



Postdoctoral Fellowship in Watershed Nutrient Cycling

Aquatic Biogeochemistry Group, University of Lethbridge (Canada)

Position Description: A fully funded, two-year postdoctoral fellowship (PDF) is available to investigate wetland nutrient retention and phosphorus and nitrogen cycling in a multi-use agricultural watershed in southern Alberta, Canada. The position includes a competitive salary, relocation allowance, health benefits, and additional support (computer, funds to attend conferences and workshops). A start date of **March 1, 2023** is preferred but negotiable.

Project Background: The Frank Lake wetland drains into the Little Bow River and Twin Valley Reservoir. This watershed is faced with degradation of habitat and water quality due to its long history of intensive land-use, and inputs of agro-industrial and municipal effluent. There is concern about the effects that nutrient loading is having on the wetland, the river, and the downstream multi-use reservoir. The successful PDF will be funded by Alberta Innovates (Water Innovation Program) to lead two projects within the broader research program:

- 1) Map and quantify sediment phosphorus retention in Frank Lake using existing detailed sediment geochemistry data and phosphorus sorption experiment results. These results will be placed in the context of a similar study conducted over 30 years ago, to establish changes in P retention in the wetland.
- 2) Leverage long-term (20yr) discharge and nutrient chemistry datasets to build a nutrient (N and P) budget for the Twin Valley Reservoir to identify drivers of eutrophication. This period encompasses the initial flooding of the reservoir, as well as major floods and droughts.

These efforts will address major gaps in watershed-scale research regarding effluent fate, reservoir nutrient cycling, and the role of wetlands in effluent remediation. The PDF will have additional opportunities to collaborate on peripheral research projects.

Qualifications & Training Plan: The successful applicant will join a collaborative and collegial group of staff and students lead by Dr. Matthew Bogard (Canada Research Chair in Aquatic Environments, Assistant Professor, University of Lethbridge). The program will provide an unparalleled training environment, due to the uniqueness of the study design, the innovative combination of methodological approaches, the emphasis on student mentorship, and the unique combination of PDF interactions with academic partners in the broader program (Universities of Regina, Saskatchewan) and non-academic partner organizations (industry, government, NGOs). Applicants should have a background in nutrient biogeochemistry and be familiar with the use of software programs including R.

To apply: Interested individuals should email Dr. Bogard (matthew.bogard@uleth.ca), and should provide unofficial transcripts, a CV, and a description of their research interests and relevant experience, and a brief description of why they are interested in the position. The University of Lethbridge and partner Universities are committed to inclusive workplaces that reflect the richness of the communities that we serve. We welcome applications from all qualified individuals, including individuals and all groups protected by the Human Rights Code.