NUFFIELD DEPARTMENT OF
CLINICAL NEUROSCIENCES
West Wing, Level 6, John Radcliffe Hospital, Oxford, OX3 9DU
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Job title	**Postdoctoral Researcher in Neuroimaging**
Division	Medical Sciences Division
Department	Nuffield Department of Clinical Neurosciences (NDCN)
Location	WIN@FMRIB, John Radcliffe Hospital, Headington, Oxford, OX3 9DU
Grade and salary	Grade 8: £45,585 - £54,395 per annum
Hours	Full time
Contract type	Fixed-term until 31st March 2025 in the first instance
Reporting to	Prof. Karla Miller and Ludovica Griffanti
Vacancy reference	170525
Additional information	*The post is available from 1st April 2024*

Research topic	Harmonisation of MRI brain scans
Principal Investigator / supervisor	Profs. Karla Miller and Ludovica Griffanti
Project team	WIN Physics, WIN Analysis, NIHR Oxford Health BRC
Project web site	www.ox.ac.uk/ https://www.win.ox.ac.uk/research/physics-research https://www.win.ox.ac.uk/people/ludovica-griffanti https://oxfordhealthbrc.nihr.ac.uk/research/brain-technologies/
Funding partner	The funds supporting this research project are provided by the NIHR Oxford Health Biomedical Research Centre
Recent publications	Griffanti et al (2022). Adapting UK Biobank imaging for use in a routine memory clinic setting: the Oxford Brain Health Clinic. NeuroImage: Clinical, 36:103273.

	Bordin…Griffanti (2021). Integrating large-scale neuroimaging research datasets: Harmonisation of white matter hyperintensity measurements across Whitehall and UK Biobank datasets. NeuroImage, 237: 118189. Alfaro-Almagro et al (2018). UK Biobank Brain Imaging: Automated Processing Pipeline and Quality Control for 100,000 subjects. NeuroImage, 166: 400-424.

The role

The post will be based within the Wellcome Centre for Integrative Neuroimaging (WIN), reporting to Professor Karla Miller and Associate Professor Ludovica Griffanti. The project is funded by the NIHR Oxford Health BRC Brain Technologies theme, which focuses on the scientific/clinical interface to create and test accurate tools for measuring brain structure and function to improve risk identification, early diagnosis, outcome prediction and treatment targeting.

Millions of hospital brain scans are performed globally each year. At the moment, these scans are interpreted by eye. This means the structure and content of the radiology reports is very variable, and even the most expert clinician may not be able to detect subtle changes in this way. In the research setting, we build powerful algorithms that analyse information objectively, compare scans across individuals or over time. However, these tools are mostly designed to analyse homogeneous data from groups of participants in research studies rather than to inform clinical decision making about individual patients based on variable clinical data. The post holder will contribute to the steps needed to deploy such brain-health markers to support individual patient decision making in clinical practice.

The post holder will be primarily responsible for the development of methods to obtain comparable measures from scans acquired with different hardware in both clinical and research settings. This will involve i) assessing variability of brain-health markers across hardware and its impact on clinically-relevant outcomes; ii) developing a strategy to minimise non-biological variability in the measures and iii) implement it at the acquisition and/or image processing level. The project is in close collaboration with the University of Manchester, which will also provide access to brain scanners from three major vendors in clinics across the city with the aim of creating a standard output from all clinical settings.

The post holder will work in a very multidisciplinary team across Oxford and Manchester, including engineers, physicists, computer scientists, neuroscientists, clinicians.

Responsibilities

- Develop questions, generate original ideas, and conduct individual researchon data harmonisation approaches and techniques to standardise imaging phenotypes across MRI scanner platforms
- Contribute to the development of the harmonisation strategy for BRC
- Propose and conduct experimental investigations to assess the variability of imaging phenotypes across MRI scanner platforms
- Agree clear task objectives, organise, and delegate work to other members of the team
- Co-supervise DPhil students and/or early-career research assistants
- Collaborate with a global network of research partners
- Regularly write research articles and present research at international conferences
- Act as a source of information and advice on techniques and approaches to group members, including student supervision, and collaborators
- Share responsibility for shaping the research group's plans and the writing of group-funding applications for new research projects
- Represent the research group at external meetings/seminars and with external collaborators
- Undertake other duties in the department from time to time as determined commensurate with the grade and responsibilities of this post, and any other reasonable request

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Selection criteria

Essential selection criteria

- Hold a PhD/DPhil in engineering, physics, neuroimaging, or other related subject.
- Expertise in MRI analysis, ideally using FSL.
- Expertise in scientific computation, optimisation techniques, and/or statistical methods.
- Knowledge of MRI acquisition and physics, including structural, diffusion, susceptibility, and/or functional MRI.
- Track record in programming, scripting, and IT (ideally in Python and Unix), including implementation of novel algorithms.
- Strong organisational and time management skills, as evidenced by a track record of delivering on a substantial research project.
- Strong interpersonal and communication skills, including a track record in academic publication.
- Demonstrated collaborative abilities and desire to work in a team environment.

Desirable selection criteria

- Experience with handling large datasets and imaging informatics platforms, such as XNAT.
- Experience with neuroimaging and/or a background in neuroscience.
- Experience with machine learning and/or advance regression methods.
- Track record of independence, such as managing a research project and/or supervision

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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.

Medical Sciences Division

The Medical Sciences Division is an internationally recognized 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 visit: www.medsci.ox.ac.uk

The Nuffield Department of Clinical Neurosciences

The Nuffield Department of Clinical Neurosciences (NDCN), led by Prof Kevin Talbot, has over 400 staff and 150 postgraduate students. NDCN has an established research and teaching portfolio with a national and international reputation for excellence.

NDCN is based in high quality research and clinical facilities in the West Wing of the John Radcliffe Hospital, alongside the Department's world-class Wellcome Centre for Integrative Neuroimaging (WIN) and the Weatherall Institute of Molecular Medicine (which houses 3 of our research groups), and provides the ideal facilities to translate research from bench to bedside. In keeping with the award of NIHR Comprehensive Biomedical Research Centre status, to a partnership between Oxford University and the Oxford Radcliffe Hospitals NHS Trust, we have developed a highly integrated and interdisciplinary environment in which research, teaching, clinical training and clinical care interact. This enables us to establish new approaches to the understanding, diagnosis and treatment of brain diseases. To this end the Department fosters collaborations worldwide and warmly welcomes visiting scientists, clinical fellows and students. The Department comprises six sections:
For more information visit: www.ndcn.ox.ac.uk

Medical Research Council Brain Network Dynamics Unit
The MRC BNDU is directed by Professor Peter Magill and is exceptionally multidisciplinary, integrating research programmes that span clinical, experimental and computational neuroscience. The Unit's collective goal is to understand and exploit the moment-to-moment interactions between nerve cells that are critical for brain functions, with a special focus on the brain circuits underlying movement and memory.
For more information visit: www.mrcbndu.ox.ac.uk

Nuffield Division of Anaesthesia
NDA is led by Associate Professor Andrew Farmery. The NDA is committed to the development and maintenance of internationally competitive research programmes in pain and consciousness; respiration and hypoxia; adult and neuro-intensive care; simulation and human factors training.
For more information visit www.nda.ox.ac.uk

Division of Clinical Neurology
DCN is led by Professor David Bennett. DCN is committed to the development of research programs that improve understanding of the nervous system in health and disease.
For more information visit www.dcn.ox.ac.uk

The Wellcome Centre for Integrative Neuroimaging (WIN)
WIN is a multi-disciplinary neuroimaging research facility led by Heidi Johansen-Berg. WIN aims to bridge the gap between laboratory neuroscience and human health, by performing multi-scale studies spanning from animal models through to human populations. It focuses on the use of Magnetic Resonance Imaging (MRI) for neuroscience research, along with related technologies such as Transcranial Magnetic Stimulation, transcranial Direct Current Stimulation, MEG and EEG. WIN has core locations at the John Radcliffe Hospital (FMRIB), Warneford Hospital (OHBA) and University Science area (BSB).
For more information visit www.win.ox.ac.uk

Nuffield Laboratory of Ophthalmology
NLO is led by Professor Russell Foster, who leads the Sleep & Circadian Neuroscience Institute. NLO pursues scientific and clinical research into a range of areas related to vision, the eye and circadian neuroscience.

For more information visit www.nlo.ox.ac.uk

Centre for the Prevention of Stroke & Dementia
CPSD is led by Professor Peter Rothwell. The centre carries out research that increases understanding of the causes of cerebrovascular disease. Its aims are to improve prevention of stroke and dementia by earlier diagnosis, more reliable prognostication, and more effective use of existing preventive treatments in routine clinical practice.

For more information visit www.cpsd.ox.ac.uk

Working at NDCN

NDCN actively promotes a healthy work life balance amongst employees through a number of family friendly policies. See https://hr.admin.ox.ac.uk/staff-benefits for further information.

The University of Oxford is a member of the Athena SWAN Charter and holds an institutional Bronze Athena SWAN award. The Department of Clinical Neurosciences holds a departmental Silver Athena award in recognition of its efforts to introduce organisational and cultural practices that promote advancement of gender equality: representation, progression and success for all.

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.

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@ndcn.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, 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 dependants. 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 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 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.

Oxford Research Staff Society (OxRSS)

A society run by and for Oxford University research staff. It offers researchers a range of social and professional networking opportunities. Membership is free, and all researchers employed by Oxford University are welcome to join. Subscribe at researchstaff-subscribe@maillist.ox.ac.uk to join the mailing list to find out about upcoming events and other information for researchers, or contact the committee on committee@oxrss.ox.ac.uk. For more information, see www.ox.ac.uk/oxrss, Twitter @ResStaffOxford, and Facebook www.facebook.com/oxrss.