



Natural History Museum

PostDoc in Comparative Genomics & Phylogenomics

Job description

A 3-year PostDoc position is available at the Natural History Museum (NHM), University of Oslo.

The subject of the PostDoc position will be 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 PostDoc project is to solve the problems associated with the reconstruction of the phylogeny of Lophotrochozoa. The PostDoc can contribute to both the development a new approach to assess the support for specific phylogenetic hypotheses and the generation of new genomic data in Lophotrochozoa. The new approach shall also determine a priori the best procedure to ameliorate the effect of misleading biases. Therefore, the effects of misleading biases shall be simulated in a phylogenomic setting based on parameter spaces derived from empirical data including confounding effects of reticulate evolution, adaptive radiations and incomplete lineage sorting. Based on these simulated data both a best-practice procedure and new support measurement on how likely a reconstructed relationship is true shall be derived. For the generation of new data, new high-quality genomes for 50 lophotrochozoan species covering all 16 lophotrochozoan phyla shall be determined. Modern genome sequencing strategies combining long and short reads will be employed. In the project, the PostDoc will closely work together and assist in supervision of the already hired PhD student.

The Natural History Museum has a modern DNA laboratory as well as access to the Norwegian Supercomputer facilities. The postdoc will be associated with the research group "Frontiers in Evolutionary Zoology", specifically Torsten Struck (Professor of Evolutionary Genomics). The starting date for the position shall be no later than January 1st 2021.

Qualification requirements

- We seek a person with strong motivation for research in comparative genomics & phylogenomics.
- The candidate must be skilled in phylogenetic reconstruction methods and in general molecular laboratory practices.
- Experience with next-generation sequencing of genomes, development of new tools for phylogenetics and/or the handling of big datasets is preferable.
- Computing skills in either Deep Learning, Neural Networks or Machine Learning Algorithms are advantageous.
- Communication skills (including written and spoken English)
- A strong academic track record
- Team-working and networking skills
- A degree equivalent to a Norwegian doctoral degree in biology, bioinformatics or equivalent. For candidates not having finished their doctoral degree the doctoral dissertation must be submitted for evaluation by the closing date of the call. An appointment is dependent on the defense of the doctoral thesis being approved.

We offer

- salary NOK 523 200 - 605 500 per annum depending on qualifications in position as Postdoctoral Research Fellow (position code 1352)
- 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 presentation of results at international conferences.
- membership in the Norwegian Public Service Pension Fund
- attractive welfare benefits

How to apply

The application must include

- cover letter (statement of motivation, summarizing scientific work and research interest)
- CV (summarizing education, positions, pedagogical experience, administrative experience and other qualifying activity)
- copies of educational certificates (academic transcripts only)

- a complete list of publications
- a one-page statement explaining how a PostDoc in Comparative Genomics and Phylogenomics will fit into the applicant's career plan
- 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. 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).

In assessing the applications, special emphasis will be placed on the documented, academic qualifications, as well as the candidate's motivation and personal suitability. Interviews with the best qualified candidates will be arranged.

It is expected that the successful candidate will be able to complete the project in the course of the period of employment.

Formal regulations

Please see the [guidelines and regulations](#) for appointments to Postdoctoral fellowships at the University of Oslo.

No one can be appointed for more than one Postdoctoral Fellow 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 University of Oslo has an [agreement](#) for all employees, aiming to secure rights to research results etc.

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

Contact information

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

About the recruitment system: HR-Adviser Thomas Brånå: thomas.brana@nhm.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 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.

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