PhD Research Fellowship in Bioinformatics, Cancer and Chromatin Biology

Job description

Applications are invited for a 3-4 year position in a Research Fellowship as a PhD Candidate in bioinformatics, chromatin and epigenetics to be based at the Institute of Basic Medical Sciences, University of Oslo.

The PhD candidate will be part of Chromatin Biology group at Division of Biochemistry, Institute of Basic Medical Sciences and the Norwegian Centre of Excellence: Centre for Cancer Cell Reprogramming (CanCell) at University of Oslo, Norway.

More about the position

Through next-generation sequencing of genomic DNA and RNA, in combination with epigenetic techniques (ChIP-seq, ATAC-seq, MNase-seq, Hi-C and related), we can generate genome-wide profiles of a number of features of nuclear DNA, such as histone modifications, chromatin openness, chromosome conformations and occupancy of DNA-binding proteins. Sequencing can also reveal information on genome variation, gene splicing, DNA methylation, and gene expression, to name a few. Different single-cell sequencing technologies allow us to understand cell to cell variations in a population of cells or within a tissue. The integration of datasets enables interrogation of relations between biological molecules and processes in various biological contexts such as cancer. Such data integration is a potent strategy to create novel models that can be tested experimentally, improving our understanding of complex biological/disease mechanisms.

A focus of this PhD project will be on the non-coding part of the genome. Regulatory effects may be due to modifications to the local chromatin context, through disruption or enhancement of transcription factor binding, or through regional or global DNA conformation changes. The PhD candidate will Integrate of datasets covering the non-coding part of the genome to understand basic gene-regulatory mechanisms and how these may be perturbed through human DNA variation in cancer. Moreover, our group has generated several single-cell datasets and we are in process of setting up CRISPRi screens as a CanCell collaborative effort. Although the potential gains from integrating multiple types of genomic information is widely appreciated, it is not yet exploited to its full extent, in particular for the new single-cell technologies. The PhD student will collaborate with a team of researchers and bioinformaticians to ensure access to data, data analysis, development and reproducibility.

The candidate will be supervised in strong research environments that will provide a unique opportunity to learn and develop leading solutions in a highly competitive field. The epigenetic environment at the Division of Biochemistry has research groups with focus on transcription factors and epigenetic modifiers with cutting-edge research into chromatin organization in health and disease. Co-supervisor Dr. Sigve Nakken (CanCell, OUH) has extensive bioinformatics experience, specifically with computational analysis of genetic variation in cancer, and co-supervisor Dr. Anthony Mathelier (NCMM, UiO) is a leading scientist in computational biology and gene regulation.

The fellowship period is up to 4 years, with 3 years devoted to research education. The position may allow for a compulsory work load of 25% that consists of teaching and supervision duties and research assistance.

The research fellow must take part in the Faculty’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 supervisors, within two months after employment, have worked out a complete project description to be attached to the application for admission to the doctoral program.

For more information, please visit our web site https://www.med.uio.no/english/research/phd/index.html.

Qualification requirements

Candidates for these fellowships are expected to be in the upper segment of their class with respect to academic credentials.

- Applicants must hold a Master’s degree or equivalent in molecular biology, biochemistry, computational biology or related fields. A Master’s degree (120 ECTS) or an equivalent qualification, minimum grade B (ECTS grading scale) or equivalent. The Master’s degree must include a thesis of at least 30 ECTS
- Fluent oral and written communication skills in English

Personal skills

We are seeking a highly motivated, creative and skilled candidate with a strong work ethics and background in computer science, molecular biology, biochemistry or related field. The ideal candidate will have experience from the field of chromatin, transcription or epigenetics. Previous experience with gene regulation, mammalian cell culture, genomics or bioinformatics is an advantage. The candidate must be able to work independently, but also have good interpersonal skills and desire to contribute to strengthening the research environment. It is expected that the candidate should have strong analytical skills and be motivated by new challenges.
We offer

- Salary NOK 479 600 - 523 200 per annum depending on qualifications in a position as PhD Research fellow, (position code 1017)
- Attractive welfare benefits and a generous pension agreement, in addition to Oslo’s family-friendly environment with its rich opportunities for culture and outdoor activities

How to apply

The application must include

- Cover letter and statement of motivation (the applicant's research interests and motivation for applying for the position)
- CV (summarizing education, positions and academic work)
- Copies of educational certificates (academic transcripts only)
- Documentation of English proficiency (if applicable)
- A complete list of publications and academic works (if applicable)
- 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).

When evaluating the application, emphasis will be given to the applicant’s academic and personal prerequisites to carry out the project. Interviews with the best qualified candidates will be arranged.

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.

Contact information

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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 Basic Medical Sciences overall objective is to promote basic medical knowledge in order to understand normal processes, provide insight into mechanisms that cause illness, and promote good health. The Institute is responsible for teaching in basic medical sciences for the programmes of professional study in medicine and the Master's programme in clinical nutrition. The Institute has more than 300 employees and is located in Domus Medica.

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