percent of librarians identified themselves as Black or African American, 8.0 percent as Hispanic or Latino (of any race), and 5.1 percent as Asian-American or Pacific Islander.*

On this project, Dr. Roy collaborated with six Co-PIs: 1) Ann Agee, chair, University Library; 2) Jane Dodge, academic liaison librarian; 3) Carl V. Lowe, university archivist; 4) Dr. Michele Villagran, assistant professor in the School of Information; 5) Vidya Kilambi, division manager, Education and Learning Pathways; and 6) Karla Alvarez, community programs administrator from the San José Public Library, as well as Sylvia Ruiz, project coordinator and Hyokyung (Carrie) Hwang, ‘23 MLS, graduate student assistant in the School of Information.

“The two-year program is called BIPOC Become Librarians (BBL). It was made possible by financial support from the Institute of Museum and Library Services,” Dr. Roy says. “The goal of BBL is to introduce librarianship as a possible career choice to BIPOC undergraduate students. The program will inform the long-term goal to recruit, train, develop, and retain a diverse workforce of library and archives professionals.”

Dr. Roy and the BIPOC Become Librarians (BBL) team are responding to the lack of diversity by focusing on the two areas likely to have the most impact: mentorships and internships. At the end of two years, the team will have created a mentorship and internship curriculum that can be shared with other institutions that want to introduce LIS careers to BIPOC communities.

* Source: Department for Professional Employees, AFL-CIO. 2023 Fact Sheet on Library Professionals: Facts and Figures.
Studying Cirrus Cloud Particle Formation to Improve Climate Change Predictions

When people look up at higher-altitude cirrus clouds, they notice the wispy strands, so different in shape from lower-altitude clouds like cumulus clouds. SJSU researcher Dr. Minghui Diao looks up at cirrus clouds, the focus is on how small particles in the atmosphere called aerosols can change cirrus clouds and further change Earth’s climate. Dr. Diao is an associate professor in the Department of Meteorology and Climate Science at the College of Science.

Dr. Minghui Diao’s research team: (clockwise from the top left) Jay Singh, ‘23 MS Physics, William Carter, ‘24 Meteorology, Elder Contreras, ‘25 MS Meteorology, Dr. Neel De-sai, Department of Meteorology Lecturer and Postdoctoral Researcher, Ching-En Yang, ‘19 Meteorology, ‘22 MS Meteorology, and Dr. Minghui Diao, Associate Professor in the Department of Meteorology and Climate Science at the College of Science. Dr. Diao’s research focuses on how small particles influence cirrus cloud formations, which are the only type of clouds that warm the Earth’s surface. As humans emit more aerosols into the atmosphere, understanding how cirrus clouds respond to aerosols could significantly impact climate forecasts in the future. Not pictured: Flor Vanessa Maciel, ‘22 MS Meteorology, Derek Ngo, ‘23 MS Meteorology, and Dao Wang, ‘23 MS Meteorology.

Minghui Diao

Aerosol Indirect Effects on Cirrus Clouds Based on NASA Flight Campaigns and Global Climate Models

National Aeronautics and Space Administration

Award(s): $483,671

as of January 19, 2024

Professor Diao has analyzed research aircraft observations, NASA satellite data, and global climate model simulations finding that larger aerosols have stronger indirect effects on cirrus clouds than smaller aerosols, and the clouds are more sensitive to aerosols when the air is cleaner.

“When aerosol indirect effects are more significant when the air is cleaner,” Diao says. “Two climate models are found to underestimate these aerosol indirect effects. That means we may not have sufficiently quantified the human influences on cirrus clouds in climate predictions as the real atmosphere shows.”

Ozgur Keles

Discovery of Smart Composite Materials at the Nano Level with Quantum Dots

When you and your research colleagues are determined to create strong and smart carbon fiber materials needed for the batteries and vehicles of the future, you have to go really small. In fact, you have to dive down to nanoparticles, which are about one hundred thousand times smaller than the width of a human hair.

When people look up at higher-altitude cirrus clouds, they notice the wispy strands, so different in shape from lower-altitude clouds like cumulus clouds. When people look up at higher-altitude cirrus clouds, they notice the wispy strands, so different in shape from lower-altitude clouds like cumulus clouds.

The Diao Lab is examining the special characteristics of cirrus clouds and their interactions with aerosols. “In our NASA-funded project, we study how aerosols in the atmosphere influence cirrus cloud formation. Cirrus are the only type of clouds that warm Earth’s surface,” Diao says. “As we emit more aerosols into the atmosphere, how cirrus clouds respond would make a difference in future climate predictions.”

Ozgur Keles is flanked by student research assistants Andrea Dairini, ‘24 MS Materials Engineering, and Timothy Tao, ‘24 MS Materials Engineering, in the Keles Lab. Dr. Keles is the Kardesbasi Chair and Associate Professor in the Department of Chemical and Materials Engineering at the Charles W. Davidson College of Engineering. He and his team are developing artificially intelligent discovery machines to explore new, synthesizable, sustainable, and high-performing materials.

A close-up of quantum dots in a suspension. Dr. Keles and his team are using artificially intelligent cyber-physical systems to discover and manufacture tough, strong, lightweight, multi-functional, and sustainable composites. These materials have a wide range of cutting-edge technical applications, including enhanced structural batteries, vertical takeoff and landing vehicles for air taxis, and other innovations contributing to global sustainable socio-economic development.
Thomas Connolly
Understanding the Dynamics and Ecological Impacts of Ocean Circulation in Coastal Zones

Dr. Thomas Connolly is an experienced physical oceanographer who studies the complex physics of ocean currents. As an associate professor at the Moss Landing Marine Laboratories in the College of Science, Dr. Connolly’s work includes researching the dynamics and ecological impacts of circulation in coastal zones.

“Currents and water properties near the Pacific coast are influenced by a wide range of processes, including wind, tides, waves, and ocean turbulence,” Dr. Connolly explains. “Unraveling these complex and physical processes is important for scientists to understand how marine ecosystems respond to changes in weather and climate.”

With financial support from the National Science Foundation, Dr. Connolly and a team of graduate student researchers are exploring how currents and water properties are influenced by a range of processes. These include wind-driven upwelling, tides, turbulent mixing, surface waves, and internal waves.

The Moss Landing Marine Laboratories Physical Oceanography Lab uses a variety of techniques to study coastal circulation patterns. Dr. Connolly’s team gathers observational data from ships, moorings, buoys, and drifters. Collaborative analyses of observational data and computer models allow the team to gain a deeper understanding of the dynamics of the marine environment and the ecological impacts of circulation in our vital Pacific coastal zones.

Yoon Chung Han and Ozgur Keles
San José, STL

STL, or stereolithography, serves as a fundamental file format in the realm of 3D printing, acting as the bridge between digital creativity and tangible objects.

At some universities, collaborations between engineering and design professors may be unusual, but not at San José State. A good case in point is the working partnership between Dr. Yoon Chung Han from the College of Humanities and Arts and Dr. Ozgur Keles from the Charles W. Davidson College of Engineering. With financial support from the National Endowment for the Arts and the SJSU College of Humanities (via the Arts’ Artist Excellence Programming Grant), they designed a project using 3D printing technology. “The program allowed participants to create 3D-printed objects,” Professor Han says.

Their collaborative project was designed to introduce a broad range of community members to the technology and the creative potential of industrial-level 3D printing. At two public workshops hosted by Chopsticks Alley Art and San José Museum of Art, participants learned how to turn 2D digital images into 3D printable models using specialized software programs like Rhino 3D.

The project culminated in an exhibition of the participants’ artwork at the Institute of Contemporary Art San José. “I hope that many community members visit the exhibition and observe the beautifully created 3D printed sculptures that reflect the broad diversity of our workshop participants,” says Professor Han.

Prototype sculptures. The red wave pattern was generated by a test geometric shape provided by a guest artist, Behnaz Farahi; the white sculpture is a lotus flower. The 2D hearts were souvenirs for workshop participants. Photo courtesy of Dr. Yoon Chung Han.
San José State University has a long history of producing talented graduates who have gone on to launch and grow successful companies throughout Silicon Valley and beyond. This entrepreneurial spirit is alive and well and continues to grow every day with active support from the committed staff at the university’s Office of Innovation which was formed in 2020.

At the core of this effort is active, ongoing collaboration with Silicon Valley industry leaders to build and sustain relationships for the benefit of SJSU students, graduates and faculty and the larger San José and Santa Clara County community. This dynamic partnership has extended the local, regional and global impact of the university’s Office of Innovation.

Now these ongoing efforts are fully integrated under the SJSU research foundation. Organizations and industry representatives. The goal is to provide an integrated support network for all SJSU innovators. The SpartUp Incubator and the Silicon Valley Small Business Development Center (SVSBDC) provide active support for Spartan Entrepreneurs, or Spartaneurs, in the practice of successful entrepreneurship. This complements and reinforces the instruction and learning provided by the respected faculty at the Lucas College of Business (LCOB), and serves all nine SJSU colleges.

The SpartUp Incubator and the SVSBDC offer small businesses in Santa Clara County free one-on-one advising sessions, prototyping programs and industry speakers provide Spartaneurs with valuable opportunities to enhance their business skills and upgrade their startups. The Office of Innovation also hosts the SVSBDC to offer small business assistance in Santa Clara County free one-on-one advising sessions on subjects including company formation, human resources, accounting and finance, capital investment and SBIR/STTR funding. All done to promote an enduring spirit of entrepreneurship throughout the community.

A recipient of a $2,000 seed grant from SpartUp’s Proof of Concept Program. SpartUp is just one of the many support services the Office of Innovation provides to student entrepreneurs and the local community to bring their ideas to

Office of Innovation: Accelerating Success for Spartaneurs

Office of Research: Programming and Resources for Faculty and Student Researchers

Navigating the complex world of external grants can be a serious challenge for even experienced faculty, staff, and graduate students. The guidelines, requirements, conditions and deadlines are unrelenting and meticulous. The challenge is even greater for new personnel arriving from another university or part of the world. Fortunately, faculty, staff, and graduate students at San José State University can respond to these challenges with expert help from the staff at the Office of Research. The office is a vital part of the Division of Research and Innovation. Staff are committed to helping faculty members and students navigate the process to apply for and secure grants that span research, scholarly, and creative activities, service, and instruction. The office assists with proposal development, acting as a thought partner to help craft proposals that are the most competitive.

For first-time, principal investigators, the research office staff offers assistance in completing and submitting external grant proposals through its flagship program, University Grants Academy. New investigators learn about and engage with university offices that support the research enterprise, and obtain individualized and cohort-level assistance on their external grant proposal leading to successful rates of awards.

Beyond being a partner on external grants, the Research Compliance unit helps to ensure that research, scholarship and creative activities at SJSU are conducted in ways that are ethical and legal. An important part of this for staff is coordinating the University’s Institutional Review Board (IRB), Institutional Animal Care and Use Committee (IACUC), and the Institutional Biosafety Committee (IBC).
SJSU’s new Interdisciplinary Science Building

**The New, $181M Interdisciplinary Science Building (ISB): Designed for Collaborative Science Teaching, Learning and Research**

With its location in Silicon Valley, the global center for high technology and innovation, SJSU has an extraordinary mission to offer students experiential learning opportunities in science that are world-class in every way. To do that, you need buildings with modern science labs that are specifically designed for collaboration to provide interdisciplinary lecture and active learning classrooms for students throughout the campus, including much-needed informal social spaces where all students, regardless of major, can gather and exchange creative ideas. This is an interdisciplinary space for high-performance computing collaborations by faculty from the College of Science engaged in leading-edge research. The Innovation Loft houses labs for data analytics, intelligent systems, metaverse labs, virtual reality, and science tech research projects.

In fact, you need a building like the new $181M Interdisciplinary Science Building (ISB), with partial funding provided by the SJSU Research Foundation. The 164,000-square-foot state-of-the-art Science Building (ISB), designed for collaborative space.

The campus community during an early tour of the Interdisciplinary Science Building.

"The ISB represents the culmination of many years of work by an army of participants," College of Science Dean Michael Kauffman says. "It is incredibly exciting to see our vision for the building come to life. We designed it to offer transformative student experiences in state-of-the-art teaching classrooms and labs."

When a university is located in the heart of Silicon Valley, it has a unique responsibility to support entrepreneurship among its students and faculty. Fortunately, SJSU has the experts at the Silicon Valley Small Business Development Center (SVSBDC) to provide the knowledge and expertise to do just that.

*Silicon Valley Small Business Development Center: Supporting Small Businesses and Entrepreneurs Across the Community*

When a university is located in the heart of Silicon Valley, it has a unique responsibility to support entrepreneurship among its students and faculty. Fortunately, SJSU has the experts at the Silicon Valley Small Business Development Center (SVSBDC) to provide the knowledge and expertise to do just that.

Edgar Ceron, the director of the SVSBDC, and Kim Tung Nhac Tran, the SVSBDC’s project manager and marketing operations professional, say they are proud to host the SVSBDC at SJSU as part of connecting the Santa Clara community to our campus. "We support small businesses in the county with a range of services like workshops, networking events, and one-on-one advising sessions with subject matter experts," says Ceron.

One recent success story for the SVSBDC team is tech startup NavigateIO. This is a company that provides infrastructure location tracking for first responders navigating the challenges of high-rise buildings. The SVSBDC staff assisted Sukhi Lamba, CEO of NavigateIO, to prepare for and win a key FIRST grant challenge by using the facilities at the MLK library. NavigateIO was able to test their location accuracy technology in a real-world scenario and win $50K.

Another recent success story for the SVSBDC team is Nancy Moua, a family nurse practitioner, and her San Jose business Revive Therapy & Aesthetics – a medical business aiding in wellness through IV therapy, regenerative medicine, and aesthetics. Facing challenges as a first-time entrepreneur, Nancy sought support for grant acquisition and business planning. Working with a dedicated SVSBDC advisor, Nancy received guidance in marketing strategy, financial planning, and attended SVSBDC webinars. With SVSBDC’s assistance, she secured a $5K DREAM FUND grant which enabled a timely business launch. “I consider myself very lucky to have found the SVSBDC; the DREAM FUND program and the resources that they offered were incredibly beneficial. I couldn’t have imagined starting a new business without their genuine support and guidance,” says Nancy.

"We provide unparalleled access to no-cost, technical, and financial expertise from entrepreneurs who have seen it all," Ceron says. "This includes no-cost, high-level advising for potential entrepreneurs in areas like financial modeling and projection pitch preparation to angels and VCs, go-to-market strategies, and access to investment capital."

In just its second year of operation, the SVSBDC exceeded its goals by serving 331 clients and generating $69.5M in total economic impact of which $17.5M was from the federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs and other grant programs.

Ceron and his staff hope to exceed these numbers in the current year by expanding corporate relationships and securing additional sponsorships.

Ceron and Tran have a simple message for aspiring tech entrepreneurs within the university community: "If you are starting a business in Santa Clara County, we would like to hear from you. If you’ve been in business for two to five years and want to reach the next plateau, we are ready to assist."
Commercialization is the step-by-step process of moving inventions from their beginnings in university research and innovation out into the business marketplace where they can have direct social and economic impact. Making commercialization work takes a dedicated team to manage the various moving parts of the process. Every invention moves along its own commercialization pathway. The invention may have been combined with other technologies to improve an existing product, or it may have been designed as the start of something entirely new. The invention may make its way to either the consumer market, the business-to-business economy or both.

In order to make this intricate process work, you need experts like Sandeep Mukkamala, a specialist with the Office of Innovation. According to Mukkamala, “We engage with university researchers to create commercialization strategies that are effective and facilitate licensing agreements with external organizations to promote new opportunities,” he says. He and his colleagues in the Office of Innovation offers market research, industry collaboration, and business networking opportunities to showcase research innovations. They share expertise to help navigate legal and regulatory requirements, as well as provide vital resources for researchers interested in launching their own startups.

“By guiding researchers through the commercialization process, we enhance the university’s reputation as an innovation hub, attract external funding and promote research excellence. Our commercialization efforts generate new revenue for the university and help support additional research initiatives and infrastructure,” Mukkamala adds.

When university researchers make scientific discoveries, create unique works of art, develop unique algorithms, or create breakthrough devices, the result is intellectual property (IP). This is a special category of property that flows from the creative effort of the researcher out into the legal and commercial world of products and services. Assisting researchers with this process is the responsibility of Sandeep Mukkamala, the Office of Innovation’s Intellectual Property Specialist. “Our team offers comprehensive assistance navigating intellectual property (IP) protection, patenting innovations, securing copyright for creative works and trademarks for university-related products and services.”

“We also provide educational resources, workshops, and training sessions to empower faculty with the knowledge and tools necessary to understand, protect, and capitalize on their intellectual property,” Mukkamala adds. “The workshops and training sessions cover key aspects of intellectual property rights and technology transfer processes.”

The process of obtaining a patent can often take four to five years. It starts with an attorney or patent agent filing a patent application with the U.S. Patent and Trademark Office (USPTO). The researcher is then asked to sign an inventor’s declaration and assignment. This step in the process assigns the patent rights to the university. After about a year, the applicant’s patent attorney will receive written notice from the USPTO stating that the application and its claims have been accepted, or that they have been rejected. Very often there are additional requests for information and clarification. This lengthy back and forth is what adds years to the approval process.

IP experts like Mukkamala assist with this complex process, which leads to additional benefits from the partnership. The university benefits from increased revenue, enhanced reputation, and research excellence, and the larger community benefits from economic development, job creation, access to innovation, and a better quality of life.

Converting Research Intellectual Property to Commercialization Opportunities

Learn more about the wide range of intellectual property (IP) support available to faculty, staff, and students by scanning this QR code with the camera on your phone.
The SJSU Early Career Investigator Award recognizes distinguished SJSU faculty who have excelled in research, scholarship, and creative activity during their initial time at the university. This year, Dr. Melissa Beresford from the Department of Anthropology is among this elite group of distinguished award winners.

Her research examines how people use informal, hidden economic arrangements to cope with the challenge of water insecurity. Arrangements like sharing jugs of water with neighbors, pooling labor and resources to build community water systems, or buying water under the table from informal water vendors.

"My goal is to understand when and how these hidden economic arrangements — what we call social infrastructures — can protect people from the most severe effects of water insecurity," she says. "Versus when they might actually exacerbate the problems of having inadequate water. Like taking up more time, being more expensive, or triggering stress and anxiety."

Dr. Beresford and her team are currently studying households in unincorporated areas of Santa Clara County where there is no public water access. Many of the households have lived there for generations and have developed deep cultural knowledge and strong norms on how to cope with unpredictable water availability.

She is also leading a global team of researchers conducting similar research in water insecure communities around the world to examine norms around social infrastructures for water cross-culturally.

"If we know what makes social infrastructures more successful and resilient, we can make better recommendations for how to support and cultivate them, and even how to better integrate them with new policies and technologies, which can help provide people with the water they need."
Dr. Hiu-Yung Wong is the 2023 Industry-Sponsored Researcher Award recipient and an Associate Professor in the Electrical Engineering Department at the Charles W. Dooley College of Engineering.

Hiu-Yung Wong
2023 Industry-Sponsored Research Award
Developing Cryogenic Semiconductor Transistors for Quantum Computer Interfaces

Industry-Sponsored Research Award winner, Dr. Hiu-Yung Wong, works in a research field that involves studying the super low-temperature (cryogenic) properties of semiconductor transistors down to 4.2 Kelvin, which is just 4.2 degrees above absolute zero.

Cold? Yes, you could say that. In fact, Professor Wong could easily make the claim that he and his research associates and graduate students are conducting one of the “coolest” experiments on the entire SJSU campus. This definitely is the “coolest” semiconductor experiment on campus.

His research with the world leading semiconductor company, Samsung, and quantum-engineered materials and intellectual property company Atomera is vital because cryogenic semiconductors are critical components in quantum computers, space exploration, and scientific instruments. In other words, Professor Wong and his team are in the vanguard of advancing cutting-edge semiconductor technologies.

“We have measured quantum-engineered transistors, 65nm transistors, and Myn FinFET (3D transistor) and developed the corresponding empirical models,” he says. “And, we will further develop TCAD models, which can be used in commercial simulators to assist the design of cryogenic semiconductors.”

His interest in cryogenic semiconductors was sparked by the advent of quantum computers. Most of these specialized computers operate at ultra-low temperatures. To develop a large-scale quantum computer, you need cryogenic semiconductor chips to control its operations.

A rewarding part of Professor Hiu-Yung Wong’s work is the interaction with his students. “I am fortunate to have undergraduate and graduate students working on this research project,” he says. “They are hardworking and resilient and fast learners.” And, undoubtedly proud to be working on such a ‘cool project’.

International House
An Intercultural Home

The International House is an intercultural home to approximately 70 U.S. and international students attending San José State University. It was founded in 1978 by alumni of SJSU, Alan and Phyllis Simpkins, and is a very special jewel on the SJSU campus.

International Gateways
English Language

In 2023, International Gateways provided access to SJSU for students from 40+ countries through intensive English, Path to SJSU degree, and semester study programs. Summer in Silicon Valley program participants worked on an innovative team project with SJSU student mentors, learned from SJSU professors, and visited Silicon Valley companies.

SELF-SUPPORT PROGRAMS

The SJSU Research Foundation supports campus by administering the following self-support programs including their financial management, contracting and human resources.

Timpany Center
Physical Health and Wellness

The Timpany Center promotes health and wellness to individuals with disabilities, obesity and advanced age. In partnership with Santa Clara County and the SJSU Research Foundation, the non-profit boasts a newly-renovated swimming pool, adapted fitness center, open swim and gym usage, swim lessons, personal training, group exercise classes, physical therapy and more.
These students and their research work will represent SJSU at the 38th Annual CSU Student Research Competition at the California Polytechnic State University in San Luis Obispo.

Anoushka Lakshmi, '25, BS Biomedical Engineering, Charles W. Davidson College of Engineering
Faculty Mentor: Miri VanHoven, College of Science
Exploiting the Metastable Brominated Diamond Surface for Amine Functionalization with Linear, Cyclic, and Branched Amines

Aries Chu, '25, MS Human Factors and Ergonomics, Charles W. Davidson College of Engineering
Faculty Mentor: Gaojian Huang, Charles W. Davidson College of Engineering

Barbara Boone, '24, Child and Adolescent Development and Psychology, Connie L. Lurie College of Education
Faculty Mentor: Dina Izenstark, Connie L. Lurie College of Education
Exploring the Social and Emotional Effects on College Students Volunteering at a Campus Community Garden

Caitlin Pambid, '23, BA Anthropology, College of Social Sciences
Faculty Mentor: Erik Johnson, College of Humanities and the Arts
Death to the Museum (As We Know It)

Inaya Rehman, '24, Psychology, College of Social Sciences
Faculty Mentor: Michael Aguilar, Dr. Martin Luther King, Jr. Library
The Impact of Social Isolation During COVID-19 on Self-efficacy and Academic Success Among San José State Students

Martin Alvarez Lopez, '25, MS Software Engineering, Artificial Intelligence, Charles W. Davidson College of Engineering

Manan Choksi, '25, MS Artificial Intelligence, College of Professional and Global Education

Sai Yaaminie Ganda, '25, MS Artificial Intelligence, College of Professional and Global Education
Faculty Mentor: Bernardo Flores, Charles W. Davidson College of Engineering
San José Urban Forest

Poorva Jain, '25, MS Human Factors and Ergonomics, Charles W. Davidson College of Engineering
Faculty Mentor: Gaojian Huang, Charles W. Davidson College of Engineering
Perception of Smart Home Technology by Senior Citizens: A Study of Healthy and Unhealthy Adults

Priyanka Bhyregowda, '24, MS Data Analytics, College of Professional and Global Education
Faculty Mentor: Mohammad Masum, College of Professional and Global Education
A Novel Framework Integrating PCA and Active Machine Learning for Efficient Dimension Reduction

Shruthi Srinivasan, '24, MS Biomedical Engineering, Charles W. Davidson College of Engineering
Khoa Letran, '24, MS Biomedical Engineering, Charles W. Davidson College of Engineering
Salim Nasir, '24, BS, Biomedical Engineering, Charles W. Davidson College of Engineering
Faculty Mentor: Yun Wang, Charles W. Davidson College of Engineering
Microfluidic Nano-biosensor for Detection of Botulinum Neurotoxin Serotype A

Zhi Zhang, '24, MS Human Factors and Ergonomics, Charles W. Davidson College of Engineering
Faculty Mentor: Gaojian Huang, Charles W. Davidson College of Engineering
Exploring Drivers’ Preference on Vibrotactile Signals for Takeover Warning on Automated Vehicles: A National Survey

2024 SJSU STUDENT RESEARCH, SCHOLARSHIP, AND CREATIVE ACTIVITY (RSCA) COMPETITION FINALISTS

STATEMENT OF ACTIVITIES
FISCAL YEAR ENDING June 30, 2023

REVENUE AND SUPPORT
Federal Contracts and Grants $19,662,572
State contracts and Grants $12,417,338
Other Contracts and Grants $9,532,099
Indirect Cost Recovery- C&G Other Revenue and Support $9,469,881
Other Revenue and Support $9,654,945
In-Kind Donations $1,509,001
Total Revenue $62,245,836

EXPENSES
Sponsored Programs $42,746,939
Board Designated Programs $417,714
Campus Organizations Activities $6,264,542
Support Activities - Management and General $9,872,384
Transfers to SJSU and Tower Foundation $500,000
Total Expenses $59,801,578

CHANGE IN NET POSITION
$2,444,258
Net Position at beginning of Year $17,138,646
Net Position at end of Year $19,582,904

Types of Revenue and Support

Indirect Cost Recovery - C&G Other Revenue and Support $9,469,881
In-Kind Donations $1,509,001
Other Contracts and Grants $9,532,099
Other Revenue and Support $9,654,945
State Contracts and Grants $12,417,338

In-Kind Donations $1,509,001
Other Revenue and Support $9,654,945
Other Contracts and Grants $9,532,099
State Contracts and Grants $12,417,338
Indirect Cost Recovery - C&G Other Revenue and Support $9,469,881
Jennifer Wolf
Enhancing Permanency in Children and Families (EPC) Program
The Ohio State University
$22,776

College of Humanities and the Arts
Department of Art and Art History
Barbara Hughes
Bay Area California Arts Project (BayCAP) Regents of The University of California $65,000

Department of Design
Yoon Chung Han, Ozgar Keles
Exploring and Supporting San José’s Cultural Heritage, and Sustainable Art through 3D Printing Technology National Endowment for the Arts $20,000

Department of English and Comparative Literature
James Coleman, Scott Jarvie
San José State Writing Project 2022-2023 - Federal Regents of The University of California $39,089

School of Music and Dance
Christopher Luna-Mega
Downtown San José Sound Walk, Concert, Sound Installation San José Downtown Association $5,000

College of Professional and Global Education
Applied Data Science Department
Shayan Shams
Employing Artificial Intelligence to Predict Clinical Outcomes in Ovarian Cancer Ovarian Cancer Research Alliance $900,000

School of Information
Anthony Chow
Reading Nation Waterfall Institute of Museum and Library Services $633,305

Anthony Chow, Darra Hofman,
Seeking Immortality: The Northern Cheyenne Preservation Project (NCPP) Northern Cheyenne Tribe $69,594

College of Science
Dean’s Office
Shelley Cangill
Govan College STEM Grad Subproject Govan Joint Community College District $150,000

MESA College Prep Program for AY 2022-2023 Regents of The University of California $280,000

San José State University $150,000

Michael Kaufman
Astronomical Infrared Bands as Collocated Prabes of Astrophysical Conditions in the JWST-era with The NASA Amos PHh-IR Spectroscopic Database National Aeronautics and Space Administration $551,613

Michael Kaufman, Christiaan Boersma
NIRSpec IFU: Deuterated PAHs, PAH-irides, and PAH Overtones and Combination Bands (ID 1591) Space Telescope Science Institute $109,840

Virginia Lehmkuhl-Daikhwe
Silicon Valley Research Practice Partnership for Computational Thinking and Positive Identity in Computer Science (SV RPP for CT & PICS) Santa Clara County Office of Education $71,704

Virginia Lehmkuhl-Daikhwe, Melody Moh, Alexandra Chakarov
CS4NothCal: Scaling on Evidence-based Model for Teacher Preparation and Support to Provide Equitable and Inclusive CS Ed in California High Schools San Francisco State University $343,160

Department of Biological Sciences
Walter Adams
Microbial and Host Factors that Promote Epithelial Disruption and S. pneumoniae Transit out of the Lung National Institutes of Health $146,500

Jessica Castaños-Verdugo
BRC-BIO: Adaptive Variation through Space and Time in American Pikas (Ochotona Princeps) National Science Foundation $501,088

Maya Devries, Luke Gardner, Michael Graham, Scott Hamilton
Examining the Capacity of Seaweed and Shellsfsh Co-Culture to Improve the Physiology, Biochemistry and Outplanting of Farmed Juvenile Abalone and Oysters United States Department of Commerce $299,663

Aquaterra: A Transformative Research and Training Experience for Undergraduates in Shelflsh Aquaculture University of California, San Diego $74,999

Frank Huyhn
Regulation of Mammary Gland Development by Sirtuin 4 National Institutes of Health $146,500

Jennifer Johnston
Identification of Novel Safe Harbors to be Used in a Gene Editing Strategy for the Treatment of Hemophilia A National Institutes of Health $146,500

Nicolas Esker
HPPo: Horizon-broadening Hostage Production Pipeline Opportunities Texas A&M University $10,131

Laura Miller-Conrad
Blocking Catabolic Antimicrobial Peptide-Resistance in Pseudomonas Aeruginosa National Institutes of Health $109,875

Alberto Rascón Jr.
Understanding the Functional Roles of Newly Identified Serine “Orphan” Proteases and Two Chymotrypsins in the Aedes aegypti Midgut National Institutes of Health $109,875

Karen Singmaster
CSU SJUS-USAMP Program 2018-2023 California State University, Sacramento $60,000

Roger Terrill
Enhanced Cooling Technology Sahajanan Technologies Private Limited $4,000

Kuan-Ann Yoon-Young
Nuclear Chemistry Summer School (NCSS) City University of New York $243,867

Ningqian Wang
Elucidating the Mechanism for Allosteric Regulation of SRT1 through the N-Terminal Region University of California, San Francisco $175,466

Katherine D. Harris
San José Downtown Association Public Art Walking Tour San José Downtown Association $10,000

Bronwyn Lamay, Scott Jarvie
San José State Writing Project 2022-2023 - State Regents of The University of California $36,506

Bronwyn Lamay
San José State Writing Project Learning Acceleration Funds 2022-2023 Regents of The University of California $25,000

School of Journal and Mass Communication
Tina Korani
International Mother Language Celebration Fico $7,000

Development of Faults through Sand and the Slip History of the San Gregorio Fault University of Southern California $30,000

Cristina Tortoreli
R.U.: A Family of Versatile Mixture Models for Analyzing Mixed-Type Data with Asymmetry, Outliers, and Missing Values National Science Foundation $150,000

Yan Zhang
Gas Price Analysis of Ethereum Fee Markets Ethereum Foundation $25,000

Yan Zhang, Tahir Issa
Restraining Bend from Holocene to Mid-Pleistocene in the Southern San Andreas Fault along its Transverse Ranges California State University, Fresno $9,000

Geology Department
Kimberly Blasu
CAREER: Re-Evaluating the Evolution of the Southern San Andreas Fault along its Restro廷ing Bend from Holocene to Mid-Quaternary Timescales via 39Cl/39Ar Burial and Cosmogenic Exposure Dating National Science Foundation $66,753

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Department of Meteorology and Climate Science

Craig Clements
Wildfire Interdisciplinary Research Center
United States Department of Commerce
$115,000

METOPs - Analyze 30 yr Climatology 2KM
WRF Model (2047625)
Pacific Gas and Electric Company
$559,301

Craig Clements, Amanda Stasiewicz, Adam Kochanski, Kate Wilkin
IUCRC Phase I: San Jose State University: Wildfire Interdisciplinary Research Center (WIRC)
National Science Foundation
$207,329

Craig Clements, Adam Kochanski, Amanda Stasiewicz, Minghui Diao
FIRE-PLAN: Planning, Monitoring, Research Across Scales and Disciplines
National Science Foundation
$198,171

Minghui Diao
Advancing the Understanding of Cloud Microphysical Processes and Aerosol Indirect Effects in High-Latitude Mixed-Phase Clouds
United States Department of Energy
$186,398

Aerosol Indirect Effects on Cirrus Clouds Based on NASA Pliant Campaigns and Global Climate Models
National Aeronautics and Space Administration
$176,902

Developing Partnership between SJSU and DOE Lawrence Livermore National Laboratory to Enhance Climate Research Equity and Inclusion
United States Department of Energy
$149,991

Adam Kochanski
Datasets of Dead Fuel Moisture for California Lawrence Livermore National Laboratory
$49,642

Improving Understanding of the Impact of Fire-Atmosphere Coupling Processes on Near Fire Circulations and Fire Behavior California Department of Forestry and Fire Protection
$248,364

Integration and Evaluation of WRF-SiRE Application for Interoperability in Wildfire Decision Making Colorado State University
$44,431

Leveraging a Hybrid High-Performance Computing Framework for Fire Forecasting Bay Area Environmental Research Institute
$51,485

Predictive Physics-Based Modeling Framework for Biomass Combustions in Wildfire Conditions Lawrence Livermore National Laboratory
$31,728

Towards a NU-WRF based Megafa Wildfire Digital Twin Smoke Transport Impact Scenarios on Air Quality, Cardiovascular Disease and Regional Deformation University of Maryland, Baltimore County
$51,840

Qian Tan
The NOAA Cooperative Science Center in Atmospheric Sciences and Meteorology Howard University
$54,740

Miguel Valero
Quantitative Measurement of Wildfire Behavior in the Field Leveraging Remote Sensing for Reproducible Observation and Improved Understanding National Science Foundation
$49,017

Elizabeth Walsh
Collaborative Research: The Role of the Southern Ocean in Late Pleistocene Climate Change National Science Foundation
$192,332

Department of Physics and Astronomy

Alejandro Garcia
Stochastic and Hybrid Models and Algorithms for Fluids Lawrence Berkeley National Laboratory
$130,111

Hilary Hurst
RUI: Quantum State Control for Ultracold Atoms National Science Foundation
$180,000

Ehsan Khatami
Al and Data Science Enabled Predictive Modeling of Collective Phenomena in Strongly Correlated Quantum Materials University of Tennessee
$110,588

Cassandra Paul, Gina Quan, Resa Kelly, Jennifer Arsen
Agents of Change: Faculty-Learning Assistant Partnerships Supporting Active, Engaging, Equitable Learning Environments California State University System
$221,969

Agents of Change: Investigating How Partnerships Between Faculty and Learning Assistants Enable Pathways for Sustainable Institutional and Classroom Transformation National Science Foundation
$1,070,013

Cassandra Paul, Tammy Vinsant, Marcos Pizarro, Katherine Wilkinson
Transforming Undergraduate Teaching and Learning Through Culturally Sustaining, Active, and Asset-Based Approaches to Introductory Science Courses National Science Foundation
$433,431

Gina Quan
Transfer Advocacy Groups: Transforming Culture to Support Transfer Students of Color in Undergraduate Physics National Science Foundation
$850,929

Aaron Romanowski
A Trail of Dark Matter-Free Galaxies in the NOCS152 Group Space Telescope Science Institute
$39,502

Characterizing the Unusual Star Cluster Population in a Candidate Dark Matter Free Galaxy Space Telescope Science Institute
$41,435

Unraveling the Origins of Cluster Ultra-diffuse Galaxies Jet Propulsion Laboratory
$14,850

Moss Landing Marine Laboratories

Ivane Aiello
A Global Synthesis of Timing and Depth of Brachiopod Mineralization in Cenozoic Marine Sediments Based on ODSP-ODP/ADP Legacy Cores Columbia University
$35,885

Dustin Carroll
Analysis of the Role of Dead Vertical Migrants in the Marine Biological Pump Brown University
$51,141

Synchro-Co-Design Lab for Synchronizing Technology Evolution for Industry, Ocean Science and Conservation Monterey Bay Aquarium Research Institute
$30,000

Thomas Connolly, Maxime Grand, Holly Bowers
CenCOOS Partnership: Information Solutions to Power Healthy and Prosperous Oceanic, Coastal and Estuarine Communities Monterey Bay Aquarium Research Institute
$118,412

Rocio Cooley
The Impact of Domestic Acid on Marine Mammals from Southern California: Cetahalopaed as Potential Vectors California Office of Environmental Health Hazard Assessment
$49,972

Rapid Response to Understanding Causes, Impacts, and Treatments of Thiamine Deficiency in California Salmon University of California, Davis
$19,996

Michael Feinholz, Mark Yturhour
Marine Optical Buoy (MOBY) Operations and Technology Refresh University of Miami
$3,226,019

Luke Gardner
White Abalone Restoration Co-Culture Research and Production United States Department of Commerce
$24,962

Developing Domestic Formulated Feeds and Sea Cucumber Polyculture Integration in California Abalone Aquaculture California Department of Food and Agriculture
$14,988

Michael Graham, Scott Hamilton
Universal Hatchery System for Developing New Seaweed Strains for Land-Based Aquaculture Production University of California, San Diego
$183,009

Michael Graham, Scott Hamilton, Maya Devries
Improving MTA System Design for the Co-Culture of Seaweeds and Abalone to Mitigate the Effects of Climate Change University of California, San Diego
$149,999

Scott Hamilton
Assessing the Potential for Rapid Adaptation to Climate Change in Rockfish California State University, Monterey Bay
$192,167

James Harvey
Estuarine Wetland and Nearshore Ecology Studies along the Pacific Flyway United States Geological Survey
$110,000

Suisun Marsh Waterfall Science Investigations: Data Synthesis and Manuscript Preparation United States Geological Survey
$155,000

Wesley Heim
PO4E Diablo Canyon Power Plant Project Pacific Gas and Electric Company
$347,636

Wesley Heim, Marco Sigala, Ross Clark
SWCRB-SWAMP Agreement Number 20-006-270 California State Water Resources Control Board
$2,118,044

Deborah Maloney
NSF Graduate Research Fellowship Program National Science Foundation
$49,000

Janet Prince
Supporting Marine Mammal Strandings Response on the Central California Coast (Sub-award through UCSC) University of California, Santa Cruz
$20,274

Mara Orescian
Ecosystem Inlet Evolution and Dynamics - Year 2 Amendment University of California, San Diego
$33,768

Jonathan Prince
NSF IRA Assignment National Science Foundation
$203,212
College of Social Sciences
Department of History
Victoria Harrison
Payment from the Israel Consulate into the Jewish Studies Account
Consulate General of Israel to the Pacific Northwest
$2,000

Department of Justice Studies
Margaret Stevenson
Enhancing Employment Through Digital Literacy Workshops Pilot Program
Santa Clara County
$15,906

San José State University Research Foundation (SJSURF) Service Navigation-2022-2023
Santa Clara County
$100,000

Worm Monad and Royalty Services
California Board of State and Community Corrections
$750,000

Department of Psychology
Valerie Carr
A Hormonal Mediator of Temporal Lobe Subregion Segmentation Protocol: An Essential Element for Dementia Research
The Ohio State University
$46,256

Hippocampal Subfields Segmentation Summit
National Institutes of Health
$10,000

Cassie Hilditch
2022 Fatigue Management Training for San Francisco Bay Pilots
California Maritime Academy
$6,000

Sean Laraway
Human Systems Integration: Coll. Human Factors Research to Improve Safety, Efficiency and Reliability of NASA’s Aeronautics and Space Missions: Phase 2 National Aeronautics and Space Administration
$12,536,329

Task Order No. 03-AS20-01509
ASRC Federal
$121,928

Test Subject Recruitment Office - Task Order No. 2
ASRC Management Services
$43,832

Evan Palmer
Mobile Device Thermal Comfort - Study #2 Google, Inc.
$65,036

Susan Snyderscik
Future Vertical Lift: Collaborative Research on Flight Control, Autonomous Rotorcraft, and Human-Systems Interface Design
National Aeronautics and Space Administration
$2,837,314

Implementing Macroergonomics for increasing the Safe, Effective, and Efficient Operation of the Entry Systems and Technology Division’s High Enthalpy Facilities
National Aeronautics and Space Administration
$57,527

SJSURF Support of Elroy Air
Elroy Air
$43,837

SJSURF Support of eVTOL Development
Bell Textron Inc.
$254,236

Department of Urban & Regional Planning
Serena Alexander
Visiting Scholar Position at the U.S. DOT’s Climate Change Center
Department of Transportation
$171,432

Serena Alexander, Hillary Nixon
Equitable VMT Mitigation Program for Santa Clara County
Santa Clara Valley Transit Authority
$52,557

Caltrans Urban and Regional Planning Training Program
California Department of Transportation
$141,448

Environmental Studies Department
Craig Clements
Different Community Needs and Uses of Fine Weather and Smoke Information
United States Department of Commerce
$1,420,000

Dustin Muhaney
Hydrosocial Dynamics and Environmental Justice in Water-Energy Transitions
Portland State University
$84,065

Bruce Olszewski
Recycling/Reuse Hotline and Website for Santa Clara County
City of Morgan Hill
$166,000

Amanda Stasiwecz
Motivating Homeowners to Take Whole Home Prepared Action
Insurance Institute for Business and Home Safety
$45,000

Lynne Trull
RN-UBE: San Francisco Bay Area Research Coordination Network for Student Opportunities in Avion Research (SOAR) to Enhance STEM Education...
Stanford University
$8,900

Sociology and Interdisciplinary Social Sciences Department
Yvonne Kwan
AAP: Active Perspectives: Collective Community Storytelling in Japantown, San José
San José Downtown Association
$31,821

Special Education
Matthew Love
CCLA: California Coalition for Learning Acceleration
Santa Clara County Office of Education
$48,963

Dyslexia Grants: San José State University
California Commission on Teacher Credentialing
$14,000

Teacher Education
Katelyn Aguilar
San José State University Single Subject Intern Program 2022-2023
Milstias Unified School District
$80,535

Connie L. Lurie College of Education
Child and Adolescent Development
Maria Fasaro, Andrea Galloher, Emily Shuesser, David Whitman
SJSU P-3 Credential ITP Planning Grant
California Commission on Teacher Credentialing
$250,000

Cara Mattlin, Nidhi Mahendra, Matthew Capriotti
Healthy Development Community Clinic: Wellness for Children, Youth, and Families
Substance Abuse and Mental Health Services Administration
$500,000

Cara Mattlin, Nidhi Mahendra
Culturally-Responsive Wellness and Communication Interdiciplinary Healthcare Development Community Clinic
Santa Clara Family Health Plan
$250,000

Ellen Middaugh, Mark Felton
Investing in Intelligence: CLARION - UC Links/CSU Seed Funding SJSU
University of California, Berkeley
$15,000

Emily Slusser, Maria Fasaro, Andrea Galloher
Santa Clara County Early Learning Master Plan Mid-Implementation Review
Santa Clara County Office of Education
$31,821

Allison Briceno
Cultivating and Sustaining Bilingualism in Multilingual Youth
Santa Clara University
$63,260

Connie L. Lurie College of Education
Child and Adolescent Development
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Teacher Education
Katelyn Aguilar
San José State University Single Subject Intern Program 2022-2023
Milstias Unified School District
$80,535
### Contracts, Grants, and Fellowships

<table>
<thead>
<tr>
<th>Organization/Program</th>
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<tbody>
<tr>
<td><strong>SJSU Research Foundation</strong></td>
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<tr>
<td><strong>California Department of Transportation Mobility (MCTM) TO 023</strong></td>
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<tr>
<td><strong>Mineta Consortium for Transportation</strong></td>
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<tr>
<td><strong>Karen Philbrick</strong></td>
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<tr>
<td><strong>$158,729</strong></td>
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<tr>
<td><strong>California Department of Transportation Mobility (MCTM) TO 022</strong></td>
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<td><strong>Karen Philbrick</strong></td>
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<td><strong>$69,955</strong></td>
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<td><strong>United States Department of Transportation (MCEEST)</strong></td>
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<tr>
<td><strong>Efficient, and Sustainable Transportation</strong></td>
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<td><strong>The Mineta Consortium for Equitable,</strong></td>
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<tr>
<td><strong>and Sustainable</strong></td>
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<tr>
<td><strong>Transportation Security Administration</strong></td>
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<tr>
<td><strong>$367,518</strong></td>
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<td><strong>Senate Bill 1 (CSU Lead Center)</strong></td>
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<td><strong>California State University System</strong></td>
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<tr>
<td><strong>$2,000,000</strong></td>
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<td><strong>CaliforniansForAll College Service Program</strong></td>
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<tr>
<td><strong>$1,110,000</strong></td>
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<tr>
<td><strong>Elena Klaw</strong></td>
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<tr>
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<td><strong>$130,685</strong></td>
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<td><strong>California State University</strong></td>
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<td><strong>$25,290</strong></td>
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<td><strong>California State University - FY 2020-2025</strong></td>
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<td><strong>ASPIRE (Student Support Services) - San José State University</strong></td>
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<tr>
<td><strong>Maria Cruz</strong></td>
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<tr>
<td><strong>$2,000,000</strong></td>
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<tr>
<td><strong>United States Department of Education</strong></td>
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<tr>
<td><strong>Hispanic Student Success in Engineering Project Engineering Success: Increasing</strong></td>
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<tr>
<td><strong>Rosenfeld</strong></td>
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<tr>
<td><strong>Vincent J. Del Casino, Jr.</strong></td>
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<tr>
<td><strong>Provost and Senior Vice President for Academic Affairs, SJSU</strong></td>
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<tr>
<td><strong>From the SJSU Administration</strong></td>
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<tr>
<td><strong>Mohamed Aboussalam</strong></td>
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<tr>
<td><strong>President, SJSU Research Foundation Board of Directors</strong></td>
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<tr>
<td><strong>Richard Macartney</strong></td>
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<tr>
<td><strong>Vice President, SJSU Research Foundation Board of Directors</strong></td>
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<tr>
<td><strong>Charlie Faas</strong></td>
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<td><strong>From the SJSU College Deans</strong></td>
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<tr>
<td><strong>Marc d’Alcarco</strong></td>
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<td><strong>Dean, College of Graduate Studies, SJSU</strong></td>
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<tr>
<td><strong>Sheryl Ehrman</strong></td>
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<tr>
<td><strong>Don Beall Dean, Charles W. Davidson College of Engineering, SJSU</strong></td>
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<tr>
<td><strong>Heather Lattimer</strong></td>
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<tr>
<td><strong>Dean, Connie L. Lurie College of Education, and Interim Vice Provost of Undergraduate Education</strong></td>
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<tr>
<td><strong>From the SJSU Faculty</strong></td>
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<tr>
<td><strong>Ivano Aiello</strong></td>
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<tr>
<td><strong>Professor, Moss Landing Marine Laboratories, College of Science</strong></td>
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<tr>
<td><strong>Jason Aleksander</strong></td>
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<tr>
<td><strong>Professor, Philosophy, College of Humanities and the Arts</strong></td>
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<tr>
<td><strong>Laurie Drabble</strong></td>
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<tr>
<td><strong>Professor, School of Social Work, and Director, Center for Applied Research in Human Services, College of Health and Human Sciences</strong></td>
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<tr>
<td><strong>Katy Kao</strong></td>
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<tr>
<td><strong>Professor, Chemical Engineering, Charles W. Davidson College of Engineering</strong></td>
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<tr>
<td><strong>Matthew Spangler</strong></td>
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<tr>
<td><strong>Department Chair, Department of Film, Theatre, and Dance, College of Humanities and the Arts, and Professor: Communication Studies, College of Social Sciences</strong></td>
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</tbody>
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Members of the Research Foundation Board of Directors represent SJSU administration, faculty and students, as well as the larger community.