

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

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 2, 2015

The Department of Biological Sciences is pleased to offer the following research project for the summer of 2015. 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: Relative Influence of Watershed and Local Scale Land Cover on Stream Ecosystem Function

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Project Description

The effects of urban development on stream ecosystems have been well documented, and include increased pollution, loss of biodiversity, and altered ecosystem function. Increased understanding of the mechanisms resulting in degradation of urban streams is critical for the conservation of aquatic ecosystems vital to both humans and wildlife. The overarching objective of this project is to expand our understanding of the influence of anthropogenic development in urban watersheds with an eye towards improving management. To achieve this, we examine the relative influence of watershed vs. local riparian land use on stream ecosystem function. Specifically, we are interested in how reach scale riparian tree canopy impacts characteristics including stream primary production and macroinvertebrate communities, and how those impacts differ in watersheds that remain mostly forested compared to those that are heavily urbanized.

Within this context, the goal of the WISE summer research project is to explore factors resulting in alteration of stream water chemistry and benthic macroinvertebrate communities. This will involve a combination of potentially strenuous field work (stream water sampling, macroinvertebrate sampling) and lab work requiring great attention to detail (chemical analysis of water nutrient concentrations, macroinvertebrate identification). The project will be carried out under the supervision of Jeremy Alberts, a graduate student in our research group. An organized, responsible, self-motivated individual with strong analytical skills and an interest in stream ecology and water chemistry will be good fit for this project.