



Laurentian University
Université Laurentienne

HARQUAIL SCHOOL OF EARTH SCIENCES
ÉCOLE DES SCIENCES DE LA TERRE

PhD Opportunities with Metal Earth at University of Ottawa

With funding from the Canada First Research Excellence Fund and through a strategic partnership between universities, government surveys and international research centers, the Metal Earth Project is conducting ground-breaking research on the mineral endowment and crustal evolution of greenstone belts. Metal Earth is led by the Mineral Exploration Research Centre (MERC) of the **Harquail School of Earth Sciences at Laurentian University**. One of its work packages, carried out in partnership with the **University of Ottawa** and the Helmholtz Centre for Ocean Research Kiel (GEOMAR), focuses on comparisons of ancient greenstone belts with modern ocean crust as a framework for understanding metal endowment.

Metal Earth PhD Opportunity: Modern/Ancient Ocean Crust

Metal Earth is seeking a PhD candidate with demonstrated research excellence to participate in the Modern/Ancient Ocean Crust Project. The successful candidate will be part of a team conducting geological transects across several modern ocean-ocean and ocean-continent boundaries. The proposed study will investigate the large-scale magmatic evolution and lithogeochemical diversity of these settings relevant to ancient ocean crust formation. Research problems will be addressed through integrated mapping, geophysical surveys, and geochemical and isotopic studies, comparing the results to other Metal Earth transects in greenstone belts on land. Experience in geological mapping and knowledge of volcanology, tectonics, structure, lithogeochemistry, and ArcGIS for map production and analysis will be important strengths. A willingness to travel and the ability to work in a team environment are essential.

Metal Earth PhD Opportunity: Trace Element Geochemistry of Ore Systems

Metal Earth is also seeking a PhD candidate to conduct research on the trace element geochemistry of ore-forming systems in modern and ancient oceanic crust, with an emphasis on volcanic-hosted massive sulfide deposits. The successful candidate will be part of a Metal Earth team examining crust-mantle processes responsible for VMS endowment in a variety of geological terranes. The study will investigate the pre-eruptive metal and volatile content of ore-hosting volcanic rocks, comparing magmas that were metal-rich prior to eruption with the deposits that formed via direct magmatic-hydrothermal processes or leaching within subseafloor hydrothermal systems. Key questions will be the trace element fingerprints of different sources of metals and the conditions of their release. Experience with state-of-the-art microanalytical techniques (microprobe, SEM, LA-ICP-MS) and ore-related isotopic systems will be important strengths.

Both research projects will be funded for 4 years (\$30K/yr including RA and TA) and will be based at the University of Ottawa. A MSc degree and admission to Graduate Studies at uOttawa are required.

To apply, please forward your application and cover letter to icsr@uottawa.ca. The application should include a CV, contact details, and names of two referees in a single PDF document file. The deadline for applications is **March 1, 2020**. All qualified candidates are invited to apply; however, preference will be given to Canadian citizens and permanent residents. We strongly encourage applications from women, Aboriginal peoples, persons with disabilities and members of visible minorities.