Establishing an independent academic career is a lofty goal and junior physician-scientists have an especially complicated balancing act: caring for patients, conducting experiments and meeting regulatory requirements for human or animal subject research. This balancing act is often accompanied by teaching and administrative tasks, as well as the need to plan a coherent research program, obtain grant funding, and publish in scientific journals while, meanwhile, the clock is ticking. The effort requires a mix of scientific, technical, project management, and interpersonal skills. More intangibly, the path to independence requires flexibility, persistence, and self-confidence. Strong support from an academic institution, stronger support from a mentor and the ability to balance the many facets of both professional and personal responsibilities is essential. For those with such an inclination, successfully combining a clinical and research career can be quite rewarding but it is a career path that carries unique challenges and requires a specific skill set. This may explain why only 199 investigators have completed the clinical investigator programs designed to augment research training in medical residents in Canada since 1995.1

Establishing productive independence is an achievable goal and while there exists no “template for success,” our experiences of the transition to new investigator, many of which are echoed by colleagues, may identify some of the necessary skills and resources.

Pace yourself

While the ultimate goal of establishing an independent research career is obviously independence, striving for complete autonomy too soon can be problematic. It is often easier to obtain larger grants when pilot data or “proof of principle” concepts have been obtained from smaller projects, or as part of collaboration. Many successful careers have been established from work that began as a small part of a senior investigator’s larger project. It is also important to take advantage of resources available within your academic department or institution. Obtaining peer reviewed feedback of grant proposals before submission is a mandatory part of some training environments but, even when this process is not required, it is often readily available if requested. It can also be invaluable. Successful investigators within a faculty are usually willing to review a grant proposal for new investigators, and often have been part of a grant review board. It is important to realize, however, that this type of request should not...
be accompanied by a 24-hour deadline and requires the ability to be open to feedback and criticism. The research departments at most academic institutions are also able to help with this process, helping to identify individuals who have been successful in a competition and facilitating contact. They can also be a source of information regarding funding opportunities and career development programs such as grant writing seminars.

Collaborate

It is often necessary when establishing a research career to think outside the box, or in this case, outside your department. Multidisciplinary collaboration allows for networking and the opportunity to access a variety of different research opportunities. Publications that combine your research area with investigations from a different discipline offer opportunities. It often simply requires an email to researchers in another program, identifying who you are and what your interests are. It is important to be proactive and to advocate for you ideas.

Accept rejection

In 2007, 20% of all New Investigator awards to the Canadian Institute of Health Research (CIHR) were successful\(^2\) and of the 22, 148 single investigator ROI grants reviewed by the National Institute of Health in 2006, only 3610 (16.3%) were funded\(^3\). Over the 25-year period between 1978 and 2002, the median age of doctoral biomedical researchers receiving their first independent research grants from the NIH rose from 37 to 42\(^4\).

What this ultimately means is that rejection is an inevitable part of the trajectory of an academic. While rejection is never pleasant, it can be educational. If afforded the opportunity, one should always try to find out why a proposal was unsuccessful. This option is not always available, however, and in these instances obtaining feedback from senior investigators can be an asset. It is often helpful to be able to discuss things with a mentor or colleague. The knowledge that even those with successful careers still have to deal with rejection can be invaluable.

Balance

Achieving balance between a professional career that requires significant time commitment while still affording time for a personal life can be a complicated endeavor. Above average time management skills are an asset, as is the ability to say no. Saying no can be difficult for a new investigator, especially when coming on faculty at an institution in which you trained. It may be difficult for others to view you as a colleague instead of a student, and it often takes time and assertiveness to successfully accomplish this transition. Establishing goals and prioritizing is key. Obligations outside those linked purely to the research and clinical aspects of your career are part of being an academic, but so too is accepting the fact that you can not do it all and that time has to be made for people and activities outside your career. Often, talking to a mentor or colleague who seems to have achieved this balance can be an asset.

Seek good mentoring

The original Mentor was a friend of Ulysses, entrusted with the protection and guidance of Ulysses’ son Telemachus (see Barondess 1997 for a brief discussion of Mentor’s role in Telemachus’ development into adulthood).\(^5\) It is widely noted that mentoring is a respected tradition in medicine but, despite the often highly valued experience of mentoring and being mentored, factors that predict the success of a mentoring relationship are not well described. Sambunjak and colleagues\(^6\) recently conducted a systematic review of mentoring in academic medicine. Mentorship was widely reported to have an important influence on personal development, career guidance, career choice, and research productivity, although the investigators note that at the present, “the quality of evidence does not allow practical recommendations to
guide mentors in doing a better job and mentees in selecting a mentor”. In addition to a paucity of empirical data describing the successful components of mentoring, other investigators have gone so far as to speculate that there may be dynamic interpersonal factors that lead to a reluctance to examine mentoring relationships in great detail as they often involve the blurring of boundaries between clear supervisory relationships and friendship, where the disclosure of personal experiences and opinions exceeds that of typical work relationships. Indeed, Levinson, whose widely noted work described the complex nature of mentoring relationships, noted that they may develop into lasting friendships; the relationship between Osler and Cushing, for example, is a famous case in point.

Despite the lack of data on the important factors predicting success in mentoring relationships, there is widespread and general agreement that mentoring relationships encourage success in academic medicine. Whether this is because the personal qualities possessed by a person who is amenable to being mentored are likely to predict success independent of the mentoring relationship remains unknown. The fact is, however, that most reports suggest that respondents view mentoring as an important feature of success, and a great deal of time and attention is now

As you transition to new investigator and beyond, the roles and requirements of a mentor may change and more than one individual will be a source of advice and guidance. We have each benefited from several people who have mentored us in different ways and at different times in our professional development. Most researchers can identify the one person who has been instrumental in career development, and our own experiences are no different. The ability of a mentor to offer support and guidance, feedback and criticism, and the invaluable experiences of having dealt with many of the same struggles you are facing cannot be over emphasized. As we move along our career paths and provide support for those who are junior to us, we try to replicate with them the experiences that we have had with our mentors, hoping that this, above all, else is a sign they did their jobs well.

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