



## **MSc Opportunity**

### **Snowmelt–Groundwater Dynamics in Mountain Headwaters**

Mountain Ice & Water Lab, University of Lethbridge

Start date: May 2026 (preferred) or September 2026 | Duration: 2 years

#### **About the Position**

We are seeking a motivated MSc student to investigate how snowmelt contributes to groundwater recharge and streamflow in mountain catchments using field instrumentation and hydrological modelling. The Mountain Ice & Water Lab (PI: Dr. Caroline Aubry-Wake) focuses on mountain hydrology, snow and ice processes, cryosphere–groundwater interactions, and climate resilience. You will join a growing research team working on glacier hydrology, groundwater modelling, snow processes, and mountain water security.

The student will:

- Install shallow groundwater monitoring wells, soil-moisture sensors, and temperature loggers across an elevational transect in the Westcastle Basin (southwestern Alberta).
- Develop site-scale water balances based on observational data.
- Use the Cold Regions Hydrological Model (CRHM) to simulate how snowpack variability and melt timing influence groundwater recharge and lateral water movement under current and future climate conditions.

#### **Applicant Profile**

- BSc in hydrology, environmental science, geoscience, physical geography, or related field
- Interest in both fieldwork and hydrological modelling
- Programming (Python, R, or MATLAB) or GIS experience is an asset
- Canadian citizenship or permanent residency is preferred

#### **Funding and Support**

The position is funded at \$16,000 per year for two years, with potential for additional support through scholarships and graduate teaching assistant positions.

#### **Why Lethbridge**

Lethbridge is an affordable, friendly, and easily navigable city with excellent outdoor access in the river valley for running, hiking, and biking. The Canadian Rockies are approximately two hours away, providing outstanding access for alpine field research and year-round outdoor activities.

#### **To Apply or Enquire**

Email [caroline.aubry-wake@uleth.ca](mailto:caroline.aubry-wake@uleth.ca) with a CV, a brief (max. one page) statement of interest, your academic transcript (unofficial acceptable initially), and contact information for one reference. Informal enquiries are welcome. Early expressions of interest are encouraged by mid-December 2025.

Dr. Caroline Aubry-Wake  
Mountain Ice & Water Lab  
Department of Geography & Environment  
University of Lethbridge, Alberta, Canada