

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

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 1, 2011

The Department of Physics is pleased to offer the following research project for the summer of 2011. 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.

Experimental High Energy Physics

Prof. Meadows (Room 448) or Prof. Sokoloff (Room 411)
Department of Physics
Geology-Physics Building
Cincinnati, OH 45221-0011
Tel: (513) 556-0501
Fax: (513) 556-3425

Project Description

The experimental high energy physics group led by Profs. Brian Meadows and Mike Sokoloff have opportunities for students to work in a variety of projects related to the BaBar experiment at SLAC and the SuperB experiment in Italy. BaBar finished recording data several years ago, and we are now analyzing it, primarily studying physics related to charm mesons. We have several analyses where students could contribute significantly over the course of the summer. The SuperB experiment will be built in Italy and record about 100 times as much data as did BaBar. We are working on simulations of the detector and of the physics. Again, we have several projects where students could contribute over the course of the summer. Finally, we are developing parallel computer algorithms for general purpose GPUs (graphics processing units) related to particle physics. The BaBar and SuperB projects require no special knowledge of computer programming, but students should have completed the intermediate physics sequence. The GPU project requires no particular background in physics, but students should have a working knowledge of C++.