



Job title	Research Associate/Fellow (Title will be 'Research Associate' where an appointment is made before PhD is completed)	Job family and level	Research and Teaching Level 4 (Appointment will be Level 4 Career Training Grade where an appointment is made before PhD has been completed)
School/ Department	School of Physics and Astronomy	Location	Sir Peter Mansfield Imaging Centre, University Park Campus

Purpose of role

You will develop and research new MR spectroscopy (MRS) approaches for robust metabolite measurement for functional brain imaging at ultra-high magnetic field strength (7 T). You will work closely with Dr. Adam Berrington at University of Nottingham and a team of interdisciplinary researchers (psychologists, clinicians) as part of the EPIC (Early Psychosis: Investigating Cognition) study to implement functional metabolite measurements alongside appropriate cognitive paradigms in patient groups to determine possible treatment response markers. You will contribute to the optimisation, development of MR acquisition and analysis tools, support wider research at University of Nottingham and publish and present your work in academic papers and conferences.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	Development and optimisation of new MRS techniques <ul style="list-style-type: none"> ▪ Programming and testing of new MR pulse sequence methodology and parameter optimization to enable sensitive functional measurements of neurometabolites in the brain ▪ Perform literature searches and summarise findings ▪ Assess different analysis strategies to maximize sensitivity to metabolite changes 	30%
2	Analysis of spectroscopy data <ul style="list-style-type: none"> ▪ Process acquired MRS data using available software or custom written open, transparent pipelines when required ▪ Perform necessary statistical analysis on data 	30%
3	Coordinate research with collaborators <ul style="list-style-type: none"> ▪ Coordinate work and provide progress updates within the EPIC study team, including Claudia Danielmeier (School of Psychology) and Mohammad Zia UI Haq Katshu (School of Medicine) ▪ Attend and contribute regularly to meetings 	10%
4	Engage with lived experience experts <ul style="list-style-type: none"> ▪ Co-develop MRS techniques with lived-experience experts through workshops and engage directly with patient groups 	5%

5	Contribute to scientific community <ul style="list-style-type: none"> Preparation of manuscripts for publication and writing of abstracts for conference presentations 	10%
6	Support wider projects at UoN <ul style="list-style-type: none"> Engage and collaborate with wider group of researchers at UoN to support MRS experiments (acquisition and analysis) Help support and mentor postgraduate research students 	15%

Person specification

	Essential	Desirable
Skills	<ul style="list-style-type: none"> Excellent oral and written communication skills, including the ability to communicate complex information clearly High analytical ability to process data, interpret results and generate new insights Ability to manage own research effectively, organise resources and time management Ability to build relationships and collaborate with others as part of a wider team Scientific computing (e.g. Python, R, C++) 	<ul style="list-style-type: none"> Pulse sequence programming Previous demonstrable peer-review scientific contributions Data analysis and/or image analysis
Knowledge and experience	<ul style="list-style-type: none"> Knowledge of MR physics Experience performing statistical comparisons 	<ul style="list-style-type: none"> Direct experience with MR imaging techniques, including functional imaging Experience with MR spectroscopy Experience performing research on neurometabolism and/or mental health
Qualifications, certification and training (relevant to role)	<ul style="list-style-type: none"> PhD (or nearing completion) or equivalent in relevant subject area or equivalent professional qualifications and experience in research domain 	



Athena
SWAN
Silver Award



Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

- Valuing people** Is friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
- Taking ownership** Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
- Forward thinking** Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
- Professional pride** Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
- Always inclusive** Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

Key relationships with others



