UiO : Universitetet i Oslo

Natural History Museum

Doctoral Research Fellowship in Comparative Genomics

Job description

Applications are invited for a 4 year position in a Research Fellowship as a PhD Candidate in Comparative Genomics to be based at the Natural History Museum, University of Oslo.

The purpose of the fellowship is research training leading to the successful completion of a PhD degree. The fellowship requires admission to the PhD program at the Faculty of Mathematics and Natural Sciences. Appointment to a research fellowship is conditional upon admission to the Faculty's research training program. A plan for the research training must be submitted no later than two months after taking up the position, and the admission approved within three months.

Compulsory service, duty work, shall represent 25% of the total hours of work.

More about the position

The subject of the PhD project will part of the recently founded RCN-project "InvertOmics - Phylogeny and evolution of lophotrochozoan invertebrates based on genomic data". The origin and evolution of Bilateria is controversially discussed in several biological disciplines such as systematics or evolutionary developmental biology. In one hypothesis, evolution in Bilateria advances from a simple body organization similar to flatworms towards more complex forms several times independently. In the other one, the evolution progresses in the opposite direction from a complex ancestor more like an annelid to simple organizations by several separate reductions. Support for one or the other depends on the phylogeny and evolution of Lophotrochozoa, one of the major bilaterian taxa, but a robust phylogeny is still lacking despite recent phylogenomic studies. This is due to both low coverage by genomic data and misleading biases in data of lophotrochozoan taxa. In this project, high-quality reference genomes shall be generated and new procedures to both ameliorate negative effects of biases and establish a new support measurement, which is entirely different from all recent support measurements. Due to both the large genomic dataset and these thorough analyses, a robust phylogeny of Lophotrochozoa shall be provided allowing contributions to discussions about the origin and evolution of Bilateria as well as of lophotrochozoan taxa and character traits.

The aim of this PhD project as part of InvertOmics is to concentrate on the problem of reconstructing the phylogeny of Lophotrochozoa from the data side. Therefore, new high-quality genomes for 50 lophotrochozoan species covering all 16 lophotrochozoan phyla shall be generated. Modern genome sequencing strategies combining long and short reads will be employed. As several lophotrochozoan species have very small body sizes (< 500 µm length) this is challenging, but existing protocols for single-cell genomics shall be optimized for single small-sized individuals collected from natural populations as part of the project. These data together with publicly available genomes will be used to reconstruct the phylogeny of Lophotrochozoa and address possible biases in the dataset using newly developed approaches as part of this project (see the accompanying advertisement for a PostDoc position). The phylogenetic reconstructions will be used to trace the evolution of different character traits within Lophotrochozoa and Bilateria, which also take into account the uncertainty of relationships. Therefore, modern macro-evolutionary tools to reconstruct ancestral states will be used.

The Natural History Museum has a modern DNA laboratory as well as access to the Norwegian Supercomputer facilities. The PhD will be associated with the research group "Frontiers in Evolutionary Zoology", specifically Torsten Struck (Professor of Evolutionary Genomics).

Qualification requirements

- Applicants must hold a Master's degree or equivalent in biology or related disciplines like bioinformatics.
- A good command of English is required.
- We seek a person with strong motivation for research in genomics.
- The candidate must be skilled in general molecular laboratory practices.
- Experience with next-generation sequencing of genomes is required and working with small amounts of tissue material (i.e., whole genome amplification) is preferable.
- Computing skills and background in bioinformatics to assemble and annotate genomes are expected.

Evaluation of the application

In assessing applications, particular emphasis will be placed upon the academic and personal ability of the candidate to complete the project within the given timeframe and write a PhD thesis under supervision. Interviews with selected candidates will be arranged. Please also refer to the English translation of regulations pertaining to the conditions of employment for research fellowship positions:
https://www.mn.uio.no/english/research/phd/application/application.html

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We offer

- salary NOK 479 600 - 523 200 per annum depending on qualifications in a position as PhD Research fellow, (position code 1017)

- challenging research questions and friendly working environment, which is close to both the city center of Oslo, a vibrant and international city, which is nice to live in, and to nature parks and mountains
- full funding of the project research-related activities, including molecular lab work and presentation of results at international conferences.
- membership in the Norwegian Public Service Pension Fund
- attractive welfare benefits

How to apply

The application must include:

- Application letter
- CV (summarizing education, positions and academic work, scientific publications and other relevant experience)
- Copies of educational certificates and letters of recommendation (others than the ones from the referees below)
- List of publications and academic work that the applicant wishes to be considered by the evaluating committee
- A one-page statement explaining how a PhD in comparative genomics will fit into the applicant's career plan
- Names and contact details of 2-3 referees (name, affiliation, relation to candidate, e-mail and telephone 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).

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

About the position: Professor Torsten Hugo Struck: t.h.struck@nhm.uio.no

About the recruiting system: HR-Adviser Thomas Brånå: thomas.brana@nhm.uio.no

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 Natural History Museum at the University of Oslo is Norway's most comprehensive natural history collection. For almost 200 years, specimens of animals, fungi, plants, rocks, minerals and fossils have been collected, studied and preserved here. The museum is located at Økern and in the beautiful Botanical Garden, which is not only popular for recreation, but is a scientific collection in itself.

Jobbnorge ID: 184791, Deadline: 14.04.2020, Customer reference: 2020/3433