

RESEARCH DIRECTIONS



ANNUAL REPORT



RESEARCH DIRECTIONS



About the cover:

Arizona's monsoon season offered SJSU Meteorology students hands-on experience.

President's Message

RESEARCH DIRECTIONS

The publication of this 2008-09 San José State University Research Foundation Annual Report provides a valuable opportunity to recognize our faculty, students and affiliated experts engaged in the rich portfolio of research, community collaborations and scholarly pursuits here at San José State University. One of the critical roles for any institution of higher education is to be a stellar community of teachers, learners and scholars, and research remains an important cornerstone of those activities. This report offers excellent examples of the significant and highly relevant research directions being pursued within the SJSU community.

Our areas of investigation are as diverse as the interests and capabilities of our university community. In all these activities, the SJSU Research Foundation provides valuable services—helping to build partnerships and providing specialized administrative management of hundreds of individually funded programs from nearly 200 different program sponsors. I am particularly pleased that so many of our students took part in these initiatives, participating in hands-on experiences such as testing new models for multi-lingual language instruction and exploring the emerging world of stem cell science. As you will see, beyond the essential academic merit of all of these initiatives, SJSU's externally funded activities have broad and positive impacts on our community, our region, and beyond.

Through the hard work and sustained commitment of our faculty, our partnerships with numerous local, state and federal governmental agencies, including NASA, the National Science Foundation, Department of Education and the National Institutes of Health, are thriving. Our research programs and collaborative initiatives continue to draw the support of industry notables such as Kaiser Permanente, IBM, Roche Diagnostics and many others. In the face of serious financial challenges, these relationships enable the campus to grow external resources and maintain our high standards of instruction and research. San José State University, its Research Foundation, and all the individuals and communities who have benefited from these programs are grateful for our sponsors' support.

I also want to acknowledge our capable team of professionals at the Research Foundation and an



Jon Whitmore and Mary Sidney

exemplary Board of Directors, composed of university faculty, administrators and community leaders, all of whom make significant contributions of time and expertise that benefit our university community in so many ways.

I am proud of all of the accomplishments of the SJSU community and look forward to building still further on our record of success.

Jon Whitmore
Jon Whitmore
President, SJSU

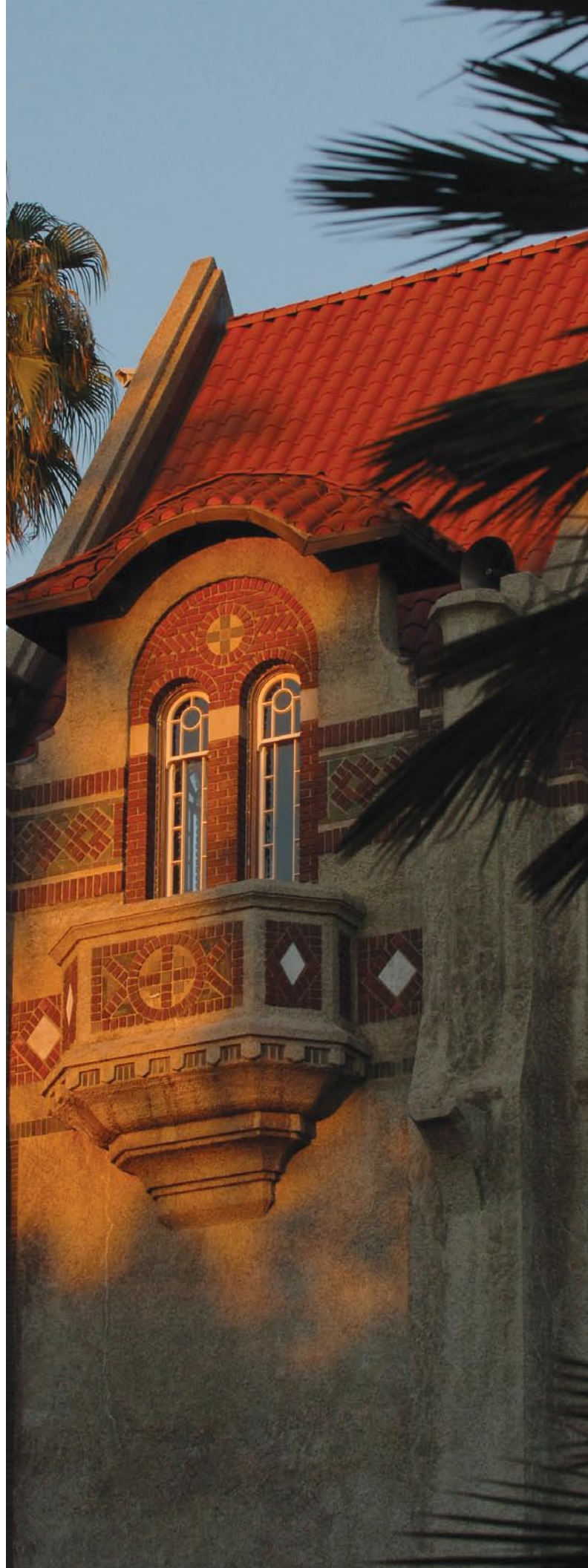
As a comprehensive university serving the most entrepreneurial region in the world, SJSU remains uniquely positioned to investigate a range of scientific, social and civic issues related to the University's broad spectrum of academic disciplines. Indeed, SJSU research and scholarly pursuits extend far beyond the confines of campus-based laboratories, from air flight simulators at NASA Ames Moffett Field to deep ocean exploration along California's coast. The projects profiled in the following pages chart the University's myriad directions of intellectual inquiry.

San José State University and the SJSU Research Foundation also play key roles in the economic resiliency of the Silicon Valley region. The San José Business Incubator program, our partnership with the City of San Jose Redevelopment Agency, enables vital new businesses to start up, mature and successfully enter the marketplace. These programs launch new companies, generate thousands of local and regional jobs, and build stronger ties between our academic community and the business sector. Both the San José BioCenter and the Environmental Business Cluster have received the distinction of being named Incubator of the Year by the National Business Incubator Association.

All of these efforts further the University's fundamental mission: "To enrich the lives of its students; to transmit knowledge to its students along with the necessary skills for applying it in the service of our society; and to expand the base of knowledge through research and scholarship." As we look to the future ahead, we reaffirm our commitment to this mission and to supporting the important and impactful investigative directions of the thriving San José State University research enterprise.

Mary Sidney

Mary Sidney
Chief Operating Officer
SJSU Research Foundation

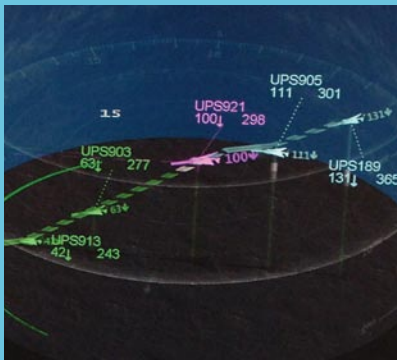


Friendlier skies

RESEARCH DIRECTIONS



Kevin Jordan (front) with Tom Prevo (back left) and Vern Battiste



Is it possible to fly safer, greener, and still arrive on time? The Federal Aviation Administration's Next Generation Air Transportation System (NextGen) aims for nothing less, implementing technologies that support more aircraft in the air, flying closer together on direct routes and thereby reducing delays, carbon emissions and fuel consumption.

Instrumental to this aviation evolution is a group of SJSU Research Foundation scientists collaborating with NASA and the FAA on large-scale simulations that evaluate the human factors in these technological advances. For a recent study focusing on separation assurance—maintaining a safe distance between aircraft—SJSU's team was part of the group that received NASA's Group Achievement Award. Their key NextGen research was also highlighted in NASA's 2008 *Performance and Accountability Report*.

Directed by **Dr. Kevin Jordan**, Department of Psychology, the research project brought together, among others, Vernol Battiste, also of the Department of Psychology, senior research engineer Dr. Thomas Prevot, SJSU graduate students and 20 airline pilots.

"Pilots love coming to NASA and being part of our simulations because they get a peek into the future," Jordan says.

Battiste, who specializes in flight deck display research, built a Boeing 777 flight simulator that is flown by two of the pilots during simulations. Prevot, who specializes in air traffic control research, rewrote all the lab software. Prevot's development efforts "are the heart of all our simulations," Jordan says.

Currently Jordan oversees three cooperative agreements with NASA that together represent more than \$10 million in funding and employ 75 researchers, including SJSU gradu-

“As a graduate research assistant, I was introduced to the Flight Deck Display Laboratory (FDDRL) while the lab was preparing for its En-Route Separation Assurance study. The exposure taught me both the theoretical and applied aspects of experimental research.”

—Sarah Ligda, MA,
Experimental Psychology,
FDDRL Research Associate



ate students working toward degrees in Psychology and in the interdisciplinary graduate program Human Factors in Ergonomics.

Cooperative agreements, unlike research grants, require substantial federal participation, which Jordan accommodates by working onsite in a NASA office.

NASA offers “access to a million-dollar sandbox,” Jordan emphasizes. “We don’t have such facilities at the university, but we do have them here, enabling students to work on their theses.”

Jordan’s almost 25-year association with NASA has garnered more than \$101 million in external funding and established a partnership that provides continuing benefits to the university.

The next round of cooperative agreements with NASA and the FAA “will result in hundreds of thousands of dollars going directly to San José State,” he reports. “Our human systems unit will be studying shift schedules, fatigue and fatigue countermeasures, flight deck and ground control station designs. Those areas contain lots of meaty human factors issues.”



Healthy Campus SJSU

RESEARCH DIRECTIONS



A mobile food cart on campus where faculty, staff and students can purchase fresh fruits and vegetables. Direct delivery to campus of boxed, locally grown, organic produce for customer pickup. A vegetable garden across from Clark Hall. Students providing client-user input in the planning and design of new buildings and facilities. Healthy Campus SJSU has brought all those innovations to campus and more.

Sponsored by Kaiser Permanente and directed by the Department of Nutrition's **Dr. Marjorie Freedman** and the Department of Anthropology's **Dr. Charles Darrah**, the initiative aims to raise awareness about health and wellness among students, faculty and staff, and to discover ways in which the physical campus, or "built environment," can support healthier lifestyles.

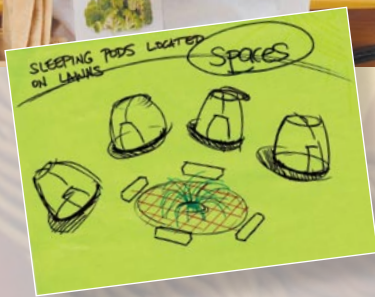
"Not everyone is going to eat healthfully, but with increased access to healthy foods, more do choose the healthful option," Freedman says. Over the past two years, she has worked extensively with Spartan Dining

in the Dining Commons, investigating various methods of reducing portion sizes that, in turn, reduce caloric intake.

Her research showed that the portion sizes of French fries could in fact be reduced by a third—a significant caloric reduction—before students compensated by taking two portions instead of one. Her student research team posted photographs of small and larger-size portions of French fries, along with each portion's calorie and fat content. The result? A remarkable 30 percent of diners passing on fries altogether.

Darrah's research studied the campus as a community and social system.

Over the course of a year, campus-wide ethnographic interviews were conducted by six Applied Anthropology graduate students and students enrolled in Darrah's Ethnographic



Charles Darrah





Marjorie Freedman

“I was only vaguely aware that I might be helping to make the campus a healthier place through research and design when I started the project. I learned a great deal about everyday life at SJSU, how to organize research studies, and how to use research to make design decisions.”

—Alicia Murphy, MA,
Applied Anthropology

Methods class. The content of those interviews helped to establish people’s “trajectories on campus,” Darrah explains. “Before suggesting changes to the physical campus, we need to know the campus ‘hot spots’—locations that are popular destinations or are passed through frequently.”

Once the interviews were completed, Darrah organized a day-long charrette, or workshop, that brought together students from Anthropology, Health Science, Urban and Regional Planning and Industrial Design to brainstorm about products, spaces, services and policies that would support wellness on campus.

“A design on paper might look wonderful,” Darrah says, “but more importantly it needs to fit the local culture.”

Ideas generated at the charrette are being incorporated in the planning



and design of the new student health center.

“We’ve got this great resource on campus: students,” Darrah says. “So how do we involve them in the process of planning what our campus will be in the future?”

The Sound of music

RESEARCH DIRECTIONS



Chang Choo with students



“Working with Dr. Choo on this grant, I have been able to practically implement my knowledge as well as learn many new things that are required in the industry. The experience will prove very useful when I search for a job.”

—Pranjali Deshmukh, student research assistant

Anyone who has placed a call on a cell phone to a business, been put on hold, and in the interim been forced to listen to scratchy music has grumbled over the low quality of that transmission. Why can't it sound better? It not only can, it soon will, thanks to the research of **Dr. Chang Choo** of SJSU's Department of Electrical Engineering.

With his current \$60,000 grant from Korea's Electronics and Telecommunications Research Institute (ETRI), Dr. Choo is working on bringing FM radio-quality sound to cell and IP (internet protocol) phones.

Sending and receiving voice and music requires compression of audio signals, and currently the same compression and decompression (codec) technique used to convey the sound of a voice is also used to convey music through a cell phone or over the internet.

Therein lies the problem.

As Choo explains: “When music is compressed using the voice compression technique, the resulting audio quality is not good.”

Choo is prototyping a wideband and super wideband audio codec on an Altera Company-donated FPGA (Field Programmable Gate Array) development system that converges both voice and music compression into a single codec. Added hardware accelerators help to achieve a much higher computational complexity than what is found in basic voice codec technology.

The intended result?

Something that will equal the quality of the sound we hear listening to FM-radio. In short: music that will sound closer to the way music should. The improvement will

also allow more of the nuances of a speaker's voice to come through.

As we move toward automobiles that respond to voice-directed commands, Choo's research will also help to ensure the safety and accuracy of hands-free communication by helping to filter out extraneous noise and echoes within a closed car.

Choo first visited ETRI as a consultant for a U.S. telecommunications company. He and his research specialty caught the company's attention. Subsequently, ETRI approached Choo about partnering on a three-year project that involved studying the digital convergence of voice, video and mobile/fixed internet as a means of integrating services. Once work on the wideband audio codec prototype is complete, ETRI will “commercialize the research results in the form of a new silicon chip,” Choo reports.

In addition to Choo's grant, ETRI is also funding speech recognition research by SJSU linguistics professor Han Koo. The company's overall support for campus research initiatives across academic disciplines has exceeded \$335,000 over the last eight years.

“Korea is well-known for advanced information technologies including cell phones, LCD TVs, and semiconductors, and is continually looking for key technologies in Silicon Valley to incorporate into their products,” Choo says. “In this globalization era, marketing an internet protocol-based technology developed in Silicon Valley to other countries is becoming more common and important.”

This particular academic-industry partnership could well play a significant role in improving the quality of these increasingly valued products and services.



Success in any language

RESEARCH DIRECTIONS

In a world of global interactions and information sharing, the ability to speak, write and fully comprehend more than one's native language is an invaluable asset and stepping stone to achievement. A pioneer in dual language immersion and author of the field's cornerstone text, *Dual Language Education*, SJSU's **Dr. Kathryn Lindholm-Leary** has specialized in finding better ways to increase students' language proficiencies for more than 20 years. Since joining the Department of Child and Adolescent Development in 1988, she has received in excess of \$1.1 million in research contracts to establish and evaluate the effectiveness of dual language programs throughout the U.S. and in California, where twenty-five percent of school-age children come from homes in which English is not the primary language.

Two-way, or dual language, immersion programs provide academic instruction in two languages in classrooms containing both native English speakers and English language learners, with the goal of helping both sets of students become bilingual and biliterate.

"In programs that do provide primary language instruction for English learners," Lindholm-Leary reports, "we see students who succeed at higher levels of proficiency and higher levels of academic achievement."

Historically, two-way immersion programs were built around the languages of English and Spanish.

"Now," says Lindholm-Leary, "we have Chinese, Korean and other languages combined with English for two-way immersion programs in California. There's increasing interest in foreign language development in our state. Parents really want their children to know two or more languages."



Kathryn Lindholm-Leary

Lindholm-Leary first began to evaluate what was then the new model of two-way immersion programs in conjunction with UCLA's Center for Language Education and Research in 1985. At the time, there were only 37 such programs in the entire country and only one in California, in San Diego. Today, in California, that number is closer to 100.

"Because they don't cost any more to implement than regular mainstream programs, we've seen a surge in two-way programs in California," says Lindholm-Leary.

Lindholm-Leary also works with preschool agencies to evaluate the implications of universal preschool for English learners. In concert with the Silicon Valley-based Sobrato Family Foundation, she is currently examining different bilingual mod-

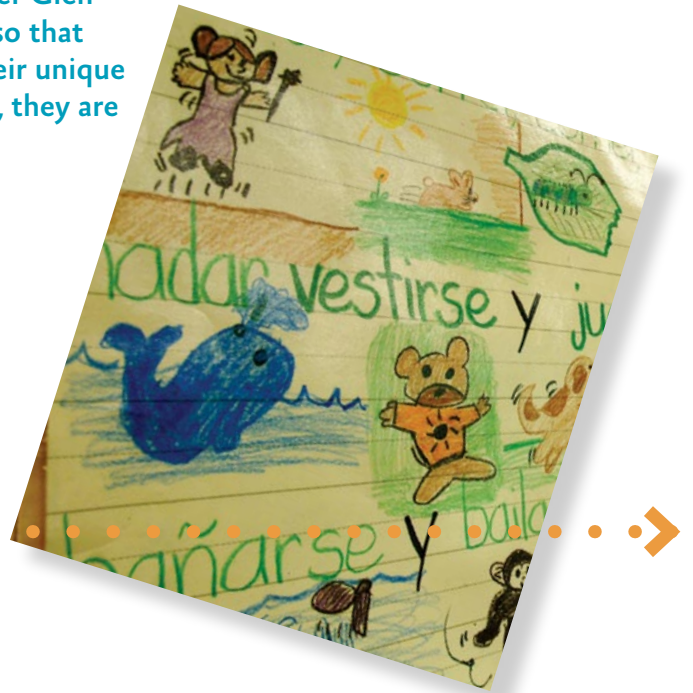
els to determine which of those best prepare English learners for kindergarten.

Previously the majority of Lindholm-Leary's research targeted K-6 public school populations; those parameters have now expanded. Her recent contracts, funded by the federal Department of Education Foreign Language Assistance program, evaluate students K-12.

"The DoE is not just interested in language proficiency programs in secondary schools anymore," Lindholm-Leary reports. "It's also interested in the performance of students throughout the span of K-16, so that students are highly proficient in a second language."

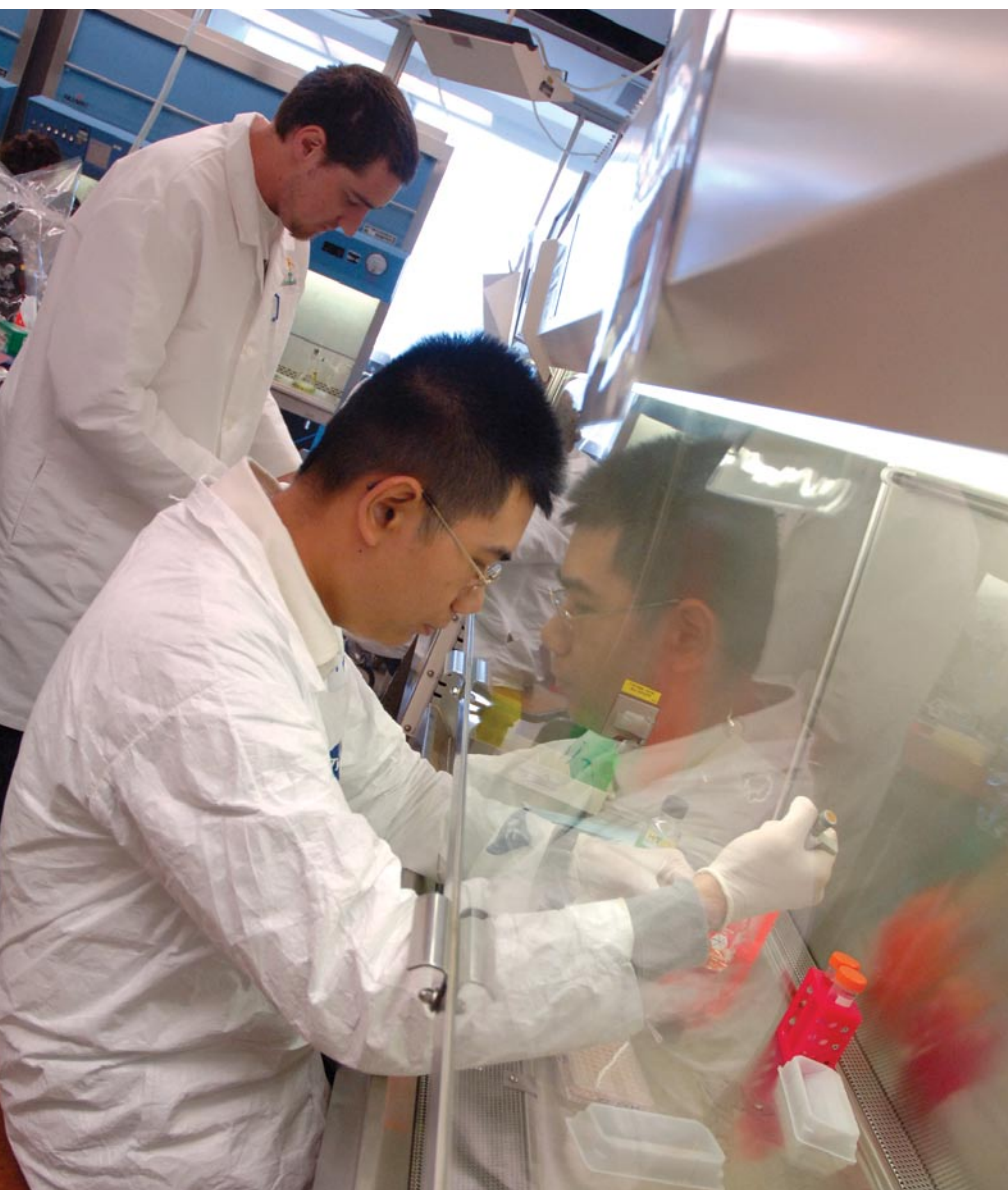
“In the two-way bilingual immersion program at River Glen School, we educate our students in two languages so that they become bilingual and biliterate. Because of their unique communication skills and multicultural perspective, they are truly prepared to engage in a global society.”

—Mildred Colon-Arellano, Principal, River Glen School



Educating stem cell researchers

RESEARCH DIRECTIONS



Graduate students in SJSU's Department of Biological Sciences now have an extraordinary opportunity to study stem cell biology in a two-year master's program that is drawing applicants from all around the world.

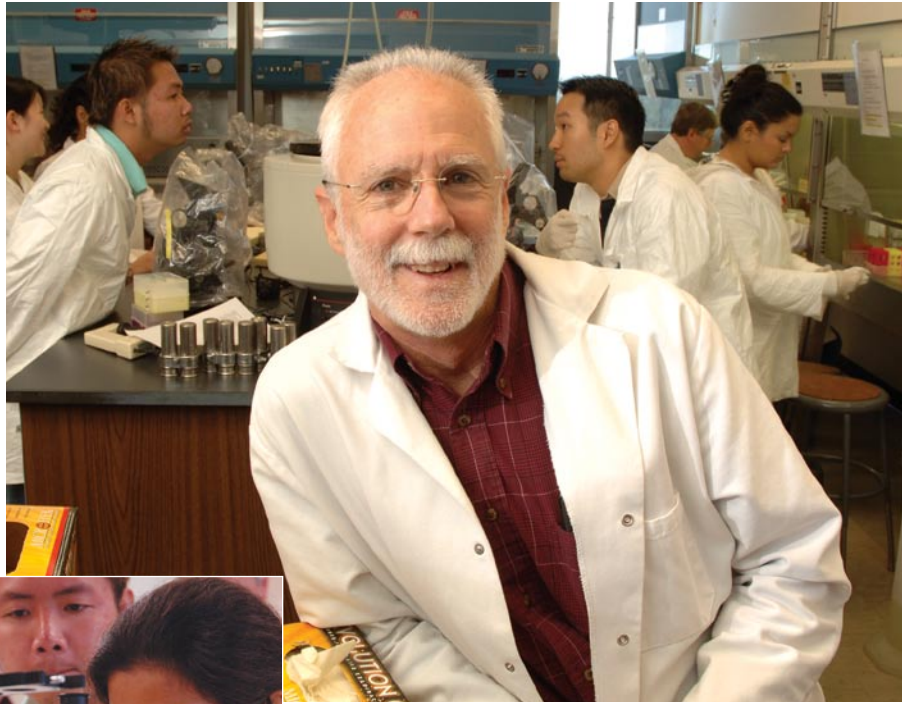
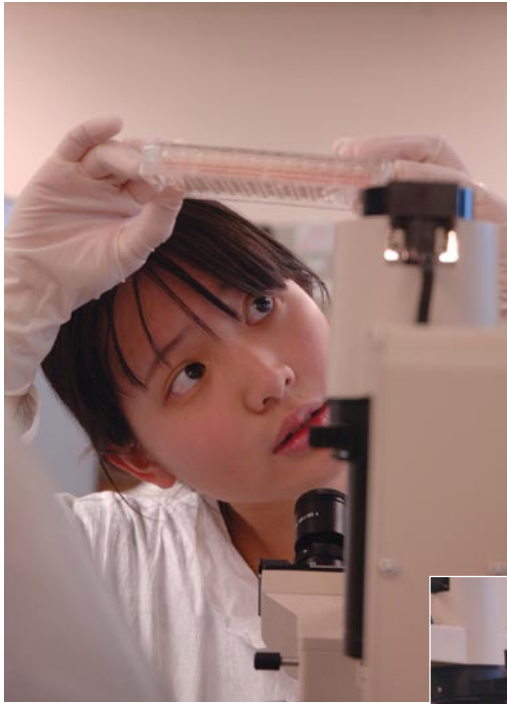
Funded by a \$1.7 million grant from the California Institute of Regenerative Medicine, SJSU's Stem Cell Internships in Laboratory-based Learning (SCILL) program, led by **Dr. John Boothby**, chair of the Department of Biological Sciences, will educate 30 SJSU graduate students, 10 each year, for careers in stem cell biology and regenerative medicine.

The largest funding organization for embryonic and pluripotent stem cell research in the world, the California Institute of Regenerative Medicine was created in 2004 by the passage of Proposition 71. It has since awarded nearly \$16 million to 11 CSU campuses to advance the field of regenerative medicine.

The SCILL program combines instruction, laboratory work, internship placement, faculty mentoring and career guidance. After completing a year of classes, students spend their second year doing laboratory research in one of four leading academic, nonprofit or private facilities.

"Our job at SJSU is to make sure the students have the course background. The host partner institute's job is to give students a stem cell research experience that will help develop a skill base," Boothby explains.

Two of the four internship partners, Stanford and the University of California Santa Cruz, are academic research institutions. The other two partners, The Parkinson's Institute



John Boothby

“The SCILL program has offered an opportunity of a lifetime, not only to work at a prestigious institution, but to contribute within a field that is destined to change the quality of life for patients with diseases like Parkinson’s and cancer.”

—Erica Anderson
SCILL intern
at Stanford University



and Escapes Therapeutics, specialize in creating clinical applications and commercial products from the basic science. The Parkinson’s Institute develops clinical applications for Parkinson’s disease and other neurological disorders. Escapes Therapeutics, a start-up biotechnology company at the San José BioCenter, focuses on discovering commercially viable stem cell products.

“Our internship partners were chosen to provide a wide array of possibilities that would suit the students’ professional development,” Boothby explains. “We’re not trying to shoehorn everyone into the same box.”

The CIRM grant will also underwrite the development of two new stem cell courses to be taught through the Department of Biological Sciences, one tailored toward majors, the other a general education course. A version of both new courses will be offered for the first time in the spring of 2010.

“Part of our mission here at SJSU is to educate more than just the science student,” Boothby says. “The CIRM grant allows us to begin educating the general student body about stem cell biology, including the basic biology, ethical issues in the use of stem cells, and the sources of stem cells.”

Begun in June 2009, the SCILL program has already substantially raised the profile of SJSU’s Biological Sciences.

“This program is bringing people into the pipeline,” Boothby says. “We’re now educating and training the next generation of stem cell researchers.”

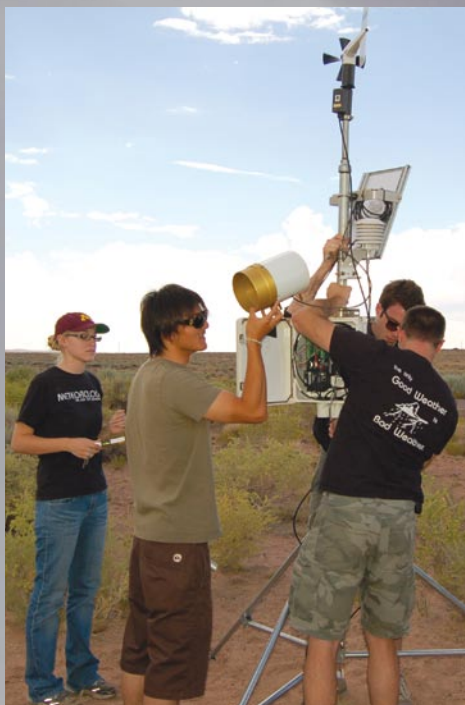


The Science and Skill of forecasting

RESEARCH DIRECTIONS ➤



Alison Bridger with students.



“Anybody can make a forecast, but forecasting with accuracy—that’s a skill that needs to be honed,” says **Dr. Alison Bridger**, chair of the Department of Meteorology.

To improve that skill set among the next generation of forecasters, Bridger developed a course for SJSU graduate and undergraduate meteorology students built around an 11-day field trip to Flagstaff, Arizona, led by Bridger and colleagues Craig Clements and Mick Voss.

“Over the years we’ve become a major where everything is taught in the classroom. Educationally, I don’t think this is the best approach,” Bridger says. “Geologists and biologists go out in the field; meteorologists also need to go out in the field. To provide our students with the skills and knowledge that will better prepare them for the workforce, they need practical forecasting experience.”

The Arizona field trip, underwritten by the National Oceanic and Atmospheric Administration (NOAA), was scheduled for August to coincide with the monsoon season.

One of the purposes of the trip was to “broaden our students’ weather portfolio,” Bridger says, and to expose them to a wider array of meteorological phenomena than is currently typical of coastal California. The showers and thunder showers of Arizona’s monsoon season offered students hands-on experience in forecasting the kinds of convective





weather predicted for the Bay Area as a result of global warming.

Professor Bridger's work on weather and climates isn't only Earth-bound. She also studies atmospheric conditions on Mars.

Funded by NASA, Bridger's Martian research helps NASA engineers plan and conduct missions, as well as evaluate the observations and data those missions collect. Her calculations regarding temperature, winds and air density are critical in determining the speed at which a spacecraft should approach the planet.

"If a mission is going to the surface of Mars, the engineers need to have some idea of the atmospheric conditions the spacecraft will pass through to avoid its burning up," Bridger says.

"The field trip experience proved that meteorology is much more than a pen and paper science. I can now say: 'Yes, I have set up a weather station.' Not many people holding degrees in meteorology can say the same."

—Jamie Favors, MA candidate, Meteorology

To simulate what constitutes the current Mars atmosphere, Bridger uses a highly sophisticated set of equations and "something like a million lines of computer code," she says. "It's very similar to the computer models used to forecast weather on Earth."

Like the climate on this planet, the climate on Mars is not what it once was.

Almost certainly, Bridger reports, there was a time when the Martian atmosphere was thicker, creating a much stronger greenhouse effect. When it was a warmer planet, evidence suggests, water flowed on its surface. Under current atmospheric conditions, flowing water is impossible.

"Our climate has changed dramatically, from extremes to extremes, and it continues to change," Bridger says. "The Martian climate has changed as well. There's no such thing as a fixed climate."

RESEARCH DIRECTIONS

College of Applied Sciences and Arts

Total: \$4,931,090

Dean's Office

Barbara J. Conry
Mental Health in Diabetic Elders in Five Ethnic Populations
Stanford University
\$25,000

Health Science

Kathleen Roe
Campionas De La Salud: Educating a Health Resource in the Latino-American Community
Kaiser Permanente
\$33,835

Health Disparities Service-Learning Collaborative 2008-2009
Health Disparities Service-Learning
\$20,000

Justice Studies

Jackye McClure
Peace Officer Standards and Training (POST)
Institute of Criminal Investigation Training Courses 2008-2009
Commission on Peace Officer Standards and Training
\$701,627

Peace Officer Standards and Training (POST)
Command College Workshops 2008-2009
Commission on Peace Officer Standards and Training
\$486,929

Peace Officer Standards and Training (POST)

Executive Development Courses 2008-2009

Commission on Peace Officer Standards and Training

\$257,033

Peace Officer Standards and Training (POST)

Executive Development Courses 2007-2008

Commission on Peace Officer Standards and Training

\$4,737

Peace Officer Standards and Training (POST)

Management Training Courses 2008-2009

Commission on Peace Officer Standards and Training

\$234,860

Peace Officer Standards and Training (POST)

Executive Seminars 2008-2009

Commission on Peace Officer Standards and Training

\$139,814

Kinesiology

Susan Wilkinson
Health Project 2008-2009 Statewide Office
The Regents of the University of California
\$291,000

Bay Physical Education - Health Project 2008-2009 SJSU Site
San José State University
\$40,000

Physical Education Professional Development Standards and Assessment in PE

San Bernardino City Unified School District
\$12,000

Library and Information Science

Anthony Bernier
Making Space for Young Adults in Public Libraries
Institute of Museum and Library Services
\$39,826

Ken Haycock

Integration for Angel Learning Management System and Second Life
Angel Learning, Inc.
\$5,569

Nursing

Daryl Canham
Advanced Education Nursing Traineeships, 2008-2009
U.S. Department of Health and Human Services
\$45,682

Jayne Cohen

Increasing Nursing Student Enrollment at School of Nursing, San José State University
The Valley Foundation
\$296,876

ADN to BSN Advanced Degree Development Collaborative with Evergreen Valley College
San José Evergreen Community College District

\$74,552

The Health Place
Town of Los Gatos
\$16,890

Nutrition, Food Science, and Packaging

Fritz Yambrach
Thermoformer Equipment Grant for Packaging Lab to be Used for Fabrication of Package Samples
Society of Plastics Engineers Foundation
\$10,000

School of Social Work

Edward Cohen
Evaluation for Mental Health and Substance Abuse Services Provided to Subscribers Enrolled in Healthy Families Program
APS Healthcare, Inc.
\$82,000

Partnering for Performance 2009 - Contra Costa County
UC Berkeley
\$10,399

Partnering for Performance 2008 - Contra Costa County
UC Berkeley
\$31,891

Amy D'Andrade Kathy Lemon-Osterling

Roots & Wings: Recruitment of Families for Children in the Foster Care System of Santa Cruz County
Santa Cruz County
\$65,267

Sadhna Diwan Sang E. Lee

Assessment of Health and Well-Being of Residents in Independent Living Housing
Jeanne d'Arc Manor
\$10,000

Alice Hines

Title IV-E Child Welfare Training Program 2008-2009

The Regents of the University of California
\$1,618,614

California Department of Mental Health Educational Stipend Program 2008-2009
UC Berkeley
\$269,688

Child Welfare Outcomes in CA: Understanding the State's Performance on Foster Care Reentry and Placement Stability
UC Berkeley
\$75,000

CALSWEC: Exploring Characteristics and Outcomes for Families with an Informal Supervision Agreement within the CWS
The Regents of the University of California
\$15,000

Meekyung Han
Project Em-Power - An Evaluation for Em-Power's Effect on Positive Outcomes for Asian-American/Pacific Islander Girls
Asian American Recovery Services
\$11,000

Soma Sen
Evaluation of HIV Education and Prevention Programs 2008-2009
Santa Clara County Department of Health
Santa Clara County
\$6,000



Susan Wilkinson

RESEARCH BRIEF

Project Director: Susan Wilkinson, Director Statewide Office, California Physical Education-Health Project, and Professor, Kinesiology

Partner: University of California, Office of the President

Objective: Provide statewide professional development for K-12 teachers focusing on content knowledge of health education and physical education by linking standards-based programs and research to deepen their content and pedagogical knowledge in pursuit of improving student achievement, with special emphasis on meeting needs of English language learners.

Funding Total: \$994,000 (2008-2009 funding: \$343,000)

College of Business

Total: \$2,820,910

Dean's Office
David M. Steele
Rod Diridon

Mineta Transportation Institute

U.S. Department of Transportation

\$914,000

Mineta Transportation Institute

California Department of Transportation

\$1,106,910

MTI NTSOE Competitive: Summit and NIMS Coop COG Application and Implementations for State Transportation Agencies

U.S. Department of Homeland Security

\$580,000

Caltrans Continuity for Operations/Continuity of Government

California Department of Transportation

\$220,000

College of Education

Total: \$3,728,281

Child and Adolescent Development

Kathryn Lindholm-Leary

FLAP-Foreign Language Assistance Program

Chula Vista Elementary School District

\$9,000

FLAP-Foreign Language Assistance Program

Davis Joint Unified School District

\$9,000

FLAP-Foreign Language Assistance Program

Flowery Elementary School

\$9,000

FLAP-Foreign Language Assistance Program

Glendale Unified School District

\$9,000

FLAP-Foreign Language Assistance Program

Language Academy of Sacramento

\$9,000

FLAP-Foreign Language Assistance Program

Poway Unified School District

\$9,000

FLAP-Foreign Language Assistance Program

South Bay Union School District

\$8,000

Amy Strage

Preparing Highly Qualified Teachers to Achieve in Highly Qualified Schools 2008-2009

CSU Monterey Bay

\$232,029

Communicative Disorders and Sciences

Michael Kimbarrow
Carrie Jones

Gloria T. Weddington Community Clinic Project
San José Unified School District

\$56,000

Gloria Weddington

Project SEEFU (Mentor)

U.S. Department of Education

\$200,000

Project Arco IRIS

U.S. Department of Education

\$200,000

Counselor Education

Andrew Hughey
Xiaolu Hu

Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP): Community Achievement Project

U.S. Department of Education

\$2,404,800

Elementary Education

Katya Karathanos

The California Reading and Literature Project/ NCLB

UC San Diego

\$44,250

Patricia Swanson
Ferdinand Rivera

English Language Development Institute for Algebra Readiness Through the Support and Instruction of Educators

Santa Clara Unified School District

\$151,152

Secondary Education

Katya Karathanos
Barbara Cohen
Rosemarie C. Viera

The California Reading and Literature Project

Oak Grove School District

\$7,105

The California Reading and Literature Project

San José Unified School District

\$40,545

The California Reading and Literature Project
NCBLX

UC San Diego

\$30,400

Special Education

Gilbert Guerin

Restructuring Preservice Personnel Preparation for HQT to Serve High Incidence Disabilities

U.S. Department of Education

\$100,000

Margaret Ann Hughes

New Families, Agencies, Communities, and Educational Strategies (F.A.C.E.S.) in Early Childhood Special Education

U.S. Department of Education

\$200,000

RESEARCH BRIEF

Project Director:

Claire Komives, Associate Professor,
Chemical Engineering

Partner:

National Science Foundation

Objective: Develop first-ever universally available bioX web-based resources, providing biology-related curricular materials, problem sets and case studies to facilitate instruction of core chemical engineering principles and concepts.

Funding: **\$253,266**



Claire Komives

College of Engineering

Total: \$2,887,338

Dean's Office

Emily Allen
Linda Ortega

MESA NSF Scholarship Grant 2007-2010

The Regents of the University of California

\$19,500

MESA Statewide Support 2006

The Regents of the University of California

\$5,000

Thalia Anagnos

NEESR-GC Mitigation for Collapse Risk in Vulnerable Buildings

UC Berkeley

\$58,099

Belle Wei

Julio Garcia

James Lee

Weider Yu

Patricia Backer

Broadening Participation in Computing-A:

Expanding Path to Computing - Leveraging Students' Personal Interest

National Science Foundation

\$149,999

Chemical and Materials Engineering

Emily Allen
John Lee

Nanoscale Materials and Device Characterization Program

U.S. Department of Defense
Microelectronic Activity

\$1,105,660

Claire F. Komives

CCLI: Educational Materials to Enhance Chemical Engineering Curricula with Applications in Biological Engineering Phase 2

National Science Foundation

\$253,266

Civil and Environmental Engineering

Rameshwar Singh

Physical Modeling for Culverts on Sunnyvale East Channel

Multech Engineering Consultants Inc

\$12,224

Steven Vukazich

NEESR-SC: Understanding and Improving the Seismic Behavior of Pile Foundations in Soft Clays

University of Oklahoma

\$163,476

Computer Engineering

Sigurd Meldal

Team for Research in Ubiquitous Secure Technology (TRUST): An NSF Science and Technology Center

Computer Engineering
UC Berkeley

\$83,000

Sigurd Meldal

Dan Harkey

QA Internships
RingCube Technologies, Inc.

\$86,355

Xiao Su

CAREER: Integrated Coding and Content Delivery for Secure Media Streaming on P2P Networks

National Science Foundation

\$80,000

Electrical Engineering

Chang Choo

Avtar Singh

Design of Hardware Accelerator IPs for Super Wideband Audio Codec

Electronics and Telecommunications Research Institute

\$80,000

Essam Marouf

Investigation of Saturn's Rings by Cassini Radio Occultation

Jet Propulsion Laboratory

\$271,225

Industrial and Systems Engineering

Louis Freund

Computational Models of Human Workload: Definition, Refinement, Integration, and Validation in Fast-Time

NASA

\$436,689

Minnie Patel

Industrial Engineer for Special Project Tasks at OptiSolar

OptiSolar, Inc.

\$49,174

Jacob Tsao

Yasser Dessouky
Developing Operating Rules and Simulating Performance for One-Dedicated-Lane Bus Rapid Transit/Light Rail System

UC Berkeley

\$24,888

Mechanical and Aerospace Engineering

Tai-Ran Hsu

The Design of a Wind Power Generating Station for IBM Almaden Research Center

International Business Machines

\$8,783

College of Humanities and the Arts

Total: \$433,205

Dean's Office

Karl E. Toepfer
Kelly Harrison
Kate Evans

Center for Literary Arts
2008-2009

City of San José

\$15,571

Center for Literary Arts
Support 2008-09

Arts Council Silicon Valley

\$2,700

School of Art and Design

John McClusky

Roche Diagnostics
Operations Internships
Roche Diagnostics
Operations

\$15,000

Joel Slayton

Climate Clock Project for
City of San José

City of San José

\$42,500

Barnaby Dallas

Summer Feature Film
Production

TV, Radio, Film and
Theatre

City of San José

\$800

English and Comparative Literature

Jonathan Lovell

San José Writing Project
UC Berkeley

\$46,000

Jonathan Lovell
Mary Warner

San José Area Writing
Project, NCLB 2008-
2009

UC Berkeley

\$39,000

San José Area Writing
Project, CSMP Funding
2008-2010

UC Berkeley

\$28,000

Susan Shillinglaw

John Steinbeck: Voice of a
Region, Voice for America:
A Summer Institute

Exploring the Author's
Life and Writing

National Endowment
for the Humanities

\$138,671

Alan Soldofsky

East Side Voices: Lives in
East San José

Silicon Valley

Community Foundation

\$2,500

Nicholas Taylor

Reed at 2009 AWP
Conference and Book Fair

Arts Council Silicon
Valley

\$2,463

Linguistics and Language Development

Hahn Koo

Development of the
Multi-Lingual (Canadian
French, Mexican Spanish)
Grapheme-To-Phoneme
Conversion Module

Electronics and
Telecommunications
Research Institute

\$50,000

Performance

Enhancement of the
Multi-Lingual (Canadian
French, Mexican Spanish)
Grapheme-To-Phoneme
Conversion Module

Electronics and
Telecommunications
Research Institute

\$50,000



Susan Shillinglaw

RESEARCH BRIEF

Project Director:

Susan Shillinglaw, Professor, English, and former Director of Center for Steinbeck Studies, SJSU

Partner: National Endowment for the Humanities

Objective: Establish *John Steinbeck: Voice of a Region, Voice of America*, a summer institute for teachers held on the Monterey Peninsula that explores the author's life and writing in historical, scientific and regional context. Recognized as an NEH "We the People" project.

Funding: \$138,671

Moss Landing Marine Laboratories

Total: \$17,787,149

Ivano W. Aiello

A High-Resolution,
Topographic Survey of the
Los Padres Reservoir

Monterey Peninsula
Water Management
District

\$16,000

Using Terrestrial Laser
Scanning Technology to
Monitor Wildfire Effects
on Slope Stability and
Stream Morphology

The Nature
Conservancy

\$10,000

Laurence C. Breaker
Nick Welschmeyer

Detecting, Localizing, and
Resolving Regimes Shifts
Along the California
Coast

The Regents of the
University of California

\$66,830

Gregor M. Calliet

Highly Migratory Shark
Fishery Research by the
National Shark Research
Consortium (NSRC),
2008-2009

Mote Marine
Laboratories

\$319,634

Gregor M. Calliet
Allen Andrews

Determination of Red
(Haliotis Rufescens)
and White Abalone
(H. Sorenseni) Age and
Growth Using the Bomb
Radiocarbon SIG

The Regents of the
University of California

\$6,348

Lead-Radium Dating of
Golden Tilefish

U.S. Department of
Commerce

\$5,700

Ross Clark

State Wetland Reference
Network Project

Southern California
Coastal Water Research
Project

\$44,000

Kenneth Coale

Russell Fairey

Enhancement of Non
Native Aquatic Species
Survey Data

California Department
of Fish and Game

\$276,743

Kenneth Coale

Erika McPhee-Shaw

CENCOOS: Long-
Term Monitoring for
Environmental Conditions
in Support of Protected
Marine Area Management

Monterey Bay
Aquarium Research
Institute

\$80,000

Kenneth Coale
Stewart Lamerdin

Ship Operations

National Science
Foundation

\$1,605,950

Kenneth Coale
Aaron Payne

Programmer Support for
UNOLS

University of Rhode
Island

\$38,792

Kenneth Coale
Jason G. Smith

The Alliance for Coastal
Technologies (ACT):
Partnership Activities at
Moss Landing Marine
Laboratories

University of Maryland

\$125,000

Kenneth Coale

Mark Stephensen

AG Waiver Chemical
Analysis

California Department
of Fish and Game

\$90,002

San Francisco Estuary
Institute 811 Guadalupe
Zone 4 Year 3

San Francisco Estuary
Institute

\$17,520

David Sea Otter Project

California Department
of Fish and Game

\$16,000



Danelle Moon



Susan Lambrecht

EARLY CAREER INVESTIGATOR AWARD WINNERS 2008-2009

The SJSU Research Foundation Early Career Investigator Award recognizes tenure-track SJSU faculty who have excelled in areas of research, scholarship or creative activity as evidenced by their success in securing funds for their research, peer-reviewed publications and other scholarly and creative activities at an early or beginning point in their career at SJSU. Our two recipients are exceptional examples of individuals who have achieved this level of success.

Ms. Danelle Moon

Director of Special Collections & Archives,
University Library

Danelle Moon, Director of Special Collections at the University Library for the past four years, has published extensively in peer-reviewed journals, databases and encyclopedias, authored two book chapters, and been invited to submit a book proposal on women in the Civil Rights Movement by Greenwood Press, a prestigious publisher of reference books. Ms. Moon received a \$151,704 National Historical Publications and Records Commission grant from the National Archives to catalog SJSU's archival collections, a project that will expand access and awareness of the university's unique holdings and its role as CSU's oldest campus. By making SJSU a part of Online Archives of California, Ms. Moon has been instrumental in attracting scholars to the King Library to further their own research.

Susan Lambrecht

Associate Professor, Biological Sciences,
College of Science

Susan Lambrecht joined the Department of Biological Sciences in 2003 and has since provided outstanding leadership in the area of plant biology, with research activities focused on plant adaptation and plant communities. Dr. Lambrecht served as one of three co-principal investigators for the \$1.3 million Howard Hughes Medical Institute grant, awarded to SJSU in 2008. She has also received external funding for her research and curricular innovation projects from Li-Cor Biosciences. A reviewer of grant proposals for the National Science Foundation and for 11 research journals, Dr. Lambrecht's own research has been published widely in peer-reviewed journals and presented at both local and international conferences. Seven of her manuscripts were co-authored by her SJSU students.

Russell Fairey Kenneth Coale

*Surface Water Ambient
Monitoring Program
(SWAMP)*
California State Water
Resources Control Board
\$9,306,538

Lara Ferry-Graham

*REU Supplement:
Development, Performance
and Evolutionary
Ramifications of
Premaxillary Protrusion in
Teleosts*
National Science
Foundation
\$6,000

Michael Graham

*Seaweed Strain Selection
and Preservation to
Optimize Harvest Yields
for Abalone Culture*
The Regents of the
University of California
\$53,490

H. Gary Greene

*Fairweather Mapping
Project*
Alaska Department of
Fish and Game
\$40,466

James Harvey

*Developing a Better
Method of Tag
Attachment for Cetaceans*
Office of Naval
Research
\$150,000

*Acoustic Identification
and Enumeration of
Epipelagic Fish and
Jellyfish*

U.S. Department of
Commerce
\$39,922

*Marbled Murrelets in
Central California with
AT Sea Surveys*

California Department
of Parks and Recreation
\$38,985

*The Ecology of Seabirds,
Waterbirds, and Marine
Mammals for California*
U.S. Department of
Interior
\$35,922

*Disturbance Effects on
Harbor Seals in Glacier
Bay*
National Park Service
\$26,988

*A Vessel for Whale
Disentanglement in
Central California*
U.S. Department of
Commerce
\$20,000

*Biological Monitor for
Moss Landing Breakwater
Repair*
Erick Ammon, Inc.
\$2,915

*Proposal for Biological
Monitoring of Repair of
Pile Connections at the
USGC Station*
Sergent Mechanical
Systems
\$5,000

James Harvey Josh Adams Erika McPhee-Shaw

*Connectivity of
West Coast Marine
Sanctuaries: Tracking
Sooty Shearwaters
Throughout Dynamic
Upwelling Ecosystems in
the California Current
System*

The Regents of the
University of California
\$95,256

James Harvey Elizabeth Phillips

*Quantifying Health
Parameters of Northern
Fulmars (*Fulmarus glacialis*) to Improve Procellariid
Rehabilitation*

The Regents of the
University of California
\$22,511

Leonid Ivanov

*Collaborative Research:
Effect Eddies and
Waves on the Westward
Transport Off Central
California*

National Science
Foundation
\$333,904

Stewart Lamerdin Kenneth Coale

*Shipboard Scientific
Support Equipment*
National Science
Foundation
\$231,300

Ship Time for Army Corps of Engineers
U.S. Army Corps of Engineers
\$120,800

Ship Time for Naval Post Graduate School 2008
Naval Postgraduate School
\$68,650

Ship Time for JHU/APL 2008
Johns Hopkins University
\$41,190

Oceanographic Instrumentation
National Science Foundation
\$40,600

Valerie Loeb
Krill Demography
Zooplankton Composition for the Antarctic Marine Living Resources Program Study Area
U.S. Department of Commerce
\$175,000

Erika McPhee-Shaw
Technology Transfer; Monitoring and Maintenance for the Land/Ocean Biogeochemical Observatory (LOBO) System Buoys in Elkhorn Slough
Elkhorn Slough Foundation
\$144,381

Mike Prince
University-National Oceanographic Laboratory System (UNOLS)
U.S. Department of Defense
\$160,984

University-National Oceanographic Laboratory System (UNOLS)
National Science Foundation
\$155,718



Alejandro Garcia (front left), Courtney Granner and Alice Carter

RESEARCH BRIEF

Project Team: Alejandro Garcia, Professor, Physics and Astronomy; Alice Carter, Professor, Art and Design; and Courtney Granner, Professor, Art and Design

Partner: National Science Foundation

Objective: Create interdisciplinary course linking illustration, animation and design to the principles and fundamentals of physics.

Total Funding: \$225,296 (2008-2009 funding: \$25,384)

Richard Starr
Baseline Surveys for Central California MPAS
California Ocean Protection Council
\$1,180,190

Collaborative Fishing Surveys
Pacific States Marine Fisheries
\$82,500

Mark Stephenson
Kenneth Coale
Time Maximum Daily Loads - Chris Foe 2008
California State Water Resources Control Board
\$100,000

Time Maximum Daily Loads - North Coast
California State Water Resources Control Board
\$30,000

Seal Beach Mussels
U.S. Department of the Navy
\$30,733

SFEI #683 Regional Monitoring Program 2006
San Francisco Estuary Institute
\$1,500

Nick Welschmeyer
Jonathan Geller
SFEI 799 Regional Monitoring Program Status and Trend 2008
San Francisco Estuary Institute
\$11,124

Nick Welschmeyer
Technologies and Practices. Metabolic Verification for Plankton Viability During Ballast Treatment Testing
U.S. Department of Commerce
\$308,539

Mark Yarbrough
Marine Optical Bouy Time-Series Uncertainty Reduction and System Enhancements for Improved Vicarious Calibration Across Multiple Agency Ocean Color Satellite Missions
U.S. Department of Commerce
\$1,857,524

Fiber Optic Ocean Color Sensor Development
U.S. Department of Commerce
\$150,000

College of Science

Total: \$10,083,424

Dean's Office

George Castro
Title V: Evergreen Valley College and San José State University Partnership
San José Evergreen Community College District
\$212,426

Stephan Crothers
Advancing Professional Master's Programs in the CSU System
San Diego State University Foundation
\$49,207

Maureen A. Scharberg
MESA 2008-2009
The Regents of the University of California
\$113,110

Herbert Silber
*MARC U*STAR at SJSU 2009-2010 AY*
U.S. Department of Health and Human Services
\$543,277

Dan Walker
Title V: STEM Future Professionals: Student Support, Faculty Development, and Streamlined Transfer / Articulation Model
Gavilan Joint Community College District
\$816,785

Dan Walker
Maureen A. Scharberg
STEP at SJSU: Improving Retention Through Student Learning Communities
National Science Foundation
\$384,145

Biological Sciences

William Murray
For The Forest Project
For The Forest, Inc.
\$80,259

Cleber Ouverney
Environmental
Uncultivable Bacteria
Model for Understanding
Human Periodontitis
U.S. Department of
Health and Human
Services
\$111,150

Nishanta Rajakaruna
Conservation Biology
and Fire Ecology of Rare
Serpentine Plants of
Plumas National Forest,
California
The Regents of the
University of California
\$85,200

Sabine Rech
Graduate Student
Researchers Program
NASA
\$30,000

Julio Soto
MBRS SCORE Program
at San José State
University
U.S. Department of
Health and Human
Services
\$69,864

Julio Soto
Cleber Ouverney
Susan Lambrecht
HHMI Exceptional
Research Opportunities
Program (EXROP)
Howard Hughes
Medical Institute
\$1,304,500

Julio Soto
Steven Lee
Cleber Ouverney
REU Site: Research by
Undergraduates Using
Molecular Biology
Applications (RUMBA)
National Science
Foundation
\$72,346

Chemistry

Juana Acrivos
Senior Scientist Mentor
Program
Camille and Henry
Dreyfus Foundation
\$10,000

Elaine Collins
Santa Clara County
Biotechnology Education
Partnership
Genentech Foundation
for Biomedical Sciences
\$120,000

J & J Bridges to Education
Johnson & Johnson, Inc.
\$20,000

Marc D'Alarcao
Truncated Inositol
Glycans and Cancer
U.S. Department of
Health and Human
Services
\$222,300

Hybrid Inositol Glycan
Analogues
U.S. Department of
Health and Human
Services

\$222,300
Fluorinated Cell Surfaces
to Modulate Biological
Function
Tufts University
\$174,429

Daryl K. Eggers
MBRS SCORE Program
at San José State
University
U.S. Department of
Health and Human
Services
\$186,809

Gilles Muller
Development of Circularly
Polarized Luminescence
as an Attractive
Complementary Method
to the Presently Available
Techniques for Probing
Specific Chiral Structural
Changes
Camille & Henry
Dreyfus Foundation
\$60,000

MBRS SCORE Program
at San José State
University
U.S. Department of
Health and Human
Services
\$189,595

Joseph Pesek
Improving the
Understanding of the
Properties and Retention
Behavior of Chemically
Bonded Stationary Phases
Employing Spectroscopic
and Chromatographic
Characterization
Techniques
National Science
Foundation
\$115,000

Joseph Pesek
Maria Matyska-Pesek
A New Approach to the
Analysis of Metabolites
for Studying Clinical,
Pharmaceutical and
Biological Processes
Agilent Technologies
Inc.
\$40,000

Karen Singmaster
CSU-LSAMP Scholars
Program 2008-2009
CSU Sacramento
\$208,500

Karen Singmaster
Maureen A. Scharberg
SJSU STEM Scholars in
Science
National Science
Foundation
\$598,925

Karen Singmaster
Herbert Silber
San José State University
Undergraduates MBRS
RISE Program
U.S. Department of
Health and Human
Services
\$495,614

Computer Science

Michael Beeson
Assisting Process Planning
in the Manufacture of
Boeing Aircraft Using
PSL and the TAU Logic
Processor
U.S. Department of
Commerce
\$25,000

Geology

Paula Messina
Ellen Metzger
Pre- and In-Service Earth
Systems (PIES)
Institute for Global
Environmental
Strategies
\$10,000

Robert Miller
EDMAP: Structure of
Jurassic and Cretaceous
Plutons, Tahoe Area,
California
U.S. Department of
Interior
\$11,190

Mathematics

Joanne Rossi Becker
Silicon Valley Math
Initiative - Professional
Development Institute
Noyce Foundation
\$421,687
California Science and
Math Partnership - Pajaro
Valley USD 2008-2009
Pajaro Unified School
District
\$162,725

CAMSP - Ravenswood
School District
Ravenswood School
District
\$70,000
Mathematics Assessment
Collaborative
Noyce Foundation
\$151,708

SVMI: Silicon Valley
Mathematics Initiative,
2009-2010
Silicon Valley
Community Foundation
\$100,000

District Support for
Lesson Study
Dirk & Charlene
Kabcenell Foundation
\$75,000

Santa Clara Valley
Mathematics Project
- NCLB5
The Regents of the
University of California
\$29,000

Mathematics and Its
Assessment
Institute for Advanced
Study
\$10,000

Joanne Rossi Becker
Cheryl Roddick
Santa Clara Valley
Mathematics Project
The Regents of the
University of California
\$19,400

Daniel A Goldston
Gaps Between Primes
National Science
Foundation
\$70,000

Ferdinand Rivera
IPA - Program Director
for the Knowledge
Building Cluster, Division
for Research on Learning
in Formal and Informal
Setting
National Science
Foundation
\$164,647

Meteorology

John Abatzoglou
Extratropical Control for
Gulf Surges: The Role
for Rossy Wave Breaking
and Associated Mesoscale
Processes
Desert Research
Institute
\$183,712

Westwide Drought
Tracker: Monitor Drought
at Fine Spatial Scales
Across the Western U.S.
Desert Research
Institute
\$93,394

Robert Bornstein

Reviewing Air Quality Impacts in the Vicinity for San José Mineta International Airport
City of San José

\$3,780

Alison Bridger

Training the Next Generation Weather Forecasters
U.S. Department of Commerce

\$200,725

The Dynamical Evolution for the 2001 Martian Global Dust Storm
NASA

\$22,157

Craig B. Clements

IN SITU Measurement for Fire-Atmospheric Dynamics: Implications for Pm 2.5 Production and Dispersion
Joseph W. Jones Ecological Research Center

\$44,266

Particulate Emissions From Prescribed Fires
Joseph W. Jones Ecological Research Center

\$9,906

Extreme Fire Behavior State-of-the-Science Synthesis
U.S. Department of Agriculture

\$28,259

Combustion Moisture in Fires Plumes
U.S. Department of Agriculture

\$13,796

Eugene Cordero

Career: Connections Between Perturbations and Climate Change-Research and Teaching Integration
National Science Foundation

\$101,113

BUSINESS AND ECONOMIC DEVELOPMENT PARTNERSHIPS

In partnership with the City of San José Redevelopment Agency, the SJSU Research Foundation manages and operates three business incubators that serve high-potential, early-stage companies specializing in green/clean tech, life science and biotechnology. In addition to outstanding facilities and business-development services, these companies receive access to expert faculty and student interns. International companies interested in establishing or expanding their U.S. market reach also receive business development advice. Shown here are business incubator directors **Melinda Richter**, San José BioCenter and Environmental Business Cluster, and **Omar Mencin**, US Market Access Center.



Melinda Richter



Omar Mencin

Menglin Jin

Studying Global and Regional Land Surface Skin Temperature Change Using Satellite Observations and Climate Modeling

National Science Foundation

\$152,505

Urban Enhancement to Meteorological Modeling
University of Georgia

\$106,398

Urban Enhancements to Meteorological Modeling and Observations
University of Utah

\$20,145

Douglas Sinton

Data Information Delivery to Support SFO Forecast Integration for NOAA/ National Weather Service
MIT Lincoln Laboratory

\$39,484

Nuclear Science**Herbert Silber**

MBRS SCORE Program at San José State University
U.S. Department of Health and Human Services

\$51,134

Undergraduate Summer Schools in Nuclear and Radiochemistry
U.S. Department of Energy

\$104,482

Physics and Astronomy**Natalie Batalha**

Science Support for the Kepler Mission
NASA

\$84,944

Systems Teaching Institute (STI) Students 2009
The Regents of the University of California

\$480,763

Friedemann Freund

Stimulated Mid-IR Emission and Thermal IR Anomalies: A Pre-Earthquake Hazard Assessment Study
NASA

\$171,311

Alejandro L. Garcia

Computational Fluctuating Fluid Dynamics in the Low Mach-Number Limit
Lawrence Berkeley National Laboratories

\$16,347

Stability Enhancement for Computational Fluctuating Fluid Dynamics
Lawrence Berkeley National Laboratories

\$16,347

Molecular Fluctuations in DSMC (Direct Simulation Monte Carlo)
Sandia National Laboratories

\$19,108

Alejandro L. Garcia Alice Carter John Courtney Granner

Physics for Animation: Master Classes in Physics for Visual Artists
National Science Foundation

\$25,384

Michael Kaufman

Characterization of Lunar Dust Environment for Human Exploration and as a Tracer of the History of Organics in the Solar System
NASA

\$86,041

Theoretical Computations for UV Illuminated Molecular Clouds
Smithsonian Institution

\$39,617

Modeling Galactic Nuclei From the Milky Way to Starburst Galaxies
Jet Propulsion Laboratory

\$26,500

The Physics & Chemistry of Diffuse Molecular Clouds
Jet Propulsion Laboratory

\$26,500

Herschel O₂ Project
Jet Propulsion Laboratory

\$18,100

REU Research Experiences for Undergraduates (REU) Site for Research in Physics
National Science Foundation

\$13,575

Monika Kress

The Virtual Planetary Laboratory: Exploring the Habitability and Biosignatures of Extrasolar Terrestrial Planets
University of Washington

\$15,000

Modeling the Chemistry of Protoplanetary Disks
NASA

\$12,533

College of Social Science

Total: \$10,197,971

Economics

Lydia Ortega

Scholarships, and
Operating Support-
Provocative Lecture Series

Koret Foundation

\$25,000

Environmental Studies

Bruce Olszewski

City of San José Litter
Study

Science Application
International
Corporation

\$6,400

Recycling Telephone
Hotline Information
Santa Clara County

\$6,500

Geography

Cindy Schmidt

DEVELOP

NASA

\$27,000

History

E. Bruce Reynolds

East Asian Regional
Materials and Resource
Center (EARMARC)

UC Berkeley

\$5,500

Jewish Studies Program

Victoria Harrison

Digital Archiving Project
for Jewish Art

Koret Foundation

\$10,000

Psychology

Vernol Battiste

Quang Dao

Metrics for Operator
Situation Awareness,
Workload, and
Performance in
Automated Separation
Assurance Systems

CSU Long Beach
Foundation

\$180,000

Kevin Jordan

Flight Deck and Airspace
Operations

Perot Systems

\$5,979,268

Modeling and Simulation
of Human Performance

NASA

\$1,930,240

Flight Control and
Autonomous Flight
Systems Research

NASA

\$1,109,417

Crew Factors and Team
Performance

NASA

\$756,115

Nextgen Airspace
Technology Evaluation
Aptima, Inc.

\$20,001

Joel Lachter

Human Decision Making
Stanford University

\$48,826

Urban and Regional Planning

Dayana Salazar

CommUniverCity San
José: Community Service
Projects

San José
Redevelopment Agency

\$90,000

CommUniverCity:
Bridging Borders
Volunteers

San José
Redevelopment Agency

\$3,704



John Shrader, Andrew J. Ingram and Julie Chun

SJSU STUDENT RESEARCH COMPETITION AWARDEES

For more than 30 years, the SJSU Research Foundation and Graduate Studies and Research have collaboratively sponsored the university-wide Student Research Competition. Featured participants from all academic disciplines have gone on to take top prizes at California State University system-wide competitions. The most recent awardees are:

Julie Chun

Major: Art History

Reexamining Korean Modernist Painting under Japanese Colonialism, 1910-1945

A reexamination of Korean art under Japanese colonization, demonstrating that state-run Japanese art schools accelerated the demise of traditional forms and the emergence of modernism.

Faculty Mentors: Dr. Anne Simonson and Dr. Beverly Grindstaff

Andrew J. Ingram

Major: Chemistry

Advancing the Use of Chiral Europium and Terbium Complexes in Circularly Polarized Luminescence, an Analytical Tool

A determination of the viability of using five lanthanide complexes as probes in Circularly Polarized Luminescence, an analytical technique for the study of chiral molecules.

Faculty Mentor: Dr. Gilles Muller

John Shrader

Major: Mass Communications

Conflicted: The Barry Bonds Home Run Chase

Documentary interviews with 15 Bay Area sports writers examine media coverage of the controversial baseball player, his personality and steroid use.

Faculty Mentor: Robert Rucker

University Programs

Total: \$2,786,641

Academic Services

Upward Bound Classic

U.S. Department of Education

\$546,168

Student Support Services (ASPIRE)

U.S. Department of Education

\$429,066

The Ronald E. McNair Post Baccalaureate Achievement Program

U.S. Department of Education

\$243,000

Educational Talent Search

U.S. Department of Education

\$226,600

Academic Technology

Mary Fran Breiling

ENACT: PDT

Sonoma State University

\$35,650

The Merlot Faculty ELIXR Project: Faculty Development Centers and Online Repositories Collaborating to Share Exemplary Practices

Trustees of the California State University

\$6,430

Associated Students

Frances Roth

Child Care Access Means Parents in School (CCAMPIS) Program

U.S. Department of Education

\$176,504

Career Center

Cheryl Allmen-

Vinnedge

Julie Sedlemeyer

SJSU Workability IV Program 2009-2010

California Department of Rehabilitation

\$7,020

SJSU Workability IV Program 2008-2009

California Department of Rehabilitation

\$7,020

Curriculum and Assessment

Debra David

Give Students a Compass: College Learning, General Education and Student Success

Trustees of the California State University

\$5,000

Elena Klaw

Bridging Borders AmeriCorps Program

California Service Corps

\$291,945

Facilities Development and Operations

Tony Valenzuela

SJSU Cesar Chavez Memorial Fund (#6)

City of San José

\$2,500

Graduate Studies and Research

Audra Ruthruff

Test Subject Recruitment Office

Perot Systems

\$225,968

Guna Selvaduray

James Lee

Barrier to Earthquake Hazard Mitigation Implementation Research

City of San José

\$36,265

Philip Trounstone

SJRDA HUD Survey

San José

Redevelopment Agency

\$15,865

James Wayman

Consultancy Support to the CESG Biometrics Test Programme

Communications-Electronics Security Group

\$135,647

SJSU Research Foundation

Jerri Carmo

Research Administrative Resources for the Space Research Directorate

Lockheed Martin Corporation

\$172,000

Student Services

Roger Elrod

Safer California Universities: A Multi-Campus Alcohol Problem Prevention Study

Prevention Research Center

\$9,600

Connie Hernandez-Robbins

Early Academic Planning Camp 2009

Santa Clara County Office of Education

\$45,000

University Library

Danelle Moon

Survey and Cataloging Project to Advance Access and Discovery for the SJSU Manuscript and University Archive Collections

National Archives and Records Administration

\$151,704

University Police

Andre L. Barnes

Homeland Security Grant Program

Trustees of the California State University

\$23,689

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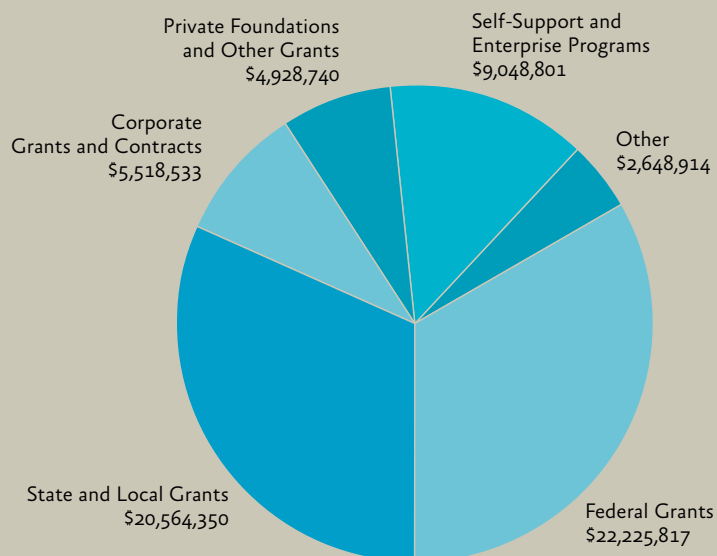
Legal Counsel
Gates, Eisenhart, Dawson

Mary Sidney

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and Board Secretary
SJSU Research Foundation

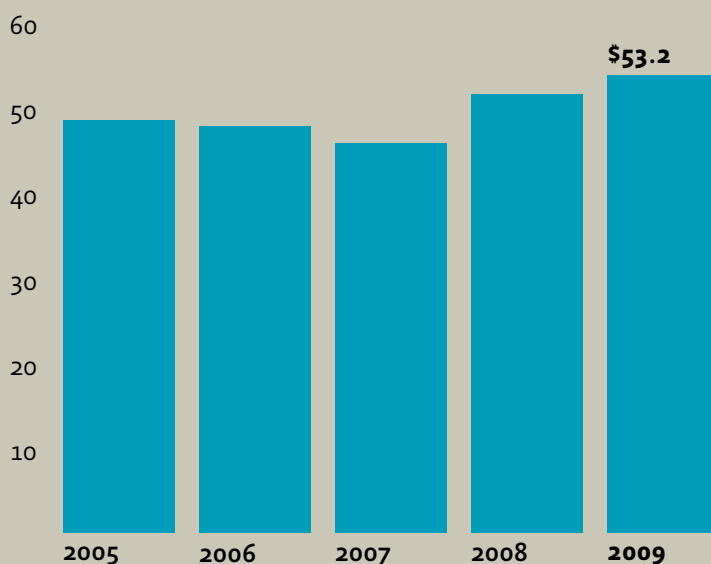
San José State University Research Foundation Summary of Financial Activities 2008-2009

Revenues: \$64,935,155



Research Grants and Contracts Expenditures

(in millions)



Statement of Activities

Fiscal year ending June 30, 2009 (unaudited)

Revenue and Support

Federal Contracts and Grants	\$ 18,678,544
State Contracts and Grants	16,297,953
Other Contracts and Grants	10,791,738
Indirect Cost Recovery-C&G	7,469,205
Administrative and Program Fees	712,695
Gifts and Pledges	32,667
Other Revenue and Support	2,616,247
Campus Organization Other Revenue and Support	8,336,106

Total Revenue **\$ 64,935,155**

Expenses

Program Activities	
Sponsored Programs	\$ 45,457,465
Board Designated Programs	1,534,584
Enterprise Activities	3,024,657
Campus Organization Expenditures	9,305,353
Support Activities-Management and General	7,348,144
Investment Losses - Net	1,435,820

Total Expenses **\$ 68,106,023**

CHANGE IN NET ASSETS (3,170,868)

NET ASSETS-BEGINNING OF YEAR 7,979,223

TRANSFER OF ASSETS TO TOWER FOUNDATION (67,705)

NET ASSETS-END OF YEAR \$ 4,740,650

San José State University Research Foundation, your trusted partner:

Access to expertise

Faculty members at San José State University conduct research and public service activities across a broad spectrum of areas and disciplines, ranging from air traffic safety to the preservation of California's wetlands to the improvement of K-12 classroom instruction. Think of the San José State University Research Foundation as a channel that delivers the skills and talents of SJSU faculty into the workplaces of Silicon Valley businesses, government agencies, and community service providers.

Hands-on service delivery

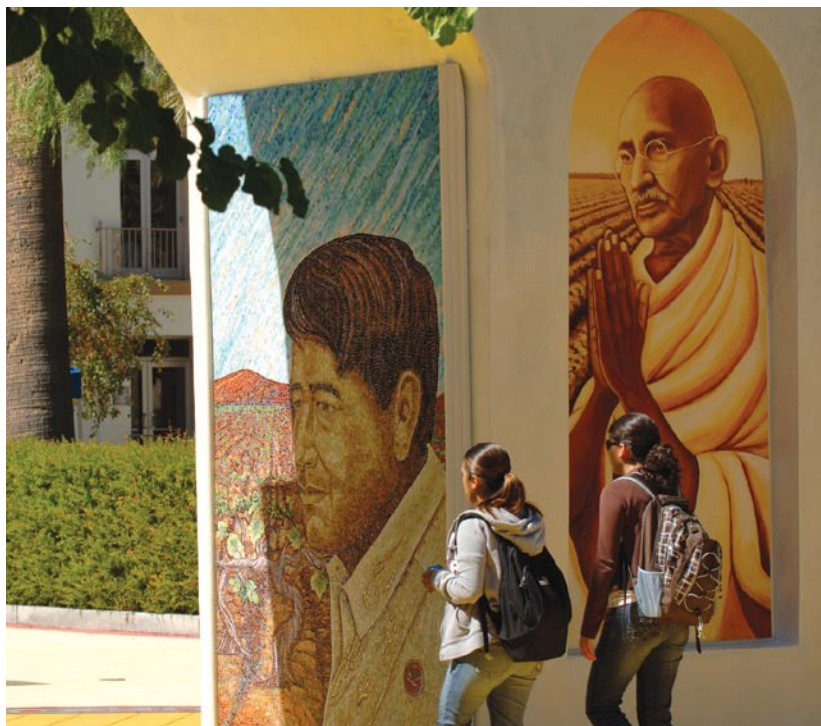
What differentiates SJSU from its Bay Area university counterparts is its emphasis on applied rather than basic research. While the work of our faculty members is grounded in basic research (our own and that of others), our deliverables make a difference in the lives of those who live and work in our communities today.

Diversity

One of the nation's most diverse campuses, San José State is headquartered in the heart of Silicon Valley—arguably the most entrepreneurial region in the world. Fueling the region's economic engine and supporting its educational and social services needs, SJSU supplies a considerable portion of the Bay Area's workforce.

Accountability

Research administration and program management is a highly regulated enterprise. With over \$36 million in assets and \$65 million in total annual revenues, the Research Foundation maintains the highest ethical standards for business and



program operations, strictly adhering to sponsoring partner requirements, Generally Accepted Accounting Principles (GAAP), California State University policies, and all applicable laws and regulations. The Research Foundation's financial operations are audited annually by the international accounting firm of Deloitte and Touche LLP.

Experienced leadership

Guided by a Board of Directors with expertise across a range of disciplines, and representing the campus and business communities, the SJSU Research Foundation provides superior service to its partnering organizations. The combined resources, reputation, and entrepreneurial profile of the Research Foundation provide an exceptional framework for successful business and community partnerships.

For more information about our programs or to learn how you might partner with San José State, visit our Web site at www.sjsufoundation.org or call 408-924-7395.

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ENVIRONMENTAL BENEFITS STATEMENT

San José State University Research Foundation printed this report on New Leaf Primavera paper that is manufactured using 100% renewable energy and is processed chlorine-free. It's made with fiber from sustainably managed forests and has 80% recycled content with 40% post-consumer waste. By taking this eco-friendly approach, we saved: 13 fully grown trees, 8,277 gallons of water, 10 million BTU of energy, 664 pounds of solid waste and 1,729 lbs greenhouse gases.



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RESEARCH FOUNDATION

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