



Gold Fingerprinting: A Metal Earth MSc Research Opportunity, May 2020

With \$104M 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 Sudbury. MERC is a semi-autonomous research centre at Laurentian established in 1997 and comprises an internationally recognized group of researchers from the Harquail School of Earth Sciences, academia, industry and government.

Metal Earth's Gold Fingerprinting Research will use state-of-the-art in-situ analytical techniques, including SEM-EDS, EMPA, and LA-ICP-MS, to characterize Au-elemental associations from a variety of mineral deposits initially across Ontario. This will provide a "fingerprint" for gold and will result in the development and population of an open-source gold database. This database will provide a tool in assessing the critical processes related to gold endowment, deposit formation and source, as well as improving our understanding of gold for metallurgical, artifact, and forensic research.

MSc Graduate Opportunities

As part of the Gold Fingerprinting Research Team, the MSc student will help define and validate a rigorous gold characterization methodology and will establish the chemistry of gold samples from deposits across Ontario. This will be complimented with the creation of the first ever Au-elemental association map layer for Ontario. This project is heavily focused on laboratory work with no field-based component. The successful applicant should excel at working with analytical instruments. Prior experience with SEM-EDS, EMPA, and/or LA-ICP-MS will be considered an asset. This is a collaborative project between Metal Earth, the Royal Ontario Museum, and the Ontario Geological Survey. It is contingent upon funding.

To apply, please forward your application and cover letter to Harold Gibson at hgibson@laurentian.ca. The application should include: a CV including a list of publications, academic transcripts, contact details and the names of three referees. Review of applications will begin immediately and continue until the position is filled.

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.