

Post-Doctoral Research Associate in MR Physics applied to Neuromuscular Diseases - A166488R

We have an exciting opportunity to work on the brand new technique of motor unit MRI (MUMRI) in the Muscular Dystrophy UK funded project

“MR imaging of motor unit dynamics as a non-invasive disease biomarker in spinal muscular atrophy”

You will have responsibility for:

- technical development of this brand new methodology on our 3T scanners,
- developing methods to activate motor units via external electrical stimuli and internal volitional control in combination with novel MR sequences,
- developing computational algorithms for quantitation of motor units in skeletal muscle,
- conducting the first clinical evaluation of these methods in patients with Spinal Muscular Atrophy (SMA) and Amyotrophic Lateral Sclerosis (ALS).

You will have a PhD in MR physics with strong knowledge of MRI. Practical, hands-on skills are essential.

Duration of Post: 3 years

Closing Date: 6th December 2018

Salary Band: Research Assistant: £27,831 - £29,515 per annum
 Research Associate: £30,395 - £34,188 per annum

For informal enquiries, contact Prof Andrew Blamire,

Email: andrew.blamire@newcastle.ac.uk

For more details and to apply for this post visit

<https://vacancies.ncl.ac.uk/LoginV2.aspx> and search for vacancy A166488R

Researcher Job Details

Post Doctoral Research Associate in MR Physics applied to Neuromuscular Diseases

Institute of Cellular Medicine

Faculty of Medicine

Research Role Profile

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As part of our commitment to career development for research staff, the University has developed 3 levels of [research role profiles](#). These profiles set out firstly the generic competences and responsibilities expected of role holders at each level and secondly the general qualifications and experiences needed for entry at a particular level.

Specific Responsibilities of Position

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1. Developing, optimising and evaluating novel, diffusion-based MRI approaches to detect muscle micro-twitch in skeletal muscle associated with motor unit activity, including MR sequence development as required.
2. Developing a system for isometric force measurement in the MR scanner with visual feedback to subjects and interfacing the system to the scanner acquisition.
3. Developing computational algorithms to detect and quantify motor unit activity from temporal and spatial patterns of signal changes in the motor-unit sensitive MRI (MUMRI) scans.
4. Contributing to ethics application and research governance approvals in relation to studies in patients with spinal muscular atrophy (SMA) and amyotrophic lateral sclerosis (ALS).
5. Working in the multi-disciplinary team (neurologists, neurophysiologists, radiographers, physiotherapists, physicists) to deliver a pilot clinical study using the MUMRI methods developed to follow the natural history of disease progression in patients with SMA and ALS.
6. Conducting all aspects of image analysis, quantification and statistical analysis arising from the study data.
7. Contributing to preparation of funder reports, conference abstracts and academic manuscripts relating to all aspects of the research project.

Person Specification

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Researcher Job Details

		Essential or Desirable
	Qualifications	
1	A PhD or the equivalent in professional qualifications in the field of Biomedical Magnetic Resonance Physics (or closely aligned area)	E
	Knowledge, Skills and Experience	
1	Experience of human in vivo MRI research	E
2	Experience with diffusion MRI methods	D
3	Familiarity with Philips clinical MR scanners (spanning day-to-day use, software modification and hardware interfacing)	D
4	Good practical skills	E
5	Experience of programming computational approaches applied to imaging data (eg in Matlab or C)	E
6	High level of analytical and problem solving capability	E
7	Ability to communicate complex information with clarity and to encourage the commitment of others	E
8	Team membership skills within multidisciplinary research teams	E
9	Understanding of research ethics and governance procedures	D
10	Trained in Good Clinical Practice (GCP)	D
	Attributes/Behaviours	
1	Aware of the ethical issues involved in human research work	E
2	Strong interest in public awareness of science	D
3	Publication record in high esteem journals (if previous post-doctoral experience)	D
4	Presentations at conferences	D

HR Office Use Only

SAP Position Number:

Grade:

Choose an item.

Effective Date:

[Click here to enter a date.](#)