The Physics group seeks a highly-motivated individual to work on MRI methodology research aiming to better understand the workings of the human brain in health and disease. The Centre’s extensive facilities include a new 7T Siemens Terra; two 3T Siemens Prisma MRI scanners (including an optical motion tracking system for prospective motion correction); a CTF-Omega 275-channel Magnetoencephalography (MEG) system; a dedicated facility mobile MEG using optically-pumped magnetometer technology; as well as EEG, TMS and tDCS systems. The Centre has pioneered many neuroimaging methodologies, including Statistical Parametric Mapping (SPM). The Physics group specializes in the development of a broad range of methods including functional, structural and diffusion MRI, and provides expert advice to enable neuroscientific studies to our collaborators, see: http://www.fil.ion.ucl.ac.uk/Research/physics.html

The post-holder will engage in their own research projects with flexibility to shape their research directions, in line with the overall goals of the Centre. Example projects include:

- Development and optimisation of quantitative fMRI techniques, such as vascular space occupancy (VASO), for layer-specific investigation of cortical processing at 7T.
- Modelling and integration of multi-contrast anatomical data for artefact-free high precision, high resolution microstructural characterisation of the human brain using qMRI.

Collaboration with neuroscientists from other disciplines working at the Centre, providing advice and guidance on optimal neuroimaging strategies, is another important aspect of the role, as is playing an active role in the Physics group’s broader research.

Applicants must have a PhD (Senior Research Fellow) or, if not already held, the PhD must be obtained by the agreed start-date (Research Fellow applicants only) in a topic related to MRI physics. Strong programming expertise (e.g. Matlab or C/C++) is also essential. Applicants must be specialized in at least two (Research Fellow) or three (Senior Research Fellow) of the following: pulse sequence programming, particularly for Siemens (IDEA/ICE); RF pulse design and/or parallel transmission; conducting and analysing human neuroimaging studies using qMRI or fMRI at ultra-high field; image reconstruction including advanced parallel imaging techniques, e.g. compressed sensing, and open platforms such as Gadgetron; biophysical modelling, e.g. relaxometry models, diffusion processes, physiological models and neurovascular coupling. Senior Research Fellow applicants must also have experience leading projects to completion.

The post is available immediately and is funded by a Wellcome Trust grant for the period to November 2021 in the first instance. Salary on UCL Grade 7 in the range £35,965 - £43,470 per annum or Grade 8 in the range £44,674 - £52,701 per annum inclusive. Appointment at Grade 7 is dependent upon having been awarded a PhD; if this is not the case, initial appointment will be at research assistant Grade 6B (salary £31,479 - £33,194 per annum) with payment at Grade 7 being backdated to the date of final submission of the PhD thesis.

You should apply for this post through UCL's online recruitment – http://www.ucl.ac.uk/hr/jobs where you can download a job description and person specification using ref: 1860145. For queries regarding the application process, please contact Miss E Bertram, HR Manager, UCL Queen Square Institute of Neurology (email: ion.hradmin@ucl.ac.uk).Informal enquiries to Dr Martina Callaghan (email: m.callaghan@ucl.ac.uk).

We particularly welcome female applicants and those from an ethnic minority, as they are under-represented within UCL at this level.

We will consider applications to work on a part-time, flexible and job share basis wherever possible.