

Job Description and Selection Criteria

Job title	Postdoctoral Research Associate in Climate Effects of Meat and Dairy Production.
Division	Mathematical Physical and Life Sciences
Department	Physics
Location	Robert Hooke Building
Grade and salary	Grade 7: £31076 - £38,183 (with discretionary range to £41,709) per annum
Hours	Full time
Contract type	Fixed-term 3 years
Reporting to	Raymond T. Pierrehumbert, Halley Professor of Physics
Vacancy reference	129656
Additional information	Closing date – midday (UK time) on 29 th September 2017
Research topic	Climate effects of animal-based food production
Principal Investigator / supervisor	Raymond T. Pierrehumbert, Halley Professor of Physics
Project team	
Project web site	http://www.futureoffood.ox.ac.uk/project/future-meat-and-dairy-fomad
Funding partner	The funds supporting this research project are provided by the Wellcome Trust
Recent publications	See project site



The role

A Postdoctoral Research Assistant is sought to work under the direction of Raymond Pierrehumbert, Halley Professor of Physics, on the climate impacts of animal-based food production systems. This effort is a component of a Wellcome Foundation project on the comprehensive impacts of animal-based food production and consumption on the environment and on human health. A major responsibility of the post is compiling and organizing a database of emissions intensities of carbon dioxide, methane and nitrous oxide for a variety of animal based food production systems covering different products (e.g. dairy and dairy/beef, poultry, pork), different regions (e.g. Europe, North America, India, China) and different production strategies (e.g. pastured vs. intensive). This will be done primarily through acquiring data from existing databases, and through meta-analysis of published literature. The effects of deforestation/reforestation associated with pastureland on the carbon cycle, and the extent of carbon uptake and release by pasture, will also be studied. The PDRA will also, in collaboration with other project members, develop animal-based food consumption scenarios and use these in conjunction with the emission intensities to conduct climate simulations using a simplified climate model, interpret the results, and prepare publications.

Responsibilities

- Compile database of greenhouse gas emission intensities for various meat and dairy production activities
- Evaluate emissions due to deforestation and pasture usage associated with meat and dairy production.
- Carry out liaison with project team members at Oxford and with relevant external research groups, as needed to develop production scenarios and compile necessary emissions data.
- Carry out and analyze simulations using an idealized energy balance climate model driven by various agricultural greenhouse gas emissions scenarios
- Develop and implement new research methodologies and materials.
- Regularly write research articles at an international level for peer-reviewed journals. Present papers at national and international conferences to disseminate research findings.
- Agree clear task objectives; identify and coordinate work for students and other junior members of the team; and coach other members of the group on specialist methodologies or procedures.
- Share responsibility for shaping the research group's long-term plans and contribute to the development of new research projects and associated funding applications.
- Represent the research group at external meetings and seminars, either with other members of the group or alone.

Selection criteria

Essential

- Hold a doctorate in an area of physical or biological sciences relevant to the project, or be very close to obtaining one.
- Familiarity with basic physics and chemistry relevant to the greenhouse effect and global warming.
- Computer skills relevant to developing and using idealized simulations
- Familiarity with lifecycle analysis applied to environmental impact of agricultural activities
- Demonstrated ability to independently formulate and implement research strategies needed to fulfill overall objectives set forth by the project supervisor

Desirable

- Familiarity with carbon uptake and release by terrestrial ecosystems and agricultural land
- Analysis of meat and dairy production systems
- Ability to program in Python
- Climate modeling using simplified energy balance models

About the University of Oxford

Welcome to the University of Oxford. We aim to lead the world in research and education for the benefit of society both in the UK and globally. Oxford's researchers engage with academic, commercial and cultural partners across the world to stimulate high-quality research and enable innovation through a broad range of social, policy and economic impacts.

We believe our strengths lie both in empowering individuals and teams to address fundamental questions of global significance, while providing all our staff with a welcoming and inclusive workplace that enables everyone to develop and do their best work. Recognising that diversity is our strength, vital for innovation and creativity, we aspire to build a truly diverse community which values and respects every individual's unique contribution.

While we have long traditions of scholarship, we are also forward-looking, creative and cutting-edge. Oxford is one of Europe's most entrepreneurial universities. Income from external research contracts in 2014/15 exceeded £522.9m and we rank first in the UK for university spin-outs, with more than 130 companies created to date. We are also recognised as leaders in support for social enterprise.

Join us and you will find a unique, democratic and international community, a great range of staff benefits and access to a vibrant array of cultural activities in the beautiful city of Oxford.

For more information please visit www.ox.ac.uk/about/organisation

Department of Physics

Oxford Physics is one of the largest and most eminent departments in Europe – pursuing forefront research alongside training the next generation of leaders in Physics.

With an academic staff of almost one hundred our activities range from fundamental particles to the furthest reaches of the universe to manipulating matter on an atomic scale. Oxford physicists are probing new ways to harness solar energy, modelling the Earth's atmosphere to

predict the future climate, exploring computation on the quantum scale and executing calculations that reveal the fundamental structure of space and time.

For more information please visit: <http://www2.physics.ox.ac.uk/>

Sub-department

The post-holder will be based in the Atmospheric, Oceanic and Planetary Physics sub-department, which is one of the six sub-departments that together make up the Department of Physics; these are Astrophysics, Atomic and Laser Physics, Atmospheric, Oceanic and Planetary Physics, Condensed Matter Physics, Particle Physics and Theoretical Physics, with a seventh function (Central Physics) providing administrative and technical support to these sub-departments.

Athena Swan Charter

The Department of Physics holds a silver Athena Swan award to recognise advancement of gender equality: representation, progression and success for all.

Mathematical, Physical & Life Sciences Division

The Mathematical, Physical and Life Sciences (MPLS) Division is one of the four academic divisions of the University of Oxford.

The MPLS Division's 10 departments and 3 interdisciplinary units span the full spectrum of the mathematical, computational, physical, engineering and life sciences, and undertake both fundamental research and cutting-edge applied work. Our research addresses major societal and technological challenges and is increasingly focused on key interdisciplinary issues. We collaborate closely with colleagues in Oxford across the medical sciences, social sciences and humanities, and with other universities, research organisations and industrial partners across the globe in pursuit of innovative research geared to address critical and fundamental scientific questions.

For more information please visit: <http://www.mpls.ox.ac.uk/>

How to apply

If you would like to apply, click on the **Apply Now** button on the 'Job Details' page and follow the on-screen instructions to register as a new user or log-in if you have applied previously. Please provide details of two referees and indicate whether we can contact them now.

You will also be asked to upload a CV and statement of research interests. Your application will be judged solely on the basis of how you demonstrate that you meet the selection criteria stated in the job description.

Please upload all documents **as PDF files** with your name and the document type in the filename.

All applications must be received by **midday** on the closing date stated in the online advertisement.

Information for priority candidates

A priority candidate is a University employee who is seeking redeployment because they have been advised that they are at risk of redundancy, or on grounds of ill-health/disability. Priority candidates are issued with a redeployment letter by their employing departments.

If you are a priority candidate, please ensure that you attach your redeployment letter to your application (or email it to the contact address on the advert if the application form used for the vacancy does not allow attachments)

Should you experience any difficulties using the online application system, please email recruitment.support@admin.ox.ac.uk. Further help and support is available from www.ox.ac.uk/about_the_university/jobs/support/. To return to the online application at any stage, please go to: www.recruit.ox.ac.uk.

Please note that you will be notified of the progress of your application by automatic emails from our e-recruitment system. **Please check your spam/junk mail** regularly to ensure that you receive all emails.

Important information for candidates

Pre-employment screening

Please note that the appointment of the successful candidate will be subject to standard pre-employment screening, as applicable to the post. This will include right-to-work, proof of identity and references. We advise all applicants to read the candidate notes on the University's pre-employment screening procedures, found at:

www.ox.ac.uk/about/jobs/preemploymentscreening/.

The University's policy on retirement

The University operates an employer justified retirement age for all academic and academic-related posts (grade 6 and above), for which the retirement date is the 30 September immediately preceding the 68th birthday. The justification for this is explained at: www.admin.ox.ac.uk/personnel/end/retirement/revisedejra/revaim/.

For **existing** employees any employment beyond the retirement age is subject to approval through the procedures: www.admin.ox.ac.uk/personnel/end/retirement/revisedejra/revproc/

There is no normal or fixed age at which **support staff** in posts at **grades 1–5** have to retire. Support staff may retire once they reach the minimum pension age stipulated in the Rules of the pension scheme to which they belong.

Equality of Opportunity

Entry into employment with the University and progression within employment will be determined only by personal merit and the application of criteria which are related to the duties of each particular post and the relevant salary structure. In all cases, ability to perform the job will be the primary consideration. No applicant or member of staff shall be discriminated against

because of age, disability, gender reassignment, marriage or civil partnership, pregnancy or maternity, race, religion or belief, sex, or sexual orientation.

Benefits of working at the University

Training and Development

A range of training and development opportunities are available at the University. Further details can be found at www.ox.ac.uk/staff/working_at_oxford/training_development/index.html.

For research staff only: Support for Research Staff

There is a particularly wide range of support for career development for research staff. Please visit: www.ox.ac.uk/research/support-researchers to find out more.

Pensions

The University offers generous occupational pension schemes for eligible staff members. Further details can be found at www.admin.ox.ac.uk/finance/epp/pensions/pensionspolicy/.

Information for international staff *(or those relocating from another part of the UK)*

A wealth of information is available on the University's International Staff website for staff who are relocating to Oxford from abroad, at www.admin.ox.ac.uk/personnel/staffinfo/international/.

The University of Oxford Newcomers' Club

The Newcomers' Club is aimed at helping partners of newly-arrived visiting scholars, graduate students and academic members of the University to settle in and to meet people in Oxford.

Transport schemes

The University offers a range of travel schemes and public transport travel discounts to staff. Full details are available at www.admin.ox.ac.uk/estates/ourservices/travel/.

University Club and University Sports Facilities

The University Club provides social, sporting and hospitality facilities. It incorporates a Club bar, a cafe and sporting facilities, including a gym. See www.club.ox.ac.uk for all further details.

University staff can use the University Sports Centre at discounted rates, and have the chance to join sports clubs. Please visit www.sport.ox.ac.uk/oxford-university-sports-facilities.

Childcare and Childcare Vouchers

The University offers quality childcare provision services at affordable prices to its employees. For full details about the services offered, please visit www.admin.ox.ac.uk/childcare/. **NB: Due to the high demand for the University's nursery places there is a long waiting list.**

The University also offers nursery fee payment schemes to eligible staff as an opportunity to save tax and national insurance on childcare costs. Please visit www.admin.ox.ac.uk/childcare.

Disabled staff

The University is committed to supporting members of staff with a disability or long-term health condition and has a dedicated Staff Disability Advisor. Please visit www.admin.ox.ac.uk/eop/disab/staff for further details.

BUPA - Eduhealth

Bupa Eduhealth Essentials private medical insurance offers special rates for University of Oxford staff and their families www.eduhealth.co.uk/mini-site/.

All other benefits

For other benefits, such as free entry to colleges, the Botanic Gardens and staff discounts offered by third party companies, please see www.admin.ox.ac.uk/personnel/staffinfo/benefits/.