

Postdoctoral Research Scholar

Description

Job Description – The Garg laboratory in the School of Chemistry and Biochemistry at Georgia Institute of Technology is seeking applicants for a full-time postdoctoral research associate position to participate in our research on metabolomics-based analysis of host-commensal, and host-commensal-pathogen interactions in the airways. Appreciating the fact that emergence of multidrug-resistant airway pathogens requires development of alternative treatment strategies, we are developing approaches to reconfigure airway microbiome using probiotics in collaboration with Sandia National Laboratories. Our central hypothesis is that enhancement of resident microbiomes using prebiotics and/or probiotics (the latter including variants engineered to recognize and attack the pathogen) can confer protection against respiratory infection. The specific objectives include 1) Characterization of the interactions between a biodefense-related bacterial pathogen and respiratory tract microbiomes in mouse models of respiratory infection; and 2) Rational manipulation of these interactions, through prebiotic/probiotic approaches, to favor defeat of the pathogen. We have isolated candidate probiotics and have established strong preliminary data that demonstrate significant change in airway chemistry upon introduction of pathogens, which can be remedied by introduction of probiotics. Garg lab (<http://www.garglab-microbiomegt.com/>) employs multi-omics methods including cutting-edge mass spectrometry-based metabolomics, spatial metabolomics, imaging mass spectrometry, sequencing, genome mining, and microbiology to interrogate microbe-microbe, and microbe-host interactions by delineating small molecules underlying these interactions. The successful candidate will gain hands-on expertise in bacterial culturing, acquisition and analyses of mass spectrometry data including high-resolution tandem mass spectrometry, imaging mass spectrometry, data analyses using bioinformatics infrastructures such as GNPS, metaboanalyst, XCMS Online, CANOPUS, MS2LDA, PLS-Toolbox and many others. The rank and salary will be commensurate with NIH scale. Salary will include the full benefits package. The position is open, and review of applications will begin immediately. The available position is a fully funded multi-year position through NIH R35 MIRA award to the PI Garg. However, we will encourage, actively help, and share preliminary data for postdoctoral funding applications. We will help you build a portfolio that matches your career goals, including but not limited to pedagogical training.

Responsibilities – Perform experiments, publish research, visit Sandia National Laboratories and lead collaborative meetings with scientists at Sandia National Laboratories, present research at conferences, and mentor junior students.

Qualifications – Ph.D in Chemistry, Biochemistry, Chemical Biology, Biological Sciences or a similar discipline. Experience with analysis of mass spectrometry data will be useful.

Hiring organization

Georgia Institute of Technology; <https://www.garglab-microbiomegt.com/>

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Contact – Neha Garg, ngarg42@gatech.edu

Post End Date – 01/31/2024

Contacts

Organization – Georgia Institute of Technology

Location – Atlanta, Georgia

Website – <https://www.garglab-microbiomegt.com/>

Email – ngarg42@gatech.edu