

Department of Pediatrics

COLLEGE OF MEDICINE

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 1, 2007

The Department of Pediatrics is pleased to offer the following research project for the summer of 2007. 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.

PATHOGENESIS OF ASTHMA

Professor Nives Zimmermann, M.D.

Assistant Professor

Division of Allergy and Immunology

Department of Pediatrics

Children's Hospital Medical Center

3333 Burnet Avenue

Cincinnati, Ohio 45229

tel: (513) 636-3887

fax: (513) 636-3310

e-mail: zimnm0@cchmc.org

Project Description

The main interest of the laboratory is broadly focused on deciphering mechanisms of allergic diseases, primarily asthma. The long-term goals of the laboratory are 1) to understand the mechanisms of eosinophilia with the ultimate aim of changing the outcome of eosinophil-mediated diseases and 2) to understand the mechanisms of lung inflammation, in homeostasis and allergic disease. A variety of approaches are undertaken, including animal modeling and ex vivo cell and molecular biology.

Experimentation in the asthma field has largely focused on analysis of the cellular and molecular events induced by allergen exposure in sensitized animals (primarily mice) and humans. While these studies have provided the rationale for the development of multiple therapeutic agents that interfere with specific inflammatory pathways, the development of the asthma phenotype is likely to be related to the complex interplay of a large number of additional genes, and their polymorphic variants. Our preliminary studies have focused on transcription profile analysis in asthma models. Several novel pathways were identified and are being studied further.