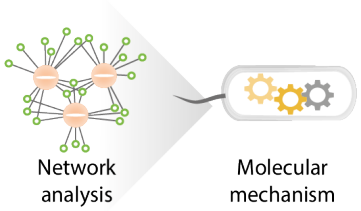
Hector Fellow Academy

Systems biology approach for elucidating bacterial revival after antibiotic treatment

Project description

Resistance of bacterial pathogens to antibiotics is a serious threat to global health, with a predicted death toll of at least 2.4 billion people worldwide in the next 30 years, and costs up to $US3.5 billion per year. New solutions to fight antimicrobial resistance are imperative, both to rescue old antibiotics and also to undermine resistance development to newly discovered ones. Antibiotic tolerance – a transient physiological state where bacteria can tolerate antibiotics without being resistant – is increasingly associated with the raise of resistance. Tolerant bacteria survive antibiotic treatment, and once the antibiotic is removed they are able to resume growth, thus leading to relapsing infections. The aim of this project is to elucidate molecular mechanisms of bacterial revival of the enteric pathogen *Salmonella Typhimurium* after antibiotic treatment using systems biology approaches. This project is an excellent opportunity for students who want to develop their computational skills in tight combination with experiments in bacterial genetics and physiology.



We are a dynamic, highly collaborative, multidisciplinary team with access to cutting-edge robotic platforms, thus our lab offers the perfect environment for such projects. We welcome applications from highly motivated students eager to explore exciting and innovative ideas. Your background can be from broad disciplines ranging from Biology to Computer Science. Don't hesitate to get in touch if you want to find out more. In fact, you are encouraged to do so!

Keywords

Pathogenic Bacteria, Antibiotics, Genomics, Systems Biology, High-throughput Screening

Entry requirements

MSc. Degree in Biotechnology, Bioinformatics, Biology, Molecular Biology, Computer Science or similar

Location

Chair of Microbiology, University of Würzburg, Germany

Starting date

September 2021 (flexible)

Hector Fellow Academy
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Interdisciplinary Network for Cutting-Edge Research

Hector Fellow Academy

Funding

limited to 3 years

How to apply

Please apply via the HFA application portal.

The Hector Research Career Development Awardees will arrange interviews (via skype or if feasible in-person) with the most promising applicants. The final candidates will be invited for a personal presentation on July 8, 2021 in Bremen (Germany). The final decisions will be announced by August 2021.

Application Deadline

March 31st, 2021

Enquiries

For further details about the project, please contact the Hector Research Career Development Awardee at: anarita.brochado@uni-wuerzburg.de

For questions related to making your application, please contact Hector Fellow Academy Office: application@hector-fellow-academy.de or www.hector-fellow-academy.de

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