University of Reading

JOB DESCRIPTION

Vacancy reference:	SRF29758
Post Title:	Research Scientist in historical temperature reconstructions with citizen science
Grade:	Grade 6
School/Department:	Department of Meteorology and National Centre for Atmospheric Science
Reports to:	Professor Ed Hawkins
Responsible for:	

Purpose
To lead a citizen science project to recover millions of historical weather observations (WeatherRescue.org) and to analyse and compare the rescued observations with other data sources.

Main duties and responsibilities
This post is part of a NERC-funded consortium called GloSAT. The overarching objective of GloSAT is to develop and analyse an extended and consistent global surface temperature climate record back to the 1780s, based on air temperatures across land, ocean and ice.

Existing estimates of global mean surface temperature combine air temperature over land with sea surface temperature (SST) for the oceans and take varying approaches for regions with sea-ice. Use of SST measurements sets the start date of the temperature record to 1850 or later, and the inconsistency of combining water and air temperatures limits confidence in estimates of climate sensitivity. To address this uncertainty, GloSAT will develop a longer and more consistent global climate record utilising air temperature measurements over the ocean, combine with extended land-based records, and improve our understanding of climate change and variability since the late 18th century.

The responsibilities for the post holder are to:

- Lead the development of the citizen science project, WeatherRescue.org. This project has already rescued millions of historical weather observations and will be continued under GloSAT, with a focus on air temperature observations from across land and oceans.
- Engage actively with the volunteers and with archival experts who will be scanning additional historical logbooks for the project.
- Perform quality control on the rescued observations and submit the data to international data archives. Ensure that GloSAT collaborators can utilise these observations in a timely manner.
- Analyse and compare the rescued observations with other data sources such as the 20th Century Reanalysis, with a focus on case studies such as large El Nino events, periods of high volcanic activity and extreme seasons.
- Examine the potential for automatic techniques to read scanned logbooks using tools developed within GloSAT by computer scientists at the University of Southampton.

Supervision received
The successful candidate will report to Prof. Ed Hawkins.

Supervision given
None.

Contact
The successful candidate will be based at the University of Reading within the Department of Meteorology and the National Centre for Atmospheric Science (NCAS). There will be close collaboration with GloSAT partners at the National Oceanography Centre and the Universities of East Anglia, Southampton, York and Edinburgh, as well as the Met Office.

Terms and conditions
This is a full-time, fixed term post of up to 36 months. The post holder will be resident in the UK for the entire period of this contract. There are no specified hours of work, but you will be required to work such hours as are necessary to carry out the duties associated with the post. Occasional travel to collaborate with other UK partners is anticipated. Overtime is not payable.

This document outlines the duties required for the time being of 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.

Date assessed:

PERSON SPECIFICATION

Job Title	School/Department
Research Scientist in historical temperature reconstructions with citizen science	**Department of Meteorology and National Centre for Atmospheric Science**

Criteria	Essential	Desirable
Skills Required	• Able to communicate effectively, both orally and in writing. • Strong analytical and problem solving skills. • Able to write and adapt computer programs.	• Image processing • Programming in python
Attainment	• Have (or expect shortly to obtain) a PhD, or equivalent experience, in a quantitative physical science, computer science, engineering or mathematics. • Appropriate publication record.	
Knowledge		• Historical temperature reconstructions • Atmospheric reanalyses
Relevant Experience	• Postgraduate level research in a computational, physical, mathematical or engineering science. • Experience giving oral presentations and writing scientific papers	• Experience in citizen science projects • Producing high quality datasets • Postgraduate experience in meteorology, oceanography and/or climate science
Disposition	• Self-motivated with the ability to take initiative • Team working - able to interact constructively and proactively with collaborators and attend national and international conferences. • Ability to actively engage with members of the public (volunteers)	

Completed by: ED HAWKINS Date: 07/07/19