

**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.

PROJECT TITLE: Understanding the evolution of weediness in the agricultural ecosystem

**Professor Regina Baucom
Department of Biological Sciences
721 Rieveschl Hall
Cincinnati, OH 45221-0006
Tel: (513) 556-9721
Fax: (513) 556-5299
Email: regina.baucom@uc.edu**

Project Description

Research in the lab is focused on how the agricultural system is impacted by human-mediated factors. The common morning glory, a noxious invasive agricultural weed, is the predominant model organism studied in the lab, with questions available for pursuit ranging from ecology to genomics. For example, one theme is to understand the evolutionary trade-offs that promote 'weediness,' such as the potential for trade-offs between life-history traits that might either promote or constrain the ability of a weed to become a significant threat to the agriculturalist. Furthermore, this type of inquiry will be considered in the context of a changing climate such that the evolutionary trajectory of noxious weeds may be predicted in light of such human-mediated influences. Another line of inquiry is in understanding the evolutionary process underlying herbicide resistance and tolerance. In this pursuit, the genetic changes involved in the process of selection via herbicide will be investigated by combining experimental selection and next generation gene sequencing. To these ends, field experiments in combination with greenhouse and lab work will be employed. Candidates interested in working on these topics should be willing to spend time outside in field conditions as well as working early morning hours in the greenhouse.