Department of Geology

MCMICKEN COLLEGE OF ARTS AND SCIENCES

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN

APLICATION DEADLINE: March 1, 2007

The Department of Geology is pleased to offer the following research project for the summer of 2007. 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.

DEFINING RATES OF EROSION ACROSS HIMALAYA USING TERRESTRIAL COSMOGENIC RADIONUCLIDES

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Project Description

Refining rates of uplift and erosion across mountain belts is essential for quantifying tectonic and landscape models to help understand how mountain evolve over geologic time. Yet quantifying these rates is one of the greatest challenges facing geologists today. However, the newly developing analysis of terrestrial cosmogenic radionuclide (TCN) concentrations in sediments and rock surface is now allowing us to define rates of erosion on timescales in the order hundreds to millions of years. These erosion rates are indicators of uplift – generally the great the erosion the great the uplift. To quantify and examine the variability of erosion and uplift across a major mountain belt, the Himalaya of northern India, sediment and rock samples will be collected to measure the accumulated concentration of Be-10 TCNs. During this project, the student will help collect samples during a three week field excursion across the Himalaya with Drs Owen and Diestch. Upon return from the field, the student will work with Dr. Owen in the newly established geochronology laboratories in the department of geology to help extract Be-10 TCN from the samples. Training will be provided in field and laboratory methods, and the analysis of geological data.