

PhD position (E13 TV-L, 65%) – Host-pathogen interactions and cell biomechanics

to be filled as soon as possible. The position is initially limited to three years.

The **Cluster of Excellence “Controlling Microbes to Fight Infections”** (CMFI) in the Interfaculty Institute of Microbiology & Infection Medicine (IMIT) at the University of Tübingen is looking to fill one PhD position (E13 TV-L, 65%) as part of Junior Group Leader Dr. Effie Bastounis’ research group. The earliest starting date for this position will be on 01.09.2022. The position is funded for a period of 3 years at least. The available position focuses on exploring the role of intra- and extra-cellular physical forces in driving intracellular bacterial spread through infected epithelia.

Specific research project

During infection with the food-borne intracellular bacterial pathogen *L. monocytogenes*, large, infected domains in epithelial cell monolayers are forced to extrude to form 3D mounds due to the collective and cooperative onslaught triggered by their uninfected neighbors. This mechanical competition between uninfected and bacterially-infected cells is driven by innate immunity signals and appears to limit pathogen dissemination through the epithelium (Bastounis et al 2021). The project seeks to investigate how signaling and cytoskeletal dynamics correlate with changes in host cell mechanics during intracellular bacterial spread through epithelial monolayers. We also want to understand the contribution of extracellular mechanical cues (extracellular matrix stiffness) in promoting or obstructing this biomechanical battle in favor of the host.

Candidate profile

The ideal candidate preferably brings along a degree that demonstrates **an interdisciplinary background in both life and engineering sciences**. While a background in host-pathogen interactions, cell biology, microscopy is a plus, a solid background in basic computer programming (e.g. MATLAB, Python etc.) and/or image processing is also important to carry out the planned studies and analysis. We are looking for a highly motivated candidate with excellent communication and initiative skills, who is excited to conduct interdisciplinary studies and can team up with the various scientists with whom we are collaborating. We offer work environment that is strongly stimulating with state-of-the-art infrastructure and various facilities (check the [IMIT](#) and [CMFI](#) websites) which will provide the successful applicant with unique opportunities to develop a strong interdisciplinary portfolio in microbiology, microscopy, cell biology and biomechanics.

For further information about the position, please contact Effie Bastounis by e-mail at effie.bastounis@uni-tuebingen.de, and visit our website <https://www.bastounislab.org>. Applications with a short cover/motivation letter, CV/biosketch, diploma(s) and two contacts for references should be sent via email to effie.bastounis@uni-tuebingen.de.

The University aims to increase the proportion of women in research and teaching and urges suitably qualified women scientists to apply. Qualified international researchers are expressly invited to apply. Disabled persons with equal aptitude will be given preferential consideration.

