

The groups of Prof. Dr. Cynthia Sharma and Dr. Ana Rita Brochado at the Institute of Molecular Infection Biology and Biocenter at the JMU Würzburg are offering

PhD Student / Postdoctoral Researcher positions (f/m/d)

High-throughput approaches and machine learning for exploring bacterial stress response, virulence, and antibiotic sensitivity

Applications are invited for PhD student/postdoctoral researcher positions in the Sharma and Brochado groups in Würzburg. Successful candidates will work in an interdisciplinary team within our “StressRegNet” consortium between the groups of Cynthia Sharma (Chair of Molecular Infection Biology II), Ana Rita Brochado (Biocenter) and Christian Müller (Dept. of Statistics, LMU Munich). Our consortium aims to investigate how environmental signals trigger regulatory pathways and control adaptation to the host and to antibiotics in the food-borne pathogens *Campylobacter jejuni* and *Salmonella* Typhimurium.

As members of our interdisciplinary team, the candidates will apply molecular biology approaches combined with cutting-edge high-throughput technologies, and machine learning to acquire and analyse large datasets of temporal transcriptional responses of small RNAs across challenging environments. Our groups join expertise in RNA biology, bacterial pathogens, high-throughput screening, antibiotic resistance, and statistics/machine learning. In particular, the Sharma lab studies mechanisms of gene regulation in the human pathogens *Helicobacter pylori* and *C. jejuni* (Dugar et al, 2018, Molecular Cell; Alzheimer et al, 2020, PLoS Pathogens; Eisenbart et al, 2020, Molecular Cell). We employ diverse deep-sequencing based approaches (RNA-seq, RIP-seq, Ribo-seq, Tn-seq) for transcriptome/translatome analyses to identify novel virulence factors. The Brochado lab develops high-throughput and computational approaches to study antibiotic mode of action in gram-negative bacteria, with focus on molecular mechanisms of multi-drug therapies (Brochado et. al. Nature 2018). StressRegNet is part of the “bayresq.net” network, an initiative by the Bavarian Ministry of Sciences and Arts engaging several research groups in Bavaria to help fighting multi-resistant pathogens through digitalization (www.bayresq.net). The members of the network meet regularly to discuss and exchange ideas, giving the candidates an excellent networking opportunity.

Applicants should have a MSc or PhD degree (for postdoctoral candidates) and a strong background in either microbiology, molecular biology, biochemistry, infection biology, bioinformatics or statistics. We welcome successful **candidates driven by wet-lab or computational biology interests**. For informal inquiries please contact Prof. Dr. Cynthia Sharma (sharma.ngs@uni-wuerzburg.de), Website www.imib-wuerzburg.de/research/sharma) or Dr. Ana Rita Brochado (brochado.recruit@biozentrum.uni-wuerzburg.de), Website www.biozentrum.uni-wuerzburg.de/en/mikrobio/staff/dr-ana-rita-brochado).

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. Salary is based on TV-L.

Please send your application (Subject: StressRegNet positions) 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, 2021** via email to petra.thomas@uni-wuerzburg.de .

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