



JOB DESCRIPTION

Job Title:	Postdoctoral Research Associate
Department / Unit:	Earth Sciences
Job type	Professional Services
Grade:	RHUL 7
Accountable to:	DEFRA project PI, Dr. Dave Lowry
Accountable for:	N/A
Purpose of the Post	
<p>To join the experienced mobile GHG measurement team at RHUL on the DEFRA-funded Landfill 2 project (subcontracting to NPL). This will include planning measurement campaigns, collecting samples for isotopic measurement and interpretation of atmospheric data, and using GIS, tracer release and flux modelling techniques to locate, attribute and quantify methane emissions from UK landfill sites. To contribute to other projects in the greenhouse gas laboratory including continuing compilation of greenhouse gas measurements.</p>	
Key Tasks	
<p>Mobile surveys including:</p> <ul style="list-style-type: none"> • Selection of landfill targets and design of survey routes. • Preparation of equipment prior to surveys. • Release of ethane tracer gas • Collection of samples from downwind plumes and from on-site gas wells for subsequent isotopic analysis • Assessment of data streams during surveys with rapid decision making based on results and current meteorology • Ensuring that datafiles are saved and archived • Integration of new instrumentation into the vehicle 	
<p>Data manipulation and interpretation:</p> <ul style="list-style-type: none"> • Handling large datafiles from a range of instruments measuring at 1 and 0.1 second intervals. • Use of GIS techniques to spatially display survey data from a range of instruments • Use of statistical techniques to analyse and interpret data • Use of atmospheric modelling techniques to quantify emissions, including Tracer release, and Gaussian and Lagrangian models 	
<p>Research output and outreach:</p> <ul style="list-style-type: none"> • Presentation of findings at group meetings. 	

- Discussion of project findings with government (DEFRA).
- Preparing quarterly reports of the measurement results and interpretation
- Setting up meetings and collaborating with project partners.

Involvement in DEFRA field measurements as campaign leader and RHUL-approved driver as part of a 2 or 3-person team. Tasks include:

- Driving the MIGGAS greenhouse gas survey vehicle on landfill measurement surveys across the UK (may involve occasional non-standard hours of work).
- Operation of instruments and GPS in the survey vehicle.
- Advising on routes and measurement targets and protocols.

Other Duties

The duties listed are not exhaustive and may be varied from time to time as dictated by the changing needs of the Greenhouse Gas Research Group. The post holder will be expected to undertake other duties as appropriate and as requested by their line manager. This could include a small amount of data entry or isotopic measurement where the subject matter is akin to the post holders research experience or related to the activities of the greenhouse gas group.

The post holder will actively follow Royal Holloway policies including Equal Opportunities policies. The post holder will also observe Fire and Health and Safety Regulations.

Career Development

For career and personal development, the post holder will develop a personal development plan outlining career goals and required training support (Support by Department and University Occupational Development), to be reviewed annually as part of the Personal Annual Appraisal (PAR) with the line manager. The poster-holder is expected to pursue opportunities arising for ECR within the University in support of career development and will be offered a mentor from within the Centre Of Climate, Oceans and Atmosphere (COCOA).

Internal and external relationships

In addition to the key tasks and duties in their role as Postdoctoral Research Associate of the Greenhouse Gas Laboratory, the post holder is expected to actively interact with the other research labs of the department for all shared supplies and resources. The post holder should also be an active member of COCOA, one of three research centres within the Department of Earth Sciences.

The following list is not exhaustive but the post holder will be required to liaise with:

- The DEFRA PI, Dr Dave Lowry and Co-Is Dr Rebecca Fisher and Dr James France
- Researchers at Project lead, NPL
- Project partners Ricardo and the University of Southampton
- Other staff and PhD students of the Greenhouse Gas Research Group
- Other academics and support staff of the department
- Colleagues in other departments/universities/other research facilities
- Students, visitors, collaborators and suppliers to the laboratory

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(Greenhouse Gas Group)**

Department: Earth Sciences

	Essential	Desirable	Tested by Application Form/Interview/Test
Knowledge, Education, Qualifications and Training			
PhD qualification in measurement of greenhouse gases or relevant subject area	X		Application, interview
First Aid at work (or willingness to be trained)		X	Application, interview
Skills and Abilities			
Ability to complete instrumental procedures without supervision	X		Application, interview
Familiarisation with laser spectrometers and / or infra-red analysers for atmospheric analysis		X	Application, interview
Excellent computing skills to process	X		Application, interview
Experience in setting up and testing instrumentation		X	Application, interview
Experience with measurement of atmospheric gases and quantification of emissions		X	Application, interview
Written, oral and listening communication skills	X		Interview
Ability to prioritise and schedule own workload	X		Interview
Experience			
Of working in adherence to health and safety procedures and precautions in routine processes	X		Application, interview
Of isotopic analysis of atmospheric gases		X	Application, interview
Of handling large datasets	X		Application, interview
Of mathematical and statistical analysis of data	X		Application, interview
First author experience of publishing research		X	Application, interview
Demonstrable commitment to equality, diversity and inclusion	X		
Other requirements			
Ability to physically undertake the duties associated with the role, including manual handling	X		Application, interview
Full driving license to drive the research group survey vehicle		X	Application, interview
Availability to carry out UK field research	X		Interview
Availability to work variable hours		X	Interview
Occasional evening and weekend work		X	Interview
Able to commence work between 1 November and 1 December 2024	X		Interview