



THE POST

College:	<u>College of Engineering, Mathematics and Physical Sciences</u>
Post:	Postdoctoral Research Associate / Fellow
Reference No:	P70009
Grade:	E/F
HERA:	ARF/RF
Reporting To:	Prof Jim Haywood

The above full time post is available from 6th January 2020 for at least 18 months in the College of Engineering, Mathematics and Physical Sciences.

Job Description

A full-time position is available for 18+ months with start dates of 6th January 2020 in the College of Engineering, Mathematics and Physical Sciences. The project will be guided by Prof Jim Haywood from the University of Exeter and the Met Office, with additional support from Dr Ben Johnson of the Met Office. A significant amount of time will be spent collaborating with staff at the Met Office/Met Office Hadley Centre and with the University of Manchester who hold the grant (Dr James Allan).

You will be expected to:-

- 1) Develop and implement a parameterisation improving the representation of BC mixing in the UKCA-mode aerosol scheme used in UKESM1. This will capture how the optical properties of the aerosol depend on the coating of BC by associated inorganic and organic compounds.
- 2) Develop and implement a representation for the absorbing impacts of BrC in UKCA-mode, by adding new class of 'brown' organic matter to the model. This will complement the existing class of non-absorbing organic matter. The relative amounts of each will vary according to source type and aging processes.
- 3) Assess the impacts of these improvements on absorption properties, radiative forcing and climate response in the UKESM1 climate model.
- 4)

Main duties and accountabilities (Postdoctoral Research Associate level):

1. To undertake research as appropriate to the field of study including:
 - Writing up research work for publication;
 - Developing research objectives and proposals for own or joint research;
 - Making presentations at national and international conferences and similar events;
 - Dealing with problems which may affect the achievement of research objectives and deadlines;
 - Analysing and interpreting the results of own research and generating original ideas based on outcomes;
 - Using new research techniques and methods;
 - Using initiative and creativity to identify areas for research, developing new research methods and extending the research portfolio;
 - Using creativity to analyse and interpret research data and draw conclusions on the outcomes.
2. To contribute to teaching and to be involved in the assessment of student knowledge including assisting in the supervision of student projects and in the development of student research skills.

3. To work in collaboration with colleagues as appropriate to the field of study including:
 - Contributing to collaborative decision making within the research group;
 - Contributing to the production of collaborative research reports and publications.
 - Preparing papers and presenting information on research progress and outcomes to bodies supervising research, e.g. steering groups.
4. To communicate complex information, orally, in writing and electronically.
5. To prepare proposals and applications to external bodies, e.g. for funding and contractual purposes
6. To contribute to the planning of research projects.
7. To use research resources, laboratories and workshops as appropriate and to take responsibility for conducting risk assessments, reducing hazards and for the health and safety of others.
8. To monitor research budgets as appropriate.
9. To engage in continuous professional development and to be responsible for continually updating knowledge and understanding in field of study or specialism and for developing skills.

This job description summarises the main duties and accountabilities of the post and is not comprehensive: the post-holder may be required to undertake other duties of similar level and responsibility. Please visit the Human Resources website to view the Research Fellow role profiles.

Person Specification (Postdoctoral Research Associate level)

Competency	Essential	Desirable
Attainments/Qualifications	PhD (or near completion) equivalent in a related field of study.	
Skills and Understanding	Sufficient knowledge in the discipline and of research methods and techniques to work within established research programmes. An understanding of the climate change issues and the concept of the radiative forcing of climate.	Evidence of research activity and published research. Knowledge of FORTRAN, IDL, PYTHON. Knowledge of the Met Office Unified Model.
Prior Experience	Experience of conducting risk assessments and understanding of health and safety legislation	Experience of undergraduate teaching.
Behavioural Characteristics	Excellent written and verbal communication skills. Able to demonstrate clear communication of scientific findings both verbally and through written work. Able to manage research and administrative activities and to balance the competing pressures of research and administrative demands and deadlines. Able to liaise with colleagues and students. Able to build contacts and participate in internal and external networks for the exchange of information and collaboration. Able to identify potential sources of funding.	

	<p>Actively participate as a member of a research team.</p> <p>Engage in continuous professional development.</p> <p>Understand equal opportunity issues as they may impact on areas of research content.</p>	
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Main duties and accountabilities (Postdoctoral Research Fellow level):

1. To undertake research as appropriate to the field of study including:
 - Acting as principal investigator on research projects;
 - Developing research objectives, projects and proposals;
 - Conducting individual or collaborative research projects;
 - Identifying sources of funding and contributing to the process of securing funds;
 - Extending, transforming and applying knowledge acquired from scholarship to research and appropriate external activities;
 - Writing or contributing to publications or disseminating research findings using media appropriate to the discipline;
 - Making presentations at conferences or exhibiting work in other appropriate events;
 - Assessing, interpreting and evaluating outcomes of research;
 - Developing new concepts and ideas to extend intellectual understanding;
 - Resolving problems of meeting research objectives and deadlines;
 - Developing ideas for generating income and promoting research area;
 - Developing ideas for application of research outcomes;
 - Deciding on research programmes and methodologies, often in collaboration with colleagues and sometimes subject to the approval of the head of the research programme on fundamental issues.

2. To contribute to teaching and learning programmes in the School and to supervise postgraduate research students.

3. To act as research team leader including:
 - Mentoring colleagues with less experience and advising on their professional development;
 - Coaching and supporting colleagues in developing their research techniques;
 - Supervising the work of others, for example in research teams or projects;
 - Developing productive working relationships with other members of staff;
 - Co-ordinating the work of colleagues to ensure equitable access to resources and facilities;
 - Dealing with standard problems and help colleagues to resolve their concerns about progress in research.

4. To routinely communicate complex and conceptual ideas to those with limited knowledge as well as to peers using high level skills and a range of media and to present the results of scientific research to sponsors and at conferences.

5. To plan, co-ordinate and implement research programmes including:
 - Managing the use of research resources and ensure that effective use is made of them;
 - Managing research budgets;
 - Helping to plan and implement commercial and consultancy activities;
 - Planning and managing own consultancy assignments.

This job description summarises the main duties and accountabilities of the post and is not comprehensive: the post-holder may be required to undertake other duties of similar level and responsibility. Please visit the Human Resources website to view the Research Fellow role profiles.

Person Specification (Postdoctoral Research Fellow level)

Competency	Essential	Desirable
Attainments/Qualifications	PhD or equivalent in a related field of study.	Be a nationally recognised authority in the subject area.
Skills and Understanding	<p>Possess sufficient specialist knowledge in the discipline to develop research programmes and methodologies.</p> <p>Record of research output in nationally recognised publications.</p> <p>An understanding of the climate change issues and the concept of the radiative forcing of climate.</p>	<p>Knowledge of FORTRAN, IDL, PYTHON.</p> <p>Knowledge of the Met Office Unified Model.</p>
Prior Experience	<p>Experience of teaching at undergraduate level.</p> <p>Experience of managing research projects and research teams.</p> <p>Successful in obtaining grant funding.</p> <p>Experience of Climate modelling and/or climate model data analysis.</p>	<p>Experience of postgraduate teaching and supervision.</p> <p>Experience of acting as principal investigator on research projects.</p>
Behavioural Characteristics	<p>Excellent written and verbal communication skills.</p> <p>Able to demonstrate clear communication of scientific findings both verbally and through written work.</p> <p>Evidence of the ability to collaborate actively within the Institution and externally to complete research projects and advance thinking.</p> <p>Able to participate in and develop external networks.</p> <p>Able to identify sources of funding, generate income, obtain consultancy projects, or build relationships for future activities.</p> <p>Able to balance the pressures of research, administrative demands and competing deadlines.</p>	

Terms & Conditions

Our Terms and Conditions of Employment can be viewed [here](#).

Further Information

Please see our [website](#) for further information on working at the University of Exeter.