UNIVERSITETET I OSLO

Jobbnorge ID: 235968
Deadline: 2/1/2023
Website: http://www.uio.no/
Scope: Fulltime
Duration: Temporary

NADIS project - Faculty of Medicine

3-year PhD position in NAD+ and Alzheimer's disease

Job description

A Horizon Europe Framework Programme (HORIZON)-funded 3-year, full time PhD position in NAD+ and Alzheimer's disease is available at the Faculty of Medicine, The University of Oslo, Norway.

The PhD position is funded by the 'NAD+ International Scientist-training' doctoral network /the Marie Skłodowska-Curie Actions (MSCA)of the European Union's Europe 2022 research and innovation program under grant agreement , EUROPEAN COMMISSION

ESR6: Linages of impaired NAD+-mitophagy axis to tau pathology in Alzheimer's disease

Hosts: Associate Prof. Evando F. Fang

Project description

Alzheimer's disease (AD) affects over 50 million individuals worldwide and there is no cure. Ageing is the primary driver of AD, thus strategies to slow down ageing may delay the onset of AD. The small molecule NAD+ is reduced during ageing and in AD, while NAD+ augmentation mitigates pathologies and retains memory in animal models of AD (Nature Neuroscience 2019, PMID: 30742114; Cell Metabolism 2019, PMID: 29514072; Nature Biomedical Engineering; PMID: 34992270). However, the molecular mechanisms on why NAD+ is reduced in AD and how NAD+ retains memory in AD are largely unexplored.

The PhD programme is devoted to carrying out a project on the roles of NAD+ in Alzheimer's disease (AD) with a focus on mechanism of altered mitophagy/autophagy in AD initiation and progression, and on how NAD+ depletion affects these events. Novel strategies (genetically and pharmacologically) that turning up mitophagy will be developed and their funcitons in treating AD animal and cell models will be explored. Novel laboratory models for AD studies will be used (Nature Neuroscience 2019, PMID: 30742114). The candidate will be having a unique opportunity to work in the leading autophagy/mitophagy and AD laboratory, the Evandro Fang Laboratory at the University of Oslo

Your working environment

You will be working in the Evandro F. Fang laboratory which consists over 12 trainees from over 7 countries. The Fang laboratory works on the molecular mechanisms of human ageing and the age-predisposed Alzheimer's disease.

The department and institution provide state-of-the-art equipment to enable the performance of broad scientific studies in the highest quality. External supervision in this project comes from partners at the Michela Deleidi Laboratory with training on neuron-microglia co-culture and Seahorse measurements.

Your main tasks and responsibilities in this project will be:

- To carry out mechanistic and interventional studeis in C. elegans, mice, and human cells;
- To design and carry out experiments as well as to collect and analyze the data in high quality and diligence;
- To write research papers;
- To assist the PI in training and mentoring in the laboraotry of summer students and master students.
- Other tasks related to this proejct

The NADIS project

The overrall project is aiming to unveil novel roles of NAD+ in delaying Alzheimer's disease (AD) with a focus on mechanism of altered mitophagy/autophagy in AD initiation and progression.

The main goal of the NADIS consortium is to train the next generation of metabolic researchers, providing them with in-depth knowledge and cross-disciplinary expertise to combat disease.

The research projects will specifically focus on the metabolism of NAD+, a central redox cofactor and enzymatic substrate that plays an essential role in virtually all major cellular functions. The limited knowledge on the interplay between NAD+ and the cellular processes in which it is involved, especially those that lead to disease, requires novel experimental and analytical tools combined with a strong interaction between scientists and clinical staff coming from different disciplines. We aim to fill these gaps by training ten highly-skilled ESRs.

To do this, we bring together our expertise in molecular and cellular biology, bioinformatics and Artificial Intelligence (AI), omics, drug development and nutritional/clinical applications. Our non-academic beneficiaries are focused on the development of nutrition products, medical

foods and drug development for new therapies. We will also provide ESRs with transferable and networking skills, and first-hand experience of industrial applications, enabling them to become future leading scientists at the forefront of metabolic research and, specifically, NAD+ research in Europe.

More about the position

The candidate must take part in the University of Oslo's approved PhD-program and is expected to complete the project within the set fellowship period. The main purpose of the fellowship is research training leading to the successful completion of a PhD-degree. The applicant must, in collaboration with her/his supervisor have worked out a complete project description to be attached to the application for admission to the doctoral program. More information here

Next to your local PhD training, you will participate in an attractive educational program customized to the NADIS doctoral candidates. The training program consists of internships, secondments, trainings, workshops, conferences to optimally develop your academic and transferable skills. UiO and NADIS will provide career development trainings and supports.

Qualification requirements

To be eligible for this position

the applicant must satisfy the following requirements conform the Marie Curie admission requirements:

- Not already hold a doctoral degree
- Not have resided or carried out their main activity (work, studies, etc.) in Norway for more than 12 months in the three years immediately prior to their recruitment. (mobility rule)

In addition, you meet the following requirements and experience

- A master degree in lifescience, biochemistry, molecular biology, neuroscience or similar fields;
- Previous experiences in working on C. elegans is essential;
- Fluent oral and written communication skills in English;
- Extensive hands-on experience with at least two of the following experimental techniques: molecular biology (RNA, DNA work, qPCR), Western blotting, confocal immunofluorescence imaging, handling mouse and to perform immunohistochemistry; and
- Candidates with prior knowledge about ageing or neuroscience will be prioritized

The skills and competences listed below will also be valued

- Communication skills
- Collaboration/Team work
- Goal-oriented

How to apply

The application must include

- cover letter statement of motivation and research interests
- CV (summarizing education, positions and academic work)
- copies of educational certificates (academic transcripts only)
- documentation of english proficiency
- a complete list of publications and academic works
- list of reference persons: 2-3 references (name, relation to candidate, e-mail and phone number)

The application with attachments must be delivered in our electronic recruiting system, please follow the link "apply for this job". Foreign applicants are advised to attach an explanation of their University's grading system. Please note that all documents should be in English (or a Scandinavian language).

Interviews will be held through Zoom or on-site visit.

When evaluating the application, emphasis will be given to the applicant's academic and personal prerequisites to carry out the project.

We offer

- A stimulating academic/scientific working environment
- Salary NOK 501 200 - 544 400 per annum in a position code 1017, depending on qualifications
- Favourable pension arrangements (Statens Pensjonskasse)
- Advantageous welfare conditions
- An individual career development programme designed for researchers at the beginning of their career.
- More information can be found here

Formal regulations

Please see the guidelines and regulations for appointments to Research Fellowships at the University of Oslo.

No one can be appointed for more than one PhD Research Fellowship period at the University of Oslo.

According to the Norwegian Freedom of Information Act (Offentleglova) information about the applicant may be included in the public applicant list, also in cases where the applicant has requested non-disclosure.

The appointment may be shortened/given a more limited scope within the framework of the applicable guidelines on account of any previous employment in academic positions.

The University of Oslo has an agreement for all employees, aiming to secure rights to research results etc.

Inclusion and diversity are a strength. The University of Oslo has a personnel policy objective of achieving a balanced gender composition. Furthermore, we want employees with diverse professional expertise, life experience and perspectives.

If there are qualified applicants with disabilities, employment gaps or immigrant background, we will invite at least one applicant from each of these categories to an interview.

Contact information

For any informal enquiries regarding the position, please contact

- Evandro Fei Fang, Ph.D - Email: e.f.fang@medisin.uio.no

For questions regarding the application process, please contact

- HR adviser Maren Retterstøl Olaisen: marenol@medisin.uio.no

About the University of Oslo

The University of Oslo is Norway’s oldest and highest ranked educational and research institution, with 28 000 students and 7000 employees. With its broad range of academic disciplines and internationally recognised research communities, UiO is an important contributor to society.

The Institute of Clinical Medicine (Klinmed) is one of three institutes under the Faculty. Klinmed is responsible for the Faculty's educational and research activities at Oslo University Hospital and Akershus University Hospital. With about 800 employees spread over approximately 425 man-labour years, Klinmed is the university's largest institute. Our activities follow the clinical activity at the hospitals and are spread across a number of geographical areas.

Additional information

Place of service:

Akershus universitetssykehus 1478 Lørenskog (Lørenskog Municipality)