

**CHILDRENS HOSPITAL and MEDICAL CENTER
Department of Pediatrics**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 3, 2008

The Department of Pediatrics is pleased to offer the following research project for the summer of 2008. 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.

NOVEL MODEL OF ADULT LUNG EPITHELIAL STEM CELL EXPANSION

**Professor Cindy J. Bachurski
Division of Pulmonary Biology, CCHMC
Department of Pediatrics
College of Medicine
Tel: (513) 636-8918
Fax: (513) 636-7868
cindy.bachurski@cchmc.org**

Project Description

Lung diseases that arise from injury to or defective development of the pulmonary epithelium including COPD, emphysema, and pulmonary fibrosis cause significant morbidity and mortality. Current treatment modalities for these serious lung diseases are not adequate and new approaches are necessary. The research project will use a novel transgenic mouse model of induced adult lung epithelial stem cell proliferation and redifferentiation to test the hypothesis that WNT signaling is required for stem cell expansion and/or differentiation into various lung epithelial cell types. This project will require work with complex transgenic mice including genotyping using the polymerase chain reaction for multiple transgenes, tissue harvesting, and analysis of cell differentiation markers by immunohistochemical analysis. This project will set the groundwork for developing new approaches to expanding lung epithelial progenitor cells for use in cell based therapies for lung disease.