

**NSF Program Announcement  
Research Experiences for Undergraduates**

**Precision Digital Geologic Mapping on the Maine Coast**  
**Using Traditional Field Methods, Sea-Kayaks, GPS, Total Stations, Aerial Imagery & GIS**  
**May 23-July 18, 2009**

**An 8-week research internship position in digital outcrop surface mapping,  
geologic interpretation, structural analysis, tectonic modeling, database construction and  
spatial analysis in GIS for junior-level undergraduates.**

***Program description***

The NSF-REU Site program at the University of Southern Maine for summer 2010 is an opportunity for nine undergraduate students to learn cutting-edge precision digital survey techniques as applied to geologic mapping in coastal Maine while working on a research project for presentation at a professional meeting. This program introduces students to the regional deformation associated with Late Paleozoic Norumbega strike-slip shearing in the Northern Appalachians from syntectonic granite intrusions and boudinage to discrete brittle fault configurations. Sea kayaking is used as a way to access wave-washed island exposures for outcrop surface mapping. Digital survey data and available aerial imagery will be compiled for database construction and spatial analysis in a geographic information system (GIS) as a base for geologic interpretation, structural analysis and tectonic modeling. Results are reported in student abstracts and posters at the Northeast Section Geological Society of America (NEGSA) meeting (spring 2010, Baltimore, Maryland).

Students receive a stipend of \$2400, travel reimbursement and support to attend the NEGSA meeting to present their work and 6 credits for their field experience (*GEY360/GEO360 - Field Mapping in the Island Environment: Data Collection to GIS*). When not camping in the field, dormitory accommodations are provided at the University of Southern Maine's Gorham Campus.

***Eligibility***

This program is designed for undergraduate students who have completed their junior year in a geoscience major, geography major with a geology minor, or other applicable degree program. Background coursework in geology and/or geography, prior field experience and established GIS computer skills are highly recommended. Training is provided in all areas.

***Application Procedure***

Submit: 1) the completed application form; 2) a copy of your college transcript, and; 3) a letter of recommendation from your faculty mentor to: Dr. Mark Swanson, Department of Geosciences, University of Southern Maine, Gorham, ME 04038. For more info email [mswanson@usm.maine.edu](mailto:mswanson@usm.maine.edu) or call 207-780-5024.

***Deadline***

Completed applications for these positions must be in hand by Monday, March 23, 2009. Applicants will be notified via e-mail by Friday, March 27, 2009.