



UNIVERSITY OF  
SOUTH FLORIDA

COLLEGE OF ENGINEERING

## ENGINEERING STUDENT RECEIVES NATIONAL INSTITUTES OF HEALTH FELLOWSHIP

**Tampa, Fla. (June 7, 2010)** – Eva Williams, a doctoral student in the Department of Chemical and Biomedical Engineering, is the recipient of a pre-doctoral Ruth L. Kirschstein National Research Service Award from the National Cancer Institute /National Institutes of Health (NCI/NIH). The fellowship will support Williams' dissertation research on the development of novel drug delivery systems to treat ovarian cancer. She is the first USF College of Engineering graduate student to receive an NIH fellowship.



Williams' research utilizes the tools of nanotechnology or nanomedicine to create therapeutic agents that target specific cells and deliver their toxin in a controlled, time-released manner. Working under the supervision of Norma Alcantar, Ph.D., associate professor of chemical engineering, the goal of the project is to treat malignant ovarian cells by using a biodegradable polymer hydrogel embedded with drugs encapsulated in non-ionic surfactant vesicles (niosomes). The hydrogel and the niosomes will each exhibit controlled drug release properties to sustain the bioavailability of the drug. This delivery matrix will conform to the void in the surgical site and remains continuously in contact with the diseased area while being released at a precise, pre-determined rate.

According to professor Alcantar, "The delivery technology has a wide application because of its ability to deliver drugs to specific disease sites. It will have the advantage of reducing the risk of toxicity associated with systemic therapies, since the agents are targeted to the treatment site, thereby reducing therapeutic dosage and secondary effects typically administered in systemic therapies such as chemotherapy."

Williams is conducting her research in collaboration with Dr. Jonathan Lancaster, Moffitt Cancer Center and Dr. David Morgan and Dr. Marcia Gordon, USF Health Byrd Alzheimer's Institute.

The late Dr. Ruth L. Kirschstein, after whom the fellowship award is named, was the first woman to direct an NIH institute -- the National Institute of General Medical Sciences. She later served as acting director of the NIH. Dr. Kirschstein was a strong advocate of student research training, especially interdisciplinary pre-doctoral and fellowship programs to increase the number of minority and women

biomedical scientists and scientists trained in emerging areas such as bionanotechnology and bioengineering.

*The University of South Florida is one of the nation's top 63 public research universities and one of only 25 public research universities nationwide with very high research activity that is designated as community engaged by the Carnegie Foundation for the Advancement of Teaching. USF was awarded \$380.4 million in research contracts and grants in FY 2008/2009. The university offers 232 degree programs at the undergraduate, graduate, specialist and doctoral levels, including the doctor of medicine. The USF System has a \$1.8 billion annual budget, an annual economic impact of \$3.2 billion, and serves more than 47,000 students on institutions/campuses in Tampa, St. Petersburg, Sarasota-Manatee and Lakeland. USF is a member of the Big East Athletic Conference.*

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