

Summary

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| Job title | Postdoctoral Researcher: Medical Data Science |
| Division | Medical Sciences |
| Department | Psychiatry |
| Location | Warneford Hospital |
| Grade and salary | Grade 7: £38,674-£43,171 per annum |
| Hours | Full time |
| Contract type | Fixed-term (funded to 30 April 2030) |
| Reporting to | Dr Max Taquet |
| Vacancy reference | 178019 |

The role

IMPACT-SMI is a 5-year research programme starting in 2025. Our mission with IMPACT-SMI is to transform the lives of millions of people with severe mental illness (SMI) by making their condition more predictable and manageable. It builds on a groundbreaking discovery that instability in symptoms (their fluctuation over time) is a critical predictor of outcomes in SMI and represents a promising new treatment target.

As a postdoctoral researcher in medical data science in IMPACT-SMI, you will be given access to several large datasets spanning 5-35 million patients with mental illness to lead and contribute to a range of projects including the development of novel prediction tools, the investigation of determinants of symptom instability, and the use of advanced causal inference techniques to create data-driven personalised treatment approaches.

In this role, you will collaborate closely with academic and industry partners, gaining valuable exposure to translational research. Your work will directly contribute to the creation of tools (by software developers) designed for integration into clinical practice, ensuring tangible impact on patient care.

This role offers significant opportunities to shape the research direction of the project while working with a network of academic collaborators at the Oxford Department of Psychiatry, the Oxford Health Biomedical Research Centre, the Oxford Big Data Institute, and the Oxford Sleep and Circadian Neuroscience Institute. You will report to Dr Maxime Taquet and will be a member of his research group. You will also benefit from a research group working on this project, including two research assistants and a DPhil student, who will increase research productivity and to whom you will provide guidance.



Flexible working

The post is only available as full-time given the time limit on the award. However, we can discuss flexible working hours (e.g. starting and finishing earlier in the day) to accommodate your needs. Working remotely is possible for up to 1 day/week.

Responsibilities

- Write computer code for analysis of large datasets, that can be easily integrated into pipelines and used by others.
- Analyse quantitative data from a variety of sources and seek opportunities to triangulate evidence across datasets
- Collaborate in the design and delivery of prospective studies aimed at complementing/corroborating/validating findings from big datasets
- Lead manuscript preparation for high-impact journals and collaborate in the preparation of other research publications.
- Present papers at conferences or public meetings
- Represent the research group at external meetings/seminars, either with other members of the group or alone
- Contribute to project development and future grant applications
- Mentor junior colleagues
- Provide necessary input to software developers to guide the implementation of the technologies
- Manage own academic research and administrative activities. This involves small scale project management, to co-ordinate multiple aspects of work to meet deadlines
- Carry out collaborative projects with colleagues in partner institutions, and research groups

Selection criteria

Essential selection criteria

- Hold a relevant PhD/DPhil, (including, but not limited to, data science, statistics, computer science, engineering, mathematics, etc) together with relevant experience
- Strong programming skills in Python and/or R or a similar language
- Skills in machine learning
- Ability to quickly grasp more advanced data analysis techniques (including causal inference techniques, such as emulated target trials)
- Ability to write code in such a way that data analysis can be streamlined (i.e. if the data is updated, then the code can simply be re-run to update the results including the graphs and tables).
- Ability to work efficiently with real-world data
- Sufficient specialist knowledge in the discipline to work within established research programmes
- Ability to manage own academic research and associated activities
- Previous experience of writing publications
- Ability to work collaboratively as part of a team
- Ability to write manuscripts with tight word count limits and to appropriately select information to keep in the main text and information to add to the supplement.
- Ability to contribute ideas for new research projects and research income generation
- Excellent communication skills, including the ability to write for publication, present research proposals and results, and represent the research group at meetings

Desirable selection criteria

- A proven track record of publications and delivering projects wherein data science was a key component
- Experience with version control and open-source code

- Previous experience working with electronic health records data
- Experience with SQL
- Experience with the development of prediction models
- Experience of causal inference
- Experience of independently managing a discrete area of a research project
- Previous experience of effectively mentoring junior colleagues.

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. If you have previously worked for the University we will also verify key information such as your dates of employment and reason for leaving your previous role with the department/unit where you worked. 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.

Department of Psychiatry

The Department of Psychiatry based on the Warneford Hospital site in Oxford has an international reputation for excellence. The Head of Department is Professor Belinda Lennox. The Department has a substantial research programme, with major funding from Medical Research Council (MRC), Wellcome Trust and National Institute for Health Research (NIHR) and provides highly rated medical training in psychiatry. There are approximately 250 staff including 41 principal investigators leading research groups investigating applying a wide range of approaches from translational neuroscience, experimental medicine, epidemiology, clinical trials and health services research to developmental disorders, mood disorders, cognitive disorders and self-harm and suicide. There are strong links with other departments and institutes both within and outside Oxford: these links ensure that we can apply the best scientific methods to psychiatric and cognitive disorders. The Department has an annual turnover of over £10 million with more than 130 research grants.

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

The Department of Psychiatry holds a silver Athena Swan award to recognise advancement of gender equality: representation, progression and success for all.

Medical Sciences Division

For more information please visit: <https://www.medsci.ox.ac.uk/>

How to apply

Applications are made through our online recruitment portal. Information about how to apply is available on our Jobs website <https://www.jobs.ox.ac.uk/how-to-apply>.

Your application will be judged solely on the basis of how you demonstrate that you meet the selection criteria stated in the job description.

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)

Please upload all documents **as PDF files** with your name and the document type in the filename.

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

vacancies@psych.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** of 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, flexible working options, travel discounts including salary sacrifice schemes for bicycles and electric cars and other discounts. Staff can access a huge range of personal and professional development opportunities. See <https://hr.admin.ox.ac.uk/staff-benefits>

Employee Assistance Programme

As part of our wellbeing offering staff get free access to Health Assured, a confidential employee assistance programme, available 24/7 for 365 days a year. Find out more <https://staff.admin.ox.ac.uk/health-assured-eap>

University Club and sports facilities

Membership of the University Club is free for University staff. It 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 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 dependants. See <https://staffimmigration.admin.ox.ac.uk/visa-loan-scheme>

Family-friendly benefits

We are a family-friendly employer with one of the most generous family leave schemes in the Higher Education sector (see <https://hr.web.ox.ac.uk/family-leave>). Our Childcare Services team provides guidance and support on childcare provision, and offers a range of high-quality childcare options at affordable prices for staff. In addition to 5 University nurseries, we partner with a number of local providers to offer in excess of 450 full time nursery places to our staff. Eligible parents are able to pay for childcare through salary sacrifice, further reducing costs. See <https://childcare.admin.ox.ac.uk/>.

Supporting disability and health-related issues (inc menopause)

We are committed to supporting members of staff with disabilities or long-term health conditions, including those experiencing negative effects of menopause. Information about the University's Staff Disability Advisor, is at <https://edu.admin.ox.ac.uk/disability-support>. For information about how we support those going through menopause see <https://hr.admin.ox.ac.uk/menopause-guidance>

Staff networks

The University has a number of staff networks including for research staff, BME staff, LGBT+ staff, disabled staff network and those going through menopause. Find out more at <https://edu.admin.ox.ac.uk/networks>

The University of Oxford Newcomers' Club

The University of Oxford Newcomers' Club is 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.

Research staff

The Researcher Hub supports all researchers on fixed-term contracts. They aim to help you settle in comfortably, make connections, grow as a person, extend your research expertise and approach your next career step with confidence. Find out more <https://www.ox.ac.uk/research/support-researchers/researcher-hub>

Oxford's Research Staff Society is a collective voice for our researchers. They also organise social and professional networking activities for researchers. Find out more <https://www.ox.ac.uk/research/support-researchers/connecting-other-researchers/oxford-research-staff-society>