Postdoctoral Researcher and Doctoral Student for Global Change Impacts on Northern Animal Communities: From Mechanisms to Ecosystem-Level Implications

The North changes the world – more sustainable, more intelligent, more humane. We at the University of Oulu work as part of the international science community to produce new scientific information and science-based solutions. We are committed to educate future pioneers to build a more sustainable, intelligent and humane world. Creating new, taking responsibility and succeeding together are values that build a strong foundation for all our actions. We offer a working environment where individuals can cultivate their skills, do meaningful work, and develop professionally. Our university's several specialized research and service units enable extensive and diverse development and career opportunities for experts in various fields.

Kvantum Institute is one of the four strategic focus institutes supporting high-quality research, coordinating multidisciplinary research activities and doctoral training. Kvantum’s science-based expertise meets global challenges in the focus areas Sustainable materials and systems and Changing climate and northern environment. The Institute promotes interdisciplinary networking of research groups as well as co-operation between groups and national and international partners.

We are now looking for

A Postdoctoral Researcher and a Doctoral student

to study global change impacts on northern animal communities.

Declining animal abundance has been repeatedly reported in recent times. This project, conducted at the Research Unit of Ecology and Genetics, University of Oulu, examines if such declines occur also in northern environments by using moths and birds as the study system. Moths are important herbivores, pollinators and food for insectivorous birds, so their abundance affects ecosystem functioning and ecosystem services. This project uses extensive long-term data, experimentation and advanced statistical analyses for elucidating how moths respond to climate and land use changes, and how these responses affect interactions among moth species, abundance of birds and interactions among bird species. Moreover, the project uses mathematical modelling for predicting future changes in moth and bird communities. The information on global change effects on animal communities produced here is scientifically significant and can also be applied in nature conservation and environmental management.

This research project consists of two interconnected work packages. Work package 1 includes analysis of dynamics and interdependency of moth and bird communities by using existing community data and state-of-the-art joint dynamic species distribution models. Work package 2 follows an experimental and modelling approach. Experiments will focus on physiology and thermal sensitivity of lepidopteran larvae, with the aim of using the experimental results in mathematical modelling of larval growth. The model would then be used in predicting how biomass and phenology of larvae respond to changes in
environmental conditions and how these responses would affect communities of insectivorous birds. When running the laboratory experiments, working even on weekends and public holidays is required.

Description of the positions

- **The Postdoctoral Researcher**: The recruited postdoctoral researcher will mainly focus on one of the work packages. The assignment of the work packages to the recruited post-doc and doctoral student will depend on their skills and knowledge, and all applicants are asked to indicate which work package they find more appealing. However, the post-doc may participate work in both work packages, depending on her/his skills. The recruited post-doc is expected to teach at most 5% of her/his working time at the Department of Ecology and Genetics.

- **The Doctoral Student**: The recruited Doctoral Student will focus on one of the work packages. The assignment of the work packages to the recruited doctoral student and post-doc will depend on their skills and knowledge, and all applicants are asked to indicate which work package they find more appealing. The recruited doctoral student is expected to teach at most 5% of her/his working time at the Department of Ecology and Genetics.

Description of the research group

The research group currently consists of the PI (https://www.oulu.fi/university/researcher/sami-kivela), two post-docs and two doctoral students. At present, we study both evolutionary consequences of urbanization by using Lepidoptera as a study system and the diversity of interspecific interactions in bird communities.

Qualification requirements

**Postdoctoral Researcher position**: Applicants must either hold a PhD degree in evolutionary biology, ecology, or related areas. Please note that, your degree should be obtained within the last 10 years, latest by the start of the employment. You are expected to be highly motivated and enterprising, to have excellent English communication skills, and preferably to have previous experience either in analysis of community data and handling big data (work package 1) or in experimental work on insects and mathematical modelling (work package 2). Experience in lepidopterology, ornithology, thermal physiology, trophic interactions, statistics, programming, joint species distribution modelling, or using the R environment are considered as advantages.

**Doctoral Student position**: Applicants must hold MSc degree in evolutionary biology, ecology, or related areas. The degree must be certified before the start of the contract. You are expected to be highly motivated and enterprising, to have excellent English communication skills, and preferably to have previous experience either in analysis of community data and handling big data (work package 1) or in experimental work on insects and mathematical modelling (work package 2). Experience in lepidopterology, ornithology, thermal physiology, trophic interactions, statistics, programming, joint species distribution modelling, or using the R environment are considered as advantages. The selected candidate will carry out her/his doctoral studies within the University of Oulu Graduate School (UniOGS) and must meet the requirements to receive doctoral study rights as defined in: http://www.oulu.fi/uniogs/requirements_for_admission.
What we offer

- You will become a part of a highly talented research group, that is working on strategically and globally significant research area
- You will receive support from your team and supervisor, so that you can excel in your studies and research
- In addition to modern research facilities, we offer you personnel benefits such as occupational healthcare and affordable sport services
- 4-year position, beginning on January 1, 2021 (or as soon as possible thereafter)
- A salary in accordance with the Finnish universities salary system (for teaching and research personnel): A Postdoctoral Researcher will be based on demand level 5 – 6 and a Doctoral Student level 2 – 4. In addition, a salary component based on personal work performance will be paid (maximum of 50% of the job-specific component). Typical starting salary for a Postdoctoral Researcher is approx. 3400€ per month (before taxes) and for a Doctoral Student approx. 2350€ per month (before taxes). A trial period of six months will be applied.

How to apply

Applications, together with all relevant enclosures, should be submitted using the electronic application form by November 1st, 2020 at 23:59 (Finnish local time). The application should be written in English and include the following:

1) **A motivation letter** (max. 2 pages) summarizing applicant’s professional experience and expertise and describing why applicant is interested in this position. Also, information on personal research interests, experience and career plans are valuable to provide here

2) **Curriculum vitae** (max. 4 pages) in accordance with the guidelines of the Finnish Advisory Board on Research Integrity [http://www.tenk.fi/en/template-researchers-curriculum-vitae](http://www.tenk.fi/en/template-researchers-curriculum-vitae)


4) **A short description of research interests**, max. 3 pages (Postdoctoral Researcher position only)

5) **Certificates/Diplomas**: Scanned copy of the original doctoral degree (Postdoctoral Researcher position) or of the original Master's degree certificate (Doctoral Student position) and transcript of records and, when necessary, official translations to Finnish or English

6) **Contact information of two senior/experienced researchers** who may be asked to give a statement on the candidate

Only applications containing all relevant appendices and submitted through portal will be considered. Top candidates will be invited to an on-site or remote interview.

Further information

For further information, please contact Sami Kivelä (sami.kivela[at]oulu.fi)
City of Oulu

The Oulu region is home to over 200 000 people making it the largest urban centre in northern Scandinavia and one of the fastest growing regions in Finland. Oulu is a combination of beautiful, northern nature, vivid cultural life and modern technology. Oulu is also known for its highly-educated people and friendly, easy-going atmosphere. Find out more about Oulu: https://www.oulu.fi/university/living-in-oulu

Apply for the job