

**Department of Pediatrics
COLLEGE OF MEDICINE**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 2, 2015

The Department of Pediatrics is pleased to offer the following research project for the summer of 2015. 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.

**Project Title: Analysis of Immune Cell Interactions and mRNA Expression
in Disease Pathogenesis.**

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Project Description

Our lab studies the role of immune cells in the pathogenesis of arthritis. We are interested in examining the interaction of T cells and antigen presenting cells at the cellular level. One of our goals is to establish a technique for detecting the molecules that interact between the T cell and antigen presenting cells using imaging cytometry. In addition, we are interested in establishing a technique for assessing messenger RNA within cells while analyzing them by flow cytometry. This will allow for characterization of the cell types that express specific transcripts (mRNAs) and is applicable to analysis of human disease or development. The proposed project will involve cellular analysis by flow cytometry, imaging cytometry and mRNA analysis. This project will help the student acquire experimental planning and state-of-the-art technical expertise.