

Ariana Nicolini, Biomedical Engineering Doctoral Student, Awarded Department of Defense 2014 SMART Scholarship

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TUCSON, Ariz. – **Ariana Nicolini**, a doctoral student in the Biomedical Engineering program of the UA [Graduate Interdisciplinary Programs](#), has been awarded a **2014 Science, Mathematics and Research for Transformation (SMART) Scholarship** from the U.S. Department of Defense (DoD). The extremely competitive scholarship is awarded to only 6 percent of total applicants, and aims to increase the number of civilian scientists and engineers working in DoD laboratories.

The SMART Scholarship for Service Program was established by the DoD to support undergraduate and graduate students pursuing degrees in science, technology, engineering and mathematics (STEM) disciplines. The scholarship is offered to individuals who demonstrate outstanding ability and special aptitude for a career in scientific and engineering research and product development and who express interest in career opportunities at DoD laboratories.

Awardees receive a full scholarship, a stipend, summer internships at sponsoring facilities throughout the course of their doctoral studies, and guaranteed employment with their sponsoring facility after they complete their degrees. Nicolini's sponsoring facility is the materials and manufacturing research laboratory at Wright-Patterson Air Force Base.

Nicolini, who received her bachelor of science degree in biomedical engineering and anthropology from the UA in 2013, was selected for the scholarship based on her work as a member of the Biosensors Lab of Jeong-Yeol Yoon, PhD, UA associate professor, [Agricultural & Biosystems Engineering](#), [Animal & Comparative Biomedical Sciences](#) & [Biomedical Engineering](#). Nicolini is currently working on mimicking the native scaffolding structure of tissues found within the body that cells adhere to and grow on. This technology will be utilized in a microfluidic channel that will house human kidney and liver cell lines. Testing of pharmacological agents within these 3D channeled chips will provide a more natural environment, comparable to that found *in vivo*. Such miniature "organ-on-a-chip" devices will be a pertinent step in testing patient specific reaction to drugs and could potentially reduce the amount of animal testing.

The UA has had 10 graduate students receive SMART Scholarships, in 2007, 2008, 2010, 2011, 2012, 2013; award recipients have been placed with Air Force, Army and Navy sponsoring facilities.

The UA Graduate Interdisciplinary Programs offer doctoral and master's degrees in the biological and biomedical sciences. The GIDPs transcend departmental boundaries by facilitating interdisciplinary research and education, allowing the fusion of ideas, techniques and expertise from the traditional academic fields that provides for the evolution of modern and imaginative methods of research, and the creation of new fields of endeavor. The programs include: **Applied Biosciences, Arid Lands Resource Sciences, Biomedical Engineering, Cancer Biology, Entomology and Insect Science, Genetics, Physiological Sciences and Statistics.**