

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

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 2, 2015

The Department of Chemistry 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: Development of environmentally benign synthesis
through mechanochemistry**

**Professor James Mack
Department of Chemistry
Rieveschl 831
Cincinnati, OH 45221-0172
Tel: (513) 556-9249
Fax: (513) 556-9239
Email: james.mack@uc.edu**

Project Description

Historically solvents have been believed to be an essential part of a chemical reaction; so much so that thought is rarely given to conducting a chemical reaction in the absence of a solvent. Because solvents are a significant amount of the waste generated by the pharmaceutical industry developing methods to reduce this waste is essential. Recently solvent-free reactions via mechanochemistry have created a new pathway to conduct traditional organic chemical reactions without a solvent. We have demonstrated various organic reactions can be conducted using this methodology and isolated in an environmentally benign way. During time in our group a student will learn how to conduct solvent-free reactions and environmentally benign ways to purify products.