

**DEPARTMENT OF CHEMICAL AND MATERIALS ENGINEERING  
College of Medicine**

**SUMMER RESEARCH OPPORTUNITIES  
FOR UNDERGRADUATE WOMEN**

**APPLICATION DEADLINE: MARCH 1, 2004**

*The Martin Laboratory of the College of Medicine is pleased to offer the following research project(s) for the summer of 2004. 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.*

**Pathogen Research into the Causes of Pulmonary Infections and Gene Therapy to Deliver Genes to Repair the Alveolar Epithelium**  
**Professor William Martin**  
**MSB E-251M (513) 558-7333 FAX: (513) 558-3512**  
**E-Mail: [William.Martin@UC.edu](mailto:William.Martin@UC.edu)**

Dr. Martin's laboratory studies opportunistic pathogens that cause pulmonary infections. Alveolar macrophages are the first line of host defense to prevent and control microorganisms. These macrophages are ultimately responsible for recognition, phagocytosis, and destruction of the microorganism. However, it is less clear as to how to correct dysfunctional alveolar macrophages in vivo. Additionally, the Martin laboratory is also interested in using gene therapy to deliver genes to repair the alveolar epithelium.

While working in Dr. Martin's laboratory, the student will learn how to maintain cells in vitro, isolate alveolar macrophages from mice, and deliver manipulated cells to mice. The student will also get a chance to learn how to test the functionality of the alveolar macrophages that are isolated from the mice.