Texas A & M professors receive NSF grant to enhance undergraduate research

Texas A&M University

For the next three years, undergraduates from universities in Texas and across the nation will investigate the water cycle in a Costa Rican cloud forest with a $550,000 grant from the National Science Foundation (NSF) awarded to two Texas A&M University professors.

The grant awarded to Chris Houser, a professor in the College of Geosciences' geography department, and to Anthony Cahill, a professor in the Zachry Department of Civil Engineering, enables students primarily from non-research colleges and universities to conduct original research and work with a contingent of Texas A&M professors from across the disciplines. Called an REU (Research Experiences for Undergraduates), the program is a national priority for the NSF.

"The program will give students the opportunity to develop essential skills in designing, carrying out and delivering the results of their original research," Houser said.

Based at Texas A&M's Soltis Center for Research and Education near San Isidro in central Costa Rica, students will work on field and laboratory research guided by faculty mentors from departments across campus.

"This opportunity gives students the chance to experience the excitement of being immersed in the practice of active inquiry and research," Cahill said. Both Houser and Cahill point out that the grant also helps the university identify highly qualified students who may want to do graduate work at Texas A&M.

The students will investigate mechanisms that lead to climate change, the transfer of water and energy through the forest canopy, the changes of the flow of water within the ecosystem and the cycling of carbon and water through biological processes. After grounding the students in the scientific method, faculty mentors will assist them in developing research questions and in collecting and analyzing data using sophisticated field and laboratory equipment.

Although scientists know that cloud forest vegetation plays an important role in absorbing water from clouds, the amount of moisture absorbed and its impact on the rest of the water cycle is less understood. This 250-acre site allows the students to research the effects that changes in climate and in land have on the water cycle. The students will investigate some areas untouched by humans and other sites that have been logged or completely cleared. Because the cloud forests exist near the tops of the Costa Rican watersheds, an understanding of the role of vegetation in these forests would help predict the availability of water downstream where most people live.

Charles William Soltis ’55 and his wife Wanda established the center to provide international experiences for Aggies while protecting the unique ecological setting and creating preservation awareness.

Houser and Douglas Sherman, also from geography, as well as students from the department, have mapped the 250 acres of cloud forest site, which established benchmarks within the multiple tributaries that flow into the Chachagua River.

Texas A&M professors who will participate in the program as faculty mentors are Sarah Brooks, atmospheric sciences; Bryan Boulanger, civil engineering; Cahill, civil engineering; Houser, geography; Kevin McInnis, soil and crop sciences; Gretchen Miller, civil engineering; and Andrew Millington, geography.

Also participating are Georgianne Moore, ecosystem science and management; Steven Quiring, geography; Brendan Roark, geography; Gunnar Schade, atmospheric sciences; Mark Tjoelker, ecosystem science and management; and Emily Zechman, civil engineering.

Contact Karen Riedel, College of Geosciences, at (979) 845-0910
http://tamunews.tamu.edu/2010/06/10/texas-am-professors-receive-nsf-grant-to-enhance-undergraduate-research/ *[1]*

SOURCE [2]

Source URL (retrieved on *07/29/2014 - 12:59pm*):
http://www.ecnmag.com/news/2010/06/texas-m-professors-receive-nsf-grant-enhance-undergraduate-research

Links:
[1] http://tamunews.tamu.edu/2010/06/10/texas-am-professors-receive-nsf-grant-to-enhance-undergraduate-research/
[2] http://engineering.tamu.edu/news/index.php/2010/06/11/texas-am-professors-receive-nsf-grant-to-enhance-undergraduate-research/