Hector Fellow Academy

PhD Project on Interaction of Rhodopsin and Cryptochrome as the Basis for Opto-Magnetic sensing in Birds

Project description

Magnetosensing is mandatory for seasonal long distant flights of birds and butterflies from north to south and back and to find the home places of previous years. During the past 40 years strong evidence has been collected that for magnetic orientation blue light sensitive Cryptochromes within the retina of the eyes are responsible.
However, since birds are able to navigate at very low light intensities during the night an interaction of the abundant rhodopsins with the only scarcely expressed Cryptochromes has been suggested.
In the open project unusual rhodopsins of birds and butterflies and their interaction with Cryptochromes will be studied and characterized in detail in order to understand animal magnetic sensing. Behavioral studies will be carried out in collaboration with behavioral zoologists.

Keywords

Magnetosensing, Photobiology, unusual rhodopsins, flavin-based photoreceptors, UV-Vis and infrared spectroscopy, EPR, ultra-fast spectroscopy.

Entry requirements

The applicant needs a MSc. degree (or equivalent) in biochemistry, biophysics, biology or related fields. Basic skills in molecular biology are mandatory. The applicant should be prepared to work in a highly interdisciplinary team with strong international collaborations.

Location

Humboldt Universität zu Berlin, Institute of Biology, Experimental Biophysics, Invalidenstraße 42, D-10115 Berlin

Starting date

Between August and December 2023

Funding

Four years of funding (3+1, three years with the possibility to extend for one year)

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Hector Fellow Academy

How to apply

Please apply via the HFA application portal: https://hectorfellowacademy.applicationportal.org/home.html

The Hector Fellows will arrange interviews (via skype or if feasible in-person) with the most promising applicants. The final candidates will be invited for a personal presentation on June 22, 2023 online. The final decisions will be announced by August 2023.

Application Deadline

March 31, 2023

Enquiries

For further details about the project, please contact Hector Fellow Prof. Dr. Peter Hegemann at: hegemann@rz.hu-berlin.de

For questions related to your application, please have a look on the Hector Fellow Academy website https://hector-fellow-academy.de/en/ or contact the Hector Fellow Academy Office: application@hector-fellow-academy.de

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