

A Career Involving Clinical Research – Potential Tracks to Success

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In whatever branch of medicine we work as clinicians, research rightly underpins and informs what we say, do and deliver in our practice. It is therefore axiomatic that all doctors need to be research aware and UK Medical Schools have an extraordinarily strong tradition of introducing research opportunities and projects to medical students. Indeed, Medical Schools can be seen as a major engine of medical research in the UK, research which is acknowledged to be at the forefront internationally. These opportunities vary from vacation projects to intercalated BScs embedded within the medical curriculum. But importantly, medical progress and innovation additionally depend on the UK generating and maintaining a cohort of doctors who as juniors and seniors spend a significant part of their working week engaged in research – medical academics. Their research may be orientated to deliver improvements in care, novel treatments or enhanced understanding of disease pathogenesis. For my money, this job – that of the medical academic or clinician scientist - offers the most exciting, challenging and stimulating of careers and establishes a lifetime flush with opportunities, intellectual challenge and achievement.

On a UK basis, the last 20 years have been characterised by a renaissance in basic, clinical and translational research. Driven by the rapid developments of key technologies in, for example the field of genetics, this renaissance has also been the result of concerted efforts by Medical Schools, research funders including the Medical Research Council and the Wellcome Trust, the NHS, the NIHR and Chief Scientists Office, NHS Education Scotland (NES) and the Academy of Medical Sciences, to establish robust career pathways for doctors interested in becoming clinician scientists. In turn, this career focus has driven the development of structured programmes orientated to support junior doctors interested in research and developing their careers as clinician scientists to achieve their goals and develop their research pedigree alongside their clinical competences, leadership skills and other aspects of their professional development. This model career pathway in England and Wales links academic FY programs with academic clinical fellowships (or ACFs) from which candidates can emerge into specialist training and/or PhD research before going on to become clinical lecturers and position themselves for more senior research funding. This structure resulted from two National reports; The Savill report commissioned by the Academy of Medical Sciences in 2000 and the so called “Walport Report” delivered in March 2005.

The Universities and NHS in Scotland responded in a slightly different way to the Savill and Walport reports, establishing a parallel but distinct career structure. In Scotland academic training falls under the umbrella of SCREDS (The Scottish Clinical Research Excellence Development Scheme) which is steered and diverted by representation from NES and the Scottish Universities. Under the aegis of SCREDS, each Scottish medical school has established an academic career track (with relatively subtle variations from one school to another) which provides a fertile environment for clinical academic careers. Most importantly each of these schemes provides support and mentorship – vital for sustaining career enthusiasm and direction whilst juggling the twin challenges of clinical and academic training. Termed clinical academic tracks or CATs, these programmes link academic FY (and non-academic FY) schemes with core and specialist training (ST) opportunities and support to obtain funding for PhD studies at the ST stage in addition to providing postdoctoral SCREDS/NES funded clinical lectureships. More detailed information on each of these schemes is available on the individual websites of the Scottish Universities listed below.

How then does a medical student interested in developing a career as a clinical academic negotiate their way through the clinical academic training schemes to success? The first major milestone in such a career is to establish ones credentials as motivated and interested in research. This might take the form of undertaking an Intercollegiate BSc; or for those who can't make such a commitment, contributing to research projects as an undergraduate and the early phases of clinical training is invaluable as a means of gaining experience and building the academic component of one's CV.

Each of the Scottish Universities, collaboratively with their local Health Board and NES, now offer an academic FY scheme. These vary in their configuration but provide the trainee with the opportunity to undertake some research and, in some cases, formal research training in specific methodologies such as statistics. The rich eco system of differently composed academic FY programmes offers a range of research experience for medical graduates. However, not all candidates may be able to access such positions or there may those who (like the author) were "late developers" and realised that they have an interest in research after this stage, perhaps in core training or specialist training.

It is important to recognise that not getting a place on an academic FY scheme does not close the door to an academic career. Indeed, some of the most impressive individuals that I've interviewed for national schemes have come from non-academic FY and ST positions. But a characteristic feature of these individuals is long standing engagement and delivery of research even while undertaking busy clinical training jobs (see my comments above). The secret to success at both the FY and ST stages, whether in an academic or non-academic position, is good mentorship. Seek the support of a successful academic in your institution who understands the

system and can offer you advice as you make critical choices. Such an individual is also well equipped to steer you to research opportunities and other researchers that may support and assist you as you develop your career.

Just as with academic FY positions, in creating Clinical Academic Tracks at the core and specialist training stages, the differences in approaches between the individual Scottish Universities and Medical Schools have created a landscape rich and varied with respect to opportunities; opportunities that will suit the range of aspirations and requirements that individual trainee clinician scientists require. In broad terms, each University teaching hospital has core training and opportunities linked with academic clinical groups and specialties. My personal view is that the aspiring academic should place emphasis on gaining a specialist training (ST) position. Because it is generally during ST training that individuals are best placed to take the next major step in an academic career; that of taking an out of programme experience to undertake a PhD. The PhD is the essential building block of an academic career and one which should remain the focus of the aspiring academic clinician scientist. Additionally, all Universities have been allocated SCREDS/NES funded clinical lectureships which allow those who have completed a PhD to complete their higher specialist training combining academic endeavour with their further clinical training and thereby ensuring that clinical competences are complimented by the development of a strong academic pedigree that will position the doctor to apply for future research grants and if appropriate further fellowships.

It is impossible in a brief summary such as this to describe in detail the various schemes and opportunities. It is suggested the reader uses the web based material listed below. But examples of the variation in approach developing clinical academic tracks include the focus in Glasgow on a series of core training positions that have been grouped to provide research opportunities, mentorship and support under the GATE scheme. Edinburgh has a portfolio of Wellcome Trust funded PhDs that are advertised and deployed to provide doctoral opportunities for successful trainees. In Edinburgh these have been linked with clinical lectureships to provide a form of “run-through” academic training (ECAT lectureships) so that the successful doctoral student exits to a lectureship and can complete training in their competencies together with accruing critical academic experience to reach the next stage in their career.

Whilst working towards and achieving funding for a PhD may seem somewhat distant and daunting at this stage, it is an eminently achievable goal for the keen, motivated and tenacious. There has never been a better time to apply. Key funders have significantly enhanced PhD funding in the last 10 years. For example, through their portfolio and national schemes, the Wellcome Trust has doubled the number of PhD opportunities available for UK medical graduates. Additionally investment by the Medical Research Council and other major charities

including Cancer Research UK has enhanced the available PhD opportunities for medical graduates.

So what are the take home messages from this, necessarily, brief synopsis of academic tracks in Scotland? For the medical students and young junior doctors interested in an academic career, the key issues are to demonstrate a commitment to research and academic endeavour; become involved in research projects and relish the chance that a busy clinical job provides not only for clinical experience but to provide research questions and opportunities. Retain a focus on your ambition and career and understand that the key building block over the 5 to 7 years after you qualify will be obtaining funding for and delivering a PhD. Don't be daunted by the idea of working towards and obtaining funding for a PhD; there has never been a better time to do so in terms of the funding opportunities or, arguably a more exciting time to become involved in research, given the wealth of technologies that can now be applied to clinical questions.

Finally and most importantly seek and exploit mentorship. The value of high quality mentorship at all stages of a clinical career, but particularly as you emerge from medical school into the professional clinical arena, cannot be underestimated.

Websites for Scottish Academic Career Track Programmes

Aberdeen - <http://www.abdn.ac.uk/acat>

Dundee - <http://medicine.dundee.ac.uk/dcat>

Edinburgh - <http://www.ecat.ed.ac.uk>

Glasgow - <http://www.gla.ac.uk/colleges/mvls/graduateschool/academicandclinicaltraining/>