CAREERS & RESEARCH

MSc & PhD Graduate Student Research Opportunities, May 2020

Job ID:	**MSc Applications: #2019-04** **PhD Applications: #2019-05**
Required	**MSc Projects: 3 MSc projects available.** Metal Earth MSc projects are fully funded for two years ($30K/yr which includes a Laurentian Graduate Assistantship). All analytical and field costs are covered. Starting May 2020. **PhD Projects: 2 PhD projects available. Refer to page 2.** The research projects are fully funded for four years ($30K/yr which includes a Laurentian Graduate Assistantship). All analytical and field costs are covered. Starting May 2020.
Metal Earth Overview	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), a semi-autonomous research centre at Laurentian. MERC was established in 1997 and comprises an internationally-recognized group of researchers from HSES, academia, industry and government.
MSc Project 1	***Sedimentology, detrital zircon geochronology, and geochemistry of the Archean Ament Bay assemblage, Sturgeon Lake greenstone belt, western Ontario.*** The future MSc student will be investigating the Ament Bay metasedimentary assemblage and the related sequences of the Neoarchean Sturgeon Lake greenstone belt in northwestern Ontario using a multidisciplinary approach, including field mapping, sedimentology, detrital zircon geochronology, geochemistry, and regional geology. The main goal is to understand the formation of the Ament Bay Assemblage and its potential for hosting mineral deposits. Top applicants will have a background in geologic mapping of Precambrian rocks.
MSc Project 2	***Structural geology and stratigraphy of the Archean Steep Rock Group, Atikokan, western Ontario.*** The Neorchean Steep Rock Group is a platformal sequence comprising conglomerate, limestone, and iron formation unconformably overlying an older Mesoarchean craton. It is overlain by pyroclastic ultramafic rocks and mafic volcanic rocks that were either emplaced during rifting of the craton or during later thrusting. The goal of the project is to test those two interpretations. Top applicants will have strong interests in field mapping, structural geology, and geochemistry.
MSc Project 3	***Gold metallogeny of the Archean Steep Rock and Finlayson greenstone belts, Atikokan, western Ontario.*** Gold mineralization in the Archean Steep Rock and Finlayson greenstone belts is spatially associated with east-trending dextral and northeast-trending sinistral shear zones. The goal of the project is to determine the chronology of the mineralization with respect to the structural evolution of the shear zones. Top applicants will have strong interests in field mapping, structural geology, economic geology, and geochronology.
To Apply	To apply, please forward your application and cover letter to **metalearth@laurentian.ca** and reference the respective Job Identification Number with expression of interest for a specific project topic. 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 January 2020, but applications will be accepted until May 2020.

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PhD Project 1	***Greenstone belt Assemblage Boundaries.*** Metal Earth is seeking a PhD student to conduct mapping-based research in the Abitibi and eastern Wabigoon subprovinces of Ontario and Quebec. Field work will be conducted as part of an integrated VMS (volcanogenic massive sulfide) thematic project which, along with Metal Earth transect and craton scale research, aims to determine the processes responsible for differential VMS endowment during the evolution and construction of Archean greenstone belts. The VMS thematic project, which involves 8 researchers at 6 universities, will address differential VMS endowment at the assemblage to greenstone belt scales. Specifically, the research will focus on assemblage/episode boundaries to provide a critical set of criteria for identifying assemblage boundaries and to determine what specific paleo-environmental conditions changed from one assemblage to the next, especially between those that are endowed versus poorly-endowed. Research will involve geological compilation and mapping of key areas not covered in the existing Metal Earth Transects to define the nature of assemblage boundaries (from structural to stratigraphic) and where possible, better constrain the duration of assemblage volcanism and magmatism, and the "time gaps" that separate assemblage forming volcanic and sedimentary episodes. The relationship of assemblage boundaries to transcrustal structures will be examined. **Mapping experience, particularly in volcanology, sedimentology and structural geology, is an asset.**
PhD Project 2	***Metallogeny of the Archean VMS Sturgeon Lake greenstone belt, western Ontario.*** Students with demonstrated academic and research excellence are invited to apply for a PhD student position funded by Metal Earth. A strong interest in field-oriented and multidisciplinary research of volcanology, geochemistry, U-Pb geochronology, and metallogeny is preferred. The future PhD student will be focusing on geologic and metallogenic studies of the Neoarchean metavolcanic sequences in the Sturgeon Lake region of the western Wabigoon subprovince, northwestern Ontario. The PhD project is expected to relate nature of the volcanism and tectonic environment of various assemblages to mineral deposit-forming environments. A further goal is to provide insights into the controlling factors of medal endowment in Archean greenstone belts. **Top applicants will have a background in geologic mapping in Precambrian rocks.**
To Apply	To apply, please forward your application and cover letter to **metalearth@laurentian.ca** and reference the respective Job Identification Number with expression of interest for a specific project topic. 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 January 2020, but applications will be accepted until May 2020.

Laurentian University is an inclusive and welcoming community and encourages applications from members of equity-seeking communities including women, racialized and Indigenous persons, persons with disabilities, and persons of all sexual orientations and gender identities/expressions. Laurentian University is committed to providing an inclusive and barrier free experience to applicants with accessibility needs. Requests for accommodation can be made at any stage during the recruitment process. Please contact the Human Resources and Organizational Development Office for more information. All qualified persons are encouraged to apply; however, Canadians and permanent residents of Canada will be given priority. While we thank all candidates for their interest, only those short-listed will be contacted.

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