Job description and selection criteria

<table>
<thead>
<tr>
<th>Job title</th>
<th>Bioinformatician in Statistical Cancer Genomics</th>
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<tbody>
<tr>
<td>Division</td>
<td>Medical Sciences</td>
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<tr>
<td>Department</td>
<td>Nuffield Department of Medicine (NDM) Oxford Big Data Institute and Ludwig Institute for Cancer Research</td>
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<tr>
<td>Location</td>
<td>Old Road Campus Research Building, Headington, Oxford</td>
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<tr>
<td>Grade and salary</td>
<td>Grade 8: £39,992- £47,722 per annum, with a discretionary range to £52,132 per annum.</td>
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<tr>
<td>Hours</td>
<td>Full time</td>
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<tr>
<td>Contract type</td>
<td>Fixed-term for 3 years</td>
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<tr>
<td>Reporting to</td>
<td>Professor Gil McVean &amp; Professor Xin Lu</td>
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<tr>
<td>Vacancy reference</td>
<td>135547</td>
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<tr>
<td>Additional information</td>
<td>This post is funded by the Ludwig Institute for Cancer Research</td>
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The role

We are looking for a Bioinformatician with research interests in statistical and computational methods for the analysis of genome-scale data to participate in a collaborative research program relating to cancer genomics.

You will have extensive experience in the analysis of cancer genomics data and research interests in developing advanced statistical methodology to learn about biological processes relating to cancer origin, evolution and response to treatment. Interest in and experience of using scalable statistical and probabilistic machine learning approaches to analyse and integrate data from other modalities, such as gene expression, proteomics and imaging would be an advantage.

The post represents a joint collaboration between Professor Gil McVean (Director of the BDI) and Professor Xin Lu (Director of the Ludwig Institute for Cancer Research, Oxford).
With mentorship from group leaders within the BDI and the Ludwig Institute for Cancer Research, you will develop an effective, productive research programme and collaborate with other members of the BDI and the wider Oxford community.

**Responsibilities**

- Participate in a collaborative research programme by identifying, defining and planning projects that will have relevance within the research at the BDI, the LICR, and the computational statistics and machine learning group in Statistics.

- Maintain, employ and implement (i) a thorough knowledge of an area of expertise relevant to the centre and (ii) an awareness of the latest technology and analytical methods in the field.

- You will develop novel statistical methodologies to learn about biological processes.

- Collaborate with other scientists to achieve the above. This will include forging and fostering appropriate links within Oxford, such as to clinicians or those involved in fundamental statistical research.

- Prepare the results for presentation as publications in journals and at national and international conferences, representing the Institute local, nationally and internationally.

- Act as a co-supervisor for DPhil students. To advise and supervise on a day to day basis, ensuring intellectual stimulus and access to resources necessary for a successful period of study at the Institute.

- Lead or contribute major sections to grant applications.

- Adhere to the values of the Institute and University policies and practices.

- Interact and collaborate with Institute technology transfer agents, ISIS and commercial partners with regard to any discoveries that may be potentially exploitable.

- Participate in activities that encourage effective internal collaboration, such as internal seminars etc.

- Responsibility for ensuring compliance with Institute, University and national regulations on safety and ethics that is relevant to the research programme.

- Responsibility to the Director and Head of Department with respect to safety policy, rules and regulations, returns required by external organisations and disciplinary matters.

- Participate in and assist with the wider activities of the Institute and University, such as fundraising, PR, patron visits, school visits etc.
Selection criteria

Essential

- A PhD or equivalent in a quantitative science with research experience in academia or industry.
- Experience and technical expertise in the statistical and computational analysis of cancer genomic data and/or other large, high-dimensional and heterogeneous data sources.
- Knowledge of modern approaches to probabilistic statistical inference in big data settings.
- Experience in developing computational statistical tools to analyse data from large-scale genomic experiments.
- Proven ability to deliver high quality novel research, for example through journal publications, patents and other IP or authoring widely-used software.
- An understanding of how to lead a successful research programme and develop new avenues of research.
- Excellent communication skills, both written and oral, with the ability to present to the scientific community and the lay public.

Desirable

- Research experience in the analysis of high throughput technologies as applied to cancer biology, particularly gene expression, proteomics or imaging.
- Experience of working alongside experimental groups to gather appropriate data, validate methodologies and test hypotheses.
- Previous experience in supervising staff and/ or 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 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](http://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](http://www.medsci.ox.ac.uk)

### Nuffield Department of Clinical Medicine (NDM)

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. The Department also has a substantial research programme which requires high quality administrative management.

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.

...fostering your career in science

For more information please visit: [www.ndm.ox.ac.uk/home](http://www.ndm.ox.ac.uk/home)

The University of Oxford is a member of the Athena SWAN Charter and holds an institutional Bronze Athena SWAN award. The Nuffield Department of Medicine holds a Silver Athena SWAN award to recognise advancement of gender equality: representation, progression and success for all.

For more information please visit: [https://www.ndm.ox.ac.uk/working-for-ndm/aboutndmatheneswan/](https://www.ndm.ox.ac.uk/working-for-ndm/aboutndmatheneswan/)

### The Ludwig Institute for Cancer Research (LICR)

Ludwig Cancer Research, Oxford Branch is headed by Professor Xin Lu. Research within the Branch is focused on identifying molecular switches that determine cancer cell heterogeneity, with the aim of sensitising cancer cells to therapy and improving patients’ response to treatment.

To combat tumour heterogeneity, the scientists are researching a wealth of different molecular mechanisms with molecular switches of cell fate being a major theme of their research. One of the main research focuses is the identification of target selectivity of
transcription factors in cell growth or death (Professor Xin Lu), stem cells and differentiation (Professor Colin Goding), as well as hypoxia and oxygen sensing (Professor Sir Peter Ratcliffe). This research is complemented by transcriptional networks governing the formation of blood vessels (Dr Sarah De Val), genetic markers that indicate how a cancer cell will respond to therapy (Dr Gareth Bond), epigenetic regulators of cell fate (Dr Skirmantas Kriaucionis), the structural and functional role of BET (Bromo and Extra Terminal) proteins in transcription initiation (Dr Panagis Filippakopoulos), inflammation and cancer (Dr Mads Gyrd-Hansen); and bioinformatics (Dr Benjamin Schuster-Boeckler).

The research groups at Ludwig Cancer Research, University of Oxford, have strong overlapping interests yet maintain diversity, enabling the effective sharing of ideas and technologies. By working together the scientists maximise their research potential.

The Oxford Branch currently employs approximately 120 staff at the Old Road Campus Research Building in Headington, Oxford, and has plans for further expansion over the coming 2-3 years.

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

The Oxford Big Data Institute

The Oxford Big Data Institute (BDI) is a new, interdisciplinary research centre, located within Oxford’s Old Road Campus, which opened in January 2017. The institute combines researchers from genomics, epidemiology and infectious disease alongside those from computer science, statistics and engineering to develop the field of big data as applied to biomedical research. Scientists working in the institute will form an analytical hub, deeply connected to the wider experimental and clinical community in Oxford and beyond, working to solve some of the major challenges in medical research. The Institute will provide core facilities in high performance computing and house about 350 researchers drawn from a wide range of departments including Statistics, Computer Science and Engineering, in addition to traditional medical departments. The Institute is led by its director, Professor Gil McVean, and deputy director, Martin Landray

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, future research proposal 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 CV, research proposal and supporting statement 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 (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/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/.

Form 1 October 2017, 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

The University Club provides social, sporting and hospitality facilities. It incorporates a bar, café and sporting facilities, including a gym. 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](http://www.club.ox.ac.uk) and [www.sport.ox.ac.uk/oxford-university-sports-facilities](http://www.sport.ox.ac.uk/oxford-university-sports-facilities).

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

If you are relocating to Oxfordshire from overseas, or elsewhere in the UK, the University’s International Staff website includes practical information related to moving to and settling in Oxford such as advice on immigration, relocation, accommodation, or registering with a doctor.

See: [www.internationalstaffwelcome.admin.ox.ac.uk](http://www.internationalstaffwelcome.admin.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](http://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](http://www.admin.ox.ac.uk/childcare).

Family-friendly benefits

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

Disabled staff

We are committed to supporting members of staff with disabilities or long-term health conditions. Please visit [www.admin.ox.ac.uk/eop/disab/staff](http://www.admin.ox.ac.uk/eop/disab/staff) for further details including information about how to make contact, in confidence, with the University’s Staff Disability Advisor.
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/

Other benefits

Staff can enjoy a range of other benefits such as free visitor access to the University’s colleges and the Botanic Gardens as well as a range of discounts. See www.admin.ox.ac.uk/personnel/staffinfo/benefits