



Mineral Exploration Research Centre  
AT THE HARQUAIL SCHOOL OF EARTH SCIENCES

## Mineral Exploration Research Centre (MERC), Harquail School of Earth Sciences, Laurentian University

Laurentian University is a recognized leader in mineral exploration research and is among the top Canadian universities in research funding for Economic Geology and in Applied Geophysics from the Natural Sciences and Engineering Research Council (NSERC).

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 will conduct 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 HSES, academia, industry and government.

MERC is seeking individuals with demonstrated excellence in research and is inviting applications for two Post Doctoral Fellowships/Research Associates beginning in January 2017; salary ranges is \$65-\$80k/yr plus benefits. The positions are contingent upon CFREF funding.

### **PDF/Research Associate in Applied Exploration Geophysics.**

We are seeking a geophysicist to undertake research on the large-scale variation in the physical properties of the Archean Craton. Initial duties will include: 1) a compilation of all the geophysical and physical property data from the available government and university sources (aeromagnetic profiles and grids; gravity measurements and grids; airborne gravity measurements and grids; subsurface seismic velocities; magnetic susceptibility measurements; density measurements; radioactivity measurements, etc) into a pre-existing software package (e.g. Geosoft Montaj or Geoscience ANALYST), 2) working with others to design geophysical surveys to fill gaps identified in the compilation, 3) helping to acquire new surveys or oversee quality control of surveys; 4) interpreting the results to better understand the structure of the Craton at depth. The candidate will assist other researchers working on the project to view the geophysical and physical property data in their area of

interest and compare it with their own data; 5) publishing the results as Metal Earth/geological survey open files and reports, and in peer-reviewed international journals.

This position will be for three years and will evolve from data compilation and import into the software to collaborating with the other researchers.

Qualifications desired are:

- Knowledge and experience in working with geophysical data (e.g. gravity, magnetic, magnetotelluric)
- Knowledge and experience working with physical property data (density, magnetic susceptibility, conductivity, seismic velocity, elastic parameters)
- Experience working with programs like Oasis Montaj or Geoscience ANALYST.
- Experience modeling and interpreting geophysical data

Non-essential but useful qualifications include;

- Some knowledge of Archean tectonics, and metallogeny,
- Some knowledge of French.

### **PDF/Research Associate in Tectonics and Isotope Geochemistry**

We are seeking a Post-Doctoral Research Fellow/Research Associate to undertake research on the application of the Lu-Hf, Nd-Sm and O isotopic systems to Archean metallogeny.

Duties will include : 1) producing a GIS-based compilation of the existing craton-wide U-Pb zircon ages, Nd-Sm and Lu-Hf databases of the Superior and Slave provinces from federal and provincial geological surveys and academic studies, 2) identifying critical gaps in the existing sample collections, 3) selecting critical samples, 4) analysing samples for Lu-Hf, Nd-Sm and O isotopic ratios on our new Multi-Collector ICP-MS or other instruments, 5) interpreting the results in collaboration with members of the research team, and 6) publishing the results as Metal Earth/ geological survey open files and reports and in peer-reviewed international journals.

Qualifications desired are:

- Knowledge and experience in the determination of Lu-Hf, Nd-Sm & O isotopic systematics by LA-MC-ICP-MS, TIMS and SIMS methods,
- Knowledge of Archean tectonics and metallogeny,
- Experience in interpreting Lu-Hf, Nd-Sm and O systematics in an Archean context including a publication record in this field.

Non-essential but useful qualifications include;

- Experience with GIS software preferably ARC GIS,
- Some knowledge of French.

For additional information regarding Laurentian University, MERC, and Metal Earth please visit [merc.laurentian.ca/metalearth](http://merc.laurentian.ca/metalearth). To apply, please forward your resume and cover letter to Chantal Duval @[cduval@laurentian.ca](mailto:cduval@laurentian.ca). The application should include: a CV including a list of publications, contact details and the names of three referees.

Laurentian University is an a bilingual (French-English), tri-cultural institution, and an equal opportunity employer that is strongly committed to employment equity and diversity within its community. 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 these positions.