

Job Description and Selection Criteria

Job title	Postdoctoral Research Associate in Neural Circuits and Behaviour
Division	Medical Sciences
Department	Department of Pharmacology
Location	Mansfield Road, Oxford OX1 3QT
Grade and salary	Grade 7: £36,024-£44,263 per annum (plus £1,500 per annum Oxford Weighting)
Hours	Full time
Contract type	Fixed term for three years, funded by the Wellcome Trust.
Reporting to	Dr Abhishek Banerjee
Vacancy reference	175113
Additional information	This vacancy is available from January 2025 or as soon as thereafter. The interview dates will be in the last week of October/early November.

Committed to equality and valuing diversity

The University of Oxford is a member of the [Athena SWAN Charter](#) and holds an institutional Bronze Athena SWAN award. The Department of Pharmacology holds a departmental silver Athena award in recognition of its efforts to introduce organisational and cultural practices that promote gender equality and create a better working environment for both men and women.



The Role:

Applications are invited for an experienced Postdoctoral Research Associate to join the Adaptive Decisions Lab (Principal Investigator: Dr Abhishek Banerjee) to carry out a project investigating adaptive neural circuits underlying distinct forms of behavioural flexibility. The postholder will be responsible for working on a research project funded by the Wellcome Trust to investigate fronto-sensory feedback microcircuits in the brain and their relevance to behavioural flexibility. The project will involve training mice on cognitive tasks and manipulating and imaging neural activity to reveal mechanisms underlying flexible cognition. Comparable experiments in animal models of neurological disorders and human cognitive experiments combining EEG in the lab will further enhance these findings, and the applicant will have a chance to collaborate on these projects. The postholder is also expected to provide guidance to less experienced members of the research group, including postdocs, research assistants, technicians, and DPhil and project students.

This project is funded by a Wellcome Trust Career Development Award (2024-2032) to Dr Banerjee. It will be carried out in the Department of Pharmacology, University of Oxford, in close collaboration with several groups in the Departments of Psychiatry and Experimental Psychology at Oxford and collaborators in ETH-Zürich, MIT, and London.

Main Responsibilities:

- Manage own academic research and administrative activities. This involves detailed project management to coordinate multiple aspects of work to meet various deadlines
- Adapt existing and develop new scientific techniques and experimental protocols, with a particular focus on animal models (mice). Performing in vivo behavioural and electrophysiological experiments on mice; performing surgical preparation on mice, including electrode/lens implantation and optogenetic virus injections; using specialist scientific equipment in a laboratory environment, such as a 2-photon microscope
- Test hypotheses and analyse scientific data from a variety of sources, reviewing and refining working hypotheses as appropriate
- Contribute ideas for new research projects
- Develop novel ideas for generating research income and present detailed research proposals to senior researchers
- Collaborate in preparing original scientific reports and journal articles and present papers and posters in group meetings, departmental meetings, and national/international meetings
- Act as a source of information and advice to other members of the group on scientific protocols and experimental techniques
- Represent the research group at external meetings/seminars, either with other members of the group or alone
- Carry out collaborative projects with colleagues in partner institutions and within the research group or with other research groups

Pre-employment screening

All offers of employment are made subject to standard pre-employment screening as applicable to the post. If you are offered the post, you will be asked to provide proof of your right-to-work and your identity, and 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 so that we can discuss appropriate adjustments with you), as well as a declaration of any unspent criminal convictions. We advise all applicants to read the candidate notes on the University's pre-employment screening procedures, found at:

<https://www.jobs.ox.ac.uk/pre-employment-checks>.

Selection criteria

Essential

- Hold or be close to holding a relevant PhD/DPhil in Neuroscience or a related subject, together with relevant experience in neurophysiology and animal behaviour
- Possess sufficient specialist knowledge in neuroscience to work within established research programmes
- Ability to manage own academic research and associated activities
- Previous experience in leading and contributing to publications/presentations, including at least one or more first-authorship publication
- 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

- Experience in independently managing a discrete area of a research project
 - Experience in actively collaborating in the development of research articles for publication
 - Experience with in vivo neurophysiological techniques and/or stereotaxic surgery
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Adaptive Decisions Lab (PI: Abhishek Banerjee, Professor of Neuroscience at Queen Mary University, joint appointment with Oxford Pharmacology)

The research in the Adaptive Decisions Lab entails a combination of parametric behavioural tasks, novel neurotechnology (viral methods, optogenetics, CRISPR-Cas9), and multi-area imaging methods to reveal the dynamics of micro-and mesoscopic circuits during flexible behaviour. This effort promises substantial new insight into how dysfunction in mechanisms at either spatial scale leads to pathophysiology in autism spectrum disorders. We also merge the field of AI and neuroscience to implement new machine learning algorithms to decipher and better interpret how cognitive variables reorganise during learning. Finally, we are developing analogous cognitive tasks in humans with EEG and fMRI measurements to probe conserved circuit-specific computations in the brain. Our work is at the forefront of dimensional psychiatry, offering a promising cross-species neurobiological and computational footing to understand brain disorders.

For more information, please visit: <https://www.adaptive-decisions.com/> and <https://www.pharm.ox.ac.uk/team/abhishek-banerjee>

Department of Pharmacology

Top of the QS World University Rankings for Pharmacy and Pharmacology 2019-2021

The Department of Pharmacology is based in the University's science area in the centre of Oxford. The Department houses around 220 researchers, postgraduate students and support staff and has excellent facilities. The members of the Department, associated staff and visiting scientists are all engaged in investigating basic questions concerning the interaction of chemical substances with biological systems.

Research in the Department is focused on cell signalling, cardiovascular pharmacology, ion channel and molecular pharmacology and neuropharmacology. In many of these areas, the Department plays a leading role in the international pharmacological community. The research of the Department has consistently been given a very high ranking in the Government's assessments of research in Universities and was rated first in the UK, within Biological Sciences, in terms of quality (i.e. the greatest volume of 4* work) and volume (the power ranking) in the recent Research Excellence Framework (REF) exercise.

For more information, please visit: www.pharm.ox.ac.uk

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. It includes 15 clinical departments and five non-clinical departments.

World-leading programmes, housed in state-of-the-art facilities, cover the full range of scientific endeavours from the molecule to the population. With our NHS partners, we also foster the highest possible standards of patient care.

For more information, please visit www.medsci.ox.ac.uk

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 and 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. Income from external research contracts in 2016/17 exceeded £564m and we rank first in the UK for

university spinouts, with more than 130 companies created to date. 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

How to apply

Before submitting an application, you may find it helpful to read the 'Tips on applying for a job at the University of Oxford' document at <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. Please provide details of two referees and indicate whether we can contact them now.

You will also 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 dependents).

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

All applications must be received by **midday** 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 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)

Should you experience any difficulties using the online application system, please email recruitment.support@admin.ox.ac.uk. Further help and support is available from [www.ox.ac.uk/about the university/jobs/support/](http://www.ox.ac.uk/about_the_university/jobs/support/). 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 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 at: www.admin.ox.ac.uk/councilsec/compliance/gdpr/privacynotices/job/. The University's Policy on Data Protection is available at: www.admin.ox.ac.uk/councilsec/compliance/gdpr/universitypolicyondataprotection/.

The University's policy on retirement

The University operates an Employer Justified Retirement Age (EJRA) for all academic posts and some academic-related posts. From 1 October 2017, the University has adopted an EJRA of 30 September before the 69th birthday for all academic and academic-related staff in posts at **grade 8 and above**. The justification for this is explained at: www.admin.ox.ac.uk/personnel/end/retirement/acrelretire8+/.

For **existing** employees, any employment beyond the retirement age is subject to approval through the procedures: www.admin.ox.ac.uk/personnel/end/retirement/acrelretire8+/.

There is no normal or fixed age at which staff in posts at **grades 1–7** 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.

Work-life balance and family-friendly policies at the University of Oxford

The University aims to support all employees with parental or caring responsibilities to ensure that they are able to balance work and family life.

This website (<http://www.admin.ox.ac.uk/eop/parentsandcarersinformation/>) provides a hub of information for all parents and carers, with links to university policies, procedures and guidance, as well as details of the facilities and benefits offered to mothers, fathers and guardians of children. In addition, the website highlights university policies, as well as external sources of guidance. You are advised to read the university policies in full; and to see respective guidance on the Personnel Services website for full details. Views expressed on external websites are not necessarily endorsed by the University of Oxford.

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 www.admin.ox.ac.uk/personnel/staffinfo/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 www.sport.ox.ac.uk/oxford-university-sports-facilities.

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 www.welcome.ox.ac.uk. There is also a visa loan scheme to cover the costs of UK visa applications for staff and their dependents. See www.admin.ox.ac.uk/personnel/permits/reimburse&loanscheme/.

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 My Family Care, 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 www.admin.ox.ac.uk/personnel/staffinfo/benefits/family/mfc/.

Childcare

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 www.admin.ox.ac.uk/childcare/.

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 www.admin.ox.ac.uk/eop/disab/staff.

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 www.admin.ox.ac.uk/eop/inpractice/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.