

The State of the Science in Graduate APP Education:

Emerging Trends Impacting Postgraduate Residency and Fellowship Programs

Bethany Croke, DNP, FNP-BC



Learning Objectives

At the end of this presentation, participants will be able to:

- Discuss how changes and trends in NP graduate education impact post-graduate training programs
- Formulate ideas that best utilize post-graduate training programs to address perceived gaps in NP graduate education



MSN vs. DNP Landscape



MSN vs. DNP

Current Status:

- No clear consensus on DNP requirement
- 2015 & 2025 targets have passed
- NONPF and AANP continue efforts to mandate DNP for entry-level practice

The Challenges:

- Unclear DNP purpose
- A mandatory DNP creates cost and time barriers for students

Impact & Considerations: Residency programs must navigate a mixed applicant pool

- How do you compare applicants with different degrees?
- Will you offer different salary for DNP vs MSN?
- Don't assume the DNP postgrad trainee has more clinical training than MSN
- Leverage DNP strengths



Online Graduate Nursing Programs



Online Programs

Current Status:

- Bloomberg 2024 Report: “The Miseducation of America’s Nurse Practitioners”
- Delivery method is not the primary issue; exploitation of the model is
- Looking ahead- likely more regulation will be needed for NP programs

The Challenges:

- Critical concern: clinical rotation quality and postgrad trainee readiness?
- Assessment of "soft skills" and leadership through online-only delivery?

Impact & Considerations: Programs must do their homework

- Must assess online program quality thoroughly
- Get creative with interviews



Graduate School Clinical Placement Challenges



Clinical Placement Challenges

Current Status:

- Crisis: shortage and quality of preceptors is a near-universal problem

The Challenges:

- Accrediting bodies have no guidelines for the focus areas for clinical hours
- Programs have varying amount of required clinical hours, range 500-750+
 - *NTF in 2022 endorsed 750 but not required yet*

Impact & Considerations: Programs must do their homework

- Assess if clinical rotation focus areas in graduate school (primary care vs. specialty) match post-graduate training program goals
- Verify how sites were secured (school-assigned vs. student-found) and amount of oversight
- Verify amount of completed clinical hours (but remember quality over quantity)
- Identify potential training gaps during the application and interview phase



Competency-Based Nursing Education



Competency-Based Nursing Education

Current Status:

- Move away from knowledge-based and to competency based: what can the student do?
- [American Association of Colleges of Nursing \(AACN\) Essentials](#)

The Challenge:

- Period of transition- postgraduate trainees will have had varying levels of competency-based education in graduate school

Impact & Considerations: Post graduate training curriculum will have to be flexible to the learners, should also be competency based

- Use the Consortium Accreditation Standards for curriculum planning
 - Will notice the sub-competency domains align with the AACN Essentials: (see next slides)
- Goal: Post-graduate training programs can build on existing progress made in graduate school and match competencies to clinical benchmarks



AACN Essentials 2026

- *Domain 1: Knowledge for Nursing Practice*

Descriptor: Integration, translation, and application of established and evolving disciplinary nursing knowledge and ways of knowing, as well as knowledge from other disciplines, including a foundation in liberal arts and natural and social sciences. This distinguishes the practice of professional nursing and forms the basis for clinical judgment and innovation in nursing practice.

- *Domain 2: Person-Centered Care*

Descriptor: Person-centered care focuses on the individual within multiple complicated contexts, including family and/or important others. Person-centered care is holistic, individualized, just, respectful, compassionate, coordinated, evidence-based, and developmentally appropriate. Person-centered care builds on a scientific body of knowledge that guides nursing practice regardless of specialty or functional area.

- *Domain 3: Population Health*

Descriptor: Population health spans the healthcare delivery continuum from public health prevention to disease management of populations and describes collaborative activities with both traditional and non-traditional partnerships from affected communities, public health, industry, academia, healthcare, local government entities, and others for high quality, safe, and accessible patient care for all populations.

- *Domain 4: Scholarship for Nursing Discipline*

Descriptor: The generation, synthesis, translation, application, and dissemination of nursing knowledge to improve health and transform healthcare.

- *Domain 5: Quality and Safety*

Descriptor: Employment of established and emerging principles of safety and improvement science. Quality and safety, as core values of nursing practice, enhance quality and minimize risk of harm to patients and providers through both system effectiveness and individual performance.

- *Domain 6: Interprofessional Partnerships*

Descriptor: Intentional collaboration across professions and with care team members, patients, families, communities, and other stakeholders to optimize care, enhance the healthcare experience, and strengthen outcomes.

- *Domain 7: Systems-Based Practice*

Descriptor: Responding to and leading within complex systems of healthcare. Nurses effectively and proactively coordinate resources to provide safe, high-quality, and accessible care across all populations.

- *Domain 8: Informatics and Healthcare Technologies*

Descriptor: Information and communication technologies and informatics processes are used to provide care, gather data, form information to drive decision making, and support professionals as they expand knowledge and wisdom for practice. Informatics processes and technologies are used to manage and improve the delivery of safe, high-quality, and efficient healthcare services in accordance with best practice and professional and regulatory standards.

- *Domain 9: Professionalism*

Descriptor: Formation and cultivation of a sustainable professional nursing identity, accountability, perspective, collaborative disposition, and comportment that reflects nursing's characteristics and values.

- *Domain 10: Personal, Professional, and Leadership Development*

Descriptor: Participation in activities and self-reflection that foster personal health, resilience, and well-being, lifelong learning, and support the acquisition of nursing expertise and assertion of leadership.



Consortium Accreditation Standards 2025

Pages 8-11: Sub-competency by Domain

- Patient care
- Knowledge for Practice
- Practice Based Learning & Improvement
- Interdisciplinary Collaboration
- Systems Based Practice
- Professionalism
- Personal & Professional Development
- Technology & Telehealth



Looking Ahead



Where Do We Go From Here?

Core Philosophy: Graduates are safe to practice, not experts

Strategies for Closing Perceived Gaps:

- Team with Academic Partners:
 - Helps stay abreast of changes in graduate education
 - Simulation resources (labs, trained faculty)
 - Consider precepting graduate students!
 - *Relationships could lead to pipeline of vetted applicants*
- Develop a Targeted Postgraduate Curriculum:
 - Build upon competency-based education from graduate school
 - Address areas not traditionally practiced in school
- Advocacy & Policy:
 - Funding Debate: Where to target an intervention?
 - *Graduate school level: GNE Demonstration Project, preceptor tax credits*
 - *Post graduate level: Invest further in post graduate training programs*



Thank you!

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The State of the Science in Postgraduate (PG) APP Education

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July 14, 2026

Continuing Education Credits

In support of improving patient care, Moses/Weitzman Health System is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

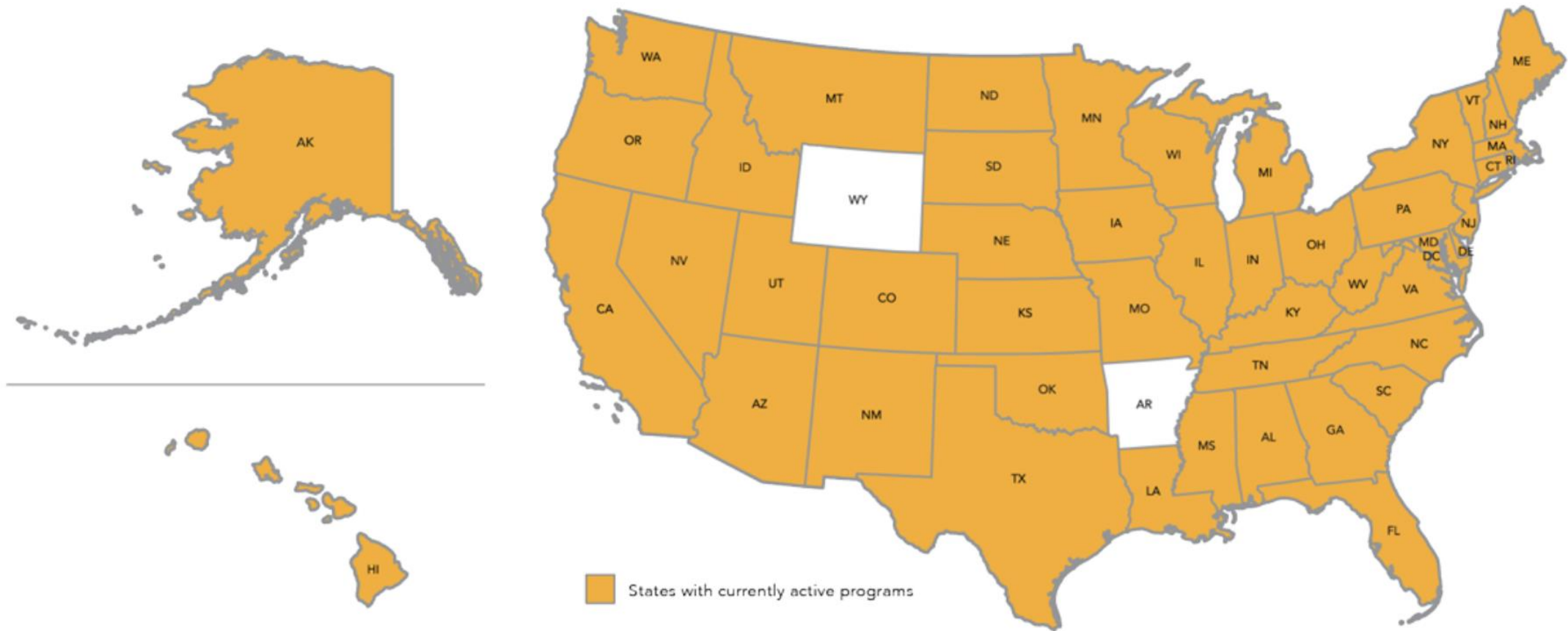
This session is intended for social workers, psychologists, and other school-based healthcare professionals.

You will be able to claim a comprehensive certificate on the Weitzman Institute Platform at the end of the conference. Please do so by December 30, 2026.

Disclosures

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- The views expressed in this presentation are those of the faculty and may not reflect official policy of Moses Weitzman Health System.
- We are obligated to disclose any products which are off-label, unlabeled, experimental, and/or under investigation (not FDA approved) and any limitations on the information that are presented, such as data that are preliminary or that represent ongoing research, interim analyses, and/or unsupported opinion.

States with and without postgraduate APP training programs



Updated and Approved 06/30/2026

(apppostgradtraining.com/postgraduate-training/)

Learning objectives

- 1) Discuss the current evidence base and gaps in post-graduate APP training literature
- 2) **Engage in scholarly activities that advance the evidence base for post-graduate APP training**

State of the Science?

Body of knowledge, evidence, and consensus within a scientific field at a given point in time, representing

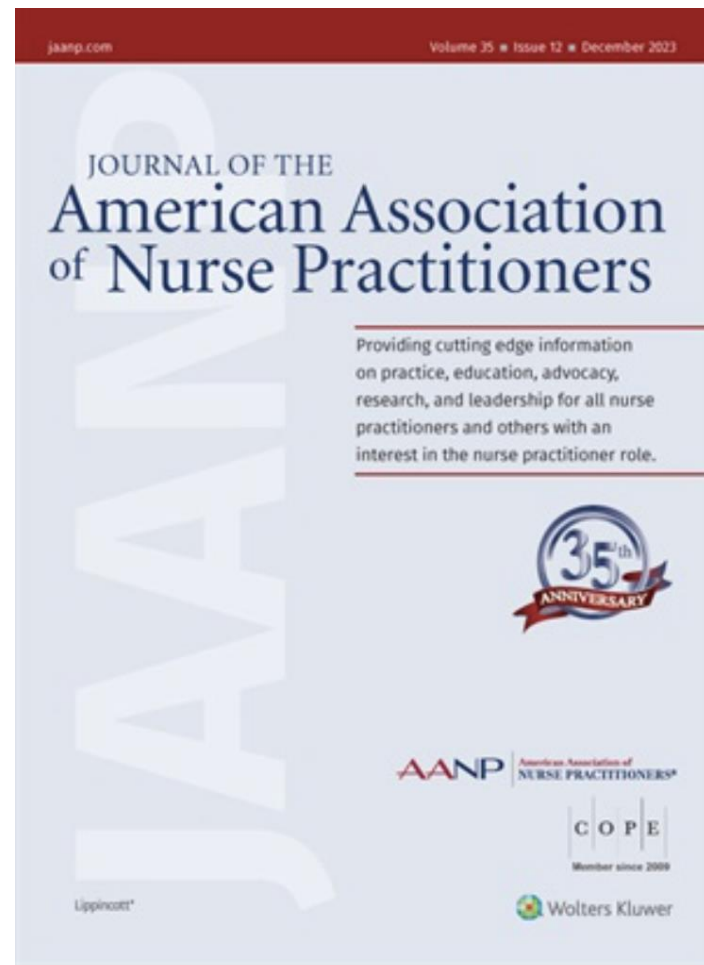
- what is known
- what is uncertain
- what remains unknown

(National Academies of Sciences, Engineering, and Medicine, n.d.)

Where to start?



Morgan P, Barnes H, Batchelder HR, et al. (2023) Nurse practitioner and physician assistant transition to practice: A scoping review of fellowships and onboarding programs

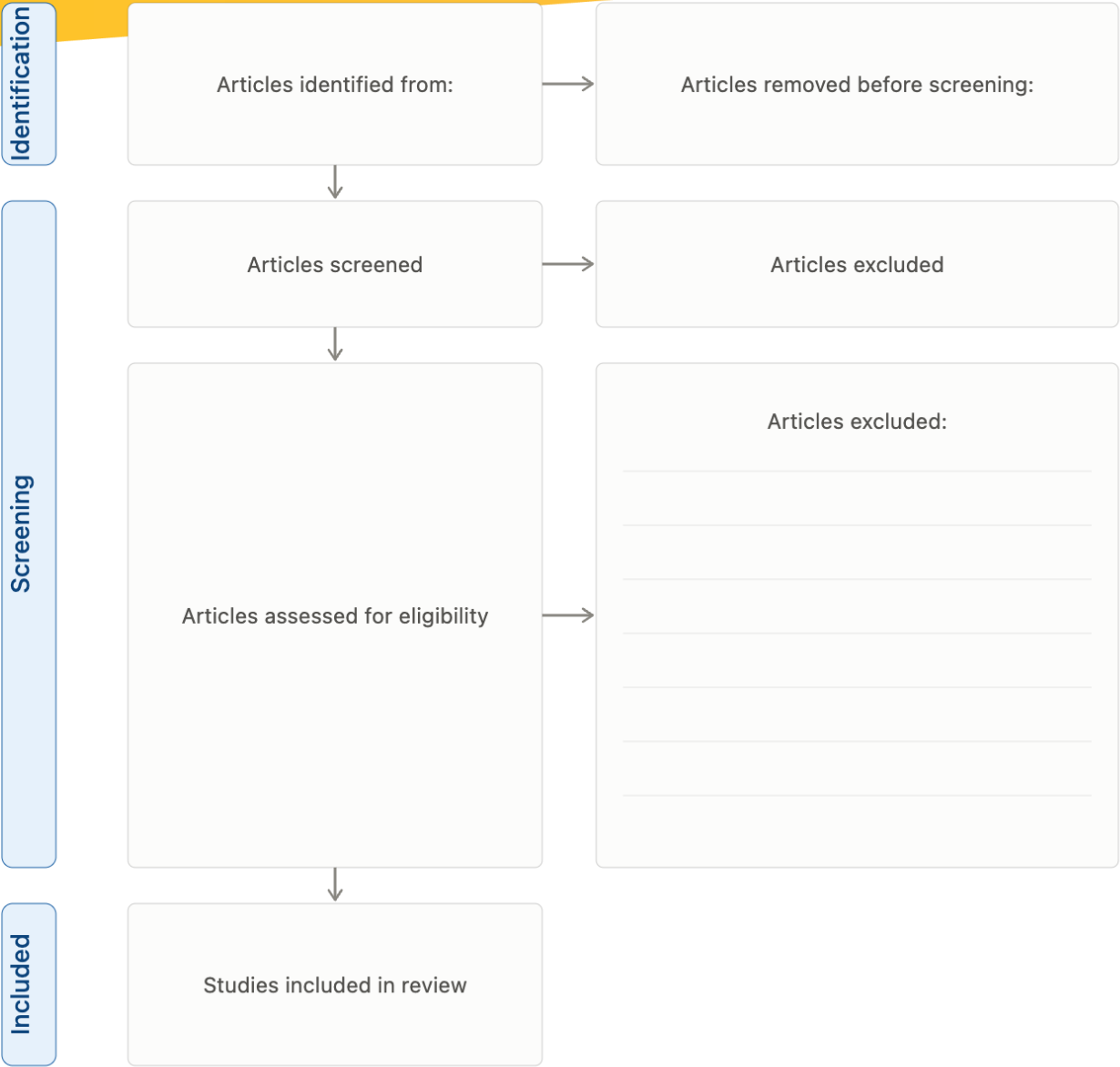


- Published in JAANP & JAAPA
- 11 authors, including 6 PAs and 2 NPs
- 216 articles from 1990 - May 2022
- 70% reported on residencies/fellowships
- 30% reported on “onboarding programs”
- 52% reported on NP programs, 17% PA programs, & 31% NP/PA programs
- 60% included outcomes (e.g., increased participant confidence & competence; program satisfaction; employment, & retention improvements)

Search Methods

- 1) **Peer-reviewed literature**
- 2) **Keywords:** postgraduate nurse practitioner (NP) residency; postgraduate (NP) outcomes; physician assistant/associate (PA) postgraduate training; transition to practice nurse practitioner; APP residency fellowship accreditation; physician assistant fellowship residency survey; NP PA postgraduate competency retention salary; advanced practice provider postgraduate
- 3) **Databases:** CINAHL; EMBASE; Pubmed; PMC; Cureus; CAPP Research & Publications (apppostgradtraining.com, updated April 2026); APPAP Clinical Postgraduate Literature (appap.org, updated April 2026); Google Scholar; Claude AI
- 4) **Timeframe:** June 1, 2022 - June 15, 2026

Search Results



2022-2026 literature categories

- 1) Taxonomy
- 2) Interest in programs
- 3) Program development (i.e., case studies)
- 4) Curricula
- 5) Program Evaluation
- 6) Program-related compensation
- 7) Accreditation and future
- 8) Return-on-investment
- 9) Long-term impact
- 10) Integrative Reviews

Taxonomy

Education

JAAANP

CE

A programmatic taxonomy to define, differentiate, and classify nurse practitioner postgraduate training

Candice S. Rettie, PhD, MA (Retired, Past Executive Director of the National Nurse Practitioner Residency and Fellowship Training Consortium) & DoQuyen Huynh, DNP, FNP, ARNP, FAAN (Health Equity Director of Washington State Health Care Authority, Chair of Accreditation Commission of National Nurse Practitioner Residency and Fellowship Training Consortium)¹

Interest in
PG APP program
development

Cureus

Part of **SPRINGER NATURE**

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Perceptions of Nurse Practitioners and Physician Assistants/Associates Toward the Concept of Developing an Advanced Practice Postgraduate Residency/Fellowship Program at a Large Academic Medical Center

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Original Research

Evaluation of a Learning Collaborative to Implement Postgraduate Nurse Practitioner (NP) and/or Physician Associate (PA) Residency or Fellowship Programs in a Community Health Center

**Meaghan Angers¹ , Manjari Mishra¹, Amanda Schiessl¹, Margaret Flinter¹,
Nicole Seagriff¹, Kerry Bamrick², Charise Corsino¹, and May Oo³**

Journal of Primary Care & Community Health

Volume 16: 1–17

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Program Development

The Development and Implementation of a Postgraduate Pediatric Primary Care Advanced Practice Nursing Fellowship



Aaron E. Carpenter, DNP, MDiv, APRN, CPNP-PC

The Journal for Nurse Practitioners 19 (2023) 104493



Contents lists available at [ScienceDirect](#)

The Journal for Nurse Practitioners

journal homepage: www.npjjournal.org



Implementing and Evaluating a Psychiatric Fellowship for Advanced Practice Providers

Julie Durand, Shelley Y. Hawkins, Linda Roussel, Kari Teigen, Dustin DeMoss



Curricula

Kidd et al. *BMC Medical Education* (2022) 22:598
<https://doi.org/10.1186/s12909-022-03664-5>

BMC Medical Education

RESEARCH

Open Access

A survey of implicit bias training in physician assistant and nurse practitioner postgraduate fellowship/residency programs



Vasco Deon Kidd^{1*}, Jennifer M. Spisak², Sarah Vanderlinden³ and Gerald Kayingo⁴

The Journal for Nurse Practitioners 21 (2025) 105391



Contents lists available at [ScienceDirect](#)

The Journal for Nurse Practitioners

journal homepage: www.npjjournal.org



By Faculty for Faculty

The Development and Design of a Competency-Based Curriculum for a Nurse Practitioner Fellowship Program

James K. Tudhope



Program Evaluation

Beyond competence and retention: Developing a comprehensive evaluation framework for a rural primary care nurse practitioner residency program

JoAnna L. Hillman, MPH (Owner and Visiting Faculty)¹, Janelle C. Gowgiel, MPH (Public Health Analyst II)², Paula S. Price, FNP-C, DNP (NoGAPP Program Director and Family Nurse Practitioner)³, & Bethany Robertson, DNP, CNM, FNAP (Clinical Professor and Clinical Executive)⁴

The Journal for Nurse Practitioners 22 (2026) 105739



Contents lists available at [ScienceDirect](#)

The Journal for Nurse Practitioners

journal homepage: www.npjjournal.org



By Faculty for Faculty

Developing a Nurse Practitioner Workforce for Primary Care: Evaluation of a Fellowship Program

Paula Smith, Sophie Weider, Brianna Ferraro, Michelle Capozzoli, Carli Giani,
Gene Harkless, Marcy Doyle



Program-related Compensation

Trainee compensation

Cureus

Part of **SPRINGER NATURE**

Open Access Original
Article

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An Analysis of Trainee Salaries Offered in Nurse Practitioner and Physician Assistant/Associate Postgraduate Residency and Fellowship Programs in the United States

Vasco Deon Kidd ¹, Jessica L. Horstmann ², Shayanna Felder ³, Kerry Bamrick ³

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Director compensation

Cureus

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Article

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National Survey on Support for Nurse Practitioner and Physician Assistant/Associate Postgraduate Fellowship/Residency Programs and Director Compensation

Vasco Deon Kidd ¹, Jessica L. Horstmann ², Shayanna Felder ³, Kerry Bamrick ³

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Accreditation & the Future

Cureus

**Open Access Original
Article**

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Exploring Motivations and Barriers To Accreditation Adoption Among Physician Assistant and Nurse Practitioner Emergency Medicine and Orthopedic Surgery Residency and Fellowship Programs

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AACN Advanced Critical Care
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Growth in Nurse Practitioner Fellowship Programs: Implications for Scope of Practice

John D. Gonzalez, DNP, APRN, ACNP-BC, ANP-C
Kristin H. Gigli, PhD, APRN, PNP-AC

ROI

Return on Investment of a Centralized Advanced Practice Provider Fellowship



Tara Merck, Allison Duey-Holtz, Jaime Fox, Jacob Hill, Tracey Hahn, &
Laurie Newton

BRIEF RESEARCH REPORT

From vision to reality: Establishing a financially beneficial APP fellowship in gastroenterology

Catherine Brady, MPAS, PA-C

Long-term Impact

Original Research

Sustained Impact of a Postgraduate Residency Training Program on Nurse Practitioners' Careers

Ann Marie Hart¹ , Nicole Seagriff², and Margaret Flinter³

Journal of Primary Care & Community Health
Volume 13: 1–9

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DOI: 10.1089/jpm.2024.0002

Brief Reports

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Career Impact of Palliative Care Fellowship Training for Nurse Practitioners

Hilary Carroll McGuire, DNP, FNP-BC, ACHPN,^{1,2} Jennifer Costa, PhD, PNP-BC,³
and Barbara Reville, DNP, ANP-BC, ACHPN⁴

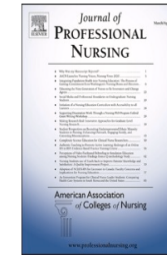
Integrative Reviews



Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Journal of Professional Nursing

journal homepage: www.elsevier.com/locate/jpnu



Outcomes of postgraduate fellowships and residencies for nurse practitioners: An integrative review

Kevin E. McDonough, MSN, AGACNP-BC^{*}

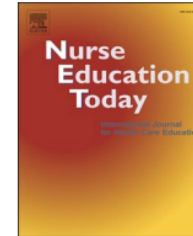




Contents lists available at [ScienceDirect](#)

Nurse Education Today

journal homepage: www.elsevier.com/locate/nedt



Postgraduate professional integration programs for nurse practitioners: A scoping review

Kathleen Bykowski^{*}, Alexandra Albers, Anne Summach, Kara Schick-Makaroff

Faculty of Nursing, University of Alberta, 3-141 Edmonton Clinic Health Academy, Edmonton, Alberta T6G 1C9, Canada



Exemplar APP cohort study from 2021

Quantitative Research

JAANP

Effects of completing a postgraduate residency or fellowship program on primary care nurse practitioners' transition to practice

Jeongyoung Park, PhD (Assistant Professor)¹, Asefeh Faraz Covelli, PhD, APRN, FNP-BC (Assistant Professor)¹, & Patricia Pittman, PhD (Professor and Director)^{2,3}

Exemplar APP cohort study

Table 1. Characteristics of PCNP respondents to the 2018 NSSRN, by a postgraduate residency or fellowship program

	All PCNPs (n = 75,963)	PCNPs With Residency (n = 7,510; 10%)	PCNPs Without Residency (n = 68,453; 90%)	p Value
Age, years, mean (SD)	45 (11)	49 (11)	44 (11)	<.001
Sex, no. (%)				
Male	6,157 (8)	878 (12)	5,280 (8)	.02
Female	69,806 (92)	6,633 (88)	63,173 (92)	
Race/ethnicity, no. (%)				
White, non-Hispanic	57,022 (75)	4,817 (64)	52,204 (76)	<.001
Other	18,941 (25)	2,693 (36)	16,249 (24)	
Employment setting, no. (%)				
Hospital	9,475 (12)	892 (12)	8,583 (13)	.64
Other inpatient setting	4,392 (6)	541 (7)	3,851 (6)	
Clinic/ambulatory	57,046 (75)	5,609 (75)	51,436 (75)	
Other	5,050 (7)	468 (6)	4,582 (7)	
Total earnings, \$, mean (SD)	98,630 (37,971)	106,714 (41,567)	97,743 (37,446)	<.001
Scope of practice, no. (%)				
Full	18,897 (25)	1,762 (23)	17,135 (25)	.22
Reduced	15,469 (20)	1,357 (18)	14,112 (21)	
Restricted	41,597 (55)	4,391 (58)	37,205 (54)	
<i>The total of the percentages was not quite 100% because of rounding.</i> <i>Note: NSSRN = National Sample Survey of Registered Nurses; PCNP = primary care nurse practitioner.</i>				

(Park et al., 2021, p. 35)

Table 2. Comparison of reported outcome measures, among PCNP respondents to the 2018 NSSRN, by a postgraduate residency or fellowship program

	PCNPs With Residency	PCNPs Without Residency	p Value
Role perception			
Prepared to be an independent practitioner (<i>n</i> = 75,963), no. (%)			
Not at all	98 (1)	494 (1)	.33
Somewhat or very little	2,531 (34)	25,060 (37)	
A great extent	4,881 (65)	42,899 (63)	
Able to practice to the full extent of your knowledge/education/training (<i>n</i> = 75,963), no. (%)			
No	1,146 (15)	12,461 (18)	.34
Yes	6,364 (85)	55,992 (82)	
Practice autonomy			
Billed under your own NPI number (<i>n</i> = 75,228), no. (%)			
No	2,356 (31)	24,530 (36)	.14
Yes	5,127 (69)	43,215 (64)	
Having own patient panel (<i>n</i> = 74,926), no. (%)			
No	2,390 (33)	29,171 (43)	<.001
Yes	4,817 (67)	38,548 (57)	
Having hospital admitting privileges (<i>n</i> = 75,963), no. (%)			
No	6,352 (85)	60,018 (88)	.07
Yes	1,158 (15)	8,435 (12)	
Having prescriptive authority (<i>n</i> = 75,963), no. (%)			
No	228 (3)	1,506 (2)	.33
Yes	7,283 (97)	66,947 (98)	
Team collaboration			
Participate in team-based care (<i>n</i> = 73,379), no. (%)			
Not at all	132 (2)	2,738 (4)	.03
Somewhat or very little	3,165 (42)	31,098 (47)	
A great extent	3,999 (55)	32,248 (49)	
Feel confident to practice in interprofessional teams (<i>n</i> = 74,050), no. (%)			
Not at all	20 (0.3)	302 (0.5)	<.001
Somewhat or very little	1,174 (16.0)	18,343 (27.5)	
A great extent	6,157 (83.8)	48,054 (72.0)	

Table 2. Comparison of reported outcome measures, among PCNP respondents to the 2018 NSSRN, by a postgraduate residency or fellowship program, continued

	PCNPs With Residency	PCNPs Without Residency	p Value
Job satisfaction			
Satisfaction in the primary nursing position (<i>n</i> = 75,963), no. (%)			
Extremely dissatisfied	150 (2)	1,433 (2)	.02
Moderately dissatisfied	356 (5)	6,087 (9)	
Moderately satisfied	3,339 (44)	32,158 (47)	
Extremely satisfied	3,665 (49)	28,775 (42)	
Intent to leave			
Ever considered leaving the primary nursing position (<i>n</i> = 67,368), no. (%)			
No	3,704 (57)	27,404 (45)	<.001
Yes	2,794 (43)	33,466 (55)	
<i>The number of observations included in the analysis differed for each of outcome measures due to missing values, as detailed in the table. The total of the percentages was not quite 100% because of rounding.</i>			
<i>Note: NSSRN = National Sample Survey of Registered Nurses; NPI = national provider identifier; PCNP = primary care nurse practitioner; .</i>			

(Park et al., 2021, p. 36-37)

State of Postgraduate APP Science

STATE OF THE PG APP SCIENCE?

Signs of maturity

- Integrative and scoping reviews
- Gaps are steadily being filled
- Science is deliberate and building on itself
- Lots of networking and collaboration
- and....

Coming soon to a journal near you....

Evaluation of evidence quality of nurse practitioner and physician assistant postgraduate training programs for program-level outcomes: A systematic review protocol

Christopher Reeves; Kristina Dorsett; Nathalie Ortiz Pate; Dominick Osipowicz; Viktoriya Pleshkan;
Bethany Grubb; Asefeh Faraz Covelli; Kiersten Brown; Christine Everett; Hilary Barnes

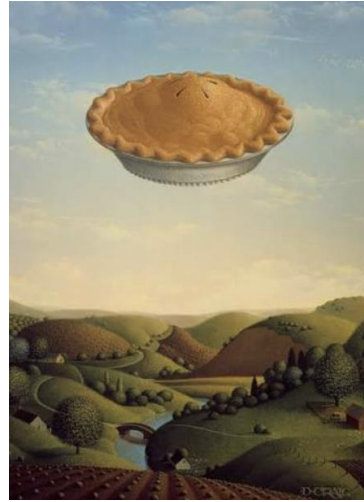
Relative GAPS in PG APP EDUCATION RESEARCH

- PA-only programs and joint NP/PA programs
- Non-primary care NP and other APRN programs
- Factors associated with interest in PG APP education
- Accredited vs. non-accredited programs: program completion rates, outcomes, satisfaction, retention, etc. in accredited vs. non-accredited PG APP programs
- Long-term salary outcomes and career achievements for PG participants
- Short- and long-term quality of life for PG participants
- Return on investment (ROI)

Advancing the science of postgraduate APP education?

- Publish trainee evaluation data – even small numbers
- Work collaboratively with other APP programs re: curricula, evaluation tools, and outcomes data to collect
- Don't discount qualitative data – many people are surveyed out and would prefer to talk
- **11th commandment** - Maintain relationships/communication with trainees, keep their NPI numbers, and talk to them about the value of following them over time

Pie in the sky?



- Journal for Postgraduate APP Education?



We want YOU!

For postgraduate advanced practice provider
(APP) program data

Share your program's data

Help build the evidence base for APP training

Thank you and Go Pokes!



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