



The Cluster of Excellence "*Balance of the Microverse*" at the Friedrich Schiller University Jena, Germany, combines expertise in life, material, optical and computational sciences to elevate microbiome studies from descriptive to hypothesis-driven and functional analyses. Our core mission is to elucidate fundamental principles of the interactions and functions in microbial communities in diverse habitats ranging from oceans and groundwater to plant and human hosts. We aim to identify the shared characteristics of disturbed or polluted ecosystems as well as infectious diseases on the microbiome level, and develop strategies for their remediation by targeted interventions. Our full spectrum of expertise in the physical and life sciences will be leveraged to address these important issues in natural habitats as well as synthetic arenas in a collaborative manner. The affiliated early career program of the *Jena School for Microbial Communication* (JSMC) offers an ambitious, structured and interdisciplinary post-graduate training based on top-level fundamental research.

The research group of Dr. Thierry Siemen  
at the Cluster of Excellence *Balance of the  
Microverse* invites applications for a

### Doctoral Researcher Position (m/f/d)

to conduct research on the project

## The role of CD4+ Foxp3+ regulatory T cells for gut microbiome constitution: atherosclerosis and modulatory effects of physical exercise

Our laboratory is interested in the balance and dysbiosis of the gut microbiome and the possibility to treat our patients by rebalancing their gut microbiome to a healthy state. We aim to assess the influence of exercise on Tregs, the gut microbiome and the resulting atherosclerotic process. Little is known about the molecules produced by microorganisms to activate Tregs, how Tregs structure the microbiome and how changes in the microbiome lead to atherosclerosis development, specifically in light of the role of Tregs. Therefore, we wish to use atherosclerosis as the dysbiosis trigger, analyse microbiome changes and the predicted change of metabolites deduced from the genome sequences of microorganisms in a balanced microbiome compared to the dysbalanced microbiome. In doing so, we hope to identify factors that can serve as diagnostic markers or as therapeutic agents to rebalance the microbiome as well as revealing the causal effects of the dysbalanced microbiome on atherosclerosis.

#### Your responsibilities:

- Contribute to the development of project direction, as the project evolves.
- Produce high-quality written reports and draft papers.
- Present your results at local meetings and national and international conferences.
- Assist with training other researchers, including Masters' and undergraduate project students, where required.
- Assist with the teaching activities of the group where required.
- Contribute to maintaining the friendly, welcoming and collaborative environment within the group.

#### Your profile

- An MSc (or equivalent) in Molecular biology or related disciplines. Candidates in the final stages of obtaining their degree are also eligible to apply
- Desirable methodological skills: surgical procedures on rodents, experience in molecular biology, microbiology and/or biomedicine.



- Highly motivated individuals with an interest in joining one of the interdisciplinary research areas of the Microverse Cluster
- The ability to work creatively and independently towards developing your own research project
- An integrative and cooperative personality with enthusiasm for actively participating in the dynamic Microverse community
- English communication skills, both written and spoken

**We offer:**

- A highly communicative atmosphere within an energetic scientific network
- A comprehensive mentoring program and soft skill courses for early career researchers
- *Jena – City of Science*: a young and lively town with a vibrant local cultural agenda

The three and a half year full-time doctoral researcher position (65% TV-L E13) will be funded through the Excellence Strategy of the German federal and state governments or the Carl Zeiss Foundation. The Friedrich Schiller University Jena is an equal opportunity employer and part-time contracts can be discussed.

To promote gender equality in science, applications by woman are especially welcome. Candidates with severe disabilities will be given preference in the case of equal qualifications and suitability.

Applications in English should comprise a cover letter, a detailed curriculum vitae and copies of academic certificates. Please familiarize yourself with the currently available doctoral projects ([www.microverse-cluster.de](http://www.microverse-cluster.de)) and the application process as described in the Online Application Portal. Please submit your application via the JSMC Online Application Portal, under the vacancy ID **08/2021 by 3. August 2021**:

<https://apply.jsmc.uni-jena.de/>