

**Department of Biological Sciences
COLLEGE OF ARTS AND SCIENCES**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 1, 2010

The Department of Biological Sciences is pleased to offer the following research project for the summer of 2010. 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.

PROJEC TITLE: Molecular genetic analysis of olfactory behavior in *Drosophila*

Dr. Stephanie M. Rollmann

805C Rieveschl

Phone: 513-556-9729

Fax: 513-556-5299

Email:rollmasm@ucmail.uc.edu

PROJECT DESCRIPTION

We investigate the genetic basis of olfactory and taste behavior to understand how animals respond to chemicals in their environment, how behavior is influenced by groups of genes, and how variation in those genes contributes to behavioral differences among individuals. The ability of an animal to discriminate among odors and tastes in their environment can be critical for their ability to find food, avoid toxins and predators, and for mating. Previous studies have shown that odors are detected by a diverse family of receptors. To understand the how behavioral differences are influenced by changes in those receptors, we study them at the molecular level in the fruit fly, *Drosophila melanogaster*. The student would participate in this project and learn the molecular techniques necessary for characterizing these receptors (including DNA extraction, PCR, and DNA sequencing). In addition, the student would be involved in the design of behavioral experiments and measurement of behavioral responses of fruit flies to different odors and tastes.