



# THE UNIVERSITY OF THE WEST INDIES

## SEISMIC RESEARCH CENTRE

ST. AUGUSTINE, TRINIDAD AND TOBAGO, WEST INDIES

### **MPhil/PhD Opportunity in Volcanology at The University of the West Indies Seismic Research Centre**

The UWI Seismic Research Centre is seeking a postgraduate candidate with a background in Physical Science, Math, Computing or Engineering to undertake MPhil / PhD research on volcanic hazard assessment and volcanic hazard maps.

Project title:

Quantifying and Communicating Hazard – User-Focused Volcanic Hazard Maps for Effective Decision Making

Project advisors:

Dr. Victoria Miller (MVO, UWI-SRC)

Professor Richard Robertson (UWI-SRC)

Dr. Gabrielle Thongs (UWI, Geography)

Dr. Jan Lindsay (University of Auckland)

Project summary:

Volcanic hazard maps are a communication tool. They sit at the interface between scientific understanding and the end-users (e.g. government and communities) that have to take this information to use in their decision making and planning. For effective communication of the outputs from a volcanic hazard assessment it is important that the resultant hazard maps are understood and interpreted correctly. Most importantly, these maps must be tailored to the end-user needs to ensure that information is aligned with needs and that hazard information is taken into consideration during every-day planning and development, thus ensuring risk reduction becomes embedded widely. Critically, volcanic hazard maps must be tailored to both the volcanic and social setting, be based on best-practice hazard assessment methods and be adaptable to potential revisions to promote future-proofing.

Soufrière Hills Volcano started a period of activity in 1995 prompting the rapid development and adaptation of the hazard map as the eruption has evolved. The current 'administrative' style of hazard map was developed to integrate the complexity of volcanic hazard around the volcano with the day-to-day requirements of managing access to the high-risk area. The current revision of the Montserrat hazard map provides an opportunity to consolidate best-practice in volcanic hazard assessment, as well as to tailor the hazard map products to fit future user needs. It is envisaged that the methods utilized during this process will be used to guide and inform future hazard mapping in other volcanic countries in the Lesser Antilles. This can be facilitated by the development of standardised methods that yield adaptable outputs.

This project will provide the candidate with an understanding of both quantitative volcanic hazard assessment, generation of hazard maps using GIS / spatial techniques, and effective communication of volcanic hazard using hazard maps, including stakeholder engagement. The student will work as part of the Seismic Research Centre / Montserrat Volcano Observatory teams and will also gain exposure to operational hazard management.

Application / Commencement deadline:

Please send a copy of your CV and a brief summary of research interests to The UWI Seismic Research Centre



(UWI-SRC) by email to [info@uwiseismic.com](mailto:info@uwiseismic.com) marked for the attention of 'Director UWI-SRC.' Prospective students should make contact as soon as possible and prior to 24 May 2019 for enrolment starting in September 2019. However, applications from suitably qualified candidates will be considered at any time of year.

#### Candidate requirements:

Candidates are required to have either a first or second class honours degree in a related subject for entry into the Master of Philosophy (MPhil) programme. A first or upper second class honours degree and an approved Master's degree in an appropriate field are required for a candidate to be eligible for admission into the PhD programme.

Please note: A candidate without an approved Master's degree can after a period of one year from the date of initial registration for the MPhil and at any time thereafter within a total period of three years from the initial registration, apply for upgrading of his/her registration to the PhD programme.

The project will require the candidate to be based at the St Augustine Campus in Trinidad, as well as on the island of Montserrat. Additional international travel may also be required.

#### For questions or further information:

Please contact Dr. Victoria Miller ([Victoria.Miller@sta.uwi.edu](mailto:Victoria.Miller@sta.uwi.edu))

### **About The UWI Seismic Research Centre (UWI-SRC)**

The Seismic Research Centre was set up in 1953 and became part of The UWI in 1962. From its headquarters in Trinidad, it operates a volcano and earthquake monitoring network throughout the English-speaking Eastern Caribbean islands extending from St. Kitts & Nevis to Trinidad and Tobago. The UWI-SRC is responsible for monitoring earthquake and volcanic activity in these islands. Potential students are strongly advised to visit our website at <http://www.uwiseismic.com> to learn more about the operations of SRC.

The region in which these countries are located is seismically active and historically has been the site of earthquakes of magnitude greater than 8.0 There are at least 19 live volcanoes in the region, which has been the site of numerous eruptions, most recently in Montserrat from 1995-present and Dominica in 1997. The UWI-SRC currently manages the Montserrat Volcano Observatory (MVO), which is responsible for monitoring the on-going eruption of the Soufriere Hills Volcano.

### **About Montserrat Volcano Observatory (MVO)**

The role of the Montserrat Volcano Observatory is to monitor the Soufriere Hills Volcano through a combination of techniques, to detect any changes in volcanic activity. Monitoring and research findings are used to provide the Government of Montserrat with regular, timely, impartial advice on volcanic hazards and risks so that appropriate decisions can be made to ensure the safety of residents. The MVO also supports local authorities with public education programmes on volcanic hazards and emergency response.

