

**Department of Neonatology and Pulmonary Biology
Cincinnati Children's Hospital**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 2, 2009

The Department of Neonatology is pleased to offer the following research project for the summer of 2009. 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.

Role of Foxm1 transcription factor in lung tumorigenesis.

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Project Description

Lung cancer is the leading cause of cancer-related deaths in men and women in the United States. Unfortunately, current 5-year survival is only of 8–12%, because it is difficult to detect early and is frequently resistant to available chemotherapy and radiotherapy. We believe that identification of genes regulating the process of lung tumorigenesis will provide novel therapeutic targets for prevention, diagnosis and treatment of human lung cancer. Lung cancer lesions contain various populations of cells, including tumor cells, as well as a diverse array of inflammatory and stromal cells that form so called “tumor microenvironment”. In our laboratory, we are studying the role of transcription factors (Foxm1, Foxf1) in tumorigenesis. We demonstrated that increased levels of Foxm1 protein in mouse lungs significantly accelerate the growth of lung tumors, induce lung inflammation, and increase macrophage infiltration. Since macrophages are important in supporting lung inflammation that helps tumor cells to grow and since their infiltration is associated with an unfavorable clinical prognosis in human lung cancer, we are investigating the direct role of Foxm1 in macrophages during lung cancer formation.