



Posted: April 4, 2024
Application deadline: April 19, 2024

Postdoctoral Researcher Department of Earth and Environmental Sciences

36-month term beginning July 1, 2024 (negotiable)

Classification: Contractual term position (37.5 hours/week)

Salary: \$50,000/year

Compensation also includes 4 weeks paid vacation, paid statutory holidays, health insurance, and life insurance. There may also be potential opportunities for part-time teaching contracts.

Overview

As Canada moves to implement the use of lower-carbon energy sources, there will be a significant increase in the demand for critical elements associated with energy production and storage. Canada lists 31 minerals and chemical elements as being essential to the country's future. Of these, six elements are prioritized due to their potential to spur economic growth and aid domestic supply chains, including lithium, which is an essential element used in rechargeable batteries. Many critical elements, including lithium, are concentrated by igneous processes. The Canadian Appalachians as well as correlative rocks in the eastern United States, and Caledonides of the British Isles are host to igneous rocks that are potentially enriched in lithium.

The postdoctoral researcher (PDR) will contribute to a Natural Sciences and Engineering Research Council of Canada (NSERC) Alliance Missions research program focused on the igneous processes that concentrate critical minerals. The research will be focused on southern Newfoundland, Canada and investigate the petrogenesis of recently discovered lithium pegmatites. The main program objective is to better understand the geological controls on formation of lithium-rich rocks to better inform exploration practices.

The PDR will have the opportunity to collaborate with other researchers at St. Francis Xavier University, as well as collaborators at Memorial University of Newfoundland, the Government of Newfoundland and Labrador, and industry partners invested lithium exploration.

Key Responsibilities

Specific responsibilities of the PDR are to:

1. Synthesize published literature with new data to develop a lithium pegmatite model.
2. Test current and new models for lithium enrichment using new data and geochemical modelling.
3. Assist with the setup of a new Raman microscopy lab at StFX University and develop analytical protocols to advance the application of Raman microscopy for studying geological processes.

The PDR will also have opportunities to gain experience mentoring undergraduate and graduate student researchers.



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Qualifications

- Completion of a doctoral degree in Geology, Earth Sciences, or a related field at the time of appointment is required.
- The ability to conduct remote, helicopter-assisted field work in rugged terrain is required.
- Expertise in one or more of the following is considered an asset: Igneous petrology, geochronology, mineralogy, or tectonics.
- Experience using microbeam analytical techniques is also considered an asset.

Application Instructions

Applications will be considered starting at 9:00 am (AT) on April 19, 2024, and will continue until the position is filled. To apply please submit a letter of application, CV, and the names and contact information of two referees to Dr. Donnelly Archibald (darchiba@stfx.ca). The cover letter should demonstrate how the candidate meets the above listed criteria. Only those selected for an interview will be contacted. Canadians and permanent residents will be given priority.

StFX is in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People. StFX is seeking candidates who are committed to contributing to our priorities of equity, diversity, and inclusion. A demonstrated ability in fostering a climate of inclusion and cultural safety is a strong asset.

About St. Francis Xavier University

Established in 1853, St. Francis Xavier University (StFX) is consistently recognized as one of the best universities in Canada. StFX exceeds the needs of today's undergraduates through providing the very best academic experience -- outstanding teaching, exceptional hands-on research opportunities, and global exchanges -- all within Canada's most vibrant and inspiring residential campus. Here, the focus is on the academic and the personal development of every student, making community and social engagement a large part of the learning experience. Our students are academically strong and highly engaged in every aspect of life, determined to make a positive impact on the world. In 2022, Maclean's annual university rankings put StFX #1 in student satisfaction and #2 in reputation across Canada in the primarily undergraduate category. For more, visit www.stfx.ca.

As a member of one of the most research-intensive departments on the StFX campus, you will have the opportunity to work on an innovative research project. StFX offers graduate studies at the MSc and PhD levels and many graduate students are active within the department. For more information, visit <https://www.stfx.ca/department/earth-environmental-sciences/research-graduate-studies>.

About Antigonish, Nova Scotia

The beautiful and historic town of Antigonish is located within the northeastern corner of Nova Scotia. Only a 15-minute drive from the ocean and a two-hour drive to major urban centres, Antigonish is a family-friendly community with a diverse and growing population and provides access to excellent education at all levels. The town is surrounded by rolling countryside and beautiful beaches and is a hotspot for outdoor recreation, sports, and other active lifestyle activities. Antigonish supports a vibrant culture in the arts with music, performing arts, visual arts and crafts, and fabulous festivals happening throughout the year. For more information visit www.townofantigonish.ca or www.visitantigonish.ca.