



UNIVERSITY  
OF COLOGNE

Faculty of Mathematics and Natural Sciences

## Postdoc in Biological Physics (f/m/x)

### Institute for Biological Physics



We are one of the largest and oldest universities in Europe and one of the most important employers in our region. Our broad range of subjects, the dynamic development of our main research areas and our central location in Cologne make us attractive for students and researchers from around the world. We offer a wide range of career opportunities in science, technology, and administration.

Horizontal gene transfer shapes bacterial evolution and is an important factor in the development of antibiotic resistance. The researchers in the Maier group study gene transfer by combining tools from physics, microbiology and laboratory evolution. This research is part of the Collaborative Research Centre 1310 'Predictability in Evolution' and focuses on fitness effects of cross-species gene transfer. This project aims at understanding the evolution of multidrug resistance in model and ESKAPE bacteria through horizontal gene transfer.

#### YOUR TASKS

- » Develop a microscopy approach for imaging of horizontal gene transfer in model bacteria and ESKAPE species
- » Characterize genome dynamics and fitness effects of horizontal gene transfer using whole genome sequencing and high-throughput methods
- » Replay evolution of multidrug resistance by gene transfer between different clinical isolates in collaboration with the university hospital
- » Employ and improve data analysis programmes

#### YOUR PROFILE

- » Excellent MSc and PhD degrees in physics, life sciences or a related field
- » Strong interest in interdisciplinary research
- » Expertise in at least one of the following fields: biological physics, advanced microscopy, molecular biology of bacterial systems, experimental evolution including genome analysis
- » Strong communication skills are essential
- » Applicants should be highly motivated, independent and able to think critically

#### WE OFFER

- » An interactive and supportive research environment
- » A diverse working environment with equal opportunities
- » Support in balancing work and family life
- » Flexible working time models
- » Extensive advanced training opportunities
- » Occupational health management offers

The University of Cologne promotes equal opportunities and diversity. Women will be considered preferentially in accordance with the Equal Opportunities Act of North Rhine-Westphalia (Landesgleichstellungsgesetz – LGG NRW). We also expressly welcome applications from all suitable candidates regardless of their gender, nationality, ethnic and social origin, religion, disability, age, sexual orientation and identity.

The position is soon as possible on a full-time basis (39,83 hours per week). The position is to be filled for a fixed term until 31 March 2027 with the possibility of an extension. If the applicant meets the relevant wage requirements and personal qualifications, the salary will be based on remuneration group I3 TV-L of the pay scale for the German public sector.

Please apply online with proof of the required qualifications without a photo under: <https://jobportal.uni-koeln.de>. The reference number is Wiss2501-22.

The application deadline is 21 February 2025.

For further inquiries, please contact Christina Wetzels ([c.wetzels@uni-koeln.de](mailto:c.wetzels@uni-koeln.de)) and take a look at our [FAQs](#).