



## **PhD or MSc position in permafrost carbon cycling at McGill University, Montréal, Canada**

Research Topic: Boreal soils and lakes store a huge reservoir of carbon that is sensitive to future climate change. One of the big future changes affecting these environments under a warmer climate is increasing plant and algal growth, which will provide much larger inputs of fresh organic matter that is easily decomposed by microbes. This project will carry out a set of experiments with soils and lake waters from boreal permafrost ecosystems in northern Quebec to better understand how inputs of fresh organic matter affect the fate of existing carbon, and whether they induce strong priming effects. This research will improve our understanding of how increasing plant growth will affect boreal carbon reservoirs, and whether these carbon reservoirs will be a net source or sink of carbon to the atmosphere in the future.

### Description of Position

The student will sample boreal soils and lake waters in northern Quebec and use these samples to carry out incubation experiments that include  $^{13}\text{C}$  labeled plant substrates. They will analyze the isotopic composition (carbon-13 and carbon-14) of respired gases and organic matter from the experiments to understand how plant inputs stimulate respiration of permafrost derived carbon. The student will be based in the [McGill Isotope Biogeochemistry Laboratory](#) led by Dr. Peter Douglas in the Department of Earth and Planetary Sciences, and will be co-supervised by [Dr. Cynthia Kallenbach](#) in the Department of Natural Resource Sciences. There will be opportunities to collaborate with research groups from the Université de Montreal and the Institut National de Recherche Scientifique that specialize in limnology. The preferred start date is January 2026.

### Qualifications

- Either an M.Sc. or B.Sc. in Earth sciences, soil science, environmental science or a related field.
- A strong background in environmental chemistry or geochemistry.
- Previous laboratory and field-based research experience.
- Experience with incubation experiments and/or microbiology is an asset.
- Ability to carry out field sampling in challenging environments.
- English proficiency and strong oral and written communication skills. French proficiency is an asset.

### How to Apply

Prospective applicants should send a CV and cover letter to [peter.douglas@mcgill.ca](mailto:peter.douglas@mcgill.ca). The departmental application deadline for January admission is August 1, 2025 and application instructions can be found at: <https://www.mcgill.ca/eps/programs/graduate-programs/admissions>.