

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

**SUMMER RESEARCH OPPORTUNITIES  
FOR UNDERGRADUATE WOMEN**

**APPLICATION DEADLINE: March 1, 2013**

**Project Title: How variation in the environment and anatomy affects muscle function, behavior and movement.**

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**Project Description:**

A key feature of the biology of animals is their capacity to move actively through their environment. Work in my lab is focused on how variation in the shape and three-dimensional orientation of surfaces in the environment interact with the behavior and anatomy of different species of animals and affect where animals go and how they get there. Presently we are studying different species of snakes that all live in and readily climb trees despite having substantial variation in their stoutness and in the anatomy of the major muscles that bend or support the vertebral column as snakes move on branches or bridge the gaps between them. Depending on the interests of the student, projects will be developed that investigate: 1) behavioral choices snakes make as they move on and between branches, 2) how environmental structure affects maximal speed and the use of different modes of locomotion, 3) the neural control of muscle activity or 4) the forces exerted by the snakes against the surfaces that they move on.