

Department of Physics
MCMICKEN COLLEGE OF ARTS AND SCIENCES

SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN

APPLICATION DEADLINE: March 1, 2006

The Department of Physics is pleased to offer the following research project for the summer of 2006. Interested students are urged to contact the faculty member(s) directing the project that most interests them. By contacting the faculty member, you can discover more about the project, learn what your responsibilities will be and if possible, develop a timetable for the twelve-week research period.

CONFOCAL IMAGING OF BIOLOGICAL STRUCTURES

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This project is to investigate new techniques for imaging biological structures using two-photon excitation. We will use a pulsed infrared titanium-sapphire laser to photoexcite either organic fluorescent dyes or semiconductor nanocrystals. Using a 63X microscope objective we will initially image small sub-micron polystyrene spheres on to a liquid nitrogen cooled CCD camera. In this project you will learn a significant amount of computer programming using LabView, as well as geometrical optics and pulsed laser techniques.