

DEEP-DIVE DISCUSSION

PhD Programs: Goals, Challenges, Opportunities, and
Preparing Graduates for the Future

1

Current State of Doctoral Education

Jean McSweeney, PhD, RN, FAHA, FAAN

Women's Cardiovascular Health Professorship

Associate Dean for Research and Professor

College of Nursing

University of Arkansas for Medical Sciences

Little Rock, AR.



2

Trends in PhD Education

- In 2010, the Institute of Medicine (IOM) recommended the number of doctorally prepared nurses double by 2020
- The nursing profession is making substantial progress towards achieving this recommendation
- Significant increases are seen in DNP prepared graduates
- Of great concern, the numbers earning a research-focused doctorate are declining at an alarming rate

IOM, (2011).

3

Concerns

- Although nursing leaders have been aware of the recent decline in PhD applications and enrollment, little has been accomplished to address the alarming decrease in PhD program enrollments and graduates
- If we fail to address this growing issue in the decline in the pipeline of future PhD nurses, we must be prepared to answer the question: how did we allow ourselves to become an endangered species?

4

Current State of PhD Education

- The aim of this Deep Dive Session is to provide
 - An environmental scan of the current PhD Educational landscape
 - Create a forum for moderated discourse among attendees, and most importantly
 - Identify strategies that will assist in forging a path forward to mitigate challenges facing the production of nurse scientists in PhD programs

5

PhD Graduation Rates

- 6,886 doctoral nursing degrees conferred in 2017
 - Both Doctor of Nursing Practice (DNP) and Doctor of Philosophy with a focus in Nursing Science (PhD)
- Only 796 (11.6%) were PhD's
- Following a six-year increase in PhD enrollments, a downward trend began in 2014, marking a 9.6% decline

American Association of Colleges of Nursing (AACN), 2018.

6

Enrollment Trends 2008-2017

Enrollments & Graduations



Following a six-year increase in PhD enrollments, a downward trend began in 2014, marking a 9.6% decline. From 2008 to 2017, PhD graduations increased by 43%.

American Association of Colleges of Nursing. (2018)

7

Problems Related to Decline in PhD Graduation

- Barriers to enrollment for those meeting admission standards
 - 2,189 completed applications for PhD programs across the U.S.
 - 1,581 qualified applicants; 129 qualified application (8.2%) were not admitted
 - Partially due to insufficient number of qualified faculty to support the educational experience of PhD students (AACN, 2018)
- **Decline in PhD applications and enrollments, which started to dip in 2014**
- **This must be a top concern for academic nursing leaders**

8

Compounding Problems

- A growing numbers of senior nurse scientists and mentors are reaching retirement age, which is depleting the critical mass of researchers needed to advance nursing science (Buerhaus, Skinner, Auerbach, & Staiger, 2017)
- Without sufficient numbers of senior PhD-prepared faculty available to educate and provide discipline-relevant mentorship, the next generation of nurse scientists is in jeopardy

9

Why are PhD Nurse Scientists Important?

- Sufficient numbers of nurse scientists are needed to provide cutting-edge evidence to guide the nursing profession and inform practice within the broader healthcare system
- A critical mass of diverse nurse scientists is needed to advance the scholarship of discovery and test new knowledge
 - Essential to promoting health, improving clinical care, and providing support for health policy decisions
- Without PhD nursing scientists, who will conduct the essential research to build the evidence base vital to the nursing profession and inform care provided to patients, families, and society?

10

Elements to Promote PhD Education

Breslin et al. (2015) identified four elements deemed essential to promoting PhD education:

1. Sufficient number of qualified, diverse faculty with research experience to teach budding nurse scientists
2. Sufficient pool of qualified applicants
3. Funding to support PhD students throughout the educational program
4. A comprehensive evaluation plan

11

Further Recommendations

- Broome and Fairman (2018) focused on PhD nurse scientists primarily within academic settings where funding an independent program of research is expected, noted two important points
 - Support for PhD-prepared nurses “will be critical for nurses to remain credible as members of research teams” and
 - The profession “must continue to invest in nurse scientists” who are responsible for generating and translating new knowledge to improve the health and well-being of society
- Our priority must be to train and mentor the next generation of PhD prepared nurse investigators and faculty

12

What Is Needed?

- Discipline-wide strategies are needed, which are immediately implementable with the specific goals to:
 - Offset the current PhD pipeline trends
 - Increase the number graduated from PhD nursing programs with skills to contribute to nursing research, become nurse scientists, and to assume faculty roles
- Discipline-wide strategies are needed to address strengthening pathways to the PhD

13

Conclusion

- Overcoming these challenges calls for urgent, dedicated, and frank discussions that address strategies to combat the declining enrollment in PhD programs
- Focus on strategies that enhance support for new and mid-career faculty who face multifaceted challenges in becoming successful, independent researchers and scientists
- If we do not make this a **priority**, we put the future of nursing science at risk of being endangered and perhaps **extinction** of the PhD within the discipline

14

Revisiting Goals of PhD Programs & Barriers to Goal Attainment

Linda S. Weglicki, Ph.D., R.N.
Dean & Professor, Medical University of South Carolina

15

Research-Focused Doctoral Program in Nursing ... (AACN Task Force, Nov. 2010*)

- PhD represents the **highest level of formal education** for a career in research and the scholarship of discovery
- It **prepares scholars** for the expression and communication of the professional knowledge base
- The PhD graduate develops the science, stewards the profession, educates the next generation of nurses, defines its uniqueness, and maintains its professional integrity
- PhD requires both mastering and extending the knowledge of the discipline through research; prepares graduates to master the breadth of the discipline and depth of a particular area of related science
- *AACN (2017): The nursing profession needs more nurses trained at the PhD level to replenish the supply of faculty and researchers*

16

PhD Expected Outcomes & Core Curriculum

Table 3. Expected Outcomes and Curricular Elements of PhD Programs in Nursing

Role	Expected Outcomes	Core Curricular Elements
Develop the Science	<ul style="list-style-type: none"> • Master in-depth knowledge in a substantive area • Appreciate the history and philosophy of science • Understand the evolving nature of the nursing discipline • Critique and integrate different science perspectives in the conduct of research • Generate new ideas based on a critical evaluation of existing knowledge • Conduct original research • Utilize professional and research ethics and judgement in the conduct of research • Assume leadership in the conduct of culturally competent scholarship to improve nursing practice • Communicate research findings to lay and professional audiences and identify implications for policy, nursing practice, and the profession 	<ul style="list-style-type: none"> • Sufficient formal and informal learning experiences to build scientific depth in an identified area of study • History and philosophies of science • Scientific methods, including team science • Advanced research design and statistical methods • Research ethics • Data, information and knowledge management, processing and analysis • Ways of knowing and habits of the mind • Concepts and components of scholarship • Mentored research experiences, including interdisciplinary mentors • Preparation of research grants and manuscripts for publication • Structured/guided clinical or practice experiences as needed to inform one's area of science and its application
Steward the Discipline	<ul style="list-style-type: none"> • Integrate the components of scholarship: research, teaching, mentoring, and service to the profession • Communicate scholarship including peer-reviewed publications and presentations for professional/interdisciplinary audiences • Understand the evolving roles and responsibilities of a nurse scholar • Lead in advancing the profession 	<ul style="list-style-type: none"> • Theoretical/scientific underpinnings of nursing and other disciplines • Practice knowledge that informs nursing science and its application • Culture of nursing and practice environments • Strategies to influence health policy • Professional values • Scholarly writing • Leadership related to health policy and professional issues
Educate the Next Generation	<ul style="list-style-type: none"> • Conduct team science and participate and lead interdisciplinary research teams • Provide professional and research mentorship to others • Contribute to a global community of scholars • Contribute to the formal and informal education of future nurses through discovery, application, and integration 	<ul style="list-style-type: none"> • Intra- and interdisciplinary communication skills • Leadership in intra- and interdisciplinary research teams • Mentoring • Leadership in culturally competent science • Art and science of teaching and learning • Mentored, integrative, applied experiences

17

Goals of PhD Nursing Programs

- Provide *essential skills* and *knowledge* needed to improve human health, the experience of health, the provision of healthcare through the advancement of nursing science
- *Develop nurse researchers* who are committed to the discovery of new knowledge and its translation into practice
- Prepare nurse *scientists* for research and clinical roles in designing, evaluating and institutionalizing innovations in clinical practice in the context of a dynamic health care system
- Prepare *nurse scientists* to conduct research in clinical outcomes and health policy, both independently and as part of interdisciplinary teams

18

Goals of PhD Nursing Programs

- Prepare graduates who will be *leaders in research*, academic, and administrative careers and *stewards of the discipline* of nursing
- Prepare graduates to *educate the next generation* of nurse scholars, researchers, scientists, and policy-makers
- Prepare *scholars* who will *build nursing science* by *leading* interdisciplinary research initiatives targeting the interface between chronic illness and care system
- *Develop scholars of the discipline* capable of building a program of research that *advances nursing knowledge* and contributes to the health of individuals, families and communities
- *Develop expertise* in conceptualizing, conducting and translating research relevant to health and wellness of patients, their families and communities
- Prepare graduates to *advance the art & science* of nursing through research and scholarship

19

PhD Program Objectives

- Develop nurse scientists engaged in a lifetime of ethical discovery and advancement of knowledge of human responses to changes in the internal & external environment in culturally diverse populations
- Generate & disseminate new knowledge through multiple methods of inquiry
- Prepare nurse scientists to *lead global change* in social and health policy
- Prepare graduates to assume roles primarily in academic & research settings
- Provide innovative leadership to the profession and make the practice of nursing more effective
- Conduct theory-guided research to test, generate, and extend knowledge that informs health care systems, health policy, and the evidence base for practice

20

Barriers to Enrollment into PhD Programs: *General*

- Confusion on the part of other scientists about the nature of nursing science
 - Based upon the historical images of nursing
- Compared with others, nurses have more interruptions in their educational journey
 - Examples: Part-time enrollment; fragmented educational trajectory; lack of adequate mentorship
- Traditional views that clinical experience is a prerequisite to doctoral education → less early stage career paths, truncated productivity as researchers, academicians, and administrators
- Inadequate numbers of senior experienced faculty with a focused program of funded research available to advise & mentor students
- Insufficient number of Federally-funded PhD programs/slots to support Pre-docs

21

Barriers to Enrollment into PhD Programs: *Student*

- Lack of appropriate match between the faculty mentor & student applicant
- Potential students may not perceive research as important, prestigious, or exciting
- Large salary differential between academic/research career and industry
- Potential students lack clarity about the contributions/impact of nursing science to patient and health outcomes
- APRN students find it difficult to complete required hours for continuing certification while pursuing a PhD
- Students understanding of the characteristics/requisites needed to become a research scholar → enter without the skills &/or focus to complete PhD and pursue a research career
- Financial constraints prevent students from enrolling full-time and concerns of debt
 - Downstream Effect: Reduces the amount of time for a career as a nursing scientist
- Students may be unable/unwilling to relocate to pursue a PhD program in their desired specialty or area of interest

22

Barriers to PhD Program Goal Attainment, *General*

- **Resources** needed and available to maintain quality PhD programs
- Mechanisms/models that support accelerated program/career trajectory from entry-level education into PhD programs
 - Evidence that demonstrates effectiveness of benchmarks for success
- Lack of clear delineation of the hallmarks of a quality, cutting-edge research-focused program
- Lack of diversity and tenured PhD-prepared faculty available to mentor PhD students
- Support service needs of students (e.g., counseling, stress management, scholarly writing, statistical, etc.)

23

Barriers to PhD Program Goal Attainment: *Program*

- **Insufficient:**
 - Applicant pool to admit and support a cohort of students
 - Funding to attract, support, and retain students through dissertation
 - Changes in faculty funding effecting research opportunities for student experiences
 - Cadre of experienced and well qualified senior faculty role models & educators
- **Challenges** created by multiple pathways to PhD
 - Inconsistent intellectual knowledge, interpersonal skills, ethical conduct of research skills required in PhD to develop new research ideas and conduct a dissertation
- **Faculty workload (credit)** for dedicated student advisement & mentorship
- **Accelerated programs:** eliminating & combining traditional PhD core courses; deleting cognates, insufficient training in grantsmanship
- **Lack of current substantive content** specific to study of clinical nursing
- **Tangible barriers:**
 - Level of student scholarly writing & English as a second language
 - Lack of faculty expertise to teach & mentor new areas of science & advanced statistical methods
 - Lack of socialization into the PhD role

24

Final Thoughts

- How many PhD programs do we need?
- What is essential core content for PhD programs?
- How do we evaluate the qualities and outcomes of the PhD programs?
- How do we collaborate cross programs?

25

Recruiting and Retaining PhD Students

Cindy L. Munro, PhD, RN, ANP-BC, FAAN, FAANP, FAAAS
University of Miami

26

Recruitment

- Potential applicants need familiarity with PhD role and expectations
 - Understanding of PhD role
 - Job opportunities for PhD prepared nurses (not limited to faculty positions!)
 - Clinical practice doctorates may seem more familiar /attractive
- Strategies
 - Highlight successful PhD faculty and alumni from a variety of roles as exemplars
 - Avoid characterization of research expertise/ clinical engagement as a dichotomy
 - Target recruitment events for PhD students (don't depend on generic graduate program recruitment)

27

Recruitment

- Three common concerns among potential applicants who are current students
 - **TIME**
 - Program length
 - School/life balance
 - **MONEY**
 - Tuition
 - Living expenses
 - Competition with clinical paycheck
 - **Desire for time in clinical practice**
 - Particularly for direct entry from undergraduate program

Squires et al., (2014).

28

Recruitment

Selecting for Success

- Admission requirements
 - Metrics are controversial- there is no “secret sauce”
 - Requirements may be driven by university
 - Common metrics include GPA, GRE, TOEFL, work history, essay, interview
 - Holistic admission process versus metric driven admission process
- FIT with program is essential
 - Institutional culture and mission
 - Potential mentors

Park, et al. PLoS One, (2018).

29

Retention

- Academic integration
 - Experiences of being exposed to the research world and academic environment
- Social integration
 - Experiences of being situated in informal environments, such as family, friends, and the community
- Social determinants
 - Economics
 - Cultural identification, including gender and race/ethnicity
 - Health and health care
 - Housing

Tinto, (1993); Cohen, (2011); Kong et al., (2013).

30

Retention

- Academic integration is affected by
 - Positive and frequent interactions with advisors
 - Departmental and university support
 - Clarity of expectations

31

Retention

- Social integration is affected by
 - Program structure
 - Informal experiences among students
 - Institutional culture

32

Retention

- Social determinants are affected by
 - Financial supports
 - Policies on work outside of program
 - University services (counseling, health, stress management)
 - Housing and safety
 - Social networks and support networks among students and cohorts
 - Institutional culture

Barbe et al., (2018).

33

Recruitment and Retention

- “What got you here won’t get you there”
- Need understanding of applicants
 - Plan to address misconceptions and knowledge gaps about PhD education
 - Plan to make applicants aware of supports available
 - Choose wisely for fit between program and students
- Need understanding of students at all stages of program
 - Plan to optimize academic integration and social integration
 - Plan to mitigate issues related to social determinants

34

Providing Mentorship for PhD Students

Rita H. Pickler, PhD, RN, FAAN

The FloAnn Sours Easton Professor of Child and Adolescent Health
Director, PhD & MS in Nursing Science Programs
Martha S. Pitzer Center for Women, Children, & Youth
The Ohio State University College of Nursing

35

PhD Mentoring: Critical to Student Success

- Mentors are the primary socialization agents
- Mentors are the principal interface between students and college
- Mentors provide opportunities for students to:
 - Attend and present at conference
 - Participate in research projects
 - Publish
- Mentors help students join the disciplinary community
- Mentors bolster students' confidence

36

What Influences Mentoring?

- Characteristics of mentees
- Faculty's personal experience being mentored
- Individual characteristics of the mentor
- Faculty reward systems

37

Mentoring Outcomes

- More interactions increase likelihood of timely progression
- Close students-mentor relationships → shorter time to complete
 - Fast completers meet with mentors more frequently
 - Fast completers more likely to collaborate with mentors on presentations and papers
- Completers rated mentors:
 - More approachable, helpful, and understanding

38

Best Practices

- Be accessible, maintain contact, establish pleasant relationships
 - Communicate regularly
 - Establish expectations
 - Work together
- Be supportive of participation in extra-academic activities
- Provide regular feedback

39

Wise Practices

- Meet early and often
 - Proactively monitor student progress
 - Help identify issues early
- Help students stay on track
- Keep on top of changes in policies
- Seek help early from colleagues

40

“Innovative” Ideas

- “Group” Mentoring
- “Peer” Mentoring
- “Mentor” Training
- Written “Plans”
- “Collaborative” Mentoring

41

Preparing Students for the Transition to First Faculty Positions

Ronald Hickman, PhD, RN, ACNP-BC, FNAP, FAAN
Associate Professor and Associate Dean for Research
Frances Payne Bolton School of Nursing
Case Western Reserve University

42

Overview

- There is a critical need for PhD-prepared nurses
- Increases in the number of PhD programs has not resulted in a proportional increase in PhD-prepared nurses
- A shift in how faculty prepare developing PhD-prepared nurses is needed

43

Looking Back National Trends

- Research-focused (PhD) programs continue to expand
 - In 2017, there were 128 research focused programs
 - Yet, there is a downward trend in PhD enrollments since 2014
- Approximately, 80% of program graduates tend to transition to academic faculty positions
 - From 2008 to 2017, PhD graduations have increased by 43%
 - While only a few of these graduates work in research intensive universities
- A pressing concern is that most research-focused programs do not adequately prepare students for the transition to a faculty role

44

Looking Back the Students' Perspective

- Fang, Bednash, & Arietti (2016) highlight doctoral students' concerns which include:
 - Unclear expectations of an academic career trajectory
 - Balance between teaching and research responsibilities
 - Different expectations for career advancement across institutions
- Lack of exposure to the wide range of faculty roles and responsibilities
 - Committee work
 - Faculty governance, institutional politics

45

Looking Back the Students' Perspective Strategies

- Fang, Bednash, & Arietti (2016): note that PhD students have concerns about assuming the faculty role:
 - Work and life balance
 - Workload and compensation
 - Demands for grant funding
 - Career trajectories
- For the next-generation of PhD-prepared nurses, providing evidence-based support is likely to increase their career decisions to pursue a faculty position and their success

46

Moving Forward a National Challenge

- In 2005, National Research Council (NRC) of the National Academies of Science put forth the following challenge to nursing:

'Re-engineer some of its doctoral programs to exclusively meet the goals of producing scientists . . . in terms of skills and projected career life, to meet the needs of nursing as a science and for development of its research-based disciplinary knowledge.' (p. 74)

47

Moving Forward Visioning New Curriculum

Curricular Customization

- A hallmark of doctoral education is a highly individualized program of study that develops expertise in the core knowledge and methods of the discipline, as well depth in a selected area
- Additional formal or informal preparation in science of pedagogy
- Academic leadership activities or courses to clarify faculty role expectations
- Engagement in teaching activities has shown to clarify expectations about the faculty role, workload, and proficiency in teaching

Ketefian, S., & Redman, R. W. (2015). A critical examination of developments in nursing doctoral education in the United States. *Revista latino-americana de enfermagem*, 23, 3, 363-71.

48

Moving Forward Visioning New Curriculum

Curricular customization

- Engagement in professional development research activities:
 - Grant writing and manuscript development courses
 - Graduate research assistantships
 - Informal interactions with research faculty
 - Presentation and publication of research
- These activities and others have shown to effectively enhance the preparation of PhD students to meet the research and scholarship expectations of the faculty role

49

Moving Forward Investing in Others

- Mentoring Matters
 - Create authentic mentor-mentee relationships
 - Establish short - and long-term career goals
 - Use individualized development plans
 - Have crucial conversations about faculty role expectations early and often
- Provide formal or informal activities to:
 - Promote work and life balance
 - Enhance readiness for the 'job talk' or interview process
 - Facilitate negotiation of a job offer
 - Engage students in curricular development or revision
 - Highlight the complexity of the faculty role

50

Moving Forward What Matters

- Preparing PhD-nurses for their first faculty positions requires:
 - Mentorship
 - Tailored approaches to activities for academic and nonacademic career development

AACN (2010). The Research-Focused Doctoral Program in Nursing: Pathways to Excellence.
<https://www.aacnnursing.org/Portals/42/Publications/PhDPosition.pdf>

51

Questions to Consider:

- As a discipline, how should nursing set criteria for the establishment and evaluation of PhD programs?
- What are the essential elements of a PhD in nursing? Should “teaching” content be included? Should there be evidence of particular scientific focus and what should that be?
- What obligations do PhD in nursing programs have to create the next generation of scientists? Of faculty?
- What are some innovative and sustainable ways to recruit student cohorts?
- What are some innovative and sustainable ways to mentor PhD students?
- Would changing the structure or content or admission criteria lead to increased recruitment and retention of students?
- Do newly minted PhD’s need a post-doc? Or a career development award? Or both? Or neither?

52