EDITORIAL

Training Clinical Pharmaceutical Scientists in Today's Highly Competitive Times: It's Time to Commit to Change

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We have reviewed the Research Affairs Committee's report titled, "Recommended Education for Pharmacists as Competitive Clinical Scientists: A Commentary from the American College of Clinical Pharmacy." The report was prepared in response to a charge from the ACCP Board of Regents to "provid[e] recommendations … regarding the optimal pathway or pathways for preparing Pharm.D. graduates to be innovative clinical and translational scientists, able to successfully compete for funding at the national level." We also had the opportunity to review the editorial composed by Drs. Jerry L. Bauman and William E. Evans titled, "Pharm.D.-Only Investigators Are Crucial to the Profession: Let's Preserve the Fellowship as an Equally Important Way to Prepare Future Clinical Pharmaceutical Scientists. Or the Case Against the 'All-Ph.D.'"[2]

In the interests of full disclosure, Blouin must declare that he chaired the AACP task force to explore how academic pharmacy can increase its capacity for training clinical scientists, allowing pharmacy to respond optimally to the national emphasis on clinical and translational research. The committee's report, titled "The Report of the AACP Educating Clinical Scientists Task Force,"[3] articulated conclusions similar to those of ACCP's Research Affairs Committee. In particular, the newfound emphasis on clinical/translational research provides the profession with a unique opportunity to make a significant contribution to the biomedical research enterprise and fulfill an important and challenging societal need. We applaud the Research Affairs Committee's attempt, on behalf of the profession, to bring closure to the issue of how we might best accomplish this goal. As a profession, we have been engaged in this conversation for more than 20 years. Despite this prolonged consideration, the issue has divided our profession and, to some extent, has distracted us from focusing on how to address this challenge.

The most serious issue on the table is straightforward: how do we (the profession of pharmacy) produce the manpower necessary to meet society's demands? Alternatively, do we simply relinquish this responsibility (and the associated opportunities) to others? As a starting point, we all agree that our profession should, and indeed must, play a significant role in clinical/translational research to optimally serve patients and the health care enterprise. Clinical/translational research is not a singular activity but rather a continuum of efforts; by virtue of its interdisciplinary nature, pharmacy aligns extraordinarily well with this continuum. At one end of this continuum is the need to have pharmacy-trained individuals who are well prepared to provide intellectual and scientific leadership. Often, this end of the spectrum is considered synonymous with individuals prepared to compete, and compete successfully, for NIH funding throughout their careers. This competition is, of course, conducted on a field of play that includes talented individuals from a wide array of disciplines who also are well prepared with strong pedigrees and experiences. As educators and senior colleagues within the profession, the most important question facing us—and perhaps the only question of any relevance with respect to this particular issue—is how best to prepare our students and junior colleagues for success in a competitive and ever-changing scientific environment.

Blouin can remember when he first joined the faculty at the University of Kentucky in 1978 and was informed how difficult it was to secure NIH funding. At that time, 30th–35th percentiles were required for funding, and it was understood that there was a bias against pharmacy/pharmaceutical science proposals (not necessarily Pharm.D.- vs. Ph.D.-trained scientists). Consequently, most schools of pharmacy had a research funding portfolio that was principally supported by the pharmaceutical industry,

not by NIH. Dr. Ken Miller's tracking of NIH and nongovernmental funding for the past 30 years likely supports this contention. We kidded back then that we were "born too late" and speculated that it would have been great to be a faculty member in an era during which a 50th percentile was sufficient to secure funding (pre-1975). Those were "the good old days." Today, most NIH institutes are funding in the low teens or even single digits. The competition for, in essence, a shrinking federal pool of resources is intense, and we have a professional and moral responsibility to prepare scientists who have the best possible opportunity to compete in that marketplace. In the end, it will be the market that tells us whether or not we have been successful.

It always worries us when we find ourselves on the other side of an issue from our distinguished colleagues Drs. Bauman and Evans. We have tremendous respect for them as scientists and leaders within our profession. However, we agree with the recommendations of the Research Affairs Committee. The critical issue is not one of pedigree, but rather one of preparation. How does our profession, given the limited resources available to us, make a strategic best effort to respond to the manpower needs, in terms of both quantity and quality, which will have an impact on the biomedical research enterprise? Anything short of that reduces pharmacy to some level of irrelevance in the clinical/translational research arena. Our challenge is to channel our profession's limited resources in a way that will give us the very best opportunity to produce the most qualified manpower for the clinical/transitional research enterprise. We have a moral and ethical responsibility to our students and junior colleagues to provide them with the tools and experiences to be competitive in a research environment that is only going to get tougher. We also have a moral and ethical obligation to society to provide the next

generation, and continuing generations, with scientists who can have a profound and lasting impact on health care.

The Pharm.D. is a great precursor for pursuing a career in clinical/translational research. There are many examples (but unfortunately not enough) of individuals with Pharm.D. degrees, residencies, or fellowship training who have had truly outstanding clinical/translational research careers and have managed to be successful with NIH funding in these highly competitive times. But the question before the academy today is how to systematically and effectively respond to the pressing demands and opportunities of these times. Unlike the ACCP Research Affairs Committee Report, the AACP report did not suggest that we abandon fellowship training. Instead, the AACP report suggested that the only way our profession would be able to build a sufficient critical mass of high-end talent to compete today and tomorrow was to challenge every major school of pharmacy at a research-intensive university to "accept as a necessary component of their research/graduate training mission a significant interdisciplinary education/training program for clinical scientists in experimental pharmacotherapeutics at the PhD level."

It is our opinion that the academy has been too slow to anticipate and respond to the opportunities that are now before us. Instead of being poised to aggressively pursue this opportunity, most schools of pharmacy are scrambling to recruit qualified and competitive talent in the clinical/translational research domain. This talent simply does not exist—regardless of training paradigm—in numbers sufficient to make a real difference. Are enough Pharm.D. fellows being produced in this country of the caliber, and with the portfolio of experiences and accomplishments, that would lead an academic organization to commit to a start-up package investment of $500K or higher? Is the

supply of such individuals (regardless of the discussion of qualifications) scalable and sustainable? Are those individuals prepared to be competitive in academic research, or have their experiences been tailored more toward the industrial sector? Who will train them and serve as role models for a lifetime of success?

This might be the time for us to suggest that the Ph.D. route is the most appropriate mechanism for preparing Pharm.D. graduates for a research career in the academy. However, clinical/translational research represents a big tent, and our profession's contributions within that tent are broad-based and varied. Of course, there is room for individuals prepared through the more traditional Pharm.D.-fellowship route. Also, of course, we are fortunate to work with many extremely talented and motivated students who will be well served by this pathway. However, the simple reality is that this pathway is not sufficiently robust to meet the needs of today, much less the demands of tomorrow. As with all other challenges that have faced our profession and that we certainly will face in the future, we must recognize the situation as it exists and formulate a strategic and effective response. In our opinion, that response must include a robust and concerted effort to prepare young clinical/translational scientists through the Pharm.D.-Ph.D. route.

References

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