Research Associate/Research Fellow in Brain MR Spectroscopy
5887BR

The Cardiff University Brain Research Imaging Centre seeks a creative and experienced MR research scientist to join its team that is developing imaging and spectroscopy methods to better understand the healthy and diseased brain.

This is an exciting career opportunity to join a successful neuroimaging centre in a phase of strong growth. We are seeking an excellent candidate, with a relevant PhD, to take forward CUBRIC’s ambitious neuroimaging research strategy, particularly in the field of MR spectroscopy. The post will focus on the development and application of MRS methods, in particular, addressing the challenges and opportunities of 7 Tesla, for example, the quantification of GABA. You should have an emerging or established international profile, with an excellent publication record.

In early 2016 CUBRIC moved to new purpose-built premises housing four Siemens MRI systems, including a 7T Magnetom system, two 3T Prisma systems and a Connectom system (3T with 300mT/m gradients). These systems are well-supported by an on-site Siemens scientist, a comprehensive master research agreement with Siemens, and a talented team of physicists, engineers, radiographers and scientific support officers. The new CUBRIC houses up to 200 researchers and in addition to excellent MRI facilities, includes MEG, EEG, TMS, tDCS and a clinical research unit. You can learn more about CUBRIC’s research and our MRC and Wellcome Trust funding relevant to this post at: http://sites.cardiff.ac.uk/cubric/our-funders.

Cardiff University is recognized as one of the UK’s leading research-intensive universities. We are ranked in the top 5 in the UK’s Research Excellence Framework based on the quality of our research. CUBRIC offers excellent scientific connections underpinned by funded national networks for microstructural imaging and 7T MRI. In CUBRIC’s research field, Psychology, Psychiatry and Neuroscience, Cardiff University is ranked 2nd in the UK on research quality. CUBRIC offers a new, positive and vibrant research environment in which to work and is situated in the lively and well-connected capital of Wales.

The post is full time and fixed term. A term of 3 to 5 years would be offered.

Appointment will be made at either Research Associate (Grade 6), or Research Fellow (Grade 7), according to the level of expertise and experience.

Salary:
£32,004 - £38,183 per annum (Grade 6).
£40,523 - £46,924 per annum (Grade 7).
Appointment at Grade 7 is not expected to be above starting salary grade 7.38 (£40,523).

Closing date: 12 May 2017
Shortlisting will be performed throughout.
Interviews will take place week beginning 22 May 2017.

Applying:
In advance of submitting a full application, applicants are strongly encouraged to engage in informal discussions with CUBRIC’s Head of MRI (Prof Richard Wise, wiserg@cardiff.ac.uk or cubricjobs@cardiff.ac.uk).

Applications can only be made through Cardiff University jobs website: http://www.cardiff.ac.uk/jobs/. Full details of the required criteria for the position can be found in the job pack online. Please submit with your full CV, together with a summary of research interests and career goals, and a clear statement of how you meet each of the essential criteria (and any of the desirable criteria) for the role.

For other job opportunities at CUBRIC and the School of Psychology, please see http://psych.cf.ac.uk/aboutus/jobs.html

Please be aware that Cardiff University reserves the right to close this vacancy early should sufficient applications be received.

Cardiff University is committed to supporting and promoting equality and diversity. Our Inclusive environment welcomes applications from talented people from diverse backgrounds.
Job Description

Main function

To conduct methodological development of MR spectroscopy data acquisition and analysis, especially at 7T. To apply these methods to basic and clinical neuroscientific research questions relevant to CUBRIC’s strategy. To pursue excellence in research, publishing work in high-quality journals [Grade 7: contribute to internationally recognised research performance including winning research funding]

Research

- To work with the team of researchers in CUBRIC to deliver the aims of major funding programmes that CUBRIC has received, including: Wellcome and The UK Medical Research Council. See CUBRIC website.
- To work collaboratively with researchers in CUBRIC to build MR research capacity, especially at 7T, through the development of imaging and spectroscopy methods and their application in humans to basic and clinical neuroscientific research questions.
- To develop and apply novel MR spectroscopy approaches to the investigation of brain chemistry, especially, but not exclusively, at 7T. This is likely to involve combination with imaging approaches, both MRI and positron emission tomography (PET) to complement neurochemistry measurements. MRS would be used for investigating neurotransmitters such as GABA and glutamate/glutamine. Multinuclear as well as hydrogen spectroscopy is also available. The role will involve pulse programming and MRS analysis.
- To collaborate closely with colleagues at other 7T research sites, such as University of Oxford and Nottingham University as well as Siemens and overseas institutions. This is likely to involve significant amounts of travel to other research sites.
- To contribute to the overall research performance of the School and University by the production of measurable outputs including bidding for funding, publishing in national academic journals and conferences, and the recruitment and supervision of postgraduate research students.  
  Grade 7: contribute to internationally recognised research performance including winning substantial research funding
- To develop research objectives and proposals for own or joint research including research funding proposals
  Grade 7: independently develop research objectives, acting as PI as required
- To build research networks both internally and externally to the University. This will include with new networks such as the MRC funded UK7T network. To influence decisions, explore future research requirements, and share research ideas for the benefit of research projects
  Grade 7: develop networks through national/international conference/seminar presentations
- To undertake administrative tasks associated with the research project, including the planning and organisation of the project and the implementation of procedures required to ensure accurate and timely reporting
- To prepare research ethics and research governance applications as appropriate
- To review and synthesise existing research literature within the field
- To participate in CUBRIC/School research activities (seminars, workshops, training etc.) and to train and supervise other researchers.

Other

- To engage effectively with industrial, commercial and public sector organisations, professional institutions, other academic institutions etc., regionally and nationally to raise awareness of the School’s profile, to cultivate strategically valuable alliances, and to pursue opportunities for collaboration across a range of activities. These activities are expected to contribute to the School and the enhancement of its regional and national profile.
- To undergo personal and professional development that is appropriate to and which will enhance performance.
• To participate in School administration and activities to promote the School and its work to the wider University and the outside world
• Any other duties not included above, but consistent with the role.
Person Specification

Essential Criteria

Qualifications and Education
1. Postgraduate degree at PhD level in a relevant subject area, for example, MR Physics / Engineering.

Knowledge, Skills and Experience
2. An established expertise and proven portfolio of research involving significant development and application of relevant MR methods.
   Grade 7: growing national reputation within field
3. Detailed knowledge of the current status of research in advanced MRS and of the challenges and opportunities of ultra-high field (7T) neuro-MRS.
4. Strong scientific computing skills for data and image/spectral analysis, such as, shell-scripting, coding e.g. Matlab, use of analysis and/or statistical packages and / or image reconstruction methods.
5. Proven ability to publish in high-quality journals and in a timely manner
   Grade 7: proven substantial record of publications in high-impact journals
6. Proven ability to be successful in contributing to competitive research funding
   Grade 7: strong contribution to research grant applications

Communication and Team Working
7. Proven ability in effective and persuasive communication including: excellent presentation skills, supervising others’ work, motivating individuals and working in a multidisciplinary team to communicate complex information to individuals from a range of disciplines (clinical and non-clinical colleagues)
8. Proven ability to establish effective collaborations both inside and outside one’s primary institution.

Other
9. Proven ability to demonstrate creativity, innovation and to work without close supervision

Desirable Criteria
10. A clear vision of how to grow and fund your research in the future
11. Experience of 7T MRI / MRS for human research and in particular MRS approaches for the quantification of glutamate/glutamine and / or GABA
12. Experience of MR sequence development/optimisation including pulse programming and image/spectral reconstruction methods (and in particular Siemens IDEA, ICE).
13. Experience of RF pulse design, optimisation and characterisation (e.g. B1 mapping) and especially techniques relevant to 7T MRS.
14. Experience of PET
15. A willingness to take responsibility for academically related administration
16. Willingness to provide training on neuroimaging analysis methods to colleagues at all levels from postgraduate to senior academic

Additional Information

Evidencing Criteria - It is School of Psychology’s policy to use the person specification as a key tool for short-listing. Candidates should evidence that they meet ALL of the essential criteria as well as, where relevant, the desirable. As part of the application process you will be asked to provide this evidence via a
supporting statement. Please ensure when submitting this document/attaching it to your application profile you name it with the vacancy reference number.

If candidates do not provide written evidence of meeting all the essential criteria then their application will not be progressed.

**Cardiff School of Psychology**

We are recognised internationally for sustained excellence in research, impact and research-led teaching. We are a large School with over 50 academic staff, over 600 undergraduates and 150 postgraduate students. In the last assessment the School attained the highest rating of ‘excellent’ for its teaching from the HEFCW Teaching Quality Assessment Panel.

Many individuals in the School are leading figures in their research areas. In the last Research Excellence Framework we entered as a unit of over 80 staff with our colleagues in Psychological medicine. We were placed 2nd in our topic area across the UK. We have state of the art laboratories and experimental expertise across the range of psychology, and are currently building one of the largest and best equipped imaging centres in Europe (see: sites.cubric.cardiff.ac.uk).

Our collective aim is to understand the psychological and biological foundations of behaviour at both individual and group levels. The research undertaken in the School ranges from 'synapse to society', and includes normal behaviour in development and adulthood, the breakdown of cognition after stress, trauma and in neurological and/or genetic conditions, as well as key psychological issues of broad importance to society, such as prejudice, reproductive health and understanding risk. The School also contributes to cross-disciplinary University Research Institutes in Neuroscience and Mental Health, Sustainable Places, and Energy Systems Research.