PhD Opportunity
Groundwater in the Proglacial Zone

Mountain Ice & Water Lab, University of Lethbridge
Start date: September 2026 | Duration: 4 years

About the Position
We are seeking a motivated PhD student to investigate how meltwater from glaciers and snow contributes to groundwater recharge and sustains mountain streamflow. The project combines field monitoring in the Peyto Glacier proglacial zone with process-based hydrological and groundwater 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, and mountain water security.

The student will:

- Install and monitor shallow hydrological sensors (e.g., piezometers, pressure transducers) in the glacier forefield to observe groundwater fluctuations and meltwater infiltration
- Analyse field data to quantify groundwater storage behaviour and meltwater–stream connectivity across different proglacial landforms
- Develop and calibrate a glacier melt energy-balance module coupled with a 3D groundwater flow model to simulate subsurface water movement
- Assess how meltwater-driven groundwater storage may buffer seasonal streamflow under changing climate

Applicant Profile
- MSc in hydrology, hydrogeology, environmental modelling, geoscience, physical geography, or a related discipline
- Strong interest in groundwater processes and/or cryosphere–hydrology interactions
- Experience with field data collection, process-based modelling, or Python-based analysis is an asset
- Programming and GIS experience
- Canadian citizenship or permanent residency is preferred

Funding and Support
The position is funded at $18,000 per year for four 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* with:

- CV
- Brief (max. one page) statement of research interest
- Academic transcript (unofficial acceptable initially)
- Contact information for two academic references

Informal enquiries are welcome. Early expressions of interest are encouraged by mid-January 2026. The final deadline to apply to the University for a September 2026 start is May 15.

Dr. Caroline Aubry-Wake
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