Research Fellow in Biomedical Imaging

Biomedical Imaging Science Department (BISD)

Location: Leeds - Main Campus

Salary: £41,064 to £48,822 per annum

Reference: MHLCM1420

Faculty of Medicine and Health

Leeds Institute of Cardiovascular & Metabolic Medicine

Are you an ambitious researcher looking for your next challenge? Do you have a background in Medical Imaging, particular in microstructural / diffusion MRI and / or MRS? Do you want to further your career in one of the UK's leading research intensive Universities?

Magnetic Resonance Imaging (MRI) is a diagnostic imaging modality that is well-established in the clinic. It allows organs and tissues to be imaged in patients without the need to cut them open. Diffusion-Weighted MRI (DMRI) infers the microstructure by measuring how water molecules diffuse inside the tissue. DMRI can also be tuned to zoom into cells and to image structures within them. However, it is not known for example whether DMRI can measure how many mitochondria are in tissue. Mitochondria are organelles found inside cells and provide 95% of their energy for them to function normally. They are present in higher densities in organs which are "energyhungry" such as the heart. It is well-known that mitochondria do not function normally in many heart diseases, that their size and shape may be changed, and their density may be reduced. This in turn makes them a potential target for treatment. The current project, which is funded by the British Heart Foundation for two years, aims to advance DMRI to measure mitochondrial content in the heart, to validate it with histology and to correlate it with assessments of the energy metabolism. The postholder will work in an interdisciplinary team comprising of (MR) physicists, physiologist, cardiologist and biologist to establish feasibility of the proposed approach. If successful, the ability to image mitochondria in living tissue using MRI will be an important tool for biomedical research and therapy development.

Main duties and responsibilities

- Working with and in support of Prof Schneider's research grant to ensure the project is successfully completed;
- Planning and conducting the different experimental approaches (MRI, MRS, sample preparation, histology etc.) and developing the underpinning technologies, in collaboration with the research team;
- Generating and pursuing original research ideas in the field of cardiac diffusion MRI;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including, where appropriate preparing proposals for funding in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- Attending regular project meetings and integrating with the wider cardiac diffusion team, ensuring good communication links;
- Preparing progress reports to grant funding and regulatory bodies;

- Presenting at local and international conferences;
- Maintaining good records and laboratory notebooks of research work carried out;
- Attending and presenting at Departmental and Institute research seminars and meetings, and in particular, participating in the diffusion / microstructure team meetings at Prof Schneider's lab, communicating the research to other researchers in his centre.
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible.
- These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent.

To explore the post further or for any queries you may have, please contact:

Professor Jurgen Schneider, Head of Biomedical Imaging Science Department

Email: j.e.schneider@leeds.ac.uk

Closing Date: 12/03/2026

To apply, please visit our website. https://jobs.leeds.ac.uk/vacancy.aspx?ref=MHLCM1420