Research Fellow in MRI applied to epilepsy

Salary: £53,947 - £56,878 per annum inclusive of London Weighting Allowance.

Closing date: 04 January 2026.

Location: St Thomas Hospital, London, SE1 7EH

Category: Research.

==To apply, please visit:==

https://www.kcl.ac.uk/jobs/133705-research-fellow-in-mri-applied-to-epilepsy

About Us
The post will be based at St Thomas' Hospital in central London in the School of Biomedical Engineering & Imaging Sciences at King's College London: **https://www.kcl.ac.uk/bmeis**. There is an unmatched infrastructure within the School to support cutting-edge translational research, including one of the UK's only 7 Tesla MRI systems located inside a hospital environment, state-of-the-art engineering and physics laboratories, high-performance computing, and industry collaboration through the London Institute for Healthcare Engineering.

About The Role
Severe epilepsy has a devastating impact on the lives of patients and their families. For many patients' medication is ineffective and surgery is the only curative treatment. However, surgery requires confident knowledge of the location of the epilepsy lesion (abnormal tissue whose aberrant electrical activity causes seizures). We are pioneering the use of Ultra-high field 7T MRI and AI based lesion detection to allow more patients to benefit from life-changing surgery. You will join a project team of post-doctoral scientists, Imaging physicists, Neurologists, Clinical Neurophysiologists and Neuro-Radiologists at KCL and Cambridge Universities and their partner hospitals to achieve this aim.

You will be responsible for optimising data acquisition and processing through novel methodological development in either image acquisition, reconstruction or post-processing (e.g. AI-based lesion identification) under the primary direction of Prof David Carmichael. You will also ensure the delivery of high-quality data to the clinical research team to meet the clinical research objectives.

This is a full time post (100% FTE), and you will be offered fixed term contract until 10th November 2029.

Job Description

Post title	Research Fellow: MRI for focal epilepsy
Faculty/ PS Directorate (Tier 1)	Faculty of Life Sciences and Medicine
School/Division/ Department (Tier 2)	School of Biomedical Engineering & Imaging Sciences
(Tier 3)	Research Department of Imaging Physics and Engineering
Grade	7
Reports to	David Carmichael (Prof in Magnetic Resonance Imaging)
Line management	0 Direct Reports
Job category	Research

Role purpose
We are looking for a technically skilled, hard-working and collaborative post-doctoral scientist to work with us for the duration of this exciting 4 year project. Severe epilepsy has a devastating impact on the lives of patients and their families – preventing them from driving, often making it impossible to work, and bringing fear that the next seizure could cause injury or death. Medicines do not effectively control seizures in around 1/3 of patients. For these patients, surgery is the only curative treatment, but eligibility for surgery requires confident knowledge of the location of the epilepsy lesion (abnormal tissue whose aberrant electrical activity causes seizures). Standard clinical 1.5 and 3T MRI and FDG-PET do not provide confident localisation in ~1/3 of patients who often have subtle cortical abnormalities. Ultra-high field 7T MRI offers exquisite spatial resolution and sensitivity and is emerging as a key clinical application of 7T MRI. At KCL we have an exceptional track record in developing 7T MRI to ensure high quality and contrast images at 7T. In parallel, we have been developing advanced methodology for automated detection of epilepsy images as part of the internationally recognised **MELD project**. In this project, together with our project partners in Cambridge (UK) we will develop optimal scans and processing before evaluating effectiveness in a multi-site prospective clinical study of 7T MRI for pre-surgical evaluation of patients with severe epilepsy. Our aim is to gather evidence to demonstrate that 7T MRI is cost effective and should therefore be commissioned by the National Health Service for patients with epilepsy. You will join a project team of post-doctoral scientists, Imaging physicists, Neurologists, Clinical Neurophysiologists and Neuro-Radiologists at KCL and Cambridge Universities and their partner hospitals. You will work closely with Cambridge (led by head of 7T Physics **Prof Chris Rodgers**) and his team. You will also be provided with a unique environment within the wider team of Ultra-High Field MRI physics at KCL via a close partnership with the groups of Prof Shaihan Malik and Prof Joseph Hajnal with 7T dedicated physicists and Siemens staff onsite. You will benefit from the state-of-the-art facilities with the Siemens TERRA.X 7T platform at both project sites. Further, image analysis and AI applications in the context of Image optimization, reconstruction and Epilepsy lesion detection are a further strength with strong interaction with Dr Konrad Wagstyl.

Key responsibilities

You will be responsible for the development, optimisation and quality control of MRI imaging data for application in focal epilepsy lesion detection. You will have a strong background in a relevant area that is likely to include either MRI physics development, image reconstruction or image analysis including AI / lesion detection. Applicants with demonstrable strong technical skills used in other research areas will be considered.

Analysis & Research:

- Develop and undertake high quality research in ultra-high field MRI
- Develop MRI protocols including pulse sequence simulation, optimisation and programming of new sequences, image reconstruction or analysis.
- Analyse and interpret MR data and draw conclusions from the outcomes. This may include AI lesion detection.
- Develop and support research methods and software for wider use in the research community
    - Troubleshoot technical issues.
    - Write robust, maintainable computer code in Python, Matlab, and C++.
    - Model good practice, including git version control and tests, for image acquisition and analysis methods.
    - Provide QC for 7T pTx imaging.
- Work independently to frame, analyse and solve research questions in line with the project aims
- Work with other members of the project team to write up research work for publication
- Seek opportunities for further career development through fellowship and grant opportunities and help other team members to do the same.
- Contribute to the dissemination of scientific results by means of writing or contributing to papers for publication, presenting orally and in poster form at internal and external meetings, seminars and conferences orally and in poster form at internal and external meetings, seminars and conferences

Communication:

- Communicate with clinical teams including radiologists, neurologists, radiographers, healthcare assistants, hospital management staff, research coordinators.
- Develop a strong understanding of clinical applications and communicate with clinical teams from a range of specialisms.
- Manage and collaborate with project partners in different institutions.
- Travel regularly to Cambridge to maintain close working collaboration.
- Communicate information of a complex nature both orally and in writing in regular meetings

Service Delivery:

- Adopt systems of work as required by the Local Rules, ethical requirements and codes of conduct
- Maintain record and input data as required by the project
- Coordinate data transfers in compliance with GDPR

The above list of responsibilities may not be exhaustive, and the post holder will be required to undertake such tasks and responsibilities as may reasonably be expected within the scope and grading of the post.

Our expectations

There are a number of duties and responsibilities that we ask all employees to be familiar with and adhere to.

We ask that the successful candidate:

- Positively contributes to an environment at King's that truly represents **Our Principles in Action** and where every individual feels safe, secure and supported.

- Always complies with the requirements of health and safety regulations to ensure their own wellbeing and that of their colleagues.

- Has an understanding of sustainability, including its impact on the University and the work we do, and engages in sustainable practices in the workplace.

- Ensures they are working in a safe environment, where they comply with our Health and Safety regulations and ensure confidentiality, only releasing confidential information obtained during the course of employment to those acting in an official capacity.

- Complies with King's protocols on the appropriate use of telephone, email and internet facilities.

Equal opportunities

Equality, Diversity & Inclusion are central tenets of King's Vision 2029 which sets out the roadmap for King's ambition to provide an exceptional student experience and to be an employer of choice. Integral to this is ensuring equality of opportunity and outcome, recognising, celebrating and improving our diversity and inclusion.

As a responsible employer we aim to provide and promote a positive working, learning, and social environment which is free from prejudice, discrimination and any forms of harassment, bullying or victimisation. Our commitment to inclusion means that King's aims to create an environment where differences are not just respected, but also valued and celebrated. Everyone should be able to bring their whole self to King's.

All King's students, staff and affiliates are responsible for meeting these commitments to value diversity and create an inclusive environment. King's will support and equip all members of its community to do this, embedding inclusion throughout the university's policies, procedures, and practices.

Additional information

Is Disclosure and Barring Service Clearance (DBS) required for this role:
☒Yes ☐Unsure ☐No

If yes, or unsure please refer to appendix A at the end of this document
(Please note all clinical roles require a DBS check)

Does this role require the post holder to undergo any Occupational Health Clearances?
☒Yes ☐Unsure ☐No

If yes or unsure, please refer to appendix A at the end of this document.
(Please note all clinical roles require an OH Clearance)

Does this role require the post holder to hold a King's Health Partners Passport (KHP)?
☒Yes ☐Unsure ☐No

If yes, or unsure please refer to appendix A at the end of this document
(Please note all clinical roles require a King's Health Passport)

Person Specification

Post title: Research Fellow: MRI for focal epilepsy			
Grade: 7			
Criteria	**To be assessed via:**		
Essential *(8 criteria max)*	**Application** *(This will be used for shortlisting applications)*	**Test/Assessment**	**Interview**
PhD qualified in relevant subject area	x		
Ability to work as part of a team to collect research data in patients	x		x
Strong analytical and technical skills (e.g. in MRI physics, AI, image processing or reconstruction)	X		X
Strong computational skills (e.g. coding in python, bash, matlab)		X	X
Demonstrated aptitude for research	X		x
Problem solving ability		X	X
Ability to work in a multidisciplinary team			X
Ability to work without close supervision			x
Desirable *(5 criteria max)*	**Application**	**Test/Assessment**	**Interview**
Expertise in MRI physics and technology	x		
Experience in working together with physicians or scientists in the field of MR imaging or clinical research	x		
Experience of pulse sequence programming (particularly IDEA) or image reconstruction	x		
Experience of computational modelling and simulatxion	x		x
Knowledge of statistical and/or machine learning methods e.g. for 3D imaging data for applications such as segmentation, registration or lesion detection.	x		x

Last reviewed date	24th November 2025

Appendix A – Employment Checks

Disclosure and Barring Service Clearance (DBS)

Carrying out regulated activities with children and/or adults[1]

Children ☐

Adults ☐

Both ☐

None ☒

Will there be any contact with vulnerable groups? [2]

Yes ☐

No ☒

Will the post be situated in a regulation environment, for example on an NHS Premises? [3]

Yes ☒

No ☐

Additional Context:

1. Regulated activity with **adults** may involve providing health care, person care, or social work;

   Regulated activity with **children (under-18s)** may involve providing health care, personal care, social work, unsupervised teaching or training.

2. Contact with vulnerable groups must meet the frequency threshold of 4 days in a 30-day period. An adult is not considered to be vulnerable due to any personal characteristic: however, an adult may be regarded as vulnerable due to particular circumstances at a particular time, for example when they are receiving treatment in a hospital.

3. KCL buildings do not qualify as regulated environments. Only NHS Trust sites qualify as regulated environments.

Further information about the disclosure scheme can be found at: www.gov.uk/dbs

Appendix A – Employment Checks

Occupational Health Clearance

When reviewing the below list, please note that any exposure, no matter how frequent will result in an Occupational Health Clearance.

Please mark the box if the following the hazards / risks are associated with this post:

Exposure Prone Procedure (EPP) Work ☐

Direct patient care or regular patient contact / contact with clinical specimens or pathogens / pathology work ☒

Prolonged repetitive movements / actions ☐

Moving or handling heavy loads ☐

Working shifts ☐

Working nights ☐

Working with dust or fumes ☐

Working with skin irritants / sensitisers ☐

Working with chemicals (industrial or cleaning) ☐

Working in a confined space ☐

Working with vibrating machinery / tools ☐

Working at heights ☐

Working with sewage ☐

Lone working ☐

Working outside ☐

Exposure to noise levels (>80dbA) ☐

Work with VDUs (>5hrs per week) ☐

Food handling ☐

Driving duties ☐

Driving LGV or PCVs ☐

Driving forklift trucks ☐

Contact with latex ☐

Contact with cytotoxins ☐

Working with children ☐

Exposure to persons with challenging or aggressive behaviour ☐

Vocational driving ☐

Please also list any other Health Surveillance checks required by legislation (e.g. COSHH) / any Statutory Medical Surveillance (e.g. Asbestos, Lead):	

Where will the role holder be based as part of their clinical practice?	KCH - Kings College Hospital ☒ GSTT - Guys & St Thomas Hospital ☒ SLAM - South London & Maudsley ☐ Other ☐ Please detail below:
Will their research involve working on NHS sites outside of the above list?	Yes☐ If yes, they will require a **Research Passport** No ☒
For IoPPN Researchers Only: **Will they require access to the CRIS Database?**	Yes☐ No ☐