Appendix D: Campus-specific Impact Examples by Topic Area

Agriculture, Food and Beverages: California’s Historic Strength

Chico

■ CSU Chico works closely with industry advisory groups and agricultural organizations to identify and solve critical problems. Highlights of CSU Chico activities include:
  
  • Contributing to the sustainability of the agriculture industry through collaborations with the University of California on crop variety trials (including walnut, almonds and field crops), agricultural waste management and by-product development trials (rice straw composting, food processing waste management, and olive oil processing waste by-product development), use of DNA markers to improve meat quality, and evaluation of potential new crops for Northern California including vegetables and pecans. Supporting the local industry and food network, the CSU Chico College of Agriculture coordinates and hosts the annual Chico Organic Farming and Food Conference.

  • Each year, hundreds of agriculturists are attracted to the Agricultural Teaching and Research Center to take part in seminars, trainings, and field days.

  • Contributing to youth agricultural leadership development by actively supporting Future Farmers of America (FFA) and 4-H programs and hosting workshops and field days, including a statewide FFA Career Development Event that attracts 1,000 high school students annually. CSU Chico also supports California Agricultural Education by managing resource websites and data collection for the secondary agricultural programs and FFA membership.

  • Helping producers become competitive and financially viable by conducting financial planning workshops in counties throughout northern California in cooperation with the USDA Natural Resources Conservation Service and county rural conservation districts.

Fresno

■ Highlights of Fresno State agricultural activities include:

  • Operating the California Agricultural Technology Institute, dedicated to improving California agriculture. Projects address regional and statewide priority issues such as air quality, food safety, agricultural drainage, farm worker safety, production and marketing, and conversion of agricultural lands.

  • Collaborating with community colleges, CSU campuses, and UC Davis on the Central Valley Ag Literacy Initiative to educate K-12 and community college students about agriculture and career opportunities.

  • Participating with Future Farmers of America (FFA) to host the annual FFA Field Day competition and California State FFA Convention.
Humboldt

- Humboldt State faculty members and graduate students embark on research projects directly related to agricultural production, such as the impact of pesticide use in rural communities, wildlife impacts on alfalfa production, tissue culture techniques for orchid growers, embryo transfer to dairy cows, management of stump sprouting in Coast Redwoods, silvicultural treatments for wildfire hazards, sprout competition and soil compactions effects on redwood seedlings, GIS surveys of invasive plants, production economics for small wood, nonindustrial private forests, watershed monitoring protocols, genetics and management of Chinook salmon at Trinity River Hatchery, and monitoring pollinating bee populations.

Stanislaus

- The CSU Stanislaus Agricultural Studies major is a unique 2+2 multidisciplinary program that allows students to complete their baccalaureate education by taking lower-division agriculture courses at a California community college. Keeping with the interdisciplinary theme of the program, the Agricultural Studies Department is housed in the CSU Stanislaus College of Humanities and Social Sciences, and includes courses in Agriculture Studies, Economics, Business, Ecology, Botany, Biology, Geography, and Political Science. Concentrations within the program include Agricultural Economics, Agricultural Biology, Sustainable Agriculture, and a Special Concentration that allows students to target a particular career area not covered in the concentration.

Business and Professional Services: Educating to Manage

Chico

- CSU Chico’s Center for Economic Development produces profiles of economic and demographic characteristics for each of 23 Northern California counties. More than 2,000 profiles are distributed to county offices, grant writers, businesses and nonprofit organizations, and workshops addressing the data are held in each county.

Domínguez Hills

- CSU Domínguez Hills provides online delivery of accredited Master of Business Administration and Master of Public Administration programs that are designed for working professionals. The online degree programs are ranked among the most affordable and robust curriculums in the United States.

East Bay

- The Human Investment Research and Education (HIRE) Center at CSU East Bay researches and evaluates programs and policies designed to further employment and educational opportunities. The center provides information and insights to administrators,
Impact of the California State University System
Appendix D: Campus-specific Impact Examples by Topic Area

policymakers, academicians, and the community at large to strengthen public and private programs, improve results and maximize societal benefits.

- CSU East Bay’s College of Business has revised its curricula to meet the needs of the 21st century global economy. Its undergraduate and graduate programs emphasize global business issues, ethics and sustainability, and students can specialize in options including entrepreneurship and international business.

**Fresno**

- Fresno State is the lead organization for the Fresno Regional Jobs Initiative (RJI), an innovative regional economic development effort. The RJI is a partnership of private businesses and public/nonprofit agencies in 12 industry clusters. The Office of Community and Economic Development at Fresno State and key staff loaned from participating organizations coordinate leadership for the coalition.

**Fullerton**

- CSU Fullerton’s Mihaylo College of Business and Economics, the state’s largest accredited business college, is home to 15 centers, including the Center for Corporate Reporting and Governance, which annually hosts an SEC conference with more than 400 attendees. The Center for Insurance Studies is the largest insurance and risk management program west of the Mississippi, with more than 17 insurance partners on its board of directors.

- The annual Economic Forecast Conference by Dean Anil Puri, held in conjunction with the Orange County Business Council, attracts more than 800 attendees.

- The Family Business Council, one of the largest and most successful such organizations nationally, supports the economically vital family-owned businesses sector.

**Humboldt**

- Humboldt State faculty and students produce the Humboldt Economic Index, the only monthly source of broad-based economic indicators for the county.

**Los Angeles**

- CSU Los Angeles’ Entrepreneurship Institute provides programs and conducts research for small businesses in the product and service sectors. The institute provides seminars on topics such as new venture management and the development of entrepreneurial talent among students and external stakeholders.

**Long Beach**

- The CSU Long Beach Office of Economic Research presents the annual Regional Economic Forecast Conference for Southern California and its counties. The conference addresses topics such as employment growth rates, the unemployment forecast, and housing market trends.
Northridge

- Hundreds of CSU Northridge business students each year provide free tax preparation assistance through CSU Northridge’s Wayne and Roberta Colmer Volunteer Income Tax Assistance program to low-income families and individuals, non-English speakers, senior citizens, and the disabled.

- Students in CSU Northridge’s MBA program are given the option for their culmination project of serving as consultants to local and internationally-based small businesses and nonprofits, developing strategic plans, marketing programs, and long-range plans, and providing other assistance.

- CSU Northridge accounting majors rank among the top three California college and university programs in pass rates for every section of the CPA exam.

Pomona

- Cal Poly Pomona is home to the Real Estate Research Council of Southern California, a nonprofit organization that develops and distributes information about conditions affecting real estate in Southern California, from housing to mortgage lending and construction.

San Bernardino

- CSU San Bernardino’s graduate-level entrepreneurship program is ranked nationally. In addition to traditional business programs such as accounting, finance, management and marketing, the business school provides concentrations in supply chain management, real estate, entrepreneurship and public administration.

San Diego

- The San Diego State Center for International Business Education and Research (CIBER) is one of five original centers founded by the U.S. Department of Education to be “centers of excellence” in international business education. CIBER provides grants to fund faculty research and student internships abroad, performs outreach and development programs for the business community, and offers training programs for language and business faculty from institutions across the country.

- The International Security and Conflict Resolution (ISCOR) program at San Diego State is designed to provide students with an understanding of world affairs and conflict resolution. ISCOR challenges students to examine the increasingly interdependent and interconnected global system, analyze a world experiencing both increased cooperation and conflict, and assess international issues from a variety of perspectives.

- San Diego State’s College of Extended Studies brings supervisory, managerial, and executive level leadership programs to adult learners representing a broad spectrum of industries. Instructors include Holly Green, former president of the Ken Blanchard Companies, and Jeff Campbell, former CEO of Burger King, who also serves as an Executive-in-Residence for SDSU’s Hospitality & Tourism Management program.
The health care management program in the Graduate School of Public Health is home to the John J. Hanlon Executive Scholar, an endowed position bridging the university with the local health care system and currently held by the director of the San Diego County Health and Human Services Agency.

San José

- San José State College of Business' Silicon Valley Center for Entrepreneurship sponsors a series of competitions linking student innovators with world-renowned venture capitalists.
- San José State’s Norman Y. Mineta International Institute for Surface Transportation Policy Studies is one of only 10 centers nationwide conducting research on surface transportation issues.

San Marcos

- CSU San Marcos’ Senior Experience Program matches teams of students with projects submitted by local businesses and organizations. To date, more than 1,100 projects have been completed for 500 local businesses and organizations.
- A new interdisciplinary Global Studies degree program at CSUSM will teach students how to understand the world as an integrated whole and relate knowledge of the language, culture, history, society and politics of a particular region to larger trends and issues that affect all peoples worldwide.

Sonoma

- The first MBA program for Wine Business in the nation was launched at Sonoma State, stimulated by the wine advisory board that guides the program. The program provides students with the financial and analytical skills required of wine business management and focuses on the wine industry through specialized classes and related case studies.

Stanislaus

- The CSU Stanislaus Executive Master of Business Administration Degree program, which has attracted students from all over Central California to serve workforce needs, has enabled more than 100 working professionals to achieve career advancement since its 2007 startup.

Life Sciences and Biomedicine: Meeting a Growing Need

Bakersfield

- To address the severe nursing shortage in the San Joaquin Valley, CSU Bakersfield's Nursing Department has obtained multiple grants to expand admissions capacity and implement accelerated programs. The nursing program has been awarded a five-year, $10.4 million grant from the National Institute of Child Health and Human Development.
(NICHD) to study children's health and development. The project is a partnership with UC Irvine, UC Berkley, and the University of Chicago's National Opinion Research Center and is an integral part of the National Children's Health Study, the largest longitudinal study of child health ever undertaken in the United States.

- The Valley Fever Vaccine Project (VFVP) is an academic consortium managed through California State University, Bakersfield. The VFVP originated as a response to a major epidemic of coccidioidomycosis that plagued California in the early 1990s and resurfaced in 2006 in areas of California and Arizona. The primary goal of this laboratory-based collaboration is to identify and produce a candidate vaccine that would undergo evaluation in human clinical trials. The VFVP recently received an award of $2 million from the State of California, Department of Public Health to continue research. Other partners in the VFVP include the County of Kern, the Valley Fever of the Americans Foundations, and local service clubs such as the Rotary and the Eagles.

- Dr. Paul Smith, Associate Professor of Biology at CSU Bakersfield, is externally funded by LI-COR Biosciences to conduct research in DNA sequencing and genotyping of diploid organisms for biodiversity, forensic mapping, and association analysis. LI-COR designs, manufactures and markets instruments for biological, biotechnical, environmental, and drug discovery research.

Chico

- CSU Chico produces approximately 75 percent of the public health nurses, master's prepared RNs and RNs who achieve bachelor's of science degrees in nursing in the region.

Dominguez Hills

- The Minority Biomedical Research Program at CSU Dominguez Hills offers students the opportunity to be integrated as research assistants in active research laboratories at the university, the Los Angeles Biomedical Research Institute at Harbor-UCLA and the Charles R. Drew University of Medicine and Science. The program is funded by the National Institutes of Health.

- The School of Nursing at CSU Dominguez Hills is a leader in innovative distance learning programs for registered nurses to earn bachelor's and master's degrees in nursing. The school also offers an accelerated full-time pre-licensure program for master's students seeking to become RNs.

East Bay

- CSU East Bay faculty in the life sciences are increasingly pursuing research in a range of topics that include endangered species, plant nutrients, heavy metals, toxicity and health issues such as dementia, HIV/hepatitis interactions and contaminated foods.

- The East Bay Biotechnology Education Program schools teachers in genetic engineering concepts and provides classroom activities in biotechnology, genetics and evolution by
using kits maintained and provided by a grant from Genentech Foundation. At least 150 teachers in two counties have been through the training, and more than 5,000 students at 60 high schools have been exposed to biotech basics in the past decade to help build a pipeline of students engaged in Science, Technology, Engineering and Math (STEM) disciplines.

Fresno

- Fresno State was awarded a five-year, $4.5 million federal (NIH) grant in 2007-08 to develop a state-of-the-art biomedical research facility in which researchers can take advantage of new technologies to research health issues impacting California. Instruments at the facility will support research in the areas of proteomics, functional genomics and bioinformatics.

Fullerton

- CSU Fullerton’s Dr. Harold R. Rogers received $340,000 from the National Science Foundation in 2007 for the purchase of an Electron Paramagnetic Resonance (EPR) Spectrometer system. The EPR can be used in interdisciplinary projects that involve the development of polymers containing potentially environmentally stable, biocidal organometallic groups. With the new spectrometer, CSU Fullerton can provide students with hands-on training on state-of-the-art equipment used in many different fields, including forensics, geology and geochemistry, medicine, the petrochemical industry, molecular biology and biochemistry, and materials science.

- CSU Fullerton leads a three-campus consortium offering a Professional Science Master’s degree with an emphasis in applied biotechnology, along with CSU Los Angeles and Cal Poly Pomona. This multicampus program offers students faculty expertise and educational resources at each of the member campuses. The two-year degree program prepares graduates for careers in the biomedical device, biocomputing and biopharmaceutical industry through training in the science skills fundamental to industry, as well as essential business skills. The CSU’s Professional Science Master’s degree programs were featured as the most advanced in the nation at the 2008 National Governor’s Association Professional Science Master’s Academy.

- The inaugural group of students enrolled in CSU Fullerton’s entry-level nursing program in 2007 achieved an 89.5 percent first-time pass rate for the National Counsel Licensure Examination-RN.

- CSU Fullerton is the only university in California that offers the MSN with a concentration in School Nursing, the School Nurse Services Credential, and the Special Teaching Authorization in Health, as an online program.

- A $1.28 million Bridges to Stem Cell Research grant awarded to CSU Fullerton from the California Institute for Regenerative Medicine funds the specialized training of student stem-cell researchers. The program pairs each student with an internship mentor at UC Irvine, UC Riverside, USC, and Children’s Hospital of Orange County.
The Howard Hughes Medical Institute Undergraduate Research Scholars program offers CSU Fullerton students an intensive two-year immersion program of research, supportive studies and workshops for promising undergraduates majoring in biology, chemistry, biochemistry and mathematics.

CSU Fullerton Professor of Chemistry and Biochemistry Dr. Maria Linder has garnered more than $3.6 million in grant funding from the National Institutes of Health in the past 13 years to continue her research of the structure, function, regulation and gene expression of proteins associated with the transport and storage of iron and copper in the body.

**Humboldt**

- Humboldt State is among the top 50 public universities in the nation for the proportion of students who go on to earn doctorates in science, math and engineering.
- Humboldt State University Professor Steve Sillett has conducted groundbreaking research on redwood forest canopies, and was featured in a 2009 cover story in *National Geographic*. He holds the Kenneth L. Fisher Chair in Redwood Forest Ecology, the only endowed chair in the world dedicated to a single tree species.
- Humboldt State has the nation’s largest undergraduate botany program.
- Humboldt State offers the state’s only undergraduate oceanography program, as well as an array of other programs focused on marine sciences. Students conduct research aboard the university’s research vessel, the *Coral Sea*, and at its coastal marine lab.

**Long Beach**

- CSU Long Beach produces the highest number of master’s of science in nursing (MSN) graduates in the CSU system.
- With a $330,000 grant from the National Science Foundation, Assistant Professor of Biological Sciences Simon Malcomber and his students are conducting research that could ultimately lead to increased agriculture production and new biofuels by collaborating with professors, students and researchers across the country.

**Los Angeles**

- Since his initial faculty appointment in 1994, Dr. Frank Gomez at CSU Los Angeles has received over $6 million in biotechnology research funding from the National Science Foundation, National Institutes of Health, Department of Defense, research corporations and the industry.
- IMPACT-LA graduate student fellows serve as visiting scientists and engineers, partnering with area high school and middle school teachers to foster students’ interest in science, technology, engineering and math. Part of a National Science Foundation program, IMPACT stands for Improving Minority Partnerships and Access through Computer/Information Science/Engineering-related Teaching.
The CSU Los Angeles Spinal Plasticity and Locomotor Training Lab, equipped with technology-advanced rehabilitation apparatus, investigates the effects of locomotor training after a spinal cord injury. Supported by federal and state funds, one current project uses rodent models to study the use of robotic technology in facilitating locomotor training, while another seeks to understand the neural mechanisms of training-enhanced locomotor recovery.

CSU Los Angeles assistant professor, Dr. Howard Xu, focuses research in his biotechnology laboratory on drug discovery, employing approaches such as microbial genetics, bacterial physiology and genetics, molecular biology, and high throughput screening. Dr. Xu’s laboratory pursues the discovery of novel antibiotics and has made significant progress in identifying the cellular targets of antibacterial compounds in bacteria, and in understanding the mechanisms of antibiotic drug resistance in clinical bacterial pathogens.

CSU Los Angeles and Cal Poly Pomona represent the CSU interests in the Pasadena Bioscience Center, a collaborative development with the City of Pasadena, the California Institute of Technology and Pasadena City College. The Pasadena Bioscience Center promotes and supports new company formation by providing low-cost, high-quality wet lab space and access to shared-use equipment to start-ups.

The Institute of Nursing at CSU Los Angeles is active in the recruitment and retention of nursing students, improving the quality of nursing practice, facilitating research and teaching.

The Institute for Applied Gerontology at CSU Los Angeles focuses on the delivery of care to the elderly and works on best practices and enhanced services to promote the well-being of disadvantaged citizens.

Northridge

According to the National Science Foundation, CSU Northridge consistently ranks among the top five comprehensive universities in the nation for preparing students to earn doctorates in research and the sciences.

Recognizing the need for trained professionals to address the issues that arise from the burgeoning field of assistive technology, CSU Northridge has launched a Master of Science in Assistive Technology Studies and Human Services (ATHS).

The CSU Northridge Language, Speech and Hearing Center has provided diagnostic and therapeutic services to children and adults with communication disorders since 1960. Today, the center averages 12,000 patient visits annually, training Northridge students to become professional speech/language or hearing specialists.

Sacramento

With the second largest nursing program in the CSU, each year CSU Sacramento graduates nearly 800 highly skilled nurses—achieving a 95 percent pass rate on the National Council of State Boards of Nursing’s Licensure Examination (NCLEX) over the past two years.
San Diego

- San Diego State’s Center for Bio/Pharmaceutical and Biodevice Development addresses the continuing education and training needs of the pharmaceutical, biotechnology and medical device industries. Programs and courses are designed to give employees a foundation for the development, manufacture, and commercialization of FDA-regulated therapeutic and medical device products.

- San Diego State and San José State have received a combined total of nearly $10 million in U.S. Department of Labor grants for education, training, and placement services in partnership with the health care and biotechnology industries. In the San Diego region, the Biotechnology Readiness, Immersion, Certification and Degrees for Gainful Employment (BRIDGE) project’s certificate and degree training focuses on fields of high need, including laboratory sciences/technology, regulatory affairs, quality assurance/control, computational sciences, medical physics, and informatics. At San José, training prepares participants for licensure and certification as Medical Laboratory Technicians (MLT), Clinical Laboratory Specialists (CLS), Clinical Genetic Molecular Biologist Scientists (CGMBS), and Cytogeneticists.

- The CSUPERB Microchemical Core Facility DNA Lab established at San Diego State in 1987 performs automated fluorescent sequencing services to support student and faculty research across all CSU campuses. The facility recently expanded its services to include genotyping, large-scale plasmid extraction, and Templiphi service, which can amplify DNA from glycerol.

- The School of Nursing is launching a baccalaureate degree program, which is partially taught through distance education, for second-degree candidates wishing to change careers and enter the field of nursing.

San Francisco

- San Francisco State’s Student Enrichment Office assists 20 to 25 underrepresented students into doctoral programs each year. Founder Frank Bayliss’ mentoring work has earned him a Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring.

- The Conservation Genetics Laboratory at San Francisco State provides molecular genetics equipment, computer analysis facilities and software for DNA extraction and sequencing, PCR, cloning and microsatellite analysis for students and faculty at San Francisco State’s and other CSU and University of California campuses.

- Technology Learning Classrooms at San Francisco State’s School of Nursing offer computer-controlled patient simulators that allow faculty and students to experience a full spectrum of nursing care scenarios.

- Dr. Ursula Simonis at San Francisco State received a $1.2 million award from the National Institutes of Health for her project, Porphyrinic Sensitizers Aimed at Mitochondrial Targeting, which targets the development of minimally invasive alternatives to chemotherapy that would drastically reduce the side effects of current treatment regimens. Her work will open new avenues for the diagnosis and treatment of leukemia and prostate cancer.
San Francisco State’s Center for Computing in Life Sciences conducts research in such areas as bioinformatics, data modeling and computational drug discovery by integrating life sciences, computational science and mathematics. A recent study that mapped the genome of three parasitic wasps is providing the agricultural industry with a better understanding of how to use parasitic wasps as natural agents against agricultural pests and disease-carrying insects.

San José

San José State’s Professional Science Master’s degree in medical product development management was developed in collaboration with Abbott Laboratories. It prepares graduates in advanced science, business management and regulatory affairs courses required to move into upper-level project management positions in one of the state's fastest growing industry sectors.

San Marcos

A Master of Biotechnology degree has been developed under the auspices of the Professional Science Master’s (PSM) program. Offered at CSU San Marcos and several other CSU campuses, this “21st century” MBA allows students to pursue advanced training and excel in science while simultaneously developing highly valued business skills.

Stanislaus

CSU Stanislaus added its first Master of Science in Nursing program in 2009 for nurses seeking professional advancement at the management level.

Physical Sciences/Advanced Sciences Research

Channel Islands

Dr. Cynthia Wyels, an Associate Professor of Mathematics at CSU Channel Islands, pursues research in combinatorial mathematics and linear algebra. She involves students in her research and has obtained funding to provide summer stipends for minority undergraduate mathematics students to work with her.

Dominguez Hills

Dr. John Price, an Associate Professor of Physics at CSU Dominguez Hills, is engaged in research studying the properties of the XI hyperon, a particle related to the proton. This research is funded by an $85,000 grant from the U.S. Department of Energy and has been carried out with the assistance of CSU Dominguez Hills undergraduate students, three of whom have gone on to graduate work in physics.
Humboldt

- Humboldt State’s fire lab researchers were recently awarded a grant to model the effects of moisture on smoldering forest floors, and have just completed a study on the effect of tree diseases on fires in tree crowns.

Engineering, Information Technology, and Technical Disciplines

Bakersfield

- CSU Bakersfield's petroleum geology program is the only one offered by a public university west of the Rockies. The program's Geotechnology Center is a state-of-the-art training resource for petroleum geology students and oil industry professionals. Its California Well Core Repository contains information from thousands of oil, gas, water, and core wells from California and is an irreplaceable resource for California’s energy and water industries.

- The West Coast Geotechnology Training Center (GTTC) is located in the Geology Department and modeled after similar centers sponsored by the American Association of Petroleum Geologists in Houston, Midland and Dallas, Texas, and Golden, Colorado. The center provides training in UNIX and PC-based workstation skills necessary to succeed in today's petroleum exploration and production market. The West Coast GTTC provides a cost-effective alternative for local professionals and students to receive software training without incurring prohibitive travel expenses. ArcView GIS training also is available at the center.

Chico

- CSU Chico's College of Business manages a mega-hosting center for SAP, the world’s largest enterprise software company, providing technical and curriculum support for hundreds of universities around the world.

Fullerton

- CSU Fullerton’s Master of Science in software engineering program prepares individuals for careers as software engineers and software process managers in industry and government agencies. It also addresses the needs of professionals engaged in the rapidly changing arena of software development. Those enrolled in the online program come from such companies as Raytheon, ThalesRaytheonSystems, Northrop Grumman and Boeing.

- CSU Fullerton conducts research on web-based telecommunications link and orbital analysis, simulation and operation for NASA-JPL. Other research areas include GPS Local Area Augmentation, Global Navigation Satellite System, Intelligent Vehicle High System for automobile navigation with GPS and Inertial Navigation System.

Los Angeles

- The CSU Los Angeles Structures, Propulsion, and Control Engineering (SPACE) Center develops state-of-the-art computing tools and techniques for modeling, controlling and
simulating aircraft of the future. The development and flight of a hydrogen fuel cell-driven unmanned aircraft is one of the first of its kind in the world. The center also trains engineering students in the areas of control systems, computer architecture design, digital signal processing, modeling, and animation. The center’s work has been supported by $20 million in grants from NASA, the National Science Foundation, the U.S. Air Force, and the aerospace industry.

- CSU Los Angeles’ Center for Technology Education assists students, faculty, teachers, public agencies, business, and industry by providing workshops, a communications network and other activities that advance technology education and technical training in robotics, computer-aided design (CAD), computer-aided manufacturing (CAM), desktop publishing, and fluid power.

**Long Beach**

- According to a National Science Foundation (NSF) study, CSU Long Beach produces more baccalaureate graduates who go on to earn a PhD in the sciences and engineering than any other master’s university in the United States.

- CSU Long Beach was awarded a five-year, $5 million grant by the National Aeronautics and Space Administration (NASA) to create a center that will focus on technological advances in the air traffic management industry through study of human factors issues. The grant was awarded through the NASA Group 5 Research Center awards program, whose goal is to increase the number of underrepresented minorities who obtain advanced degrees in science, technology, engineering and mathematics by establishing multidisciplinary research centers at minority-serving universities.

- The CSU Long Beach Center for International Trade and Transportation (CITT) is working with its METRANS Federal Transportation Center partners at the University of Southern California on a three-year Transportation Workforce Development research project. The work is funded by a Federal Highway Administration grant. The multidisciplinary team is examining models for collaborative workforce development, bringing educational institutions together with local and regional industry organizations.

- A new rodder machine was designed, manufactured and tested entirely in the CSULB’s College of Engineering laboratories and embodied numerous inventions. Through a partnership with a local entrepreneur, the new machine went into production with few changes from the original design.

**Northridge**

- CSU Northridge has two NASA grants totaling over $430,000: Exploring the Magnetic Connection and Associated Dynamics from the Photosphere through Chromosphere to the Corona; and a subcontract from Montana State University/NASA titled, Magnetic Origins of Solar Irradiance Variations.
Pomona

- The Cal Poly Pomona aerospace engineering program partnered with the Air Force to build supersonic and subsonic wind tunnels on campus, which allow faculty and students to research aerodynamics. The wind tunnels, as well as other aerospace projects such as unmanned aerial vehicles and spacecraft development, have received $5 million of support in the last six years.

- The Cal Poly Pomona Electrical & Computer Engineering Department has conducted applied research in the area of signal processing over the last five years, with grants from Rockwell International, Lockheed Martin, and Raytheon totaling more than $170,000. These research efforts are led by Professors Dr. H. K. Hwang and Dr. Zekeriya Aliyazicioglu who have involved undergraduate and graduate students in their work on radar antenna designs, antenna arrays, and specialized antenna systems.

San Diego

- San Diego State’s Communication Systems and Signal Processing Institute is internationally recognized for leading innovations in technologies that support wireless communication. Telecommunications giants Qualcomm, SAIC, Cubic Corporation, and Northrop Grumman collaborate in this partnership and use the opportunity to employ San Diego State graduates.

San José

- San José State’s Charles W. Davidson College of Engineering features campus laboratories sponsored by leading Silicon Valley firms including Applied Materials, Cisco and Hewlett-Packard. Faculty members collaborate with industry leaders to offer innovative programs for working professionals in emerging fields such as clean technology and cloud computing.

- San José State is part of a team conducting multiyear research on the solar system using a powerful telescope mounted on NASA's Kepler spacecraft.

- The NASA-Ames Research Center continues its research partnership with San José State to explore the role of human error in flight accidents and air transportation safety. With over $50 million invested in the Human Factors research, three current cooperative agreements provide $7.1 million in funding to enable the investigation of human automation integration, human information management, and safety system research, all focusing on safer air travel.

Sonoma

- The bachelor's and master's programs in Computer and Engineering Science prepare students to design and manufacture electronic systems, communications systems and networks, microprocessors and computers, microwave and lightwave communications, and integrated circuits.
Stanislaus

- Students in the Computer Information Systems (CIS) program at CSU Stanislaus receive training in the E & J Gallo Winery Laboratory to prepare them for jobs with major companies in the region such as Gallo and Foster Farms.

Media, Culture, and Design: California’s Best-Known Export

Channel Islands

- In collaboration with prominent business leaders and community partnerships, CSU Channel Islands’ Art Program provides off-campus galleries in Camarillo and Ventura that host art exhibitions and cultural events to benefit the campus and surrounding communities.

Chico

- CSU Chico’s arts and media studies programs have produced a number of successful writers and artists, including Russ Woody, TV writer/producer (Murphy Brown, Cybill, Mad About You, Becker, The Drew Carey Show); Amanda Detmer, film actor (Saving Silverman, The Majestic, Big Fat Liar); and Matt Olmstead, TV writer/producer (NYPD Blue, Blind Justice, Prison Break).

Dominguez Hills

- The Digital Media Arts program at CSU Dominguez Hills focuses on careers in the television, motion picture, music recording, interactive, and digital media industries. Students have an option to major in Audio Recording, Music Technology or Television Arts, and alumni work as sound engineers, producers, writers, directors, editors, camera operators, and technicians in broadcast, entertainment, corporate, and educational venues.

Los Angeles

- In collaboration with the University’s Office of Community Engagement, CSULA students in English 301 (An Introduction to Language) and English 430 (Children’s Literature) developed creative, hands-on activities to get east Los Angeles children interested in reading and to help improve their English grammar.

- CSU Los Angeles is home to the Center for Contemporary Poetry and Poetics, which each year hosts the acclaimed Jean Burden Poetry Readings, British Council Poet-in-Residence, and other programs.

- CSU Los Angeles' Luckman Fine Arts Complex, home of the renowned Luckman Jazz Orchestra, seats up to 1,152 and, with one of the largest stages in Los Angeles, has featured performers such as world-renowned violinist Itzak Perlman. The complex also hosts an array of well-received contemporary art exhibitions in the Luckman Gallery.
Northridge

- CSU Northridge’s Department of Cinema and Television Arts offers frequent lectures from entertainment industry professionals who also teach in the program and hire Northridge graduates. Alumni of the program have written and directed feature films as well as created shows for television and other media.

VISCOM, housed in CSU Northridge’s College of Arts, Media, and Communications, develops educational and research opportunities for students, faculty, and staff interested in visual communications by providing creative services to regional businesses requiring graphic design support in multimedia platforms.

San Bernardino

- CSU San Bernardino’s Coyote Radio was selected as the top Internet-only college radio station in America and the third-best of all college radio stations in the nation, as determined by students nationwide who voted for MTV’s “Radio Woodie” Award. It is also one of only 50 select U.S. college radio stations carried by iTunes and is home to the nationally syndicated feature program “Isla Earth,” with a weekly audience of 5 million listeners.

- CSU San Bernardino’s Robert V. Fullerton Art Museum is a showcase for the fine arts and home to one of the finest privately held collections of Egyptian antiquities in the world.

San Diego

- SDSU’s College of Extended Studies, in collaboration with the School of Journalism & Media Studies, now offers a certificate program targeted to working professionals within the fields of journalism, public relations, advertising, and multimedia content production. Participants hone their skills in multimedia and harness the interactive power of the internet to build an audience.

San Francisco

- San Francisco State has more than 13 Oscar wins among its alumni, including screenwriter/director Steve Zaillian (Schindler’s List). San Francisco State-trained actors include Danny Glover, Annette Bening, Jeffrey Tambor, and Alex Borstein.

- The College of Creative Arts at San Francisco State hosts more than 300 events annually, serving more than 30,000 patrons. These events include concerts, plays, exhibits, film screenings, dances, lectures, broadcasts and telecasts.

Stanislaus

- Since 1986, all students in CSU Stanislaus’ Music Education program have found jobs after graduation, and most have been hired by schools in the campus’s service region.
Tourism: Packaging the California Experience

Dominguez Hills

- The Home Depot Center at CSU Dominguez Hills offers world-class competition and training facilities for amateur, Olympic, collegiate and professional athletes. The venue features an 8,000-seat tennis stadium; a 27,000-seat stadium for soccer, other athletic competitions and outdoor concerts; a 20,000-seat facility for track and field; an indoor velodrome for cycling; and facilities for softball, baseball, beach volleyball, basketball and other sports. Designated as an “Official U.S. Olympic Training Site,” it is also home to Major League Soccer’s Los Angeles Galaxy and Chivas USA.

East Bay

- The Department of Hospitality, Tourism, and Recreation at CSU East Bay places an emphasis on leadership, offers online courses in both bachelor’s and master’s programs, and provides internships for students.

Fullerton

- The Mihaylo College of Business and Economics at CSU Fullerton has the only undergraduate program in California that offers a concentration focused on the business/management side of entertainment and tourism.

San Diego

- The J. Willard and Alice S. Marriott Foundation Student Center for Professional Development in the School of Hospitality and Tourism Management has a 99 percent placement rate for graduates.

San Francisco

- Recreation studies at San Francisco State features the Fort Miley Adventure Challenge Course located in the Golden Gate National Recreation Area. The program fosters an environment for individuals and groups in the business, nonprofit and educational arenas to develop confidence, trust, support, communication, cooperation and leadership skills.

Educating Teachers: Building the Future Generation

Bakersfield

- CSU Bakersfield serves as the lead agency for the Central California Partnership for Teacher Quality Programs (CCP-TQP), one of only 28 awards in the nation to be given as part of the Teacher Quality Partnership aimed at improving instruction in struggling schools. CCP-TQP is an innovative collaboration between CSU Bakersfield, CSU Monterey Bay, and Cal Poly San Luis Obispo as well as the Kern County Superintendent of Schools and the Tulare County Office of Education to address the diverse needs of schools, teachers and
students at 16 high-need schools in primarily rural areas. With a focus on science, math and special education, the program provides a two-year introductory experience and mentoring for new teachers in partner schools.

- Several departments at CSU Bakersfield are involved in the Single Subject Program in Social Science (History, Economics, Political Science, Philosophy/Religious Studies, and Sociology), preparing students to meet the needs for well-educated teachers of history, government, economics and the social and behavioral sciences.

**Dominguez Hills**

- The CSU Dominguez Hills Transition to Teaching program, funded by a five-year $3.2 million grant from the U.S. Department of Education, allows the program to expand into the Compton and Inglewood School Districts. The program, currently serving Lynwood and Los Angeles Unified School Districts, recruits and trains recent graduates who majored in math, science and English, as well as mid-career professionals, to become middle school and high school teachers for high-need schools.

**East Bay**

- Already among the state’s largest provider of credentialed math and science teachers, CSU East Bay is expanding the pipeline of future teacher and students by partnering creatively with business and industry to encourage K-12 students to study science, technology, engineering and math (STEM). This includes a $1.5 million Chevron grant to triple capacity for the university’s mathematics achievement academies, which help underserved students strengthen math skills and attain college readiness.

**Fresno**

- Fresno State’s Kremen School of Education and Human Development was the first in the CSU to offer a doctorate in Educational Leadership as a joint program with UC Davis.

- Central Valley Educational Leadership Institute (CVELI) was formed in 2002 to support educational leaders in the San Joaquin Valley in their efforts to eliminate the achievement gap. CVELI delivers conferences, training, coaching and consulting activities in collaboration with the 150 school districts served by the Kremen School of Education and Human Development at Fresno State. Funding is provided by donations, grants and fees for service.

**Fullerton**

- With a five-year, $46.5 million grant from the National Science Foundation plus $2.1 million from the American Recovery and Reinvestment Act, Dr. David Pagni and Dr. Paul DeLand are directing Teachers Assisting Students to Excel in Learning Mathematics, in partnership with the Orange County Department of Education and 14 secondary schools. The program builds professional learning communities and provides professional development. Teachers collaborate on developing motivational classroom strategies to entice students to learn mathematics.
Long Beach

- CSU Long Beach’s SERVE (Service Experiences for ReVitalizing Education) Program creates an opportunity for undergraduate students, particularly those considering careers in K-12 education, to learn about urban classrooms and the needs of the diverse K-12 student population. SERVE interns provide academic support and are able to focus on their career goals while providing direct service to K-12 students and teachers in their communities.

Northridge

- CSU Northridge continues to issue a significant portion of the state’s teaching credentials; in fact in 2000-01 teaching credentials were issued to more CSU Northridge students than from any other public university.

San Bernardino

- CSU San Bernardino’s nationally accredited College of Education developed a literacy center to improve the reading and comprehension skills of children from community public schools.

- CSU San Bernardino hosted community educators, administrators and leaders in education for the inaugural Latino Education and Advocacy Day summit, which drew nearly 200,000 viewers, listeners and attendees from around the U.S., as well as Mexico, El Salvador, Nicaragua and Panama, to discuss critical issues in Latino education.

San Diego

- The City Heights Educational Collaborative, begun in 1998, is a partnership between San Diego State, the San Diego Unified School District, the San Diego Education Association and Price Charities. The collaborative seeks to improve the academic achievement of students in three City Heights schools—Rosa Parks Elementary, Monroe Clark Middle and Hoover High—by improving the training and support of educational professionals working in the inner city.

- The Compact for Success is a partnership between San Diego State and the Sweetwater Union High School District and is supported by the Ellis Foundation and the Stensrud Foundation. The compact, which started with the class of 2006, guarantees admission to all Sweetwater graduates who meet the program’s requirements. San Diego State also is supporting the district’s efforts to strengthen its curriculum requirements and teacher development programs.

- The National Center for Urban School Transformation at San Diego State works to help urban school districts and their partners transform urban schools into places where students achieve academic proficiency and graduate prepared to succeed in post-secondary education, the workplace, and their communities. The center identifies the best practices of successful urban schools nationwide to support creating model high-performing schools.
Criminal Justice: Providing Leadership and Security

Domínguez Hills

- CSU Domínguez Hills Criminal Justice Administration program was one of the first to offer a course on terrorism and extremism as part of the criminal justice major. Criminal Justice Department Chair Dr. Clarence Martin is the author of several definitive texts on terrorism.

- With the award of grants totaling $1 million from the Department of Homeland Security, Dr. Antonia Boadi will develop programs that prepare undergraduate and graduate students who are majoring in science, technology, engineering or mathematics for homeland security related careers.

Los Ángeles

- Working directly with local law enforcement agencies, CSU Los Ángeles criminalistics master’s students are playing important roles in reducing DNA forensic casework backlogs in sexual assault cases. The Smart Backlog Reduction Program, in partnership with the Los Angeles Police Department and the L.A. County Sheriff’s Office, is funded through a $1 million federal appropriation to the California Forensic Science Institute at CSU Los Angeles.

San Bernardo

- CSU San Bernardo is the only campus in the CSU with a center for the Study of Hate and Extremism.

Public Administration: Leadership and Service

Bakersfield

- In addition to evaluating the effectiveness of mental health services in Kern County and educating the next generation of social workers in a variety of fields to meet the human needs of the community, CSU Bakersfield’s Department of Social Work provides more than 72,000 hours a year of service learning through student internships. The department is working to create a national model to provide educational support for students who will work with Medicaid eligible elderly persons.

- CSU Bakersfield’s Public Service Institute (PSI) makes available resources and expertise to public, nonprofit and health care agencies in the southern San Joaquin Valley. PSI provides: 1) technical, supervisory, managerial and leadership training; 2) policy analysis and program evaluation; and 3) international linkages that will benefit CSUB students and practitioners in the service region. Clients include California Compliance School, Bakersfield College, CSUB Center for Career Education and Community Engagement, Kern Medical Center, and CSUB Hawk Honors Program.
Dominguez Hills

- The California African American Political and Economic Institute at CSU Dominguez Hills is a training center that studies the dynamics of African American political and economic contributions and political leadership in California.

East Bay

- CSU East Bay’s Department of Public Affairs and Administration participates in the federally funded Minority Training Program in Cancer Control and Research (MTPCCR). This joint program of the UCSF Comprehensive Cancer Center and the UCLA School of Public Health serves to increase ethnic diversity in the field of research and cancer control by encouraging minority students to pursue doctoral degrees and careers in research.

- CSU East Bay’s Department of Public Affairs and Administration has built a strong network of community partnerships to offer internship and project opportunities for students in the field of public administration and health care administration. Members of the network include regional hospitals, county health offices, and nonprofit organizations.

- The Institute of Governmental Research and Training in CSU East Bay’s Department of Public Affairs and Administration sponsors training workshops and conducts research in public policy and administration. Regionally, the institute provides training for public administrators and offers consulting and research services to government organizations.

Sacramento

- The Institute for the Study of Politics and Media at CSU Sacramento explores the impact of media and political processes on society. The institute is the go-to resource for political reporters throughout the state seeking expert analysis on candidates and issues as well as topics affecting elections and elected officials.

- Sacramento Semester, a program open to students throughout the state, offers undergraduate students unprecedented access to the largest state government in the country through legislative internships and a specially designed curriculum that features guest speakers from all levels of California government.

San Francisco

- The Willie L. Brown, Jr. Leadership Center at San Francisco State provides students the opportunity to gain professional experience working in the public sector, while preparing a diverse, qualified and well-educated workforce for Bay Area public agencies. The center also offers a speaker series and leadership programs for working professionals in the public sector.
Sustainability: Environmental Consciousness and Energy

Bakersfield
- Drs. Robert Horton and Robert Negrini, CSU Bakersfield professors of geology, have received grants from multiple agencies and foundations and published papers relating to climate and climate modeling.

Channel Islands
- The university is committed to environmental sustainability through research and education, environmentally conscious practices across campus, and leadership in the community. Some of these “green” efforts include:
  - Reduction of campus irrigation by 25 percent.
  - Converting irrigation to reclaimed water as the supply becomes available.
  - Waterless urinals only in men's restrooms, saving up to 40,000 gallons of water annually.
  - Replaced faucets and toilet valves with low-flow units throughout the campus.
  - Developed design standards that incorporate sustainable strategies for new buildings using recycled materials and rapidly renewable resources, and energy efficient heating, cooling and lighting systems.
  - Divert construction wastes from landfills by recycling metals, cardboard, asphalt and concrete.

Chico
- The Associated Students Chico Recycling Program diverts more than 1,200 tons of waste from landfills annually and has trained more than 150 future teachers and 2,000 elementary school students in waste reduction techniques.
- CSU Chico's University Printing Services was awarded the Forest Stewardship Council chain-of-custody certification by Scientific Certification Systems in 2008, supporting CSU Chico's campus-wide commitment to sustainability. CSU Chico is one of the first universities in the country to receive this certification. The certification means that products by CSU Chico's Printing Services bearing the FSC trademark meet strict tracking requirements ensuring that they come from responsibly-managed forests.
- CSU Chico was awarded the grand prize in the National Wildlife Federation's Campus Ecology Chill Out contest held in 2007. The competition recognizes colleges and universities around the country that are implementing innovative programs to reduce global warming pollution.

Dominguez Hills
- The Center for Urban Environmental Research (CUER) at CSU Dominguez Hills coordinates and supports urban environmental activities on campus, including an environmental science master's degree and interdisciplinary urban environmental research and policy.
CSU Dominguez Hills is planning a native species urban forest on campus to serve as a resource/teaching center and also has plans for a Child Development Center Discovery Play Garden to be an educational tool for families.

All showerheads on the CSU Dominguez Hills campus are being replaced with low-flow models. California Water Service Company (Cal Water) donated 132 showerheads and provided a grant to replace campus urinals with low-flow models.

A grant from the Metropolitan Water District of Southern California provides a wireless irrigation system for the CSU Dominguez Hills campus that uses reclaimed water and includes a weather sensor that monitors flow.

Fullerton

CSU Fullerton’s annual Alternative Energy and Transportation Expo attracts business and industry, policymakers, government agencies, and the public. The 2009 AltExpo featured exhibits from major manufacturing and technology companies, entrepreneurs and government agencies, including BMW, Mercedes, Honda, Clean Energy, EBus, MTA and OCTA.

Since 2006, CSU Fullerton has constructed four buildings that meet LEED standards, including the gold-rated Student Recreation Center, which also won the “Best Overall Sustainable Design” title as part of the 2007 Best Practice Awards for the University of California/California State University Energy Efficiency Partnership Program. Over the last 30 years, CSU Fullerton has implemented a variety of measures to assist in managing energy usage and utility costs. Despite incredible growth in the university’s facilities and population, energy consumption per gross square foot (GSF) has been reduced by 62 percent from 1980 to 2008.

Humboldt

Humboldt State’s Marine Wildlife Care Center provides emergency care for seabirds following oil spills from Mendocino to the Oregon border. In addition, Humboldt State faculty and students are designated to respond when marine mammals are stranded on beaches along the North coast.

Humboldt State’s fire science program teaches modern techniques for managing wildfire, and an advanced training program is offered for Forest Service employees and similar professionals.

Humboldt State’s student-run eco-demonstration house on campus is one of the nation’s oldest, and students recently voted for a new fee to fund student-led energy efficiency projects on campus.

Humboldt State students developed the Graduation Pledge of Social and Environmental Responsibility, which has been adopted at hundreds of universities around the world.
Long Beach

- The CSU Long Beach Center for Energy and Environment Research and Services (CEERS) engages in basic and interdisciplinary research, development, testing and evaluation related to energy and environment, and provides educational outreach and professional development to local schools and industry. CEERS’ areas of focus include air pollution, water pollution, diesel emissions control technology, assessment and mitigation processes, indoor and outdoor air quality, and renewable energy.

- Managed by the CSU Long Beach College of Engineering, the California Pavement Preservation Center works collaboratively with two other CSU campuses and CalTrans. Among other innovations, the center focuses on “green” construction, recycled materials and novel mix asphalt.

- The Center for Green Composites Technology at CSU Long Beach focuses on products and manufacturing processes for aerospace, automotive, defense, consumer products and alternative energy industries. Center activities include innovative manufacturing methods, nondestructive testing, composite repair and qualification, and workforce development.

- In partnership with the County of Los Angeles and the City of Long Beach, CSU Long Beach collaborated in the first and largest installation of energy efficient, state-of-the-art LED street lighting project in Southern California.

Los Angeles

- In 2009, CSU Los Angeles was awarded a $5 million, five-year grant from the National Science Foundation to establish the Center for Energy and Sustainability. The project will train students, support research and increase public awareness in the fields of biofuels, carbon sequestration, photovoltaics and fuel cells. CSU Los Angeles recently concluded a similar NSF program focus on environmental analysis.

Monterey Bay

- CSU Monterey Bay was honored with the Monterey County Business Council’s Public/Private Partnership award in 2008 for implementing projects that have resulted in significant energy savings. Projects implemented in the previous three years included lighting retrofits, heating and ventilation retrofits, and controls upgrades. These projects resulted in an annual savings of 16 percent of the university's electricity consumption and 11 percent of natural gas consumption. The university also received a best practice award for a project to monitor—and reduce—energy consumption in nine campus buildings, which resulted in an 11 percent savings in electricity use and a 24 percent savings in natural gas consumption.

Northridge

- CSU Northridge’s 1 megawatt fuel cell power plant, the single largest such power plant at a university in the world, is generating the base load electricity for the university’s facilities and
surplus heat for hot water. Designed with the help of CSU Northridge’s engineering student team, the plant also powers a satellite chiller plant to help the campus handle its air conditioning and heating. During its lifetime, the fuel cell plant will effectively reduce CSU Northridge’s carbon dioxide emissions into the environment by 60 million pounds.

- CSU Northridge’s new “biotechnology” building, Chaparral Hall, conserves energy throughout its spaces, from its fluorescent lighting to low-flush toilets and waterless urinals, and uses energy from the campus’s hydrogen fuel cell satellite plant.

- In 2003, CSU Northridge installed more than 3,000 solar panels on campus. It was one of the largest solar electric installations at a public university in California. In 2005, 2,832 more panels were installed. The panels save the campus more than $160,000 annually in energy costs and help reduce the campus’s environmental impact in a significant way.

- Directed by Associate Professor of Geography Helen Cox, geography undergraduates are identifying, measuring and tagging each of the more than 3,600 trees on the CSU Northridge campus to determine whether the university can minimize its water usage—by choosing drought-tolerant trees—and reduce its greenhouse gas emissions by maximizing the trees’ uptake of carbon dioxide.

**Pomona**

- Cal Poly Pomona Parking and Transportation Services has a GPS-based system that tracks the locations of the Bronco Express shuttles around campus and provides riders wait times at each stop. The Efficient Deployment of Advanced Public Transportation System (EDAPTS) includes marquee signs at four popular stops, an online map that pinpoints the shuttles routes and updates every 7 seconds, and a mobile phone option. The LED marquee signs are solar-powered and display the arrival time of the next bus. They are also ADA compliant, providing an audio announcement for visually impaired riders. The EDAPTS system assists Parking and Transportation Services in managing the bus routes and schedules more efficiently.

**Sacramento**

- CSU Sacramento is home to the California Smart Grid Center, which will oversee the installation of smart grid technology in buildings on campus and has developed curriculum to educate engineering and computer science students. CSU Sacramento and its smart grid partners, Sacramento Municipal Utility District (SMUD), Los Rios and the Department of General Services received $127 million in American Recovery and Reinvestment Act funding for the project. The grant will help make CSU Sacramento a “smart campus” by modernizing about 50 buildings. Additional grants of over $905,000 were awarded to CSU Sacramento in April 2010 to develop a new training program to enhance the region’s growing smart grid system.
San Bernardino

- CSU San Bernardino has implemented conservation efforts to generate its own electricity through renewable solar power panels and produce fewer greenhouse gases, saving the university more than $1 million—or a 25 percent reduction—in utility costs.

- CSU San Bernardino has become the first college or university in California to convert human exercise into electricity with 20 elliptical fitness machines that generate energy from exercise.

San Diego

- In 2009 San Diego State launched the Center for Regional Sustainability to further sustainability on campus through academic engagement programs, faculty training, research, and community outreach. The center's initiatives include a faculty institute for course design and a service-learning project/community engagement project, “Public Conversations for a Sustainable Future,” which engages students and faculty in intergenerational, community discussions.

- In 2009, San Diego State established a new sustainability major and implemented three additional courses on sustainability. Many faculty incorporate sustainability into courses in disciplines from biology to accounting to writing and rhetoric.

- San Diego State University’s College of Extended Studies has developed three online professional certificates: Green Building Construction, Green Energy Management, and Sustainable Practices. The new Green Home Performance Contractor Certification will be the first green BPI certification course offered in Southern California to comply with the soon-to-be-signed legislation for Home Star tax incentives for homeowners and new jobs for BPI-certified green contractors.

San Francisco

- San Francisco State’s College of Business requires graduate and undergraduate students to take a course on business and society and recently launched the MBA emphasis in sustainable business.

- University Housing at San Francisco State has furnished a model green apartment that showcases how students can live in a modern and comfortable setting while reducing their ecological impact.

- The MBA program at San Francisco State offers an emphasis in sustainable business that aims to transform mainstream businesses. The program provides students with an in-depth appreciation of the environmental and social dimensions of conducting business in a global market. Three aspects of sustainable business that improve a firm's long-term performance are emphasized: managing risks (regulatory, reputation, litigation, market), values-driven leadership, and recognizing market opportunities created by environmental and social challenges.
The campus custodial service at San Francisco State has implemented a green cleaning program in all buildings that reduces the amount of harmful chemicals released into the environment and improves air quality.

San José

In partnership with the San José Redevelopment Agency, the San José State University Research Foundation manages and operates the San José Bio Center, the U.S. Market Access Center, and the Environmental Business Cluster. All three business incubators provide high-potential, early-stage companies with facilities, business development services, and access to faculty experts and student interns.

San José State won the $15,000 first prize at the 2007 "Idea-to-Product Competition" held at Purdue University for creation of the zero-emissions vehicle. SJSU Professor of Mechanical and Aerospace Engineering Tai-Ran Hsu was the senior project supervisor for an endeavor to create a new class of energy-efficient automobile: a student-designed zero-emissions vehicle, dubbed ZEM, which incorporates a pedaling system that initiates movement and generates storable power, as well as solar and electrical systems to back up the human element.

San Luis Obispo

San Luis Obispo is conducting a campuswide energy audit, has $5.5 million contracted with Chevron Energy for energy and water conservation measures, and is performing feasibility studies for 1MW solar PV system, 1 MW wind power, and 1 MW biomass.

San Marcos

CSU San Marcos Extended Learning is offering a new Certificate Program in Green Business Operations for those in local industry and organizations seeking to gain a deeper understanding of the problems and potential solutions for “Going Green,” including how to reduce associated costs and comply with new legislation to preserve the environment.

CSU San Marcos earned a statewide energy efficiency award in 2008 for cutting its peak-demand energy use in summer 2007 by 150 kilowatts, or 9 percent, compared to the previous year.

Sonoma

Sonoma State earned a major “green” rating in a new category developed in 2008 by the Princeton Review in its annual “2009 Best 368 Colleges” issue. The institutional survey for the rating included questions on energy use, recycling, food, buildings, transportation, academic offerings (availability of environmental studies degrees and courses) and action plans and goals concerning greenhouse gas emission reductions.
Stanislaus

- CSU Stanislaus’ Ecology and Sustainability Master’s Degree in Science program trains students to help find solutions to resolve the conflicts between the region’s growing population and the environment.

Environmental Research

Bakersfield

- Through an innovative partnership with Aera Energy LLC and other industry stakeholders, CSU Bakersfield’s Environmental Resource Management program met regional needs for occupational safety and health managers through development of a new concentration within the Environmental Resource Management program.

Fresno

- Since 2005, a consortium comprising Fresno State, the U.S. Department of Agriculture, Red Rock Ranch, and the Panoche Drainage District, has been conducting research on the development of new resources from an otherwise known contaminant, selenium. Under the project, seed harvested from canola plants would be processed for bio-oil and blended with diesel fuel; investigators would then evaluate performance of the biofuels.

Fullerton

- CSU Fullerton’s Dr. Steve Murray, Dr. Jayson Smith, and their students are conducting studies to determine whether, and to what extent, native rocky shore consumers feed on introduced marine plants. The impacts of invasive marine plants on coastal ecosystems is of increasing concern, and knowledge of how these species contribute to marine food webs is important to coastal managers. This applied research contributes to on-going state and federal efforts to improve management of invasive species and is funded by the National Oceanic and Atmospheric Administration’s Sea Grant Program.

Humboldt

- Humboldt State’s Marine Wildlife Care Center provides emergency care for seabirds following oil spills from Mendocino to the Oregon border. In addition, Humboldt State faculty and students are designated to respond when marine mammals are stranded on beaches along the North Coast.

Northridge

- The Energy Research Center in CSU Northridge’s College of Engineering and Computer Science is set up to promote, coordinate, facilitate and implement research and development projects in new or alternative energy sources, conservation and sustainability practices, and to bridge the gap between the state-of-the-art and the state-of-practice in energy utilization.
San Bernardino

- CSU San Bernardino has reduced its carbon footprint by 15 percent. That translates to a reduction of nearly 2,000 metric tons of carbon dioxide emissions on campus—equivalent to taking 14,000 cars off the road or planting 2.9 million trees.

- The campus recycles more than 60 percent (by weight) of solid waste that would otherwise go to landfills. All construction projects on campus are required to recycle more than half of all the solid waste generated. All cleaning products at CSU San Bernardino have been converted to “green” products.

- A state-of-the-art wireless controlled irrigation system at CSU San Bernardino allows large irrigation lines to be turned off if breaks occur and large volumes of water are sensed. Irrigation is also switched off during inclement weather and self-adjusts watering times.

- The Palm Springs Institute for Environmental Sustainability works to improve the quality of life in the Coachella Valley through research, education and advocacy on issues pertaining to environmental sustainability. The institute is a community partnership for providing research data, consumer information and practical recommendations regarding environmental sustainability in the Coachella Valley.

San Diego

- Professor Richard Gersberg of the Graduate School of Public Health has been involved for many years in water quality studies involving San Diego Bay, the border areas between the United States and Mexico, and in Venice, Italy. His research includes water-based pathogens and chemical contamination.

San José

- The Center for Development of Recycling (CDR) located at San José State has worked on commercial recycling and water conservation projects for local government and established a beverage container-recycling program at SJSU. Since 1991, the center has operated with the financial support of more than 20 different government and agency contracts totaling $2 million.

San Luis Obispo

- Cal Poly San Luis Obispo’s Dr. Jagjit Singh is conducting research that focuses on the use of Recycled Polyethylene Terephthalate, including the best use of these materials for non-food applications. Funded by the California Department of Conservation, the research is a collaboration among Cal Poly, the University of California, Santa Barbara, and Michigan State University to make systemwide improvements for sustainable use of beverage container materials.

- Cal Poly San Luis Obispo Professor of City and Regional Planning, Dr. Ken Topping, was the recipient of a sizeable grant in 2007-08 from the California Office of Emergency Services to prepare an updated version of the State of California’s Multi-Hazard Mitigation Plan (MHMP) for the California Office of Emergency Services. The researchers have already...
produced a new plan that has been recognized by the Federal Emergency Management Agency as a model for other states and has resulted in significantly enhanced federal funding for California for emergency preparedness and response.

**Sonoma**
- Assistant Professor of Biology Dr. Michael Cohen and graduate student Catherine Hare have partnered with the City of Santa Rosa to investigate the potential use of algae to remove excess nutrients and other contaminants from municipal wastewater at its treatment plant. The project has gained national attention and has garnered $200,000 in funding from a variety of sources, including the California Energy Commission, the Bay Area Air Quality Management District and the City of Santa Rosa.

**Stanislaus**
- CSU Stanislaus performs more than $6 million of government-funded research dealing with California's endangered species annually. The Endangered Species Program in the College of Natural Sciences focuses on rare and endangered animals and plant life, and helps resolve conservation conflicts with agriculture and urban growth.

**Entrepreneurship and Innovation**

**Channel Islands**
- The CSU Channel Islands California Institute for Social Business is an interdisciplinary, international and multicultural program that includes curriculum, research and an incubator/seed capital for business plans that build businesses on sound business practices and that have a social impact. The center's goal is to create a “triple bottom line” of financial, social and environmental results for businesses.
- CSU Channel Islands has partnered with the Smithsonian National Museum of American History on a national oral history project titled, *The Bracero History Project, Legacy of a Community*, in an effort to collect oral histories from those who participated in the bracero program, a guest worker program administered by the United States government from 1942 to 1964. To date, students in Chicana/o Studies, History, Library, and Spanish programs have collected 32 oral histories from former braceros and their families.

**Chico**
- The Accelerator Fund of CSU Chico’s Entrepreneurship Program supports emerging businesses and intellectual properties. Fund assets are used to support student and faculty initiated entrepreneurial ventures, mobilize student teams, and acquire professionals to help entrepreneurs prepare their proposals for investor groups.
Dominguez Hills

- The Institute for Entrepreneurship, Small Business Development, and Global Logistics within the College of Business Administration and Public Policy at CSU Dominguez Hills focuses on minority and female entrepreneurs. The institute holds an annual business plan competition where student teams compete on abstracts, business plans, and oral presentations, evaluated by entrepreneurs and professionals.

East Bay

- The Center for Entrepreneurship at CSU East Bay promotes research and teaching of entrepreneurship in the university’s academic curricula, supports student entrepreneurs and outreach activities, and connects with regional community economic agencies to explore and discuss business opportunities.

Long Beach

- The CSU Long Beach College of Engineering was instrumental in a technology incubation effort that resulted in the creation of TruePoint, a Long Beach-based company.

Northridge

- CSU Northridge’s annual International Technology and Persons with Disabilities Conference is the largest conference in the world that explores new ways technology can help the disabled.

- Northridge’s Ernie Schaeffer Center for Innovation and Entrepreneurship in its College of Engineering and Computer Science provides services, resources, and activities for CSU Northridge stakeholders and helps students, faculty members, alumni, and community members access educational programs, team building and networking events, facilities for making prototypes, technology transfer services, and funding organizations, and form technical and business partnerships.

- The Energy Research Center in CSU Northridge’s College of Engineering and Computer Science is set up to promote, coordinate, facilitate and implement research and development projects in new or alternative energy sources and conservation and sustainability practices, and to bridge the gap between the state-of-the-art and the state-of-practice in energy utilization.

- CSU Northridge’s San Fernando Valley Economic Research Center is widely recognized as the expert source for information and perspective on the economy and demographics of the San Fernando Valley.

- CSU Northridge’s Language, Speech, and Hearing Center provides diagnostic and therapeutic services to children and adults with communication disorders and trains Northridge students to become professional speech/language or hearing specialists.

- CSU Northridge’s Center for Supramolecular Studies—which includes faculty members and post-doctoral research associates from the Departments of Physics and Chemistry—is an
interdisciplinary program in experimental biophysics, bio-physical-chemistry, and biochemistry. Research is pursued within the center and in collaboration with scientists at other national and international institutions.

Pomona

- Cal Poly Pomona’s Innovation Village Research Park has become a world-class research and development environment for public-private partnerships. With a large commitment from the Economic Development Agency, Innovation Village is home to the Southern California American Red Cross blood services unit, Southern California Edison’s power distribution and engineering group, and the Center for Training, Technology, and Incubation, which includes two business incubators, the NASA Commercialization Center and the Pomona Technology Center.

Sacramento

- The Institute for Business Research and Consulting at CSU Sacramento offers research and consulting services for both the state and the public, including a biannual economic analysis of the Sacramento Region. The Sacramento Business Review offers the only independent study of the business climate of the region, exploring the economic impact of the area’s real estate, energy, capital market and service industry sectors.
- CSU Sacramento’s Center for Small Business offers small businesses in the Sacramento Region free personalized advice on topics from business plans to how to set up a website. Nearly 3,000 businesses have benefited.
- The College of Business Administration at CSU Sacramento has launched an Entrepreneurship Concentration to help students gain an understanding of entrepreneurial activities and strategies within organizations and to provide them with entrepreneurial skills that will enable them to be more effective in organizations that create new ventures, spin-offs, mergers and other entrepreneurial activities.

San Bernardino

- The Office of Technology Transfer and Commercialization (OTTC) at CSU San Bernardino provides business and research services to government agencies, private enterprise and academia to assist them in moving their technologies through the commercialization process. The OTTC helps new government and academic technologies transition to commercial applications.

San Diego

- Since the inception of the Technology Transfer Office, 10 start-ups have been initialized and remain in business today to generate new high-tech jobs and increase local, state and federal tax revenues.
- The College of Extended Studies Workforce Training and Education offers approved programs in collaboration with Workforce Partnership, Military Spouse projects, VA and
active military. The programs offer an industry-based certificate program for career transition, building new skill sets for a new environment and economy.

San Francisco

- San Francisco State Professor of Design and Industry Martin Linder designed an innovative line of chairs for health care waiting rooms that provide comfort and functionality.
- The Whirlwind Wheelchair International program at San Francisco State designs wheelchairs that can be manufactured in developing countries from locally available materials. Whirlwind technology has been taken to 45 countries to date, and the program has been awarded a $4.8 million grant from the U.S. Department of Education to develop a blueprint that will guide organizations that design, manufacture and distribute technology products in the Third World and American Indian tribal lands. Only five percent of disabled people in developing nations have the assistive devices they need.

Stanislaus

- CSU Stanislaus faculty and student researchers have the opportunity to work on biotechnology and environmental projects in conjunction with companies such as E&J Gallo Winery, Hilmar Cheese Co., Salida Wastewater, and California Animal Health & Food Safety. They also collaborate with colleagues at CSU Sacramento, UC Davis and UC San Francisco.

CSU Centers and Institutes – Additional Examples

- **Institute for Business Research and Consulting**: The Institute for Business Research and Consulting (IBRC) at CSU Sacramento offers research and consulting services for the state and the public, including a biannual economic analysis of the Sacramento Region. The Sacramento Business Review offers the only independent study of the business climate of the region, exploring the economic impact of the area’s real estate, energy, capital market, and service industry sectors.

- **Center for Entrepreneurship**: The Center for Entrepreneurship is an outreach center and entrepreneurship support organization at the Mihaylo College of Business and Economics at CSU Fullerton that assists entrepreneurs throughout Southern California. Through a Small Business Development Center grant funded by the U. S. Small Business Administration, the center provides students and entrepreneurs with the knowledge and skills to create, launch and grow new ventures and supports entrepreneurial education, outreach programs such as the Small Business Institute, and research.

- **Center for Excellence in Early Intervention**: Housed in the Division of Special Education at CSU Los Angeles, the center provides a model program for training early-intervention professionals. It focuses on developing, demonstrating, and evaluating the best practices in serving young children with special needs and their families by providing training to professional, paraprofessionals, and parents; and by developing other resource materials and services.
The Bureau of Business and Economic Research: The College of Business and Economics at CSU Los Angeles maintains a research bureau to encourage, facilitate and communicate faculty and student research. The bureau's primary objective is to relay information about research opportunities and ongoing research efforts to faculty members and students.