



PhD Student Opportunity

The Paleoenvironment and Diagenesis Research Group (PDRG) at Memorial University of Newfoundland (MUN) is looking for a suitable PhD candidate to take part in the Transforming Climate Action (TCA) program. The TCA is an ocean-first research program that will examine the role of the polar and sub-polar environments of the Northwest Atlantic (NWA) in CO₂ uptake, storage and the various exchanges of the carbon cycle. The TCA comprises several large research projects with contributions from four universities: Dalhousie University, Memorial University of Newfoundland, Université Laval, and Université du Québec à Rimouski, along with other research and government institutions.

Overview

The advertised PhD student position at MUN will be part of a work package within a large research project focusing on the transfer of terrestrial matter and freshwater fluxes on carbon uptake and storage. As a part of the TCA, the student will have a chance to network and collaborate with students and professors from several other complementary research groups, and work together towards a cohesive and comprehensive evaluation of the carbon cycle in the NWA.

Project Description

The student will be working on sediment cores collected along a latitudinal gradient in various basins along the NWA including but not limited to Baffin Bay, the Labrador Sea, and the Gulf of St. Lawrence. Sediment push cores and gravity cores from these locations will be characterized to determine the mechanisms of transport of terrestrial matter from the land to the shelf and into deeper water environments (where possible). The biogenic, sedimentary (depositional), and diagenetic effects on long term carbon storage will be evaluated using a variety of analytical techniques. Traditional qualitative sedimentological tools such as logging, petrographic analysis, and cold cathodoluminescence microscopy will be used to analyze the sediment cores. These will be analyzed alongside additional datasets including 3D CT scans, hyperspectral imaging, X-ray fluorescence, X-ray diffraction, scanning electron microscopy, major and trace element geochemistry and stable isotope analysis.

Qualifications

- Completion of an MSc degree in Earth Science, preferably with a sedimentology focus.
- Experience in planning and executing field work and sampling is required.
- Additional skills that would be considered an asset to the research project are as follows: sedimentology, geochemistry, ichnology, invertebrate taxonomy (foraminifera), spectral processing and imaging.

How to Apply

A review of applications will begin on September 15 at 9:00 am (AT) and will continue until the position is filled. To apply, please submit 1) a letter that details why you are interested in the project and what your previous experience is in sedimentological research and field work, 2) an unofficial transcript, 3) CV, and 4) the names and contact information for two referees who have either taught or supervised you previously. These application packages should be sent to Dr. Hilary Corlett (hilary.corlett@mun.ca). Only those with the full application package and required information will be considered and only those selected for interview will be contacted. Canadians and permanent residents will be given priority.