University College London
Department of Earth Sciences
Job Description (Vacancy Ref: 1817989)

Job Title: Research Fellow in Earth System Modelling
Department: Earth Sciences
Reports to: Dr Philip Pogge von Strandmann (Principal Investigator of Project: ERC 682760)
Grade: 7
Salary: £35,382–£42,701 per annum inclusive of London Allowance
Start Date: No later than 1/1/2020

Main Purpose

We are seeking an Earth Systems Modeller for a 24 month post-doctoral research position funded by Dr Philip Pogge von Strandmann's ERC grant "Quantifying the link between weathering and past CO_2 levels". The aim of this post-doctoral project is to incorporate novel isotope records into box models and Earth system models of intermediate complexity (EMICs), to determine the effect of weathering on CO_2 through past climate perturbations.

The specific objectives of the project are to use models such as COPSE and cGENIE to integrate new records of chemical weathering and biogeochemical cycling into our understanding of how the climate recovered from such perturbations as oceanic anoxic events (OAEs), the Paleocene-Eocene Thermal Maximum (PETM), and other Cenozoic events.

To achieve this you will: (i) integrate current model code on novel isotope systems' (Li, Mg, Ca isotopes) behaviour into more complex box models and EMICs; (ii) determine the effect of carbon drawdown by chemical weathering; (iii) model the recovery mechanisms and rates from short-term palaeo-climatic perturbations. These data will be used to quantify the response and control the silicate weathering system exerts on climate.

This project will be based at the Institute of Earth and Planetary Sciences, UCL, as part of the LOGIC (London Geochemistry and Isotope Centre) Group. The project will be supervised by Dr. Philip Pogge von Strandmann, with collaboration from Prof. Tim Lenton (Exeter University) and Prof. Andy Ridgwell (UCR).

Duties

- To develop the use of new isotope systems within existing geochemical and climate models.
- To use novel data to examine the effect of weathering on the climate and the marine carbon cycle.
- To interpret the results in context of biogeochemical processes and past CO_2.

Person Specification for the Post of Research Fellow in Earth Systems Modelling
London Geochemistry and Isotope Centre
(Vacancy Ref: 1817989)

Qualifications

Essential

- PhD, or thesis submitted subject to examination, in a relevant branch of climate, palaeo-climate or Earth System modelling.

Experience, Skills and Knowledge

Essential

- Strong background in ocean box modelling and/or Earth System modelling.
- Experience in use of carbon cycle models.
- Knowledge of biogeochemical cycles and the carbon cycle
- Demonstrable ability to interpret model results in a geological context.
- An active record of publications in high impact factor journals.
- A record of making presentations at international scientific meetings.

Desirable

- Experience in independent development of carbon cycle models

Personal qualities

Essential

- Commitment to high quality scientific research
- Ability to work collaboratively as part of a team
- Ability to work independently of close supervision.
- Commitment to UCL's policy of equal opportunity and the ability to work harmoniously with colleagues and students of all cultures and backgrounds.