

Job Title: Post-Doctoral Research Associate

Grade: 7

Salary: £39,906 to £42,254 per annum due to external funding restrictions, pro-rata if part-time

Department: School of Psychology and Vision Sciences

Hours/Contract: Full-time, or job share considered, fixed term contract from 1st February 2026 to 31 May 2028

Job Family: Teaching and Research

Reference: 12535

Role Purpose

You will take a key role in the generation and integration of data for the Medical Research Foundation-funded project "Advancing early diagnosis and clinical characterisation of retinoblastoma through innovative imaging" You will work with collaborating clinicians and scientists across multiple centres to drive research aimed at improving the early diagnosis and clinical characterisation of retinoblastoma. Research will include the analysis of multi-centre imaging datasets and the application of deep learning models to imaging data for disease classification and prediction. Based on the candidate's interest, there are opportunities to also be involved in functional validation of genetic findings.

You will be expected to attend both virtual and in-person meetings with local team members on a weekly basis and will usually be expected to be present on campus.

You will join the internationally-renowned Ulverscroft Eye Unit, with a strong track record of funding and a major focus on training and capacity building.

Resources Managed –

To assist with clinical studies with a combined cost in excess of £1 million.

To supervise equipment in excess of £300,000

To assist with supervision of research staff and PhD/iMSc/project students.

Main Duties and Responsibilities

To co-design an intervention toolkit to facilitate the multi-site implementation of the handheld optical coherence tomography (HH-OCT) in children with retinoblastoma (Rb).

Specifically:

- To recruit and consent participants to studies and perform clinical and visual measurements on participants. This will include travelling to recruitment centres outside of Leicester (such as London and Birmingham) to recruit and test participants.
- Analyse and record and optical coherence tomography (OCT) images and if required other eye tests and make them available to the PIs
- To develop and apply innovative deep learning and machine learning models to multi-centre ophthalmologic imaging data for automated disease detection and characterisation.





- To lead in the collection, harmonisation, and analysis of multi-centre research data, working autonomously to attain project milestones.
- To liaise with clinical collaborators across multiple sites to manage data transfer, ensure data quality, and align analytical approaches.
- To lead in writing up research findings for publication in high-impact journals and for presentation at national and international conferences.
- To contribute to the development of future grant applications arising from this project.
- To provide guidance to other staff and students involved in the research programme.

Professional Development:

- Duties and opportunities to engage in work that support your own professional development.

Impact and Knowledge Exchange:

- Participate in workshops and conferences to support the dissemination of research findings.

Leadership and Citizenship:

- Contribute to the overall success of the research programme.

Internal and External Relationships

- Principal investigator (line manager): Dr Zhanhan Tu
- Collaboration with research and healthcare professionals within the University of Leicester, University Hospitals of Leicester and external collaborating sites NHS patients
- Initiate and maintain collaborations with other researchers, scientists and clinicians, both nationally and internationally to support research students, members of the clinical team and other staff members to provide advice and guidance on projects and to enhance the groups' profile.
- To liaise with ethics committees and regulatory bodies such as the Medicines and Healthcare products Regulatory Agency (MHRA) and University Hospitals of Leicester NHS Trust (UHL) Research & Development (R&D) Directorate to ensure research is of high quality, ethically sound and of benefit to patients and to provide advice on this to the wider research team
- To liaise with commercial partners to maintain the running of clinical studies.
- Attendance national academic conferences to network and disseminate research findings and enhance the reputation of the University and wider research program
- Involvement in teaching programs for undergraduate and postgraduate students
- Participation on organising committees for scientific outreach and public awareness

Planning and Organising





- Day to day project management of research studies to deliver research in a timely manner.
- To organise meetings with the wider research community to encourage new collaborations and maintain existing relationships with researchers, scientists and clinicians within the groups specialised field.
- Management of running of imaging required for ophthalmology studies
- Organisation of outreach events such as days to raise awareness of neuroscience and vision related diseases.

Qualifications, Knowledge and Experience

Essential

- PhD or equivalent in appropriate discipline or the equivalent professional qualification and experience (already-awarded or thesis completion expected by the time of taking up the post).*
- Demonstrated experience in bioinformatics, computational biology, or a related field, with a strong focus on image analysis and statistical methodologies. *
- Proficient in the use of statistical programming languages (e.g., R, Python) for complex data analysis and familiarity with bioinformatics tools and databases.*
- Knowledge of OCT images.*
- Evidence of research productivity (including contributing to high-quality research publications and presentations).*
- Evidence of proven analytical problem-solving capability.*

Desirable

- Practical experience in the analysis of medical imaging data, particularly ophthalmologic images, using AI/ML frameworks (e.g., TensorFlow, PyTorch).
- Familiarity with the challenges and best practices of working with multi-centre clinical datasets.
- Practical experience in conducting lab-based genetic experiments or clinical projects.
- Proven track record in interdisciplinary research, bridging the gap between computational biology, clinical ophthalmology, and data science.
- Experience analyzing medical images, especially eye images, using AI and deep learning.
- Experience collaborating with lab scientists to design experiments based on computational findings.

Skills, Abilities and Competencies

Essential

- Excellent communication skills – written and verbal, evidenced by the ability to communicate complex information to both technical and clinical audiences.*
- Willingness and ability to work with a diverse group of internal and external stakeholders across multiple clinical sites.*
- Strong computational and analytical skills, with the ability to develop and apply novel computational approaches to integrate imaging and genetic data.
- Proficient in managing and analysing large-scale, multi-centre datasets, including genomic and complex imaging data.





- Demonstrated ability to conduct high-quality research, as evidenced by peer-reviewed publications or major project contributions.*
- Evidence of working effectively as part of a multi-disciplinary team and the ability to work independently.*

Desirable

- Ability to manage and combine complex datasets from different hospitals or sources.
- Skills in advanced genetic data analysis to find biological meaning from results.
- Ability to work effectively with clinicians and understand patient-centered research needs.
- A creative approach to solving problems in rare disease research.
- Potential to mentor and guide students within the research team.

**Criteria to be used in shortlisting candidates for interview*

Reason for Fixed Term Contract

The reason for the fixed term contract is stated in section 1.9 in the summary of contractual terms in your contract of employment.

Criminal Declaration and Disclosure and Barring Service (DBS).

If you become an employee, you must inform your manager immediately, in writing, if you are the subject of any current or future police investigations/legal proceedings, which could result in a criminal offence, conviction, caution, bind-over or charges, or warnings.

This post is exempt from the Rehabilitation of Offenders Act 1974 because the appointee will have substantial access to young people and/or vulnerable adults. Therefore, an appointment to this post will be subject to checking through the Disclosure and Barring Service (DBS). The successful applicant for this post will, therefore, be required to give consent for the University to check and obtain appropriate clearance with the DBS for the existence and content of any criminal record in the form of an Enhanced Disclosure with Child and Adult Barred List.

Information received from the DBS and the police will be kept in strict confidence and will be destroyed once the University is satisfied in this regard.

NHS Research Governance

Where it is determined that the duties of this post for the purposes of research involve work with the NHS, it is necessary to ensure that the performance of the duties attached to the post are covered by NHS research governance arrangements and the appointee must comply with all such arrangements, which may include occupational health clearance and DBS clearance.

Supporting University Activities

As a University of Leicester citizen, you are encouraged to support key university activities such as clearing, graduation ceremonies, student registration and recruitment open days. We encourage all staff



as citizens to work flexibly across the University if required. If supporting these activities is likely to affect your workload, please speak to your line manager in the first instance

University Values

Inclusive - We are diverse in our makeup and united in ambition. Our diversity is our strength and makes our community stronger.

Inspiring - We are passionate about inspiring individuals to succeed and realise their ambitions. We challenge our community to think differently, to get involved, and to constantly embrace new ideas.

Impactful - As Citizens of Change we will generate new ideas which deliver impact and empower our community

Freedom of Speech

The University is committed to upholding freedom of speech and academic freedom within the law throughout our recruitment processes. We ensure that all candidates are considered based on merit and suitability for the role, without regard to their lawful viewpoints or the expression of challenging or controversial ideas. Our recruitment policies and practices are designed to protect applicants from discrimination or adverse treatment on the basis of their opinions, and to foster an environment where open debate and diverse perspectives are valued as essential to our academic mission.

Equity and Diversity

We believe that equity, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equality support our efforts to attract a diverse range of high quality staff and students, and identify our University as a progressive and innovative workplace that mainstreams equality, diversity and inclusion.

