

## Editorial

As educators, we have a broad remit to provide our students with a solid pedagogical foundation on which they are able to learn to be competent health professionals. One could argue that our job ends there, but I doubt anyone reading this journal would agree. In fact, designing and delivering a curriculum should be the vehicle that provides educators with the many options available to students to enhance their future careers as health professionals. Enhancing student learning through opportunities to help them make the right career decisions and improve their employability are certainly within our responsibility as educators. Research training is a good example, as it imparts important and unique skills that help improve students' analytical thought processes and encourages them to think critically about how to approach a clinical problem and appraise the relevant clinical literature. While this training is most commonly thought of as medicine-centric, the benefits of research training are universal across all health professions. Papers included in this issue deal with programmes that shape student decisions about that next step toward committing to a chosen career path (Weston, Garne, Bushnell and Hudson) or enhancing their future career, for example, as a clinician-scientist (Anderson, Johnston, Gunnarsson and Larkins).

A clinician-scientist is a health professional with additional research training. This training is traditionally a research higher degree, either an MPhil (research master's degree) or a PhD. Instruction in scientific skills alongside medical training first appeared in the 1800s at Harvard and then Johns Hopkins University (Bromley, 1999). It was not until the 1950s that the modern clinician-scientist model of education was introduced, and it continues to be recognised as vital to progressing medical research and improving patient care. In medicine, this clinician-scientist training is traditionally undertaken in the undergraduate years, e.g., MD-PhD, which is the common model in North America, where long established programmes provide full support to students who incorporate the PhD with their medical degree. Completion of both degrees ranges between 6 and 15 years. In contrast, programmes in Europe and the UK focus research training across the continuum of postgraduate clinical years. Although not a postgraduate research higher degree, the research honours is a customary programme in the UK, Europe, Australia and New Zealand. As a foundation for research training in its own right, it serves as an indicator of research readiness to advance to a masters or PhD.

While there is universal confirmation of their importance to healthcare, the past 4 decades have seen a decline in numbers of clinician-scientists (Schafer, 2010). The reasons for the universal decline in their numbers are multifaceted and similar worldwide. The extra time to complete both degrees is probably foremost, which is a deterrent due to loss of earnings and compromising lifestyle. Equally, given the current unreliable state of research funding, a clear career pathway for clinician-scientists is becoming more uncertain.

There is no clear consensus around when is the best time to incorporate research training with another degree. If we follow the notion that it's never going to be easy,

## EDITORIAL

then there are advantages to including it early, alongside the professional or clinical degree. This allows for integration of both degrees to enhance a student's understanding of the clinical relevance of their research, and equally, the research that underlies their clinical training.

Australia and New Zealand are unique in this arena because despite producing many of the world's significant medical discoveries, there isn't a coordinated approach to training clinician-scientists in either the undergraduate or postgraduate years (Traill, Januszewski, Larkins, Keech, & Jenkins, 2016). This is not to say that research training is any less valued in the Australasian health professions. Certainly in medicine, most medical schools will offer students the opportunity to intercalate a PhD with their medical degree. Nevertheless, it is a long and arduous commitment we expect from our brightest and most dedicated students—who we risk losing without some pathway of structure and support. Given the lack of any coordinated approach to research training, we must try harder to develop new models of funding and support to incorporate research training into all health professions degrees. This is vital not only to advance the various health professions but to encourage further discovery in delivering patient care across the continuum of healthcare.

The importance of introducing quality research opportunities for students needn't always refer to research higher degrees. As noted above, traditional models of clinician-scientist training involve several significant considerations. For the student, it is an optional degree, meaning extra training time, academic support for two degrees, and financial concerns for living, not to mention committing to research appropriately scoped for a 3 to 5-year PhD. In this issue, Anderson et al. provide a qualitative account of student perceptions of a research honours degree offered as either a 1-year intercalated model or an overloaded enrolment model, i.e., concurrent with the 6-year MBBS at James Cook University. My experience with a similar concurrent honours programme, whereby eligible students completed a full project over 18 months of their clinical years, is congruent with Anderson et al. findings in that it was equally loathed and loved by students. Other models, such as the MD at the University of Melbourne have truly embedded research as a standard course for all students over 2 years of their 4-year MD.

Although challenging for the student, as mentioned above, this integration of research skills alongside clinical training enhances learning in both fields. Above all, the promotion of research training to inexperienced students needs to be practical and provide an education pathway to enhance its relevance to the professional degree. We know that students pursue research for various reasons, including career advancement, but importantly, many develop a genuine interest during their scholarly research experience—however it is offered. Evidence of the latter will be demonstrated by the number of former honours graduates who subsequently enter a PhD. Given the persistent stall in any formal support for a “traditional” clinician-scientist pathway in Australia and New Zealand, and the fact that many schools have addressed the inclusion of research during the medical degree, perhaps the bigger issue for us is tackling the problem of extending the pathway we start for our students into the postgraduate years. How can we set them up with skills and, hopefully a desire, to pursue more research if their opportunities come to a halt when they begin practising?

## EDITORIAL

Interestingly, also in this issue, Saad, using a mixed-methods design, unpacks the often complex factors that academics face in trying to fulfil their university requirements for research and scholarly output. It is a familiar account of juggling teaching and service commitments with academic and research interests. Perhaps not surprisingly, medical academics face similar challenges as medical students when it comes to research involvement. Lack of time, skills and funding were cited as the biggest barriers in the Anderson et al. study with students, and these concur with the academics in Saad's study as well as with the literature (Funston et al., 2016). Of concern may be the similarity of these barriers between students and academics, because it suggests a culture that is contrary to universities' aims of building research capacity amongst academics in the health sciences.

Also in this issue is further research contributing to the dilemma of the worldwide rural medical workforce shortage. Weston et al. describe their programme at the University of Wollongong, which not only provides support for the impact of rural origin but further endorsement of the benefits of quality "longitudinal integrated clerkships" in recruiting medical students to practise in rural and regional Australia. Their longitudinal comparative study demonstrates the benefit of this combination of factors and the value of taking these factors into account at selection. Nevertheless, until there are more targeted programmes to attract and nurture rural students into science, through high school and onto an undergraduate degree, we will never solve our rural workforce problem by relying only on rural origin. The combination of rural origin and quality rural clinical experiences is powerful, and if well directed, will help meet Australia and New Zealand's workforce needs (Kondalsamy-Chennakesavan et al., 2015).

**Associate Professor Diann Eley**

The University of Queensland

*Member of ANZAHPE Committee of Management, FoHPE Liaison*

**References**

- Bromley, E. (1999). The evolving relationship between the physician and the scientist in the 20th century. *JAMA*, 281(1), 95–96. doi:10.1001/jama.281.1.95
- Funston, G., Piper, R. J., Connell, C., Foden, P., Young, A. M. H., & O'Neill. (2016). Medical student perceptions of research and research-orientated careers: An international questionnaire study. *Medical Teacher*, 38(10), 1041–1048.
- Kondalsamy-Chennakesavan, S., Eley, D. S., Ranmuthugala, G., Chater, A. B., Toombs, M., Darshan, D., & Nicholson, G. C. (2015). Determinants of rural practice: Positive interaction between rural background and rural undergraduate training. *Medical Journal of Australia*, 202(1), 41–45.
- Schafer, A. I. (2010). The vanishing physician-scientist? *Translational Research*, 155(1), 1–2.
- Trail, C. L., Januszewski, A. S., Larkins, R., Keech, A. C., Jenkins, A. J. (2016). Time to research Australian physician-researchers. *Internal Medicine Journal*, 46(5), 550–558.