

Postdoctoral Research Scientist in Eco-Evolutionary Infectious Disease Modeling with the University of Montana, USA, and the University of Exeter, UK.

A 4-year postdoctoral position focused on eco-evolutionary modeling of bat populations affected by White-Nose Syndrome (WNS) is available with the [Computational Ecology Lab](#) at the [University of Montana \(UM\)](#). Funded by a grant from the National Science Foundation Ecology and Evolution of Infectious Disease program, the postdoctoral research scientist will focus on the disease system WNS in the United States working with a new computational model for eco-evolutionary epidemiological dynamics across three bat host species. Using this modeling approach, research questions will address how host ecology and evolution, in response to disease and climate, interact to steer disease dynamics on climate impacted landscapes. This project will yield a deep understanding of the processes driving disease dynamics and spread by integrating ecological, genomic and epidemiological approaches into a generalizable forecasting model. Understanding the factors affecting pathogen transmission across climate and human-impacted landscapes is essential for future disease control strategies and development.

The postdoctoral research scientist will be part of collaborative international project team between US and UK institutions to model bat evolution and pathogen transmission dynamics in changing landscapes. They will work closely with the US-team leading simulation modeling efforts (Drs. Erin Landguth, Casey Day, UMT) and the UK-team leading the molecular and genomic data analyses (Drs. Orly Razgour, Rhys Farrer, Duncan Wilson, and UK-hired postdoctoral research scientist, University of Exeter). The US-postdoctoral research scientist will also be provided the opportunity for field and lab research working closely with Dr. Julie Weckworth, UMT, as well as state, federal and non-governmental organizations, including the USFWS National WNS Response Team.

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. Start-up workstation/laptop computers, as well as conference travel each year, has been included in project budgets for this person. 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 disease resistant and climate-adaptive genes on WNS dynamics and bat host population trends.
- Assimilation, management and analysis of large complex datasets across a range of disciplines, including epidemiology, ecology, remote sensing, etc.
- Utilize high-performance computing including the CEL, UM Griz/Hellgate, and CPHR Data and Modeling Core clusters to process and analyze very large datasets.
- Participate in field research by gathering empirical data on bats and associated fungal pathogen in multiple states across the eastern US.
- Participate in lab-related activities at UM: fungal extraction, BSL2, qPCR, pathogen genetics.
- Assist with the development of summer teaching modules focused on coding opportunities for rural and underrepresented high school students.
- Attend yearly conferences and communicate findings to research partners.
- Visit the University of Exeter, UK, to work with [Dr Orly Razgour](#) on modeling range suitability for bats under climate change.
- Publish at least 4 peer reviewed manuscripts from research, and contribute as co-author on at least 4 more 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.
- This position is available to start on 1 September, 2024. Preference will be given to applicants who can start in the of Fall 2024.
- Funding is available for 4 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, disease ecology, 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 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

- Applicants are strongly encouraged to contact Dr. Landguth (erin.landguth@umontana.edu) with any questions with 'EEID postdoc inquiry' in subject line.
- Priority application due date: 15 August, 2024 by 11:59 PM (Mountain Time). Complete applications received by 16 August, 2024 will be guaranteed full consideration.
- Application link will be available at <https://umjobs.silkroad.com> on 15 July 2024 and the following materials will be required:
 - Letter of Interest – describing your research interests and qualifications.
 - Detailed resume – listing education and describing work experience
 - 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.