

UNIVERSITY RANKINGS

University of Arizona ranked top in nation for environmental research

The UA is the No. 1 university in the U.S. and ranks second in the world for environmental science research, according to a study analyzing citation data from more than 180 journals. Environmental research at the UA involves many international collaborations and the results directly inform management practices in pressing areas such as land use, water and food security and energy.

The University of Arizona has been ranked as the top environmental university in the U.S. based on several measures of productivity for research publications in environmental science. The UA also is the second-ranked environmental university in the world in environmental science publications, according to a report published in the journal *Science of the Total Environment*.

"Although no study or ranking is going to be definitive, it is terrific to see the UA ranked as a top environmental university in the U.S. and second ranked environmental university in the world," said Jonathan Overpeck, professor of geosciences and atmospheric sciences, as well as co-director of the UA Institute of the Environment. "This is a great reflection on our faculty and students, and the fact that we are leaders in not just doing great environmental research, but also in communicating it to our colleagues and the public."

The researchers based their study on the Thomson Reuters *Web of Science*® database to analyze not only the number of top-cited articles published by an institution, but also to assess scientific publications resulting from collaborations and to follow the lifespan and history of a particular article, all of which are indicators of significance of a research report in the scientific community. The database contains citation data

for more than 11,000 research journals, from the fields of science, social sciences as well as arts and humanities.

To obtain a measure of scientific significance and productivity in the area of environmental sciences, the authors studied the impact of published scientific papers with regard to their country of origin and institution. Specifically, they selected the articles from top environmental science journals that were cited more than 500 times in subsequent publications. The more often an article is cited by other researchers, the more important it is deemed in the scientific community.

Most of the top-cited articles were published in the U.S., with the UA ranking No. 4 in the overall ratings, behind the U.S. Geological Survey, Brunel University in the U.K., and U.S. Environmental Protection Agency, making the UA the nation's top most-productive university in environmental sciences.

"The best article can be classified as an article that may be read by most of the people and also cited in peer-reviewed journals," the authors wrote in their report, adding that "analysis of the top-cited articles in a field provides a historical perspective in the scientific advancement of research, evolution and areas of intensive research activities."

"I'm impressed that this study placed our close federal partner, the U.S. Geological Survey, as the top-ranked environmental governmental institution in the world," said Overpeck. "This all means we are having impact in helping real people deal with environmental challenges, but also that we're giving the state, federal and other funders a high return on their investment."

Diana Liverman, Regents Professor of Geography and Development and co-director of the UA Institute of the Environment, said: "Some might

say it's a limited analysis, but it is the main environmental science citation index, and it shows how good we are especially in regard to water-related research, remote sensing, climate and research on land-use change and ecology."

"Environmental scientists at the UA are publishing many important multi-authored articles, which is characteristic of major collaborations," she added. "It's something that really makes us stand out. We're very good at working with each other and as part of multi-disciplinary, national and international teams."

"The journals that were evaluated for this study are some of the specialist environmental publication outlets," she said. "In addition to those, it is exciting to



R. JOHNSON / USGS

Ensuring a healthy water supply is one of the research areas of the UA Institute of the Environment. Shown here is Montezuma Well in Arizona.

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note the frequency with which our research gets published in the top-tier science journals like *Nature* and *Science*, where I would guess a UA-affiliated environmental researcher publishes a paper every month or so.”

Environmental science and policy at the UA spans a wide range of disciplines, institutes, departments and colleges, with many researchers affiliated with the Institute of the Environment.

Liverman pointed out that several publications identified as seminal papers were authored by UA longtime researchers who are reaching retirement, but UA expertise has been maintained through new hires and collaborations. More than 30 new faculty members – with about half being women and with diverse backgrounds – have joined the UA in environmental science and policy across the university over the last three years.

“We are reinvesting in our excellence in the environment,” Liverman said. “As some of our leading, often still productive faculty are moving into retirement, we have brought in a new generation of rising environmental stars, and we also were able to attract high-profile, faculty at the peak of their careers. They would all tell you that a major reason they came here is the University’s interdisciplinary environment, where the barriers to collaboration are very low.”

Liverman pointed to the UA Biosphere 2 as an example of such a highly collaborative endeavor in environmental science spearheaded by the UA.

“The way that our environmental scientists have turned that into a serious research facility is impressive and well recognized in the scientific community. The recently completed Landscape Evolution Observatory is the sort of facility that should produce the type of publications and articles that are seminal.”

The UA’s standing in the environmental field is also reflected by a host of interdisciplinary centers of excellence, which conduct research in topics such as water resources, solar energy, mining impacts and use-inspired climate science.

Liverman, who has served on several national committees focusing on climate, said: “We have a reputation in Washington, D.C. for the science we

do here and the ways we make it useful to society, and one of the reasons we continue to get those large grants is that we encourage research on highly relevant areas, particularly in areas like the security of our water supply, energy, food and environmental health.”

Among the authors of the recently released draft national climate assessment, more are at the UA than from any other university.

Liverman pointed out that the advances made at the UA don’t stay in the scientific community alone. “Our environmental scientists have a strong commitment of sharing their results with stakeholders, in line with our mission as a land-grant university.”



MOHAMMAD ASKARZADEH

Environmental research at the UA reaches all over the globe, seeking new ways to ensure sustainable use of the Earth’s resources. This photo, taken in Iran by Mohammad Askarzadeh, a student in the UA College of Architecture and Landscape Architecture, received an honorable mention in the Institute of the Environment’s photo contest last year.