PhD position on 'From sensory perception to action: Active sensing in insects'

The International Max Planck Research School for Organismal Biology is a joint cooperation between the Max Planck Institute for Ornithology and the Department of Biology at the University of Konstanz. The Neurobiology lab with Dr. Einat Couzin-Fuchs at the University of Konstanz invites applications for a PhD position (f/m) on 'From sensory perception to action: Active sensing in insects'.

We are looking for a highly motivated candidate for a fully funded PhD project, studying active sensing strategies in cockroaches. Active exploratory movement is involved in a range of sensory guided behaviors. We seek to understand the mechanisms translating perception into movement, how movement facilitates sensing and how sensory perception and decision making are linked.

This project will employ techniques for neurophysiology, computer vision to track the motion and body posture, as the animals make movement decisions across a range of ecologically relevant contexts, and in the face of uncertainty, perceived risk and time constraints. In particular we will consider the multi-modal nature of decision-making (i.e. integrating olfactory and tactile cues) and the role of consistent inter-individual differences, previous experience and social context. Integrating behavioral experiments, neurophysiology (electrophysiology and calcium imaging) and computer simulations, this project aims to reveal the neural basis of decision-making in cockroaches. Understanding how natural systems implement fast and robust active sensing and decision-making will offer direct inspiration for new implementations in autonomous robots.

**Your profile:** We welcome candidates from a wide range of backgrounds (biology, engineering science, physics, computer science), but it is essential that candidates are motivated to understand biological phenomena and are willing to learn programming language-based data analysis. Candidates also ideally already hold a Masters degree. The research will be undertaken in the department of Neurobiology, University of Konstanz. Applicants should hold a MSc or equivalent degree in biology or a related discipline at the point of enrollment.

**Our offer:** The PhD project is fully funded for at least 3 years. The salary will be paid according to the collective agreement for civil service employees (TVöD). The program offers a dedicated teaching program, high quality research experience, and outstanding research facilities in an inspiring research and living environment. The working language is English. Each PhD student receives individual supervision and mentoring and is guided in her/his research work by a PhD advisory committee.

**Application:** Please apply exclusively on our online application portal on no later than Jan 15, 2018. Interviews with the applicants are scheduled for Mid-March. Candidates accepted into the program may start latest October 2018.

The University of Konstanz and the Max Planck Society are equal opportunity employers that try to increase the number of women in research and teaching. As family-friendly institutions, they are committed to further the compatibility of work and family life and prefer disabled applicants when qualification is equal.
Interested? For further information about the position, please contact Einat Couzin-Fuchs, einat.couzin@uni-konstanz.de. More information at www.orn.mpg.de/IMPRS and www.facebook.com/OrganismalBiology.