

## PhD position in bacterial cell biology at Humboldt-Universität zu Berlin

### Background/objectives:

The Humboldt-Universität zu Berlin is one of eleven German universities that have been awarded the 'University of Excellence' status since 2012. Located at the Institute of Biology, our research group investigates fundamental molecular mechanisms in bacterial cell biology.

The model system of our research is a remarkably complex, self-assembling nanomachine: the bacterial flagellum of *Salmonella enterica*. Flagella mediate motility of *Salmonella* and are by far the most prominent extracellular structure known in bacteria. We use a combination of genetic engineering, biochemistry and quantitative fluorescent microscopy techniques to understand the genetic regulation, self-assembly and protein export mechanisms of this fascinating nanomachine [1-4].

In a consortium funded by the VolkswagenStiftung, we aim to elucidate fundamental principles of cell decision-making according to their intrinsic programming and in response to microenvironmental cues.

In this PhD project, the selected candidate will test cell decision-making theory predictions in the context of phenotypic plasticity of flagella formation during bacterial cell division.

### Requirements:

- Master's / Diploma degree in biology, bioinformatics, biotechnology, life sciences or related fields
- Experience in microbiology, microscopy, bioinformatics and/or bacterial genetics will be considered as an advantage
- Knowledge of a scripting language and Python is a plus
- Ability to work independently and as part of an international team
- Excellent English communication skills (written and spoken)

### Position:

The position (65%, TV-L E13) is available immediately and funded for 36 months with the possibility of extension after evaluation. The Humboldt-Universität zu Berlin is an equal opportunity employer and welcomes the application of qualified female scientists. Equally qualified applicants with disabilities will be given preference. Applicants with migration background are particularly welcomed.

### Application:

Qualified applicants should send their curriculum vitae, including a letter of motivation, a statement of research interests and the names of previous supervisors/referees, in a **single PDF** document until **July 31st, 2020** to [marc.erhardt@hu-berlin.de](mailto:marc.erhardt@hu-berlin.de) (reference number **DR/049/20**).

Please visit our website [www.hu-berlin.de/stellenangebote](http://www.hu-berlin.de/stellenangebote), which gives you access to the legally binding German version.

[1] Horstmann, J. A. et al. Methylation of *Salmonella Typhimurium* flagella promotes bacterial adhesion and host cell invasion. *Nature Communications* **11**, 2013 (2020) [doi].

[2] Spöring, I. et al. Hook length of the bacterial flagellum is optimized for maximal stability of the flagellar bundle. *PLoS Biol* **16**, e2006989 (2018) [doi].

[3] Renault, T. T. et al. Bacterial flagella grow through an injection-diffusion mechanism. *Elife* **6**, e23136 (2017) [doi].

[4] Fabiani, F. D. et al. A flagellum-specific chaperone facilitates assembly of the core type III export apparatus of the bacterial flagellum. *PLoS Biol* **15**, e2002267 (2017) [doi].