**Title:** Postdoctoral Research Fellow

**Group:** Huttenhower

**Date:** January 2025

**OVERALL RESPONSIBILITY**

The Huttenhower lab in the Departments of Biostatistics and Immunology and Infectious Diseases at the Harvard T.H. Chan School of Public Health is seeking to fill multiple postdoctoral fellow positions. The successful candidates will work broadly in microbiome population studies and molecular multi-omics, with specifics to be determined by individual interest and experience. Funded projects with open positions include:

* Computational methods development and consortium data management for the Human Virome Program, with the mandate to characterize viral (phage and eukaryotic) communities across the human body in health and disease.
* Human-animal microbiome interactions and microbiome biochemical responses to nutrition using canine and feline companion animal models, in collaboration with Hill’s Pet Nutrition.
* Characterizing the oral (tongue swab) microbiome in chronic cardiometabolic disease (particularly coronary heart disease and type 2 diabetes) using a subset of the 20,000 individuals enrolled in the Nurses’ Health Study II Micro-N (Microbiome among Nurses) study.
* Assessing the microbiome, diet, and aging in the Nurses’ Health Study and Health Professionals Follow-up Study populations within the BIOM-Mass microbiome data portal (<http://biom-mass.org>).
* Identifying microbiome structural variants and mobile elements implicated in colorectal cancer.

The incumbent will be an integral member of our group, working alongside postdocs, research staff, and students, as well as with collaborators and established software development teams. Our interdisciplinary lab represents a convergence of microbial ecology, bioinformatics, biostatistics, molecular microbiology, computer science, and software development.

**PRINCIPAL DUTIES AND RESPONSIBILITIES** (\*Essential Functions)

* \* Facility with analytical methods for microbiome data, particularly computational approaches for metagenomic and metatranscriptomic profiling, multi-omic integration (e.g. with metabolomics or genetics), and their application in population studies.
* \* Familiarity with computational environments for 'omics data manipulation (command line, Python, R, etc.)
* \* Deep knowledge in at least one relevant subdiscipline, i.e. bioinformatics, microbiology, microbial ecology, biostatistics, epidemiology, nutrition, immunology, or similar.
* \* Presentation of results to collaborators, local, national, and international scientific audiences comprising broad backgrounds (quantitative, computational, and biological).
* Optional mentoring and/or teaching opportunities in the context of Ph.D. students from the Harvard Chan School / Harvard Medical School, junior scientists, and Harvard and public guest lectures and short course workshops.
* Regular interaction with internal and external contacts, including Harvard scientists, collaborators, students, postdocs, and external clinicians and industry leaders.
* Collaboration with teams of students, postdoctoral researchers, and faculty associated with both the Huttenhower lab and with the broader Harvard Chan Microbiome in Public Health Center on microbiome bioactive discovery and translation.

**MINIMUM QUALIFICATIONS**

* Ph.D. in Computational Biology, Molecular Biology, Computer Science, Biostatistics or related fields. Some experience with microbiome, microbiological, or molecular 'omics preferred.
* Familiarity with methods for high-throughput sequence analysis, ideally microbial community metagenomics and/or microbial genetics.
* Excellent record of scientific contributions, publications, and presentations; primary or key author on one or more major presentations and papers.
* Must be able to handle a variety of tasks, to effectively solve problems with numerous and complex variables, and to shift priorities rapidly.
* Demonstrated success in working on complex, novel research problems in a collegial environment.
* Creativity, curiosity, and the desire, persistence and ability to create scientific advances in human microbiome science.

Please send application materials (CV and cover letter) along with contact information for at least three references to Nicole Levesque, levesque@hsph.harvard.edu.