

The Water Resources Ecohydrology Lab (WRElab; wrelab.science) at Northeastern University invites applications for a Ph.D. position in mountain ecohydrology and water resources beginning in fall 2024. The successful candidate will be supported to design a research project within the broad themes of mountain ecohydrology and water resources that excites them and complements ongoing projects. The project will use computational simulations constrained with measurements to build new understanding of how these watersheds function and affect water resources. Areas for potential projects include, but are not limited to, the drivers of water partitioning and its effects on drought occurrence and severity; groundwater-vegetation feedbacks in a shifting climate; and multiobjective calibration of watershed models using machine-learning-based surrogate models and novel measurements. The selected candidate will have the opportunity to collaborate with others at Northeastern University, particularly in the [College of Science](#) and the Departments of [Marine & Environmental Science](#) and [Civil & Environmental Engineering](#). They may also collaborate with colleagues at [Lawrence Berkeley National Laboratory](#) (LBL), including but not limited to in [LBL's Watershed Function Science Focus Area](#), and with others across Boston's many world-class Universities. This candidate will further have the opportunity to mentor as well as learn from current and future lab members.

The WRElab seeks to better understand how watersheds function as systems with interactions among meteorological forcing, geologic setting, and ecological process, and how these systems affect critical water resources in a changing climate. To do so, we use state-of-the-science computational watershed and ecological simulators that are constrained with novel field and remotely-sensed measurements, including stable isotope analyses and spatial-pattern calibration approaches. Current projects focus on the partitioning of rain and snow to streamflow and evapotranspiration in mountain environments, groundwater-vegetation feedbacks at watershed scales in a changing climate, and watershed responses to disturbances including extreme storms and wildfire.

The WRElab emphasizes productive collaboration facilitated by a dedication to a respectful and inclusive work environment. We encourage candidates from a broad variety of backgrounds to apply, particularly those with majors in earth science, ecology, geography, computer science, and civil and environmental engineering and experience in computational modeling and data analysis. Ideal candidates will have research experience, a passion for learning and scientific exploration, and a commitment to equity and inclusion. While an M.S. is preferred, it is not required. A positive attitude and the ability to work both independently and part of a team are required. Candidates from historically and currently marginalized groups are particularly encouraged to apply and to ask the questions necessary to ensure they can feel safe, supported and comfortable in the lab, university, community, and field environments. Candidates can apply to the Lab through either Northeastern's Department of Marine & Environmental Science or Northeastern's Department of Civil & Environmental Engineering depending on their background, and can be housed in either department.

Funding: This position will be funded on research and teaching assistantships for up to five years. Students will be supported and encouraged to apply for university and national fellowships, where Northeastern has a successful track record. The position includes a competitive stipend, tuition waiver, health insurance benefits, and funding to attend academic conferences annually.

Need more information?

[Northeastern Department of Marine & Environmental Sciences](#)

[Northeastern Civil & Environmental Engineering](#)

[Northeastern Facts & Figures](#)

Questions can be directed to pidf@northeastern.edu. Prospective candidates are encouraged to email to express their interest and discuss potential research projects.

How to apply: Qualified applicants are invited to apply for graduate admission to the [Department of Marine & Environmental Science](#) (MES) or the [Department of Civil & Environmental Engineering](#) (CEE) at Northeastern. The priority application deadlines are December 1, 2023 for MES and December 15, 2023 for CEE.