

Department of Geology  
COLLEGE OF Arts & Sciences

**SUMMER RESEARCH OPPORTUNITIES  
FOR UNDERGRADUATE WOMEN**

**APPLICATION DEADLINE: March 1, 2014**

*The Department of Geology is pleased to offer the following research project for the summer of 2014. 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.*

**PROJECT TITLE: *Paleoenvironmental reconstruction in northern Africa inferred from Epipaleolithic and Neolithic marine gastropods***

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**Project Description**

The carbon and oxygen isotopic compositions of marine gastropods are valuable retrospective environmental archives because the shell generally precipitates in isotopic equilibrium with host waters and grows relatively continuously throughout most seasons. Thus, fossil mollusk shells offer the opportunity to reconstruct paleoenvironments when the organisms lived at seasonal (and finer) temporal scales. Specimens of the species *Phorcus turbinatus* (Born, 1778) were recovered from the Ofri Oudadane archaeological site (north of Morocco) to study the isotopic composition of their shells and infer the seasonal environmental conditions in northern Africa during Epipaleolithic and Neolithic time periods. This target time interval was an important cultural period in which hunter-gatherer human groups interacted with the environment and organisms. In this project, undergraduate students will learn about (1) fossil marine mollusks, (2) sample preparation for isotopic analyses, and (3) paleoenvironmental reconstruction. No previous training or experience is required.