

Exploration Systems Mission Directorate (ESMD) Space Grant Faculty Project

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PROGRAM DESCRIPTION

In 2006, the ESMD Space Grant Faculty Project was initiated by the Kennedy Space Center Management Team for the sole purpose of identifying key educational elements that bridge the gap between Space Grant institutions and work performed at NASA Centers. The Faculty Project was performed over a 10-week period during Summer 2007.

Five faculty members were competitively selected for this program, each working at two NASA field centers. The purpose of the ESMD Space Grant Faculty Project is two-fold: 1) to collect Senior Design projects pertaining to Constellation work performed at each NASA Center; and, 2) to identify potential internships for the period of 2007-2008 at each Center relative to Exploration in support of the ESMD Space Grant Student Project.

Senior Design projects are intended to stimulate undergraduate research on current NASA activities related to Lunar, Mars, and other planetary missions, and to bring out innovative and novel ideas that can be used to complement those currently under development at respective NASA Centers. Additionally, such academic involvement would better the prospects for graduating seniors to pursue graduate studies and to seek careers in the Space industry. Internships are intended to provide hands-on experience and training to students on on-going Center activities by engaging students in diverse state-of-the-art technology development, prototype bread-boarding, computer modeling and simulations, hardware and software testing, and a variety of other activities that provide students a strong perspective of NASA's vision and mission in enhancing the knowledge of Earth and Space planetary sciences. Both opportunities are methods to prepare the future space industry workforce.

More information about the project may be found at:

<http://education.ksc.nasa.gov/esmdspacegrant/>.

PROGRAM RELEVANCE TO NASA

The project benefits NASA in broadening the number of faculty with first-hand knowledge of the Exploration work being done at the centers and also helps create a more synergistic approach for collaboration between NASA and the academic community that contributes to the Agency's objectives. Aids the NASA Centers (both Education Offices and associated technical organizations) in providing relevant opportunities for the ESMD Space Grant Program. Enables better matches between the ESMD work required and what the Space Grant Consortia can do to effectively contribute to NASA programs

PROGRAM BENEFITS TO SOCIETY

The project benefits the nation by enriching the knowledge-base of universities and their respective students of the Exploration work being done at the centers. Exposes new and novel approaches to Space exploration that better prepares students for future space related careers. Incorporation of space related curriculum into higher education institutions to increase the training and knowledge base of graduating students.

PROGRAM GOALS

The goal of this project is to establishing a close relationship between the centers and the consortia, as well as allowing for better matches to make effective and substantial contributions to NASA's ESMD work. By placing faculty from Space Grant Consortium affiliated universities at the centers, we will be able to:

1. Provide the Space Grant Consortia an opportunity to strengthen relations with the NASA centers
2. Better understanding for all involved (center, space grant, faculty, education office, as well as the eventual students the faculty will teach) of how they each can contribute to enable the Vision for Space Exploration
3. Enable the faculty to better prepare their students to meet NASA needs

PROGRAM ACCOMPLISHMENTS

For the 2006-2007 Academic Year there were a total of 125 NASA Center internship opportunities. In the summer of 2007, the faculty had identified 128 additional internship opportunities for the 2007-2008 Academic Year. This represents a 95% increase over the prior year.

For the 2006-2007 academic year there were a total of 39 NASA Center senior design opportunities offered. The faculty had identified 84 additional senior design opportunities for the 2007-2008 academic year. This represents a 115% increase over the prior year.

The ESMD Faculty Project helped bridge the gap between academia and the NASA vision and mission for Space exploration. It provided students and faculty from all Space Grant universities the opportunity to participate in NASA's exploration activities that integrate all disciplines of Science, Technology, Engineering, and Mathematics. Better awareness of NASA requirements that enable appropriate shifts in academic curriculum to increase the training and knowledge base of graduating students. The Project provided a compendium of ideas that motivate students and faculty to pursue revolutionary approaches to technology needs for future Space exploration.

STUDENT ACCOMPLISHMENTS

44 student interns were placed at nine NASA Centers for Spring and Summer 2008. 43 student teams have selected the ESMD senior design projects for their capstone courses in the 2007-2008 Academic Year.