

Job Announcement

Post-doc position (3+1 years) in the NEURONEX collaboration at the Institute for Evolutionary Biology and Ecology

Bonn, 10. Februar 2021

The workgroup of Prof. Blanke at the Institute for Evolutionary Biology and Ecology would like to strengthen its team with an interdisciplinary thinking applicant, ideally with a background in neurophysiology, and/or biomechanics, and/or imaging and with a doctoral degree either in the Biological Sciences, Engineering Sciences, or Computer Sciences. A certain affinity to a programming language would be highly beneficial but is not mandatory.

The applicant will work within the international NEURONEX collaboration, an initiative which aims to explore the communication, coordination, and control in neuromechanical systems of animals. Neuronex is an interdisciplinary research group consisting of modelers, engineers, and experimentalists (<https://neuronex.org/projects/23>). Within the subproject, the applicant will study how information about leg states and leg movements is encoded by sensory organs in the fruitfly *Drosophila*. Sensors such as campaniform sensilla (CS) are arranged in characteristic fields along each leg in fruit flies. These CS fields vary in exact location and arrangement between individuals. It is not yet understood how whole CS fields encode information about leg states and how robust their encoding is to changes in sensor number and placement. As a first step to gain a deeper understanding of this sensor system, the work of the applicant therefore involves the quantification of location and arrangement of CS fields in a population of fruitflies, ideally by semi-automatic image analysis routines which have to be developed by the applicant in collaboration with the PI. Given neurophysiological data from *Drosophila*-oriented projects of other Neuronex members, the applicant will then model how single CS act together to encode leg state information. The results of this subproject will have a high relevance for the design of control circuits of robots (other Neuronex members) and will aid our understanding of the evolution of sensory systems in animals.

The project is of course open to own ideas of the applicant which can be mentioned in the motivation letter (see below). Given the outline above, it can be expected that research involves the use of histological methods, TEM, μ CT, and quantitative image analysis via self-developed scripts. The project can also have a neurophysiological component via collaboration within Neuronex.

The position is paid according to the provisions of the collective agreement for the public service of the Länder (TV-L) within pay group 13 (100%). Experience levels are taken into account. Initially, the duration of the contract is 36 months if the requirements stated above are met. After a successful evaluation of the project, the duration of the contract can be extended for another 12 months.

Apart from a full CV (without photograph and without date of birth; including own publications and contact details of 2 referees), applications should contain a letter of motivation (2 pages or less) detailing your previous research experience. Please also state up to three publications from other workgroups which have substantially influenced your scientific thinking.

While detailing your future research, please take into account that you can plan with a considerable research budget. Details will be communicated upon request, inquiries can be made with Alexander Blanke (blanke@uni-bonn.de).

The application (as a **single** pdf file) should be sent to the secretary of the IEZ (secretary@evolution.uni-bonn.de) with the reference "**NEURONEX**". The **deadline for application is April 30th 2021**, the estimated **start date would be July/August 2021**. If no suitable candidate is found, the position is open beyond these dates. We regret that the state of North Rhine-Westphalia cannot cover application and travel costs.

Equal opportunities are important to us. The University of Bonn is committed to diversity and equal opportunity. It is certified as a family-friendly university and aims to increase the proportion of women employed in areas where women are under-represented and to promote their careers. To that end, it urges women with relevant qualifications to apply. Applications will be handled in accordance with the Landesgleichstellungsgesetz (State Equality Act). Applications from suitable candidates with a certified disability or equivalent status are particularly welcome.

We look forward to reading your application!

Prof. Dr. Alexander Blanke
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