

Is an Academic Career for you?

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You probably have some important questions about your career. Like which clinical specialty best matches your interests and provides the best work-life balance? But I want to pose the question about what part research, teaching and leadership should play in your career. Medical school rightly focusses on preparing you for clinical practice, and while it looks to provide opportunities for those who want to develop an academic career, it is a road less travelled.

Medical students receive an outstanding science education from some of the best medical researchers in the country. Their scientific literacy is contextual and thorough, but often fades during the clinical years of medical school and can suffocate under the weight of administration during the early post-graduate years. For those doing vocational training in surgery there is a second bite at the cherry, an opportunity to sharpen scientific literacy with the entry Part 1 examination, but little of this is required for the exit Part 2 examination where the focus is on fitness for surgical practice.

The practice of surgery is becoming increasingly sophisticated. In writing about the relevance and rigor of medical education, Professor Julie Dienstag stated 'we should expect a high standard from our (trainees) who wish to pursue their career in an era in which genomics and informatics will revolutionise biomedical science and healthcare. To fulfil expectations, (training) needs to foster scholastic rigor; analytical thinking, quantitative assessment and analysis of complex systems in human biology. Our goal should be to help trainees acquire a different, more molecularly orientated and scientifically sophisticated knowledge base'.¹

The purpose of this article is to promote your thinking about the possibility of an academic career. Please note that while I necessarily write from a surgical perspective, much of what follows is germane to all branches of medicine.

Oxymoron

It is not surprising that only 5-10% of graduates become 'clinical academics' or 'clinician scientists' given the rather inconsistent scientific training. While some of these medical graduates will end up in University employment, it is not always so. There are many examples of those who have made telling contributions to surgery from clinical practice. They too are clinical academics, although they may not be as comfortable with such a description. During my own surgical training the appellation 'academic' was often used in a pejorative manner, especially when applied to surgeons. It was said by some that an academic surgeon was someone who could not operate and was encouraged to do research. In 1996 the editor of *The Lancet*, Richard Horton referred to surgical research as an 'oxymoron'.² While there may have been some truth in that, there was also some prejudice which could be traced back to the days when surgeons were derided by physicians, trained on the streets rather than in the cloisters, craftsmen rather than intellectuals, gathering in guilds rather than Universities. Sir Robert Platt, Oxford University, expressed it this way back in 1963: 'Surgeons I suspect, see themselves in a setting of glamour; conquering disease by the bold strokes of sheer technical skill. Physicians quietly remember that they were educated gentlemen, centuries ago, when surgeons were tradesmen'.

What is an academic?

The term 'academic' needs to be unpacked. One dictionary states that an academic is someone who is 'theoretical, not practical, realistic or directly useful', and who is 'scholarly but lacking in worldliness, common sense or practicality'. No surgeon would want such a description, because practical skills and common-sense are essential to good surgical practice. And there is an important place for the 'theoretical' and the 'scholarly' in surgery. Academic surgery combines both academic rigor and surgical finesse, and are not mutually exclusive or an oxymoron (Figure 1).

Recognising some difficulties with the term 'academic', the Section of Academic Surgery in the RACS has provided a useful definition: 'an academic surgeon is somebody who has chosen to acquire specific training and experience in research and/or education and/or leadership, and to make this a significant part of their professional career'.³ Note that being an academic surgeon is not determined by your employment contract or your place of work.



Figure 1. Academic surgery: the blending of academic rigor and surgical finesse

Intertwined elements

All of this might sound a bit dry, but it really isn't, for in practice a career in academic surgery is an exciting weave of four elements: clinical practice, research, teaching and leadership. These are about the application, acquisition, dissemination and continuance of surgical knowledge and skills, respectively. They comprise the ecosystem of academic surgery, sustaining it and taking it forward. The first, the application of evidence-based, cutting-edge surgical care (literally) is an exciting privilege. Within the daily practice of surgery there is the opportunity to challenge orthodoxy, introduce new approaches, shift boundaries and leave the process and results of care better than when we started. Reflecting on the daily practice of surgery highlights gaps in knowledge, historic assumptions, unanswered questions and areas where improved outcomes are needed. Often these questions arise from a sort of cognitive dissonance, where observations don't fit with our knowledge framework. Pausing to recognise this and then to frame a question or hypothesis is at the very heart of academic surgery.

Francis Moore, one of the doyens of academic surgery, said that 'the surgical investigator must be a bridge tender, channeling knowledge from biological science to the patient's bedside and back again. He traces his origins from both ends of the bridge'.⁴ In this way, an academic surgeon needs to be bicultural and bilingual, understanding the culture and the language of both the clinical and scientific settings. She is able to shuttle

questions and potential answers in both directions, and thus contribute to the advancement of knowledge.

No two academic surgical careers are alike. The relative importance of the four elements of academic surgery differ between individuals and change through the years. For instance, during surgical training, the focus must be on gaining mastery of clinical surgery. During the middle years of busy clinical practice there are tremendous opportunities to help train the next generation of surgeons, spending more time on the other side of the operating table. While conducting studies and publishing is something that might wax and wane through an academic career, it is common to see this become a stronger element over time. With increasing experience and influence, more opportunities to make contributions through leadership occur in the second half of one's career. But not always.

Academic training

The knowledge, attitudes and skills of academic surgery are not an automatic by-product of surgical training. The Royal Australasian College of Surgeons was founded to promote two pillars – surgical training and surgical research.⁵ Historically, it has done extremely well with the former, but it has been somewhat inconsistent with the latter: It recognises this now, and has defined 'scholar and teacher' within their competency framework, but this is a work in progress, seeking to improve our understanding of what this means and how best to train for these competencies. The RACS has largely devolved surgical training to the different Specialty Associations and Societies, and the requirements for research training during vocational training is quite variable between them. There is even less emphasis on gaining skills in surgical teaching and leadership. In the United States, the American Surgical Association report on Surgical Education raised concerns that 'research training in surgery is regarded almost as an afterthought, and that the surgical profession has not placed a premium on its development and support...and that it lacks structure, organisation and oversight that are so well developed in clinical training'.⁶

The motivation for doing research training varies from individual to individual. For the majority, it is about fulfilling a training requirement, ticking a box, and moving on. For the minority, it is the quest to acquire the range of skills that will allow them to be strong contributors through a combination of research, training and leadership. When it comes to research training, it is helpful to make a distinction between what is required for all future surgeons and what is required for the minority who embark on a career in academic surgery.⁷ It is no different from anatomy, where all surgeons need a foundational knowledge of anatomy, but not all surgeons need to become academic anatomists. The foundational research competencies for all surgeons continue to be refined and are usually acquired through courses and research activities undertaken during training. A different approach is needed for those who are training to be academic surgeons. It is usual to take leave from their training program, for a period of full-time research training, often over a 3-year period, with the goal of attaining a PhD.

The timing of this full-time research training is the subject of some debate.⁸ The advantages of doing a higher research degree during surgical training (rather than before it) are that you have secured your position in surgical training (which is, after all, the primary career objective), the specialty has been decided (making it possible to better match the research to your clinical interests), and the funding of the research is easier (because the RACS Foundation can help).

Embarking on full-time research training is a brave decision, and you will want to reduce any risks. Having some prior experience of research is important for you (so you know you want to do it) and for the University (so they know you can do it). The most important decision to be made is not in which University or Department you should do your research, but who you are going to be supervised by. Supervision is critical. Less important is the subject area of the research, because it is just as much about your development as a researcher as your contribution to the body of scientific knowledge. When thinking about the sort of research

you might want to do, it is helpful to appreciate the breadth of surgical knowledge (and opportunity) and how it is acquired (Figure 2).

The focus of this article has been on those who might want to develop a career in academic surgery. Without people prepared to commit to such a career progress in surgery would be slow. Such a career requires careful planning and no little commitment. However, the training investment brings enormous opportunities for contribution and immense satisfaction throughout a professional career, where the balance of the elements might vary through different phases. When I was trying to decide whether an academic career was for me, my mentor asked if I wanted to keep doing things the same way, or to help find ways to do it better. For me there was no choice. And for me 'academic surgery has been the perfect blend of the cerebral and practical'.⁹

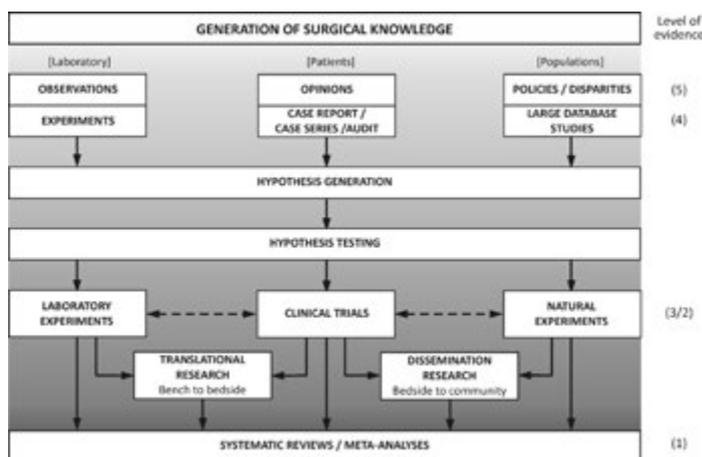


Figure 2. The generation of surgical knowledge, settings for research, types of studies and their relationship to levels of evidence.

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