Job description and selection criteria

Job title	**Postdoctoral Research Assistant in Ocean Modelling**
Division	**MPLS**
Department	**Earth Sciences**
Location	**South Parks Road, Oxford**
Grade and salary	**Grade 7: £32,817 - £36,914 per annum**
Hours	**Full time**
Contract type	**Fixed-term (3 years)**
Reporting to	**Dr Helen Johnson**
Vacancy reference	**147343**
Additional information	**May require remote working in the first instance**

Research topic	Dynamics and predictability of the Subpolar North Atlantic Ocean
Principal Investigator / supervisor	**Helen Johnson (Earth Sciences) and David Marshall (AOPP)**
Project team	This post is funded by the NERC Changing North Atlantic Ocean SNAP-DRAGON project (Subpolar North Atlantic Processes - Dynamics and pRedictability of vAriability in Gyre and OverturNing). The team includes scientists at the National Oceanography Centre, University of Liverpool, University of Reading and Scottish Association for Marine Science, as well as collaborators across the US and Europe.
Project web site	Closely related to the Overturning in the Subpolar North Atlantic Programme: https://ukosnap.org, o-snap.org
Funding partner	The funds supporting this research project are provided by the UK Natural Environment Research Council.
Recent publications	Lozier et al. (Science, 2019, DOI: 10.1126/science.aau6592)

Job description

Postdoctoral Research Assistant in Ocean Modelling

Overview of the role

The subpolar North Atlantic Ocean occupies a key role in regional and global climate, yet is poorly represented in climate models, which limits our confidence in predictions. Recent data from the Overturning in the Subpolar North Atlantic Programme (OSNAP, https://ukosnap.org, o-snap.org) and other observational campaigns reveal significant subpolar ocean variability, but raise questions about the processes that give rise to this variability and that link it to atmospheric changes.

The consortium project SNAP-DRAGON (Subpolar North Atlantic Processes - Dynamics and pRedictability of vAriability in Gyre and OverturNing) will bring the observations together with numerical ocean and climate models to make a step change in our understanding of subpolar North Atlantic variability. The objective is to expose the time-dependent causal relationships governing subpolar ocean variability, their robustness across models and their implications for predictability. In addition to the group in Oxford, the SNAP-DRAGON team includes researchers at the National Oceanography Centre, University of Liverpool, University of Reading and Scottish Association for Marine Science, as well as collaborators in the US (Texas, Woods Hole, Colorado, Florida, Georgia) and Europe.

The postholder is one of 5 UK PDRA's to be employed on the SNAP-DRAGON project, and will be responsible for setting up, running and interpreting the results of numerical model simulations of the subpolar North Atlantic Ocean. They will use targeted, high-resolution model sensitivity experiments based on the Massachusetts Institute of Technology general circulation model (MITgcm) to probe the causal connections between atmospheric forcing and the variability of the Atlantic overturning circulation and subpolar gyre.

The post will be based in the Earth Sciences Department (https://www.earth.ox.ac.uk), where the post holder will be part of the Physical Oceanography group, which also includes scientists in the sub-department of Atmospheric, Oceanic and Planetary Physics (AOPP, https://www2.physics.ox.ac.uk/research/atmospheric-oceanic-and-planetary-physics). They will report to Dr Helen Johnson and to Prof David Marshall, will provide guidance to junior members of the research group including PhD students, and will interact regularly with members of the wider SNAP-DRAGON team.

The post is funded by the Natural Environment Research Council (NERC) under the UK-US Changing North Atlantic Ocean programme for three years and we wish to fill it from 1 November 2020 or soon afterwards.

Responsibilities/duties

- Set-up, run and analyse high-resolution, regional numerical model sensitivity experiments of the subpolar North Atlantic Ocean.
- Perform statistical analyses of existing large ocean model datasets.
- Develop, test, review and refine hypotheses as appropriate while analysing scientific data from a variety of sources.
- Collaborate in the preparation of research publications.

- Manage own academic research and administrative activities. This involves small scale project management, to co-ordinate multiple aspects of work to meet deadlines.
- Work collaboratively with SNAP-DRAGON colleagues in other institutions in the UK and US.
- Adapt and improve research methodology and experiment design where necessary.
- Present papers at national and international conferences and meetings.
- Act as a source of information and advice to other members of the group, for example DPhil research students working on related questions.
- Contribute ideas for new research projects.
- Represent the research group and SNAP-DRAGON project at external meetings/seminars.

Selection criteria

Essential

- Hold, or be close to completion of, a PhD/DPhil in ocean or atmosphere dynamics.
- Relevant experience in numerical modelling of the ocean or atmosphere.
- Sufficient knowledge of ocean and climate dynamics to work within established research programmes.
- Demonstrated ability to design, conduct and analyse numerical experiments.
- Ability to lead and report an original research programme, as shown by a documented research track record, including publications and presentations at international conferences.
- Demonstrated ability to contribute ideas for new research projects.
- Excellent communication skills, including the ability to write for publication, present research proposals and results, and represent the research group at meetings.
- Demonstrated willingness and ability to collaborate with other researchers in a multi-disciplinary international environment.

Desirable

- Deep understanding of Atlantic Ocean dynamics.
- Experience in setting up and running the Massachusetts Institute of Technology general circulation model (MITgcm).
- Experience of running simulations on High Performance Computing (HPC) platforms, and analysing the large datasets generated by these simulations.

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 2016/17 exceeded £564m 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 Earth Sciences

The Department of Earth Science conducts research across a broad range of disciplines. This work can be loosely divided into the following themes:

- Geophysics and geodynamics
- Planetary evolution and materials
- Oceanography, climate and palaeoenvironment
- Palaeobiology and evolution
- Geodesy, tectonics, volcanology and related hazards
- Earth resources

The department has a national and international reputation for research excellence. It ranked top in the UK for Earth and Environmental Sciences during the 2014 REF exercise (based both on overall grade, and on the fraction of research judged to be 4*).

The department presently consists of 28 academics (i.e Associate Professors and Professors) 47 research staff, and 32 support staff.

Thirty-five undergraduate students are admitted each year to read for a BA (3 years) or M. Earth Sci. (4 years) in Earth Sciences. The course provides a broad overview of the earth sciences and requires A levels (or equivalent) in maths and either physics or chemistry to enter. It attracts students of a very high calibre with A level grades of AAA* or higher. The final year of the M. Earth Sci. course includes a substantial research project during which students are embedded in department research groups.

Between 15 and 20 graduate students join the department every year to study for a D. Phil. They can be admitted directly to the department, or through the cross-University

NERC Doctoral Training Programme in Environmental Research (http://www.environmental-research.ox.ac.uk/).

The department is housed in a specialist new Earth Sciences building completed in late 2010. The building features a wing with 4 floors of dedicated services laboratories. These contain a wide range of analytical equipment enabling cutting-edge research in a broad range of earth science disciplines. Of these laboratories, 6 are designated as Small Research Facilities (SRFs):

- Cleansuite SRF
- Electron Microanalysis SRF
- Geofacilities SRF
- Multi-collector Mass Spectrometers SRF
- Stable Isotope SRF
- Trace Metal Analysis SRF
- Workshop SRF

Each of these SRFs are run by at least one full time permanent member of staff

For more information about the department please visit: www.earth.ox.ac.uk

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

For further information about working at Oxford, please see:
www.ox.ac.uk/about_the_university/jobs/research/

http://www.careers.ox.ac.uk

MPLS Division

The Mathematical, Physical and Life Sciences (MPLS) Division is one of the four academic divisions of the University of Oxford. We have over 6,000 students and research staff, and generate over half of our funding from external research grants.

Solving tomorrow's problems - Research
Oxford is widely recognised as one of the world's leading science universities. In the 2008 UK Research Assessment Exercise, **over 70% of research activity in MPLS was judged to be world-leading (4*) or internationally excellent (3*)**, and **Oxford was ranked number 1 in the UK across the mathematical sciences as a whole**.

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 interdisciplinary in nature. We collaborate closely with colleagues in Oxford across the medical sciences, social sciences and humanities.
Today's scientific research not only crosses traditional subject boundaries, but also transcends national boundaries: MPLS scientists collaborate with researchers from around the world, and play leading roles in many international projects. For more information please visit: http://www.mpls.ox.ac.uk/

How to apply

Before submitting an application, you may find it helpful to read the 'Tips on applying for a job at the University of Oxford' document, at www.ox.ac.uk/about/jobs/supportandtechnical/.

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 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).

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/.

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: www.admin.ox.ac.uk/councilsec/compliance/gdpr/privacynotices/job/. The University's Policy on Data Protection is available at: www.admin.ox.ac.uk/councilsec/compliance/gdpr/universitypolicyondataprotection/.

The University's policy on retirement

The University operates an Employer Justified Retirement Age (EJRA) for all academic posts and some academic-related posts. From 1 October 2017, the University has adopted an EJRA of 30 September before the 69th birthday for all academic and academic-related staff in posts at **grade 8 and above**. The justification for this is explained at: www.admin.ox.ac.uk/personnel/end/retirement/acrelretire8+/.

For **existing** employees, any employment beyond the retirement age is subject to approval through the procedures: www.admin.ox.ac.uk/personnel/end/retirement/acrelretire8+/.

There is no normal or fixed age at which staff in posts at **grades 1–7** 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

University Club and sports facilities

Membership of the University Club is free for all University staff. The University Club provides 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 www.sport.ox.ac.uk/oxford-university-sports-facilities.

Information for international staff

The University offers support and advice to international staff, including a visa loan scheme to cover the costs of UK visa applications for staff and their dependents.
See www.admin.ox.ac.uk/personnel/permits/reimburse&loanscheme/.

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 www.welcome.ox.ac.uk.

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 to settle into Oxford and to provide them with an opportunity to meet people in the area. See www.newcomers.ox.ac.uk.

Childcare

The University has excellent childcare services with 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 www.admin.ox.ac.uk/childcare.

Family-friendly benefits

The University subscribes to My Family Care service through which staff are eligible to register for emergency back-up childcare and adultcare services, a 'speak to an expert' advice service and a wide range of guides and webinars through a website called the Work+Family space.
See: www.admin.ox.ac.uk/personnel/staffinfo/benefits/family/mfc/.

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 www.admin.ox.ac.uk/eop/disab/staff.

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 www.admin.ox.ac.uk/eop/inpractice/networks/.

Additional benefits

Staff can enjoy a range of other benefits and discounts, including free entry to the Botanic Gardens and University colleges, and discounts at University museums.
See www.admin.ox.ac.uk/personnel/staffinfo/benefits.