Job Description

NIHR Academic Clinical Fellowship

Radiology ST1

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 level**. This post has been created as part of the NHS England (NHSE)/National Institute for Health Research (NIHR) programme of Integrated Academic Training and offers candidates a comprehensive experience of clinical academic medicine working alongside internationally renowned clinicians and researchers.

Please note: This post will be recruited at ST1 level. Applicants with prior relevant experience may, on appointment, have their entry level assessed to ensure they are placed appropriately within the training programme.

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 part of the next generation of academic radiologists.

This Academic Clinical Fellowship (ACF) programme in **Radiology (Imaging)** will be run by the University of Sheffield, the Sheffield Teaching Hospitals NHS Trust and NHS England North East and Yorkshire.

POST DETAILS

Job Title

NIHR Academic Clinical Fellow (ACF) – Radiology

Duration of the Post

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

Lead NHS Hospital/Trust in which training will take place

Sheffield Teaching Hospitals NHS Trust.

Research institution in which training will take place

The Sheffield Imaging Unit

Based in the School of Medicine and Population Health at the University of Sheffield, the Imaging Unit brings together expertise in radiology, physics, engineering, computer science, and biomedical sciences. The Unit integrates clinical radiologists with internationally recognised physicists, imaging scientists, and data specialists, creating a unique environment for translational imaging research. Core themes include cardiothoracic imaging, hyperpolarised gas MRI, PET-MRI, photon-counting CT, quantitative imaging biomarkers, and the application of artificial intelligence to clinical diagnostics.

In the 2021 Research Excellence Framework (REF), Sheffield's imaging outputs were consistently rated as world-leading or internationally excellent, confirming its status as one of the UK's foremost centres for imaging innovation. The Unit benefits from more than £15 million in strategic investment from NIHR, Wellcome, UKRI and Yorkshire Cancer Research, including major facilities and partnerships with NHS organisations and industry.

Section of Imaging Research

The post holder will be attached to the Imaging Research theme within the School of Medicine and Population Health. Imaging research is a highly translational discipline with global impact, developing new methods and biomarkers that directly influence the diagnosis, monitoring, and treatment of disease. Sheffield Imaging has close partnerships with the NHS and industry, ensuring rapid translation into patient benefit.

Imaging Research at Sheffield

Sheffield is a leading national and international centre for imaging research, with five Professors of Radiology and Imaging Science, senior lecturers, physicists, and over 15 PhD students. Research is supported by internationally unique facilities, including:

- PET-MRI: Hybrid scanner enabling simultaneous molecular and anatomical imaging, with applications in oncology, neurology, and cardiovascular research.

- POLARIS Hyperpolarised MRI Centre (https://www.sheffield.ac.uk/polaris): A world-leading programme pioneering helium-3 and xenon-129 MRI for radiation-free functional lung imaging.

- Photon-counting CT (PCCT): NIHR-funded scanner providing ultra-high resolution imaging with reduced radiation dose, supporting oncological and cardiovascular applications.

- Low-field MRI: Development of affordable, portable MRI for global health and community-based imaging.

- Yorkshire Cancer Research oncological imaging programme supporting translational cancer research.

Collaborations extend across:

- Insigneo Institute for in silico Medicine (https://www.sheffield.ac.uk/insigneo): Europe's largest institute for computational modelling of human physiology and disease, with strong links to musculoskeletal and cardiovascular imaging.

- Sheffield 3D Lab (https://sheffield3dlab.com/): A £3 million imaging-AI facility that integrates advanced image analysis, additive manufacturing, and surgical planning.

- Centre for Machine Intelligence: A cross-faculty hub applying machine learning and AI to medical imaging and clinical data.

- Advanced Manufacturing Research Centre (AMRC): A world-leading translational centre applying manufacturing and engineering innovations to medical technology and imaging hardware.

Research themes include:

- Cardiothoracic and pulmonary imaging: MRI and CT innovations with a focus on pulmonary hypertension and heart disease.

- Hyperpolarised gas MRI: Pioneering studies in lung ventilation imaging using helium-3 and xenon-129.

- Liver MRI: Imaging biomarkers for non-invasive assessment of liver disease and treatment monitoring.

- Paediatric imaging: Programmes in skeletal trauma, developmental dysplasia, and neonatal brain/body imaging.

- Neuroimaging: Translational applications in ataxia, gluten sensitivity, and neurodegenerative disorders.

- Artificial intelligence and quantitative imaging biomarkers: Development of automated diagnostic tools and imaging biomarkers to improve clinical trials and precision medicine.

Further details of Sheffield's Imaging research can be found at:

- University of Sheffield Imaging Theme: https://www.sheffield.ac.uk/smph/research/themes/imaging

- NIHR BRC Imaging and Engineering Theme: https://www.sheffieldbrc.nihr.ac.uk/our-research/imaging-engineering/imaging

- POLARIS Hyperpolarised MRI Centre: https://www.sheffield.ac.uk/polaris

- Sheffield 3D Lab: https://sheffield3dlab.com/

- Insigneo Institute for in silico Medicine: https://www.sheffield.ac.uk/insigneo

Clinical academic training is provided at all levels of medical career progression:

- Medical student SSC modules alongside established projects
- One-year intercalated BMedSci degrees
- 4-month foundation year 2 attachments
- Three-year academic clinical fellow posts
- Full-time MD/PhD research fellowships
- Four-year clinical lecturer posts

Academic Clinical Fellowship Training Programme: Research Component

The research component will be based within the **Imaging Unit at the University of Sheffield**, where the fellow will be supervised by senior academics in Radiology and Imaging Science, including Professors of Radiology, Physics, and Computer Science. Fellows will have access to a wide range of methodological expertise spanning imaging physics, quantitative image analysis, artificial intelligence, clinical trial design, and translational research.

The Imaging Unit is engaged in a wide portfolio of nationally and internationally funded projects. Fellows will have opportunities to participate in or develop projects in areas such as:

- Application of **PET-MRI** and **photon-counting CT (PCCT)** in oncology, cardiology, and neurology.
- **Hyperpolarised gas MRI** studies in lung disease, including pulmonary hypertension and COPD.
- **Liver MRI biomarkers** for non-invasive monitoring of disease progression.
- **Paediatric and neonatal imaging**, including musculoskeletal development and neonatal MRI.
- **Neuroimaging research** into ataxia, gluten sensitivity, and neurodegeneration.
- **Artificial intelligence in imaging**, including automated diagnosis and quantitative imaging biomarkers for clinical trials.

Fellows will also benefit from Sheffield's cross-institutional collaborations, including the Insigneo Institute for in silico Medicine (https://www.sheffield.ac.uk/insigneo), Sheffield 3D Lab (https://sheffield3dlab.com/), the Centre for Machine Intelligence, and the Advanced Manufacturing Research Centre (AMRC), which together provide expertise in computational modelling, image analysis, and engineering.

During the academic component, the fellow will be expected to undertake formal training, including modules from the Master's in Clinical Research (MClinRes), which provides grounding in quantitative and qualitative research design, advanced statistics, and health informatics. The fellow will also complete a research project suitable for peer-reviewed publication and presentation at national and international meetings. This project may also contribute to a Master's dissertation (subject to external funding) and will form the foundation of an externally funded doctoral fellowship application (e.g. NIHR Doctoral Fellowship, Wellcome Trust, or MRC).

Sheffield has a strong track record of academic progression, with previous Imaging ACFs successfully achieving Master's qualifications, securing doctoral fellowships, and advancing to Clinical Lectureships and beyond.

Research Protected Time:

The post will be split so that 9 months (25%) are spent undertaking research-related activities and 27 months (75%) in clinical activities. In Radiology, this research time is usually arranged on a per-block basis, often as a regular day-release model within each clinical rotation, although block arrangements may occasionally be agreed with the Training Programme Director. Fellows are required to keep a clear record of their academic activity to demonstrate fulfilment of the 25% commitment.

Academic Clinical Fellowship Training Programme: Clinical Component

The clinical component will be undertaken within the **Sheffield Radiology Training Scheme**, which forms part of the North East and Yorkshire Postgraduate Deanery. The scheme is well-established, highly regarded, and offers comprehensive training across all major radiology subspecialties.

The training programme is based primarily at:

- **Royal Hallamshire Hospital**
- **Northern General Hospital**

- **Sheffield Children's Hospital**
- **Weston Park Hospital**
- Associated district general hospitals across South Yorkshire and North Derbyshire

Structure of Clinical Training

- Fellows will enter at **ST1 in Radiology** and follow the structured **Royal College of Radiologists (RCR) modular curriculum**.
- The first year of training focuses on developing core diagnostic radiology skills in plain film, ultrasound, and cross-sectional imaging, with supervised exposure to acute and emergency radiology.
- **On-call duties** are introduced from ST2 onwards, with a 24-hour acute imaging service covering Sheffield Teaching Hospitals and neighbouring Trusts. Fellows are fully supported by consultant radiologists and senior registrars during these duties.
- As training progresses, fellows rotate through all major radiology subspecialties, including neuroradiology, cardiothoracic imaging, musculoskeletal, paediatric radiology, oncology, breast, nuclear medicine, and interventional radiology.
- **Subspecialty development** is available in later years, allowing fellows to align their clinical interests with their academic research (e.g. cardiothoracic imaging or quantitative imaging biomarkers).

Teaching and Examinations

- Sheffield has an excellent record in FRCR examinations, with trainees consistently performing at a high level nationally, including the award of the **Royal College of Radiologists' gold medal**.
- Fellows are supported by a dedicated postgraduate educational programme covering the full FRCR syllabus, including structured teaching in physics, anatomy, and clinical radiology.
- Additional teaching opportunities include multidisciplinary team meetings, audit, governance sessions, and regular academic radiology seminars.

Outcomes of Clinical Training

- The Radiology training scheme is designed to provide progressive, comprehensive training leading to accreditation at **CCT (Certificate of Completion of Training)**, normally after five years.
- Recent graduates of the Sheffield Radiology Programme have all successfully obtained consultant posts in the NHS or academic positions nationally and internationally.
- Fellows benefit from Sheffield's extensive international research and clinical networks, offering opportunities for collaborations and placements abroad.

Post information

JOB TITLE: NIHR Academic Clinical Fellowship in Clinical Radiology

BRIEF OUTLINE:

The clinical programme is designed to provide training from ST1 for a period of 3 years.

Objectives of the Training Programme:

1. To undertake structured Radiology training within the Sheffield Radiology Programme, leading to progression through the Royal College of Radiologists (RCR) curriculum and completion of CCT in Radiology.

2. To undertake a generic programme in research methodology, including formal training through the University of Sheffield's Master's in Clinical Research (MClinRes) or equivalent.

3. To identify and develop an area of academic imaging research interest (e.g. cardiothoracic imaging, hyperpolarised gas MRI, neuroimaging, paediatric imaging, liver imaging, or AI/quantitative biomarkers), upon which to base an application for an externally funded doctoral research fellowship.

Successful candidates:
The exit from this post will typically be to an externally funded doctoral fellowship (e.g. NIHR Doctoral Fellowship, Wellcome Trust, or MRC award), leading to the award of a PhD/MD(Res). Successful candidates would then be well-placed to apply for Clinical Lecturer posts, intermediate fellowships, or Clinician Scientist Fellowships, with a view to progressing towards academic consultant posts.

Unsuccessful candidates:
If the post-holder does not achieve the expected clinical competencies, this will be handled in the same way as for all other trainees in Radiology. If the post-holder fails to achieve the required academic competencies or is unsuccessful in securing research funding, they would be expected to return to a clinical training pathway. This will be discussed proactively with the Training Programme Director (TPD) and Academic Lead through established appraisal and mentoring systems. Every effort will be made to accommodate such individuals within local training schemes, although no guarantee of a suitable academic post can be offered.

CONTACTS

Academic Leads and Supervisors:

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Further Information

For more information on Sheffield, see https://www.sheffield.ac.uk/medicine-dentistry-health/study/clinical-academic-training

For more information on NIHR clinical academic training, see http://www.nihr.ac.uk/IAT

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) Integrated Academic Training (IAT) page on https://www.nihr.ac.uk/explore-nihr/academy-programmes/integrated-academic-training.htm#one