Metal Earth Graduate Student Research Opportunity

Spring/Fall 2019

Petrogenesis and metallogenic implications of post-tectonic lamprophyres and other mafic magmas from the Superior Province, Canada

With CAD $104 million in funding provided by the Canada First Research Excellence Fund (CFREF) and through strategic partnerships with 5 Canadian universities, 6 government geological surveys, and 3 international research centres, Laurentian University has initiated Metal Earth — the largest ever mineral exploration research project undertaken in Canada. Metal Earth seeks to identify and understand the processes responsible for Earth's differential metal endowment during the Precambrian. This research initiative aims to transform our understanding of Earth's early evolution and how we explore for metals.

Metal Earth is led by the Mineral Exploration Research Centre (MERC), which is housed in the Willet Green Miller Centre at Laurentian University, Sudbury. MERC is a semi-autonomous research centre within the Harquail School of Earth Sciences (HSES). MERC was established in 1997 and comprises an internationally-recognized group of researchers from HSES, academia, industry, and government.

PhD Project Outline

The Metal Earth project seeks to understand whether there are deep lithospheric factors that affect the mineral prospectivity of various belts and terrains in the Superior Province. This PhD project will be part of a larger group project that aims to answer this question by documenting the effects of metal mobility and residence time during deep lithospheric metasomatism, as presented by xenoliths in, and the compositions of, deep lithospheric derived post-tectonic magmas such as lamprophyres, lamproites, kimberlites, and basalts, sampled from across the Superior Province. The PhD project will first involve data compilation, followed by fieldwork and sampling of archived collections, and finally analytical work (lithogeochemistry, mineralogy, radiogenic and stable isotopic studies) and interpretation. The PhD student will be based at Laurentian University, and will interact with other researchers on the project, including teams at the University of Alberta, the Carnegie Institution for Science, Washington DC, and Université du Québec à Chicoutimi.

The PhD project is fully funded for four years ($30k/yr, which includes a Laurentian University Graduate Teaching Assistantship) with an anticipated start date of September 2019. To enquire, please contact Professor Jeremy Richards (JRichards2@laurentian.ca), including your CV and a copy of your current university transcripts. Review of applications will begin immediately; however, applications will be accepted until the position is filled. Students with strong fieldwork and petrological backgrounds will be preferred, and an MSc or equivalent is required for admission to the PhD program. However, outstanding students may register initially in the MSc program, with the expectation of converting to the PhD program after the first year of study (conditional on exceptional performance).

MERC
Mineral Exploration Research Centre
AT THE HARQUAIL SCHOOL OF EARTH SCIENCES

LaurentianUniversity
UniversitéLaurentienne
HARQUAIL SCHOOL OF EARTH SCIENCES
ÉCOLE DES SCIENCES DE LA TERRE