

Graduate Opportunities in Biology at CWU with the I-90 Snoqualmie Pass East Project:

Fish and Wildlife Connectivity in the Washington Cascade Range

CWU has partnered with the Washington State Department of Transportation since 2008 to conduct research and monitoring programs for the internationally-recognized I-90 Snoqualmie Pass East Project (<https://wsdot.wa.gov/Projects/I90/SnoqualmiePassEast/>). This project in the heart of Washington's Cascade Range features multiple wildlife crossing structures (underpasses and overpasses) to improve ecosystem connectivity across the highway. Our road ecology research seeks to understand how low-mobility fish and wildlife species are affected by this major interstate highway and the effectiveness of the crossing structures in improving ecological and genetic connectivity in this forest ecosystem.



Dr. Jason Irwin is focusing on the movements of amphibians and reptiles in the Snoqualmie Pass area. Species of interest include Coastal Giant Salamanders, Western Toads, Coastal Tailed Frogs, and Northern Alligator Lizards, among others. His team studies movements of these species using a variety of techniques, including radiotracking, PIT tags, and genetic analyses.

Dr. Paul James's work on stream ecology emphasizes fish and macro-invertebrates, with a focus on monitoring the populations and movements of native cutthroat trout and bull trout. He and his students use backpack electrofishing equipment in small streams to sample fishes for measurements and tagging, and use dry suits to conduct snorkel surveys in larger streams. His students have recently conducted studies on juvenile bull trout and kokanee salmon to assess their responses to restoration efforts.



Dr. Kris Ernest investigates how small mammals interact with the highway and the wildlife crossing structures. Her research lab seeks to understand habitat requirements, relative abundance, population distribution, population genetic structure, and species interactions of small mammals near the highway. Her graduate students have conducted thesis research on pikas, shrews, bats, and the whole assemblage of small mammals.

Many of our graduate students working on the I-90 Snoqualmie Pass East Project have been supported by a teaching assistantship for one year, and a research assistantship the other year of their 2-year master's program. Internal CWU funding helps support research equipment needs and participation in conferences.

How to Apply:

- Visit our graduate program website: <https://www.cwu.edu/biology/graduate-program-0>
- Please contact Dr. James (Paul.James@cwu.edu), Dr. Irwin (Jason.Irwin@cwu.edu), or Dr. Ernest (Kristina.Ernest@cwu.edu) to see if we are taking new students. Send a statement of your research experience and interests, and a current C.V. or resume.
- Specific instructions and forms for applications can be found at CWU's Graduate Studies and Research webpage <http://www.cwu.edu/masters/> (click on Prospective Students). Please note that the Biology Dept. no longer requires the GRE.
- We especially encourage applications from underrepresented groups in wildlife biology and field ecology, including black, indigenous, and students of color.