

**DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
College of Engineering**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: MARCH 1, 2004

The Department of Civil and Environmental Engineering is pleased to offer the following research project(s) for the summer of 2004. 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.

**Characterization and Control Of Diesel Exhaust Emissions From
Underground Mines**

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The diesel particulate matter (DPM) emissions from trucks (the dark plume) and diesel machines (such as those used in construction) can be hazardous to health. The emissions in enclosed underground mines are much higher than ambient levels, which pose potential health threats to miners. This project is aimed at better characterization of DPM emissions in underground mines and development of a novel control technology to effectively mitigate DPM and other emissions. DPM sampling will be performed both at the Centerhill facility as well as in an underground mine. This is followed by instrumental analysis where the students will learn the state-of-the-art instrumentation to see what specific compounds are in those dark plumes to better understand the health risk. The control technology will be tested. The student will be working on both the emission measurements portion or with the control technology development portion depending on her qualifications and interest.