

The **Institute of Cellular Neurosciences** at the University of Bonn/University Hospital Bonn (Bonn, Germany) invites applications for a **PhD student position**.

PhD student (m/f/d)

A neuroscience PhD studentship in the field of synaptic physiology is available in the laboratory of Prof. Christian Henneberger at the Institute of Cellular Neurosciences (University of Bonn, Germany). The position is part of a larger effort to understand how the plasticity of excitatory synapses is controlled by co-agonists of the N-methyl-D-aspartate receptor (NMDARs). We explore how neurons and non-neuronal cells shape synaptic plasticity, and in turn learning, by supplying the NMDAR co-agonists D-serine and glycine using newly designed optical indicators for D-serine and glycine. Specifically, we plan to optimize the current generation of optical indicators to study D-serine and glycine signaling in the rodent hippocampus. This will be achieved by using state-of-the-art optical and electrophysiological methods such as intensity and lifetime based multiphoton fluorescence microscopy of genetically encoded and organic indicators.

The position is available from the 1st of May 2024. The contract initially runs for three years. The salary will be according to the German salary scale (65% TV-L E13). The University of Bonn is an equal opportunities employer.

Tasks:

The specific aim of the project is to first improve the current generation of D-serine and/or glycine indicators by optimizing their structure, fluorophores, membrane targeting and expression in the brain using established techniques. It is then planned to visualize the extracellular dynamics of D-serine and/or glycine in the hippocampus in acute slice preparations and in the awake mouse in vivo in scenarios involving synaptic plasticity, i.e. the cellular mechanisms underlying learning. The project relies on an extensive experimental toolset for optical sensor design, monitoring and manipulating neurotransmitter and intracellular signalling. In addition, a broad spectrum of imaging approaches and electrophysiological methods is available to dissect the topic further. Additional information about our research, research methods and recent publications can be found at <https://henneberger-lab.com/>.

Requirements:

Applicants should have a Master of Science (M.Sc.) or equivalent academic degree in a relevant field of science. In addition, applicants should ideally have experience in some of the mentioned techniques.

We offer:

- Exciting neurobiological research projects using a variety of modern and continuously evolving methods
- A thriving international and collaborative research environment within and beyond the institute and the University of Bonn
- Excellent supervision and support by the PI and colleagues as well as regular group meetings and scientific events
- Enrollment in the structured graduate program of the Bonn International Graduate School for Neuroscience (<https://bigis-neuroscience.de/>)
- Additional possibilities for further education in university and non-university courses
- Attendance of national and international scientific meetings

- A professional career development program
- A salary according to the German salary scale TV-L (EG 13, 65 %)
- Supplementary benefits in the public sector (pension plan according to VBL)
- Corporate customer ticket (subsidized public transport)
- Possibility to use the day care center

The University of Bonn is committed to diversity and equal opportunity. It is certified as a family-friendly university. It aims to increase the proportion of women in areas where women are under-represented and to promote their careers in particular. It therefore encourages women with relevant qualifications to apply. Applications will be handled in accordance with the Landesgleichstellungsgesetz (State Equality Act). Applications from suitable individuals with a certified serious disability and those of equal status are particularly welcome.

How to apply:

Applicants should send their application in a single pdf file (max. 5 MB), including a motivation letter, CV, scanned academic degrees, transcripts of relevant degrees (e.g., M.Sc.) and the contact details of two references. The application deadline is the 3rd of March 2024. Please send your application by email under indication of the reference number 13_2024 to:

Prof. Dr. Christian Henneberger
Institute of Cellular Neurosciences
University of Bonn / Universitätsklinikum Bonn
Venusberg-Campus-1
53127 Bonn
E-Mail: christian.henneberger@uni-bonn.de
www.henneberger-lab.com