

The Institute of Molecular Infection Biology, University of Würzburg is offering

## **Two PhD Student Positions (f/m/d) in Microbiology/Molecular Biology/ Bioinformatics**

### **“Studying gene regulation in bacterial pathogens at the single cell level using microfluidics and live-cell microscopy”**

We are looking for PhD students in the field of Microbiology / Molecular Biology / Bioinformatics to study RNA-based regulation in bacterial pathogens at the single cell level in real time. Successful applicants will work in an interdisciplinary and international team at the Department of Molecular Infection Biology II (Prof. Dr. Cynthia Sharma) in Würzburg, Germany.

So far, very little is known about the dynamics and single-cell heterogeneity of post-transcriptional regulation using small RNAs and RNA-binding proteins. Thus, in our **MOMENTUM** project funded by the VolkswagenStiftung we will use **microfluidic systems coupled with time-lapse microscopy** to monitor bacterial gene expression and stress responses in live cells in real time.

Research in our group focuses on gene regulation in stress response and virulence control of the human pathogens *Helicobacter pylori* and *Campylobacter jejuni*. For further information on our research, please see also our recent publications: König et al., 2024, *Nature Communications* (PMID: 38897989), Jiao et al., 2021, *Science* (PMID: 33906967), Pernitzsch et al., 2021, *Nature Communications* (PMID: 34290242), Eisenbart et al., 2020, *Molecular Cell* (PMID: 33002424), or website: [www.uni-wuerzburg.de/imib/forschung/sharma](http://www.uni-wuerzburg.de/imib/forschung/sharma).

#### **Successful candidates will:**

- Set up microfluidic devices combined with time-lapse microscopy
- Monitor single-cell parameters and heterogeneity of RNA-based regulation in live bacterial cells
- Develop data analysis tools for single-cell parameters and time-resolved reporter expression data

#### **Applicants should have the following qualifications:**

- M.Sc. degree or equivalent life sciences, natural sciences, mathematics, physics, or engineering
- Research interest in RNA biology/molecular biology/microbiology, microscopy/image-based data analysis, biotechnology/bioengineering, or bioinformatics/computer sciences
- Curiosity and drive to independently set up new methods
- Strong written and spoken English skills, high self-motivation, dedication to perform excellent research

#### **We offer:**

- An interdisciplinary and international research team
- An open-minded and collaborative work environment with a strong focus on RNA and infection biology
- State-of-the-art infrastructure and cutting-edge technologies
- Diverse opportunities for further education, career development, and training at the JMU Würzburg

We welcome applications from all sections of the community regardless of race, gender, or disability. The University aims to increase the proportion of female employees. Thus, applications from qualified women are particularly welcome. Preference will be given to severely handicapped persons in case of otherwise equal aptitude. The position is available for one year with the possibility of extension. Salary is based on the pay scale for the public sector (TV-L).

Please send your application with reference **“PhD MOMENTUM”** including a letter of motivation, CV, and publication list, copies of relevant documents, and contact information of two academic references as a **single PDF-file** until **April 30th, 2025** via email to [petra.thomas@uni-wuerzburg.de](mailto:petra.thomas@uni-wuerzburg.de).



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