



Exciting, ERC funded Postdoc and PhD Opportunities in Systems Biology and Biochemistry of Fungal infections

Why are fungal infections an increasing problem, and what can we do against fungal pathogens becoming resistant and tolerant against antimicrobials?

Attractive for prospective PhD students and Postdocs with a background in Biochemistry, Genetics, Molecular Biology, Systems Biology, or Computational Biology, and Proteomics.

Project descriptions: Resilience to antimicrobials is an increasing global problem. One underexplored area are fungal infections, where strains such as the prominent human pathogen *Candida albicans* often become tolerant rather than resistant, leading to treatment failures. We are seeking passionate Postdocs and PhD students to join our team and explore the mechanisms that enable *Candida albicans* to tolerate and overcome antifungal drugs, as well as investigate how they contribute to its pathogenicity. The project can also be approached from a more technical perspective, focusing on the development of our mass spectrometry-based -omics methods. Available interdisciplinary projects are based on our recent advancements in high-throughput proteomics, and newly generated libraries / natural isolate collections that now allow the systematic study of fungal phenotypes and their biochemistry in controlled systems at scale.

Research environment: We are looking for candidates for multiple participating laboratories including the group of **Markus Ralser at Charité**, the Junior Group of **Johannes Hartl at the Berlin Institute of Health at Charité**, our close collaboration with the lab of **Judy Berman at Tel Aviv University**, and **Martin Vingron at the Max Planck Institute for Molecular Genetics**. The main host will be the Institute of Biochemistry at Charité - Universitätsmedizin Berlin, Germany. Located in the heart of Berlin, Charité is one of Europe's largest and most research-intensive medical universities. The candidates will have access to cutting edge technologies, and be trained within an interdisciplinary research team consisting of biologists, data analysts, and analytical chemists with strong support from experienced technical staff. In our groups, we are particularly interested in gaining a functional understanding of microbial and human metabolism, its regulation and dynamics, and its impact on disease. Ultimately, our goal is to use this knowledge to create innovative therapies and diagnostics. We mainly work with microbes, *in vitro* cell cultures, and human biofluids such as serum. We have a strong focus on mass spectrometry-based -omics assays, particularly metabolomics and proteomics, which we routinely integrate with genomics data and phenotypic assays using various bioinformatics approaches. This data-driven approach is further complemented through molecular biology methods such as gain- or loss-of function assays.

Your profile:

Essential:

- Master's degree in natural sciences (PhD positions), PhD in the natural sciences (Postdoc positions)
- Available projects are of multidisciplinary character, and are thus ideal for candidates with a background in either microbiology, molecular biology, biochemistry, proteomics/metabolomics, systems biology, or computational biology, who want to expand their background into one of the related disciplines .
- The ability to work independently and collaboratively in a multidisciplinary team
- Strong work ethic

Highly beneficial:

- Hands on experience in wet-lab or computational biology
- For wet lab scientists: Proficiency in data analysis or a strong motivation to obtain the required skills (e.g. basic programming in R, Python)
- For computational biologists: Hands-on experience in the analysis of large biological datasets, or a strong motivation to obtain the required skills
- For Analytical Scientists: Proficiency in proteomics or metabolomics, or a strong motivation to obtain the required skills
- Excellent communication skills in English

Considered a plus:

- Experience with systems biology approaches and high-throughput methodologies
- Experience with HPLC, mass-spectrometry, and -omics methods

Contact. Please submit your interest preferably in one document, your CV, a cover letter, and contact information for references to "bewerbungen-biochemie@charite.de". For any inquiries, please contact Markus Ralser (markus.ralser@charite.de, for postdoc applications) or Johannes Hartl (johannes.hartl@charite.de, for PhD applications)