

The **Chair of Molecular Infection Biology II (Prof. Dr. Cynthia Sharma)** at the **Institute of Molecular Infection Biology**, Julius-Maximilians-University of Würzburg is offering a

## **PhD STUDENT position (f/m/d)**

### **“3D Tissue Models for Studying Infections by Gastrointestinal Pathogens”**

Applications are invited for a PhD student position at the Department of Molecular Infection Biology II (Prof. Cynthia Sharma) in Würzburg, Germany. Our group studies mechanisms of gene regulation in stress response and virulence control of the human pathogens *Helicobacter pylori* and *Campylobacter jejuni*. We employ diverse deep-sequencing based approaches for transcriptome and translome analyses and to identify novel virulence factors and regulators. We are especially interested in mechanisms of RNA-based regulation via small RNAs, RNA binding proteins and/or bacterial CRISPR-Cas systems.

This PhD project within the **DFG Research Training Group GRK2157 “3D-Infect”** ([www.uni-wuerzburg.de/grk2157/startseite](http://www.uni-wuerzburg.de/grk2157/startseite)) will focus on the development and application of novel human 3D *in-vitro* infection models based on tissue engineering to study host-pathogen interactions during *C. jejuni* or *H. pylori* infections. Deep-sequencing based approaches (e.g. RNA-seq, Tn-seq) will be employed to monitor gene expression changes of pathogen and host during the course of infection and to identify genes, including sRNA regulators, that are relevant for infection. The functions and underlying molecular mechanisms of sRNAs will be studied using molecular biology, genetics and biochemical approaches. For further information, please see for example also our following recent publications: Alzheimer et al, 2020, *PLoS Pathogens*, PMID: 32069333; Svensson & Sharma, 2021, *eLife*, PMID: 34843430; Jiao et al., 2021, *Science*, PMID: 33906967; Pernitzsch et al, 2021, *Nature Communications*, PMID: 34290242, Eisenbart et al., 2020, *Molecular Cell*, PMID: 33002424 or our website: [www.imib-wuerzburg.de/research/sharma/](http://www.imib-wuerzburg.de/research/sharma/).

Potential projects for this PhD student position are as follows:

- Exploring virulence factors and regulators of the foodborne pathogen *C. jejuni* in human 3D tissue infection models.
- Establishment of a gastric 3D tissue model to study *H. pylori* colonization factors

Applicants should have a MSc or Diplom degree and a strong background in either microbiology, molecular biology, biochemistry, infection biology, bioinformatics or statistics. For informal inquiries contact Prof. Dr. Cynthia M. Sharma ([sharma.ngs@uni-wuerzburg.de](mailto:sharma.ngs@uni-wuerzburg.de)).

We welcome applications from suitably qualified people from all sections of the community regardless of race, gender or disability. Preference will be given to severely handicapped persons in case of otherwise equal aptitude. Part time employment is possible. Positions are initially limited to 1 year with the possibility of extension. Salary is based on TV-L.

Please send your application including a letter of motivation, CV and publication list, copies of relevant documents, and contact information of 2-3 academic references as a **single PDF-file** until **March 31<sup>st</sup>, 2022** via email to [petra.thomas@uni-wuerzburg.de](mailto:petra.thomas@uni-wuerzburg.de) .