

Postdoctoral Research Scientist in Community Ecology and Evolutionary

Modeling with the University of Montana, USA.

A postdoctoral research scientist position focused on eco-evolutionary modeling of predator-prey systems and their responses to climate change is available with the Computational Ecology Lab at the University of Montana (UM). Funded by a grant from the National Science Foundation Organismal Response to Climate Change program, the postdoctoral research scientist will focus on a new computational model for community ecology and evolutionary dynamics to assess climate change vulnerability in a predator (cutthroat trout; *Oncorhynchus clarkii*) – prey (tailed frog; *Ascaphus* spp.) system in US Pacific Northwest streams. Using this integrated modeling approach, research questions will address the relative vulnerability of predators and prey when trophic interactions, climate change sensitivity, and adaptive capacity are considered together in spatially explicit settings. This project will yield a deep understanding of key processes in climate change vulnerability and provide novel tools for the integrated assessment of environmental, ecological, and evolutionary components of organismal responses to climate change.

The postdoctoral research scientist will be part of collaborative and interconnected teams across many institutions spanning genomics, physiology, community and ecosystem ecology, eco-evolutionary modeling, and stakeholder engagement. They will work closely with Colorado State University (Dr. Chris Funk), USGS (Drs. Jason Dunham and Joe Benjamin), University of Idaho (Dr. Paul Hohenlohe), USFS (Dr. Alex Fraik), Oregon Dept Fish & Wildlife (Dr. K Anlauf-Dunn), and University of Montana (Dr. Erin Landguth).

The postdoctoral research scientist will have the opportunity to participate in field work, research, teaching, and mentoring activities that will further their career training. They will serve as lead author on peer-reviewed publications; participation in manuscript review; dissemination results at regional, national and international conferences; and participation in seminar series and outreach events. Example tasks, opportunities, and responsibilities for this position are given as follows:

- Integrate empirical data, statistical algorithms, and predictive models for assessing the impact of landscapes, life history, and climate-adaptive genes on predator-prey dynamics.
- Test predictions with a predator-prey multispecies spatially explicit, individual-based, eco-evolutionary modeling framework.
- Utilize high-performance computing including the CEL, UM Griz/Hellgate, and CPHR Data and Modeling Core clusters to process and analyze very large datasets.
- Publish at least 2 first-authored peer reviewed manuscripts from research, and contribute as co-author on additional manuscripts from this research.

Position Details

- Position is full-time, 1.0 FTE, Letter of Appointment and includes a comprehensive and competitive benefits package including insurance package, mandatory retirement plan, and wellness program.
- The option for part-time work (0.75 FTE) and/or remote work is available.
- Salary for this position is \$70,000 per year.
- Preference will be given to applicants who can start in March 2025.
- Funding is available for 2 years, but is contingent on satisfactory performance on a yearly basis.

Required Qualifications

- PhD (by start date) with experience in one or more of the following: wildlife biology, landscape/spatial ecology, connectivity, population/landscape genetics, simulation modeling, or other related experience.
- Experience in data analysis, modeling and statistical analysis.

Preferred Qualifications

- Coding proficiency in one or more of the following languages: R, Python, C++, Java, etc.
- Experience with HPC cluster and Cloud computing.
- Expertise in GIS and the processing/analysis of remotely sensed data and familiarity with large data repositories (e.g., Google Earth Engine).
- Expertise with CDMetaPOP or in the application and interpretation of spatial statistical

models and spatio-temporal modeling, individual-based modeling, and machine learning models.

- Record of research output in high quality publications

How to apply

- Complete applications received by 31 December, 2024 will be guaranteed full consideration.

This position is available to start on 1 March, 2025.

- Applicants are strongly encouraged to contact Dr. Landguth (erin.landguth@umontana.edu) with any questions with 'ORCC postdoc inquiry' in subject line.

- Please submit the following application materials (UM link coming soon)

- o Letter of Interest – describing your research interests and qualifications.

- o Detailed resume – listing education and describing work experience

- o Professional references – names and contact information for three professional or academic references.

About University of Montana

The University of Montana is a research-intensive R1 institution that is home to a diverse and highly interactive collection of scientists with expertise in biomedical sciences, genomics, evolution, ecology, and wildlife biology and a strong emphasis on the study of natural systems. Nestled in at the base of Mount Sentinel and on the banks of the Clark Fork River, UM campus is described as one of the most beautiful in the US. The region boasts unparalleled year-round recreational opportunities and nearby Glacier National Park and Yellowstone National Park complement a thriving intellectual atmosphere. The University of Montana offers eligible employees a generous benefits package that positively separates UM from other local employers and offers many programs and policies to support work-life balance for its employees

The University of Montana is an Affirmative Action/Equal Opportunity employer and has a strong institutional commitment to the principle of diversity in all areas. In that spirit, we are particularly interested in receiving applications from a broad spectrum of qualified people who would assist the University in demonstrating its five priorities for action: Place student success at the center of all we do; drive excellence and innovation in teaching, learning, and research;

embody the principle of “mission first, people always”; partner with place; and proudly tell the UM story.

Criminal Background Investigation is required prior to Offer of Employment In accordance with University policy, finalists for this position will be subject to criminal background investigations.

ADA/EOE/AA/Veteran's Preference Reasonable accommodations are provided in the hiring process for persons with disabilities. For example, this material is available in alternative format upon request. As an Equal Opportunity/Affirmative Action employer, we encourage applications from minorities, veterans, and women. Qualified candidates may request veterans' or disabilities preference in accordance with state law.

References *References not listed on the application materials may be contacted; notice may be provided to the applicant.

Testing Individual hiring departments at UM may elect to administer pre-employment tests, which are relevant to essential job functions.

Employment Eligibility. All New Employees must be eligible and show employment eligibility verification by the first date of employment at UM, as legally required (e.g., Form I-9).

Must be eligible to work in the United State upon hire.