



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Biogeochemical Modelling, Faculty of Environment



Salary: Grade 7 (£33,797 – £40,322 p.a.) due to funding restrictions this post can only be appointed at no higher than spine point 33 (£36,914)

Reference: ENVEE1398

Fixed-term until 31/05/2022

We will consider job share / flexible working arrangements

Research Fellow in Biogeochemical Modelling

School of Earth and Environment, Faculty of Environment

Are you an ambitious researcher looking for your next challenge? Do you have a background in numerical modelling? Do you want to further your career in one of the UK's leading research intensive Universities?

You will be a key member of the UK Natural Environment Research Council funded project "PlantFun" and will work with the research team at Leeds and the Cary Institute of Ecosystem Studies in New York (USA). The PlantFun project seeks to understand the role of the evolving terrestrial biosphere in changing Earth's climate over geological timescales, with a specific focus on the relationship between plants, bacteria and fungi, and the cycling of carbon and nutrients between them. Working as a biogeochemical modeller you will develop and validate a new long-timescale global vegetation model. In particular you will assess the links between evolutionary advances in the biosphere and changes in atmospheric CO₂ and O₂ concentration. You will undertake model development and lead associated research publications.

You will have experience in scientific programming and knowledge of dynamic global vegetation modelling. Experience in Earth history and global biogeochemistry is also desirable. You will show a strong commitment to publishing scientific results at an international level.

What does the role entail?

As a Research Fellow your main duties will be:

- Working with the project team (Dr. Benjamin Mills, Professor Katie Field, Dr Sarah Batterman, Professor Simon Poulton) to develop a long-timescale global vegetation model and to investigate the links between biosphere evolution, climate and geochemistry;
- Building on published approaches, and the experimental data from the project, to develop the model;
- Comparing model output to, and validating model output against, published estimates of present day inventories and fluxes;



- Applying the new model to investigate the consequences of the evolution of plants, bacteria and fungi over Earth history, in terms of the global cycles of phosphorus, nitrogen and carbon;
- Embedding the vegetation modelling within an Earth System Model to reconstruct global CO₂ and O₂ levels, and to compare to the geological record;
- Working with the research team to compare model output with the latest experimental results, and iterating model development as necessary.

You will also be expected to:

- Work with and in support of Dr Mills, Prof Field, Dr Batterman and Prof Poulton to ensure the project is successfully completed;
- Communicate and present your research results, including preparing papers for publication in leading international journals and at conferences;
- Generate and pursue original research ideas in the appropriate subject area;
- Contribute to the training of both undergraduate and postgraduate students, including helping to supervise projects in areas relevant to your research;
- Where appropriate, contribute to the development of complimentary research funding proposals in collaboration with colleagues;
- Assist with public engagement efforts throughout the project;
- Contribute to the research culture of the School of Earth and Environment and the Cohen Geochemistry Group and Laboratories.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

What will you bring to the role?

As a Research Fellow you will have:

- A PhD (or be close to completing i.e the initial thesis needs to have been handed in at the point of application) in Earth, Environmental or Marine Sciences, Mathematics, Engineering, Computing or Physical Sciences, Ecology, Biology or a related discipline;



- A strong background and extensive experience of developing and applying numerical models of Earth's biosphere, including experience in scientific programming;
- Experience of developing, modifying, running, visualising and conveying outputs from complex numerical models;
- A proven commitment to publishing original scientific results at an international level;
- Excellent written and verbal communication skills including presentation skills and the ability to communicate effectively within a research team;
- Excellent organisational and planning skills;
- A proven ability to work flexibly, both as part of a team and independently, with proven ability to manage competing demands effectively, responsibly and without close support.

You may also have:

- Experience of using Earth System Models;
- Expertise in global biogeochemical cycles;
- Knowledge of Earth history;

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised closing date.

Contact information

To explore the post further or for any queries you may have, please contact:

Dr Benjamin Mills, Associate Professor of Biogeochemical Modelling

Tel: +44 (0)113 343 9830

Email: b.mills@leeds.ac.uk

Additional information



A diverse workforce

The Faculty of Environment has received a prestigious Athena SWAN silver award from [Advance HE](#), the national body that promotes equality in the higher education sector. This award represents the combined efforts of all schools in the Faculty and shows the positive actions we have taken to ensure that our policies, processes and ethos all promote an equal and inclusive environment for work and study.

Working at Leeds

Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our [Working at Leeds](#) information page.

Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.

