

## 2009-10 Wentz Project Awardees

Three chemical engineering undergraduates won funding from the Lou Wentz Foundation to do research projects with chemical engineering or chemistry faculty members during the 2009-10 academic year. This prestigious award provides \$4,500 to a student who is working on a research project. Competition is open to all students at OSU, but only 42 were awarded this season.

One of the ChE students, Maria Vera, will be working for ChE associate professor Dr. Sundar Madihally. Another Lindsey Campbell will work with ChE assistant professor Dr. Heather Fahlenkamp. ChE student Grit Kupgan will be working with chemistry professor Dr. Nicholas Materer.



Maria Vera's project title is Injectable Hydrogels. She writes, *"The purpose of my project is to investigate ways in which injectable hydrogels can be utilized in order to provide a minimally invasive procedure for the replacement of damaged knee cartilage. During the project, I plan to test the biocompatibility as well as the mechanical strength of a hydrogel that will mimic cartilage."*

Maria is from Tulsa, OK, is presently finishing her sophomore ChE classes in, and is in the Honors College as well as the ChE program. She plans on entering medical school after graduation to begin a career in pediatric ophthalmology.

In addition to success in a rigorous academic program and biomedical engineering research, her photo reveals that she also enjoys campus life.

Lindsey Campbell is finishing her freshmen classes, and is one of the exceptional early recipients of a Wentz Project. She started research with Dr. Fahlenkamp right after arriving on campus and was one of nine OSU students to receive the Women's Faculty Council recognition for her undergraduate research.

Lindsey describes her project, Characterizing a Novel Ophthalmic Drug Delivery System as, *"The primary goal of the project is to measure drug release rates of a novel ophthalmic drug delivery system and compare the rates to currently used ophthalmic drug delivery systems, including eye drops of either a liquid drug solution or drug-loaded nanoparticles. I plan to test the drug loading and release rate of the lens system and compare this to the drug-infused nanoparticles alone."*



Lindsey is from Haworth, OK, and is in the Pre-Medical option of the Chemical Engineering program.

Grit Kupgan's project title is: Molybdenum and tungsten hydrogen bronze films for detection of improvised explosives.



He explains his work as, “*Terrorists typically use Triacetone Triperoxide (TATP) as their explosive of choice. Guidelines for synthesizing this organic explosive are readily available, and access to starting materials such as acetone and hydrogen peroxide is not difficult. Therefore, developing TATP sensors is important. One possibility for suitable detector materials are molybdenum and tungsten-hydrogen-bronze films which change properties when exposed to low concentration of TATP vapors. The focus of this project is to determine the effectiveness of the films as detector materials.*”

Grit is a ChE junior, originally from Bangkok, Thailand.

To win a Wentz Project award, the students must write-up their own research proposal, which is to reveal their personal leadership in the investigation and evaluation. The proposal must also touch on the relevance of the research societal issues, and contribution to the student's preparation for intellectual leadership. Faculty members, representing a cross section of OSU academic programs, review the proposals. Since the judges might be from humanities, business, landscape architecture, entomology, or theatre, the student proposals must appeal to a wide audience.

Many of our Wentz Project recipients make sufficient progress to publish their work and to become national scholarship recipients.

Congratulations and best wishes for continued success to Maria and Lindsey; and thanks to their faculty mentors Sundar Madihally and Heather Fahlenkamp, and to the Lou Wentz Foundation.