N.B: Please avoid using the term Deanery and instead use NHS England (NHSE), Health Education Team (HET), or London & South East Region (LaSE).

NIHR | National Institute for Health and Care Research

# Job Description for NIHR Academic Clinical Fellowship in Neurosurgery ST1

**1. Job Title.**

Academic Clinical Fellow (ACF) in Neurosurgery (ST1)

**2. Duration of post.**

3 years

**3. Research institutions in which training will take place**

St George's University Hospitals NHS Foundation Trust & St George's, University of London ("St George's")

Potential collaborating sites:
University of Oxford
Guys & St Thomas' NHS Foundation Trust
Kings College London
City, University of London
University College London
Imperial College, London

**4. Timetabling of clinical and research time**

This post will meet the 25% research and 75% clinical training recommendations. ST1 will be 100% clinical and follow the current training programme of 6 months neurosurgery, 3 months neuro-intensive care, and 3 months neurology. ST2 will be 6 months neurosurgery, 3 months allied neurosciences (neuroradiology, neurophysiology, and neuropathology, and 3 months research. ST3 will be 6 months neurosurgery and 6 months research with a view to leading into a higher degree, if applicable. During the academic component, the ACF is expected to attend daily clinical teaching and participate in the on-call senior-house officer rota (ST1, ST2) and registrar rota (ST3) at St George's. During the clinical component the ACF will be based at St George's.

**5. Description of research component of programme**

Overall, the objective is to develop a coherent body of research in functional neurosurgery under the theme of 'digital' leading either into a PhD, or if a post-graduate degree has already been obtained, a funded post-doctoral clinical lecturer / clinician scientist position. To do this, protected academic time will be ensured together with regular supervision, opportunities to foster productive collaborations, and support for skills acquisition.

Potential research avenues at St George's within the theme of digital include:

- Big data analysis in pain and spinal cord stimulation
- Machine learning / AI in epilepsy and Parkinson's disease

- Precision medicine and disease biomarker characterization with neuroimaging and neurophysiological markers
- App development and virtual/augmented reality with smartphone technology to objectively and independently appraise outcomes

Our lab provides a diverse, stimulating, and supportive environment for academic clinical fellows. A variety of collaborations and partnerships have been fostered to enable a diverse range of data acquisition based on clinical data, MRI, and in-vivo neurophysiology. To foster a collaborative and stimulating research environment we have an active program of departmental academic meetings and an infrastructure to support junior researchers in developing research and grant ideas and in successfully writing up and publishing research data. Mentorship is key and ACF's will have available proven primary supervisors (Erlick Pereira and Michael Hart) as well as a larger network of advisors with which to draw upon for support and feedback. Supporting this infrastructure are a series of prestigious and generous funding sources including 15 grant awards totaling £3.8M over the past 5 years.

Maximising benefit and minimising harm in functional neurosurgery are the overarching background themes to the lab's academic pursuits. We leverage cutting-edge neuroimaging methods (ultra-high field 7T MRI, connectomics) to understand both disease mechanisms (thalamic sensori-motor dysintegration) and novel treatment targets (tractography-based stimulation). Translating technological advances to improved patient care is effected through judicious industry collaborations. Our work leverages consultancy agreements for cell delivery in movement disorders and epilepsy, leading trials on novel electrode design, and app development for surgical planning and accuracy appraisal. Overall, our aim is to provide a wide-ranging clinical and academic practice in functional neurosurgery that allows patients to benefit from the latest clinical advances, research discoveries, and technological innovations.

A typical academic timetable is presented below:

| | |
|---|---|
| Monday | Research: skills acquisition, reading / literature review |
| Tuesday | Theatre fortnightly / research |
| Wednesday | Research: primary data analysis |
| Thursday | Supervisor & lab meetings, networking |
| Friday | Clinic & MDT twice monthly |

In summary, our lab offers a wide exposure to cutting edge research and clinical techniques. We aim to remain at the vanguard of innovate approaches in functional neurosurgery. It is anticipated that ACF's graduating from our programme will be in a prime position to both collaborate with and lead on similar work in the future.

**6. Description of clinical training component of programme**

St George's Healthcare NHS Trust is a large teaching hospital based in Southwest London and one of the largest healthcare units in the United Kingdom, accommodating around 1170 beds and treating around 100,000 inpatient and day cases, and over 350,000 outpatients annually. The Trust employs almost 5000 staff incorporating over 700 Medical & Dental Staff.

N.B: Please avoid using the term Deanery and instead use NHS England (NHSE), Health Education Team (HET), or London & South East Region (LaSE).

NIHR | National Institute for Health and Care Research

The Atkinson Morley Regional Neuroscience Centre provides tertiary neuroscience care to a regional population of approximately 3 million in Southwest London, Surrey, and Sussex. The clinical services are housed in the purpose-built Atkinson Morley Wing of St George's Hospital, opened in 2003 to accommodate the relocation of neurosciences from Atkinson Morley's Hospital in Wimbledon. St George's Hospital is the main teaching hospital in the western sector of the South Thames, and as such has developed links with most district general hospitals throughout South Thames West and supports a significant training programme for junior doctors who rotate through the Trust.

Consultant staff includes over 30 neurologists/neurophysiologists/stroke physicians including visiting consultants from other providers, 14 neurosurgeons, 8 neuroradiologists and 3 consultant paediatric neurologists. There are close clinical and academic links with neuroanaesthetics, neuropathology and pain management.

The unit houses a total of 116 beds, including 38 adult Neurosurgical beds split on to two wards with a 4 bedded day unit, 20 Hyper-Acute Stroke and 16 Acute Stroke beds and 12 beds in a dedicated Neuro-Intensive Care unit. In addition to these beds, there are 8 dedicated Paediatric neurosciences beds within the Paediatric Unit located in Lanesborough Wing. There are approximately 3000 admissions to Neurosurgery and around 2800 operations annually.

There are 18 neurosurgical operating theatre lists each week. The unit has its own Neuroradiology department, which has a 128-slice spiral CT scanner with facilities for CT angiography, a 3T and 1.5T MR scanner, 2 rooms with digital subtraction for angiography, plain film facility and Ultrasound. Two Consultant Neuropathologists provide a full Neuropathology service including immediate per-operative frozen sections. There is a fully equipped Neurophysiology department with five equipped video telemetry beds.

The Department of Neurosurgery is one of the busiest in the country performing approximately 2800 procedures per year, with the Consultant body specialising in oncological, spinal, skull base, vascular, paediatric, and functional neurosurgery. It has historically had one of the highest caseloads per consultant of all UK departments. The functional neurosurgery service is the most recently established unit in the UK but has grown rapidly to become the fourth largest.

The Department currently includes the following staff members:

- 14 consultant neurosurgeons including 3 academics (Prof Papadopoulos, Reader Mr Pereira, and Senior Lecturer Michael Hart)
- 16 registrar-equivalent posts; 5 from the Pan-London Rotation, 5 St George's Trust position and 2-3 academic registrars carrying out research at SGUL (one CL), 3-4 senior fellows: complex spine, neuro-oncology, skull base / vascular, and functional. There is a long history of international registrars particularly from the USA.
- The department has a long and outstanding history of teaching at undergraduate and postgraduate level. The South Thames neurosurgery programme is consistently one of the most competitive registrar training schemes in the UK and attracts the best neurosurgical trainees. Trainees consistently rate the neurosurgery department extremely highly in JCIE ISCP and GMC surveys. Trainees from this programme, held across St George's, King's and The Brighton Neurosurgical Unit have won the Norman Dott medal for the most outstanding performance in FRCS (SN) four times recently. Three of 14 consultants hold the Norman Dott medal and three have authored best-selling neurosurgical revision books.

The ACF post would fit within our established and successful training programme, and this would enable the post-holder to benefit from the training supervision and mentorship infrastructure at St George's. We would ensure that competencies that are part of neurosurgery training are gained by the ACL and that any difficulties in this regard are detected early and remedies put in place. Furthermore, we would support the ACL in developing a subspeciality interest of his/her choosing by providing opportunities to observe and work within one of more of the many subspecialty neurosurgery services present within the department.

A typical outline of a clinical timetable is presented below, based on that of the functional neurosurgery team:

| | AM | PM |
|---|---|---|
| Monday | Theatre (MH) | Theatre (MH) |
| Tuesday | Theatre (EP) | Theatre (EP) |
| Wednesday | admin | audit |
| Thursday | SPA/ISCP | SPA/ISCP |
| Friday | Clinic | MDT |

On-call commitments will be approximately 1 day per fortnight as part of a 1:12 F2-ST2 senior house officer rota in ST1/2 then in ST3 a 1:16 single-tier ST3-ST8 registrar / senior fellow full-shift resident on-call rota involving night shifts and weekend cover.

Additionally, there is a daily 8-9am morning teaching meeting followed by a 9-930am ward round with 930-1000 board round on non-theatre days.

During clinical training the ACF will have opportunistic release to research (0.5 days per week envisaged) and retain research office / laboratory space and facilities.

SPA/ISCP = supporting professional activities & training
MH = Michael Hart
EP = Erlick Pereira

**7. Academic Programme Director name**

Michael Hart

**8. Clinical Programme Director name**

Navneet Singh

**9. Programme contact for further information (phone or email)**

Michael Hart
mhart@sgul.ac.uk

**10. NHSE contact**:
Specialty Team https://lasepgmdesupport.hee.nhs.uk/support/home

N.B: Please avoid using the term Deanery and instead use NHS England (NHSE), Health Education Team (HET), or London & South East Region (LaSE).

Recruitment Enquiries - https://lasepgmdesupport.hee.nhs.uk/support/home

**11. Useful websites for further information**

https://www.nihr.ac.uk/explore-nihr/academy-programmes/integrated-academic-training.htm

**12. Confirmation that the post attracts an NTN (A)**

This post attracts an NTN(A).