Job title	Senior Research Computing Administrator
Division	Medical Sciences
Department	Nuffield Department of Medicine
Location	Big Data Institute Building, Li Ka Shing Centre for Health Information and Discovery, Old Road Campus, Oxford, OX3 7LF And, the Henry Wellcome Building for Genomic Medicine, Old Road Campus, Roosevelt Drive, Headington, Oxford, OX3 7BN
Grade and salary	Grade 8: £45,585 - £54,395 with a discretionary range to £59,421 p.a. (pro rata) Whilst this role is a Grade 8 position, we would be willing to consider less experienced candidates who might be suitable for the role with adjusted duties to then be offered as an underfill at Grade 7: £36,024 – £44,263 with a discretionary range to £48,350 per annum This would be discussed with applicants at interview/appointment where appropriate
Hours	Full time
Contract type	Fixed-term contract until 31 July 2024, with the possibility of extension
Reporting to	Adam Huffman, BDI Research Computing Manager
Vacancy reference	167996
Additional information	Funding provided by the Department

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The role

Underpinning all the amazing science performed at the NDM are the computing platforms that are required to deliver results. The NDM has been developing the Biomedical Research Computing (BMRC) facility for high-performance computing and high-capacity data management. Development of BMRC is overseen by the Director of Research Computing. The aim is to deliver Oxford researchers with access to a unified platform for data-intensive research at scale, mixing on-premise and public infrastructures as appropriate.

As part of BMRC, developments based in the Big Data Institute (BDI) are led by the BDI Research Computing Manager. We now have a vacancy for a Senior Research Computing Administrator to work under the direction of the BDI Research Computing Manager and with the rest of the BMRC team. You will help to develop and manage our large-scale compute and storage infrastructures. While you will learn about all the BMRC technical platforms, the role will focus on supporting our OpenStack cloud and artificial intelligence (AI) platforms.

Currently, BMRC has access to ~40 computer equipment racks capable of supporting up to 0.5MW IT load across the BDI and Wellcome Centre for Human Genetics (WHG). There are two rooms directly linked by private networking, including an 800Gbit/s storage network. The facility offers some 8500 cluster compute cores, 100 cluster GPU cards, 18PB raw high-performance (Spectrum Scale and Lustre) storage and 12PB raw lower-grade storage for data acquisition and archiving. We have an OpenStack cloud with 2500 cores and 50 GPUs backed by 460TB extreme performance NVMe Ceph. We also run a smaller high-compliance, secure VDI/cloud platform; a test-and-dev OpenStack cloud; and a small oVirt VM platform. We are exploring new storage platforms ranging from NVMe-over-fabric to bulk S3-compatible object storage. All these platforms are linked on our 100g Ethernet and HDR/EDR InfiniBand networks.

In the longer term, however, a bolder strategy is envisaged that includes off-site scalable infrastructures and the use of public cloud facilities to offer much greater capability and, eventually, enable computing at “exascale”. You will have the opportunity to play a full part in building world-leading infrastructure and therefore play a crucial role in enabling the scientific strategy of the NDM in collaboration with other computing platforms across the University.

Responsibilities

You will:

- Work as directed by the BDI Research Computing Manager and with the rest of the BMRC team to deliver and maintain the high-performance research computing infrastructure for the NDM and the wider biomedical research community in Oxford.
- Work under the line management of the BDI Research Computing Manager to support the work of BDI researchers. This includes configuration of new equipment, day-to-day system management, performing upgrades and planning to meet future needs.
- Work directly with NDM 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.
- Lead on the training and teaching of research computing to researchers and students who may be new to the field, and to organise and lead an effective user-group network.
- Work closely with research groups to help understand their needs and to deliver scalable solutions that enable collaborative, flexible, compute-intense research while enforcing appropriate standards of data integrity, security, privacy and access control.

- Work openly with those responsible for overseeing data governance and security to provide timely, accurate and appropriate evidence of compliance with these requirements.
- Report to the BMRC team and senior management on the state of the infrastructure and any opportunities for developing the research computing facilities.
- Represent the NDM at both internal and external conferences and meetings to help further the aims of the BMRC facility and advance biomedical research in Oxford.
- Undertake other tasks as requested by the BDI Research Computing Manager, the Director of Research Computing or NDM senior management to support the research aims of the NDM and the development of the BMRC facility
- 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.

Selection criteria

Essential

- A degree involving significant use of computing.
- Substantial experience of administering computers running Linux/Unix operating systems and knowledge of relevant scripting languages such as bash 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 computing resources.
- Experience of troubleshooting software, middleware and/or hardware 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 software technologies related to high-performance computing such as operating systems, hypervisors, scripting languages, compilers, provisioning systems, schedulers and/or orchestration.
- 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.
- Experience of GPU computing, particularly as applied to image processing and common artificial intelligence frameworks (e.g. PyTorch and Tensorflow).
- Experience of managing compute platforms under demanding governance regimes, including implementing technical solutions for managing sensitive data.

Pre-employment screening

Standard checks

If you are offered the post, the offer will be subject to standard pre-employment checks. You will be asked to provide: proof of your right-to-work in the UK; proof of your identity; and (if we haven't done so already) 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 for which you may need us to make appropriate adjustments.

Please read the candidate notes on the University's pre-employment screening procedures at: https://www.jobs.ox.ac.uk/pre-employment-checks

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 and we rank first in the UK for university spin-outs, and in recent years we have spun out 15-20 new companies every year. 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.

About the Nuffield Department of Medicine (NDM)

The Nuffield Department of Medicine aims to improve healthcare internationally through its research and teaching. Over the last fifty years, it has pioneered the use of genetics, structural and cellular biology to understand susceptibility to human disease; at the same time, it remains a department of clinical medicine with a clinical interface at the core of its success. The NDM is the largest department in the University of Oxford and the largest department of medicine in Europe by research income.

The department is organised around a series of strong and identifiably unique institutes, centres and units; but its aim is to be as non-hierarchical and closely-knit as possible, to encourage the very best interactions and the exchange of ideas between its staff. It supports teaching to encourage the very best students to join academic research. It maintains a £800m portfolio of externally funded research from over 140 different sponsors/funders, and has an annual turnover approaching £200m. The department's activity is run directly through the University, but also through a series of subsidiary companies and other legal vehicles, tailored to the activity and the countries within which it operates. Across these vehicles and partnerships, the department has over 3,000 staff and students working solely on, or supporting, its research and teaching; and 1,000 of these staff are based in Oxford. The NDM holds collaborative grants with ~40 other departments or centres in the University of Oxford.

The NDM is recognised for its diverse impacts in the field of healthcare. These range from the discovery of the mechanism of hypoxic gene regulation (Sir Peter Ratcliffe, Nobel Prize 2019) to the worldwide introduction of artemisinin and combination therapy for malaria (Sir Nick White and others). The underlying strength of the department, and its ability to bring together disciplines, has been evident through its contributions to the pandemic response, including: ISARIC and its overseas activity, IDDO and TGHN, the work of the Africa-Asia Programmes, the Oxford-AZ vaccine, elucidating the structural biology of variants and neutralising antibodies, the Office of National Statistics study, the UK Serology Surveillance platform, the standard testing of commercial assays for the Government, Mobile Apps, RECOVERY trial leading to the worldwide use of dexamethasone, the NHS cohort studies, the COMBAT study. This activity has certainly saved more than 2m lives during the pandemic.

The major strategic plans of the NDM are built around, (1) establishing a step-change in to clinical pathology and the study of human disease in all clinical specialities; (2) accelerating the discovery of new medicines; and (3) addressing the burden of worldwide infectious disease, including emerging threats. The GSK-Oxford Molecular and Computational Medicine Institute (MCMI) is aligned with this vision and will be primarily based in its Wellcome Centre for Human Genetics and Big Data Institute with strong links to other departments and its overseas activity.

The NDM has a strong commitment to careers and equality of opportunity and treatment. The Department holds an 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 the NDM pages of Equality, Diversity and Inclusion.

For more information on NDM please visit: https://www.ndm.ox.ac.uk

About the Wellcome Centre for Human Genetics

The mission of the Wellcome Centre for Human Genetics is to integrate approaches in genetics, structural biology, proteomics and molecular and cellular biology to study the patterns of disease. Its aim is to change clinical practice, with a focus on identifiable and treatable mechanistic pathways. Its major clinical themes include the CNS, Autoimmunity and Inflammation, Infectious Disease, Cancer Biology, Human Genetics, and Cardiometabolic Disease. The Centre's estate is undergoing a major remodelling refurbishment in 2022. The Centre is committed to providing its investigators with the most appropriate cutting-edge technology and tools. For example, its world-renowned structural biology unit is at the forefront of developing high containment cryo-EM tomography for human tissues. It is committed to providing a strong interface with clinical practice, access to national resources and data management. The technology platforms in the Wellcome Centre are underpinned by a series of commercial collaborations, with Thermo-Fisher Scientific and others. The MCMI will benefit from these resource platforms and the wide variety of existing collaborations.

WHG is situated in the University of Oxford's Biomedical Research Campus in Headington, which is one of the largest concentrations of biomedical expertise in the world. It hosts more than 400 active researchers and around 70 employed in administrative and support roles. It benefits from strong links to the UK National Facilities at the nearby Harwell, including Diamond Light Source and Rosalind Franklin Institute, with several shared appointments

The WHG is partnered locally by the NDM Big Data Institute, Centre for Medicines Discovery and other institutes.

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

How to apply

Applications are made through our e-recruitment system and you will find all the information you need about how to apply on our Jobs website https://www.jobs.ox.ac.uk/how-to-apply.

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.

As part of your application you will be asked to provide details of two referees and indicate whether we can contact them now. You will 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. Please note using a long file name may prevent you from uploading your documents.

- http://www.ox.ac.uk/about_the_university/jobs/professionalandmanagement/

All applications must be received by **midday** UK time 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).

If you need help

Application FAQs, including technical troubleshooting advice is available at: https://staff.web.ox.ac.uk/recruitment-support-faqs. Non-technical questions about this job should be addressed to the recruiting department directly recruitment@ndm.ox.ac.uk

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 online recruitment portal 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: https://compliance.admin.ox.ac.uk/job-applicant-privacy-policy. The University's Policy on Data Protection is available at: https://compliance.admin.ox.ac.uk/data-protection-policy.

The University's policy on retirement

The University operates an Employer Justified Retirement Age (EJRA) for very senior research posts at **grade RSIV/D35 and clinical equivalents E62 and E82**, which with effect from 1 October 2023 will be 30 September before the 70th birthday. The justification for this is explained at: https://hr.admin.ox.ac.uk/the-ejra.

For **existing** employees on these grades, any employment beyond the retirement age is subject to approval through the procedures: https://hr.admin.ox.ac.uk/the-ejra.

There is no normal or fixed age at which staff in posts at other grades 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 https://hr.admin.ox.ac.uk/staff-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 https://www.sport.ox.ac.uk/.

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 https://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 https://staffimmigration.admin.ox.ac.uk/visa-loan-scheme

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 the Work+Family Space, 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 https://hr.admin.ox.ac.uk/my-family-care

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 https://childcare.admin.ox.ac.uk/

Disabled

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 https://edu.admin.ox.ac.uk/disability-support

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 https://edu.admin.ox.ac.uk/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.