Preparation the Next Generation of Scientists: Expanded Opportunities for Undergraduate Research
Impact Statement 2017

INVESTIGATORS
School of Environment and Natural Resources (SENR) Faculty, Staff, Graduate Students and Undergraduate Students

SUMMARY
The School of Environment and Natural Resources's Honors and Undergraduate Research Programs provide support for undergraduates to conduct mentored research. Our focus on hands-on, student-centered learning has led to gains in students' understanding of the research process and ability to conduct research and work independently. Our students regularly present research at conferences, coauthor journal articles, and have been competitive for jobs, scholarship and fellowships, and graduate school applications in STEM disciplines.

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 enhance the student experience at Ohio State and help prepare our students for future careers, SENR has aggressively developed and promoted research opportunities for undergraduates. Currently, there are 39 students engaging in undergraduate research through SENR’s honors program, 12 students earning research distinction, 16 students earning undergraduate research credit. These programs help our students develop global awareness, encourage original research topics, enrich their academic experience, develop leadership skills and instill a commitment to community service. Students acquire training in a wide range of 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, participated in summer fellowship and internship programs and won awards and scholarships for their work. Six undergraduate students presented their research at the 2017 CFAES Undergraduate Research Forum. Four of these students won awards for their work. Nine students presented at the 2017 Denman Forum and one of these students won an award for their work. One student was awarded $3,300 from the OARDC Undergraduate Seeds Grant Program. Four students were awarded $3,500 each from Ohio State’s Undergraduate Research Office, Summer Research Fellowship Program. Six students were awarded small research grants ($6,400 total) through a newly, developed SENR Small Grants for Undergraduate Research Program. One student was awarded the Udall Undergraduate Scholarship ($7,000). Two students published research with their faculty mentors in peer-reviewed journals. And finally, one undergraduate honors student was awarded a full NSF Graduate Research Fellowship to support their graduate studies.