

**Department of Chemistry
COLLEGE OF ARTS & SCIENCES**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 1, 2010

The Department of Chemistry 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.

**Professor Anna Gudmundsdottir
Department of Chemistry
802 Crosley Tower
Cincinnati, OH 45221-0172
Tel: (513) 556-3380
Fax: (513) 556-9239
Email: annag@uc.edu**

Project Description

Phototriggers, photocaging groups or photoremovable protecting groups (PRPGs) have been used to release molecules with specific properties in a wide variety of applications. For example, PRPGs have been used as aids in multi-step syntheses and to deliver fragrance in household goods. Furthermore, PRPGs have been used to study various physiological events, such as enzyme activities, ion channel permeability, protein folding, and muscle contraction by ATP hydrolysis. PRPGs are particularly useful in physiological studies because bioactive molecules can be delivered with high spatial and temporal control within living cells. Since photoremovable protecting groups have potential use in such a wide diversity of applications, there is a need for PRPGs with different physical properties that can specifically be tailored to each application.

A WISE student would spend her summer synthesizing a new PRPG and study the mechanism for release using laser flash photolysis and product studies. The proposed research would allow the student to become familiar with using various spectroscopic methods.