

PaSCoR

...from Space

NASA – PAIR
UPR – Mayagüez

Partnership for Spatial and Computational Research

<http://ece.uprm.edu/pascor>



The purpose of PaSCoR is to provide minority institutions with an opportunity to build on their NASA-sponsored research and their rich history of educational excellence by strengthening the Mathematics, Science, Engineering and Technology

(MSET) the undergraduate academic infrastructure of the institution.

PaSCoR will have an opportunity to create a multidisciplinary training environment by engaging a broad spectrum of the MSET faculty and by advancing classrooms of students preparing to become the next generation of scientists and engineers. The general topics will be in the study and use of remote sensing: algorithm development and applications with the idea of creating a certificate program in remote sensing. Collaborations will be in the form of seminars, lectures and summer research internships at several universities and NASA space centers.

Throughout the collaboration with the Tropical Center for Earth and Space Studies at UPRM and their satellite downlinks, data will be provided that can extend our knowledge of Earth system changes in the Caribbean and their applications on the global scale.

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Specific Outcomes

At the end of the period of performance an undergraduate Certificate Program consisting of 12 credit hours in the area of remote sensing, GIS and GPS and 6 credit hours of undergraduate research, will be developed. A total of 125 students are expected to benefit from this program. Based on previous experience, more than 50% of these students will pursue a Master of Science Degree.

Strategy

The strategy is similar to the one used by the Manufacturing Education Partnership (MEEP) to develop undergraduate manufacturing-product realization minor or option at UPRM and other institutions. This strategy will provide continuing curriculum contact with students which will span their entire college career, freshman through senior years, integrated with hands-on learning activities and industrial collaboration.

Curriculum Development

PaSCoR combines curriculum revitalization with coordinated opportunities for application and hands-on activities. Ten new courses will be created at the ECE Department, Mathematics, Geology and Agricultural Sciences. In addition seven courses will be revised at these departments to include concepts and applications of remote sensing and GIS. The courses to be developed and those to be revised will contain and balance both content with “soft” skills such as problem-solving, communication and teamwork. The interdisciplinary curriculum will consist of a continuous progression of courses spanning the student’s entire academic career.

Industry Partnership Component

Our industry partners, such as Raytheon, will assist our undertaking in various ways, some of which are:

- ◆ Providing input and critique to the curriculum
- ◆ Assisting in the evaluation of student projects
- ◆ Providing experts for lectures, seminars and workshops
- ◆ Providing summer internships for faculty and students
- ◆ Providing jobs for our graduates

Outreach

A CD-ROM with all the curricular materials will be pressed and disseminated. In addition a video will be developed to present PaSCoR.