

BIG DATA INSTITUTE

<b>Job title</b>	Data Analyst
<b>Division</b>	Medical Sciences
<b>Department</b>	Nuffield Department of Medicine
<b>Location</b>	Big Data Institute, Li Ka Shing Centre for Health Information and Discovery, Old Road Campus, Headington, Oxford, OX3 7LF
<b>Grade and salary</b>	Grade 6: £28,098 - £33,518 (with a discretionary range up to £36,613)
<b>Hours</b>	Full time
<b>Contract type</b>	Fixed-term until 30 June 2021
<b>Reporting to</b>	Senior Research Manager
<b>Vacancy reference</b>	135527

<b>Research topic</b>	The Global Burden of Disease - Antimicrobial Resistance (AMR)
<b>Principal Investigator / supervisor</b>	PI: Prof. Simon Hay, IHME Senior Research Manager: Dr Catrin Moore, Big Data Institute
<b>Project team</b>	Global Research on AMR (GRAM)
<b>Funding partner</b>	UK Department Of Health and Social Care The Wellcome Trust The Bill and Melinda Gates Foundation

## 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





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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](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) ...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/>





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### Oxford Big Data Institute

The Big Data Institute (BDI) is a state-of-the-art building at Oxford University's Old Road Campus. When it opens in early 2017, this interdisciplinary research centre will focus 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 will be 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.

For more information please visit: <http://www.bdi.ox.ac.uk/>

### Partner Institution for this grant: Institute for Health Metrics and Evaluation (IHME), University of Washington

The Institute for Health Metrics and Evaluation (IHME) is an independent research center at the University of Washington focused on expanding the quantitative evidence base for health. A core research area for IHME is the Global Burden of Diseases, Injuries, and Risk Factors (GBD) enterprise. A systematic, scientific effort to quantify the comparative magnitude of health loss due to diseases, injuries, and risk factors by age, sex, and geography over time, the GBD is the largest and most comprehensive effort to date to measure epidemiological levels and trends worldwide. The GBD's aim is to provide policymakers, donors, and researchers with the highest-quality quantitative evidence base to make decisions that achieve better health.

For more information please visit: [www.healthdata.org](http://www.healthdata.org)



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## Overview of the role

This is an exciting opportunity to join the new Big Data Institute (BDI), based at the University of Oxford. Research at the BDI will be focussed on analysis of biomedical big data, and generation of health knowledge and information. The post holder will be based in the BDI, reporting to the Senior Research Manager in the BDI. The grant Principal Investigator (PI) is Professor Simon Hay based at the Institute for Health Metrics and Evaluation (IHME), University of Washington, Seattle, WA, USA.

The post holder will contribute to The Global Burden of Disease - Antimicrobial Resistance (AMR) project which is a collaborative grant funded by the UK Department Of Health, the Wellcome Trust and the Bill and Melinda Gates Foundation. The grant is in partnership with the Institute for Health Metrics and Evaluation (IHME), University of Washington. The purpose of the grant is to collect and synthesise data on the burden of disease associated with AMR and ensure that this data is included in the Global Burden of Disease study (GBD). Ultimately this will increase global awareness of AMR and drug resistant infections (DRI) and drive support for strategies that can reduce AMR/DRI. This will be achieved by the following activities:

1. Data collection from desk review or country visits, data preparation and management.
2. Geospatial disease mapping of AMR.
3. Dissemination of AMR mapping data through policy briefs, reports, infographics, conference and workshops.
4. Collaboration and support of AMR data collection networks through workshops, the creation of data networks, and expansion of data users.

The Data Analyst will provide support through data extraction and formatting, data quality management, database management, computational support, and providing key inputs for papers and presentations. Data Analysts must be able to independently translate requests into actionable results through interactions with research databases, formulation of displays of results, and development of complex code to be applied to a variety of quantitative data. This position calls for dexterity working with datasets and the ability to extract, assess, transform, and utilize quantitative data using coding languages (Stata, Python, R, SQL). The individual must then quality control results to ensure that other team members have exactly what they need to incorporate the data and results into their own components of the analytic process, presentations, and papers.

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### Responsibilities/duties

- Extract, validate, clean, and geolocation data. Understand the context of the data, and ensure that they are relevant to the analyses themselves. Maintain, update, and interact with databases containing health data from multiple sources. Work as part of a team compiling datasets on a) drug resistance in selected pathogens, and b) geolocated health facilities.
- Undertake systematic reviews on antimicrobial resistance in selected pathogens. Create and document efficient, effective and replicable methods to extracting data, writing and applying code as relevant, organizing data sources, managing data quality, and explaining complex analytic processes.
- Develop or tailor analytical tools and resources in collaboration with members of the research team. Problem-solve computational and analytic challenges by investigating the data, understanding the root questions, developing and using code functions, and coming up with alternative measurement strategies.
- Perform quality assurance and routine diagnostics on data, conduct detailed analysis of complex datasets, and provide statistical analysis plans for studies and undertake day to day planning of work.
- Write up statistical analysis, methods, and results which may be used for relevant sections of manuscripts, presentations and other means of disseminating results.
- Attend scientific seminars, meetings and training as appropriate.
- Contribute ideas and communicate effectively with database experts and scientific programmers.

### Selection criteria

#### Essential

- A bachelor's degree in Biostatistics, Mathematics, Statistics, Computing, Mathematical Biology, Public Health, or a related subject.
- Demonstrate experience and ability in biostatistics or bioinformatics.
- Proficiency in the use of statistical programming languages and developing code in R, Python, Stata, SQL, or other coding language.





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- Demonstrated facility with analytic tasks and ability to participate productively in interdisciplinary research teams.
- Strong quantitative aptitude, desire to learn new skills and information, and ability to interpret complex analytic quantitative information.
- Interest in global health research.
- Demonstrable ability to organise and prioritise work efficiently whilst delivering results to the required standard and to an agreed schedule.
- Strong communication skills and cooperative team player
- Experience writing novel code to handle complex analytic tasks.
- Experience with using, building, or maintaining datasets or databases with quantitative information

### Desirable

- A post-graduate master's degree in Biostatistics, Mathematics, Statistics, Computing, Mathematical Biology, Public Health, or a related subject.
- Previous research experience

### 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.



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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](mailto: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/](http://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/](http://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/](http://www.admin.ox.ac.uk/councilsec/compliance/gdpr/universitypolicyondataprotection/).



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### 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 69<sup>th</sup> 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+/](http://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+/](http://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.

### 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.





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### 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

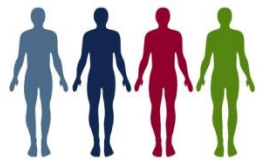
The University subscribes to My Family Care ([www.admin.ox.ac.uk/personnel/staffinfo/benefits/family/mfc/](http://www.admin.ox.ac.uk/personnel/staffinfo/benefits/family/mfc/)) and staff are eligible to register for emergency back-up childcare and adultcare services, a 'speak to an expert' phone line 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.





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## 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/](http://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](http://www.admin.ox.ac.uk/personnel/staffinfo/benefits)

