

## Postdoctoral Fellow in Host-Microbiota Interactions

We are looking for a skilled and enthusiastic candidate to fill a Postdoctoral Fellow position in the laboratory of Dr. [Xin Li](#), Assistant Professor in Pediatrics and Immunology. Dr. Li's research harnesses cutting-edge techniques in microbiology and immunology, leveraging a diverse array of model organisms, including bacteria, fungi, drosophila, mice, and humans. Through these innovative approaches, his research endeavors to uncover fundamental insights into the mechanisms governing how gut commensals regulate inflammatory immune responses within the intricate landscape of host-microbe interactions.

### Position Description:

At UT Southwestern, we are deeply committed to cultivating an inclusive and diverse research community. As a Postdoctoral Fellow in Dr. Xin Li's research group, you will embark on a journey where you can make significant contributions to groundbreaking research in host-microbiota interactions. Our group's recent work has been pivotal in unraveling the intricate connections between the gut and distal organs. For instance, we discovered that fungal sensing by tissue-resident CX3CR1+ mononuclear cells in the gut can exert a profound influence on distal allergic airway disease. These specific immune cells transmit signals to the lungs, setting the stage for pioneering investigations into the mechanisms underlying gut-lung immune crosstalk (Li et al., Cell Host and Microbe, 2018; Leonardi, Li et al., Science, 2018).

In a recent study (Li et al., Nature, 2022), Dr. Li illuminated the critical role of microbial strain diversity in shaping inflammatory immunity. Through meticulous analysis of diverse fungal strains and their associated fungal factors, we identified a compelling correlation between high levels of the fungal pore-forming toxin, candidalysin, and the severity of ulcerative colitis. Replicating these findings in murine colitis models, we pinpointed candidalysin as a pivotal pore-forming toxin that mediates niche-specific inflammatory immunity. These findings underscore the paramount importance of personalized approaches in the development of microbiome-based therapeutics.

### Key Research Directions:

Identifying novel host factors involved in bacterial and fungal sensing to regulate inflammatory diseases.

Exploring new microbial factors, including pore-forming toxins and other toxins, involved in bacterial and fungal sensing to regulate inflammatory diseases.

Investigating how microbe sensing of host-derived factors in the gut controls microbial commensalism and pathogenicity.

Utilizing fungi as a model system for genetic engineering of microbial effectors to understand how microbes dictate protective and pathogenic immunity at tissue barriers.

### Qualifications:

Candidates must hold a recent Ph.D. in a relevant field (Immunology, Microbiology, Molecular Biology, Genetics, Biochemistry or a related discipline). Experience in microbiological (genetics) and immunological techniques is highly desirable. Strong research background and a demonstrated interest in host-microbiota interactions.

Excellent communication skills and the ability to work collaboratively within a diverse research team.

### Benefits:

Competitive salary and benefits package.

Access to state-of-the-art research facilities and resources.

Opportunity to collaborate with a dynamic research team led by Dr. Xin Li, where diversity of thought and background is valued.

Engagement in cutting-edge research with potential for high-impact publications.

Professional development and career advancement opportunities.

To apply, please send a combined PDF file including: (1) a 2-page cover letter summarizing your research interests, accomplishments, and career ambitions, (2) your CV, and (3) the name and contact information for 2-3 references to:

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Li lab website: <https://labs.utsouthwestern.edu/li-xin-lab>

Dr. Li, Ph.D - faculty profile: [Xin Li, Ph.D. - Faculty Profile - UT Southwestern](#)

Information on our postdoctoral training program, benefits, and a virtual tour can be found at <http://www.utsouthwestern.edu/postdocs>.

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