Jobbnorge ID: 196555
Deadline: 1/14/2021
Website: http://www.ntnu.no
Scope: Fulltime
Duration: Permanent

Kavli Institute for Systems Neuroscience are looking for

Four positions as Postdoctoral fellows / Ph.d students in the Moser group

This is NTNU

At NTNU, creating knowledge for a better world is the vision that unites our 7 400 employees and 42 000 students.

We are looking for dedicated employees to join us.

You will find more information about working at NTNU and the application process here.

Video: https://www.youtube.com/watch?v=clgKd1SwGLI

About the position

We are pleased to advertise 4 new Postdoc/PhD positions in the Moser group of the Kavli Institute for Systems Neuroscience, Faculty for Medicine and Health Sciences, NTNU in Trondheim, Norway. Three of the positions will likely be for postdocs and one for a PhD student but the allocation ratio is not fixed. The positions are to be filled during the year of 2021. Exact startup times are flexible. The work carried out in this project will be financed by the European Research Council (ERC) and a special contribution to the Moser group from the Ministry of Science and Education in Norway. Successful candidates will be offered a fellowship or Ph.D position lasting 3-4 years.

The Kavli Institute for Systems Neuroscience is part of the Faculty of Medicine and Health Sciences at NTNU. It was established as a Centre of Excellence in 2002 and again in 2012. It was designated as a Kavli Foundation Institute in 2007 (www.kavlifoundation.org). The scientific goal of the Institute is to understand neural circuits and systems in the cortex and to identify neural-population mechanisms underlying high-level cognitive functions (www.ntnu.edu/kavli). The focus of the Nobel-awarded work in the Moser group is on mechanisms for space and memory coding in the hippocampus and entorhinal cortex (https://www.ntnu.edu/kavli/moser-group#/view/about). With the introduction of new technologies for high-resolution neural population recording, the group is shifting its interests towards large-scale neural network computation in these systems. The group has an extensive network of collaborators inside and outside the institute.

Description of the project and the job

We are looking for 3 postdoctoral candidates and 1 PhD candidate in neural circuits-oriented computationally-inspired behavioral neurophysiology. The 3:1 postdoc:PhD ratio may change depending on applicants' qualifications.

Three of the four successful candidates will perform large-scale neural population recordings and cell-specific interventions in hippocampal-entorhinal regions of freely moving rats or mice, using either the latest generation of high-site-count Neuropixels silicon probes or calcium imaging with portable 2-photon miniscopes. Both technologies have been adopted successfully in the lab and are under further development. The Moser lab is a member of the international Neuropixels consortium and is also involved in the development of light-weight 2-photon endoscopes for rapid multiplane imaging and perturbation in volumes of entorhinal-hippocampal cortex. Projects seek to identify computational algorithms in thousands of simultaneously recorded neurons with specific identity in neural networks with known functional connectivity. The overall objective is to understand the fundamental computations of mammalian circuits for space, time and memory.

While the focus of the 3 positions above is on freely moving animals, the 4th position will be reserved for a candidate with experience and/or interest in patch-clamp studies in brain slices. This candidate will use state-of-the-art methods to map connectivity between modules and clusters of neurons with specific functional properties or developmental origins.

The work plan for the 4 positions is part of a larger project under the objective of understanding entorhinal-hippocampal neural network dynamics. The project has partial funding from a theoretical-experimental ERC Synergy grant (2021-26) aimed at testing, in large-scale population data, core predictions of continuous attractor network models. Successful candidates involved in the Synergy project will interact closely with theorists working on such models in Yoram Burak's group at the Hebrew University of Jerusalem.

Applicants should have experimental skills, steady hands, and familiarity with, or capacity for, analysis of large-scale neural recordings. Experience with data collection in freely moving rodents, using state-of-the-art molecular tools, will be clearly advantageous but is not required and may be balanced by a strong analytical and mathematical background. Coding experience is essential.

Required selection criteria

For the postdoctoral positions: Completion of a doctoral degree (recognized as the equivalent to a Norwegian Ph.D.) in neuroscience, psychology, biology or medicine, computational science, physics, or mathematics.

For the PhD position: Completion of a master's degree or equivalent, with a strong academic background in the same subjects as for the postdoc position, with a grade of B or better in terms of NTNU's grading scale.

Excellent communication skills in English are imperative, both orally and written, and must be proven. For the postdoc positions, the candidate must have a track record of paper writing.

If, for any reason, you have taken a career break or have had an atypical career and wish to disclose this in your application, the selection committee will take this into account, recognizing that the quantity of your research may be reduced as a result.

The appointment is to be made in accordance with the regulations in force concerning State Employees and Civil Servants and national guidelines for appointment as PhD, post doctor and research assistant.

Preferred selection criteria

- Applicants should have experimental skills, steady hands, and familiarity with analysis of large-scale neural recordings. Experience with data collection in freely moving rodents, using state-of-the-art molecular tools, will be clearly advantageous but is not required and may be balanced by a strong analytical and mathematical background.

Emphasis will also be placed on

1. Experience with studies of laboratory animals, including behavioral training and assessment.

2. Prior experience with electrophysiological recording or calcium imaging from awake behaving animals (the current projects will utilize Neuropixels probes).

3. Experience with state-of-the-art molecular-biology tools for targeted intervention

4. Experience with analysis of large-scale neural data sets and familiarity with computational neuroscience

5. Prior productivity (e.g. publications, abstracts, conference proceedings, code).

While experience with 1-4 is expected, it is the total combination of skills that is evaluated (less on one item may be compensated by more on another).

Travel to present work at national and international conferences, and to the collaborating partners at Hebrew University, should be expected.

Personal characteristics

In the evaluation, emphasis will be placed on education, experience and personal suitability in relation to the qualifications specified in the advertisement. We will place great emphasis on:

- strong personal initiative, self-motivation and work ethic
- a solution-oriented attitude, ability to solve problems independently
- the ability to work collaboratively to accomplish common research goals
- willingness to accommodate to the team's research strategy

We offer

- exciting and stimulating tasks in a strong international academic environment
- an open and inclusive work environment with dedicated colleagues
- favourable terms in the Norwegian Public Service Pension Fund
- employee benefits

Salary and conditions

PhD candidates are remunerated in code 1017 and are normally remunerated at gross from NOK 479 600 per annum before tax. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

Postdoctoral candidates are remunerated in code 1352 and are normally remunerated at gross from NOK 542 400 per annum before tax. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

The period of employment is 3-4 years, with possibilities for shorter extensions.

The engagement is to be made in accordance with the regulations in force concerning State Employees and Civil Servants, and the acts relating to Control of the Export of Strategic Goods, Services and Technology. Candidates who by assessment of the application and attachment are seen to conflict with the criteria in the latter law will be prohibited from recruitment to NTNU. After the appointment you must assume that there may be changes in the area of work.

The position is subject to external funding.

It is a prerequisite you can be present at and accessible to the institution daily.

About the application

The application and supporting documentation to be used as the basis for the assessment must be in English

The application must include the following:

- Information about education background and work experience.
- A short research statement explaining the experience and the interest of the candidate for the research topic and describing the relevance of the candidate's background to the research project (maximum 1 page; see ii above).
- Any relevant publications. Joint work will only be considered provided that a short summary outlining the applicant's contributions is attached.
- Certified copies of relevant transcripts and diplomas.
- Contact information for the candidate's references.

Please submit your application electronically via jobbnorge.no with (i) current CV and publication list, including a description of your contribution to each work, (ii) 1-page statement of research interest, and (iii) a list of 2-3 references and a description of their relationship to you.

Application deadline: January 14, 2021

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal suitability.

NTNU is committed to following evaluation criteria for research quality according to The San Francisco Declaration on Research Assessment - DORA.

General information

Working at NTNU

A good work environment is characterized by diversity. We encourage qualified candidates to apply, regardless of their gender, functional capacity or cultural background.

NTNU wishes to increase the amount of women in our scientific positions and have a number of processes to amplify gender equality.

The city of Trondheim is a modern European city with a rich cultural scene. Trondheim is the innovation capital of Norway with a population of 200,000. The Norwegian welfare state, including healthcare, schools, kindergartens and overall equality, is probably the best of its kind in the world. Professional subsidized day-care for children is easily available. Furthermore, Trondheim offers great opportunities for education (including international schools) and possibilities to enjoy nature, culture and family life and has low crime rates and clean air quality.

As an employee at NTNU, you must at all times adhere to the changes that the development in the subject entails and the organizational changes that are adopted.

Information Act (Offentleglova), your name, age, position and municipality may be made public even if you have requested not to have your name entered on the list of applicants.

Questions about the positions can be directed to Professor Edvard Moser, e-mail: edvard.moser@ntnu.no or Professor May-Britt Moser, e-mail: may-britt.moser@ntnu.no

For information about the recruitment process, you can contact HR-Senior consultant Ole Kristian Indergård, e-mail ole.k.indergard@ntnu.no

Please submit your application electronically via jobbnorge.no with your CV, diplomas and certificates. Applications submitted elsewhere will not be considered. Diploma Supplement is required to attach for European Master Diplomas outside Norway. Chinese applicants are required to provide confirmation of Master Diploma from China Credentials Verification (CHSI).

If you are invited for interview you must include certified copies of transcripts and reference letters.

Application deadline: 14.01.2021

NTNU - knowledge for a better world

NTNU - knowledge for a better world

The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

The Kavli Institute for Systems Neuroscience is part of the Faculty of Medicine and Health Sciences at NTNU. It was established as a Centre of Excellence in 2002, and designated as a Kavli Foundation Institute in 2007 (www.kavlifoundation.org). The scientific goal of the Institute is to increase the understanding of neural circuits and systems along with their role in generating psychological functions.

Today, the Institute consists of the Centre for Neuronal Computation (CNC) as well as the Egil and Pauline Braathen and Fred Kavli Centre for Cortical Microcircuits. In 2014, the Nobel Prize in Physiology or Medicine was awarded to two of the Institute’s professors, Edvard Moser and May-Britt Moser. The Institute is responsible for an international master's programme and is affiliated with a doctoral programme in medicine. Through our widespread network of international collaboration, we offer unique career opportunities. For further information, see: www.ntnu.edu/kavli.

Additional information

Place of service:

Kavli Institute for Systems Neuroscience 7030 Trondheim (Trondheim Municipality)