Job description

Post	Researcher in Life Cycle Environmental Assessment
Department	Biology
Division	Mathematical, Physical and Life Sciences Division (MPLS)
Location	11a Mansfield Road, Oxford, OX1 3SZ and Oxford Martin School, 34 Broad Street, Oxford, OX1 3BD
Grade and salary	Grade 7: £36,024 - £44,263 per annum
Hours	Full time
Contract type	Fixed term until 30/04/2025, with extension to 31/10/2026 dependent on funding.
Reporting to	Professor E.J. Milner-Gulland, Dr. Joseph Poore
Application deadline	12:00 Midday on Wednesday 15 November 2023
Vacancy reference	168826
Recruitment contacts	HR: hr@biology.ox.ac.uk

Research topic	Life Cycle Environmental Impact Assessment of Agriculture and Food
Principal Investigator / supervisor	Professor E.J. Milner-Gulland
Project team	Dr. Joseph Poore, Guillaume Royer, Valentina Caldart, HESTIA team
Project web site	https://www.hestia.earth/ https://www.iccs.org.uk/
Funding partner	Login5 Foundation
Recent publications	Poore, J. and Nemecek, T. 2018. Reducing food's environmental impacts through producers and consumers. *Science,* 360(6392), pp.987-992.

The role

We are seeking a Life Cycle Environmental Assessment Researcher to join the HESTIA project team with a focus on growing our farm-specific data, improving our environmental impact assessment models, and contributing to academic publications.

- **Growing our data:** HESTIA stores data on the environmental impacts of thousands of farms already, but we need substantially more data to represent the huge diversity of global agriculture. You will primarily work with external institutions which hold large amounts of data describing farms and their environmental impacts, and help structure their data into the HESTIA format and archive it on our platform. Example organisations you are likely to work with in this project include: FiBL, ecoinvent, Agroscope, CIRAD, CIMMYT, and Worldfish. You will focus on large datasets covering thousands of farms including: smallholder organic farms in Africa, fruit and vegetable farms in Europe, farms producing tropical export crops in Africa, maize farms in India, and aquaculture farms in Egypt.

- **Improving our models:** HESTIA runs models over data describing the activities of farms to calculate environmental impact. You will work on specifying up models which are ready to be picked up by a software developer. This requires an ability to understand simple linear and non-linear emissions and resource models, or an interest in work with our team to build your knowledge of how to specify these models. Example models you will work on include: models to calculate the nitrous oxide emissions from fertiliser application and models to quantify the methane emissions from aquaculture ponds.

- **Leading/contributing to academic publications:** There will be opportunities to publish the results of the data and models work, and you will have an interest in leading or contributing to academic publications.

About the Project

Agriculture is one of the biggest drivers of humanity's environmental impacts. HESTIA provides the digital infrastructure and underpinning science to enable these impacts to be quantified and reduced, while also supporting increases in agricultural productivity. For more information on the project visit https://hestia.earth.

The number of partners our project works with and our team is growing and this is an exciting time to join the project as it scales up. Our team is part of the Interdisciplinary Centre for Conservation Science in the Department of Biology and the Oxford Martin School.

Responsibilities

- Upload datasets – particularly large datasets – to the HESTIA platform.

- Work with external partner organisations, and create new relationships, to ensure data exchange.

- Create new, and debug existing, environmental impact assessment methods and models.

- Manage your own academic research and administrative activities. This involves small scale project management, particularly with external partners, to co-ordinate multiple aspects of work to meet deadlines.

- Contribute ideas for new research projects, particularly with our external partners.

- Develop ideas for generating research income, and present detailed research proposals to senior researchers in the HESTIA team.

- Collaborate in the preparation of research publications, and present papers at conferences or public meetings.

- Represent the research group at external meetings/seminars, either with other members of the group or alone.

- There will be opportunities for the post holder to carry out teaching and supervision within the Department of Biology, if desired.

Selection criteria

Essential selection criteria

- Either: hold, or be close to completion of, a relevant PhD/DPhil; or hold an undergraduate or master's degree in a relevant subject with relevant experience.

- Possess sufficient specialist and technical knowledge in the discipline to work within established research programmes.

- Ability to manage own academic research and associated activities.

- Previous experience of contributing to publications, presentations or reports in this field.

- Ability to contribute ideas for new research projects and research income generation.

- Excellent communication skills, including the ability to write for publication, present research proposals and results, and represent the research group at meetings.

Desirable selection criteria

- Experience using Python, either for delivering production-ready code and/or for data analysis.

- Experience with Git and GitLab/GitHub.

- Experience with Life Cycle Assessment or other environmental impact modelling.

- Experience working with agricultural datasets.

Pre-employment screening

Standard checks

We will ask selected candidates to complete a data test lasting 3 hours which will test your experience working with Excel (or equivalent software) and with agricultural datasets.

If you are offered the post, the offer will be subject to standard pre-employment checks. You will be asked to provide: proof of your right-to-work in the UK; proof of your identity; and (if we haven't done so already) we will contact the referees you have nominated. You will also be asked to complete a health declaration so that you can tell us about any health conditions or disabilities for which you may need us to make appropriate adjustments.

Please read the candidate notes on the University's pre-employment screening procedures at: https://www.jobs.ox.ac.uk/pre-employment-checks

Hazard-specific / Safety-critical duties

This job includes hazards or safety-critical activities. If you are offered the post, you will be asked to complete a health questionnaire which will be assessed by our Occupational Health Service, and the offer of employment will be subject a successful outcome of this assessment.

The hazards or safety-critical duties involved are as follows:
- Driving on University business

- Travel outside of Europe or North America on University Business

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 and we rank first in the UK for university spin-outs, and in recent years we have spun out 15-20 new companies every year. 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.

The Department of Biology

You will be joining the Department of Biology at an exciting time. The Department established from August 2022 as a result of a merger between the Departments of Zoology and Plant Sciences, and is preparing to move into the new state-of-the-art Life and Mind Building in two to three years time.

The Department of Biology is recognised internationally for its research in a wide range of fields spanning all levels from molecules to ecosystems, and tackling global challenges through fundamental bioscience research. Over time, the research interests of the Department has been focused on five primary themes: Behaviour & Biomechanics; Ecology & Conservation; Evolutionary Biology; Microbiology & Infectious Disease; and Molecular Plant Biology. Research is conducted in all spheres from laboratory and in silico analysis to theoretical and field-based research.

At all times we seek to reinforce the connections between research and our education offering, at both graduate and undergraduate level. The Department teaches a four-year undergraduate degree MBiol course in Biology, with fourth-year students undertaking a Masters-level research project. It also supports a variety of graduate placements and hosts the University's DPhil in Biology.

External research income to the Department is derived from over 50 different funding agencies, with the principal current funders being the European Research Council, the Royal Society, the Wellcome Trust, BBSRC and NERC. The Department has a significant record in integrating broader societal impacts of its research, including the provision of policy to government at the highest level, as well as supporting the commercialisation of research through spin-out companies and licensing arrangements that have generated hundreds of millions of pounds' worth of innovation.

The Department is located in the University's Science Area at two sites, and will move into the new £200m Life and Mind Building in 2024 that will include extensive laboratory provision with controlled environment rooms, glasshouses and an imaging suite. The Department also benefits from extensive facilities at the John Krebs Field Station at Wytham, with Wytham Woods nearby, as well as partnerships with organisations in the area such as the Oxford Botanic Gardens and Oxford Natural History Museum.

For more information please visit: https://www.biology.ox.ac.uk

The Mathematical, Physical and Life Sciences Division

The Mathematical, Physical, and Life Sciences (MPLS) Division is one of the four academic divisions of the University. Oxford is widely recognised as one of the world's leading science universities. . The disciplines within the MPLS Division regularly appear at the highest levels in world rankings and have been evaluated as conducting world-leading and internationally excellent research in UK research assessments, and Mathematical, physical and life sciences research at Oxford is the best in the country according to the 2014 Research Excellence Framework (REF) assessment exercise carried out by HEFCE.

The MPLS Division is home to the non-medical sciences at Oxford and its 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 tackles major societal and technological challenges – whether developing new energy solutions or improved cancer treatments, understanding climate change processes, or helping to preserve biodiversity, 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.

MPLS is proud to be the home of some of the most creative and innovative scientific thinkers and leaders working in academe. Our senior researchers have been awarded some of the most significant scientific honours (including Nobel prizes and prestigious titles such as FRS and FREng) and we have a strong tradition of attracting and nurturing the very best early career researchers who regularly secure prestigious fellowships. The Division is also the proud holder of ten Athena Swan Awards (5 Silver and 5 Bronze) illustrating our commitment to ensure good practice and to encourage women in science at all levels in the division.

We have around 6,000 full and part-time students (including approximately 1900 graduate students) and play a major role in training the next generation of leading scientists. Oxford's international reputation for excellence in teaching is reflected in its position at the top of the major league tables and subject assessments. MPLS academics educate students of high academic merit and potential from all over the world. Through a mixture of lectures, practical work and the distinctive college tutorial system, students develop their ability to solve major mathematical, scientific and engineering problems.

MPLS is dedicated to bringing the wonder and potential of science to the attention of audiences far beyond the world of academia. We have a strong commitment to supporting public engagement in science through initiatives including the Oxford Sparks portal (www.oxfordsparks.net) and a large variety of outreach activities; these are crucial activities given so many societal and technological issues demand an understanding of the science that underpins them. We also endeavour to bring the potential of our scientific efforts forward for practical and beneficial application to the real world and our desire is to link our best scientific minds with industry and public policy makers.

For more information please visit: www.mpls.ox.ac.uk
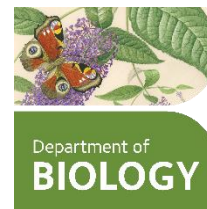
How to apply

Applications are made through our online recruitment portal. Information about how to apply is available on our Jobs website https://www.jobs.ox.ac.uk/how-to-apply.

Your application will be judged solely on the basis of how you demonstrate that you meet the selection criteria stated in the job description.

As part of your application you will be asked to provide details of two referees and indicate whether we can contact them now.

You will be asked to upload a CV and a supporting statement. The supporting statement must explain how you meet each of the selection criteria for the post using examples of your skills and experience. This may include experience gained in employment, education, or during career breaks (such as time out to care for dependants)

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

All applications must be received by **midday** UK time 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 department(s).

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).

If you need help

Application FAQs, including technical troubleshooting advice is available at: https://staff.web.ox.ac.uk/recruitment-support-faqs

Non-technical questions about this job should be addressed to the recruiting department directly at HR@Biology.ox.ac.uk

To return to the online application at any stage, please go to: www.recruit.ox.ac.uk.

Please note that you will receive an automated email from our online recruitment portal to confirm receipt of your application. **Please check your spam/junk mail** if you do not receive this email.

Important information for candidates

Data Privacy

Please note that any personal data submitted to the University as part of the job application process will be processed in accordance with the GDPR and related UK data protection legislation. For further information, please see the University's Privacy Notice for Job Applicants at: https://compliance.admin.ox.ac.uk/job-applicant-privacy-policy. The University's Policy on Data Protection is available at: https://compliance.admin.ox.ac.uk/data-protection-policy.

The University's policy on retirement

The University operates an Employer Justified Retirement Age (EJRA) for very senior research posts at **grade RSIV/D35 and clinical equivalents E62 and E82**, which with effect from 1 October 2023 will be 30 September before the 70th birthday. The justification for this is explained at: https://hr.admin.ox.ac.uk/the-ejra.

For **existing** employees on these grades, any employment beyond the retirement age is subject to approval through the procedures: https://hr.admin.ox.ac.uk/the-ejra.

There is no normal or fixed age at which staff in posts at other grades have to retire. Staff at these grades may elect to retire in accordance with the rules of the applicable pension scheme, as may be amended from time to time.

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

Employee benefits

University employees enjoy 38 days' paid holiday, generous pension schemes, travel discounts, and a variety of professional development opportunities. Our range of other employee benefits and discounts also includes free entry to the Botanic Gardens and University colleges, and discounts at University museums. See https://hr.admin.ox.ac.uk/staff-benefits

University Club and sports facilities

Membership of the University Club is free for all University staff. The University Club offers social, sporting, and hospitality facilities. Staff can also use the University Sports Centre on Iffley Road at discounted rates, including a fitness centre, powerlifting room, and swimming pool. See www.club.ox.ac.uk and https://www.sport.ox.ac.uk/.

Information for staff new to Oxford

If you are relocating to Oxfordshire from overseas or elsewhere in the UK, the University's Welcome Service website includes practical information about settling in the area, including advice on relocation, accommodation, and local schools. See https://welcome.ox.ac.uk/

There is also a visa loan scheme to cover the costs of UK visa applications for staff and their dependants. See https://staffimmigration.admin.ox.ac.uk/visa-loan-scheme

Family-friendly benefits

With one of the most generous family leave schemes in the Higher Education sector, and a range of flexible working options, Oxford aims to be a family-friendly employer. We also subscribe to the Work+Family Space, a service that provides practical advice and support for employees who have caring responsibilities. The service offers a free telephone advice line, and the ability to book emergency back-up care for children, adult dependents and elderly relatives. See https://hr.admin.ox.ac.uk/my-family-care

The University has excellent childcare services, including five University nurseries as well as University-supported places at many other private nurseries.

For full details, including how to apply and the costs, see https://childcare.admin.ox.ac.uk/

Disabled staff

We are committed to supporting members of staff with disabilities or long-term health conditions. For further details, including information about how to make contact, in confidence, with the University's Staff Disability Advisor, see https://edu.admin.ox.ac.uk/disability-support

Staff networks

The University has a number of staff networks including the Oxford Research Staff Society, BME staff network, LGBT+ staff network and a disabled staff network. You can find more information at https://edu.admin.ox.ac.uk/networks

The University of Oxford Newcomers' Club

The University of Oxford Newcomers' Club is an organisation run by volunteers that aims to assist the partners of new staff settle into Oxford, and provides them with an opportunity to meet people and make connections in the local area. See www.newcomers.ox.ac.uk.