Ph.D. Positions in Neuroscience

Episodic memory loss in Alzheimer's disease

Place: Switzerland, Zürich

Institute: University of Zürich, Brain Research Institute

Project description

The research group led by Xiaomin Zhang, an assistant professor funded by SNSF PRIMA, is seeking candidates for a Ph.D. position available from January 1st, 2024, or as soon as possible thereafter. The principal supervisor for this position will be Prof. Xiaomin Zhang (https://www.hifo.uzh.ch/en/research/zhang.html), and the formal supervisor will be Prof. Fritjof Helmchen (https://www.hifo.uzh.ch/en/research/helmchen.html).

The main objective of this project is to investigate the functional role of neuromodulation in coordinating the hippocampal-dependent memory consolidation in mouse models of Alzheimer's disease. By conducting research in the laboratory of Prof. Helmchen, applicants will have the unique opportunity to collaborate with renowned scientists who possess extensive expertise in optical imaging and advanced computational skills.

Our group and research

Our research group started on May 1st, 2023, with the primary goal to unravel the neuronal mechanisms that underlie episodic memory consolidation in the hippocampus in healthy and Alzheimer's disease mouse models. Specifically, we study how hippocampal neurons are recruited into neuronal assemblies during memory consolidation. Furthermore, we explore the role of neuromodulation in coordinating hippocampal-dependent memory consolidation in awake behaving animals.

To achieve our goals, we employ state-of-the-art *in vivo* whole-cell patch-clamp techniques and silicon probes to measure neuronal activity at both the single cell and population levels. Additionally, we utilize fiber photometry to monitor the release of neuromodulators. Moreover, we incorporate optogenetic perturbations to manipulate the specific pathways, aiming to gain further insights into the potential tools to alleviate episodic memory loss in Alzheimer's disease.

Key criteria for the assessment of applicants

- Hold a master's degree in a relevant field, such as Neuroscience, Biology, Medicine, Biomedicine, or Physics.
- Demonstrates a curious and internally driven mindset.

- Possesses a strong interest in Alzheimer's Disease.
- Capable of working effectively in a team environment.
- Has experience in electrophysiology, optogenetics, and virus injections.
- Experience in data analysis using Matlab, Python or R.
- Possessed excellent written and spoken English skills.

We offer

- The position is available from 01.01.2024 for four years.
- The salary will be based on the standard Ph.D. salary of the University of Zürich, provided the applicant meets the relevant requirements and personal qualifications,

Application procedure

Please submit your application **as a single pdf**, including the following:

1. A motivation letter of application, with a maximum length of one page.

2. A CV that includes details of your education, research experience, language skills, other skills relevant for the position, and contact details of two persons for references.

3. A certified copy of your original Master of Science diploma and transcript of records in the original language, including an authorized English translation if issued in a language other than English. If not completed, a certified/signed copy of a recent transcript of records or a written statement from the institution or supervisor is accepted.

4. If applicable, include a publication list.

Contact Details

Name: Xiaomin Zhang
Email: zhang@hifo.uzh.ch
Website: https://www.hifo.uzh.ch/en/research/zhang.html

We strongly encourage applications from female candidates, and in the case of equal suitability, competence, and professional performance, they will be given priority. Individuals with disabilities are also welcome to apply, and they will be treated preferentially in the case of equal suitability and qualification.