



General Overview

The Infectious Disease Dynamics group in the Department of Epidemiology at the Johns Hopkins Bloomberg School of Public Health (JHBSPH) has multiple positions available on the *Seroanalytics Hub* project, where computational approaches to integrated, multipathogen serological surveillance will be further developed, optimized, and disseminated globally. As part of this new project funded by the Bill & Melinda Gates Foundation, we are seeking a research analyst, scientific programmer, and postdoctoral fellow to join a collaborative and interdisciplinary team led by Dr. Saki Takahashi and Dr. Sonia Hegde.

Seroanalytics, the practice of collecting and analyzing antibody data in individuals and populations, has emerged as a potentially efficient and impactful tool for informing disease prevention and control programs. The overarching objective of this project is to produce a centralized resource explicitly focused on how data derived from integrated serosurveillance systems can be used and appropriately interpreted across pathogens and settings. We aim to accomplish this by synthesizing the current landscape of seroanalytic tools and approaches, developing frameworks that streamline analytic approaches in seroepidemiology and are updated as the tools, assays, and data streams evolve, creating novel methods to inform the design and analysis of serological surveys, and by working in collaboration with public health agencies and other researchers to enable the rapid integration of such data into public health decision-making.

Successful candidates will have opportunities to lead independent lines of research and to work with partners in academia and international public health agencies to directly inform ongoing serosurveillance efforts worldwide. Competitive salary including full benefits will be provided, commensurate with experience and qualifications. Funding will be for 1 year initially, with possibility for renewal. Remote working arrangements are possible. Application review will occur on a rolling basis from August 22, 2023, and continue until positions are filled.

Research Analyst

Description: We are seeking to hire a Research Analyst to contribute to a scoping review of the available seroanalytics literature to synthesize the current seroanalytics landscape for various pathogens and use cases. This project will encompass a review of scientific literature specific to the Luminex multiplex bead assay (MBA) for pathogen serosurveillance and engagement with multilateral organizations and universities actively involved in integrated serosurveillance. In addition, there will be opportunities to develop open source seroepidemiologic resources for researchers and agencies, including the development of analytical tools in R for integrated serosurveillance and training materials to support the dissemination of such tools.

Essential Qualifications: Essential qualifications for this position include a Master's degree in public health or a related field, experience using search engines like PubMed and Embase, strong organizational skills, and writing skills.

Preferred Qualifications: Preferred qualifications include experience interacting and working with multilateral organizations, a considerable understanding of biology and/or immunology, and coding skills in R.

Scientific Programmer

Description: We are seeking to hire a Scientific Programmer to productionize a generalizable, flexible seroanalytics pipeline to improve our ability to synthesize data, streamline analyses of multipathogen Luminex MBA data, and obtain epidemiological insights about target populations. This role will also involve the development of user-friendly R packages based on these tools, and the maintenance of an existing website for the Seroanalytics Hub where the developed materials can be easily accessed by the broader community.

Essential Qualifications: Essential qualifications for this position include a Bachelor's degree in a computer science related field, experience developing packages in R, and strong programming and organizational skills.

Preferred Qualifications: Preferred qualifications include experience working with bioinformatics, a considerable understanding of biology and/or immunology, and interacting with multilateral organizations.

Postdoctoral Fellow

Description: We are seeking to hire a Postdoctoral Fellow to develop computational tools and methods for multiplexed serological data. Such tools include generalizable pipelines that span from the raw laboratory data generated from the Luminex MBA and

extend to obtaining epidemiological insights about the target population and synthesizing findings. This project will include opportunities for publication and engagement with multilateral organizations and research groups working in the field of seroepidemiology, as well as opportunities to develop different aspects of the pipeline into operationalized toolkits and training materials to be shared globally. To further enhance the pipeline, this project will also include opportunities to develop novel geospatial methods to analyze multipathogen serologic data and improve our guidance on spatial sampling designs for multipathogen serosurveys.

Essential Qualifications: Essential qualifications for this position include a PhD in epidemiology, biostatistics, computational science, or a related field, experience using R or other programming languages, strong organizational skills, and writing skills.

Preferred Qualifications: Preferred qualifications include experience using serology data, spatial statistics, a considerable understanding of biology and/or immunology, and interacting and working with multilateral organizations.

To apply to any of the above positions, please email a cover letter indicating the position you are interested in applying for and describe your relevant experience and interests, CV, and contact information for 2 references to saki.takahashi@jhu.edu and shegade@jhu.edu.