

**Department of Chemistry
COLLEGE OF Arts & Sciences**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 3, 2008

The Department of Chemistry is pleased to offer the following research project for the summer of 2008. 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.

NEW VAPOCHROMIC MATERIALS FOR CHEMICAL SENSING

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Project Description

There is growing interest in vapochromic compounds which change color in response to chemical vapors of volatile organic compounds. These materials have potential practical use in chemical sensing and chemical sequestration applications. We have recently discovered a new class of vapochromic platinum salts whose colors and phosphorescence change when exposed to vapors of simple organic molecules, such as dichloromethane, ethanol and acetonitrile. This research project is focused on understanding the mechanism of vapochromic response with the objective of learning to tailor this extraordinary behavior. A student working in this area will determine the stoichiometry of vapor uptake, as well as the energetics of vapor absorption. She will have the opportunity to learn various synthetic and analytical methods that are useful in chemistry, including absorption and emission spectroscopies, thermal gravimetric analysis, X-ray crystallography and NMR spectroscopy. There is flexibility for the student to take the project in any of a variety of directions, depending on her interests and background. No prior research experience is required. Interested students are encouraged to meet with Professor Connick to learn more.