

CCHMC Orthopaedic Research Laboratory
CINCINNATI CHILDREN'S HOSPITAL MEDICAL CENTER

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 1, 2007

The Orthopaedic Research Laboratory at Children's Hospital 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.

MECHANOBIOLOGY OF THE GROWING SPINE

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Project Description

Unilateral control of intervertebral joint displacement affects spine growth and tissue structure by altering compressive stress distribution.

The purpose of the Orthopaedic Research Laboratory of Cincinnati Children's is to improve the treatment, diagnosis, and prevention of musculoskeletal disorders of childhood and adolescence. Particular emphasis is given to the most severely affected surgical patients, and to those with the most common injuries. The core competence of the laboratory is biomechanics. In addition, we collaborate with other divisions integral to surgery, such as radiology, pathology, and veterinary services, and have strong industrial connections. Our main project focuses on a potential new surgical treatment for idiopathic scoliosis that has been shown to alter spine growth. Possible student projects include assisting with analysis of spine intervertebral disc stresses from preclinical studies of the proposed new spine treatment, biomechanical testing of spine segments, bone and joint histomorphometric tissue preparation and analysis and/or imaging (MRI, CT) of disc changes due to treatment. Activities will include abstract preparation for July submission for the 2007 Orthopaedic Research Society.