

Environmental Science: 2 PhD Opportunities

An interdisciplinary team of researchers from McGill University ([Peter Douglas](#), [Cynthia Kallenbach](#)), the Institut national de la recherche scientifique (INRS; [Isabelle Laurion](#), [Jérôme Comte](#)), and the Université de Montréal ([Roxane Maranger](#)) are recruiting two Ph.D. students for the FRQNT-funded project **The role of soil microbial processes in aquatic greenhouse gas emissions in Eastern Canadian permafrost landscapes**. One PhD student will be based at McGill University and the other at INRS.

Permafrost degradation has the potential to lead to large increases in ecosystem greenhouse gas (GHG) fluxes. Ponds are hotspots for GHG emissions on permafrost landscapes. What remains unclear is the extent to which upstream soil microbial processes influence the flux and source of GHG emissions from ponds. In this study we will combine in-depth sampling across soil-pond gradients with incubation experiments designed to identify the microbial and biogeochemical variables controlling GHG emission patterns.

Study sites include Bylot Island (Nunavut, continuous permafrost) and a region close to Whapmagoostui-Kuujuarapik (Nunavik, Quebec, sporadic permafrost). The PhD projects will involve 1) field sampling and in-situ GHG flux analysis, 2) incubation experiments on soils and pond sediments, 3) genomic and microbiological assays, and 4) isotopic, molecular, and elemental analyses of GHG, pond water, and sedimentary and soil organic matter.

This project is ideal for individuals with multidisciplinary interests in microbial ecology, biogeochemistry, soil science and limnology. Previous experience with remote fieldwork, GHG measurements, genomics, environmental microbiology, and molecular, isotopic or elemental biogeochemistry would be valuable assets for these projects. Members of communities that are underrepresented in the Environmental Sciences, including racialized persons/visible minorities, women, Indigenous persons, persons with disabilities, and persons of minority sexual orientations and gender identities, are encouraged to apply. Both Canadian and international applicants are eligible to apply.

The anticipated start date of the projects is January 2021, and the **application deadline is August 20, 2020**. However, applications will be reviewed on a rolling basis. The successful candidates will be provided a stipend. Applicants should include a cover letter stating research and career goals, and current transcripts and resume. **Please send application materials in one PDF file to recrutement@ete.inrs.ca**