Postdoctoral Associate
Metagenomic Trait Prediction and/or Modeling Microbial Systems
Stony Brook University

The Microbial Genomes And Metagenomes to Unravel Traits Lab (mGAMUT Lab; PI: JL Weissman) at Stony Brook University (https://microbialgamut.com/) has an opening for a postdoctoral researcher to begin in January 2025 (earlier start date negotiable). This position will be for one year initially and is renewable for an additional year dependent on applicant contributions to the project.

Our lab develops new computational tools to infer what microbes are doing and can do directly from genomic and metagenomic data (e.g., https://github.com/jlw-ecoevo/gRodon2), aiming to improve the representation of microbes in global biogeochemical models. The successful applicant will work on several projects developing computational methods for microbial trait prediction from genomic and metagenomic data. This position comes with significant flexibility for a candidate to shape their own research program depending on their interests and background. For example, our group also has ongoing projects that use a combination of comparative genomics, population genetics, and mathematical models to understand the ancient and ongoing battle between microbes and their viruses.

The successful applicant should have or will shortly obtain a PhD in Computational Biology, Biology, Ecology & Evolution, Computer Science, Mathematics, or Physics, or a closely related field, with research experience using computational approaches to answer biological questions. This position is expected to be highly computational, therefore prior experience with computer programming is essential (ideally, the R programming environment at a minimum) and familiarity with high performance computing environments is desirable. Given the nature of the work, prior experience working with genomic data is required. A working knowledge of metagenomics and a familiarity with microbial systems is desired.

Our lab is committed to creating a collaborative, equitable, and inclusive working environment, and we welcome candidates who share those goals. You can find our draft code of conduct online. Finally, studies have shown that women and people of color are less likely to apply for jobs unless they believe they can perform every job description task. We encourage you to apply even if you do not meet every single preferred qualification listed on the official job posting, with the explicit understanding that scientists from a broad range of backgrounds bring skills and perspectives that can push our lab's research in new and exciting directions.

Applications will be accepted until October 3, 2024. Applicants must submit materials electronically through the SBU Jobs system:
https://stonybrooku.taleo.net/careersection/2/jobdetail.ftl?job=2402855&tz [position number 2402855]

- a resume/CV that documents all applicable required and preferred qualifications,

- a writing sample (*e.g.,* a peer-reviewed paper, submitted manuscript, or dissertation), and
- a cover letter (1-2 pages) that briefly (1) describes their relevant training and research accomplishments, (2) explains their reasons for applying for this specific position, (3) describes their career aspirations and how this position will advance their goals, and (4) clarifies any of the required or preferred job qualifications listed on the official posting that the candidate may meet but are not clearly indicated on their CV,

to:

Dr. Jackie Lee Weissman (they/she)
Department of Ecology & Evolution
Life Sciences Building, Room 610
Stony Brook University
Stony Brook, NY 11754-5245

The official posting and online application can be found at https://stonybrooku.taleo.net/careersection/2/jobdetail.ftl?job=2402855&tz.
Queries regarding this position can be made by email to: jackie.weissman@stonybrook.edu

The anticipated annual salary for this position is $72,000 plus location pay, which is currently $3,400 annually for Fiscal Year 2024-2025 (for a total of $75,400).

Job Description

Required Qualifications: Doctoral Degree in Computational Biology, Biology, Ecology & Evolution, Computer Science, Mathematics, or Physics, or closely related field or foreign equivalent degree. For those with degrees that are not explicitly computational (*e.g.,* Biology), a record of coursework and/or research in quantitative areas must be shown. For those with degrees not explicitly related to biology (*e.g.,* Mathematics), a record of coursework and/or research concerning biological questions must be shown. Degree in hand by December 2024.

- Experience analyzing genomic and/or metagenomic data using computational methods
- A record of publishing research in peer-reviewed scientific journals
- Experience in programming in R, Python, or a similar programming language

Preferred Qualifications:

- Experience developing new approaches for the analysis of biological data beyond the application of established pipelines
- Experience developing dynamical (mathematical) and/ or statistical models of biological systems

- Experience analyzing metagenomic data
- Experience developing novel methods for analyzing metagenomic data
- Experience working in microbial systems, specifically to answer questions in microbial ecology and evolution
- Experience with population genetics
- Experience developing R packages
- Experience applying or developing machine learning tools
- Strong scientific writing skills
- A demonstrated commitment to open-science, to team-science, and to fostering an inclusive and equitable research environment

Brief Description of Duties: Brief Description of Duties: The Postdoctoral Associate will assist the Principal Investigator in the Institute for Advanced Computational Science and the department of Ecology and Evolution. Please visit https://microbialgamut.com/, https://www.stonybrook.edu/iacs/, and https://www.stonybrook.edu/ecoevo/ to learn more about our department/research. The incumbent will conduct research and ensure that all analyses and experiments are appropriately conducted following the policies and procedures of Stony Brook University.

50% Within the predetermined research scope and methodology, conduct research experiments in the field of computational microbial ecology and evolution.

30% Collect and analyze data, including periodical/literature search and utilizing specialized skills in related field to analyze the collected data.

15% Participate/assist in manuscript writing for publication in scientific journals and/or presentations. May also assist in grant writing.

2.5% Lab maintenance, including equipment maintenance and ordering of supplies as needed.

2.5% Other duties as assigned, which may include attending, presenting at Scientific Conferences and Meetings.