The University Of Sheffield.

Job Reference Number: UOS034759

Job Title: Research Associate in Modelling of CO2 Removal in Rivers and Aquifers

Contract Type: Fixed-term until 31.08.25 (subject to continued funding beyond mid-point review)

Faculty: Faculty of Science

Department: School of Biosciences

Salary: Grade 7
£35,333 per annum.

Closing Date: 28th October 2022

Summary:

We are seeking to appoint an experienced Research Associate in the general field of modelling of freshwater geochemistry to join a dynamic, high-profile research project: the Greenhouse Gas Removal with UK agriculture via enhanced rock weathering Demonstrator, funded by UKRI-BBSRC (2021-2025). The Demonstrator is a UK focused integrated whole system assessment of the science, societal and scalability opportunities and challenges of enhanced rock weathering (ERW) to help the UK reach Net Zero by 2050. This Demonstrator is one of five, coordinated by the Directorate Hub, CO2RE.

The Research Associate will be embedded within the Leverhulme Centre for Climate Change Mitigation (LC3M) at the University of Sheffield, funded by a Leverhulme Trust Research Centre Award. UKRI partners on this large research consortium project include a number of leading UK institutions and scientists working in the exciting field of atmospheric CO2 removal.

This post is in the project modelling team led by Professor D.J. Beerling FRS, and project partners at U. Leeds Professor S.A. Banwart and Professor L.J. West. The appointed Research Associate will assess the security of carbon dioxide removal (CDR) in the UK resulting from ERW during transport of weathered products in rivers and groundwater from agricultural land to the marine environment. The Research Associate will assess the extent to which Greenhouse Gas Removal (GGR) efficiency by ERW may be affected by carbonate precipitation or other interactions with groundwater and river systems during water flow and transport to the coastal margins at national scale. For example, the extent to which fate of ERW products during transport in groundwater, streams and rivers is influenced by alkalinity, pH and aqueous carbonate speciation, carbonate mineral precipitation and carbon dioxide gas exchange with the atmosphere. The goal is to produce a UK-wide scenario-based evaluation of the net GGR potential of ERW and its contribution to the UK's net zero target incorporating new evaluation of critical uncertainties. The project will thus require construction of a geospatial dataset of freshwater chemistry to upscale the local impacts to predict UK-wide ERW efficiency.

You will have experience of in handling and processing large geospatial datasets e.g. using geographical information systems and ideally, experience with geochemical data or modelling (e.g., using USGS hydrogeological code PHAST or similar codes). Experience with chemistry of rivers and/or groundwaters would be an advantage. You will be responsible for writing scientific papers and reporting to other members of the GGR consortium, presenting at annual meetings, and other research events. You will have excellent interpersonal, communication and organisational skills, with the ability to manage a varied workload.
We're one of the best not-for-profit organisations to work for in the UK. The University's Total Reward Package includes a competitive salary, a generous Pension Scheme and annual leave entitlement, as well as access to a range of learning and development courses to support your personal and professional development.

We build teams of people from different heritages and lifestyles from across the world, whose talent and contributions complement each other to greatest effect. We believe diversity in all its forms delivers greater impact through research, teaching and student experience.

To find out what makes the University of Sheffield a remarkable place to work, watch this short film: www.youtube.com/watch?v=7LblLk18zmo, and follow @sheffielduni and @ShefUniJobs on Twitter for more information.

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