BIOZENTRUM
University of Basel
The Center for
Molecular Life Sciences

NCCR AntiResist

Postdoctoral Researcher in Infectious Diseases and Antibiotic Tolerance,
Laboratory of Prof. Dirk Bumann (100%, Summer 2022)

The Biozentrum of the University of Basel is one of the leading institutes worldwide for molecular and biomedical basic research and teaching. It is home to 32 research groups with scientists from over 50 countries. Research at the Biozentrum focuses on the areas of Infection Biology, Neurobiology, Structural Biology & Biophysics, Cell Growth & Development, and Computational Biology. With its more than 550 employees, the Biozentrum is the largest department at the University of Basel's Faculty of Science.

Description:
Infectious diseases are a major worldwide health concern. One particularly important problem is the co-existence of diverse pathogen subsets in the same infected tissue. Some subsets are in a special physiological state that makes them refractory against antibiotics ("tolerance") while others are successfully killed by host immunity. Although many labs investigate the problem of pathogen heterogeneity in laboratory models, mechanisms that operate in host tissues remain largely unknown and probably differ markedly from those in vitro. We develop and apply novel approaches in single-cell biology, microbial and mouse genetics, reporter strains, flow cytometry, proteomics, multiplex immunohistochemistry, and whole-organ tomography to address this highly relevant issue (e.g., Cell 2014; Cell Host&Microbe 2014, 2015; Nat Microbiol 2017, Science 2019, PNAS 2021). We collaborate with multi-national groups from academia, hospitals, and industry.

Your responsibilities are:
Our goal is to identify host and bacterial mechanisms that result in divergent fates of individual bacteria in specific tissue microenvironments. We will use biosensors bacteria, flow cytometry sorting, proteomics and advanced in vivo imaging.

Your Profile:
PhD in one of the following disciplines: biophysics, chemistry, physics, microbiology, biochemistry. You have a deep interest in infectious diseases and preferentially some hands-on experience in advanced microscopy, image analysis, or single-cell biology.

We offer:
Our multidisciplinary group includes microbiologists, biochemists, chemists, pharmacologists, and software engineers with expertise in proteomics, multi-color high-speed FACS sorting, confocal microscopy, whole-organ serial two-photon tomography, microbial genetics, and *in silico* modeling. We also have excellent support from core facilities with expert staff and state-of-the art equipment (including Orbitrap Exploris and Eclipse mass spectrometers; FACSAria Fusion, FACS Fortessa; TissueCyte 1000; Zeiss LSM 800 Airyscan and several spinning-disc microscopes).

How to Apply:
Please send a pdf-file containing your CV, letter of motivation, and contact info for three reference letters to bumannstelle@unibas.ch. Applications will be reviewed on a rolling basis.

13.04.2022