



<b>Job title</b>	Senior Data Scientist
<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, Oxford, OX3 7LF
<b>Grade and salary</b>	Standard grade 8: Salary in range £48,235 - £51,059 per annum. This is inclusive of a pensionable Oxford University Weighting of £1,500 per year (pro rata).
<b>Hours</b>	Full time
<b>Contract type</b>	Fixed-term contract for 36 months Funding provided by GSK
<b>Reporting to</b>	Professor Chris Holmes, Principle Investigator
<b>Vacancy reference</b>	173896

<b>Additional information</b>	This role meets the eligibility requirements for a Skilled Worker Certificate of Sponsorship under UK Visas and Immigration legislation, but eligibility will depend on the chosen candidate's details so, if a visa is required, this will be determined once the selection has been completed.
<b>About us</b>	<ul style="list-style-type: none"> <li>University of Oxford - <a href="http://www.ox.ac.uk/about/organisation">www.ox.ac.uk/about/organisation</a></li> <li>Nuffield Department of Medicine (NDM) - <a href="https://www.ndm.ox.ac.uk">https://www.ndm.ox.ac.uk</a></li> <li>Unit - <a href="https://www.bdi.ox.ac.uk/">https://www.bdi.ox.ac.uk/</a></li> </ul>
<b>What we offer</b>	<a href="https://hr.admin.ox.ac.uk/staff-benefits">https://hr.admin.ox.ac.uk/staff-benefits</a> <ul style="list-style-type: none"> <li>An excellent contributory pension scheme</li> <li>38 days annual leave</li> <li>A pensionable Oxford University Weighting allowance of £1,500 per annum (pro rata)</li> <li>A comprehensive range of childcare services</li> <li>Family leave schemes</li> <li>Cycle loan scheme</li> <li>Discounted bus travel and Season Ticket travel loans</li> <li>Membership to a variety of social and sports clubs</li> <li>A welcoming and diverse community</li> </ul>



## The project

The University of Oxford and GSK have recently formed a new partnership focused on cutting-edge biostatistics and artificial intelligence (AI) for application in biomedicine. With a basis in the Nuffield Department of Medicine (NDM) and Department of Statistics, the partnership will bring together the University of Oxford's expertise in statistics, mathematics, engineering and AI with industry scientists, forming small teams focused ambitious, 'blue sky' research for novel methods development relevant for drug discovery analysis pipelines, design and operational efficiency. Led by Professor Chris Holmes, with scientific oversight from Oxford Principal Investigators and GSK scientists, the centre will initially focus on the following thematic areas:

- Decision analysis under model misspecification
- Uncertainty quantification around LLMs
- Constrained experimental design
- Combining models and combining data / Realistic simulation of clinical trials
- Developing LLMs to utilise ODEs and ProbML as tools, Code synthesis for causality
- Generalisability, transportability and validation of multiomics ML across biobanks

Principal Investigators from Oxford for this programme are Profs David Clifton, Robin Evans, Yarin Gal, Agni Orfanoudaki and Tom Rainforth.

Teams will be located in the University of Oxford's Big Data Institute and will be well supported by a dedicated data scientist, as well as a programme manager.

## The role

This post provides an exciting opportunity for an experienced Senior Data Scientist to join this new Oxford-GSK collaboration led by Professor Chris Holmes. The research activity will be located in the University of Oxford's Big Data Institute (BDI) and closely linked with the Department of Statistics. Reporting to Professor Holmes, you will act as the primary interface between different data analytical and data provisioning teams across the Oxford-GSK partnership, providing senior oversight to manage unique highly dimensional biomedical and patient data, ensuring accurate data harmonisation, integration and version control. The role is crucial to enable robust and reproducible research to further in the development of tools and methodologies translatable for medical and biopharmaceutical research.

The postholder will take responsibility for providing detailed data management input into project plans, ensuring adequate resourcing, setting of milestones and deliverables, and working collaboratively to troubleshoot and solve potential issues. You will be supported by a Data Scientist, who you will recruit and line manage, and will work closely with a Research Software Engineer associated with the team, to provide guidance and support to deliver best practice analyses for the collaboration. The role requires an individual confident in identifying and implementing use of novel and established approaches to optimise tracking, storage, querying and reporting of data across a complex interdisciplinary research landscape.

# Responsibilities

You will:

- Act as the primary interface between different data analytical and data provisioning teams across industry projects, involving different departments and external teams, taking responsibility for data wrangling activities, working closely with GSK external scientists.
- Identify, define and plan use of novel and established methodologies to develop and enhance data tracking, storage (databases), querying and reporting strategies for each project, providing advice to scientists and clinicians within the University and at GSK.
- Identify and implement novel approaches to ensure accurate data harmonisation, integration and version control across projects, contributing to the overall aims of the partnership, and in particular, in relation to data management.
- Produce a detailed plan for each project to support reproducible analysis; oversee resourcing, set and monitor deliverables, and identify and troubleshoot technical or scientific problems, working collaboratively across the partnerships to overcome issues.
- Recruit and line manage a data scientist,, providing advice and supervision on a day-to-day basis and ensuring staff development and training needs are met.
- Design database schemas for large scale data and pool together and harmonise data from multiple modalities and clinical trials ready for research.
- Use knowledge of clinical trial data and data standards to extract and QC multiple datasets tailor suited to analytical requirements.
- Compile detailed documentation and guides for team members to use as resources for accessing data and understanding processes.
- Provide data management input into outline and full research proposals, including supporting exploratory research, for further collaborative projects.
- Ensure GDPR principals are upheld and maintained through anonymization while optimising data availability. Develop and implement operational procedures to ensure compliance with wider information governance policies across the project and team.
- Assist in the preparation of manuscripts for publication in high profile peer-reviewed journals, taking leadership in more specialised publications on data management, and present approaches at international workshops and meetings.
- Prepare and present regular data wrangling updates on approaches and progress for regular Scientific and Steering Committee meetings with internal and external collaborators, chairing discussions where appropriate.
- 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

- Hold a Master's degree in a mathematical or computational area.
- Extensive experience in data science and data wrangling in a biomedical space.
- Experience and fluency in programming (with python, R, and SQL).
- Experience in bioinformatics techniques, data management and relational databases.
- Experience in developing user-friendly interfaces for data visualisation and quality control.
- Experience in clinical trial data management.
- Knowledge and experience of clinical data standards and procedures, including application in real world examples.
- Demonstrable ability to supervise and train junior team members.
- Ability to independently manage your own workload and plan and manage research projects.
- Excellent organisational and prioritisation skills with an ability to work under pressure at times to meet deadlines.
- Great written and oral communication skills including ability to present complex information and data in a concise and clear manner to people from different backgrounds.
- Experience in contributing to peer-reviewed research publications in a relevant scientific area and of presenting at (inter)national workshops and meetings.
- Flexible, pro-active and adaptable team worker with strong interpersonal skills and a demonstrable ability to develop and maintain effective working relationships.

### Desirable

- Experience of providing data science support for large academic-industry partnerships involving a range of different stakeholders.

## 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>



## 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/research/](http://www.ox.ac.uk/about_the_university/jobs/research/)

All applications must be received by **midday** UK time on the closing date stated in the online advertisement

If you currently work for the University please note that:

- As part of the referencing process, we will contact your current department to confirm basic employment details including reason for leaving.
- Although employees may hold multiple part-time posts, they may not hold more than the equivalent of a full time post. If you are offered this post, and accepting it would take you over the equivalent of full-time hours, you will be expected to resign from, or reduce hours in, your other posts(s) before starting work in the new post.

## 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](mailto:recruitment@ndm.ox.ac.uk)

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 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 70<sup>th</sup> 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.

