

## PostDoc in Microbial Ecology with a focus on Biogeochemical Modelling

### Lund University, Faculty of Science, Centre for Environmental and Climate Research

Lund University was founded in 1666 and is repeatedly ranked among the world's top 100 universities. The University has 42 000 students and 7 400 staff based in Lund, Helsingborg and Malmö. We are united in our efforts to understand, explain and improve our world and the human condition.

The Faculty of Science conducts research and education within Biology, Astronomy, Physics, Geosciences, Chemistry, Mathematics and Environmental Sciences. The Faculty is organized into ten departments, gathered in the northern campus area. The Faculty has approximately 1900 students, 330 PhD students and 700 employees.

The Centre for Environmental and Climate Research, CEC, is a center at Lund University. CEC conducts research, education and communication on environmental science and climate research, read more here <http://www.cec.lu.se/>. A central part of the CEC is the coordination of the strategic research area Biodiversity in a Changing Climate (BECC).

BECC is a strategic research area that brings together over 200 researchers at Lund University and the University of Gothenburg. BECC brings together scientists from the natural and social sciences to perform research essential in understanding the impacts of climate change on biodiversity and ecosystem services on local, regional, national and global scale provide a scientific basis for the sustainable management of ecosystems and biodiversity. We examine how human influence on climate and ecosystems affects biodiversity and ecosystem services from local to global scales and how this knowledge can be integrated into decisions on mitigation or adaptation to these changes. Read more here [www.becc.lu.se](http://www.becc.lu.se).

#### Modelling the resilience and sustainability of soil microbial functions to climate change

Soil microorganisms govern the decomposer processes that dominate the terrestrial carbon and nutrient cycles. Recently, the ability to characterise microbial dependences on a responses to variation in environmental factors, including temperature, moisture, etc., have improved dramatically, partly due to method developments. In parallel, biogeochemical models have begun the incorporation of mechanistic representations of microbial processes. However, to date, these developments lack integration. The project will focus on integrating empirical microbial responses to climate change factors in soil, including in particular microbial growth rate, community properties and carbon-use efficiency responses to temperature, drought, and recurring drought cycles in soil, etc.

The project will be exclusively focused on modelling, but conducted in close collaboration and active two-way-exchange with an empirical team. The candidate will also act like to experienced modellers (<http://www.nateko.lu.se/paul-miller>). Hence, an interest in linking between ecosystem model and empirical work is valuable.

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#### Qualifications - requirements

- PhD in Ecology, Biogeochemistry, Environmental Science, Soil Science or a related discipline
- Excellent knowledge of biogeochemical modelling including preparation and verification of input data, set-up of model runs, verification, post-processing, analysis and visualisation of output data.
- Excellent language skills in English, in conversation, presentation, and writing.
- Documented experience with conducting independent research projects, including all stages from design, via laboratory/modelling analyses and data interpretation, to final publication.
- Documented skills in computer programming, preferably in FORTRAN or the C/C++ language family.

#### Merits

- Documented experience with the use of process-based ecosystem models (e.g. LPJ GUESS) and modules describing soil C and N pools and fluxes (e.g. CENTURY) relevant to the project.
- Experience and in depth knowledge of research in microbial ecology, soil microbiology, biogeochemistry, or soil science with relevance to the project.
- Experience of model parameter estimation techniques.
- Publications in international, peer-reviewed journals, with a leading role (i.e. first-author, and/or corresponding author).
- Funded research grants and academic prizes.

The postdocs main duty will be to carry out research in an active research environment including several postdocs, PhD students, and thesis students investigating research questions in similar themes, with generous opportunity for collaborative work. The postdoc is also expected to actively participate in the BECC environment, by e.g. participating in initiating and contributing to seminars, workshops and thematic research meetings. The postdoc may also participate in teaching on a limited basis.

Appointment to a post-doctoral position requires that the applicant have a PhD, or an international degree deemed equivalent to a PhD, within the subject of the position, completed no more than three years before the last date for applications. Under special circumstances, the doctoral degree could have been completed earlier.

The most important criterion for evaluating the applicants will be scientific skill. Emphasis will also be on the extent to which the applicant can contribute to the general development of the strategic research area BECC.

#### Attachments

CV, cover letter and at least two references to former employees/supervisors.

Personal suitability for the project will be of importance.

#### Terms

The University applies individual payroll. Please enter salary claims in your application

Lund University welcomes applicants with diverse backgrounds and experiences. We regard gender equality and diversity as a strength and an asset.

We kindly decline all sales and marketing contacts.

<b>Type of employment</b>	Temporary position longer than 6 months
<b>Contract type</b>	Full time
<b>First day of employment</b>	As soon as possible, preferably in 2017, employment 2 years
<b>Salary</b>	Monthly salary
<b>Number of positions</b>	1
<b>Working hours</b>	100
<b>City</b>	Lund
<b>County</b>	Skåne län
<b>Country</b>	Sweden
<b>Reference number</b>	PA2017/2200
<b>Contact</b>	Johannes Rousk, Senior University Lecturer, +46 (0) 46 222 37 45, johannes.rousk@biol.lu.se
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