



Metal Earth MSc Student Research Opportunity, September 2021

With CAD \$104 million in funding provided by the Canada First Research Excellence Fund (CFREF), the Northern Ontario Heritage Fund and through strategic partnerships with universities, government geological surveys and 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) at Laurentian University in Sudbury, Canada. MERC was established in 1997 and comprises an internationally recognized group of researchers from academia, industry, and government.

MSc Project 1 (Project ID 2021 03): Testing the diapirism-sagduction vertical tectonic model

The project proposes to address the emplacement mechanisms of batholiths in Archean greenstone belts. The main questions are: (1) Were batholiths emplaced as near-horizontal tabular sheet intrusions or laccoliths that were deformed during subprovince accretion? (2) Were they emplaced as diapirs during sagduction of the denser greenstones and partial convective overturn of the crust? Or were they emplaced during regional extension, exhumation and gravitational collapse of greenstone belts? (3) Are there differences in batholith emplacement mechanisms in Mesoarchean and Neoarchean greenstone belts? and (4) If present, do these changes reflect parallel changes in the geodynamic evolution of these greenstone belts? To address these questions, detailed structural, petrological, and geophysical studies will be done on batholiths in the Wabigoon and Abitibi subprovinces of the Archean Superior Province.

One **MSc student** is sought with interest in **Structural Geology and Applied Geophysics**. The project will start in September 2021 and will be supervised by Drs. Bruno Lafrance and Stéphane Perrouty from Laurentian University and Dr. Lucie Mathieu from the Université du Québec à Chicoutimi. Metal Earth MSc projects are fully funded for two years (\$30K/year, which includes a Laurentian Graduate Assistantship) and include complete field and analytical support.

Application Process:

To apply, please forward your application and cover letter to merc@laurentian.ca and sperrouty@laurentian.ca and reference the Project Identification Number and position you are applying. The application should include: a CV including a list of publications and conference presentations, academic transcripts, contact details and the names of three referees. Review of applications will begin in **July 2021**, but applications will be accepted until **August 2021**.

Laurentian University is a bilingual (French-English), tri-cultural institution. Laurentian University especially welcomes and encourages applications from members of visible minorities, women, Aboriginal persons, members of sexual minorities and persons with disabilities. Applicants may self-identify as a member of an employment equity group. All qualified candidates are encouraged to apply. However, Canadians and permanent residents will be considered first for this position.