University of Reading

JOB DESCRIPTION

Vacancy reference:	SRF33010
Post Title:	Post-Doctoral Research Assistant in Palaeofire
Grade:	Grade 6, spine 27
School/Department:	Geography and Environmental Sciences
Reports to:	Professor Sandy P. Harrison
Responsible for:	n/a

Purpose

The Palaeofire PDRA will be responsible for the analysis of changes in fire regimes in response to past environmental and climate changes, using large-scale data synthesis and fire modelling. The main responsibilities of the PDRA will be the collection and analysis of relevant palaeodata sets, including data on fire regimes, vegetation, peat growth, land-surface hydrology and climate reconstructions. This work will involve updating existing global data sets, through collaboration with international groups such as the PAGES Global Palaeofire Working Group or the PAGES C-peat project. It may also involve creating and promoting new data compilations, for example for regional vegetation changes. In addition to analysis of the palaeodata, the PDRA will be involved in the design and analysis of model experiments to test explicit hypotheses about the response of fire to environmental and climate change in the past, including running specific palaeo-experiments using state-of-the-art fire-enabled vegetation models.

Main duties and responsibilities
- Provision of expertise in relevant areas, including interpretation of palaeofire records from charcoal, tree-rings or ice cores, palaeodata synthesis and data base construction, statistical analysis, palaeoclimate analysis, vegetation and fire modelling,
- Collection and analysis of relevant palaeo data sets, including updating the existing Global Charcoal Database, to derive regional fire histories and for model evaluation
- Provision of access to and advice on other palaeo data sets
- Analysis of palaeofire data in the context of information on the drivers of fire, including vegetation distribution and climate
- Design of model experiments to test explicit hypotheses about the response of fire to environmental and climate change
- Analysis of palaeofire simulations and evaluation using observations of fire and vegetation
- Collation and processing of climate-model outputs as drivers of fire model(s)
- Running fire-vegetation model simulations, specifically in a palaeoclimate context
- Provision of research support in preparing publications and lectures arising from the project
- Provision of organisational support in developing academic workshops and networking events, and coordinating academic networks
- Assistance in the dissemination of the results, from co-presenting conference papers to co-authoring relevant publications.

Supervision received
The appointee will be supervised by Professor Sandy P. Harrison, who will provide scientific supervision and professional mentoring. Additional supervision will be provided by Professor Colin Prentice (Imperial). The

School of Archaeology, Geography and Environmental science also runs an independent professional mentoring programme.

Supervision given
Not applicable

Contacts
The appointee will be part of a team of researchers in the new **Leverhulme Centre for Widlfires, Environment and Society (**https://centreforwildfires.org/**)**. They will be associated with the SPECIAL research group at Reading (https://research.reading.ac.uk/palaeoclimate/) which focuses on reconstruction and analysis of past climates. They will also have the opportunity to work with members of the Palaeoclimate Modelling Intercomparison Project (https://pmip4.lsce.ipsl.fr/doku.php).

Terms and conditions

Full-time, Fixed-term for up to 4 years. Percentage of time spent on the project: 100%.

This document outlines the duties required for the post to indicate the level of responsibility. It is not a comprehensive or exhaustive list and the line manager may vary duties from time to time, which do not change the general character of the job or the level of responsibility entailed.

PERSON SPECIFICATION

Job Title	School/Department
Post-Doctoral Research Assistant in Palaeofire	SAGES/Geography and Environmental Science

Criteria	Essential	Desirable
Skills Required	• Experience with using charcoal data to reconstruct fire histories • Experience in utilisation of palaeoenvironmental databases • Palaeoenvironmental analysis and modelling • High-level competence in programming, particularly Fortran, Python and R • Statistical analysis skills, including GLM and mixed-effect models	• Experience with processing and analysis of climate model output • Experience with running fire-enabled vegetation models
Attainment	• Academic qualifications to MSc/MA standard in physics, biogeochemistry, ecology, environmental science or a related subject • PhD in relevant subject area by time of appointment	• Significant research / professional experience • Publications in relevant area
Knowledge	• Palaeoclimatology • Palaeofire records • Vegetation and/or fire modelling	
Relevant Experience	• Hands-on experience with the creation and use of palaeodata bases • Hands-on experience with fire-vegetation modelling *or* with analysis of palaeoenvironmental data sets • A proven track record of publishing research • Ability to generate high quality figures and tables using appropriate software • Experience of presenting and communicating at conferences	

Disposition	• Good organisational and self-motivational skills, including the ability to work to tight timetables • Team working • Flexibility • Ambition to make a significant contribution to the field	• Interest in international collaborations.
Other	• Capacity to develop independent research agenda • Proven networking ability	

Completed by: Sandy P. Harrison   Date: 11 June 2020