

MASTER STUDENT IN MICROBIOLOGY 100%

“Linking genes, bacterial behaviours and clinical outcomes in *Pseudomonas aeruginosa* infections”

Project Background

We broadly understand how antibiotics inhibit bacterial growth and how bacteria overcome growth restriction (drug resistance). Much less is known about bacterial killing. How do bacteria survive a normally deadly treatment? Are these bacteria responsible for treatment failures during infection? Can we target these cells with novel therapies? We are working at the interface of genomics, experimental microbiology and patient care to tackle these questions. If you are curious and motivated, get in touch with us!

Your Position

You will work with *Pseudomonas aeruginosa* isolates obtained from over 50 clinical centres in the US and characterise their behaviour using traditional approaches and novel tools such as robotics and Antimicrobial Single-Cell Testing (ASCT). ASCT is a high-content live imaging technology recently developed in our lab that allows simultaneous tracking of millions of individual bacteria. Together with Santiago Muniz (Postdoc, <https://github.com/phisaniti>), you will automatically analyse time-lapse images to reveal single bacterial behaviours. You will use whole-genome sequencing to identify molecular mechanisms underlying these bacterial behaviours and use patient data to reveal their clinical relevance. The team will support you and you will collaborate with national and international research groups (Urs Jenal, Biozentrum, Basel and Josie Bryant, Wellcome Sanger Institute, Cambridge, UK).

Your Profile

We are looking for a passionate student who is eager to get a better understanding of bacterial strategies overcoming antibiotic treatment. We encourage applicants who are highly self-motivated, have a gettingthings-done attitude, and have the ability to work well in an interdisciplinary environment. Experience in microbiology techniques is beneficial but not essential. All applicants need to be fluent in English.

We Offer You

We offer an independent research project and interdisciplinary training in a young, motivated research team. You will work in a dynamic research environment with state-of-the-art research facilities and enthusiastic colleagues from different nationalities and scientific backgrounds. We encourage participation in seminars and a presentation at least at one international scientific meeting. The anticipated starting date is mid-2024.

Application/Contact

Please send your complete application documents in one PDF, including a motivation letter, a CV and at least one reference to lucas.boeck@unibas.ch.