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PhD Preparation of Nurse Faculty and Nurse Scientists: Do They Have to Be the Same?

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In the past several months, I have been wrestling with my thoughts on the issues confronting research-focused doctoral programs. First, there is the national need for more doctoral-prepared nurse faculty. In the past 5 years, the American Association of Colleges of Nursing (AACN), the American Nurses Association, the American Organization of Nurse Executives, and the National League for Nursing have published numerous press releases on the predicted shortage of nurses in the next 20 years, the number of qualified applicants turned away from nursing programs, the shortage of advanced practice nurses to provide primary care under the Affordable Care Act, and the number of vacant faculty positions underpinning the inability of schools and colleges of nursing to admit more students. Recent reports demonstrating the association between patient care outcomes and the educational preparation of the registered nurse staff in acute care settings makes the shortage of doctoral-prepared faculty who can teach in baccalaureate and graduate programs of nursing loom even larger.

There has been a surge in the number of PhD programs in nursing in the past 20 years, but there has not been an appreciable uptick in the number of PhD graduates. This likely reflects the willingness of programs to admit students for part-time study to allow students to maintain a living wage while pursuing their doctoral degree. Historically, most applicants to a PhD program in nursing have already earned a master's degree, and some programs have begun offering a 3-year curriculum for postmasters, full-time students. Other schools and colleges of nursing have developed programs to accelerate the transition of baccalaureate students into graduate nursing courses during their senior year, such as the "early entry" option offered by the University of Wisconsin-Madison School of Nursing (<http://www.son.wisc.edu/school/s-early-entry-phd-option-primed-to-transform-doctoral-education.htm>).

The second, more obvious approach to increasing the number of doctoral-prepared faculty more quickly is to provide financial incentives to encourage students to take on full-time study and graduate in a shorter period. Examples include the Graduate Assistance in Areas of National Need program administered by the Department of Education (<http://www2.ed.gov/programs/gaann/index.html>), the new Future of Nursing Scholars Program administered by the Robert Wood Johnson Foundation (<http://www.rwjf.org/en/grants/calls-for-proposals/2014/future-of-nursing-scholars.html>), and the Nurses for Wisconsin Initiative (<http://www.uwec.edu/nursesforwisconsin>). The Nurse Faculty Loan Program, administered by the Bureau of Health Professions in the Department of Health and Human Services (<http://www.hrsa.gov/about/organization/bureaus/bhpr/index.html>), provides low-interest loans to graduate nursing students with a significant loan forgiveness for borrowers that serve as full-time nursing faculty for the prescribed period after graduation. Other programs, such as the Hillman Scholar's Program (<http://www.rahf.org/grant-programs/scholars/>), provide low-cost loans to potential PhD students during their senior year of the baccalaureate program and first year of the PhD program so students can be immersed in research early on and complete the PhD program in 3 years of full-time study.

The conundrum is how to prepare greater numbers of nursing faculty and prepare PhD graduates for a competitive and sustained program of nursing research. In 2006, AACN issued its Position Statement on Nursing Research, advocating for programmatic changes in nursing education to create a culture and workforce for nursing research (<http://www.aacn.nche.edu/publications/position/nursing-research>). This was followed in 2010 by an AACN task force report titled "The Research-Focused Doctoral Program in Nursing: Pathways to Excellence" (<http://www.aacn.nche.edu/education-resources/phdposition.pdf>). This document is not about increasing the number of PhD-prepared nurse faculty but preparing nurse scientists. It identified essential elements for research-focused doctoral programs in nursing, not the least of which were faculty with extramurally funded, cutting-edge programs of research and student opportunities for interdisciplinary training and research experiences in a substantive area of nursing science. In 2011, the National Institute of Nursing Research (NINR) issued a request for information (NOT-NR-11-09) to solicit input on future training and career development programs for nurse scientists. Examples of current NINR programs to enhance the training of nurse scientists are the Graduate Partnership Program (<https://www.training.nih.gov/programs/gpp>) and the National Research Service awards made to qualified doctoral programs (T-32) and individual predoctoral (F31) and postdoctoral (F32) students. The NINR has also increased its sponsorship of "summer boot camps" for faculty and students to learn cutting-edge methods in biobehavioral research.

Recently, the national dialogue has turned to whether our research-focused doctoral programs are adequately preparing nurse scientists in emerging areas of science. In the fall of 2012, the Council for the Advancement of Nursing Science convened a small group of senior nurse scientists to lead an "Idea Festival" on nursing science education. The charge to the Idea Festival Advisory Committee (IFAC) was to explore emerging areas of science relevant to building the science for nursing practice. In meetings and phone conferences, the IFAC members identified seven emerging areas of science: (a) omics and the microbiome, (b) patient-reported outcomes, (c) informatics and m-health, (d) biobehavioral science/behavior change, (e) quantitative methods, (f) translational science, and (g) health economics. Each member aligned with a topic area and convened

workgroups of nurse scientists and colleagues from related disciplines to discuss ways to incorporate that area of science into doctoral programs and research training of future nurse scientists.

In September 2013, AACN sponsored a National Dialogue on the Future of Nursing Science and the Research-Focused Doctorate. Our charge was to consider if transformation in PhD nursing education was needed. After a general presentation on new and important areas of science impacting health science research, attendees met in small groups to discuss (a) possible changes in curricular content and format needed to keep pace with emerging areas of science and other clinical research programs and (b) characteristics of the research doctorate for the future and potential barriers to achieving that vision. Attendees then met as a whole to share their "table" discussions, providing a long list of "needs" and "musts" that few research intense programs could accomplish in 3 years of study. There was some discussion of partnering across schools with greater and lesser research resources, training opportunities, and faculty expertise in specific content areas. Others urged us to not lose sight of our responsibility to prepare future nurse faculty. This is the challenge: how to resolve the opposing challenges to graduate more PhD-prepared nursing faculty and to prepare PhD graduates for competitive careers as nurse scientists. Do all programs have to accomplish both, or does the scientist role require more than the research-focused doctoral degree?

In January 2014, the AACN sponsored its annual Doctoral Education Conference, attended by faculty from DNP and PhD programs. The program was divided into tracts addressing the unique issues of each program, with joint sessions to discuss ways to build clinical research collaborations between DNP and PhD graduates. In one session, a small panel of IFAC members asked attendees what content they considered to be essential in preparing PhD students for successful careers as nurse scientists. As in September, attendees discussed programmatic and organization issues impeding student exposure to emerging areas of science, such as faculty composition and curricular models. CANS IFAC then took the discussion to the regional nursing research society meetings. It took part in the 2014 Southern Nursing Research Society as part of the session on senior scientist roles in advancing nursing science. At the 2014 Midwest Nursing Research

Society meeting, the CANS IFAC conducted a second panel to solicit input on what content was needed to prepare PhD students for a competitive science career. At the time this commentary went to press, IFAC dialogues were also planned at Eastern Nursing Research Society and Western Institute of Nursing.

Despite the intensive dialogue these past few years, the conundrum or “wicked question” we still face as a discipline is how to prepare greater numbers of nursing faculty to meet the national need for more and better educated nurses and how to prepare adequate numbers of nurse researchers to build the scientific foundation for clinical practice. I believe that most research-focused doctoral programs are doing a good job of preparing nurse faculty scholars. Initiatives to increase the number of PhD graduates have produced lively discussions about curriculum content, sacred course cows, and rigorous research training for PhD students. These discussions have reaffirmed my belief that the PhD is actually an entry-level degree for conducting research and obtaining a faculty position. I have come to believe that doctoral training in research extensive environments, as described in the AACN Pathways to Excellence document, is the most cost-effective way to prepare nurse scientists. Research extensive programs have more resources, training opportunities, and faculty in emerging areas of science. However, I also believe that meaningful experiences in team science and interdisciplinary collaborative research would be difficult to accomplish in a PhD program. It is time for nursing faculty to encourage PhD students to pursue postdoctoral training if, in fact, we want to prepare our graduates for competitive careers as nurse scientists.