



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Metabolic Imaging, Faculty of Medicine and Health



Salary: Grade 7 (£33,797 – £40,322 p.a.) (A maximum of £34,804 can be offered due to funding restrictions).

Reference: MHLCM1187

Closing date: 27 November 2019

(Redeployment Closing Date: 08 November 2019)

Fixed-term until 31st December 2021.

Research Fellow in Metabolic Imaging

School of Medicine

Institute for Cardiovascular and Metabolic Medicine, Biomedical Imaging Science Department

Are you an ambitious researcher looking for the next challenge? Do you want to develop the next generation imaging sequences to advance metabolic characterisation of the heart? Do you want to contribute to translating novel Magnetic Resonance Spectroscopy and Hyperpolarization techniques to patients?

The post is for a Post-doctoral Research Fellow in Metabolic Imaging with a background in MR physics / biomedical imaging. The post supports Prof Plein's British Heart Foundation programme grant on diabetic heart failure and our institute's internationally-leading research programme in cardiovascular and metabolic medicine. The post holder will support the development and translation of current and new metabolic MRI methods from small animal models to patients, including ^1H -, ^{31}P -MRS and the Signal Amplification by Reversible Exchange (SABRE) method of hyperpolarisation. The work will make use of our unique translational imaging capacity, which includes a new BHF-funded preclinical imaging centre (with a Bruker 7T small animal MRI scanner) and a new MRC funded clinical MRI facility (with a Siemens 3T Prisma MRI Scanner). The post holder will further act as a link between the preclinical imaging groups at Universities of Leeds and York to facilitate translation of SABRE from the bench to preclinical cardiac applications, and will be expected to undertake their own research in the field of cardiac MRS.

What does the role entail?

As a Research Fellow your main duties will include:

- Working with and in support of Prof Plein's British Heart Foundation programme to ensure the project is successfully completed;
- Generating and pursuing original research ideas in the appropriate subject area;



- To provide MR physics support to ongoing cardiac ^1H - and ^{31}P -MRS projects on the 3Tesla Siemens scanner comprising both data acquisition and post-processing.
- Develop and implement corresponding techniques on the preclinical 7Tesla scanner for metabolic phenotyping of small animals of cardiovascular disease.
- To support the development of a framework for the quantitative analysis of MRS data.
- To develop pulse sequences and hardware on the Bruker platform as required for SABRE imaging.
- To support the delivery of a Medical Research Council Infrastructure grant that aims to take the SABRE hyperpolarisation method from preclinical to clinical application.
- To support ongoing work and other researchers involved in SABRE imaging both clinically and preclinically.
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- Communicating or presenting research results through publication or other recognised forms of output;
- Preparing papers for publication in leading international journals and independently writing reports;
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the research culture of the School, where appropriate;
- Contributing to the training of both undergraduate and postgraduate students, where appropriate, including assisting with the supervision of projects in areas relevant to the project.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

You will report to Prof Sven Plein, Professor of Cardiology, Head of the Department of Biomedical Imaging Science, Prof Jurgen E Schneider, Chair in Biomedical Imaging and Dr Eylem Levelt, Clinical Research Fellow in MRI.



What will you bring to the role?

As a Research Fellow you will have:

- A PhD (or passed PhD with minor corrections at the point of application) in Physics/Medical Physics/Biomedical Engineering or equivalent;
- Experience with design, development, and implementation of novel pulse sequences on Siemens and / or Bruker high-field MR scanners;
- Extensive experience with scanner protocol implementation and pulse sequence compatibility on a Siemens and / or Bruker platform;
- Experience in MR spectroscopy and quantitative analysis of MRS data;
- Excellent mathematics, problem solving, and analytical skills;
- Thorough understanding of MRS physics and associated biophysics;
- Excellent collaboration and communication skills;
- Familiarity with diverse computer operating systems and programming environments (Unix/Linux, c, Matlab, idl);
- Demonstrated experience of conducting research;
- Proven ability to write to the standard required for research reports/international publications;
- Good time management and planning skills, with the ability to meet tight deadlines and work effectively under pressure;
- Excellent written and verbal communication skills including presentation skills and the ability to communicate effectively with a wide range of stakeholders;
- Proven ability to manage competing demands effectively, responsibly and without close support;
- A proven ability to work well both individually and in a team;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience in MR hardware, RF coils, RF pulse design, parallel imaging and compressed sensing techniques, in-depth theoretical knowledge in these fields
- Knowledge in novel / advanced MRS techniques
- Familiarity with Hyperpolarised MRI/MRS
- Excellent written and oral (scientific) communication skills
- Experience in setting up and leading (multi-site) projects



- Experience with independent writing of grant proposals, scientific conference abstracts and journal papers

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised closing date.

Contact information

To explore the post further or for any queries you may have, please contact:

Prof Sven Plein and / or Prof Jurgen E Schneider

Tel: +44 (0)113 343 6310

Email: S.Plein@leeds.ac.uk or J.E.Schneider@leeds.ac.uk

Additional information

Find out more about the [Faculty of Medicine and Health](#) and the [School of Medicine](#)

Find out more about the [Leeds Institute of Cardiovascular and Metabolic Medicine](#)

Find out more about [Athena Swan](#) in the Faculty.

Working at Leeds

Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our [Working at Leeds](#) information page.

Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at disclosure@leeds.ac.uk.



Criminal record information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.

