2013 Curriculum Grant Awardee

Dr. Diane Owen

College: Charles E. Schmidt College of Science
Department: Environmental Sciences

Project Description:

The proposed curriculum enhancements in the Environmental Sciences Undergraduate Certificate Program will introduce an intensive research and inquiry component that does not exist in the current curriculum, and allow a broader range of ES Certificate students to build research and inquiry skills. To ensure the quality and sustainability of this enhanced curriculum, the ES will 1) develop a peer mentoring program, as outlined in the \\\\\\\"Entering Mentoring\\\\\\\" seminar developed by the Howard Hughes Medical Institute Professors Program and 2)develop an Academic Service Learning component in new and existing courses to engage students in research through service to the community, according to the guidelines developed by the Weppner Center for Civic Engagement and Service. The existing ES Certificate core courses do not have a research component; the proposal will develop components to build research skills in PCB 3352, Issues in Human Ecology, the only upper-division ES core course. There is currently no capstone course for the ES Certificate; a new senior capstone course will be developed that engages students in intensive research and inquiry. ES Certificate students can currently participate in Directed Independent Study in their field of interest to satisfy course requirements in ES Certificate Focus Area, but the ES Program has no direct oversight or means of assessing DIS research; the proposed curriculum enhancements will create standardized templates and rubrics that can be used by students, faculty and mentors to guide and assess DIS research projects. The multidisciplinary nature of environmental science presents unique challenges for the sustainable integration of undergraduate research into the Certificate curriculum. Development of strong peer-mentoring and Academic Service Learning programs, in collaboration with university and community partners, is the key to establishing a permanent culture of research and inquiry in the undergraduate Environmental Sciences Program.

List of Courses scheduled for Enrichment:

Issues in Human Ecology (PCB 3352)

a) Proposed Undergraduate Research Level: Skill building
a) Listed Student Learning Outcomes Targeted: Formulate Questions, Critical Thinking, and Communication

Issues and Applications in Environment (BSC 4930)

a) Proposed Undergraduate Research Level: Intensive
b) Listed Student Learning Outcomes Targeted: Knowledge, Formulate Questions, Plan of Action, Critical Thinking, Ethical Conduct, and Communication

Directed Independent Study (BSC 4905)

a) Proposed Undergraduate Research Level: Intensive
b) Listed Student Learning Outcomes Targeted: Knowledge, Formulate Questions, Plan of Action, Critical Thinking, Ethical Conduct, and Communication