PREPARING THE NEXT GENERATION OF SCIENTISTS: EXPANDED OPPORTUNITIES FOR UNDERGRADUATE RESEARCH IMPACT STATEMENT

Investigators
School of Environment and Natural Resources Faculty, Staff, graduate students and undergraduate students

SUMMARY
The School of Environment and Natural Resources (SENR) Honors, Scholars and Research Programs provide support for undergraduates to work with SENR faculty, staff and graduate student mentors to conduct self-directed research across several disciplines. These programs have given undergraduates valuable opportunities to present their research at conferences and coauthor journal articles, and have made our students more competitive on the job market, for scholarship and fellowships, and in their graduate school applications.

SITUATION
The 21st century economy demands higher levels of technical and scientific training and employers and graduate schools increasingly expect undergraduates to have hands-on experience designing, conducting, and synthesizing research. This is particularly true in environmental and natural resource management, where expertise from multiple disciplines is required to provide science-based solutions to complex problems. The applied and interdisciplinary research focus of SENR faculty and staff provide unique opportunities to engage undergraduates in a wide range of applied research experiences on topics including community development, ecosystem restoration, environmental policy, environmental law, environmental science, fisheries, forestry, natural resource management, parks and recreation, soil science, sustainable agriculture, sustainable business management, water science and wildlife.

RESPONSE
To help prepare our students for future careers, SENR has aggressively developed and promoted research opportunities for undergraduates. Approximately 150 undergraduate students are currently involved in the school’s programs, including 35 undergraduate honors students, 100 undergraduate scholars students, 30 STEP scholars and 23 undergraduate instructional assistants. These programs are designed to help our students develop leadership skills, encourage creative inquiry, appreciate diversity, and instill a commitment to community service. Students acquire training in a wide range of field, lab, survey and qualitative research methods, and learn to communicate their results orally and in writing by presenting papers or posters at scientific meetings and by
serving as coauthors on the published papers. These efforts encourage our students to gradually transition into independent scientists who are able to actively participate in research that is highly interdisciplinary in nature.

**IMPACT**

Our undergraduate student research programs have helped a large number of students achieve their goals of working as professional scientists. They have presented their work at scientific meetings, published in peer-reviewed journals, taught classes and labs, participated in summer fellowship and internship programs and won awards and scholarships for their work. Six undergraduate students presented their research at the 2016 CFAES Undergraduate Research Forum. Four of these students won awards for their work. Nineteen students presented at the 2016 Denman Forum and two of these students won awards for their work. Twenty-three undergraduate students are working as student instructional assistants for classes and labs that are taught in SENR. Seventeen ENR Scholars were awarded $2,000 each ($32,000 total) for summer projects as part of Ohio State’s STEP program. Three students were awarded $3,300 each ($9,900 total) from the OARDC Undergraduate Seeds Grant Program. Three students were awarded $3,500 each from Ohio State’s Undergraduate Research Office, Summer Research Fellowship Program. And finally, two undergraduate honors students were each awarded a full NSF Graduate Research Fellowship to support their graduate studies.