PhD Research Fellowship in statistics

Job description

Applications are invited for a 3-year Research Fellowship as PhD Candidate in statistics at the Oslo Centre for Biostatistics and Epidemiology (OCBE), Institute of Basic Medical Sciences, University of Oslo.

The PhD student will develop new models and methods in statistics and machine learning for the advancement of personalised cancer therapy. The PhD project is part of a cross-disciplinary project funded by the Norwegian Research Council under the scheme Digital Life, (https://digitallifenorway.org/).

Despite many drugs have been approved to combat blood cancers, many patients do not benefit from the administered therapies. At least in part, this is due to the heterogeneity present among the cancer cells of each patient. This PhD project will produce new methods to detect cancer cell heterogeneity in individual patients and model their response to different drugs and drug combinations, in this way helping the oncologist to determine the best personalized treatment. The project team is in a unique position to address this problem given the combined expertise in statistical and mathematical modeling of cancer and the access to high throughput drug screens on a large number of blood cancer patients with detailed longitudinal clinical records. The PhD student will contribute important insight to the field, supported by publications in leading scientific journals.

The PhD candidate will be employed at OCBE (https://www.med.uio.no/imb/english/research/centres/ocbe/). OCBE has eight professors, five associate professors, fifteen researchers, many post-doctoral fellows and PhD students, making up a group of about 80 scientists. OCBE is internationally recognized, with interests spanning a broad range of areas (including time-to-event models, data integration, causal inference, statistical genomics, Bayesian inference, stochastic simulation algorithms, probabilistic graphical models, machine learning, evolution and population genetics, informative missingness and measurement error models, epidemiological studies of lifestyle and chronic diseases, stochastic models for infectious diseases, high dimensional data and models) and numerous collaborations with leading bio-medical research groups internationally and in Norway. In the last national research evaluation, OCBE was judged as excellent by an international committee. OCBE has a leading role in the centre of excellence for research-based innovation BigInsight, a consortium of academic, industrial and public partners, with a funding of about 4 mil Euro annually until 2023. Furthermore, OCBE hosts the ERC Advanced Grant of Professor Corander (Scalable inference algorithms for Bayesian evolutionary epidemiology) and several further important projects in the areas of digital life sciences, systems medicine, statistical methods for biobank, health survey and registry data, causal inference and mathematical oncology. Professor Arnoldo Frigessi (https://www.med.uio.no/imb/english/people/aca/frigessi/) will be the supervisor of the PhD candidate. Frigessi develops innovative stochastic models and inferential methods to carefully represent fundamental principles, basic dynamics, intricate patterns of dependence and known mechanisms of life science systems, to be understood or predicted. The PhD project will benefit from the collaboration with professor Kjetil Tasken’s and Jorrit Enserick’s groups at the Oslo University Hospital, who have established a cancer drug sensitivity screening platform for different cancers (https://digitallifenorway.org/prosjekter/pinpoint).

More about the position

The PhD candidate will enroll in OCBE’s PhD programme at the University of Oslo. The main purpose of the PhD is research training leading to the successful completion of a PhD degree. During the three years of fellowship, the PhD candidate will produce three scientific papers to be published in peer-reviewed journals of highest quality, at least one as first and all as key author. Furthermore, she/he will take some courses (approximately for in total one semester). The PhD candidate will also be invited to participate to OCBE’s advising services for bio-medical sciences, systems medicine, statistical methods for biobank, health survey and registry data, causal inference and mathematical oncology. Professor Arnoldo Frigessi (https://www.med.uio.no/imb/english/people/aca/frigessi/) will be the supervisor of the PhD candidate. Frigessi develops innovative stochastic models and inferential methods to carefully represent fundamental principles, basic dynamics, intricate patterns of dependence and known mechanisms of life science systems, to be understood or predicted. The PhD project will benefit from the collaboration with professor Kjetil Tasken’s and Jorrit Enserick’s groups at the Oslo University Hospital, who have established a cancer drug sensitivity screening platform for different cancers (https://digitallifenorway.org/prosjekter/pinpoint).

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Qualification requirements

- Applicants must hold a Master’s degree or equivalent in statistics, biostatistics, mathematics, machine learning or computer sciences, with a documented competence in statistics. The Master’s degree must have a minimum grade B (ECTS grading scale) or equivalent. If the masters studies are not completed at the point of application, a statement of the supervisor must be provided with an expected date for obtaining the degree. This cannot be after 1 October 2020.
- Documented high level programming skills in R, Python, C, C++ or equivalent are necessary.
- Fluent oral and written communication skills in English, which is the working language of the project and OCBE.
- Experience in cancer research, personalised medicine and genomic data is not expected.

Personal skills

- The candidate must express genuine interest in developing and applying new statistical and machine learning methodology to outstanding medical research questions.
- The candidate is used to work in team and has excellent communication skills.
- The candidate shows the ability to work independently and efficiently.

We offer
Salary NOK 479,600 - 532,300 per annum depending on qualifications in a position as PhD Research fellow, (position code SKO 1017)

- Dedicated supervision on a highly relevant biostatistical research project.
- Access to unique data.
- A friendly, professional and stimulating international working environment.
- Access to a network of top level national and international collaborators.
- Attractive “Scandinavian” welfare benefits, including full health insurance, and a generous pension agreement, in addition to Oslo’s friendly environment with its rich opportunities for culture and outdoor activities.

How to apply

The application must include

- A personal cover letter, stating motivations for this position and research interests
- A CV with full education, positions, academic experiences, details on master thesis, detailed computational skills and a list of publications (if actual)
- Copies of educational certificates (academic transcripts only)
- 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, German, Italian, or a Scandinavian language. Shortlisted applicants will be called in for an interview in person or by skype.

Formal regulations

Please see the guidelines and regulations for appointments to Research Fellowships 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 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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