



Lakehead
UNIVERSITY



**Community Ecology
& Energetics Lab**

PhD Student Opportunity: Evaluating the use of lake sediment eDNA for reconstructing past ecosystems and establishing restoration targets

The [Community Ecology and Energetics lab \(CEElab\)](#) at Lakehead University is currently recruiting a domestic (Canadian citizen or permanent resident) PhD student interested in building off ongoing work in the lab to develop eDNA methods for reconstructing aquatic communities using lake sediments. The anticipated start date for the position is Fall of 2021.

The CEElab is led by Dr. Michael Rennie, a Canada Research Chair in Aquatic Ecology and Fisheries at Lakehead University. He is also a Research Fellow with

Research will be conducted at the world-renowned [IISD-Experimental Lakes Area \(ELA\)](#), an unparalleled outdoor research facility in Northwestern Ontario that has conducted whole-lake research to better inform environmental policy since 1969. Historical records of changes in zooplankton and fish communities dating back 50 years will be used to validate downcore patterns in eDNA using a combination of both species-specific primers and metabarcoding methods. Once developed, these methods will be applied to disturbed ecosystems across Ontario that are currently under recovery from industrial impacts. These methods will help to characterize pre-impact community composition to better inform restoration efforts.

The Paleo-DNA lab at Lakehead University will support this work, as well as facilities at the ELA to support field work and sample collection. It is anticipated that the student will enrol in the Biotechnology PhD program at Lakehead University. The proposed work will also work in partnership with the [GEN-FISH project](#) (Dr. Margaret Docker, University of Manitoba and Dr. Dan Heath, University of Windsor), and additional anticipated collaborations at several other institutions.

Lakehead University is located on the shores of Lake Superior, and is the only research-intensive Canadian University in Northwestern Ontario. It is well situated for supporting collaborations with other institutions, approximately 3 hours drive from Duluth and 6 hours from the ELA, and within a day driving to Winnipeg (2 hour flight). Funding for the position is competitive.

Interested students should send a CV, cover letter expressing interest and relevant skills, as well as a copy of recent unofficial transcripts to mrennie@lakeheadu.ca. Review of applications will occur as they are received. While the position is targeted at domestic students, we encourage all qualified applicants from diverse cultural backgrounds and gender identities, indigenous persons, women, visible minorities, and persons with disabilities to apply.