Academic F2

JOB DESCRIPTION

Research Training with Academic Training Opportunities

4 month rotation (one post)

Immunohistochemistry and molecular cell biology

Lead Academic: Dr. Derek P. Brazil

Centre: Wellcome-Wolfson Institute for Experimental Medicine

Contact Details: d.brazil@qub.ac.uk

028-9097-6469

Outline of the post

Prior to starting the placement

The Brazil group is based in the Wellcome-Wolfson Institute for Experimental Medicine on the Belfast City Hospital site. The group is interested in Gremlin1, a molecule that plays a key role in human diseases such as colorectal cancer, diabetic nephropathy and lung fibrosis. The Brazil group has shown that patients with high levels of Grem1 expression in their colorectal cancers have poorer survival rates. In addition, Grem1 expression is associated with the CMS4 stromal, metastatic subtype of colorectal cancer. The group is working to elucidate how Grem1 expression drives aggressive cancer formation, and also identify whether Grem1 can be detected in patient serum as a potential early biomarker for disease detection. Finally, the Brazil group have developed novel, small molecule inhibitors of Grem1 that are being developed as lead compounds for therapeutic Grem1 inhibitors to treat colorectal cancer, diabetic nephropathy and other diseases.

The trainee should read up on the Brazil group and ongoing research activities:

https://pure.qub.ac.uk/en/persons/derek-brazil
https://www.qub.ac.uk/schools/mdbs/Research/find-a-phd-supervisor/dr-derek-brazil.html
https://vimeo.com/qubmarketing/review/360214697/eba9a6eb50

Background reading of publications from the Brazil laboratory. Familiarisation with theory around laboratory techniques such as Western blotting, PCR, immunohistochemistry, in situ hybridisation.

Generic academic skills

Literature review focussed on the role of Gremlin1 and BMP signalling in colorectal cancer and kidney fibrosis. Data analysis and statistical interrogation. Presentation at group meetings, Writing of papers.

Academic component

The trainee will be exposed to the range of research activities here in the Wellcome-Wolfson Institute for Experimental Medicine. Attendance at weekly seminars will provide exposure to cutting-edge research here at QUB and also from external institutions. The trainee will be expected to write up their results and present them to the centre at the end of their placement. It is expected that results from the trainee will be included on published abstracts and research papers from the Brazil group. Completion of this placement should place the trainee in a strong position to apply for a PhD and pursue a career in clinical academic medicine.

Research skills

This 4-month placement will involve the trainee joining the Brazil research team here in the Wellcome-Wolfson Institute for Experimental Medicine. The trainee will be part of the project team focussed on elucidating the role of Gremlin1 in colorectal cancer and kidney fibrosis. Tissue samples from patients and mouse models of disease will be analysed by immunohistochemistry staining for Grem1 in biopsies to map the expression of Grem1 in diseased tissue. In addition, levels of Grem1 in serum samples will also be analysed by mass spectrometry to identify the potential of Grem1 as a prognostic/diagnostic/therapeutic marker for colorectal cancer, diabetic nephropathy and other diseases. The trainee will compare these laboratory findings with other clinicopathological correlates from patients to provide correlative evidence of Grem1 protein expression and patient outcomes.

Teaching skills

Opportunities to teach undergraduate medical students in small group teaching, as part of the new C25 medical curriculum.

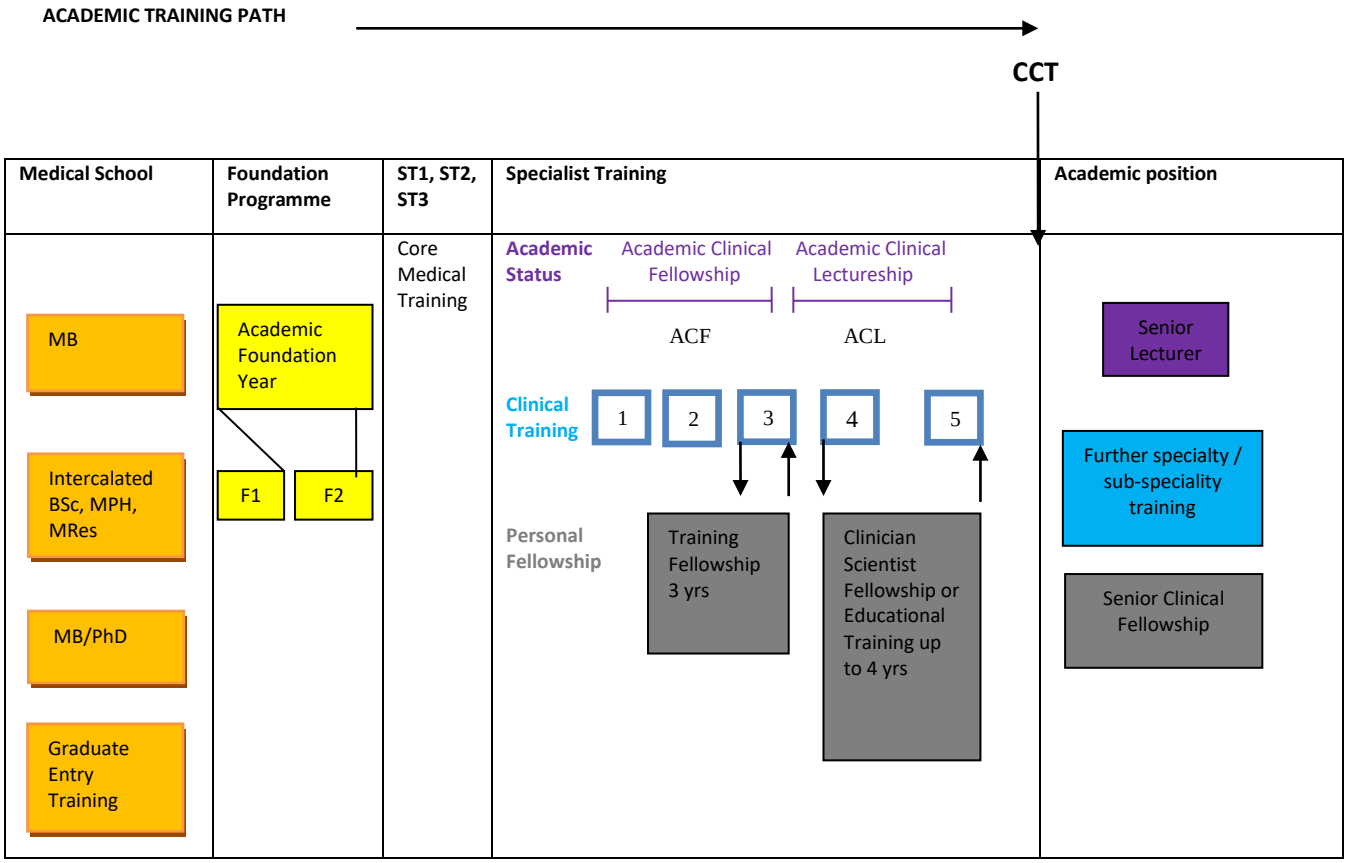
Clinical component

The trainee will obtain one-two sessions per week of clinical training (depending on clinical and scientific research interests) at the Cancer Centre, Belfast City Hospital, under the supervision of Dr. Vicky Coyle, Clinical Senior Lecturer and Consultant Oncologist. Dr. Coyle will act as the educational supervisor for the trainee and allow them to complete a series of clinical competencies in oncology during their 4-month placement.

Provisional job plans

Example Template (flexible sessions are possible, to be discussed with Dr. Brazil)

	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
a.m.	x	x	**x**	x	x
p.m.	x	x	Clinical session	x	x



The timings of personal fellowships are indicative – there should be flexibility according to individual career progression

Academic F2 : Academic F2 training posts are for 4 months.
This will be with two other rotations one of which will be a General Medicine attachment.

ACF/ACL: Trainees already appointed at ST3 or above are eligible to apply.
Trainees who have undertaken postgraduate research (PhD or MD) should have already submitted their thesis, or be within three months of submission.