

The Bumpy Path to Successful Academic Surgery: A Roadmap for the Surgical Resident

U. Güller^{a, d} O. Kempster^e M. Zuber^{b, c}

Departments of Surgery, ^aUniversity of Bern, Bern, ^bUniversity of Basel, Basel, and ^cCantonal Hospital Olten, Olten, Switzerland; ^dDepartment of Surgery, University of Toronto, Toronto, Ont., Canada; ^eInstitute for Neurosurgical Pathophysiology, University Medical Center Mainz, Mainz, Germany

A career in academic surgery can be a challenging undertaking, with many potentially daunting hurdles to overcome. What does it take to succeed in the field of academic surgery? Which aspects are needed to excel as an academic surgeon?

The objective of the following short article [1] is to provide a guide for the surgical resident who has the desire and enthusiasm to become an academic surgeon.

Be a Good Clinician

We firmly believe that a successful academic surgeon should be both an excellent clinician as well as a prolific researcher. It is cardinal that academic activities do not compromise clinical training and patient care. If an academic surgeon does not care for patients, has poor clinical judgment, or mediocre operative skills, the value of his or her research becomes questionable, regardless of the number of peer-reviewed publications or the amount of extramural funding he or she can boast. Patient care comes first!

Persevere

Perseverance is central to a successful career in academic surgery [2]. The acquisition of patient data and subsequent analysis can be extremely tedious and frustrating. Moreover, only rarely do manuscripts or grant submissions meet with immediate success. In many cases, acceptance is contingent upon major revisions, or even more likely, the article will simply be rejected out of hand. It is essential that the aspiring academic surgeon remains undiscouraged by these setbacks and continues resolutely in his or her course of action. The authors, themselves, experienced having a manuscript rejected multiple times by high-quality journals before it was finally published. It would have been easy to abandon this manuscript in profound frustration after the third or fourth rejection, but the authors were convinced that the article had real merit and should be offered to the surgical community.

In another instance, one of the authors submitted an article to a high-impact factor, peer-reviewed surgical journal, which was summarily rejected. Persistence, however, paid off: when the author carefully read the reviewers' remarks, he found that some of the comments that had prompted the rejection of the paper were, in his esti-

mation, unjustified. He therefore decided to write a letter to the Editor-in-Chief appealing against the decision and explaining why he believed the rejection was inappropriate. The manuscript was sent out to other reviewers who judged it favorably, and it was published in the journal shortly thereafter.

Winston Churchill once said: 'Success consists of going from failure to failure without loss of enthusiasm'. He was right.

Work Hard

Hard work is a sine qua non to becoming a good academic surgeon [3]. Teaching, grant writing, data acquisition and analysis, publishing, and public speaking devour one's time and energy. It is thus essential that the aspiring academic surgeon regularly sets aside time to devote to research activities. This can be early in the morning or late at night, on the weekends or during the increasing spare time during 'compensations'. In many European countries as well as in North America, work hour limitations for surgical residents were introduced over the past decade. We are convinced that adhering to strict work hour limitations is incompatible with excellence in academic surgery, which cannot be mastered within the compass of such arbitrary limits. Fortunately, however, the work hour limitation undoubtedly makes possible the pursuit of scientific endeavors in addition to clinical duties [4]. Therefore, our advice is: Take as much advantage as possible of the work hour limitations by reading and writing regularly when you are free of clinical duties.

Work in Groups

We firmly believe that working in groups is advantageous in many ways. First, two brains are better than one, three brains better than two, etc. We have often found discussing ideas for scientific studies or grants with peers and mentors to be invaluable, as critical and frank feedback is indispensable to such efforts. Second, by working in groups, researchers can take advantage of the unique talents and experience of each member of the group. One person may have special in-depth knowledge of statistics; one may be an excellent bench worker; another might have database management skills; and one might be a gifted English-language writer. Such a division of labor makes the most of the resources at hand and renders ef-

forts far more efficient. Finally and most importantly, we believe that it can be both more pleasant and stimulating to work in groups, where successes can be shared and frustrations and failures can be met with support and encouragement. We all have had the pleasure of collaborating on numerous research projects with outstanding and inspirational researchers. Not only was the scientific output excellent, but we also have many fond memories of our work together.

Find a Mentor

Mentorship is a crucial part of the journey to becoming an academic surgeon [2–6]. The 'ideal' mentor is experienced and well-respected in his field; has a vocation for teaching; is motivated by a selfless desire for encouraging excellence in others, and has an abiding enthusiasm for educating promising surgical residents. A mentor should supervise, guide, and advise the resident, providing opportunities for involvement in promising research projects, talks at scientific meetings, and membership in professional associations. We have been fortunate to have had some wonderful mentors on our surgical paths; many of them have become close personal friends, as well as colleagues.

Find Your Niche

On the way to becoming an academic surgeon, it is critical to find a niche for yourself, an area of expertise. This can be anything related to surgery or surgical research: you can become the expert in performing meta-analyses, statistical computations, setting up access databases, knowing a particular technique for basic research, etc. It really does not matter what your niche is, however, it should be an area, in which you know more than anybody else. You should be the person that other surgeons consult and refer to, you should become *the expert*. One of the authors performed a research fellowship, during which he mainly focused on statistics and medical epidemiology. It was an excellent, intense, and productive time fully dedicated to research, during which he was able to lay the groundwork for his academic career. Ever since this fellowship, he is being consulted regularly by other surgeons to perform sample size computations, statistical analyses, and give input in designing clinical trials. There is no doubt that being 'an expert' in the field of statistics and study design positively impacted his career.

Be Honest

Although perseverance, hard work, mentorship, and collaboration are all essential for a successful academic career, we believe that without integrity, one cannot hope for fulfillment in one's career – or, for that matter, life in general. There will be many times when the aspirant may stumble in his or her career. We believe that in most of these cases it is possible to bounce back from mistakes as long as one is honest, transparent, and candid. There are many situations – both in the clinic as well as in research activities – where one may be tempted to 'cut corners' on the way to academic success. This temptation should be resisted without compromise.

Treasure Friendships and Family

The surgical world – despite its enormous rewards and highlights – can be tough. The workload is high [7], the education is very intense, surgical complications will in-

evitably happen and may be emotionally difficult to deal with. It is thus critically important to have friends and family, people outside of work, with whom moments of success and profound satisfaction as well as dire times can be shared [7, 8]. Friendship and family must be treasured as they are an invaluable source of strength, comfort, and joy [2, 9, 10].

Enjoy What You Are Doing!

There is no doubt that academic surgery can be supremely rewarding and satisfying. For us, surgical research has always been the icing on the cake of our medical careers. It is wonderful to be able to apply research findings at the bedside, while at the same time using interesting phenomena observed in clinical practice as a stimulus for research that may itself some day improve the standard of patient care.

The path to academic surgery can be bumpy, but it is a great ride nonetheless!

References

- 1 Güller U, Zuber M: The bumpy path to successful academic surgery. *Swiss Knife* 2007; 4:22 (not indexed).
- 2 Brennan MF: Lessons learned. *Ann Surg Oncol* 2006;13:1322–1328.
- 3 Eberlein TJ: 'The little red book' – sayings of chairman Brennan. *J Am Coll Surg* 2007; 205(4 suppl):S99–S100.
- 4 Stamp T, et al: Before and after resident work hour limitations: an objective assessment of the well-being of surgical residents. *Curr Surg* 2005;62:117–121.
- 5 McCord JH, et al: Surgical career choices: the vital impact of mentoring. *J Surg Res* 2008.
- 6 Suliburk JW, et al: Training future surgical scientists: realities and recommendations. *Ann Surg* 2008;247:741–749.
- 7 Hockerstedt K: Surgeons' self-esteem: a change from too high to too low? *Ann Surg* 2006;244:841–844.
- 8 Balch CM, Copeland E: Stress and burnout among surgical oncologists: a call for personal wellness and a supportive workplace environment. *Ann Surg Oncol* 2007;14: 3029–3032.
- 9 Campbell DA Jr, et al: Burnout among American surgeons. *Surgery* 2001;130:696–702; discussion 702–705.
- 10 Spickard A Jr, Gabbe SG, Christensen JF: Mid-career burnout in generalist and specialist physicians. *JAMA* 2002;288:1447–1450.