Postdoctoral Positions in Host Response and Microbial Pathogenesis

Postdoctoral fellow positions are available in the laboratory of Dr. Danielle Garsin (https://med.uth.edu/mmg/faculty/danielle-a-garsin/) in the Department of Microbiology and Molecular Genetics at The University of Texas Health Science Center at Houston in the following areas:

1) Host Response of Infected Caenorhabditis elegans: The Garsin lab has long studied the molecular aspects of host response to bacterial infection using C. elegans as a model. One response is controlled by a NRF1/2 homolog called SKN-1. A screen has been carried out and new regulators of this response have been identified, including some that are pathogen specific. This project will involve the characterization of these new regulators and will require propagation and genetic manipulation of C. elegans, biochemical assays and western blotting, molecular biology and cloning, fluorescent microscopy, and transcriptomic analysis.

2) Ethanolamine Utilization in Bacterial Pathogens: Ethanolamine utilization, which is beneficial to bacterial pathogens in certain host environments, is actively under investigation. Current studies are focused on the formation of bacterial microcompartments, protein-bound organelles in which ethanolamine catabolism takes place. Questions are focused on the order of assembly and where and when formation takes place in host environments with a primary focus on the human pathogens Enterococcus faecalis and Listeria monocytogenes. The project requires molecular genetic manipulation of these species and fluorescent and electron microscopy.

3) Interactions between Enterococcus faecalis and Candida albicans: This project is a collaboration between the Garsin and Lorenz labs (https://med.uth.edu/mmg/labs/lorenz-lab/). We previously discovered that E. faecalis secretes a peptide, EntV, which inhibits the human fungal pathogen C. albicans. Current questions are focused on 1) the molecular mechanism(s) by which EntV inhibits C. albicans, 2) identification of how E. faecalis inhibits C. albicans, 3) further development of EntV as an antifungal therapeutic. Opportunities for a primary appointment in either the Garsin or Lorenz lab are available. Projects will involve genetic manipulation of one or both species, biofilm assays, fluorescent microscopy, transcriptomic analysis, and animal models of infection.

Qualifications:
Interested applicants should be highly motivated and have a Ph.D. degree with a strong background in molecular biology. For the host response project, training in C. elegans biology is desirable, whereas a strong background in microbial genetics is preferred for the other two projects. Prior publication in internationally recognized journals is required and candidates should be fluent in spoken and written English.

To apply:
Please send a cover letter indicating which project(s) are of most interest and a brief description of prior research experience, a curriculum vitae, and contact information for three references in a single pdf file to Danielle.A.Garsin@uth.tmc.edu.
Salary is commensurate with experience and will follow university guidelines. Review of applications will begin immediately and continue until the positions are filled.

Equal Employment Opportunity Statement:
UTH is committed to providing equal opportunity in all employment-related activities without regard to race, color, religion, sex, sexual orientation, national origin, age, disability, genetic information, gender identity or expression, veteran status or any other basis prohibited by law or university policy. Reasonable accommodation, based on disability or religious observances, will be considered in accordance with applicable law and UTH policy. The University maintains affirmative action programs with respect to women, minorities, individuals with disabilities, and eligible veterans in accordance with applicable law.