



## Your dream of a 4-year PhD position in Systems Neuroscience

as part of the newly funded Collaborative Research Centre 1436 (English website expected very soon) under the supervision of **Dr. Stefan Dürschmid** and **Prof. Stefan Remy** at the Leibniz Institute for Neurobiology and Otto-von-Guericke-University Magdeburg has become true.

### Role within the new Collaborative Research Centre

The newly funded Collaborative Research Centre 1436 in Magdeburg is dedicated to understanding neural resources of cognition, with the ultimate goal to develop interventions to improve resource allocation and enhance our cognitive potential. The German Research Council (DFG) has recently granted almost 14 million euros to support this team effort across twenty-two research groups at three neuroscience institutions in Magdeburg (Otto-von-Guericke University, the Leibniz Institute for Neurobiology, and the German Centre for Neurodegenerative Diseases). As part of this collaborative research centre, two research groups led by [Dr Stefan Dürschmid](#) and [Prof. Stefan Remy](#) at Otto-von-Guericke University and the Leibniz Institute for Neurobiology, respectively, teamed up to investigate how functional changes of the spatiotemporal organization of cellular and network activity precede the onset of symptoms in cognitive disorders, and ultimately understand, by which extent a cognitive reserve can prevent the behavioural manifestation on the learning and memory level. Our analyses and interventional strategies will therefore focus on a) detecting abnormal patterns of oscillatory activity and assessing the predictive power for cognitive dysfunction and b) restoring physiological oscillatory patterns with the aim of increasing cognitive resources. Such an approach may offer long-term perspectives for detection and therapeutic intervention in humans.

### What we offer

The [Leibniz Institute for Neurobiology](#) (LIN) is a research institute with a long tradition of **world-leading research** into processes of learning and memory in the brain spanning species and system levels. The LIN offers a highly vivid research environment with about 230 people and around 100 scientists from 25 different countries. The LIN is one of the reasons why Magdeburg is an attractive city to live in for scientists and their families. Especially the **Science Campus Magdeburg** is a unique and world-leading research campus in Germany, which is home to more than 13,000 students and that conducts multi-disciplinary, cutting-edge research, in particular at Otto-von-Guericke University Magdeburg and the two non-university research centers, i.e., the LIN and the German Center for Neurodegenerative Diseases (DZNE, part of Helmholtz Society). Dr. Stefan Dürschmid's research group at the Leibniz Institute has access to Magdeburg's **excellent, state-of-the-art facilities for invasive and non-invasive human and animal electrophysiology and neuroimaging**, including MEG, EEG, 7T and 3T MRI, and ECoG and silicon probe recordings, which are all supported by expert IT and physics staff. In addition, a very close collaboration exists with the Departments of Neurology and Stereotactic Neurosurgery, which allows for **systematic invasive electrophysiology in humans** and, more generally, **studies in clinical populations**.

We are a young research team, which is densely connected within the LIN and the University with weekly meetings, in addition to regular department and institute meetings, and provides a supportive and friendly atmosphere. For the potential candidate we offer access to a newly funded Graduate School for all hired PhD students, flat hierarchies with strong connections to universities around the world. Methodological support by leading experts and the possibility to present data at several national and international conferences guarantee strong early career support.

### Your tasks and skills

The successful candidate will design, conduct, analyze and publish experimental studies into **detection of abnormal patterns of oscillatory activity and assessing the predictive power for cognitive dysfunctions**. We are looking for highly motivated, team-oriented scientists with a strong interest in oscillatory processes in women and mice and a high degree of scientific creativity. Demonstrable experience with analyses of behavioral and electrophysiological data is mandatory for the position. In addition, demonstrable experience with multivariate techniques for analyses of animal data is essential. Good programming skills (in particular MatLab; in addition, Presentation, Python, C, Simulink would help) as well as solid statistical skills and high proficiency in spoken and written English are mandatory. Suitable candidates should hold a Master's degree in psychology, neuroscience, physics or engineering (with a previous focus on neuroscience), biology, or related. In sum, you should be an ambitious candidate to whom we can offer our support.

### Terms & conditions

The position is for four years. Preferable starting dates are March - April 2021, which is negotiable. The position will remain open until filled. Salary is based on TV-L E 13 (65%, i.e., salary around 2650,- euros/month brutto).

### How to apply

The application should include the following documents (in a single PDF-file):

- 1) Cover letter (max 1.5 pages) providing a brief description of previous and current research work and achievements, research interests and, importantly, motivation to enter this project and pursue a career in academia;
- 2) Curriculum vitae, including a list of publications;
- 3) contact details of two scientists who can provide references.

Please email the PDF file for your application to [stefan.duerschmid@lin-magdeburg.de](mailto:stefan.duerschmid@lin-magdeburg.de) before **March 15th latest**.