



**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](http://www.nmbu.no)

## **Postdoctoral fellow within meta-omics analysis of microbial communities - ref.no. 17/03972**

The Faculty of Chemistry, Biotechnology and Food Science (KBM) at the Norwegian University of Life Sciences (NMBU) has a vacant 2-year Post Doctoral-position related to the project: "MetaNorSE: Meta-omic interpretation of Norwegian Salmon gastrointestinal Ecosystems".

KBM at NMBU is located at Ås Campus 30 km south of Oslo and has approximately 130 employees spread over 12 research groups. The position is part of a collaboration between the Biostatistics group and the Protein Engineering and Proteomics (PEP) group. The Biostatistics group does research in the intersection between biology and statistics/computer science, and currently consists of six senior researchers, two postdoc, five PhD students and a number of master students. The PEP group is focused on basic and applied enzymology, bioprocessing, microbiology and anaerobic digestion. The project will also engage in close collaboration with researchers at the Centre for Integrative Genetics (CIGENE, Department of Animal and Aquacultural Sciences at the Faculty of Biosciences), which includes experimental biologists as well as experts on bioinformatics and mathematical modeling.

### **Research Project**

The postdoctor will be associated with the project "MetaNorSE: Meta-omic interpretation of Norwegian Salmon gastrointestinal Ecosystems" which aims to decipher gut microbiome-host metabolic networks that exert major influence in Norwegian Salmon nutrition and health.

The continued growth in production of Norwegian Atlantic Salmon has presented the industry with a range of challenges. In particular, feed resources that are environmentally sustainable and nutritive for the animal are a prerequisite for long-term expansion and development. Whilst there are decades of research actively examining alternative non-fishmeal diets for salmon production, there is scarce information pertaining to the salmon gastrointestinal (GIT) microbiome that is directly responsible for feed conversion and maintaining host physiology.

Given the direct correlation of the salmon GIT microbiome towards salmon health and therefore agricultural production, the overall project objectives are to describe major as-yet uncharacterized microbial populations and associated metabolic networks that are ubiquitous in the salmon GIT microbiome, and are believed responsible for efficient feed conversion and gut homeostasis. In order to achieve this, we aim to use a combination of metagenomics, metaproteomics and bioinformatics to generate more insight into the microbe-microbe and microbe-host interactions that occur within the GIT microbiome. Pursuing this goal addresses fundamentally intriguing scientific questions, such as how GIT microbes within a community cooperate to convert feed and how these processes are interconnected to nutrient metabolism in host tissue. The significance of this work is generating new horizons into cooperative microbial actions and "hidden" mechanisms for feed conversion.

### **Main tasks**

Major tasks include:

- | Generation of metagenomic datasets and population genomes that are representative of salmon host-associated microbiomes.
- | Functional meta-omic characterisation of salmon gut microbiota using metabolic reconstruction and quantitative metaproteomics.
- | Identification of key metabolic pathways using regulatory network analysis of meta-omic data generated from microbiome(s) as well as salmon host tissues.

### **Academic Qualifications**

The main purpose of the post-doctoral position is to qualify for work in high-level scientific positions. A relevant PhD degree is required.

*Required Academic qualifications*

- | Wet-lab experience with handling biological samples, DNA extraction, PCR, etc.
- | Experience with the analysis of high-throughput sequencing data

#### *Desired Academic qualifications*

- | Good programming skills in at least one language
- | Experience with the most common bioinformatics methods/tools
- | Experience with microbial ecology and/or molecular microbiology

We expect that the candidate will successfully publish research findings in high-impact peer reviewed journals.

#### **Personal skills**

##### *Required personal skills*

- | Enthusiasm for science
- | The ability to work independently as well as in collaboration with others.
- | Proficiency in English, both written and spoken

#### **NMBU offers:**

- | An optimistic academic institution with focus on professional development, dissemination and competence.
- | An interdisciplinary and inclusive environment that provides exciting research- and development opportunities.
- | Daily contact with inspiring students and skilled colleagues.
- | Various welfare schemes.
- | Beautiful surroundings just outside Oslo.

#### **Remuneration**

The position is placed in government pay scale position code 1352 Postdoctoral Fellow, wage framework 24 (salary grade 57-65, pt. NOK 499 900 - NOK 569 000 per year), depending on qualifications. Seniority Promotion in position

#### **Further information**

For further information, please contact Prof. Torgeir R. Hvidsten ([torgeir.r.hvidsten@nmbu.no](mailto:torgeir.r.hvidsten@nmbu.no); +47 67232491) or Dr Phillip Pope ([phil.pope@nmbu.no](mailto:phil.pope@nmbu.no); +47 67232540)

#### **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: October 20 2017**

#### **Key publications**

Up to ten publications selected by the applicant as most relevant must be attached to the application. If it is difficult to identify the contribution of the applicant in multiple-author publications, a short explanation about the applicant's part of the work is suggested.

Printed material which cannot be sent electronically should be sent by surface mail to Norwegian University of Life Sciences, Faculty of Chemistry, Biotechnology and Food Science, P.O. Box 5003, NO-1432 Ås, within the application deadline. Please quote the reference number 17/03972

#### **Verified testimonies, certificates**

Applicants invited for an interview will be asked to present verified copies of diplomas and certificates.

The position follows the Norwegian government pay scale 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: 142451, Søknadsfrist: 20. oktober 2017