



**Norwegian University
of Life Sciences**

Global challenges regarding energy and climate change, the environment, health, food safety, technology and renewable solutions, use and conservation of land and natural resources, and development of the bio-economy, requires greater effort. NMBU is well equipped to conduct further research in these fields. NMBU's expertise spans entire value chains and includes both basic and applied research.

On 1 January 2014, the Norwegian School of Veterinary Science and the University of Life Sciences merged and became -NMBU, the Norwegian University of Life Sciences. NMBU has 1700 employees and 5200 students, and is currently located on two campuses - Ås, about 30 km south of Oslo, and Adamstuen in Oslo. In 2020, the new research- and education-building for veterinary science will be completed and all of NMBU will then be located at Campus Ås.

Further information about NMBU is available on www.nmbu.no

PhD scholarship exploring transposable elements (TEs) as agents of chromosome evolution in salmonids - Ref. no 18/03098

The Department of Animal- and Aquacultural Sciences (IHA), Faculty of Biosciences, at the Norwegian University of Life Sciences (NMBU) is inviting applications for a 3-year PhD-position using long-read technology to characterise transposable elements (TEs) in salmonid genomes and explore their role as agents of chromosome evolution in salmonid fishes.

The successful candidate will join CIGENE, a multidisciplinary genome biology research group possessing expertise in genetics, evolutionary and comparative genomics, bioinformatics and systems biology. Located within the Department of Animal- and Aquacultural Sciences, this group includes 2 full-time professors, 1 associate professor, 11 researchers, 8 PhD students and 9 research technicians. CIGENE (www.cigene.no) has a strong aqua- and agri- research profile, with key strengths in the application of 'omics' data to understand the genetic architecture of complex traits. The group wishes to use functional genomics technologies, including gene editing, to better understand the biology underlying specific genotype-phenotype associations. CIGENE has excellent wet and dry lab facilities for automated high-throughput omics, and bioinformatics.

The Department of Animal and Aquacultural Sciences provides fundamental, innovative research and practical solutions to improve productivity and sustainability across the agriculture and aquaculture sector. Currently, disciplines within the department include Animal Nutrition and Feed Technology, Ethology and Animal Environment, Breeding and Quantitative Genetics, and Genome Biology.

The main objective of the Faculty of Biosciences is to contribute to the development of sustainable agriculture and food production systems through basic and applied research on plants and animals including fish (aquaculture). The faculty houses Centre for Integrative Genetics (CIGENE) and the research center for Research-based Innovation (SFI) - Foods of Norway.

The faculty is responsible for bachelor- and master programmes in Biology, Animal Science and Plant Science, and international master programmes in Agroecology, Plant Science, Aquaculture, Animal Breeding Genetics and Feed Manufacturing Technology. PhD programmes include Animal Science and Aquaculture, and Plant Sciences. There are currently 480 bachelor and master students, and 90 PhD students, enrolled in these programmes. The faculty has approximately 220 permanent and temporary scientific employees, including technicians, and 18 administrative positions.

Research project

The successful candidate will be associated with the 4-year TRANSCOPE project recently funded by the FRIPRO Toppforsk program in the Research Council of Norway (<https://cigene.no/category/projects/>). TRANSCOPE uses salmonid fishes as a model system with which to explore fundamental knowledge gaps concerning genome evolution following a lineage specific whole genome duplication.

Main tasks

The main tasks will be integrated with specific activities planned for TRANSCOPE including:

- Generating long-read data using nanopore technology and integrating with other data to generate the most complete chromosome level assemblies possible,
- Cataloging TE content, classify TE's with regards to their insertion location and estimate their temporal dynamics with a view to identifying shared and lineage specific TE-activity,
- Testing the theory that TE's are linked to structural rearrangements underlying rediploidization.

The successful candidate is expected to enter a plan for the progress of the work towards a PhD degree during the first months of their appointment, and have responsibility to complete their doctorate within the PhD scholarship period.

Qualifications and competence

The successful applicant must meet the conditions defined for admission to a PhD programme at NMBU. The applicant must have an academically relevant education corresponding to a five-year Norwegian degree programme, where 120 credits are at master's degree level. The applicant must have a documented strong academic background from previous studies, and be able to document proficiency in both

written and oral English. For more detailed information on the admission criteria please see the [PhD Regulations](#) and the relevant [PhD programme description](#).

Required qualifications and competence:

- Master degree in genomics, bioinformatics, statistical genomics, or similar
- Experience with analyzing / interpreting high-throughput 'omics' data
- Familiarity with at least one programming language (R, python, perl, etc.)
- Excellent communication skills both to the scientific community and to a broader audience.

Desired qualifications and competence:

- Relevant statistical skillset and programming experience
- Experience with de novo assembly of genome sequencing data from long read data (e.g. nanopore).
- Experience with comparative analyses of omics data

Personal skills

- Highly motivated and enthusiastic about the field of genomics
- Ability for independent work and self-monitoring skills
- Excellent time management and planning skills
- Display initiative and careful creative thought
- Analytical and academic approach to research questions
- Good collaborative and social skills
- Applicants must have excellent skills in written and spoken English. Proficiency in Norwegian is not required but is advantageous

NMBU offers:

- An interdisciplinary and inclusive environment that provides exciting research and development opportunities
- Daily contact with inspiring students and skilled colleagues.
- Generous employee benefit schemes
- Beautiful surroundings just outside Oslo

Remuneration

The position is placed in government pay scale position code 1017 (PhD Fellow), wage framework 20, salary grade 51. PhD Fellows are normally assigned pay grade 51 (NOK 443.900,-) on the Norwegian Government salary scale upon employment and follow ordinary meriting regulations. Employment is conducted according to national guidelines for University and Technical College PhD scholars.

Further information

For further information, please contact Dr. Matthew Kent matthew.peter.kent@nmbu.no, phone +47 67232701, +47 47362026, or prof. Sigbjørn Lien (sigbjorn.lien@nmbu.no), phone +47 91353715.

Application

To apply online for this vacancy, please click on the '**Apply for this job**' button above. This will route you to the University's Web Recruitment System, where you will need to register an account (if you have not already) and log in before completing the online application form.

Application deadline: 15.06.2018

Applications should include (electronically) a letter of intent, curriculum vitae, full publication list, copies of degree certificates and transcripts of academic records (all certified), and a list of two persons who may act as references (with phone numbers and e-mail addresses). Publications should be included electronically within the application deadline. The relevant NMBU Department may require further documentation, e.g. proof of English proficiency.

If it is difficult to judge the applicant's contribution for publications with multiple authors, a short description of the applicant's contribution must be included.

A compulsory contribution of 2 % is made to the Norwegian Public Service Pension Fund. A good working environment is characterized by diversity. We encourage qualified candidates to apply, irrespective of gender, physical ability or cultural background. The workplace will if necessary be facilitated for persons with disabilities.

According to the Freedom of Information Act § 25 the list of applicants for this position may be made public irrespective of whether the applicant has requested that his/her name be withheld.

Jobbnorge-ID: 153501, Søknadsfrist: 15. juni 2018