

PhD Opportunities in Molecular Ecology and Microbial Genomics within the Canadian Lake Pulse Network



We are seeking highly motivated PhD students to investigate the impact of human activities on the health of freshwater lakes and their communities across Canada. The Lake Pulse network approach provides an exceptional opportunity to conduct large-scale molecular ecology research and will offer outstanding opportunity for student training in environmental science, microbial ecology and evolution, paleolimnology, and genomics. Given that the PhD projects are part of a NSERC Network, extraordinary collaborative opportunities also exist with academic and government research scientists across Canada. The two PhD projects are:

Project 1 (PhD): Reconstructing the historical conditions in lake ecosystems using cutting-edge paleogenetic approaches. In this project, the student will develop and employ molecular genetic approaches in a paleolimnology context. Genetic approaches will be combined with classical subfossil analyses of sediments to provide an unprecedented view of lake ecosystem changes that have occurred over the Anthropocene. The supervisors are Dr. David Walsh (Concordia University) and Dr. Irene Gregory-Eaves (McGill University).

Project 2 (PhD): Assessing human impacts on microbial communities in Canadian lakes using metagenomic approaches. In this project, the student will develop and employ advanced metagenomic approaches to investigate the structure and function of microbial communities in lakes across different land use gradients. Metagenomic datasets will be explored in the context of a variety of environmental stressors with an aim of making recommendations on the use of microbial indicators for monitoring lake health status. The supervisor is Dr. David Walsh (Concordia University).

Applicants should be team-oriented but also have the ability to work independently, have strong oral/written communication skills, and have demonstrated a strong potential for research excellence. Applicants should also have an interest and/or background in microbiology, limnology, aquatic ecology and/or genomics. Experience in statistical analysis, bioinformatics, and computer programming are also strong assets.

The expected project start date is **January 2018**. Interested applicants are encouraged to contact David Walsh at the email below for further information.

To apply, please send (by e-mail) a cover letter, CV, unofficial transcripts and the names of two references to David Walsh, Associate Professor, Department of Biology, Concordia University. E-mail: david.walsh@concordia.ca. Tel: (514)-848-2424 ext. 3477. Lab Websites: www.dawalshlab.ca & http://biology.mcgill.ca/faculty/gregory_eaves/



For more information on the research conducted by the Canadian Lake Pulse Network, please visit <http://lakepulse.ca/>