

From: Bjoern Wissel
Subject: MSc or PhD student opportunity in "Lake metabolism of Canadian hardwater lakes: summer vs. winter controls"

Lake Metabolism MSc or PhD student opportunities

The Associate Director of the Institute of Environmental Change and Society (IECS) at the University of Regina, Canada is inviting applications for two fully-funded MSc or PhD projects to study seasonal patterns of lake metabolism in Canadian hardwater lakes. Lakes across the northern Great Plains are unique in their unparalleled biological, chemical, physical and climate diversity, and represent ideal model systems to study the impacts of land-use and climate change on lake metabolism. Combining standard limnological techniques and stable isotope analyses, our Long-term-Ecological-Research program (since 2002) has been evaluating food-web structure, controls of gamefish populations, carbon dynamics and hydrology of 21 prairie lakes in southern Saskatchewan.

The long-term goal of this research program is to develop a mechanistic framework for food-web-controls and biogeochemical cycling in hardwater lakes. Specifically, the objectives are to characterize the impacts of winter dynamics on summer food-web structure and carbon/nitrogen dynamics, and predict individual and interactive effects of climate change on summer vs. winter conditions. Ultimately, my group will synthesize similarities and differences between boreal and hardwater lakes to assist global estimates for climate change impacts on inland lakes.

Specifically, the student projects will characterize oxygen and carbon dynamics in hardwater lakes during the fall-winter-spring transition and quantify the relative importance of metabolic, hydrologic, physical and chemical processes to carbon pools and fluxes. In addition, we will assess summer vs. winter zooplankton biomass, composition and food sources to evaluate the importance of grazing during the spring peak in algal biomass for carbon routing in hardwater lakes.

The preferable start date is May 2018, but no later than September 2018. In addition to laboratory analyses, these projects have large field components, including under-ice winter sampling. Previous experience with lake surveys, stable isotope techniques and strong quantitative skills are critical assets. Please send your cover letter, CV and names of two references to bjoern.wissel@uregina.ca by **March 23rd 2018**.

For further information regarding these opportunities, please contact Dr. Bjoern Wissel (bjoern.wissel@uregina.ca).

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