NEWCASTLE UNIVERSITY
INSTITUTE OF CELLULAR MEDICINE

PhD Studentship in Development of Novel PET-MRI methodologies for Dementia Research, Sponsored by GE Healthcare

Value of Award: 100% of UK/EU tuition fees paid and annual living expenses of £14,282. Successful international candidates will be required to make up the difference between the UK/EU fees and international fees.

Advanced neuroimaging offers the opportunity to non-invasively study brain changes in patients with dementia and contribute to our understanding, diagnosis and monitoring of neurodegenerative diseases. This PhD will create new imaging approaches using the latest generation of integrated Positron Emission Tomography – Magnetic Resonance Imaging technology (PET-MRI) based on a technical understanding of the essential physics of MRI and PET. Following training in PET-MRI scanning and in MR sequence development, the project will design and implement modifications to scanner software and hardware to create novel scanning methods and then apply these in clinical studies of patients with dementia. A specific area for development will be simultaneous acquisition of regional metabolic rate (FDG-PET) and tissue metabolite content by MR spectroscopy (MRS) as an approach to understand regional cortical hypometabolism in patients with Alzheimer's disease. The project will also involve advanced image reconstruction and modelling of dynamic PET-MRI data. This work will shape the future use of both MRI and simultaneous PET-MRI in dementia research and clinical diagnosis.

You must have a First class degree in physics or related physical science/engineering subject, preferably including technical medical imaging modules. A high level of computer literacy is essential in addition to a strong interest in the application of physics principles at the interface with biology and medicine. Under some circumstances, a 2:1 level degree may be acceptable.

The award is available to UK/EU and international students. If English is not your first language, you must have IELTS 7 with at least 6.5 in the written component, or equivalent.

The post is available from 2nd October 2017 for 3 years.

Closing date for applications: 31st May 2017

For informal discussion or further information, please contact Prof Andrew Blamire, (andrew.blamire@newcastle.ac.uk).

Supervisors:

Prof Andrew Blamire (Prof of MR Physics, Director of CIVI), Institute of Cellular Medicine
Dr Ross Maxwell (PET Technical Director), Northern Institute for Cancer Research
Dr Maélène Lohézic (GE Healthcare PET-MRI development scientist).

To apply:

You must apply through the University's online postgraduate application system and 'Create a new account'.
Only mandatory fields need to be completed. However, you will need to include the following information:
• insert the **programme code 8300F** in the programme of study section
• select '**PhD in the Faculty of Medical Sciences – Cellular Medicine** as the programme of study
• insert the studentship code **CL097** in the studentship/partnership reference field
• attach a **covering letter and CV**. The covering letter must state the title of the studentship, quote the studentship reference code CL097 and state how your interests and experience relate to the project
• attach degree transcripts and certificates and, if English is not your first language, a copy of your English language qualifications