Job title	Single Cell Genomics Computational Biologist / Statistician (HIDI - Human Immune Discovery Initiative)
Division	Medical Sciences
Department	Wellcome Centre for Human Genetics
Location	Roosevelt Drive, Headington, Oxford, OX3 7BN
Grade and salary	Grade 8: £41,526 - £49,553 per annum An appointment at Grade 7: £32,817 - £39,152 per annum may also be considered for a less experienced candidate with suitable adjustment of the responsibilities.
Hours	Full time
Contract type	Fixed-term for 2 years in the first instance
Reporting to	Dr Calliope Dendrou / Dr Rory Bowden
Vacancy reference	143522
Additional information	Funding provided by NIHR and WHG

The role

With the support of the NIHR Oxford BRC, the University of Oxford Immunology Network has driven the development of a Human Immune Discovery Initiative (HIDI), an initiative that aims to improve accessibility to immunological assays and expertise for all researchers across the University (and beyond). HIDI will act as a gateway to immunological resources by sponsoring 4 Discovery Platforms within the Medical Sciences Division. These Platforms are led by experienced researchers and include;

- Deep immune phenotyping
- Immune pathology
- Genomics and metagenomics
- Proteomics

Projects that flow through these platforms will vary in the number and type of assays utilised and the scientific background, including but not limited to oncology, infection, neuroscience, metabolism, and others. Regular HIDI team meetings will ensure that the portfolio of projects is

discussed and that the requirements of individual projects are defined and have the appropriate support.

We have an exciting opportunity for an experienced computational biologist / statistician to join the Genomics Platform of HIDI to work with data generated using single-cell and spatial transcriptomics next-generation sequencing technologies. This role provides a unique opportunity to lead the data analysis for rewarding research that is making a fundamental impact on human health. You will be part of Calli Dendrou's and Rory Bowden's research groups at the Wellcome Centre for Human Genetics (WHG) and will work collaboratively with scientists and clinicians engaged in cutting-edge immunology research to develop a streamlined platform for single-cell and spatial transcriptomics data analysis as part of an initiative investigating the role of immune cell types and activation states in health and disease, upon treatment, and as influenced by genetic and environmental factors. The role will also involve implementing this platform for the analysis of data generated through the immune-mediated disease arm of the Human Cell Atlas that is led by Prof Paul Klenerman in Oxford and will involve interactions with scientists at the Wellcome Sanger Institute and Embl-EBI.

You should have a background in biomedical or quantitative science, prior experience working with single-cell RNA-Seq and other relevant next generation sequencing data sets - preferably derived from human immune cells, and a strong interest in working with medical and biological researchers towards a common goal. You should thrive on scientific challenges associated with analysing complex biological data sets, be keen to learn, test and develop new analytical tools and methods, and be capable of learning and working independently. You should have good code and data management skills to enable reproducible research, and be capable of simultaneously working on different projects and deadlines. You will be expected to document all work thoroughly, to provide manuscript-level reporting of final analyses and results, and to contribute to manuscript writing for publication as a first author and co-author, and to grant writing as appropriate. You will need to communicate effectively with a range of stakeholders, including the Dendrou research group and staff within the Oxford Genomics Centre, the project manager for HIDI, parallel Platform staff and potential users.

Responsibilities

- Evaluate and plan incoming HIDI projects and advise on additional/alternative analyses, and timescales
- Conduct detailed analysis of diverse next generation sequencing datasets generated from HIDI projects
- Prepare project-specific reports and communicate results clearly and effectively
- Develop novel statistical methodologies for interrogating genomic datasets
- Identify and troubleshoot technical or scientific problems, working collaboratively with team members to overcome issues
- Contribute to the production of scientific publications and reports, taking a leadership in more specialised publications on bioinformatics
- Provide bioinformatics input into future grant proposals, as a co-applicant
- Accurate record keeping of all project activities
- Keep abreast of advances in the field, and disseminate results
- Contribute to the development and maintenance of shared capabilities within the WHG Single-Cell Platform and the HIDI Genomics Platform, such as workflow-specific analyses and evaluations of techniques of broader relevance to single-cell biology
- Advise and consult on data and biology relevant to single-cell techniques and immunology/infection questions for technical and less-specialised colleagues.
- Contribute to the specification and support of data workflows for single-cell analyses
- Participate in the education and training of other staff as necessary and appropriate

General Responsibilities

- Ensuring good laboratory practice and acting within the interest of the department
- Accountability for personal professional conduct within the project.
- Ensuring safety for all work carried out in the laboratory and applying appropriate safety procedures in the dedicated areas for that work.
- Agreement to the University Equal Opportunities and Data Protection policies.
- Participation in and Support of 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.

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/.

Selection criteria

Essential selection criteria

- Hold, or be close to completion of a PhD (or equivalent) in computational biology, statistics, bioinformatics or other related computational subject
- Experience in the analysis of next-generation sequencing and other 'omics' data, including single-cell (10X, Smart-seq etc) and bulk RNA-seq data derived from human immune cells
- 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
- Proven success using and developing bioinformatics or biostatistics tools, as evidenced through a strong publication record
- Working knowledge of biology and genetics and expertise in answering biological questions from a computational perspective
- Knowledge of functional analysis (use of tools for GSEA, enrichment studies, networks), data management and visualisation
- Excellent interpersonal skills and capacity to work collaboratively, including the ability to communicate results clearly and effectively by oral and written means, and to discuss scientific ideas

- Evidence of ability to take a leadership role and drive project completion and ability to work independently on several projects in parallel - meeting deadlines in a timely fashion

Desirable selection criteria

- Experience in computational biology in an immunological context
- Prior experience in analysing TCR/BCR sequencing data
- Prior experience in analysing ATAC-Seq and ChIP-Seq data
- Experience of contributing to grant proposals

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/ .

Wellcome Centre for Human Genetics (WHG)

In the first decades of the 21st century, researchers are beginning to understand in detail how our genetic inheritance makes us who we are. At the Wellcome Centre for Human Genetics, our aim is to extend that understanding in order to gain a clearer insight into mechanisms of health and disease. Looking across all three billion letters of the human genetic code, we aim to pinpoint variant spellings and discover how they increase or decrease an individual's risk of falling ill.

The WHG is a research institute of the Nuffield Department of Medicine at the University of Oxford, funded by the University, the Wellcome and numerous other sponsors. It is based in purpose-built laboratories on the University of Oxford's Biomedical Research Campus in Headington, one of the largest concentrations of biomedical expertise in the world.

With more than 400 active researchers and around 70 employed in administrative and support roles, the WHG is an international leader in genetics, genomics and structural biology. We collaborate with research teams across the world on a number of large-scale studies in these areas. Our researchers expend close to £20m annually in competitively-won grants, and publish around 300 primary papers per year.

For more information please visit: http://www.well.ox.ac.uk/home

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 http://www.ox.ac.uk/about_the_university/jobs/research/

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.