HZI HELMHOLTZ Centre for Infection Research

Job advertisement no. 135/2025

The department of Microbial Immune Regulation, led by Prof. Dr. Till Strowig, at the Helmholtz Centre for Infection Research (HZI), is offering the position of a

Postdoc – Microbiome Research (f/m/d)

The Helmholtz Centre for Infection Research, based in Braunschweig, is a member of the Helmholtz Association and conducts top-level research on infectious diseases. Our scientists are developing novel methods and strategies to combat infectious diseases more quickly and effectively. Our shared objective is to develop innovative approaches to the prevention, diagnosis, and treatment of infectious diseases. The Helmholtz Biomedical Engineering initiative aims to foster new synergies by enhancing collaboration between Helmholtz Research Centres and Research Fields, while also engaging with partners from the applied and entrepreneurial sectors. It focuses on interdisciplinary innovations that deliver rapid solutions to medical challenges.

The research of our group aims to discover and characterise the specific ecological principles and factors that govern the assembly of the human gut microbiome and the bidirectional communication between the microbiome and the host. This communication influences the host's susceptibility to infectious diseases and inflammation in both mouse models and humans. To understand the effects of microbiota on the host, we use an interdisciplinary mix of sequencing-driven, microbiological, and immunological approaches on gnotobiotic mouse models and patient cohorts (e.g., El Mouali et al., Cell Host Microbe, 2024; Osbelt et al., Nature Microbiology, 2024; Osbelt et al., Cell Host & Microbe, 2021).

In order to strengthen our team for a Helmholtz Biomedical Engineering-funded research project, we are seeking highly motivated candidates who are interested in contributing to the development of innovative microfluidic systems for studying microbial communities (e.g., those found in the human gut). The successful candidate will work in an interdisciplinary team across three Helmholtz centres, each with complementary expertise in microfluidics technologies, imaging, AI-supported image analysis and innovative reporter systems. The scientist will set up a microfluidics-based imaging system at HZI, perform experiments in prototype systems, and provide critical feedback to collaborating engineers to optimise the system. The ultimate aim of the system is to provide critical insights into microbial ecology that can be translated into novel types of microbiome-centric medicines.

Responsibilities:

- Establish a microfluidic imaging setup to dynamically monitor microbial consortia
- Set up a microfluidic invasion assay to evaluate colonization resistance against pathogens
- Characterize metabolic profiles of candidate bacteria using cultivation- and modeling-based approaches
- Elucidate metabolic niches and inter-bacterial communication within defined synthetic microbial communities
- Identify the molecular mechanisms underlying community assembly and shifts
- Prepare scientific papers and presentations

Requirements:

- A completed university degree in natural sciences and a Ph.D. in microbiology, biology, bioengineering, biotechnology, biophysik or a related life/natural sciences field
- Experience with automated live-cell / time-lapse fluorescence microscopy or imaging and image analysis
- Excellent communication skills in English, both written and spoken
- Ability to work independently and collaboratively within a diverse, international team

- Willingness to participate in lab exchanges (up to 2 weeks at a time) with national partner labs
- High interest to explore translational research and microbiome-based innovation
- A structured, proactive, and communicative work style
- Creativity, resilience, and a strong drive to solve complex scientific problems

Advantageous for this position:

- Experience in microbiology
- Experience in establishing automated imaging workflows
- Experience with the maintenance of microscopes
- Experience working with microfluidic systems

We offer you:

- An attractive and varied job in a future-oriented research institute with an international environment at the Science Campus South in Braunschweig
- A state-of-the-art infrastructure and the latest technologies
- Flexible working hours, part-time models
- A corporate culture of appreciation and promotion of equal opportunities
- Extensive training and continuing education opportunities to develop professional knowledge and personal skills
- A family office to support family and career as well as childcare offers
- Interesting additional public service benefits
- Option of an additional employer subsidy for the job ticket

People with severe disabilities and equivalent professional qualifications who are suitable for the position are given preference. In order to protect your rights, we ask you to provide us with a clearly recognizable reference to the existence of a degree of severe disability in your cover letter or resume.

The HZI is actively committed to equality, diversity and integration. For this reason, the HZI pursues the goal of professional equality between women and men. The position is suitable for part-time work.

Starting date:	As soon as possible. The contract will be limited to 31.12.2028
Salary:	E13 TVöD Bund
Working time:	39 hours per week
Place of work:	Braunschweig
Probation period:	6 months
Published:	12.12.2025
Closing date:	11.01.2026

For further information, please contact Prof. Dr. Till Strowig, phone 0531 6181 4700, email: till.strowig@helmholtz-hzi.de.

How to apply:

When sending us your application documents, **please confirm** that you have read our privacy policy and that you agree to the processing of your personal data. Please use the text module in our privacy policy for this purpose. **Without these declarations we cannot consider or process your application** and will immediately delete any application documents already received after the application deadline.

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Please include a cover letter, resume, (employment) references, certificates, and (if available) work samples or reference projects with your application materials. Please refrain from sending a photo.

Please send your complete application, quoting the **reference number 135/2025**, to the Helmholtz Centre for Infection Research GmbH, Human Resources Department, Inhoffenstr. 7, 38124 Braunschweig, Germany or by e-mail. If you send your application in electronic form, please provide a **summary in one single (1) pdf document**.

We look forward to receiving your application!