Freie Universitaet Berlin, Germany
Open PhD position: Damage, immune defence and pathogen virulence evolution
Application deadline: 30th March 2020

The Evolution and Ecology of Insect Defences group at the Institute of Biology, Freie Universitaet (FU) Berlin, Germany, would like to invite applications for a German Research Foundation (DFG) funded **doctoral candidate position (TV-L E13, 65%) for the research project: "Damage, immune defence and pathogen virulence evolution: From the wild to the lab**". The position is fixed-term and available for 4 years and it will start in June 2020, or as soon as possible thereafter.

Project background
Our research lies in the field of eco-evo-immunology (https://armitagelab.com/). To fully understand immune defence variation and function it is essential to consider the ecological context in which defences are used and the evolutionary pressures placed on them. Much of our extensive knowledge is from carefully controlled laboratory-based studies, which is quite different from the complex environments under which the defences have evolved. Given rapid adaptation rates to lab conditions in short-lived insects, it is relevant to connect insight from the lab with that from wild organisms. To address this, in this project, the successful candidate will sample flies (*Drosophila melanogaster*) from the wild and examine their "natural state", in terms of the degree of wounding that they have been subjected to and their cuticular microbiota. The latter will be identified and quantified using e.g. 16S rRNA metabarcoding. They will also ask how immune defences of wild- and lab-bred *D. melanogaster* differ in terms of resistance to bacterial pathogens, and whether their associated cuticular microbiota affect the virulence evolution of bacterial pathogens. A mathematical/statistical analysis will provide an understanding of the drivers of the virulence data. The results will give insight into variation in the natural selection pressures placed upon the host, and inform us about how they affect insect defences and pathogen virulence evolution.

The position is part of the "Insect Infect" Research Unit funded by the DFG. The Research Unit will give the opportunity for the candidate to interact with a diverse group of doctoral candidates, post-docs and PIs, to obtain methodological training, to collaborate with theoreticians, and to receive bioinformatics support. There will be yearly retreats for Research Unit members and access to a graduate training programme.

Requirements
A completed University Master's degree in biology.

Desirable

- We would like applications from enthusiastic and highly motivated students with a background/strong interest in evolutionary ecology
- Laboratory experience with bacteria and insects.
- Good basic knowledge of statistics and experimental design.
- Proficient in spoken and written English.
- Good team-working and communication skills.
- Ability to work independently.

- A European driving licence would be an advantage.
- Experience in collecting insects from the wild.
- Experience in molecular biology.
- Completed projects/internships on topics relevant to the research area are advantageous.

How to apply
Applications should be written in English and include the following documents: (1) a cover letter detailing your suitability and motivation to join the research project (no more than one page), (2) a CV including details of your research experience, the abstract of your MSc thesis, and any publications, (3) the names of 2-3 potential referees. Please send the application as one single PDF document, to sophie.armitage@fu-berlin.de, with the following identifier in the subject field: WiMi InsectInfect_SA.

The deadline for applications is the **30th March 2020**. Interviews will take place as soon as possible after this date. The working language of the group is English.
For further information, please contact Sophie Armitage.