

PhD position (m/f) in Experimental Evolution

Institute for Biological Physics

Foto: Thomas Josek

With approximately 49.000 students, the University of Cologne is one of the largest universities in Germany and ranks among the Excellence Universities. It employs over 600 professors and 7,000 academic and non-academic staff.

Our research: Horizontal gene transfer can speed up adaptive evolution of bacteria; in particular, it is involved in acquisition of antibiotic resistance. At the molecular scale, our lab focuses both on the molecular mechanism of bacterial transformation (a form of horizontal gene transfer). At the population level, we develop methods for quantifying its costs and benefits during adaptive evolution. To this end, biologists and physicists work in close collaboration.

The project: The CRC 1310 of the German Science Foundation (DFG), will address *Predictability in Evolution*. The specific project will focus on the question how horizontal gene transfer affects the fitness of bacteria during adaptation to novel environments. In close collaboration with theorists (Lässig group), we aim at predicting effects of gene transfer on the rate of evolution. To this end, a massively parallel laboratory evolution setup will be developed.

YOUR TASKS

- » experimental evolution
- » molecular biology, in particular design and generation of bacterial mutant strains
- » high-throughput techniques for laboratory evolution (liquid-handling platform, FACS)
- » whole genome sequencing, RNSseq, and analysis in collaboration with bioinformatics facility
- » single cell analysis and fluorescence microscopy
- » developing and planning research projects

YOUR PROFILE

- » M.Sc. in biology or comparable
- » Skills in molecular cloning and strong interest in genomics are mandatory.
- » Experience in molecular microbiology, evolutionary biology, or biophysics are beneficial but not essential.
- » Applicants should be highly motivated, creative and independent individuals and have an excellent academic record.

WE OFFER YOU

- » The PhD student will have the opportunity to join the Graduate School for Biological Science at the University of Cologne (<http://www.gs-biosciences.uni-koeln.de>).
- » a diverse and fair working environment
- » support in reconciling work and family life
- » flexible working time models
- » extensive advanced training opportunities
- » occupational health management offers
- » local transport ticket at a discount for UoC employees

The position is available from 01.05.2019 on a parttime basis (65%). It is limited to 24 months initially. Possibility for extension is given. If the applicant meets the relevant wage requirements and personal qualifications, the salary is based on remuneration group 13 TV-L of the pay scale for the German public sector.

The University of Cologne promotes equal opportunities and diversity in its employment relations. Women are expressly encouraged to apply and given priority in accordance with the Equal Opportunities Act of North Rhine-Westphalia (Landesgleichstellungsgesetz – LGG NRW). We expressly welcome applications from individuals with severe disabilities or people of equivalent status. Severely disabled applicants of equal merit and qualifications will be given priority.

To apply for the position, please send a cover letter, a recent CV, a summary of previous accomplishments as well as an outline of research interests, and contact information for three references including certificates with the reference number 1712-15 to „berenike.maier@uni-koeln.de“ The application deadline is 15.02.2019. Applications received after this deadline can be considered after the position is filled. It is mandatory that you visit Cologne for an interview.