Academic Clinical Fellowship in Histopathology

Description of ACF Programme:
Title: Histopathology Duration: 3 years
Lead NHS Hospital/Trust and contact details:
University Hospital Southampton NHS Foundation Trust Tremona Road Southampton SO16 6YD 02380 777222
Research Institution in which training will take place:
Faculty of Medicine University of Southampton University Road Southampton SO17 1BJ
Arrangements for protected research time:
The ACF would rotate into a 6-month research post based within the School of Cancer Sciences, Faculty of Medicine and cellular Pathology, UHS in the second six months of Year 2, and into a half-time 6-month research post in the same department in the second six months of Year 3.
Research Objectives:
1. To undertake the equivalent of 2 years 3 months full time training in Histopathology in accredited posts on the Wessex Rotation. 2. To undertake generic research methods training through a programme run by the Faculty of Medicine's Postgraduate School. 3. To gain relevant training and experience in research design, methods and data analysis. 4. To expose the trainee to digital pathology- and spatial transcriptomic-based research within the Faculty of Medicine and UHS 5. To pilot a research project (AI-based image analysis of spatial data) in order to generate preliminary data for development of a proposal for a research training fellowship 6. To submit a competitive application for a research training fellowship to Cancer Research UK, MRC or the Wellcome Trust.
Description of research component of programme (up to 500 words):
The ACF will undertake research within the School of Cancer Sciences (Faculty of Medicine) and Cellular Pathology (University Hospital Southampton; UHS). The University has a long-established relationship with Cancer Research UK (CR UK); facilities include the CR UK Experimental Cancer Medicine Centre, Clinical Trials Unit and Centre for Cancer Immunology The research component of the fellowship will provide: • scientific training in research methods, experimental design and data analysis • exposure to spatial-based image research across a range of cancer-related projects

- the opportunity to pilot a research project to generate preliminary data
- training in presentation and publication of research work.
- the opportunity to develop fellowship writing skills

The objectives of the academic clinical fellowship is to provide basic scientific training and to identify an area of AI/digital pathology-based research in which to obtain preliminary data for a Clinical Fellowship application. The Fellow will become familiar with a broad range of research methodologies employed within the School and Cellular Pathology (including single cell sequencing, spatial transcriptomics, multiplexed immunochemistry, AI approaches for image analysis, bioinformatics).

The School of Cancer Sciences has a broad range of scientific interests in different cancers, ranging from basic cell and molecular biology through translational studies and clinical trials. The School has over 150 staff working in coordinated teams across several disciplines. This will provide an ideal environment to develop research skills.

Cellular Pathology (UHS) is well placed to help develop a clinical academic in the field of Digital Pathology; it has undergone a programme of digital transformation over the last five years as part of PathLAKE and is one of the few pathology departments across the UK where all histopathology workflow is now fully digitised (since 2023). AI tools are already being incorporated into the workflow to help streamline work- (eg. PDL1 analysis lung carcinoma; breast cancer metastasis detection in sentinel lymph nodes). The Department is engaged in national clinical trials using AI to aid diagnostic pathways in prostate cancer detection (CHAIROS), Coeliac disease automated detection (Lyzeum) and inflammatory bowel disease detection (COBIx), and works with several industry partners aiming to create future AI tools (eg. Visiopharm, Aiforia and Ibex Medical Analytics).

The ACF would be expected to register for postgraduate study leading to a PhD within the University. The ACF would be affiliated to the research programme of senior clinical academic staff and would be supported in developing a programme of research activity for a Clinical Fellowship application. Provisions would be made for allocation of suitably experienced research supervisors, to attend postgraduate courses based within the Faculty and for any external training necessary to ensure progression through the period of postgraduate study. All ACF doctors in Southampton have access to a formal taught postgraduate research training programme which includes statistics, trial design, epidemiology, ethics, research governance, and project design. The ACF would be expected to attend Academic Unit joint academic meetings, and to make presentations of research findings at both this and the postgraduate conference, and other scientific meetings relevant to the area of investigation.

The Unit has a long track record of winning clinical training fellowships. Recent examples (since 2011) relevant to Experimental Pathology include: 3 MRC Clinical Training Fellowships, 3 CRUK Clinical Training Fellowships, 1 Pathological Society Clinical Training Fellowship, 1 MRC Clinician Scientist Fellowships, 1 CRUK Senior Fellowship). Following PhD completion, it is anticipated that Fellows will be appointed to NIHR ACL positions.

Description of clinical component of programme (up to 500 words):

The ACF will join the Wessex Specialist Training Programme in Histopathology which is coordinated through the Wessex Deanery. Subspecialist histopathology training programmes (neuropathology, paediatric pathology, oral and maxillofacial pathology) are also available. The experience offered will cover the training needs of future consultants in all aspects of

histopathology as well as academic career development. The post will be spent in a combination of clinical posts across Trusts chosen to provide training.

The intended learning outcome of the post is to achieve the standards required by the GMC for progression of training in histopathology.

Specifically, the clinical training programme will provide:

- the diagnostic techniques required to become a technically competent pathologist, and to master the underlying analytical and clinical principles
- the opportunity to become familiar with relevant specialist areas,
- training in the communication and teaching skills necessary for effective practice
- the acquisition of life-long habits of reading, literature searches, consultation with colleagues, attendance at scientific meetings, that are essential for continuing professional development (CPD)
- experience of the practice of clinical governance and audit (specialist and multidisciplinary) through evaluation of practice against the standards of evidence-based medicine, which underpin patient safety and good histopathology practice.

The ACF will have a named Educational Supervisor during their training. The supervisor will hold quarterly appraisals to review clinical progress and prepare a plan for the subsequent period. Annual Review of Competence Progression (ARCP) will be undertaken by the deanery at the end of each year of training, as outlined in *A Guide to Specialty Training in the UK* (Gold guide).

The ACF will join the programme at an appropriate level to their training needs. Although som time may be spent in a hospital outside Southampton, in general the ACF will spend most trainin time in Cellular Pathology at UHS (Southampton General Hospital). This is a busy teachin hospital which is co-located with the research facilities of the University/Faculty of Medicine. Th Cellular Pathology department in Southampton is the busiest in the region, reporting aroun 40000 histopathology cases a year, and also receiving 3500 non-gynaecological cytolog specimens annually. The department plays an important role as a tertiary referral centre.

Currently the department comprises 25 consultants. Nineteen Specialty trainees within the Wessex Histopathology Specialty Training Programme are based in Southampton. The remaining trainees are based in Salisbury, Portsmouth, Bournemouth, Dorchester and Chichester. The department also hosts the Year 1 Histopathology School, one of the original three Histopathology schools in England sponsored by the Department of Health. At present, there are four ST1 trainees in the Southampton School.

The Cellular Pathology department deals with many complex cases, including regional, national and international referrals. Services are currently provided within the specialist fields of:

- Breast pathology
- Cytopathology (cervical screening and diagnostic cytology)
- Dermatopathology
- Endocrine pathology
- Gastrointestinal pathology (including liver and pancreatic pathology)
- Genitourinary pathology (including renal pathology)
- Gynaecological pathology
- Head & neck and Oral & Maxillofacial pathology
- Lymphoreticular and haematopathology

- Neuropathology (including eye, muscle and peripheral nerve pathology)
- Paediatric and perinatal pathology
- Pulmonary pathology
- Soft tissue pathology
- Ultrastructural pathology

The department operates a system of specialist reporting to match the increasing specialisation within clinical teams.

Specific support provided to trainee

Particular research support and opportunities will be provided, depending upon the interests and training needs of the ACF.

Milestones and timing of achievement of academic and clinical competencies

The following milestones will be applied:

Year 1	
1	Initial training in Histopathology
2	Attendance at autumn introductory course provided by University of Southampton Postgraduate School of Medicine
3	Identification of topic of interest for research project and initial literature review
4	Identification of research questions to be addressed in pilot study through an iterative process of discussion and planning with the academic supervisors
5	Identification of specific learning needs for the project and appropriate courses
Year 2	
1	Continuing clinical training in Histopathology
2	Obtaining ethical committee and NHS Research & Development approval for exploratory project as appropriate
3	Attendance at relevant internal and external training courses and attendance at annual national/international conferences of relevance to the project
4	Initial data collection for pilot study
Year 3	
1	Continuation of Histopathology Training Programme
2	Completion of data collection and writing up of pilot research project and presentation at national/international conference(s)
3	Submission of clinical research fellowship application to external funding agencies

Passing the FRCPath part 1examination is also a requisite of trainees by the end of ST3.

How post links in to the NIHR approved Research Training Programme at your locality:

It is envisaged that a successful fellowship application will lead to a further three years in full-time clinical research, culminating in a PhD. There would then be a natural progression to a Lecturer position within the Faculty of Medicine. In the event of failure to obtain clinical

research fellowship funding for the full-time three-year research period culminating in a PhD, the research fellow could return to the Histopathology specialist training programme within the Wessex rotation.
Trainee centredness:
The training will be centered on the trainees' own needs, identified early during the first year, and by dedicated supervision during the post. The Fellowship will be tailored towards achievement of successful external funding.
Quality assurance of the programme:
The research methods training will be provided through the established Postgraduate School at the University of Southampton Faculty of Medicine. Academic supervisors have completed the postgraduate research supervision training provided by the University.
Mentoring Arrangements:
Mentorship will be provided by the academic and clinical supervisors to the fellow. This will be co-ordinated by Prof Ramsey Cutress (academic lead). Further mentorship and supervision can be undertaken through the normal governance arrangements for postgraduate research at the University of Southampton Faculty of Medicine. This will include mentorship through supervision of the emerging PhD programme and senior authorship of research fellowship applications to major funding agencies.
Academic Lead (University)
Name: Professor Elaine Dennison Position: Professor of Musculoskeletal Epidemiology Address: Faculty of Medicine, University of Southampton, Building 85, Life Sciences Building, Highfield Campus, Southampton, SO171BJTelephone: 023 8070 4021 Email: emd@mrc.soton.ac.uk
Academic Supervisor (University) Details:
Professor Gareth Thomas Professor of Experimental Pathology Cancer Sciences Unit, Faculty of Medicine, University of Southampton, Somers Building, Tremona Road, SO16 6YD Telephone: 02381 205745 Email: g.thomas@soton.ac.uk
Education Supervisor (Trust) Details:
Dr Hannah Markham

Consultant Histopathologist Dept. of Cellular Pathology, University Hospital Southampton NHS Foundation Trust, Southampton SO16 6YD Telephone: 02381 206634 Email: Hannah Markham Hannah.Markham@soton.ac.uk
Clinical Supervisor(s) Details:
The Dept. of Cellular Pathology contains 25 consultants specialising in different fields (eg neuropathology, paediatric pathology). Clinical supervisors will be chosen according to the clinical and research interests of the trainee.
Deanery Programme Training Director Details:
Name: Dr Natalie Brearley Consultant in Histopathology, Queen Alexandra Hospital Portsmouth PO63LY Telephone: 023 9228 6000 Email: natalie.brearley1@nhs.net
Deanery Programme Manager Details:
Ysabel Hensford Education Programme Manager Email: england.medicine.wx@nhs.net
Confirmation that ACF posts attract an Academic NTN (ACA):
This post will attract a National Training Number with a specialty component of ACA to identify as an Academic.