Job Advertisement Title: Research Associate or Research Assistant

Salary: £40,215 - £47,579 per annum at Research Associate level or £35,477 - £38,566 per annum at Research Assistant level

Location: Royal Brompton Hospital London

Job Summary

The National Heart and Lung Institute (NHLI), Imperial College is seeking a highly motivated Research Associate or Research Assistant to develop novel in-vivo magnetic resonance imaging techniques in the heart.

As part of an ongoing research programme at the Cardiovascular Magnetic Resonance (CMR) Unit at the Royal Brompton Hospital, NHLI researchers are developing diffusion tensor CMR (DT-CMR) methods that provide information on the 3-dimensional microstructure in the beating heart of patients and healthy volunteers non-invasively. With this new technology, which has already provided novel insights into the microstructural dynamics of cardiac contraction, we aim to improve our understanding of how the healthy heart functions as well as how microstructural dysfunction contributes to disease. This exciting new modality will yield a disruptive reassessment of cardiac function and will have important diagnostic and prognostic value in cardiac disease. The successful candidate will join a multi-disciplinary team of physicists, computer scientists, cardiologists and technologists and work on MRI sequence development, image reconstruction and artificial intelligence under the supervision of Dr Andrew Scott in the CMR physics team, led by Dr Sonia Nielles-Vallespin.

Duties and responsibilities

While DT-CMR has already been successfully applied in clinical research studies, it remains a time-consuming method which is only available in a handful of specialist research centres and is only applicable in healthy volunteers and highly cooperative patients.

You will develop, implement and test CMR sequences and image reconstruction techniques improving the efficiency, clinical applicability and reliability of DT-CMR, helping to transform this novel research method into a clinically useable tool. Predominantly this will involve developing free breathing AI-driven methods with respiratory biofeedback, providing robust methods that avoid the multiple breath holds that are often difficult for patients. You will also contribute to the ongoing collaboration with the national microstructural facility, CUBRIC, University of Cardiff, including regular travel to Cardiff. You will provide support for DT-CMR clinical research, from assisting with problem solving to supporting data analysis, developing custom tools tailored to the clinicians' challenges and helping to draw sound conclusions from ongoing experiments. In all ways possible, you will be expected to assist in maintaining the high international standing of the CMR Unit.
Essential requirements

At Research Associate level you will have a PhD in Physics, Mathematics or a related field and experience in MRI pulse sequence development and/or MRI reconstruction. At Research Assistant level you will have a first or upper second class degree or a good Masters level degree in a similar field. Experience in a programming language (C++, MATLAB or Python preferred) is essential and a knowledge of the use of AI methods applied to images is highly desirable. Excellent communication, organisational and time management skills and a creative approach to problem solving, together with the ability to work constructively and effectively within a multi-disciplinary team. Self-motivation, enthusiasm and a passion for high quality novel science. Good written English. Training may be provided within post.

Further Information

https://www.imperial.ac.uk/jobs:description/MED01652/research-associate

You will hold a substantive 3-year contract with Imperial College London and an honorary contract with Royal Brompton and Harefield NHS Foundation Trust. The post is full time and fixed-term for 3 years.

For informal enquiries please contact Dr Sonia Nielles-Vallespin (s.nielles-vallespin@imperial.ac.uk) or Dr Andrew Scott (a.scott07@imperial.ac.uk).

For technical issues when applying online please email recruitment@imperial.ac.uk