1 Advertisement

**Post Title:** Post-Doctoral Research Fellow in Neuroscience  
**School/department:** Psychology / Sussex Neuroscience  
**Hours:** Full time, 36.5 hours. Requests for flexible working options will be considered (subject to business need).  
**Location:** University of Sussex, Falmer, Brighton, United Kingdom  
**Contract:** Fixed term until 31/08/2026  
**Reference:** 21865  
**Salary:** starting at £37,099 to £42,978 per annum, pro rata if part time  
**Placed on:** 09 October 2023  
**Closing date:** 27 November 2023. Applications must be received by midnight of the closing date.  
**Expected Interview date:** Week commencing 11 December 2023  
**Expected start date:** 20 January 2024

This is an exciting opportunity to find out how cells in the brain’s white matter are affected by low brain blood flow, to understand the development of dementia.

White matter damage is increasingly common as people age, correlates with cognitive impairment and is associated with an increased risk of Alzheimer’s disease, stroke and death. This damage is thought to be a consequence of cerebral hypoperfusion and hypoxia.

You will use in vivo 2 photon imaging of calcium signals and blood vessels in different cells in the white matter of awake mice to understand white matter physiology and how this is perturbed during low brain blood flow. Alongside this, you will measure brain blood flow, oxygenation and metabolism, to understand how changes in cell physiology relate to white matter energy supply.

You will work with mice, design and conduct imaging experiments and complex analyses, and present your work in a variety of formats, including writing up your results for publication in peer-reviewed journals.

You will be educated to doctoral level in neuroscience or a closely-related discipline, with relevant experience in some aspects of the project.

You will work in a small team alongside PhD students and technicians, and in close collaboration with Nicola Hamilton-Whitaker’s lab at Kings College London, who will be investigating the electrophysiological and structural underpinnings of changes in white matter function.

Please contact Catherine Hall ([Catherine.hall@sussex.ac.uk](mailto:Catherine.hall@sussex.ac.uk)) for informal enquiries.

The University is committed to equality and valuing diversity, and applications are particularly welcomed from women and black and minority ethnic candidates, who are under-represented in academic posts in Science, Technology, Engineering, Medicine and Mathematics (STEMM) at Sussex.
Please note that this position may be subject to ATAS clearance if you require visa sponsorship.

For full details and how to apply see our vacancies page.

The University of Sussex values the diversity of its staff and students, and we welcome applicants from all backgrounds.

2. The School / Division

Please find further information regarding the School of Psychology and Sussex Neuroscience.

3. Job Description

Job Description for the post of: Post-doctoral research fellow in neuroscience

Department: N/A

Section/Unit/School: Psychology

Location: JMS and CRPC

Grade: 7.1-7.6 depending on experience

Responsible to: Professor Catherine Hall

Responsible for: None

Research Fellow I is an early career-grade research position. Post-holders will be expected to contribute to the work of the research team, and also to develop their research skills with support from more experienced members of staff. Their key responsibility will be to conduct experiments in mice to uncover the changes in white matter physiology during chronic hypoperfusion, and to prepare manuscripts summarizing the results.

PRINCIPAL ACCOUNTABILITIES

To engage in individual and/or collaborative research activity resulting in high-quality publications; and to develop research funding and knowledge exchange income individually or in collaboration with others, as appropriate, depending on the size and scope of the bid.

KEY RESPONSIBILITIES

1. Research, Scholarship & Enterprise

1.1 Develop research objectives and proposals for own or joint research, at acceptable levels, with assistance if required.

1.2 Conduct research projects individually and in collaboration with others.
1.3 Analyse and interpret research findings and draw conclusions on the outcomes.
1.4 Produce high-quality research outputs for publication in monographs or recognised high-quality journals, or performance/exhibition, as appropriate, and contribute to the School’s REF submission at acceptable levels of volume and academic excellence.
1.5 Contribute to the preparation of proposals and applications to external bodies, for example for funding purposes.
1.6 Individually or with colleagues, explore opportunities for enterprise activity, knowledge exchange income and/or consultancy, where permissible.
1.7 Build internal contacts and participate in internal networks and relevant external networks in order to form relationships and collaborations.
1.8 Continually update knowledge and understanding in field or specialism, and engage in continuous professional development.

2. Teaching & Student Support
2.1 Undertake teaching duties, if required.
2.2 Assist in the assessment of student knowledge and supervision of student projects if required.
2.3 Assist in the development of student research skills, for example as part of a postgraduate supervision team.

3. Contribution to School & University
3.1 Attend and contribute to relevant School and project meetings.
3.2 Undertake additional duties, as required by the Principal Investigator and/or Head of School.

4. Role-specific duties
4.1 Design and conduct experiments to assess changes in white matter function in control mice and after surgical models of hypoperfusion.
4.2 Plan and coordinate mouse colonies to ensure the required mice are available when required for experiments.
4.3 Collect data using a variety of in vivo and ex vivo methods including 2 photon imaging of different cells’ calcium activity and blood vessels, immunohistochemistry, and biochemical assays.
4.4 Develop appropriate analysis pipelines for to process and present acquired data.
4.5 Write up the analyses in the form of an accessible report and a journal article and present findings at conferences or other fora.

This Job Description sets out current duties of the post that may vary from time to time without changing the general character of the post or level of responsibility entailed.

INDICATIVE PERFORMANCE CRITERIA
- Pursuing a line of independent research within a research group.
- Publishing research.
- Other forms of externally recognised professional practice of creative output of a standing equivalent to regular publication of original research.

4. Person Specification
ESSENTIAL CRITERIA

1. Normally educated to doctoral level, or other equivalent qualification, or appropriate level of experience, as appropriate to the discipline (see role-specific criteria below).
2. Evidence of engagement in high-quality research activity.
3. Excellent presentation skills, with the ability to communicate effectively, both orally and in writing, with students, colleagues and external audiences.
4. Ability to work individually on own initiative and without close supervision, and as part of a team.
5. Ability to exercise a degree of innovation and creative problem-solving.
6. Excellent organisational and administrative skills.
7. Ability to prioritise and meet deadlines.
8. Excellent IT skills.

ESSENTIAL ROLE-SPECIFIC CRITERIA

1. Experience in working with mice in some capacity.
2. Scientific background in studying white matter, neurovascular physiology or hypoxia.
3. Experience of coding experiments and analyses to extract and present data.
4. Experience in microscopy.

DESIRABLE CRITERIA

1. Experience of conducting surgery in mice
2. Experience of 2 photon microscopy to study blood vessels, neurons or glia
3. Experience in studying physiology underlying dementia
4. Writing scientific manuscripts for publication
5. Experience and knowledge of open science practices.