OXFORD POPULATION HEALTH
UNIVERSITY OF OXFORD

Job description

Job title	Senior Researcher in Wearable Sensors
Division	Medical Sciences Division
Department	Oxford Population Health (Nuffield Department of Population Health, University of Oxford)
Location	Old Road Campus, Headington, Oxford, OX3 7LF
Grade and salary	Grade 8: £48,235 – £57,255 per annum
Hours	Full time (part time considered)
Contract type	Fixed-term until 30 April 2026
Vacancy reference	176523

About Oxford Population Health

Oxford Population Health (the Nuffield Department of Population Health) provides an excellent environment for multi-disciplinary research and teaching and for professional and support staff. We work together to answer some of the most important questions about the causes, prevention and treatment of disease.

The Department has around 1000 staff, students and academic visitors working in a number of world-renowned population health research groups, including the Clinical Trial Service Unit and Epidemiological Studies Unit (CTSU), the Cancer Epidemiology Unit (CEU), the National Perinatal Epidemiology Unit (NPEU) and other groups working on public health, health economics, ethics and health record linkage. It is also a key partner in the Oxford University's Big Data Institute.

In the 2021 Research Excellence Framework (REF), 96% of the research submitted to Unit of Assessment 2: Public Health, Health Services and Primary Care, was ranked either 4* (world-leading in terms of originality, significance and rigour) or 3* (internationally excellent in terms of originality, significance and rigour). This comprised research from Oxford Population Health and research from the Nuffield Department of Primary Care Health Sciences. We scored particularly well for having an environment that is conducive to producing research of world-leading quality and enabling outstanding impact, in terms of its vitality and sustainability.

In addition to its research activities, the Department is home to the **MSc in Global Health Science and Epidemiology**, the **MSc in Clinical Trials**, and a variety of short courses. Students also come to undertake research for **DPhil degrees**. Teaching is provided for undergraduates reading for Medicine and for public health doctors in specialist training.

For more information please visit the **Oxford Population Health website**.

About the Medical Sciences Division

The Medical Sciences Division is an internationally recognised centre of excellence for biomedical and clinical research and teaching, and 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 the **Medical Sciences Division website**.

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 the **Oxford University website**.

The Big Data Institute (BDI)

The Big Data Institute (BDI), which opened in May 2017, is an interdisciplinary research centre housing 350 staff and students, located within the University of Oxford's Old Road Campus. The Institute combines researchers from genomics, epidemiology, population health, and infectious disease alongside those from computer science, statistics and engineering to develop the field of big data as applied to biomedical research. Scientists working in the Institute form an analytical hub, deeply connected to the wider experimental and clinical community in Oxford and beyond, working to solve some of the major challenges in medical research. The BDI aims to develop, evaluate and deploy efficient methods for acquiring and analysing information at scale and for exploiting the opportunities presented by large-scale studies. Its activity includes, the analysis population scale data, derived from health records, genetics and biomarkers, the analysis of images and application of machine learning, and the analysis of single cells and molecular proteomic and transcriptomic data. The Institute provides core facilities in high-performance computing and high-capacity data management.

The BDI is part of the Li Ka Shing Centre for Health Information and Discovery at the University of Oxford's Old Road Campus. It is an institute of the Oxford Population Health (the Nuffield Department of Population Health), although it also hosts scientists from a number of other Departments within the University. The Institute's space is allocated between NDPH (2/3) and NDM (1/3).

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

The role

We are looking for a Senior Researcher to develop new methods to investigate if data from smartphones and wearables can improve risk prediction of major health outcomes in large-scale epidemiological studies.

You will be based in the Wearables Group within the Nuffield Department of Popuation Health, based at the Big Data Institute. Our research team has access to world-leading population health data sets with objective wearable sensor measurements of sleep and physical activity linked to clinical and genomic data. For example, we play a key role in the UK Biobank and China Kadoorie Biobank activity monitoring projects, where ~150,000 participants have accelerometer, genomic, hospitalisation, and mortality data collected. You

will be supported in getting to grips with these data repositories and collaborate with other members of our team. In addition, there will be opportunities for collaboration with the extensive range of mega-scale epidemiological cohorts and clinical trial studies within the Nuffield Department of Population Health and beyond.

We would like you to build on your past experience to develop new lines of enquiry around the analysis of smartphone and wearable datasets where it is now possible to capture new information at scale on activities of daily living (via gyroscopes), heart rate (via photoplethsomnograms) and a range of other sensors. Such information has the potential to transform our understanding of the causes and consequences of disease. There will be opportunities to supervise DPhil (PhD) students and to develop your own external fellowship applications around the collection and analysis of remotely assessed phenotypes in large-scale epidemiological studies and clinical trials. There will be exciting opportunities to translate your research beyond academia, where you will closely collaborate with Swiss Re and gain insights in healthcare risk prediction models.

Responsibilities

- Develop research questions for the remote assessment of health relevant traits via smartphones and/or wearables in large-scale epidemiological studies

- Develop, establish, and pursue appropriate analytical protocols and techniques to support research

- Regularly write original research articles for peer-reviewed journals, and present research at national and international conferences.

- Raise research funds through grant applications and manage own area of a larger research budget.

- Share responsibility for shaping the research group's plans and the writing of group-funding applications for new research projects

- Liaise with funding bodies and provide information to project stakeholders and represent the research group at external meetings/seminars, either with other members of the team or alone

- Assist with related teaching and other work within department that takes into account the post-holder's career aspirations and development aims.

- To contribute, as required to the wider academic activities of the Nuffield Department of Population Health (including teaching, student mentoring or supervision, and assessment) and to participate in appropriate training and quality assurance processes for such roles

The above list is not exhaustive and the role-holder is required to undertake such duties as may reasonably be requested within the scope of the post. All staff are required to act in a professional, cooperative and flexible manner, in line with the requirements of the post.

Selection criteria
Essential

- Hold a relevant Ph.D/D.Phil in an area of relevance to the remote assessment of health relevant traits via smartphones and/or wearables in large-scale epidemiological studies

- Substanial research experience in an area of relevance to the remote assessment of health relevant traits via smartphones and/or wearables in large-scale epidemiological studies

- Strong publication record and familiarity with the existing literature and research in the field.

- Possess sufficient specialist knowledge in the discipline to develop research projects and methodologies

- Ability to independently plan and manage a research project, including a research budget

- Ability to raise research funds through making grant applications

- Excellent team working and communication skills, including the ability to write for publication, present research results, and represent the research group at meetings

- Proven track record in working in a highly collaborative way

Desirable

- Experience of supervising staff

- Experience of managing a research budget

- Experience of making grant applications

- Experience of high-performance computing environments, UNIX environments, and scripting skills in languages such as Python

- Experience of working with terabytes of smartphone and/or wearable data (e.g. cleaning, processing, analysing)

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.

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**.

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 your CV and supporting statement **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 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).

If you need help

Help and support is available from the **HR Systems Recruitment support webpage**. If you require any further assistance please **email the Recruitment Support team**.

To return to the online application at any stage, please go to the **University's recruitment website**. Please note that you will receive an automated email from our e-recruitment system 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**. The University's Policy on Data Protection is available on the **University's Compliance webpages**.

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.

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.

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. There is also a visa loan scheme to cover the costs of UK visa applications for staff and their dependents.

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/.

Disabled staff

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 the Disability Support webpages.

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 on the Equality and Diversity at Oxford webpages.

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.