



Description. The Yang Lab at Rutgers New Jersey Medical School invites applicants for a postdoctoral associate position in studying gene regulatory networks in *Mycobacterium tuberculosis* (Mtb), the causative agent of tuberculosis (TB) disease. Research in the Yang Lab applies experimental and computational systems and synthetic biology approaches to advance TB, antimicrobial resistance, and immunoengineering research. We seek applicants who are curious, creative, self-motivated team players who enjoy being part of a fun and dynamic research lab. The start date is flexible – we are looking for someone who will make a great fit.

Project. We recently received a grant entitled “*Modeling and manipulating transcription factor activities to shorten TB therapy*”. In this project, we are interested in studying how genes that control TB drug sensitivity are regulated in Mtb and how they vary across clinical strains, environmental conditions, and for different drugs. We are also interested in understanding how Mtb gene networks crosstalk with metabolic and kinase networks. The goal of this work is to discover mechanisms that can be translated into novel TB diagnostics and drug targets. This project combines Biosafety Level-3 (BSL-3) experimental activities with computational bioinformatics, network modeling, and machine learning/artificial intelligence analyses to study Mtb genetic, metabolic, and kinase networks. Examples of experimental activities include mycobacteriology, genetic engineering, RNA sequencing, LC-MS metabolomics, genetic screens, fluorescence microscopy, high-throughput automation, and advanced genetic screening in Mtb H37Rv, Mtb auxotrophic strains, and Mtb clinical strains.

Candidate. The ideal candidate will have received, or will be receiving, a Ph.D. in microbiology, infectious disease, bioengineering, or related fields by December 31, 2026, with no more than 2 years of previous postdoctoral training. Candidates must possess extensive molecular biology and microbiology experience in mycobacteria, preferably Mtb H37Rv in a Biosafety Level-3 environment, including expertise in mycobacterial genetics and genetic engineering. Candidates must also possess programming experience in Python, R, and/or MATLAB and an interest in further advancing their programming skills. Candidates should also possess at least 2 first-author publications containing Mtb experimental work, including submitted manuscripts that are available as preprints. Candidates must also be excellent communicators.

Research Environment. The Yang Lab is located at Rutgers New Jersey Medical School in Newark, NJ, in the Public Health Research Institute, Center for Emerging Pathogens, and Department of Microbiology, Biochemistry, and Molecular Genetics. Researchers in the Yang Lab have access to a state-of-the-art BSL-3 research facility with resources for flow cytometry; confocal microscopy; drug screening; genomics, proteomics, and metabolomics; and animal experiments. We are part of a vibrant TB research community comprised of scientists and physicians that study TB in all dimensions, from bacteria to animal and human infection and from basic to translational and clinical science in collaboration with world-class TB researchers.

Training and Mentorship. Research training and career mentorship are core priorities of the lab. When trainees first join the lab, they complete an Individual Development Plan to map out their research training and career development goals, which are revisited quarterly. Trainees meet with Dr. Yang weekly in 1-on-1 and/or small groups to discuss data, experimental designs, research directions, and professional development. Trainees in the Yang Lab will grow in technical research skills; experimental design and data analysis; systems biology, bioinformatics, and machine learning/artificial intelligence analyses; the design and management of research projects; written, oral, and visual communication; preparation and review of manuscripts and grant applications; and preparation for future academic and industry positions.

Application. Visit <https://www.jasonyanglab.org/> for more information about the Yang Lab. Email Dr. Yang at jason.y@rutgers.edu with a CV, a brief cover letter describing your research interests and long-term career goals, 3 representative publications, and the names of 3 references, including your Ph.D. advisor. Complete the application at <https://jobs.rutgers.edu/postings/279252>. Review of applications will begin **September 1, 2026**, and continue until the position is filled.