



The
University
Of
Sheffield.



Job Description

NIHR Academic Clinical Fellowship in the NIHR theme of Dementia

Radiology ST1 to ST3 (1 post)

The University of Sheffield, in partnership with NHS England North East and Yorkshire and the Sheffield Teaching Hospitals NHS Trust, has developed an exciting pathway of academic clinical training opportunities.

Applications are now invited for an Academic Clinical Fellowship in Radiology at ST1 to ST3. This post has been created as part of the NHS England (NHS)/National Institution for Health Research Trainee Coordinating Centre (NIHRTCC) programme of Integrated Academic Training and offers candidates a comprehensive experience of clinical academic medicine working alongside internationally renowned clinicians and researchers.

Please note: Applicants looking for an ST2 post are encouraged to apply to this vacancy at ST1. If successful your experience will be assessed upon commencing in post enabling you to work at the appropriate level.

We are seeking highly motivated, enthusiastic individuals with the potential to excel in both their clinical and academic training and who have the ambition to be the next generation of academic clinicians.

This Academic Clinical Fellowship (ACF) programme in Radiology will be run by the Sheffield Radiology Research, part of the Division of Clinical Medicine, School of Medicine and Population Health, University of Sheffield, the Sheffield Teaching Hospitals NHS Trust and Health Education England Yorkshire and the Humber.

Academic Clinical Fellowships (ACFs) are 3 year fixed-term national training posts. They attract an NTN(A) and trainees undertake 75 % clinical and 25% academic training over the term of the post. They are employed by the NHS Trust and have an honorary contract with the University at whose Medical School their academic research is supported. The post is supernumerary to existing trainees.

ACF trainees also undertake a Research Training Programme provided by the University for which funding is provided by NIHR. They also are eligible for a £1,000 bursary per year to support research training activity (e.g. to attend academic conferences).

ACF trainees would also normally complete and submit an external funding application for a research fellowship to enable them to complete a higher degree (PhD or research MD) following the completion of their ACF fixed-term post, which would be completed as Out-of-Programme-Research (OOPR).

All Academic Clinical Fellowships are run-through posts, regardless of specialty, with the exception of 'Medical Education' ACFs. A trainee would therefore be guaranteed continued training to CCT in the eventual specialty, as long as they progress satisfactorily through both their academic and clinical training. Run-through status is withdrawn if ACFs do not complete the academic component.

POST DETAILS

Job Title

NIHR Academic Clinical Fellow (ACF) – Radiology

Duration of the Post

Up to 3 years (25% academic, 75% clinical).

Hospital/Trust in which training will take place

Sheffield Teaching Hospitals NHS Trust.

Research institution in which training will take place

UoS MRI unit, Imaging theme, Division of Clinical Medicine, School of Medicine and Population Health, The University of Sheffield

We are an active research group focussed on MR and PET imaging with a strong publication and grant income record.

The main research themes are neuroscience, lung and pulmonary vascular MRI, and paediatric /neo-natal /in-utero MRI. The UOS MR imaging unit is based on C floor adjacent to the main NHS Radiology Department, the brand new development of the Sheffield PET MR facility is accessed through the research unit, in addition our MRC POLARIS building at 20 Claremont Crescent, was opened in 2016.

The unit has two whole body research MRI scanners at the Royal Hallamshire Hospital: 3T Philips Intera (1H and 3He), 1.5 T GE Signa HDx (1H / 3He / 129Xe) and a 1.5T. GE Optima™ MR450w GEM (1H / 129Xe) housed at the Northern General Hospital. The imaging group are also responsible for Sheffield University PET MR facility which is now in use since being commissioned in 2021. There are extensive image processing and data warehousing facilities which were developed as part of the POLARIS project funded by the MRC (>£8M).

There is a group of 4 senior academics who hold honorary Consultant Radiologist status based at Sheffield Teaching Hospitals or Sheffield Children's Hospital. They are members of the fully integrated imaging research group that also includes four academic MR Physicists. The imaging research group is headed by Professor Jim Wild, Professor of MR Physics. In total there are 2 professors of MR physics and 3 clinicians two of whom are Professors of Radiology and 1 senior lecturer in Sheffield (three at Sheffield teaching Hospitals and 1 at Sheffield Children's Hospital).

The unit has a long history of providing the ideal environment for the growth and development of radiologists who are research active, with 2 previous trainees now holding personal chairs and another three at senior lecturer level and with 3 previous radiology trainees who have

gone on to complete funded PhDs and attain Academic Clinical Lecturer positions. We offer a nationally unique multi-disciplinary imaging research environment with opportunities to train in, develop and translate cutting edge imaging technologies for patient benefit.

The unit also employs five MR Research Radiographers, over twenty Research Associates and staff scientists, ten PhD students and five research administration and secretarial staff.

Research Protected Time:

(negotiable with clinical training programme director eg day release, block, etc). Trainees must keep a record of their research time which needs to amount to 25% of the total.

Academic Clinical Fellowship Training Programme: Research Component

The research that the ACF will undertake is in the NIHR theme of "Dementia".

Human neuro-imaging

The explosion in MR technology over the last 30 years has led to an imaging modality that not only depicts human neuro-anatomy and pathology but is also capable of depicting various aspects of central nervous system function. The implications of this to our understanding of the normal and diseased brain are gradually being realised, as is the use of such information in the context of caring for people who have diseases which affect the central nervous system.

The human neuro-imaging research group studies many diseases, with the Sheffield BRC is focused on neurology there are huge opportunities for collaborative research in neurodegenerative diseases such as Motor Neuron disease, Parkinson's disease, dementia and ataxia, but also in neuroinflammation, epilepsy and cerebrovascular disease. Indeed a lot of clinical topics are covered, relating to both CNS development and degeneration and these are investigated using a multitude of MR investigative techniques.

The Sheffield PET MR facility is a state of the art facility combining PET imaging with 3T MR imaging, which in Sheffield has the unique additional aspect of multinuclear imaging (ie using other nuclei other than hydrogen to generate the images, such as hyperpolarised xenon, phosphorus and sodium. There is also expertise with spectral editing techniques enabling biologically interesting targets such as GABA and glutathione to be imaged in the brain. The Sheffield NIHR BRC is supporting a programme of research in dementia, much of which is centred around MR and PET brain imaging with PIs in neuroimaging, neurology and primary care all working in this field.

The major goals surrounding this research are to:

- develop and implement novel diagnostic MR techniques and to maximise their sensitivity and specificity
- integrate advanced MR techniques into large-scale clinical research programmes and clinical practice
- with the aid of clinical-MR data, further our understanding of the mechanisms underlying CNS disease and the time-course of pathological progression

- assess MR-based markers for patient prognosis
- develop, assess & use MR to monitor and evaluate therapies and interventions
- develop and integrate machine learning and other artificial intelligence techniques into imaging research and clinical practice.

Cardiac and pulmonary disease

The group has a number of research interests and involvement with any of these will be encouraged. There is ample opportunity for supervision of research and career mentoring. Sheffield is the world's leading centre for hyperpolarised gas and pulmonary vascular MRI, led by NIHR-Professor Jim Wild and Dr Andy Swift. Novel applications of existing imaging techniques, such as hyperpolarised gas MRI and positron emission tomography (PET), have been developed to reveal structural and functional information as novel imaging biomarkers for chronic lung diseases. Imaging research in this area is underpinned by the MRC/BHF funded POLARIS institute (£8.5M PI Wild). We work closely with several pharma companies using lung and pulmonary vascular MRI for mechanistic understanding and as outcome measures for assessment of clinical treatments. We also have strategic collaborations in place with the MRI scanner manufacturer GE healthcare.

Sheffield also hosts innovative programmes in drug development in the areas of clinically relevant inflammation biology (Condliffe, Renshaw) attracting significant competitive grant funding, including 2 MRC Programme Grants and an MRC AMR Consortium award (PI Shield).

All academic clinical fellows are expected to apply for doctoral training funding. There is a local doctoral training programme funded by the Wellcome and trainees are also supported where they wish to apply for a standalone fellowship, such as from the NIHR DRF programme. Typically most trainees undertake their PhDs at the end of the third year of clinical training, having gained their FRCR but this is flexible.

Wider imaging research activities:

Hyperpolarized gas MRI of lungs and Cardiovascular MR imaging

We have been working on novel inhaled contrast enhancement mechanisms for imaging lung ventilation using the signal of inhaled hyperpolarised (HP) noble gases. The images produced are supplying clinicians with anatomical and functional information of the pulmonary system that has previously been unattainable. The first clinical studies in the UK to use inhaled hyper-polarised gas MRI have taken place at the University and much technological development work has been done to establish the group as a world centre in this emergent branch of diagnostic imaging.

Sheffield is an internationally leading clinical and research centre for pulmonary hypertension and imaging of the right heart. There is a rapidly growing interest in developing AI technologies to improve clinical performance of imaging in collaboration with the department of computer science and Insigneo.

Body imaging and Quantitative imaging

This research group's interest is in the development of quantitative imaging biomarkers (QIBs) and applications thereof in clinical studies, drug development and basic research. QIBs are measurements extracted from medical images that can be used as indicators of normal biological processes, disease progression or treatment response. QIB development in MRI is a highly interdisciplinary area and sits on the interface between (bio)physics, engineering, computation, biology and medicine.

QIB development in MRI is a highly interdisciplinary area and sits on the interface between (bio)physics, engineering, computation, biology and medicine. An example of current work is the development and validation of QIBs that measure liver function, and using these to identify patients that are likely to suffer from toxic side effects of drugs www.imi-tristan.eu/en/liver/.

We are also very active in Chronic Kidney Disease, where we are looking at larger panels of QIBs to identify patients that are at risk of progression and therefore are in need of more aggressive management www.beat-dkd.eu.

Maternal, fetal & neonatal imaging

We have an active research group in maternal, fetal and neonatal imaging.

These include:

- In-utero MR imaging of the fetal Central Nervous System (CNS)
- In-utero MR imaging of the fetal abdomen, lungs & limbs
- Post-mortem MR imaging of the fetus & comparison with autopsy
- Imaging of the placenta
- Image processing & analysis

Academic Clinical Fellowship Training Programme: Clinical Component

Clinical Training Programme

You will undertake clinical training at 75% whole time equivalent rate within the Sheffield Radiology Training Scheme, which falls within the North East and Yorkshire Postgraduate Deanery, with clinical training at the Royal Hallamshire Hospital, Northern General Hospital, Sheffield Children's Hospital, Weston Park Hospital and possibly some of the associated district hospitals. Post-FRCR level training is provided in a broad range of imaging sub-specialties, providing you with excellent opportunities to develop your clinical sub-specialisation. You may wish to sub specialise in cardiothoracic radiology to match your research focus, but the clinical aspect of the post will rotate through other sub specialties over the four year period.

Training Programme

Sheffield's radiology training programme is well established, highly regarded and located in a compact geographical area in the centre of the UK. All facets of radiology training are available locally at every stage of the five year programme. We have dedicated fellowships in neuroradiology, vascular/ interventional radiology and radionuclide imaging, plus paediatric and oncology imaging at local specialist hospitals.

Trainees have consistently achieved excellent examination results, including award of the Royal College of Radiologists' gold medal. There is an active Postgraduate educational programme which covers the syllabus required for FRCR. For FRCR part 1 there is a programme of Physics and Anatomy teaching. Trainees are released from clinical duties to attend the Programme of radiology teaching and there is also an active programme of audit, clinical governance, research meetings.

Recent graduates of the Programme were all successfully appointed to Consultant Radiologist posts on achievement of CCT. Trainees benefit from the Faculty's extensive international network of colleagues who are able to provide personal introductions and a springboard to careers in North America and Australasia.

We have an established Faculty with many senior members at its core. Sheffield consultants are represented on the Royal College of Radiologists' Education Board, Training and Accreditation Committee, Scientific Committee and act as senior FRCR examiners.

A rotational training programme is in operation for specialty registrars in line with recommendations contained in the document "Structured Training in Radiology" published by the Royal College of Radiologists. First year registrars gain experience with basic radiology methods in preparation for on-call duties in the second year allowing the Specialty Registrar to participate in a 24 hour emergency radiology (there is a full shift working pattern in operation) service to the Sheffield, Chesterfield and Doncaster hospitals. More complex procedures are introduced progressively in years two and three in line with the Royal College of Radiologists modular curriculum and in years four and five Specialty Registrars will be given opportunities to develop expertise in specialised radiology fields as appropriate. It is expected that most Specialty Registrars will obtain the FRCR within three years. The rotation is designed to give progressive training in radiology leading to accreditation at five years after commencement in the grade. On-call duties are undertaken from the second year of training.

Hospitals within the training programme offer a full range of specialities including regional centres for neurosciences, cardiology and cardio-thoracic surgery, paediatrics and oncology. Supporting radiology facilities include all current imaging modalities and interventional radiology methods are in regular use. All teaching sites benefit from state of the art imaging equipment and PACS.

Further information on the clinical training programme can be provided by the Training Programme Director (Dr Gayle Rutherford, gayle.rutherford@nhs.net) or the Radiology ACF/ACL Programme Deputy Director (Prof Nigel Hoggard, nigel.hoggard@nhs.net), or Head of Radiology Academic Training (Dr Andy Swift, andy.swift1@nhs.net).

PROUD VALUES

These are the values that all staff at Sheffield Teaching Hospitals NHS Foundation Trust are expected to demonstrate in all that they do.

Patients First – Ensure that the people we serve are at the heart of what we do

Respectful – Be kind, respectful, fair and value diversity

Ownership – Celebrate our successes, learn continuously and ensure we improve

Unity – Work in partnership with others

Deliver – Be efficient, effective and accountable for our actions

For further details of our services and organisational structure, including our Board of Directors, and our future plans please visit www.sth.nhs.uk/about-us

CONTACTS

Academic Leads and Supervisors:

Professor Nigel Hoggard, Professor of Neuroradiology, The University of Sheffield and Sheffield Teaching Hospitals- n.hoggard@sheffield.ac.uk

Dr Andy Swift, Clinical Senior lecturer in Chest Radiology, The University of Sheffield and Sheffield Teaching Hospitals- a.j.swift@sheffield.ac.uk

College Tutors: Academic, Educational and Clinical supervisors will be assigned to align with individual needs, following appointment.

Training Programme Director (clinical):

Dr Naomi Hersey, Consultant Radiologist, Sheffield Teaching Hospitals – n.hersey@nhs.net

Academic Training Programme Director

Professor Dilly Anumba - d.o.c.anumba@sheffield.ac.uk

Further Information

Because of the nature of the work for which you are applying, this post is exempted from the provisions of Section 4 (2) of the Rehabilitation of Offenders Act 1974 by virtue of the Rehabilitation of Offenders Act 1974 (Exceptions) Order 1975.

Applicants are therefore not entitled to withhold information about convictions, which for other purposes are “spent” under the provisions of the Act, and in the event of employment any failure to disclose such convictions could result in dismissal or disciplinary action by the University. Any information given will be strictly confidential and will be considered only in relation to an application for positions to which the Order applies.

For further information about the Academic Clinical Fellowship programme, please refer to the NIHR (National Institute for Health Research) Trainee Coordinating Centre (NIHRTCC) page on <https://www.nihr.ac.uk/explore-nihr/academy-programmes/integrated-academic-training.htm>

Person Specifications

Applicants for this post will be required to meet the relevant Clinical eligibility criteria for the appropriate specialty and level listed at:-

Please note - (applicants applying for Surgical, Medical or Psychiatry specialties at ST3 or above may be required to consult the relevant Core Training person specification):-

<http://specialtytraining.hee.nhs.uk/Recruitment/Person-specifications>

AND the Academic eligibility criteria listed at:

<http://specialtytraining.hee.nhs.uk/Recruitment/Person-specifications>

How to Apply

For more information about applying to ACF vacancies in NHS England North East and Yorkshire. please visit:-

http://www.yorksandhumberdeanery.nhs.uk/recruitment/our_vacancies/academic_recruitment/

Applications will only be accepted through the Oriel online application system:-

<https://www.oriel.nhs.uk>

After the application deadline no applications will be accepted. There will be no exceptions to this deadline. You are advised to complete and submit your application ahead of the deadline to allow for any unforeseen problems.

Please note: All applicants who do not already hold a National Training Number (NTN) or Deanery Reference Number (DRN) in the GMC specialty to which they are applying for will be required to undertake the national clinical recruitment process and attend an assessment/interview for that GMC specialty as appropriate.

Interviews will be held online. The date will be confirmed to applicants via the Oriel application system.