

CA Space Grant Consortium_2007 Annual Performance Data

California Space Grant Consortium

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CaSGC Affiliate Members:

UC Berkeley	CSU Long Beach	Santa Clara University
UC Davis	CSU Sacramento	San Diego SuperComputer Ctr.
UC Irvine	CSU San Diego	Palomar College
UC Los Angeles	CSU San Jose	Pomona College
UC Riverside	CSU San Bernardino	Astro. Society of Pacific
UC San Diego	CSU Los Angeles	Grossmont-Cuyamaca College
UC Santa Cruz	CalPoly Pomona	University of San Diego
UC Santa Barbara	CalPoly San Luis Obispo	Azusa Pacific University
CalTech	Stanford University	San Francisco Art Institute
CSU Fresno	University of So. California	

CaSGC Program Description:

The National Space Grant College and Fellowship Program consists of 52 state-based, university-led Space Grant Consortia in each of the 50 states plus the District of Columbia and the Commonwealth of Puerto Rico. Annually, each consortium receives funds to develop and implement student fellowships and scholarships programs; interdisciplinary space-related research infrastructure, education, and public service programs; and cooperative initiatives with industry, research laboratories, and state, local, and other governments. Space Grant operates at the intersection of NASA's interest as implemented by alignment with the Mission Directorates and the state's interests. Although it is primarily a higher education program, Space Grant programs encompass the entire length of the education pipeline, including elementary/secondary and informal education. The California Space Grant Consortium (CaSGC) is a Designated Consortium funded at a level of \$590,000 for fiscal year 2007.

CaSGC Program Relevance to NASA:

Space Grant consortia build human capital and research expertise to support NASA programs and missions, expand NASA's expertise and educational networks, and bring knowledge and awareness of space to a broad range of constituents in every state. In FY 2007, the CaSGC, with base funding from NASA of \$590,000 and a non-Federal match from the University of California (state funding of \$465,000), conducted the following activities that were relevant to NASA:

- Provided aerospace-related higher education undergraduate scholarships and graduate fellowships throughout California;

- Provided Space Grant "seed" support for aerospace-related research infrastructure partnerships involving affiliate universities, NASA Centers, and industry;
- Provided Space Grant support for aerospace science and engineering curriculum development at the higher education level at CaSGC affiliate campuses;
- Facilitated community partnerships for aerospace-related K-12 and public outreach projects at CaSGC affiliate campuses

CaSGC Program Benefits to the State:

The CaSGC, with its 29 university affiliates, impacts California's citizens and economy by facilitating and coordinating educational programs at all levels, STEM pipeline workforce development, and aerospace-related private – public partnerships for science and innovation. In FY 2007, the CaSGC facilitated and/or coordinated the following:

- Two space-related Institutes of Science and Innovation with the University of California Office of Research (CalView Institute & Space Access);
- The International Space Station National Laboratory Workshop and the Biotechnology Space Research Alliance (BSRA) in California;
- Partnerships with NASA Centers in California for CaSGC "Human Capital" and education goals;
 - NASA Ames Research Center [ARC - Education Associates Program (EAP) and Alliance for Space Portal - Commercial Enterprises in Space (ACES) Institute];
 - NASA Dryden Flight Research Center [DFRC - Aeronautics, Education, Research, and Operations (AERO) Institute].
- A Statewide STEM organization to facilitate and coordinate California's STEM Coalition (C-STEM).

CaSGC Program Goals:

The **CaSGC Program Goals** that relate to the Congressional directives, NASA's Strategic goals, and the aerospace-related needs of California are:

- To develop and maintain a network of institutions of higher education throughout California with interests and capabilities in aerospace science, engineering, and technology.
- To recruit and train aerospace professionals, especially women and underrepresented minorities, for careers in aerospace science and engineering.
- To promote a strong science, mathematics, and engineering education base from elementary through university levels that meets NASA's Education Enterprise established Education Program Operating Principles.
- To encourage interdisciplinary education and training, research, and public service programs related to aerospace. To encourage collaborative development programs among universities, industry, and federal, state, and local governments.

Program Accomplishments:

In FY 2007, CaSGC:

- Awarded aerospace-related scholarships/fellowships/training grants (Totaling \$430,000) throughout California
 - 107 undergraduate scholarships at 14 affiliate campuses

- 44 graduate Fellowships at 14 affiliate campuses
- Exceeded the CaSGC goal for under-represented participation (20% of scholarship/fellowship)
- Provided research infrastructure support (Totaling \$195,000) for Centers of Excellence Partnerships at six University of California affiliate campuses

Student Accomplishments:

In FY 2007, the CaSGC provided fellowship/scholarship support for 151 (107 undergraduate scholarships and 44 graduate fellowships) awards in discipline areas important to NASA's mission. Of the 151 awards, 41 award recipients were female (27.2%) and 110 award recipients were male (72.8%). 30 awards were given to underrepresented minority students (19.9%).

The number of students receiving significant awards (>\$5,000) from CaSGC in FY 2007 was 25 (2 undergraduates, 2 masters level, 21 Ph.D. level). These students were longitudinally tracked to determine the number of students pursuing or continuing with STEM careers. Of the 25 students receiving significant CaSGC awards, 24 students have reported that they are still enrolled in current STEM degree programs or have remained in the STEM career path. The CaSGC-supported Intern Program at NASA Ames Research Center (ARC) has been very effective in STEM career development over the past decade. Over 1000 interns (undergraduates – 63%, graduate – 31%, Post-Doc – 3%, Faculty – 3%) have participated. Of these interns, 58% were male and 42% were female with 13% underrepresented minorities. Over the last 10 years, NASA ARC hired 27 interns into civil service positions and ARC contractors hired 106 interns into aerospace-related positions. This is a highly successful recruiting tool for STEM workforce at NASA Ames Research Center.

CaSGC Student Success Story: Mike Rasay - Santa Clara University (SCU) - Dr. Chris Kitts (CaSGC Affiliate Director at SCU) had the pleasure of working with Mike Rasay (Pacific Islander) throughout his academic career. Mike was funded as a Space Grant intern and as a research intern while he was an undergraduate computer engineering major at SCU. During that time, Mike helped to develop a high-performance internet-based architecture for controlling robots through the Internet. Upon graduation, Mike returned to his home state of Hawaii and became a high school math teacher. SCU recruited him back to SCU for his Masters Degree in 2005. As a CaSGC fellowship graduate student, Mike extended his previous work on internet-based teleoperation in order to be the chief architect of SCU's internet-based satellite control network. Mike led the design and engineering of this system, helping to set a remarkable precedent of using this system to conduct operations for the NASA GeneSat-1 satellite, the first time a student-engineered ground segment and a student-based mission operations team was ever selected to conduct a NASA satellite mission. Mike completed his M.S. in 2007, and he is now entering SCU's doctoral program. His research expertise is in advanced diagnostic systems for detecting, diagnosing and resolving anomalies that occur in complex engineering systems. He is applying this work to a wide range of systems ranging from NASA spacecraft to BMW automobiles.