**DEPARTMENT OF CHEMISTRY**
**McMicken-College of Arts & Sciences**

**SUMMER RESEARCH OPPORTUNITIES**
**FOR UNDERGRADUATE WOMEN**

**APPLICATION DEADLINE: MARCH 1, 2005**

*The Department of Chemistry is pleased to offer the following research project for the summer of 2005. 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.*

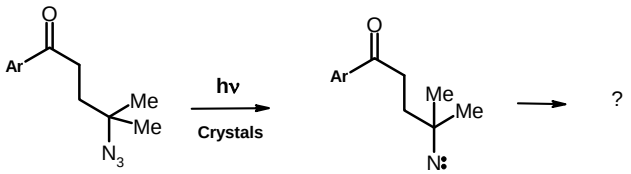
## Designing Stable Nitrene Intermediates in the Solid State

**Professor Anna D. Gudmundsdottir**
**Arts & Sciences/Chemistry CROSLEY TOWER 802 (513)556-3380**
**FAX: (513)556-9239**
**E-Mail: annag@uc.edu**

Recent discoveries in chemistry have led to the synthesis of new materials with fascinating magnetic, electrical and optical properties, which have prompted many new technological advances, anywhere from faster computers to stealth bombers. The pursuit of organic magnetic materials has sparked renewed interest in triplet aryl nitrenes, which are ideal candidates for magnetic materials because of their high spin properties.

My research group is currently studying triplet alkyl nitrene intermediates, which are intrinsically unreactive intermediates. We are designing crystal lattice of alkyl azides, the precursor to alkyl nitrenes, which will render these intermediates stable.

A summer student working in my laboratory will learn to synthesize alkyl azides, purify them using column chromatography and characterize them using 1H-NMR, IR and MS spectroscopy. We will also obtain the stolid state structure of the vinyl azides with X-ray analysis.




Alkyl Azide  Triplet Alkyl Nitrene