

**DEPARTMENT OF GEOLOGY
College of Arts & Sciences**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: MARCH 1, 2004

The Department of Geology 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.

Mineralogy of Ohio River Floods

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This project will have a WISE program participant work on a study of the mineralogy of sediments deposited by Ohio River floods. The study will establish the relationship between the causal mechanism of a flood and the sedimentary record it leaves. The Ohio River Basin includes areas of the Central Interior Lowland, Appalachian Plateau, and Folded Appalachian geologic provinces. Because of the highly varied nature of the underlying rocks, the sediment derived from the tributary valleys differ dramatically in their mineralogy, particularly in their clay composition. By “fingerprinting” the unique mineralogical makeup of various flood events and correlating them with their point of origin and cause, a detailed history of flooding in the basin can be extended back for thousands of years based on analysis of sedimentary deposits. The WISE participant would install and regularly monitor an array of suspended sediment traps, analyze the mineralogy of the sediments on the Geology Department’s x-ray diffractometer and correlate the mineralogy with upstream precipitation events. This is a pilot study that should test the viability of the concept and provide necessary data for a more ambitious long-term study.