



UiO : Universitetet i Oslo

RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion

Postdoctoral Fellowship in Cognitive Neuroscience

A postdoctoral research fellowship (SKO1352) in cognitive neuroscience is available at RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion at the University of Oslo.

RITMO is a **Centre of Excellence** funded by the Research Council of Norway. This interdisciplinary centre focuses on rhythm as a structuring mechanism for the temporal dimensions of human life. Methods from musicology, psychology, neuroscience, and informatics are combined to study rhythm as a fundamental property that shapes and underpins human cognition, behavior and cultural expressions.

All RITMO researchers will be co-located and work in a unique interdisciplinary constellation, with world-leading competence in musicology, psychology and informatics. It is expected that all members of the center contribute to the general activities and collaborations within RITMO. The researchers have access to state-of-the-art facilities in sound/video recording, motion capture, eye tracking, physiological measurements, various types of brain imaging (EEG, fMRI), and rapid prototyping and robotics laboratories.

Job description

The postdoctoral researcher will work on the project "[Neurophysiological Mechanisms of Human Auditory Predictions: From population- to single neuron recordings](#)", funded by [the Research Council of Norway](#). The fellow will work in close collaboration with the project leader and a Ph.D. student, and will have a main affiliation with [Front Neurolab](#) and the [Structure and Cognition Cluster at RITMO](#).

The overarching aim of the project is to identify the neurophysiological basis of auditory predictions beyond "classical" auditory areas. We will record electrical signals directly from the brains of patients with epilepsy (implanted with electrodes for clinical reasons) while they for example listen to streams of regular sounds that are occasionally replaced by unexpected events. We aim to delineate how distinct brain areas play different roles and interact in encoding auditory regularities, predicting upcoming sounds, and detecting unexpected sounds or silences. The interaction between attention and predictions will also be addressed.

The work of the postdoctoral fellow will have a particular focus on the role of neuronal populations during prediction of regularities of auditory stimuli. **The candidate will work with local field potentials (intracranial EEG/iEEG/SEEG/ECOG), and single- and multi-unit activity (SUA/MUA) obtained from patients with epilepsy.** We aim to understand how "prediction" and "prediction error" signals are encoded in the human brain, and how these signals are communicated between cortical and subcortical areas.

In collaboration with interdisciplinary research staff, the fellow will develop a subproject that addresses core research questions of the overarching project. She/he is expected to be involved in all aspects of the research, including experimental design, data collection in a clinical setting, signal analysis, and publishing results related to the project aims.

The project will be conducted in collaboration with the Department of Neurosurgery at Oslo University Hospital, Norway, the Department of Psychology/Helen Wills Neuroscience Institute at UC Berkeley, USA, and the Neurosciences and Complex Systems Unit at El Cruce Hospital - CONICET, Argentina.

Moreover, meetings with the project scientific advisory board are expected (Lucia Melloni, Karl Friston, Robert T. Knight, and Anne-Kristin Solbakk).

The appointment is for a duration of three years, starting April 1st, 2022. A 4th year can be considered with the addition of 25 % teaching requirements, depending on the qualifications of the recruited candidate, departments' needs for teaching, and the centre's need for assistance. The candidate will be enrolled in the [RITMO Career Development Programme](#).

The successful candidate is expected to be part of the research environment of RITMO and contribute to strengthening the links between different research areas within the centre. The main purpose of postdoctoral research fellowships is to qualify researchers for work in higher academic positions within their disciplines.

Qualifications/requirements

- A Ph.D. in neuroscience, biology, physics, biomedical engineering, medicine, or related field. The applicant is required to document that the degree corresponds to the profile for the post. The Ph.D. thesis must have been submitted by the time of applying and approved before the start of the postdoctoral fellowship.
- Experience with a) signal processing of brain activity data, b) scientific programming in Matlab, Python, or any other programming languages, and c) statistics.
- Knowledge of cognitive experimental designs is an advantage.
- Prior experience with single-unit or multi-unit activity data analysis (human or animal research) is a significant advantage.
- Excellent skills in written and oral English.
- Personal suitability and motivation for the position

In assessing the applications, particular emphasis will be placed on:

- The applicant's scientific merit, research background, and motivation for the position.
- The candidate's proposed research project relevance to the project's and RITMO's research profile.
- The applicant's estimated academic and personal ability to complete the project within the time frame.
- Capability to work independently, as well as good collaboration skills to join interdisciplinary academic communities.

We offer

- salary level 526 000-608 000 NOK per annum, depending on qualifications
- a professionally stimulating working environment
- [attractive welfare benefits](#)
- membership in the Norwegian Public Service Pension Fund

How to apply

Applications must include:

- Application letter describing the applicant's qualifications and motivation for the position.
- Curriculum Vitae (complete list of education, positions, teaching experience, administrative experience and other qualifying activities, including a complete list of publications with links to full version of published papers).
- Research outline, including relevant research questions and theoretical and methodological approaches (approximately 2-3 pages, see the [template for research outline](#)).
- Names and contact details of 2-3 references (name, relation to candidate, e-mail, and telephone number).

Diplomas, certificates, doctoral thesis, and other academic works will be requested later.

The application with attachments must be delivered in our electronic recruiting system, jobbno.no. Please note that all documents must be in English or a Scandinavian language and preferably in pdf format.

The short-listed candidates will be invited to an interview.

Formal regulations

See also [Guidelines concerning appointment to postdoctoral and research posts at UiO](#).

No one can be appointed for more than one postdoctoral period at the University of Oslo.

Following the Freedom of Information Act (Offentleglova) § 25, Chapter 2, demographic information about the applicant may be used in the public list of applicants even if the applicant opts out from the entry in the public application list.

The University of Oslo has an [Acquisition of Rights Agreement](#) for the purpose of securing rights to intellectual property created by its employees, including research results.

The University of Oslo aims to achieve a balanced gender composition in the workforce and to recruit people with ethnic minority backgrounds.

Contact information

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