

## **Open PhD student positions in volcanology, remote sensing, and cyberinfrastructure development at Michigan Technological University (MTU)**

We invite applications for two fully-funded PhD studentships in the Department of Geological and Mining Engineering and Sciences (GMES) at MTU. The GMES department hosts one of the largest graduate volcanology programs in the US and participates in field activities at volcanoes in Central and South America, East Africa and Indonesia. We offer access to an extensive suite of remote sensing instruments for deployment at active volcanoes, including compact UV spectrometers, a MIDAC Fourier-Transform Infrared (FTIR) spectrometer, UV imaging cameras and a Forward-Looking Infrared (FLIR) camera. PhD positions are currently available to work on two projects:

**1. VHub: Cyberinfrastructure for Volcano Eruption and Hazards Modeling and Simulation.** This innovative, NSF-funded project (lead by SUNY Buffalo) aims to develop robust cyberinfrastructure and advanced computational techniques to facilitate coupling of volcanic eruption models to complex, dynamic spatial datasets for more effective model intercomparison and volcanic hazard mitigation. A virtual organization called VHub will be created to address this need. MTU's principal role will be to assemble and maintain a data warehouse containing various state-of-the-art satellite remote sensing measurements of volcanic eruption clouds, for exploitation by the VHub community. We seek a motivated student, skilled in computer programming and interested in geosciences and information technology, to participate in this cutting-edge project. Funding for this position (stipend, tuition and fees) is available for 4 years beginning January 1, 2010. For further information or to express interest, potential candidates for this position should contact Simon Carn ([scarn@mtu.edu](mailto:scarn@mtu.edu)) and Bill Rose ([raman@mtu.edu](mailto:raman@mtu.edu)) in the first instance.

**2. Validation of OMI sulfur dioxide (SO<sub>2</sub>) measurements at degassing volcanoes.** The goal of this NASA-funded project is to validate measurements of SO<sub>2</sub> made by the Ozone Monitoring Instrument (OMI) aboard NASA's Aura satellite. A particular emphasis is on lower tropospheric SO<sub>2</sub> plumes produced by degassing volcanoes. Funding is available for fieldwork at target volcanoes to collect validation data using ground-based instruments, for conference travel, and for additional instrumentation. The student will become acquainted with a variety of state-of-the-art satellite remote sensing datasets. Funding for this position (stipend, tuition and fees) is available immediately and includes 2 years of support. Additional support may be available from other sources. Potential candidates for this position should contact Simon Carn ([scarn@mtu.edu](mailto:scarn@mtu.edu)).

To qualify for the Ph.D. positions, candidates must hold a BS or equivalent degree in science or engineering, and strong evidence for independence in scientific writing is highly desirable (e.g., an MS degree with a published thesis; or a refereed scientific publication). A strong background in quantitative science including data analysis is preferable. We also require a statement of purpose for career goals and good professional references.

Michigan Tech has a total student population of about 6300. The geosciences department has an outstanding group of doctoral students, comprising a powerful academic peer group. The location is a superb outdoor environment far from cities, on the largest and most pristine of the Great Lakes and the midcontinental rift, Earth's first continental flood basalt province, with

excellent skiing, bicycling, kayaking and wilderness activities. Cost of living is low, and independent environmentalism is a way of life. PhD programs are offered in Geology, Geological Engineering, and Atmospheric Sciences. Interested candidates can learn more about the department programs, courses, and research and find contact information for faculty at [geo.mtu.edu](http://geo.mtu.edu)