

ABSTRACT

AN INNOVATIVE: NASA – UPRM PARTNERSHIP

The University of Puerto Rico at Mayagüez (UPRM) has established, through NASA Grant number NCC5-340, the Partnership for Spatial and Computational Research (PaSCoR). The main goal of this 5-year project is to strengthen academic programs and integrate research at the undergraduate level in various science, math and engineering/technology (SMET) disciplines, following the strategy of the Learning Factory model implemented by the NSF Manufacturing Engineering Education Partnership. PaSCoR program is outcomes-based and student centered, focused on hands-on learning activities provided throughout the student's academic career.

OUTCOMES

The program's outcomes are a SMET graduate that is knowledgeable of the technology and applications of remote sensing (RS) and geographical information systems (GIS), and, possesses the necessary skills either to enter graduate school or become a successful professional in these areas. The program also aims at developing values such as diversity, teamwork, global awareness and communication. PaSCoR goals are being achieved through five tasks, namely: 1) curriculum development, 2) undergraduate research & student mentoring, 3) industry collaboration, 4) outreach, and, 5) assessment.

INTERDISCIPLINARY GROUP OF STUDENTS

Students from various SMET departments at UPRM (Agricultural Sciences, Biology, Electrical & Computer Engineering, Civil Engineering, Geology, Chemical Engineering, Mathematics, Mechanic Engineering and Industrial Engineering) earn a certificate in RS/GIS upon completion of 12 credit-hours in course work, 6 credit-hours in undergraduate research and a summer internship. Courses and resources are open to all SMET students on Campus. Currently, there are eight (8) faculty members involved mentoring undergraduate students in research and innovating/developing courses. Aproximately 30 students per semester engage in undergraduate research and currently more than 800 students have taken RS/GIS interdisciplinary courses.

NASA site visitors have recognized this project as a model program in the United States. PaSCoR students have spent summers applying the knowledge acquired in RS-GIS and developing leadership skills in States and Federal agencies, and universities in the US such as USGS, NASA and IBM. Due to outstanding performance, one of our students was selected to attend NASA's 2000 Summer Academy. More than 40 publications and presentations in local, national and international forums have helped disseminate this curriculum model.

INTERNSHIPS

PaSCoR values all of its stakeholders, specially its industrial and government partners. Thus, the program devotes a lot of effort in identifying and nurturing their relationship. Collaborative partners are sought to sponsor and support different phases of the program, providing summer internships for faculty and students. Organizations like Boeing, US Army Research Laboratory, US Geological Survey and IBM, sponsor summer internships. Each year, various students enjoy the internship experience and have the opportunity to work with real applications of RS and GIS technologies.