

**Department of Mathematical Sciences
COLLEGE OF ARTS AND SCIENCE**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 1, 2011

The Department of Mathematical 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.

**MATHEMATICAL MODELING AND SIMULATION IN BIOLOGY USING
MATLAB**

**Professor: Sookkyung Lim
Department of Mathematical Sciences
815 Old Chem
Cincinnati, OH 45221-0025
Tel: (513) 556-4127
Fax: (513) 556-3417
Email: limsk@math.uc.edu**

Project Description

This project is designed to introduce mathematical methods of modeling in biology using MATLAB software. Many biological phenomena can be modeled by differential equations that can be solved numerically. In this project the student will learn the fundamental concepts of mathematical modeling and how to solve the equations using MATLAB. The student will then apply the method to biological system to model population dynamics, enzyme kinetics, and so on. No previous knowledge of biology is necessary.