

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

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 1, 2012

The Department of Biological Sciences is pleased to offer the following research project for the summer of 2012. 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: Impact of Plant Diversity on Water Quantity and Quality
from Green Roofs**

**Professor Ishi Buffam
Departments of Biological Sciences/Geography
1405 Crosley Tower
Cincinnati, OH 45221-0006
Tel: (513) 556-9745
Fax: (513) 556-5299
Email: ishi.buffam@uc.edu**

Project Description

Stormwater management in urban environments is a growing concern in the US where impervious surfaces are contributing to the increase of sewer overflow and strains on water treatment plants. These strains are caused by an excess influx of water and an influx of pollutants from fertilizing agents, roadways, and rooftops. Green (vegetated) roofs are an example of green infrastructure designed, in part, to lessen the strain on these treatment plants because of their ability to retain water and nutrients.

Our research seeks to determine if increasing the biodiversity of a green roof would increase its functionality in stormwater mitigation services. The goal of this summer project is to explore the functions of water and nutrient retention of the green roof system by testing the quantity and quality of stormwater runoff from green roof plots containing a gradient of plant species richness. This will involve a combination of field work (monitoring precipitation, installing water samplers, taking water samples) and lab work (analysis of water retention and nutrient concentrations). The project will be carried out under the supervision of Kate Johnson, a graduate student in our research group. An organized, responsible, self-motivated individual with analytical skills and ideally some experience with chemistry will be a good fit for this project. Experience with, and interest in, vegetation ecology or botany is also a plus.