

OXFORD-GSK INSTITUTE of MOLECULAR and COMPUTATIONAL MEDICINE



Job title	Postdoctoral Researcher in Alzheimer's Disease Pathology, Oxford-GSK Institute of Molecular and Computational Medicine
Division	Medical Sciences
Department	Nuffield Department of Medicine, Centre for Human Genetics, seconded to the Nuffield Department of Clinical Neurosciences, in the first instance
Location	John Radcliffe Hospital, West Wing, Headley Way, Oxford, OX3 9DU And on occasion, Building of Genomic Medicine, Old Road Campus, Roosevelt Drive, Headington, Oxford, OX3 7BN
Grade and salary	Grade 7: Salary in range £36,024 - £44,263 per annum
Hours	Full time
Contract type	Fixed-term contract until 30 September 2027 Funding is provided by GSK
Reporting to	Professor Laura Parkkinen, with oversight from Dr Georgina Kerr, Senior Programme Manager
Vacancy reference	173056

Hybrid working arrangements	The successful person will need to work on site for a minimum of 4 days per week
Additional information	This role meets the eligibility requirements for a Skilled Worker Certificate of Sponsorship under UK Visas and Immigration legislation. Therefore, the Nuffield Department of Medicine welcomes applications from international applicants who require a visa.
Additional information	For the full duration of the contract you will be a University of Oxford employee and your substantive department will be NDM. You will hold an affiliation to the Nuffield Department of Clinical Neurosciences (initial duration of 12 months) but must be willing to work on a cross-cutting departmental basis depending on the scientific need of projects under IMCM.
About us	 University of Oxford - <u>www.ox.ac.uk/about/organisation</u> Nuffield Department of Medicine (NDM) - <u>https://www.ndm.ox.ac.uk</u> Unit - <u>https://www.well.ox.ac.uk</u> / <u>www.imcm.ox.ac.uk</u> Research - <u>https://www.imcm.ox.ac.uk/</u>



	https://hr.admin.ox.ac.uk/staff-benefits
	An excellent contributory pension scheme
	38 days annual leave
	A comprehensive range of childcare services
What we offer	Family leave schemes
	Cycle loan scheme
	 Discounted bus travel and Season Ticket travel loans
	 Membership to a variety of social and sports clubs
	A welcoming and diverse community



The role

This post provides an exciting opportunity to join the newly established multidisciplinary Oxford-GSK Institute of Molecular & Computational Medicine (IMCM) operating within Nuffield Department of Medicine (NDM) in collaboration with Nuffield Department of Clinical Neuroscience (NDCN), Sir William Dunn School of Pathology, Department of Psychiatry and Department of Physiology, Anatomy and Genetics (DPAG). The Institute brings together the very best scientific, clinical, technological and computational expertise from Oxford University and GSK forming a unique industry/academic partnership. The aim of the Institute is to improve tools in, and knowledge from, genetics, genomics, molecular and single cell biology, spatial imaging, machine learning and novel methods of data handling to study the pattern of diseases in new ways. The Institute will develop disease agnostic platforms to change the clinical practise of pathology, helping to identify and validate early potential drug targets, and biomarkers to predict disease progression. The Institute is built around Fellows and Oxford-GSK project teams located across different departments within the Medical Sciences Division. Projects will initially focus on neurodegeneration and the central nervous system, specifically Alzheimer's disease, Parkinson's disease and amyotrophic lateral sclerosis but it is anticipated the range of activities will expand into other research areas in future.

A highly motivated Postdoctoral Scientist looking to develop an independent research career is being recruited to join Professor Laura Parkkinen's research group, which includes diverse expertise including next-generation neuropathology, proteomics/transcriptomics and computational biology. Dr Parkkinen is a Professor of Translational Neuropathology and Director of the Oxford Brain Bank. Her group has access to high-quality, clinically and neuropathologically well-characterised human brain and biosamples as well as state-of-the-art infrastructure and technologies within the NDCN. The Parkkinen Lab is an inclusive environment with a focus on positive and proactive mentorship, teamwork, and scientific creativity. In this role you will undertake a multidisciplinary approach to dissect the underlying biology that differentiates between Alzheimer's disease phenotypes. Our goal is to integrate brain pathology with spatial transcriptomics, genomics, blood/CSF proteomics and clinical measures to generate novel biomarkers and treatment avenues. You will be primarily responsible for the detailed pathological characterization of a large Alzheimer's disease post mortem cohort including highthroughput quantification of core protein aggregates and neuroinflammatory hallmarks using digital pathology and novel AI. Using spatial transcriptomics, you will also explore regional and cellular gene expression changes in selectively vulnerable cell types within Alzheimer's disease brains to gain novel insight into cellular function and interactions. You will be an integral member of the research group, supporting the team in diverse experimental approaches including cross-matrix protein profiling including CSF/serum biomarkers and functional validation studies, including induced pluripotent stem cells (iPSCs). You will be collaborating with the core IMCM bioinformatics team to quality control, analyse and integrate data from across this multi-disciplinary project.

Responsibilities

You will:

- Create, establish, and pursue appropriate analytical protocols and techniques to support research, particularly in relation to AI-driven algorithms to recognize different hallmark brain pathologies as well as to spatial transcriptomic platforms (i.e.Nanostring GeoMx and 10X Xenium).
- Create, select, and evaluate the most suitable methodologies for testing hypotheses, and determine suitable alternatives if there are technical problems.
- Be responsible for the data analysis and interpretation of resultant datasets (with support from core bioinformatics team).

- Keep meticulous, detailed records of your work and commit to engaging with cloud-based analyses on the IMCM data platform.
- Prepare manuscripts for publication and contribute to written and oral presentations/reports as required.
- Communicate effectively with colleagues at all levels both within Oxford and at GSK to identify needs, risks and develop appropriate solutions, escalating where appropriate.
- Collaborate with peer scientists from cross-functional teams to analyse and interpret large complex datasets and communicate findings.
- Manage own academic research and administrative activities, including small scale project management, to co-ordinate multiple aspects of work to meet given deadlines.
- Contribute ideas for new research projects, develop ideas and preliminary data for generating research income, and present detailed research proposals to senior researchers.
- Supervise graduate students, acting as a source of information and advice to other members of the group on scientific protocols and experimental techniques.
- Represent the Oxford-GSK IMCM at external meetings/seminars.
- 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.
- 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 relevant PhD/ DPhil. (or close to completion) in Neuroscience, Molecular Biology, Genetics/Genomics or related areas
- Demonstrable experience in translational human (or animal) neuropathology and knowledge of the brain anatomy.
- Knowledge of neurodegenerative diseases, such as Alzheimer's Disease.
- Ability to manage own research and administrative activities.
- Experience in general molecular biology techniques (immunohistochemistry, microscopy, subcellular fractionation, immunoblotting).
- Experience in implementing, adapting, and creating experimental and analytical protocols.
- Excellent communication skills, including the ability to write text that can be published, present data at conferences, and represent the research group at meetings.
- Demonstrate strong teamwork and interpersonal skills.
- Previous experience of contributing to publications/presentations.
- Ability to contribute ideas for new research projects and research income generation.

Desirable

- Knowledge on digital pathology and deep learning algorithms.
- Practical experience in single nuclei/spatial transcriptomics and proteomics.
- Knowledge of cutting-edge bioinformatic analysis (such as single nuclei transcriptomics and hWGS data analysis).
- Experience of working productively in a multi-disciplinary team.

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

Hazard-specific / Safety-critical duties

This job includes hazards or safety-critical activities. If you are offered the post, you will be asked to complete a health questionnaire which will be assessed by our Occupational Health Service, and the offer of employment will be subject a successful outcome of this assessment.

The hazards or safety-critical duties involved are as follows:

- Lone Working
- Working with blood, human products and human tissues
- Work with any substance which has any of the following pictograms on their MSDS:



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 <u>https://www.jobs.ox.ac.uk/how-to-apply.</u>

If you would like to apply, **click on the Apply Now button** on the 'Job Details' page and follow the onscreen 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/

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: <u>https://staff.web.ox.ac.uk/recruitment-support-faqs.</u> Non-technical questions about this job should be addressed to the recruiting department directly <u>recruitment@ndm.ox.ac.uk</u>

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/job-applicant-privacy-policy. The University's Policy on Data

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: <u>https://hr.admin.ox.ac.uk/the-ejra.</u>

For **existing** employees on these grades, any employment beyond the retirement age is subject to approval through the procedures: <u>https://hr.admin.ox.ac.uk/the-ejra.</u>

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.

