

**DIVISION OF CARDIOTHORACIC SURGERY
Children's Hospital Medical Center**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: MARCH 3, 2003

The Division of Cardiothoracic Surgery is pleased to offer the following research project(s) for the summer of 2003. Interested students are urged to contact the faculty member(s) directing the project(s) that most interest 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.

Understand and Improve the Outcome of the Fetus with Congenital Heart Disease

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The primary goal is to understand and improve the outcome of the fetus with congenital heart disease. To this end, our research has two different areas of focus: (1) understanding the role of oxygen as a master regulator of fetal cardiac development, and (2) developing the principles of fetal cardiac surgery/intervention in an animal model of congenital heart disease. To accomplish our studies, we are using (1) the technology of transgenesis to express "oxygen-sensitive" genes in fetal and neonatal cardiac myocytes, and (2) operating on mid-gestation sheep fetuses to create and subsequently repair a model of hypoplastic left heart.