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<table>
<thead>
<tr>
<th>Job title</th>
<th>Research Computing Administrator</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</td>
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<tr>
<td>Location</td>
<td>Big Data Institute, Li Ka Shing Centre for Health Information and Discovery, Old Road Campus, Oxford, OX3 7LF</td>
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<tr>
<td>Grade and salary</td>
<td>Grade 8: £40,792- £48,677 per annum (with a discretionary range up to £53,174 p.a)</td>
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<tr>
<td>Hours</td>
<td>Full time</td>
</tr>
<tr>
<td>Contract type</td>
<td>Fixed-term for 3 years in the first instance</td>
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<td>Reporting to</td>
<td>BDI Research Computing Manager</td>
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<td>Vacancy reference</td>
<td>139270</td>
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Introduction

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.
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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: https://www.ndm.ox.ac.uk/working-for-ndm/aboutndmatheneswan/

Oxford Big Data Institute (BDI)

The Big Data Institute (BDI) is a state-of-the-art building at Oxford University's Old Road Campus, which opened in March 2017. This interdisciplinary research centre focuses on the analysis of large, complex, heterogeneous data sets for research into the causes and consequences, prevention and treatment of disease. To this end, BDI researchers will develop, evaluate and deploy efficient methods for acquiring and analysing information for large clinical research studies. These approaches will be invaluable in identifying the associations between lifestyle exposures, genetic variants, infections and health outcomes around the globe.
Research is conducted in 4 general themes: genomics, population health, infectious disease surveillance, and methodology (including informatics, statistics, and engineering). Big Data methods could transform the scale (breadth, depth and duration) and efficiency (data accumulation, storage, processing and dissemination) of large-scale clinical research. The work of the BDI requires people and projects that span traditional departmental boundaries and scientific disciplines, supported by technical resources to handle the vast quantities of data they generate.

Under the leadership of Professor Gil McVean (Director) and Professor Martin Landray (Deputy Director), the BDI will comprise around 350 researchers (approx. 30 research groups) drawn from a wide range of departments and will form an analytical hub, deeply connected to the wider experimental and clinical community in Oxford and beyond.

**Overview of the role**

The BDI is developing the Biomedical Research Computing (BMRC) facility for high-performance computing and high-capacity data management at scale as a joint initiative with the neighbouring Wellcome Centre for Human Genetics (WHG). The development of the BMRC platform is overseen by a joint appointment – the BDI/WHG Director of Research Computing. The aim is to deliver Oxford researchers with access to a unified platform for data-intensive research at scale. As part of BMRC activity, developments within the BDI are led by the BDI Research Computing Manager. A new position, the BDI Research Computing Administrator, is being created to play a key role in supporting this activity. Working under the direction of the BDI Research Computing Manager, and with the rest of the BMRC team, the post-holder will be helping to design, commission and manage the large-scale compute and storage infrastructures that will be required. While there are a broad range of technical platforms within BMRC and support for all aspects is required, this role will have a particular focus on the developing and supporting the new on-premise OpenStack cloud services.

Currently, the WHG cluster room offers 11 computer equipment racks supporting 150kW IT load, while the BDI major equipment room has 32 racks designed for a total load of 320kW. The two rooms are directly linked by dark fibre, currently providing networking including a 400Gbit/s storage network capability. The facility already offers some 7000 cluster compute cores, 50 GPU cards, 7PB raw high-performance storage (Spectrum Scale), 8PB raw lower-grade storage for data acquisition and archiving, trial OpenStack and oVirt virtualization platforms, a small S3-compatible object store and backs these with FDR and EDR InfiniBand and up to 100Gbit/s Ethernet based on Cumulus. It is also currently commissioning over 1000 cores of OpenStack backed by a high-performance Ceph store.

In the longer term, however, a wider strategy is envisaged that includes off-site scalable infrastructures and the use of public cloud facilities to offer much greater capacity and, eventually, enabling computing at “exascale”. These facilities will support researchers across the BDI, the rest of the Li Ka Shing Centre for Health Information and Discovery, the WHG and collaborating facilities across Oxford and beyond. The new BDI Research Computing Administrator will play a full part in building a world-leading computing infrastructure and therefore is crucial for delivering the scientific strategy of the BDI.
Responsibilities/duties

Under the direction of the BDI Research Computing Manager, the post holder will be at the heart of developing, implementing and managing the research computing strategy for the BDI, including both on-site facilities and future off-site expansion: providing hardware, software and user support to our researchers and their collaborators. The post holder will work closely with research groups and those responsible for data governance to help understand their needs and to help design and implement innovative, effective and scalable solutions that enable collaborative, flexible, compute-intense research while enforcing appropriate standards of data integrity, security, privacy and access control. The post holder will play a key role in the day-to-day technical administration of BMRC and, through organising and leading user-group network, help in the planning for modifications, additional capacity and new functionality as part of the development of BMRC.

Two key directions for the BDI over the next couple of years are the development of an OpenStack cloud service and the development of a platform for exploring the use of artificial intelligence (AI) at scale in biomedical research. While the post holder will play a central role in maintaining and managing these platforms, the overall role is wider:

- To work with the BDI/WHG Director of Research Computing, the BDI Research Computing Manager and rest of the BMRC team to deliver an appropriate world-leading high-performance research computing infrastructure for the BDI, WHG and the wider biomedical research community in Oxford.
- To work under the line management of the BDI Research Computing Manager to support the work of BDI researchers. This includes installation and configuration of new equipment, day-to-day system management of our complex infrastructure, managing upgrades and enhancements and planning to meet future needs.
- To support directly BDI and WHG researchers, their collaborators and other users of BMRC systems. This includes installing, compiling and testing applications and pipelines; troubleshooting of performance issues and assisting with optimization strategies.
- To help with the training and teaching of researchers and students who may be new to research computing and to organise and lead an effective user-group network.
- To report to the BMRC team and senior management on the state of the infrastructure, its appropriateness for the needs of researchers in the BDI, emerging threats and opportunities for mitigation, and any opportunities for developing the research computing facilities.
- To work openly with those responsible for overseeing the data governance and security to provide timely, accurate and appropriate evidence of compliance with information security requirements.
- To represent the BDI at both internal and external conferences and meetings to help further the aims of the BMRC facility and advance biomedical research in Oxford.
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- To undertake other tasks as requested by the BDI Research Computing Manager, the BDI/WHG Director of Research Computing or BDI senior management to support the research aims of the BDI and the development of the BMRC facility.

Selection criteria

Essential

- Significant experience of managing computing platforms at scale and/or education to degree level in a relevant subject.
- Extensive experience of administering computers running Linux/Unix operating systems and knowledge of relevant scripting languages such as bash, perl and Python.
- Experience of cluster, virtualization and/or containerization technologies. Particular weight will be given to experience in OpenStack cloud implementation and administration.
- A good knowledge of applying the basic principles of computer security to, for example, configuration of firewalls, networking, identity management, authentication and authorization, encryption and isolation of compute processes.
- Experience with directly supporting researchers or other non-specialists in computing, such as giving presentations, running training courses, running user groups, compiling software, troubleshooting problems and/or software pipeline optimization.
- Experience with design, deployment and commissioning of significant computing resources.
- Experience of troubleshooting hardware, middleware and/or software problems with and without support from external specialists.
- Ability to discuss computing requirements with line managers, scientists and other non-specialists in computing in order to solve challenges and to facilitate access to appropriate data-processing capabilities.

Desirable

- Experience of managing a computing infrastructure that integrates high-performance compute, high-capacity storage and high-speed networking.
- Knowledge of a wide range of hardware technologies related to high-performance computing on clusters and cloud/virtualization platforms such as servers, block, file and object storage systems, networking and wider infrastructure.
- Knowledge of a wide range of software technologies related to high-performance computing such as operating systems, hypervisors, scripting languages, compilers, provisioning systems, resource managers and schedulers.
- Experience of GPU computing, particularly as applied to image processing and common artificial intelligence frameworks (e.g. Tensorflow, Torch and Caffe).
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- Experience of managing compute platforms under demanding governance regimes, including implementing technical solutions for managing sensitive data.
- An interest in the research areas of the Big Data Institute.

**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_the_university/jobs/research](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 should explain how you meet 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.

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/](http://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](http://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+/

From 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.
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 and 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/

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 (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 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