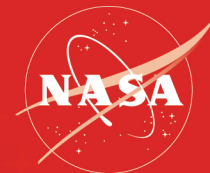National Aeronautics and Space Administration

NASA

Office of
Small Business
Mentor-Protégé Program

Historically Black Colleges and Universities
TECHNOLOGY INFUSION
ROAD TOUR
and Minority-Serving Institutions

www.nasa.gov

San Jose State University

San Jose State University

- San José State University (SJSU), a metropolitan university, has a long and proud history as a supplier of excellent higher education, a contributor to the skilled workforce in the Bay Area and an incubator for innovations that have local and global impacts. SJSU is committed to providing rigorous course work, along with research, scholarship, and creative activity (RSCA) opportunities, to a diverse population of nearly 33,000 undergraduate and graduate students in seven colleges. SJSU is a Minority Serving Institution including dual designation of HSI and AAPI (Asian American and Pacific Islander). The university is especially dedicated to enhancing the connection between RSCA and classroom activities to provide context and relevance for the curriculum while also engaging and inspiring students. These opportunities combine learning with discovery, mentoring with teaching and knowledge with application. SJSU also recognizes the importance of RSCA to move disciplines forward, improve quality of life on local and global levels, provide experiences for students that support retention, build the reputation of our institution and bring in resources from outside agencies. SJSU is situated in a region known for innovation with extensive global connections that leads the United States and the world in many industries.

The Department of Meteorology and Climate Science

- The Department of Meteorology and Climate Science continues its commitment toward maintaining active research programs in the atmospheric sciences and global climate change. Faculty members are currently involved in various projects supported by local and national agencies including NASA, the National Science Foundation (NSF) and the National Oceanographic and Atmospheric Administration (NOAA). In most cases, both undergraduate and graduate students are actively involved in these research programs and work closely with faculty and staff. Research projects are directed at both local and global issues using models and though analysis of observations. Current research areas include: air pollution, air quality and public health, urban meteorology, climate change dynamics, fire weather and wildfire dynamics, mesoscale, tropical, planetary boundary layer meteorology, wind energy assessment, and space weather.

The Department of Physics and Astronomy

- The Department of Physics and Astronomy engages in research in a range of fields, including astrophysics, condensed matter physics, computational physics, lasers/optics, physics education research, and quantum foundations. Faculty work with undergraduate and masters students on original research. Faculty and students use department facilities for optics, computational physics and materials characterization, and they work with collaborators at NASA/Ames, LBL, Lawrence-Livermore, SLAC, and area companies.

The Department of Physics and Astronomy

- Specific areas of expertise include: Astrophysics (astrochemistry and star formation simulations and comparison with space-based and airborne observations; ground-based observations of dense satellite galaxies as probes of dark matter, and comparison of dynamical simulations with observations; theory of protoplanetary disks and planet formation; millimeter interferometric observations of galactic star formation; dynamical simulations of massive star evolution and corresponding visualization techniques; Jovian satellite formation) – Optics (laser interferometry for gravitational wave detection, phase-contrast microscopy, low-cost optical devices for medical applications; holographic fingerprint sensors) - Condensed Matter Physics (materials characterization of ferrite-ferromagnetic nanostructures; computational condensed matter calculations and high-performance computing; theory of cuprate superconductivity) - Physics Education Research (student-student interactions and instructor-student interactions and effectiveness of different approaches) - Computational Physics (fluctuating hydrodynamics, direct simulation Monte Carlo) - Quantum Theory (quantum foundations, time-reversal symmetry).

The Departments of Electrical Engineering and Computer Engineering

- The Department of Electrical Engineering engages in research in a range of interests, including 1) Wireless communications, cooperative and cognitive radios, 2) Computer vision, autonomous vehicles and drones, 3) Semiconductor and opto-electronic devices, nano-electronics, fabrication technology, 4) System-on-Chip, embedded systems design, 5) Modeling of semiconductor devices, radio-frequency analog and mixed signal integrated circuits, 6) Sub-THz CMOS integrated circuits, low power analog interface circuits, 7) Software-defined cognitive radio, radio-frequency identification systems, 8) High Performance Computing (HPC) using Field Programmable Gate Arrays (FPGAs), 9) Distributed algorithms to improve network performance. Protocol design for wireless and mobile networks, and 10) Computer Networks, Cloud data centers, VoIP, Video/ Multimedia Networking.

The Departments of Electrical Engineering and Computer Engineering

- The Department of Computer Engineering engages in research in a range of interests, including 1) Software systems, multimedia communications, network security, 2) Big data, data analytics, machine learning, 3) Distributed networking, mobile platforms security and privacy, 4) Web based software systems, Cloud computing systems, service oriented computing, 5) Malware detection, software defined networking, network function virtualization, 6) Mobile commerce, mobile cloud services, smart city complex systems, 7) Reliable and energy efficient throughput processor design, emerging memory and storage systems, 8) Web mining and recommendation systems, interactive database exploration, and 9) System and software engineering, object-oriented design and programming, object-oriented application frameworks, software stability and reuse.