A challenge for nurse anesthesia educational programs awarding practice doctorate degrees for entry into practice is ensuring that there is an appropriate balance of scholarly work and academic/clinical education requirements for students. Programs aim to formulate curricula that underscore the goal of graduating students who have acquired entry-into-practice competencies, on which nurse anesthetists continue to build their knowledge, skills, and abilities along the practice continuum beginning at graduation (proficient) and continuing throughout their entire professional careers (expert).\(^1\) Nurse anesthesia educational programs require complex didactic academic coursework and a minimum of 2,000 hours of clinical training, during which students must also prepare for the National Board of Certification and Recertification (NBCRNA) National Certification Examination for Nurse Anesthetists (NCE). The implementation of a meaningful scholarly project in the context of this rigorous educational milieu imposes challenges on both students and faculty. The purpose of this article is to provide the Council on Accreditation of Nurse Anesthesia Educational Programs (COA) guidance regarding scholarly work in practice doctorate programs.

At its October 2018 meeting, the COA finalized the appointment of the White Paper on Scholarly Work Special Interest Group (SIG) to examine the wide variation in types of scholarly projects as well as project rigor. This was in response to requests from nurse anesthesia programs for the COA to provide guidance on the requirements for scholarly projects. The standards related to scholarly work and the corresponding definitions for scholarly work and scholarship skills can be found in the Practice Doctorate glossary.\(^1\) The charges of the SIG included the following: (1) conduct a survey to identify the current state of scholarly work in doctoral-level nurse anesthesia programs and to investigate the requirements and scholarly work of other disciplines that award a practice doctorate and (2) produce a white paper to guide programs’ development of criteria for scholarly work as defined in the COA Standards for Accreditation of Nurse Anesthesia Programs—Practice Doctorate. Standards that apply to scholarly work include Standard D. Graduate Standards (Professional Role) and Standard E. Curriculum Standards (Research).
Literature and Scholarly Work

Literature addressing scholarly work for the nursing practice doctorate is scarce. A dialogue regarding DNP projects took place among participants at the Committee on Institutional Collaboration DNP Invitational Conference. The focus of this dialogue was to discuss the DNP project's intent and breadth, demonstration of competencies, and similarities and differences to the PhD dissertation. One question asked was related to the value of the time and energy expended by faculty on the DNP project. In responding to this question, the group noted the following benefits for faculty:

- Recognition resulting from product dissemination
- Matching project topics with faculty interest and expertise
- Student mentorship (meets an expectation of faculty role)
- Contribution of project to scholarship (meets an expectation of faculty role)

The literature regarding faculty workload when supervising graduate nursing students' doctoral projects is limited. A study was conducted to describe workload assignments for graduate nursing faculty supervising both research and advanced clinical nursing students. A survey was sent to 617 nursing school administrators via email, and the response rate was 20% (N=126). Of the 36 administrators who responded to a question about whether they give workload credit for Doctor of Nursing Practice (DNP) project supervision, 22 (61%) confirmed that they did.

Another study examined opportunities for faculty teaching in DNP programs noting that DNP faculty may need different strategies for teaching, scholarship, and service due to the focus on translation of science into practice. The authors noted that roles for DNP faculty align with the broader conceptualizations of scholarship consistent with the Boyer Model. The expanded view of the Boyer Model (scholarship of discovery, integration, application, and teaching and learning) was evidenced in a rank and tenure analysis for faculty. The relevance of the Boyer Model for faculty charged with mentoring scholarly projects underscores that universities and colleges consider all forms of scholarship for faculty advancement. Furthermore, "promotion and tenure policies should accommodate newer forms of scholarship if DNP prepared faculty are on tenure tracks".

In addition, DNP-prepared faculty should be afforded opportunities to develop in the tripartite role (teaching, scholarship, and service) aligned with the institution's mission. The dissemination of DNP projects and the application of existing knowledge into practice should be considered as scholarship for the DNP-prepared faculty, and participation on DNP projects would meet this faculty role requirement. Finally, when academic rank promotion requires the faculty to demonstrate mentorship, participation on DNP projects would meet this requirement. Mentoring focuses more on "long-term relationships, role development, and the development of scholarship," which would be consistent with the faculty role of serving on a DNP project.

There is tension among DNP-prepared faculty and PhD-prepared faculty regarding available resources. Specifically, PhD faculty are relied on in some schools to teach and advise DNP students, which limits the time they have available to devote to research endeavors needed for promotion and tenure. Furthermore, the lack of standardization regarding the rigor of practice doctorate projects leads to confusion among faculty members and limits collaboration among PhD- and DNP-prepared faculty. Supporting the development and collaboration of DNP- and PhD-prepared faculty on practice doctorate projects can facilitate rank promotion and promote the development of a community of scholars. Multiple factors including project area of interest, advisor experience, and faculty workload were identified as important to matching a mentor to a student's project. The need for development of faculty working with doctoral students was highlighted.

Although the purpose of scholarly work for the practice doctorate has been defined, differentiating quality improvement projects from other research activities poses challenges for some faculty and programs. Resources are needed to assist with these challenges. The US Department of Health and Human Services Office for Human Research Protections provides the latest guidance to determine if a project requires institutional review board (IRB) approval.

Materials and Methods

In November 2018, a survey instrument was developed by SIG. The purpose of the survey was to identify the current state of scholarly work for nurse anesthesia programs approved to offer practice doctorates. Before the survey link was emailed, the survey was vetted by the Louisiana State University Health Sciences Center IRB to ensure human subject protections for participants. It was determined that no approval was needed as long as responses and participants were kept confidential and anonymous. The initial survey was sent to all programs offering an entry-level doctorate or completion degree program for Certified Registered Nurse Anesthetists (CRNAs; 89 programs) on January 15, 2019, with a follow-up on January 22, 2019. The survey closed on January 30, 2019. An impressive 57% of programs (N=51) responded to the survey. Preliminary survey results were presented to participants at the American Association of Nurse Anesthetists (AANA) Foundation session at the February 2019 Assembly of Didactic and Clinical Educators (ADCE), resulting in an active discussion and question-and-answer session.
A faculty focus group session was also held at the same meeting. The focus group addressed key items, including the vision for scholarly work, examples of scholarly work, and examples of what is not considered acceptable to represent scholarly work in practice doctorate programs. Last, a call for comments survey addressing the white paper draft was sent to program administrators, deans, and members of the AANA and NBCRNA Boards of Directors.

Survey Results

Responses were reported by 34 programs (67%) in schools or colleges of nursing and 17 (33%) housed in other units (Colleges of Health Sciences, Health Professions, Biology; Schools of Medicine; Colleges of Business: Healthcare Administration and Management; Schools of Natural Sciences, Mathematics, and Computing; and Graduate Studies). The results of the survey are summarized in Tables 1 to 4.

Evidence-based practice projects (Table 1) were the primary type of scholarly work offered by the respondents. A few programs required original, retrospective, and IRB-approved research (2%-4%); practice change initiatives (4%-8%); a portfolio (1%-2%); or a literature review (1%-2%). Forty-one (80%) of the programs reported they had flexibility in designing the scholarly work project, whereas 10 (20%) did not (the project criteria are controlled by the parent organization).

An implementation component of scholarly work was required by 38 (75%) of the 51 programs, whereas dissemination was required by nearly all programs (n=50, 98%). Dissemination methods were varied (Table 2). The methods reflected program, college, and/or university requirements.

Programs reported that the number of faculty needed to support scholarly projects ranged from 1 to 12 (mean, 2.4). The data, however, did not account for full-time or part-time faculty status. Each academic year, an average of 6 projects per faculty member were reported (range, 2-18). Doctoral degree credentials were required for faculty participating in scholarly work (DNP, DNAP, DNSc, EdD, PhD, MD). Faculty contact hours in support of scholarly projects were a mean of 61 hours, a maximum of 400 hours, and mode of 30 to 40 hours.

Initial approval for a proposed project was completed by committees (n=36), individuals (n=11), or other course-assigned faculty members. Final approval for projects included committees (n=39), individuals (n=8), or other (n=4) sources including department or program chair or course faculty.
Table 4. Examples of Scholarly Projects With and Without Implementation

<table>
<thead>
<tr>
<th>Project type</th>
<th>Project example</th>
</tr>
</thead>
<tbody>
<tr>
<td>With implementation</td>
<td>• Registered nurses may lack knowledge and training regarding malignant hyperthermia protocols throughout a multifacility hospital system. Administration of a pretest to determine baseline knowledge would precede an in-service education program; following the in-service posttest to evaluate gains in knowledge would form the foundation of the project. Implementation of new educational requirements would result.</td>
</tr>
<tr>
<td></td>
<td>• Implementing oral didactic testing in an entry-level nurse anesthesia educational program may be initiated based on a project dedicated to testing comparisons.</td>
</tr>
<tr>
<td>Without implementation</td>
<td>There is a need to improve patient safety by changing current monitoring practices for patients receiving peripheral nerve blocks (PNBs). To address this issue, a student may search for, analyze, and apply evidence to create a hospital policy for patients receiving PNBs. However, implementing the policy requires multiple levels of approval as well as staff education. Time constraints of the entry-level or completion-degree CRNA may preclude full implementation.</td>
</tr>
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</table>

Table 4. Examples of Scholarly Projects With and Without Implementation

Individual and team project composition was reported by programs. The composition of student teams ranged from 2 to 4 students. Some teams were self-selected. Variables for the team size included the type and complexity of the project, scope, learning outcomes, mission, interprofessional collaboration, and number of students at clinical sites. Team project evaluation methods varied (Table 3).

Eighteen (35%) of the respondents shared that participation in scholarly projects had an impact on the rank and tenure of faculty. Colleges and universities differed regarding how faculty who mentor scholarly work received credit. Faculty may receive credit for teaching, scholarship, and/or service.

Results of AANA Foundation Session
The AANA Foundation session included a substantive discussion covering multiple topics. The following topics were raised by the attendees.

• Topic Selection. Some nurse anesthesia educational programs are prescriptive and other programs offer latitude in the selection of project type, scope, and topic. Some programs assign topics to their students, whereas others allow students to select topics. Programs that allow student selection cited the desire to develop leaders and problem solvers while nurturing skill sets highlighting creativity and analysis. Educators speculated that the doctoral degree was just the beginning of a career and raised the question, “What should students take away from the practice doctorate?”

Creating future leaders with skills to address clinical problems requiring change represented an approach to better understand the aim and scope of practice doctorate scholarly work. For example, identifying a clinical issue, searching the literature, coming up with viable solutions, and presenting the information in an executive summary offers one approach.

• Collaboration. Programs with strong resources continue to undertake collaborative work with bench research approaches to scholarly work.

Multiple programs described extending a project over more than 1 cohort; that is, students or teams in subsequent classes might continue to pursue the aims or goals of the project. Other collaborative ideas were offered such as pairing a student registered nurse anesthetist with a completion degree CRNA. Both may benefit from such teamwork.

• IRB Submission. The IRB submission process poses challenges. Some universities and/or programs, as well as hospitals, require all projects to be submitted to the IRB. Work overload for all stakeholders is a consideration. Some programs struggle with submission of quality improvement projects to IRBs that may be unfamiliar with such projects. Other programs struggle to determine whether quality improvement projects need IRB approval.

• Writing. Project writing presents challenges, as entering undergraduate students may have insufficient writing skills. Editorial work can be burdensome for faculty. Some programs hire editors or use writing resources in the community or institution to assist with the burden.

Some programs mentioned that the Standards for Quality Improvement Reporting Excellence (SQUIRE) Guidelines are used as guidance for projects. These writing guidelines, first published in 2008, offer guidance to improve the accuracy and clarity of written reports on the quality and safety of healthcare.14,15

• Barriers. Barriers to scholarly project work reported by the attendees include misaligned expectations by PhD, EdD, DNP, and DNAP faculty. For example, the opinion was expressed that a “140-page dissertation-type” project does not match the purpose of scholarly work for a practice doctorate.

Programs also seemed uniformly concerned about overcrowding clinical sites with scholarly work projects. However, clinical sites indicated that they value these projects. For entry-level programs, balancing academics and clinical education remains a challenge. Spending time on scholarly work rather than studying for the NCE was underscored. Taking students out of clinical education to work on projects created concern for educators.
Creating a “practice scholar” through the practice doctorate remains the goal.

- Portfolio. The use of portfolios was raised. The suitability of portfolios containing some of the evidence developed by the scholarly project was compared with portfolios containing only curricular items (eg, papers unrelated to the scholarly project, journals, clinical case numbers).

Results of COA Focus Group
Like the AANA Foundation session, the COA focus group resulted in a robust discussion. The discussion explored 3 questions: (1) What is the vision for scholarly work (projects)? (2) What key elements should be included in scholarly work? (3) What is an example of something that would not be a key element of a scholarly work? Attendees provided substantive feedback, which is summarized for each question.

- What Is the Vision for Scholarly Work (Projects)? The practice doctorate results in a skilled clinician but also represents a graduate who is prepared to use scholarly work skills, leadership, and teamwork to advance practice. Scholarly work skills include problem identification; seeking, applying, appraising and translating evidence; determining strategies for change; creating new policies and procedures; implementing such changes (if feasible); and sharing (disseminating) the scholarly work products with others.

The evidence-based process informs and improves clinical and educational practice. The skill set derived from the process is as important as the product. Inspiring students to use the skill set following graduation is key to promoting future scholarly work as clinicians.

The required scholarly work should involve reasonable scope and time commitment in the context of practice doctorate nurses anesthesia educational programs, be achievable, and inform practice. Including teams to address gaps in practice and clinical or educational issues fosters leadership development while moving through the scholarly work process. Teamwork is foundational to anesthesia practice.

- What Key Elements Should Be Included in Scholarly Work? Although the key elements identified by the focus group mirrored the choices offered in the survey, the group discussion provided additional insights. Project types may vary, but the following elements were identified as important to all scholarly work.

- Problem identification (clinical, educational, professional)
- Retrieval, review, and analysis of existing evidence from the literature
- Developing a strategy to address the problem
- Implementation (actual vs simulated): Because of the breadth and scope of some projects, not all projects may be implemented. This is particularly true for projects aimed at changes in practice, educational strategies, or administrative policies. Although the student may generate the underpinnings of change based on evidence and analyses, executing the change may continue well past the student’s graduation. Later student cohorts may implement changes suggested in the initial scholarly work.
- Dissemination in some form (COA requirement): Institutional requirements may include additional requirements for project dissemination. The following list of options were offered at the AANA Foundation session: continuing education offering, poster, submission for publication, executive summary, or oral defense.

Examples of final project types included the following: final paper, publication-ready manuscript, platform presentation (national, state, local meeting), and virtual presentation.

- What Is an Example of Something That Would Not Be a Key Element of a Scholarly Work? An example of what would not be a key element of scholarly work is a literature review that lacks applicability to affect practice improvement. In contrast, a review of the literature inclusive of an appraisal with implications and/or recommendations for practice offers greater breadth, depth, and scope. One student may undertake and complete such a review; a follow-up student may then use the review for policy development.

Discussion
Based on the work of the SIG, the white paper was developed and is available on the COA website. Most of the content from the white paper is contained in this article. Scholarly work is specifically linked to the definitions of scholarly work and scholarship skills contained in the COA Standards. The term dissertation conveys research-oriented work consistent with PhD and EdD degrees. The term capstone is used in high school and middle school or at the end of an academic program. “Scholarly Project” speaks to the unique application of work required to attain the practice doctorate. Programs may also select to use similar terms consistent with the degree focus, such as DNP project or DNAP project, as recommended by other nursing accreditation agencies. As evidenced by the results of the SIG survey, Foundation session, focus group, and call for comments survey, scholarly projects can be extremely varied.

- CRNA Faculty Oversight of Scholarly Work. Both CRNA and non-CRNA faculty involvement in the scholarly work development process may vary depending on the project scope or on the requirements of the institution, college, or program. However, faculty with a CRNA credential must be involved in the process of planning, formation, and evaluation of each scholarly project.

- Elements of Scholarly Work. To satisfy the requirements of practice doctorate training, scholarly work represents an evidence-based inquiry process using scholarship skills resulting in an academically sound
product to improve clinical practice. Original research is typically reserved for research doctorates; however, some programs may require original research.

The scholarly work for students in a nurse anesthesia program that awards a practice doctorate should include the following steps: (1) Identify a problem related to nurse anesthesia practice. (2) Search, analyze, and synthesize the literature. (3) Develop a strategy or method to address the problem. (4) Develop a plan for implementation. (5) Evaluate the project. (6) Disseminate the project.

- Identify a problem related to nurse anesthesia practice. The problem may relate to clinical, educational, or professional practice.
- Search, analyze, and synthesize the literature. This step uses literature search skills and critical thinking. Literature reviews are a requirement for all projects. A review of the literature inclusive of an appraisal with implications and/or recommendations for practice offers breadth, depth, and scope to a project. For example, a student may complete a literature review, analysis, and synthesis focused on CRNA involvement in professional associations. Another student may address this same topic focusing on state policy development. Standalone literature reviews without analysis serve as a platform for a project but fall short of the other elements of scholarly work.
- Develop a strategy or method to address the problem. This step demonstrates problem solving and critical thinking.
- Develop a plan for implementation. The strategy or method to be used to address the problem should have an implementation plan. It is acknowledged that not all

<table>
<thead>
<tr>
<th>Profession</th>
<th>Degree</th>
<th>Accreditation Organization/Standard</th>
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<tbody>
<tr>
<td>Audiology</td>
<td>AuD</td>
<td>ACAE (Accreditation Commission for Audiology Education) Standard 25: Student Research &amp; Scholarly Activity. The program must demonstrate that students have knowledge of the fundamentals of research and research design, enabling them to read the professional literature and understand and critically evaluate the concepts related to evidence-based practice.</td>
</tr>
<tr>
<td>Behavioral health</td>
<td>DBH</td>
<td>ACHC (Accreditation Commission for Health Care). Doctor of Behavioral Health is a non-licensure professional doctoral program in which students gain the leadership, management, consulting, and entrepreneurial skills to advance their career in diverse behavioral health settings. Typically, the academic programs require that students complete an independent, applied practice-based project exploring a behavioral health issue or problem.</td>
</tr>
<tr>
<td>Chiropractor</td>
<td>DC</td>
<td>CCE (The Council on Chiropractic Education) Meta-Competency 6—Information and Technology Literacy, Curricular Objective: A. Locate, critically appraise and use relevant scientific literature and other evidence.</td>
</tr>
<tr>
<td>Dentistry</td>
<td>DDS/DMD</td>
<td>CDA (Commission on Dental Accreditation) Standard for Dental Education Programs: 2.10. Critical Thinking. Emphasis is on practice skills and clinical residency programs. Critical thinking and evidence-based practice methods are required; there is no scholarly project.</td>
</tr>
<tr>
<td>Health informatics</td>
<td>DHI</td>
<td>CAHIIM (Commission on Accreditation for Health Informatics and Information Management Education). Scope of accreditation is associate, bachelor’s and master’s degree programs. Advanced practice doctoral programs in Health Informatics require a translational practice project completed in a healthcare organization, a written report and disseminated through a presentation of the findings in an oral session.</td>
</tr>
<tr>
<td>Health science</td>
<td>DHSc/DHS</td>
<td>No recognized program accreditation organization. These programs require a final research practicum through faculty-supervised research experiences, development of the research question, literature review, design and method, IRB, grant writing, subject recruitment, instrumentation, measurement, data collection, data analysis, interpretation of results, and/or dissemination of results.</td>
</tr>
<tr>
<td>Medicine</td>
<td>MD</td>
<td>LCME (Liaison Committee on Medical Education). The LCME is jointly sponsored by the Association of American Medical Colleges (AAMC) and the American Medical Association (AMA). Medical school education includes principles of scholarly investigation with the actual curriculum structured by each institution. ACGME governs the residency programs and emphasizes scholarly activities and quality assurance principles within the residents’ clinical experience.</td>
</tr>
<tr>
<td>Medical science</td>
<td>DMSc</td>
<td>ARC-PA (Accreditation Review Commission on Education for the Physician Assistant). The Doctor of Medical Science degree is a clinical doctorate for licensed physician assistants (PA) and PA educators; curricula include execution of a scholarly project suitable for publication and/or presentation at conferences.</td>
</tr>
<tr>
<td>Occupational therapy</td>
<td>OTD/DrOT</td>
<td>ACOTE (Accreditation Council for Occupational Therapy) D.1.0. Doctoral Capstone. The doctoral capstone consists of 2 parts: a capstone project and a capstone experience.</td>
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</tbody>
</table>

Table 5 continues on page 59
projects can be actually implemented or fully implemented because of breadth or scope. For example, projects aimed at changing practice, educational strategies, or administrative policies may not be implementable because of their breadth or scope, yet they still have value as an initial examination and analysis of a problem. Therefore, although the student may generate the foundations of change based on evidence and analyses and propose methods for implementing the change, executing the change may require time, resources, and committee approvals well past the student's graduation. Projects with a very large scope may be extended from one cohort to the next. It may not be feasible to implement the initial project. Narrowing the scope of the project is advisable but is not always feasible depending on the project topic. Table 4 gives examples of scholarly projects with and without implementation.

- **Evaluate the project.** Evaluation of scholarly work may include a combination of methods, including faculty, expert, and/or peer evaluation. Programs tailor their scholarly work evaluation and approval processes according to university, departmental, program, or committee requirements.

- **Disseminate the project.** Dissemination of rigorous scholarly work contributes to the profession and is required by the COA. Dissemination methods depend on

### Table 5. Other Practice Doctorates

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<tr>
<th>Profession</th>
<th>Degree</th>
<th>Accreditation Organization/Standard</th>
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<tbody>
<tr>
<td>Optometry</td>
<td>OD</td>
<td>ACOE (Accreditation Council on Optometric Education) Standard III. Research and Scholarly Activity. 3.2. The program must provide opportunities for students to participate in research and other scholarly activities mentored by faculty.</td>
</tr>
<tr>
<td>Osteopathic medicine</td>
<td>DO</td>
<td>COCA (Commission on Osteopathic Accreditation) Pre-Accreditation Element 6.5: Scientific Method. The curriculum must include the methods by which research is conducted, evaluated, explained to patients, and applied to patient care. Students may be engaged in research activities in the final phases of their academic program.</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>PharmD</td>
<td>ACPE (Accreditation Council for Pharmacy Education) Standard 2. Essentials for Practice and Care. 2.4. The graduate is able to describe the development of practice-based guidelines and evidence-based best practices, and appropriately evaluate the validity and reliability of the conclusions of published research studies.</td>
</tr>
<tr>
<td>Physical therapy</td>
<td>DPT</td>
<td>CAPTE (Commission on Accreditation in Physical Therapy Education) Professional Practice Expectation: Evidence-based Practice. CC-5.25 Participate in the design and implementation of patterns of best clinical practice for various populations. A doctoral project appropriate to the profession of physical therapy should demonstrate critical inquiry, independent thinking, and rationale. An abstract, written manuscript or report and an oral presentation is usually required.</td>
</tr>
<tr>
<td>Public health</td>
<td>DrPH</td>
<td>CEPH (Council on Education for Public Health) D6. DrPH Applied Practice Experience (SPH and PHP, if applicable). All DrPH students engage in 1 or more applied practice experiences in which students are responsible for completion of at least 1 project that is meaningful for an organization and to advanced public health practice. This may take the form of a journal or other written product, a professional portfolio or another deliverable as appropriate for the program. D8. DrPH Integrative Learning Experience (SPH and PHP, if applicable). DrPH candidates generate field-based products consistent with advanced practice designed to influence programs, policies or systems addressing public health and must require, at a minimum, production of a high-quality written product.</td>
</tr>
<tr>
<td>Social work</td>
<td>DSW^b</td>
<td>CSWE-COA (Council on Social Work Education–Commission on Accreditation). Scope of accreditation is bachelor and master’s degree programs. For the advanced practice Doctor of Social Work, a capstone project is required consisting of 2 publishable articles submitted in a portfolio, ready for submission to a professional journal although it is not required that they be submitted.</td>
</tr>
<tr>
<td>Veterinary medicine</td>
<td>DVM/VMD</td>
<td>AVMA-COE (American Veterinary Medicine Association–Council on Education) 7.10. Standard 10, Research Programs. All students must receive training in the principles and application of research methods and in the appraisal and integration of research into veterinary medicine and animal health.</td>
</tr>
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^aSource of each standard is the respective named accreditation organization.

^bAdvanced practice professional doctorate or advanced professional degree program is above and beyond entry-level professional requirements. It is distinguished from research doctorates in that the program does not require dissertations and the original research on which the dissertations are based. Advanced practice doctorates incorporate advanced practice rotations or residencies and a capstone research project demonstrating the student's ability to conduct clinically relevant research appropriate to the advanced diagnostic or therapeutic practices taught in the program. Source: Association of Schools Advancing Health Professions. Position statement of ASAHP. September 16, 2013. Accessed November 19, 2020. https://www.asahp.org
Faculty participation and understanding of a project but not be considered the sole deliverable product of the project.

• **Team Projects.** Some programs faced with an ever-increasing number of projects are opting to incorporate the multifaceted engagement of a team approach to complete scholarly work. Through this approach, students can gain essential teamwork skills. For faculty members, a major benefit of the team approach is a reduced number of projects they must oversee; likewise, survey and project fatigue may be lessened for all involved, including survey recipients. The team approach also helps address concerns expressed by clinical site coordinators about the potential for scholarly work to take away from clinical activities. Clinical sites can be overwhelmed with multiple ongoing projects.

A clear delineation of requirements for team projects is recommended. Some programs also recommend the use of learning contracts for team members wherein the team members delineate responsibilities for the project. Team composition may vary by project requirements and institutional needs. For CRNAs completing a practice doctorate, interprofessional collaboration may be advantageous. The American Association of Colleges of Nursing published guidance regarding teamwork in its DNP Tool Kit.17

• **Academic Portfolios.** Academic portfolios chronicle student accomplishments throughout the program, which may include scholarly work, student manuscripts, case numbers, reflections, and presentations. Scholarly work may be included in the portfolio. If used as a project tool, portfolios are useful for organizing material and allowing students to view the scope of their topics. The portfolio should be a tool to enhance the presentation and understanding of a project but not be considered the sole deliverable product of the project.

• **Original Research.** Research to develop new knowledge is historically viewed as work within the PhD domain and therefore is not viewed as a requirement for the practice doctorate scholarly project. Programs may provide this as an option for exceptionally motivated students, but requiring original research is not necessarily consistent with the aim of the practice doctorate.

• **Resources.** Scholarly projects require faculty input as a source of expert guidance and oversight. Faculty workload inclusive of teaching, clinical practice, community service, and scholarship poses challenges; mentoring students regarding scholarly projects adds to the already heavy workload. A substantial component of faculty workload, guiding students’ scholarly projects is essential to the practice doctorate curriculum for the nurse anesthesia program. Programs should consider this academic workload when planning practice doctorate education to ensure hiring an adequate number of faculty with the appropriate background to meet this need. Based on the survey, variation exists regarding the number of projects assigned to faculty. Due to the wide range of variables affecting faculty workload, the COA is not prescriptive regarding the number of projects. However, the survey indicated an average of 5 projects assigned to each faculty member.

• **Faculty Rank and Promotion.** Faculty participation in doctoral projects in many institutions is considered scholarship, teaching, and/or service. The diversity of approaches to awarding promotions, rank, and/or tenure to faculty based on their work in scholarly projects can be beneficial.

• **Other Practice Doctors.** To offer a broader scope on the topic of scholarly work, requirements for scholarly work in other practice doctorates was explored. Table 5 presents a review of 18 other practice doctorates in health-related professions that demonstrate a variety of approaches to and interpretations of scholarly work as a culmination of the academic program. This table is intended to be an overview and not an exhaustive analysis of the various programs. The respective accreditation organization standards applicable to doctoral degree scholarly work are displayed in the last column. All standards require a variety of courses such as a review of the respective practice literature, research design, and quantitative statistics, concluding with a project and/or written report specific for each professional field of study with application to current practice. In some fields of study such as the Doctor of Health Informatics (DHI), Doctor of Medical Science (DMSc), and Doctor of Social Work (DSW), a doctoral degree is not required for entry to practice but is considered enhancement of professional stature and contributes to the body of knowledge for those professions. In these 3 examples, there are currently no accreditation standards within the scope of the respective accrediting organizations, but information related to awarding of a doctoral degree is provided in the table footnote as explanatory details. For additional information regarding these program’s requirements for scholarly work, please visit the complete white paper on the COA website.16

**Conclusion**

The COA’s guidance contained in the white paper strives to present the status of the scholarly work project requirements in practice doctorate programs of nurse anesthesia. It is the hope of the COA that program educators will find this information useful as the practice doctorate education for nurse anesthetists continues to evolve.
Graduate programs to educate CRNAs are rapidly moving into the practice doctorate framework. This move has the potential to advance the profession but presents numerous challenges to faculty and students. As an integral component of practice doctorate curricula, faculty must guide and mentor students as they engage in scholarly work. Programs should strive to ensure that this faculty contribution is recognized as a source of support for academic advancement, not as an extra responsibility. Students must create a meaningful evidence-based inquiry project or scholarly work intended to improve practice quality, while engaging in long clinical training hours and attending to concurrent academic coursework. The most desirable outcome of practice doctorate training will be to produce clinical scholars with skill sets that enable them to identify practice problems, explore the relevant scientific literature, and devise and test solutions in a skillful and engaged manner.

REFERENCES


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