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ARIZONA STATE UNIVERSITY

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NASA helps ASU sniff out pollution

Under a grant from the Environmental Protection Agency (EPA), a team of air-quality modelers, climatologists and air policy specialists at ASU have developed a new way to close the gaps in the global pollution dragnet by using NASA satellite data to detect precursors to ozone pollution, also known as smog.

The technique, devised with the aid of health specialists from University of California-Berkeley, uses satellite data to improve ASU's existing computer models of ozone events – filling in the blanks while expanding coverage to much larger areas.

Such information can have vital implications for health, as studies have linked ozone exposure to a series of ailments in healthy adults with shortness of breath, chest pains, increased risk of infection, and significant decreases in lung function among them.

New degree gives bioscience wings

To help meet the need of Arizona's booming bioscience sector and create the next generation of highly skilled, interdisciplinary scientists, the Arizona Board of Regents recently approved an innovative ASU graduate degree in biological design.

The biological design doctoral program seeks to attract and train new scientific talent to use an outcome-driven, interdisciplinary approach in solving major global challenges in human health and the environment. The program is a collaboration between ASU's Biodesign Institute, the Ira A. Fulton School of Engineering, and the College of Liberal Arts and Sciences.

The doctoral program consists of a two-semester core course sequence to provide training in bio-related areas. There, doctoral candidates will receive intensive training in all the relevant biology-related areas (including biophysics, biomedical engineering, biochemistry and molecular biology) combined with emergent disciplines, including synthetic biology, systems biology, artificial tissues and drug development.

Science is in the midst of a profound transformation, with increasingly complex data sets and problems requiring a large, interdisciplinary team approach combining the biological sciences, physical sciences, engineering and computing. Arizona has been on the fast track in creating a collaborative environment for success.

ASU Fulbrights highly successful

ASU students who apply for Fulbright awards to study overseas are among the most successful in the nation, with 40 percent of students who applied being chosen to receive the grants.

Out of 45 ASU applicants, 18 students were offered the awards in 2007, though just 16 accepted. Even with 16 honorees, ASU ranks fourth in the nation among leading Fulbright institutions in its acceptance rate.

Stanford University entered 61 students to win 18 awards in the application process, and UCLA put forth 38 applicants to win 12. Harvard's rate of acceptance is 22 percent.

Janet Burke, associate dean of Barrett, The Honors College and director of the national scholarship advisement office, attributes ASU students' success to supportive faculty and ASU's increased focus on global studies.

"The attention the university is paying to global studies, the proliferation of foreign languages offered, and the cutting-edge research in which so many faculty members are engaged all translate into a student body that is well-informed and well-disposed to study and research in foreign countries," Burke says.

Report defines 'green' for Arizona

With Arizona's population reaching 6 million people, and the world's population now exceeding 6.5 billion, the new Arizona Policy Choices report, titled "Sustainability for Arizona: The Issue of Our Age," defines the concept of sustainability and reveals how it relates to Arizona's past, present and future.

The report is a joint project of the Morrison Institute for Public Policy and the Global Institute of Sustainability.

"Sustainability is about more than just being 'green,' " says Rob Melnick, director of the Morrison Institute. "It's about making policy choices that take the economy, society and the environment into account."

The report, the first of its kind, is a primer on the subject – and a targeted analysis for Arizona. In addition to thoughtful examinations of the state's history, economy, environment and society, "Sustainability for Arizona" presents the views of leading policy-thinkers in Arizona and across the country.

The report's contributing authors reveal that Arizona can be an ideal test bed for sustainability, and they also point out the ways in which sustainability efforts have the potential to connect the state with the rest of the world.

SFAz enhances research at ASU

Capping its inaugural year of funding several research initiatives, Science Foundation Arizona (SFAz) has been a major catalyst in enhancing ASU's research portfolio. This statewide public-private partnership, made possible by an appropriation from the governor and Arizona Legislature, awarded more than $8 million to ASU research awards in 2007.

"The state Legislature has demonstrated economic vision by providing the resources to jump-start several high-merit, high-impact research programs that will benefit our region," says Rick Shangraw, ASU's vice president of research and economic affairs.

The investments by SFAz include:

- Nearly $1.1 million in small-business catalytic awards to help Arizona-based research programs further develop existing research to the point of technology commercialization.
- $1.75 million in competitive advantage awards to seed fund research with the greatest potential to secure significant federal grants.
- $525,000 for a K-12 discovery program to create a world-class teacher work force for Arizona schools.
- $1.85 million to support 37 ASU graduate student research fellowships.

In addition, SFAz's Strategic Research Group program (SRG) granted nearly $3 million to four outstanding ASU research collaborations. The SRG program is designed to help build a world-class science, engineering and medical research infrastructure in Arizona by investing in highly innovative research programs.