

**Open position for a PhD student** (m/f/d) within the

**Collaborative Research Centre (CRC) 1371 Microbiome Signatures**  
Functional Relevance in the Digestive Tract

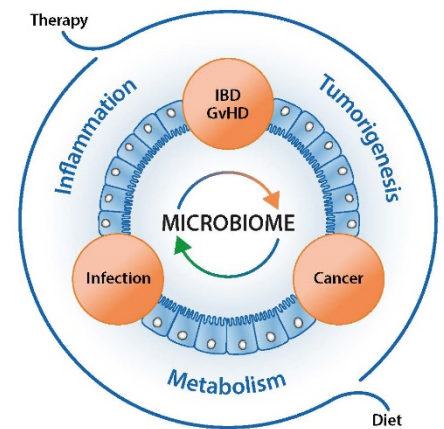
in **Computational Biology**

at the **Technical University of Munich**

(Campus Freising-Weihenstephan) within the

**Emmy Noether Group for Computational Microbiome Research**

starting **15.04.2023** (or as early as possible)



The gut microbiome plays a fundamental role in health and disease. CRC 1371 (Speaker Prof. Dr. Dirk Haller) focuses on the digestive tract and proposes an interdisciplinary approach to elucidate the functional relevance of microbiome signatures in the context of inflammation and cancer.

Within CRC 1371, the Integrated Research Training School (IRTG) provides a qualification program for PhD students containing excellent multidisciplinary training with tailor-made subject-based and soft skills courses, annual retreats, summer school, and a supervision concept.

More information on the IRTG, the research projects and principal investigators are available on the [CRC 1371 website](#).

## Job description

### *About us*

The Schirmer lab is part of the ZIEL - Institute for Food & Health at the Technical University of Munich and located in Freising-Weihenstephan. The research of our lab focuses on the human microbiome, especially gut microbes, and investigates potential mechanisms of host-microbial interactions in health and disease. We are particularly interested in the role of the microbiome in inflammatory and auto-immune diseases. To address these questions, we use integrated multi-omics analyses (metagenomics, metatranscriptomics and metabolomics) to identify disease-associated bacterial strains and their metabolites.

### *Candidate profile*

We are looking for an outstanding highly-motivated PhD candidate with the ambition and commitment to achieve excellence in a highly productive environment. The activities surrounding this position will be part of the CRC and will focus on the role of *Desulfovibrio spp.* in inflammatory bowel disease and colorectal cancer. The work of the PhD candidate will include computational analysis of multi-omics data generated from clinical samples and bacterial isolates. This will include applying, conceiving and developing algorithms and analytical approaches for these datasets, interpreting the data within the context of the study and developing testable hypotheses that can be subsequently validated in the lab.

### *Tasks*

- Analyzing large multi-omics datasets and interpret results
- Perform comparative microbial genomics, transcriptional and metabolic analyses
- Develop, enhance, validate, and maintain current and new bioinformatic pipelines
- Lead and contribute to the generation of publications, grant applications, and protocols
- Network with our national and international collaborators and present our work at conferences and scientific meetings

### *Requirements*

- M.Sc. or diploma in bioinformatics, computational biology, computer science, statistics or a relevant field
- Experience with scientific programming (such as R, Bash, Python), data analyses and data visualization, fluency in Unix
- Strong interest in human microbiome research
- Knowledge or experience with analyzing complex datasets (e.g., next-generation sequencing or metabolomics data), bioinformatic tools, statistical methods or high-performance computing is an advantage
- Excellent communication skills, and proficiency in English (oral and written)
- Self-motivated and enthusiastic to work in an interactive, international research environment, ability to work independently and as part of a team
- Excellent organization and time management skills required

### *Our offer*

We offer you a cutting-edge, interdisciplinary research project using data from state-of-the-art multi-omics technologies in a fruitful, collaborative research environment. The successful candidate will be part of a multi-disciplinary team and will work closely with other computational and experimental researchers and our clinical collaborators.

### **Salary and duration**

Payment is according to the wage agreement of the civil service TV-L, 65% of E13 for PhD student positions. Please note that there are no additional postgraduate degree fees required for international candidates.

### **Application deadline**

Please send your full application as a PDF by **April 11<sup>th</sup>, 2023** to [melanie.schirmer@tum.de](mailto:melanie.schirmer@tum.de) or by mail (address below). Applications will be considered on an ongoing basis until the deadline.

### **Contact person**

Technical University of Munich, **Dr. Melanie Schirmer**, Emmy Noether Group,  
Gregor-Mendel-Str. 2, 85354 Freising  
Tel. +49 8161 71 2343, [www.ziel.tum.de/melanie-schirmer](http://www.ziel.tum.de/melanie-schirmer)

## Application

Applicants are asked to send one pdf file to the contact person. The file should include

1. cover letter (please indicate a preferred starting date and why you are interested in joining the Schirmer lab),
2. curriculum vitae,
3. description of research experience and interests (1-2 pages),
4. contact information for at least two references,
5. list of publications with link for downloading (do not include your publications in the pdf file).

As an equal opportunity and affirmative action employer, TUM explicitly encourages applications from women as well as from all others who would bring additional diversity dimensions to the university's research and teaching strategies. Preference will be given to disabled candidates with essentially the same qualifications.

### **Data Protection Information:**

When you apply for a position with the Technical University of Munich (TUM), you are submitting personal information. With regards to personal information, please take note of the [Datenschutzhinweise gemäß Art. 13 Datenschutz-Grundverordnung \(DSGVO\) zur Erhebung und Verarbeitung von personenbezogenen Daten im Rahmen Ihrer Bewerbung](#) (data protection information on collecting and processing personal data contained in your application in accordance with Art. 13 of the General Data Protection Regulation (GDPR)). By submitting your application, you confirm that you have acknowledged the above data protection information of TUM.)