**Job title**: Postdoctoral Scientist in single-cell transcriptomics

**Division**: Medical Sciences

**Department**: Nuffield Department of Medicine, Jenner Institute

**Location**: Old Road Campus Research Building, Headington, Oxford, OX3 7DQ

**Grade and salary**: Grade 7: £32,817 - £40,322 per annum

**Hours**: Full time

**Contract type**: Fixed-term until 30 September 2022, in the first instance

**Reporting to**: Dr Anita Milicic

**Vacancy reference**: 146605

**Additional information**: Position Funded by Chan Zuckerberg Initiative (CZI)

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**The role**

This exciting new role has arisen as a result of a new collaborative research project aimed at studying the earliest events of inflammation induced by vaccine adjuvants in human lymphoid tissue from different ethnic backgrounds. The project will be carried out in close partnership with Prof. Mark Coles (The Kennedy Institute of Rheumatology, Oxford) and Dr Calliope Dendrou (The Wellcome Centre for Human Genetics, Oxford). The project is funded by the CZI and is linked to the Human Cell Atlas.

We are seeking an exceptional, enthusiastic and motivated Postdoctoral Scientist with a passion for novel scientific approaches and technological advances. The successful applicant will work primarily within the Vaccine Formulation Group at the Jenner Institute, under the supervision of Dr Anita Milicic, with access to Prof. Coles’ and Dr Dendrou’s laboratories.

The project focuses on a novel ex vivo model of controlled adjuvant-induced inflammation in human lymph nodes (LNIs). To map the earliest events and spatio-temporal progression of inflammation this model system will be combined with single-cell resolution technologies. The tissue will be exposed to conventional (aluminium salt) and novel (AS01-like) adjuvants, and the inflammatory response followed through time within the tissue. LNIs will be obtained from individuals of European, Asian, and African ethnic background, and the cell types, activation states and trajectories driving inflammation will be characterised by agnostic (10x) and inflammatory gene-specific (BD Rhapsody) single-cell RNA-seq methods. In parallel, the spatial...
organisation of the inflammatory response dynamics will be mapped at the protein level by hyperplexed imaging (GE CellDIVE).

Informal enquiries about the post are welcome. Please contact anita.milicic@ndm.ox.ac.uk

Responsibilities

- Design and perform original research using human lymphoid tissue
- Contribute to single-cell transcriptomics data analysis
- Adapt existing and develop new scientific techniques and experimental protocols.
- Maintain awareness of the relevant literature.
- Work independently, testing hypotheses and analysing scientific data, reviewing and refining working hypotheses as appropriate.
- Manage own academic research and administrative activities. This involves small scale project management, to co-ordinate multiple aspects of work to meet deadlines.
- Collaborate in the preparation of scientific reports and journal articles and occasionally present papers and posters.
- Regularly communicate with Dr Anita Milicic, Dr Dendrou and Prof. Coles, and other members of the groups as required, ensuring that they are kept fully up to date with progress and any difficulties in the research project.
- To be responsible for overseeing the daily housekeeping of the laboratory area and performing any other comparable duties as may be required to ensure the efficient running of the laboratory.
- Attend appropriate scientific seminars, training opportunities and meetings in the Institute and University.
- To be responsible with others for the biological safety of the laboratory.
- Assist in dissemination of findings of the research group by authorship of manuscripts, presentation of results at meetings, and contribution to the group website.
- Participate in and support the public engagement and widening access activities of the Department and the University. This is anticipated to be not more than 2 days per year.
- Undertake mandatory training as required by the University, Division and Department. The specific list of training courses may change from time-to-time, in response to both legal and internal University requirements.

Once trained the post holder's performance will be continually monitored to ensure that the required standard of accuracy and efficiency is maintained.

All employees will have to ensure that their work in the laboratory is conducted safely at all times and, in particular, that work is undertaken following the appropriate health and safety policies and procedures for the particular area, without compromise to their own safety or that of others who may be affected.

Pre-employment screening

All offers of employment are made subject to standard pre-employment screening, as applicable to the post.

If you are offered the post, you will be asked to provide proof of your right-to-work, your identity, and 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 so that we can discuss appropriate adjustments with you), and a declaration of any unspent criminal convictions.

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/.
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 (OHS), and the offer of employment will be subject to a successful outcome of this assessment.

The hazards or safety-critical duties involved are as follows:
- Lone Working
- Working with infectious pathogens (hazard group 2)
- Working with blood, human products and human tissues

Selection criteria

Essential selection criteria

- PhD (or near to completion) in the field of immunology
- Experience with tissue handling techniques (human lymph nodes in particular)
- Proven experience in at least two of the following techniques: human tissue dissociation and cellular profiling, single-cell transcriptomics, single-cell data analysis, confocal/hyperplexed imaging
- Proven organisational and interpersonal skills to collaborate with other researchers within and outside of the Institute
- Ability to interpret scientific data, analyse and research complex issues and write research reports
- High level of precision and attention to detail
- Ability to drive a project to completion
- Clear and effective communication skills

Desirable selection criteria

- Proficiency with a high-level programming language (eg. C++, Java, Python) and/or appropriate scripting languages
- Proficiency with statistical data analysis tools such as R
- Ability to write manuscripts for peer review and publication
- Experience in supervising junior staff/students

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.

**Medical Sciences**

The Medical Sciences Division is an internationally recognized centre of excellence for biomedical and clinical research and teaching. We are the largest academic division in the University of Oxford

World-leading programmes, housed in state-of-the-art facilities, cover the full range of scientific endeavour from the molecule to the population. With our NHS partners we also foster the highest possible standards in patient care.

For more information please visit: www.medsci.ox.ac.uk

**Nuffield Department of Clinical Medicine (NDM)…fostering your career in science**

The Nuffield Department of Clinical Medicine (NDM) is one of the largest departments of the University of Oxford and is part of the Medical Sciences Division, with responsibility for a significant part of the teaching of clinical students within the Medical School.

NDM has significant financial turnover and complexity, resulting from its diverse research portfolio, its geographical spread and its close links with NHS funding and strategic teams involved in the development and delivery of increasingly integrated clinical research platforms. For more information please visit: http://www.ndm.ox.ac.uk/home

The Nuffield Department of Clinical Medicine has been presented with a Departmental Athena SWAN Silver award in recognition of the commitment made to promote gender equality through our organisational and cultural practices and our efforts to improve the working environment for both men and women. For more information please see our Departmental Athena SWAN pages: www.ndm.ox.ac.uk/working-for-ndm/aboutndmatheneswan/.

**The Jenner Institute**

The Jenner Institute was founded in November 2005 to develop innovative vaccines against major global diseases. Uniquely it focuses both on diseases of humans and livestock and tests new vaccine approaches in parallel in different species. A major theme is translational research involving the rapid early-stage development and assessment of new vaccines in clinical trials.

For more information please visit: department website http://www.jenner.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 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).

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 receive an automated email from our e-recruitment system 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: 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. 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

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 www.admin.ox.ac.uk/personnel/staffinfo/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 www.sport.ox.ac.uk/oxford-university-sports-facilities.

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. There is also 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/.

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 My Family Care, 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 www.admin.ox.ac.uk/personnel/staffinfo/benefits/family/mfc/.

Childcare

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 www.admin.ox.ac.uk/childcare/.

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/.

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.