

TITLE OF PROJECT: Weblog and Activities During the 2006-07 Antarctic Search for Meteorites

CONTACT: Barbara Cohen

ABSTRACT:

While participating in the Antarctic Search for Meteorites this winter, I propose to create and maintain a web log for public outreach. Previous field parties have maintained web logs, but my intended audience is different from previous activities – I will target teachers, adults and members of the public who take an active interest in diverse scientific topics. My ANSMET web log will to give in-depth information and real-time data from a unique vantage point not only on meteorite hunting in the Antarctic, but also on why meteorites are important objects, classification and active research, information on meteorite history, aspects of Antarctic geology and meteorology, and the very interesting human aspect of spending 6 weeks in the deep field of the most remote continent on Earth.

TITLE OF PROJECT: Renewable Energy Technology Curriculum Development

CONTACT: Thomas Jenkins

ABSTRACT :

The New Mexico State University Department of Engineering Technology (ET), and WERC - A Consortium for Environmental Education and Technology Development and the Southwest Technology Development Institute (SWTDI) divisions of the Institute for Energy and the Environment (IEE) are seeking funding assistance from the New Mexico Space Grant Consortium (NMSGC) Education Enhancement Program to meet the following objectives during the 2007 calendar year:

- Develop and implement phase one of a long-term three-phase plan to develop and introduce curricula components in the ET department at NMSU. This first phase will be the development of a single three credit undergraduate course and accompanying applied laboratory entitled “Renewable Energy Technologies”.
- Develop techniques and procedures to track the effects of the new curriculum on student recruitment and retention.
- Provide educational and applied knowledge and skill development opportunities to traditionally under-represented populations in engineering and technology.
- Begin the design of the second and third phases of the long-term plan to develop a sustainable program in “Renewable Energy Technologies” in the College of Engineering at NMSU

All projections indicate that international, federal, state, and local trends in both the public and private sectors will see increased emphasis on renewable energy sources. Those trends are expected to continue, and indeed accelerate over the short-, mid-, and long-terms. At present, however, there is no adequate educated, diverse, and skilled workforce to provide the bridge between the theory/research of energy technologies and the application of these technologies. This program is intended to bridge that gap over the long term.

The partnership of ET and IEE offers unique resources that will permit the development of this initial class and accompanying laboratory for Spring 2007 offering. The procedures and techniques for tracking of recruitment and retention will be designed in time for implementation immediately after the class has been taught for the first time. The proposal offers abundant opportunities for student involvement and additional follow-on for phases two and three in this long-term plan. The partnership strongly believes that the use of the proposed NMSGC resources to meet the above goals closely matches the letter and spirit of the four major objectives of the New Mexico Space Grant Consortium as defined in the narrative.

TITLE OF PROJECT: Solid Modeling Curriculum Enhancement

CONTACT: Rebecca Kongs & Jon Davis

ABSTRACT :

NASA's dynamic collaborative engineering and design environment requires the use of rapid prototyping today and especially into the future as NASA budgets are challenged while program demands remain "Challenging". NASA's Aeronautics Research Mission Directorate (ARMD) recognizes the critical mission of preparing engineering and design teams of the future for full immersion in the collaborative design process through Educational Enhancement Programs. Towards this NASA ARMD requirement, DACC/NMSU's Mechanical Drafting and Solid Modeling Program, in the Digital Imaging and Design Department, proposes to enhance curriculum by providing comprehensive training in Rapid Prototyping Techniques, through extensive use of the Department's Z-Corporation 3-D Printer. Print media costs and printer maintenance will incur a significant financial burden on the department. NMSGC Grant Funds would enable the department to provide extensive training, enabling our Graduates to successfully fill the important and central role of Mechanical Computer-Aided Design (MCAD) Professional in any regional, national, or even international Engineering Design Team. Our graduates would not only be capable of supporting Engineering and Design efforts with their skills, they would be able to take this an order of magnitude further by providing Rapid Prototyping and Presentation expertise. No modern solid modeling curriculum is complete without providing training in Rapid Prototyping. Through our future Graduates, DACC/NMSU will become recognized as a center of excellence in this field as well as providing and exciting and challenging "bridge" program for our transfer track students, preparing and enabling those students to succeed in any Engineering curriculum at NMSU's College of Engineering.