Job advertisement

Vacancy ID: 26/2021
Closing date: 21 February 2022

FRIEDRICH-SCHILLER-
UNIVERSITÄT
JENA

Friedrich Schiller University is a traditional university with a strong research profile rooted in the heart of Germany. As a university covering all disciplines, it offers a wide range of subjects. Its research is focused on the areas Light—Life—Liberty. It is closely networked with non-research institutions, research companies and renowned cultural institutions. With around 18,000 students and more than 8,600 employees, the university plays a major role in shaping Jena's character as a cosmopolitan and future-oriented city.

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 Prof. Dr. Axel Brakhage
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

"Natural products shaping microbial communication (RaMiCo)"

commencing on 01.04.2022. A later start may be possible if desired. The position is initially limited to 3 and a half years. We offer a part-time position 65%.

The aim of this project is to characterize and detect with sophisticated optical methods natural products that are important molecules for communication between microorganisms and shaping of microbial consortia (microbiomes). At the same time many of them are important dugs like antibiotics.. In the project the doctoral researcher will collaborate with an expert on optical technologies in particular on Raman spectroscopy. Azalomycin F and other marginolactones are key drivers of interactions between the bacterium *Streptomyces rapamycinicus*, the fungus *Aspergillus nidulans* and the green algae *Chlamydomonas reinhardtii*, including the activation of the silent natural product gene clusters (PNAS 2009, 2011, ISME J 2020, PNAS 2021). The ecological functions of most natural produts remain obscure. For all compounds, the open questions are how they are released, transported through the environment and how they trigger the response in the recipient microorganisms? For application of Raman-based optical detection the doctoral researcher will generate overproducing strains by synthetic biology, to analyse the molecular regulation of the production of molecules but also the regulation triggered in the recipient cells.

Your responsibilities:

- (Co)-cultivation of microorganisms and their genetic manipulation (cloning, GFP etc.)
- Extraction and purification of natural products by HPLC
- Real-time monitoring of microbial communication
- 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 in Life Sciences (e.g. Microbiology, Biology, Biochemistry, Chemistry) or related discipline. Candidates in the final stages of obtaining their degree are also eligible to apply.
- Skills in microbiology and molecular biology, knowledge in separation techniques, including HPLC would , characterization of substances by LC-MS and NMR.
- Desired methodological skills: knowledge in and practical experience in optical spectroscopic be desirable but not essential.
- 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
- A family-friendly working environment with a variety of offers for families: University Family Office 'JUniFamilie' and flexible childcare ('JUniKinder);
- University health promotion and a wide range of university sports activities;
- Attractive fringe benefits, e.g. capital formation benefits (VL), Job Ticket (benefits for public transport), and an occupational pension (VBL)

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) 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 26/2021** by 21 February 2022:

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

Since all application documents will be duly destroyed after the recruitment process, we ask you to submit only copies of your documents.
For further information for applicants, please also refer to www4.uni-jena.de/stellenmarkt_hinweis.html (in German)
Please also note the information on the collection of personal data at www4.uni-jena.de/en/jobs_information_collecting_personal_data.html