Postdoctoral associate in how dynamic interactions shape ecosystem stability

Department of Biology, University of Maryland College Park

Application window

Open date: August 10, 2024
Review date: November 10, 2024
Applications will continue to be accepted until this date, but those received after the review date will only be considered if the position has not yet been filled.

Position description

Dr. Vadim Karatayev's lab (https://resiliencelab.github.io/) seeks a postdoctoral associate to study how dynamic species interactions affect ecosystem stability. This study will have two components. The first component will apply empirical dynamic modeling to data from marine food webs (Northeast Shelf and/or Chesapeake Bay) to detect species interactions and how they change over time. The specific method will be an extension of convergent cross mapping in Sugihara et al 2012 and Merz et al 2023.

The second component is more open-ended and will depend on the candidate's background and interest. It may involve a theory-focused analysis of how observed levels of interaction variability affect stability (e.g., using random matrices or other methods familiar to the associate). Alternatively, it may be a more data-driven modeling study of community dynamics and responses to climate change in the Chesapeake or Northeast Shelf systems.

The associate will be actively mentored by Vadim. They will also join an active community of quantitative biologists at UMD, including the labs of Bill Fagan (animal movement and conservation), Joshua Weitz (viral and microbial ecology), Emme Bruns (plant eco-evo), Phillip Johnson (immune dynamics), and Abba Gumel (epidemics).

The target start date is **January 2025**, but is flexible. The postdoctoral appointment will be two years. Anticipated annual salary is approx. $65,000. As a postdoctoral associate, 20% of your time can be allocated to self-directed work.

Qualifications

Candidates that possess some but not all of these qualifications are still encouraged to apply, but the ideal candidate will:

- Have PhD in quantitative ecology, physics, applied math, or a closely related field
- Have experience building and simulating dynamical models
- Have some training and experience in statistics
- Have some experience in working with large datasets
- Be proficient in programming and experience with - or openness to learn - R
- Have excellent written and verbal communication skills
- Have experience leading independent research projects, and a record of first-author publications (commensurate with experience) in related topics

- Be excited about doing highly quantitative work that is relevant to marine ecology and/or theoretical biology
- Contribute to a supportive and inclusive professional culture in the Lab

Application requirements

To apply please submit:

- Cover letter, maximum two pages, that includes:
  - your research accomplishments,
  - any other relevant training, skills, experience,
  - why you are interested in this position,
  - your future career interests, and
  - your anticipated start date.
- A CV.
- Contact information for three references.
- A writing sample, whether a published or draft manuscript.

Please send all materials by email to vadimk@umd.edu with the subject line “Dynamic Interactions postdoc application”.