

DNP Scholarly Project Manuscript

Diversity and Inclusion in Nurse Anesthesia

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Author Note

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**Doctoral Nursing Project Team Members**

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### **Executive Summary**

The purpose of this project was to assess the impact of an evidenced based diversity and inclusion workshop on minority nursing students' level of knowledge and interest in nurse anesthesia. This project aimed to educate minority undergraduate nursing students about nurse anesthesia and promote the recruitment of minorities to nurse anesthesia using an educational intervention and mentoring. There are several variables that influence the likelihood of minorities to pursue a career in nurse anesthesia. The variables of particular interest to this project include prior exposure to diverse certified registered nurse anesthetists, participation in a mentorship program, and level of knowledge about nurse anesthesia and necessary steps towards pursuing a career in nurse anesthesia.

Three outcomes were measured for this project: (1) Minority students who attended this workshop scored 25% higher on the posttest than the pretest over key information regarding the CRNA profession; (2) Participants indicated via surveyed responses an increased level of interest in pursuing a career in nurse anesthesia; (3) Participants gained increased exposure between participants and a group of diverse CRNAs and SRNAs serving in a mentorship role.

Working to increase diversity in nurse anesthesia was an evidenced-based practice project. This project was implemented on February 7, 2020. The University of Saint Francis (USF) in Fort Wayne, Indiana was the setting. All participants were undergraduate minority nursing students enrolled in one of the three nursing programs: USF, Indiana Fort Wayne (IFW), and Ivy Tech. All participants accepted for inclusion in the project were at least 18 years of age and enrolled full-time in a 4-year or 2-year registered nursing degree program. This project included racially, or ethnically diverse participants as defined by the International Minority Rights Group. Applicants who were not considered racially or ethnically diverse were not

excluded. Applicants enrolled less than half time or in a licensed practical nursing degree program were excluded.

A flyer was distributed to the undergraduate nursing program director on all three campuses. Participants interested in attending contacted the project manager via email at which point a pre attendance survey was completed that captured demographic information as well as the subject's baseline awareness and interest level in nurse anesthesia.

On the day of the workshop, participants were asked to complete a pretest prior to the educational intervention. The educational intervention was presented in the form of a PowerPoint presentation. The pretest covered key content related to beginning a pursuit of a career in nurse anesthesia. The content included key information such as the requirements for applying to anesthesia school, job roles and responsibilities of a nurse anesthetist, and training requirements to complete a degree in nurse anesthesia. This pretest was composed of ten questions in total.

A posttest was administered in the same fashion as the pretest at the end of the workshop. It covered the same material as the pretest. A maximum of 20 minutes was provided to each participant to complete each test. Lastly, an evaluation survey was electronically delivered to every participant who attended the workshop.

Data analysis included descriptive statistics of the pretest posttest scores, the mean, median, and mode of scores from all participants on the pre and posttest along with computation of a Gain score using SPSS version 24. Demographic data (age, gender, race, and ethnicity), was also collected to determine the percentage of men, women, racial and ethnic groups, average age of attendees, and percentage of participants indicating an increased interest in pursuing a career in nurse anesthesia.

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## Diversity and Inclusion in Nurse Anesthesia

### Chapter 1: Introduction

#### Problem

The lack of racial/ethnic diversity within the nurse anesthesia profession is a longstanding issue reflected in the most recent demographic data produced by the American Association of Nurse Anesthetists (AANA) (“Increasing diversity”, 2019). Underrepresented populations include African American, Hispanic, Native American, Asian-American, and Pacific Islander. Diversity as defined by the AANA is “all of the ways in which individuals and groups differ and recognizing how these differences should be valued” (AANA Diversity and Inclusion, 2016). Only 1% of the CRNAs registered by the AANA practicing either full or part-time are of African American descent. It was not until 1951 that black nurse anesthetists were granted access into the AANA (Diversity in Nurse Anesthesia, 2019).

According to Diversity in Nurse Anesthesia (2019), currently 52,000 CRNAs registered with the AANA practice either full or part-time. Hispanic and Asian/Pacific Islanders account for only 2% and 3% respectively (Diversity in Nurse Anesthesia, 2019). A lack of diversity indicates a need to incorporate strategic initiatives to increase the number of minority applicants into nurse anesthesia school. In the United States, African Americans are listed as the largest minority by race at 14.2% and Hispanic and Latino-Americans the largest by ethnicity at 17.8% (U.S. Census Bureau Quick Facts, 2016). Yet, minorities comprise just 10% of the nursing workforce (“From minority nurse to nurse anesthetist”, 2019).

### **Background of the Problem/Literature Supporting the Problem**

The inaugural cohort of the University of Saint Francis nurse anesthesia DNP program of eleven students, has one student of African American descent, a first-generation Russian-American student, and a first-generation Eastern European student. Allen County's population is made up of 80% Caucasians, 12% African Americans, and 7.5% Hispanic and Latinos ("U.S. Census Bureau QuickFacts: Allen County, Indiana", 2018).

As of 2015, only 11% of African Americans held an advanced degree (Francis & Vilma, 2018). Additionally, only 11% of Hispanics ages twenty-five to twenty-nine hold a bachelor's degree or higher, compared to 34% of Caucasians (Gandara, 2020). Historically Black Colleges and Universities (HBCUs) were an integral part of higher education for African Americans prior to the civil rights movement (Gandara, 2020). They comprised 90% of the African American graduates in the U.S. and they were the only institutions where enrollment and graduation rates were equivalent. Reasons for underrepresentation in nurse anesthesia and the disparity in higher education are multifactorial. They include complex and dynamic considerations that encompass economic, social, and cultural domains (AANA, 2016; Carter et al., 2015; Francis & Vilma, 2018; Gandara, 2019; "Increasing Diversity-One CRNA at a time", 2019).

After the Civil Rights movement in the 1960's, which led to increased minority enrollment in mainstream institutions, the enrollment in HBCUs has declined to 9% (Francis & Vilma, 2018). Predominantly white institutions are dealing with the task of creating an academic environment amenable to all races and ethnicities that supports their inclusion and provides them an equal opportunity of success (Francis & Vilma, 2018). Obstacles that are commonplace amongst underrepresented populations include implicit bias, lack of mentors, lack of resources, social isolation, and a disparity of promotion opportunities (Francis & Vilma, 2018). According

to Harper, Patton, & Wooden (2009), the continued fight for racial equality in higher education suggests that policy efforts in isolation will not be sufficient to address the opportunity gaps between minorities and the mainstream populace. Additionally, the socioeconomic disadvantages that are linked to these opportunity gaps make this an issue that has a broader societal impact outside of the classroom (Harper, Patton, & Wooden, 2009).

To address the disparities specifically related to nurse anesthesia, strategic initiatives must be implemented to increase awareness about the profession and enhance minority recruitment. Efforts to provide diverse mentorship to prospective applicants supports the removal of the known barriers to minorities such as isolation and lack of mentorship (Rodriguez, Campbell, & Pololi, 2015). By removing barriers to access that underrepresented populations are faced with, an increase in the number of successful minority applicants might arise. Removing barriers using evidenced-based strategic initiatives is consistent with the tenets of evidenced-based practice and the translation of evidence into practice. The doctoral prepared nurse is key to this effort, as he/she is specially equipped through extensive training to undertake leadership roles in bridging the knowledge to practice gap (White, 2016).

### **Practice/Knowledge Gap**

Evidence supports diversity and inclusion inspired workshops and informational sessions regarding the nurse anesthesia profession. Benefits of this approach supported in the literature include increased awareness about the profession of nurse anesthesia and promotion of a more diverse campus environment (Shaw, 2015). This is a critical aspect and facilitates increasing the awareness about the profession of nurse anesthesia. Increased awareness is especially important for applicants in areas of lower income and diverse backgrounds because early exposure can

increase their likelihood and success in taking steps toward a career in nurse anesthesia (Shaw, 2015).

Removal of organizational and extrinsic barriers can be achieved via undergraduate outreach, strategic diversity and inclusion events at universities, and faculty development programs (Powers, White, Oriol, & Jain, 2016). A diverse staff including women and underrepresented minority faculty members amplifies the ability of academic medicine to fulfill its educational, research, and patient-care missions (Eastland, Morrow, & Davis, 2018, Powell et al., 2010). Policies and reward systems must be implemented to support changes over time. Cultural values should be assessed, encouraged, and supported as doing so supports sustaining changes when inevitable transitions in leadership emerge (Krupat et al., 2013).

It is not uncommon for CRNAs to enter into professional roles in education after serving as mentors in a nurse anesthesia mentorship program. Attendance at a Diversity CRNA event represents for many minority attendees their first exposure to the profession of anesthesia. Juan Quintana CRNA, DNP, MHS is a Hispanic American who is a former president of the AANA. Currently he sits on the committee for diversity and inclusion with Jorge Valdes DNP, CRNA, ARNP who is the committee chair. The goals for this committee include improving cultural competency training, supporting resources for increasing diversity in the field of nurse anesthesia, and developing a model based on the recommendations of other nurse anesthetists and consulted external experts to improve cultural sensitivity (American Association Nurse Anesthetists, 2016).

### **PICO Question**

Does participation in a diversity focused nurse anesthesia workshop increase minority nursing students' knowledge base and interest in pursuing a career as a nurse anesthetist?

P- Minority nursing students

I – diversity focused nurse anesthesia workshop

C – No comparison group

O – Increased knowledge about anesthesia and interest from minority nursing students in nurse anesthesia

### **Project Necessity**

The topic of diversity and inclusion have received increasing interest from professional organizations such as the AANA, American Association of Critical Care Nurses (AACN), and American Nurses Association (ANA). Diversity & Inclusion are core values of the AANA. Diversity is defined as “all the ways in which individuals and groups differ” and inclusion is the “act of creating an environment where any individual or group can be and feel welcomed” (AANA Diversity and Inclusion, 2016). The University of Saint Francis’ (USF) goals for diversity and inclusion are centered around transforming the campus climate to reflect the values and ethics outlined in the University’s mission statement and the President’s address.

The USF Nurse Anesthesia doctoral nursing program’s inaugural cohort began in August of 2017. Out of an initial eleven accepted candidates, the first cohort consisted of two African American students, one Russian American student, and one Bosnian-American student. Demographic data for Allen county reflects a population that consists of 80% Caucasian, 12% African American, and 7.5% Hispanic and Latino (“U.S. Census Bureau QuickFacts: Allen County, Indiana”, 2018). However, currently the university does not have a diversity focused nurse anesthesia mentorship program which evidence suggests is beneficial to increasing the number of underrepresented populations in nurse anesthesia (Powers et al., 2016).

Over 90% of the current workforce of practicing CRNAs are Caucasian. An unencumbered registered nursing license is required to work as a CRNA. The disparities present at the graduate level of nursing reflect a similar disproportionate workforce at the undergraduate level. Registered nursing represents one of the largest employment sectors of the healthcare industry with over three times the number of nurses for every physician. However, minorities only comprise approximately 10% of the registered nursing workforce (“From minority nurse to nurse anesthetist”, 2019).

The lack of resemblance between health care workers and the diverse patients they care for leads to feelings of exclusion in a health care system that patients designate as removed and unsympathetic (DuVivier, 2017, Purnell & Fenkl, 2019; Brown, et al., 2019; Alvidrez, Castille, Laude-Sharp, Rosario, & Tabor, 2019). Addressing the health disparities in the U.S. requires a workforce that is more diverse and reflective of the population’s racial and ethnic mix (DuVivier, 2017, Purnell & Fenkl, 2019; Brown, et al., 2019; Alvidrez, Castille, Laude-Sharp, Rosario, & Tabor, 2019).

### **DNP Project Overview**

**Scope of project.** The purpose of this project was to increase diversity within the profession of nurse anesthesia by informing, empowering, and mentoring minority students. Increasing diversity in nurse anesthesia was an evidenced-based practice (EBP) project. This EBP project’s goal was to improve diversity in the nurse anesthesia workforce by using recommendations from the best available evidence obtained from a review of current literature. Evidence based recommendations included campus-based information sessions for minority students, using simulated training exercises to enhance learning, and mentorship to promote minority student recruitment in nurse anesthesia (Eastland, Morrow, & Davis, 2018, Krupat et

al., 2013). Student opinions were included for the assessment of campus specific issues to address diversity and inclusion (Sackett, 2014). Student opinions were captured via surveys in addition to informal and formal discussions between students and team members. Mentorship was supported as a means to increase diversity by building therapeutic relationships between faculty members and students. Vestiges of these diversity and inclusion specific interventions were implemented at the University of Saint Francis Fort Wayne campus on February 7, 2020.

### **Stakeholders.**

My project team consisted of Dr. Wallena Gould EdD, CRNA, FAAN, University of Saint Francis Diversity and Inclusion department head Dr. Paul Porter Ph.D., Nurse Anesthesia Program (NAP) director Dr. Lisa Osborne DNP, CRNA, Nurse Anesthesia Program Assistant Professor Gregory Louck MS, CRNA, project adviser Dr. Carolyn Yoder DNP, RN, CNE, and student registered nurse anesthetists (SRNAs), Okechukwu Gubor and Rebecca Ngaling from the class of 2021. Clearly identified roles for team members helped ensure project success because members fully understood their role and its impact on the project's outcome. Dr. Gould served as the practice mentor. Dr. Porter served as project advisor. Dr. Yoder was the academic advisor for this project. Dr. Lisa Osborne and Professor Gregory Louck were team members who also assisted with the simulated training exercises.

The project team consisted of key stakeholders who directly impacted the project's success. Key to the project's success was the institutional support from Dr. Angela Harrell and Dr. Lance Richey. A letter of support was obtained from both Dr. Harrell and Dr. Richey, as well as Dr. Gould EdD, CRNA, FAAN, Dr. Osborne DNP, CRNA, and Dr. Porter Ph.D. (see Appendix B for all letters of support).

### **Budget and Resources**

To minimize cost, the project leader collaborated with USF nurse anesthesia staff to utilize the equipment and supplies already possessed by the program. The USF Nurse Anesthesia Program (NAP) faculty was supportive of the project aims. The NAP provided the project manager with a classroom in the Doerner Health Sciences building, printing support, and access to NAP simulation training equipment. A simulation laboratory, classrooms, and training equipment were procured and maintained on campus in the Doerner Health Sciences building.

### **Cost and Description of Resources**

The NAP reduced the number of associated costs related to the project by providing a venue, printing support, and access to educational equipment. The educational equipment provided included airway management training manikins, video laryngoscope, macintosh and miller direct laryngoscopy blades, fiberoptic bronchoscope, laryngeal mask airways, oral and nasal pharyngeal airways.

**Resources.** An organizational assessment of USF demonstrated the school's willingness to utilize best practice recommendations to incorporate diversity and inclusion on campus. University goals for diversity and inclusion are centered around transforming the campus climate to reflect the values and ethics outlined in the University's mission statement and President's address. Additionally, the University worked to improve its diversity and inclusion efforts by reorganizing its staffing model to include a taskforce dedicated to addressing diversity and inclusion on campus. In 2016, the university collaborated with the higher education consulting firm CREDO to host a diversity and inclusion workshop. Furthermore, the university's Catholic faith-based values support a culture that is rooted in compassion and service ("University of

Saint Francis”, 2019). The President’s address as well as the University’s mission statement reflect a campus wide effort to promote scholarship, social responsibility, and leadership guided by faith-based principles (“Mission and Values”, 2019). Specific to diversity and inclusion, the university is working towards increasing the graduation rate of minority students to be on par with that of Caucasian students (Avila et al., 2017). As of 2017, Caucasian students at the University of Saint Francis graduate at approximately a 70% success rate while students of Hispanic descent graduate at approximately 50% success rate (USF Office of Institutional Research and Effectiveness OIRE, 2018).

### **Process and Outcomes**

A flyer was created in December 2019 to advertise the project and was distributed to the USF undergraduate nursing program director, Ivy Tech’s nursing program director, and the nursing department at Indiana University’s Fort Wayne campus. Participants interested in attending emailed the project manager at which point they were sent a pre attendance survey. This survey captured demographic information as well as baseline awareness and interest level in nurse anesthesia. On the day of the workshop, participants were asked to complete a pretest prior to the PowerPoint presentation. This pretest covered key information related to pursuing a career in nurse anesthesia. This pretest was composed of 10 questions in total. Questions covered the requirements for applying to anesthesia school, job roles and responsibilities of a nurse anesthetist, and training requirements to complete a degree in nurse anesthesia. Participants were not expected to have prior knowledge on the subject matter and were encouraged to answer questions to the best of their ability. A maximum of 20 minutes was allotted to complete the 10 multiple choice questions on the pretest.

Following the pretest, participants attended an information session regarding the topics covered in the pretest, including information on basic airway equipment. Participants were paired with mentors for airway equipment familiarization and practice of airway management techniques.

At the conclusion of the event, participants were again tested on the content included in the pretest. A maximum of 20 minutes was provided to complete this posttest. In total, four hours were spent completing the workshop. Additional time was spent meeting with mentors after the conclusion of the workshop.

### **General Timeline**

Recruitment of the sample of participants for the study occurred during the months of November-December 2019 and January 2020. The project manager and SRNA volunteers convened upon return from Christmas break on January 31 to discuss final preparations and review roles and assignments with USF NAP faculty. All forty-three participants recruited to attend submitted their pre-surveys to Survey Monkey. The pre-surveys were dispatched to participants on the same day their initial email to the program director was received. The bulk of respondents, greater than 80%, submitted their completed surveys to Survey Monkey on January 30, 2020. The project was implemented on February 7, 2020. Data collection concluded on the day of the event. One undergraduate nursing student out of the forty-three respondents participated in the event. She completed her pretest, posttest, and post implementation survey on the day the project was implemented. Data analysis occurred from February 7 to February 8, 2020.

### **Project Setting**

University of Saint Francis in Fort Wayne, IN was the setting of this doctoral project titled Diversity and Inclusion in Nurse Anesthesia. This setting was chosen based on the information obtained from the organizational assessment of the campus performed by the project manager. The university's goals for diversity and inclusion are centered around transforming the campus climate to reflect the values and ethics outlined in the University's mission statement and President's address, both of which adhere to a message of service to the community and inclusion with equal opportunity for all its members.

Reverencing the unique dignity of each person is one of the Franciscan values, and it aligns with the project aim of increasing diversity and inclusion. In addition, the USF Nurse Anesthesia Program (NAP) faculty and administration fully support implementation at USF. Promoting a culture of respect for all aspects of diversity among students, faculty, and the community at large is of the utmost importance to the NAP.

The four-year undergraduate nursing program on campus also provided a convenience sample from which to recruit participants for the workshop. Flyers promoting the workshop were displayed throughout the Doermer Health Sciences building with the permission of the nursing administration and faculty.

### **Participant Inclusion/Exclusion Criteria**

All participants were at least 18 years of age and minority nurses or undergraduate minority nursing students enrolled in one of three nursing programs: University of Saint Francis, Indiana University Fort Wayne, and Ivy Tech. Participants considered for inclusion were registered nurses or full-time students in a four-year or two-year registered nursing degree

program and were of a racially or ethnically diverse background as previously defined by the International Minority Rights Group.

### **Expected outcomes**

The three major project aims were knowledge acquisition, increased interest in pursuing a career as a nurse anesthetist, and increased exposure to diverse mentorship. The expected outcomes for this project were that project interventions would produce increases in awareness about the nurse anesthesia profession and interest in nurse anesthesia among minorities. There were three outcomes for this project: (1) The student who attended this workshop scored at least 25% higher on the posttest than the pretest over key information regarding the CRNA profession; (2) Surveyed responses indicated an increased level of interest in pursuing a career in nurse anesthesia; (3) Increased exposure between the participant and a group of diverse CRNAs and SRNAs led to the development of a mentoring relationship.

### **Risk Analysis**

This project presented minimal risk to the participant outside of what they would normally encounter during daily living including psychological, physical, or mental testing. The cost of attendance for the workshop was free. No monetary funds were received by project team members, mentors, or participants.

### **Strategies to Mitigate Risks**

Jennifer Shepler, Executive Assistant to the Vice President for Administration & Vice President for Finance and Operations was contacted regarding this scholarly project, and she supplied the project manager with the Release and Waiver of Liability, Assumption of Risk, and Indemnity Agreement. All participants were required to sign these documents to participate (see Appendix C for the Release and Waiver of Liability, Assumption of Risk, and Indemnity

Agreement). If a current student had required medical treatment during the event and it was during normal operating hours, they could have visited the clinic. If a non-USF student required medical treatment during the event, they would have been directed to seek medical treatment through their regular provider. In the event of an emergency, 911 and USF security were to be contacted.

### **Informed Consent Document**

On the day of the event, all participants received a full explanation of the study to include proposed risks. Each participant signed an informed consent after a discussion with the project manager to assess their level of understanding of the study, the associated risks, and field any additional questions if appropriate (see Appendix D for the Informed Consent document).

## **Chapter 2: Synthesis of Supporting Evidence/Literature and Project Framework**

### **Relevant Theory and Concepts**

Multiple frameworks served as the scientific underpinnings of this project design. Intervention construction occurred strategically with the overarching goal of increasing workforce diversity in the nurse anesthesia profession. The Knowledge-to-Action model (KTA) was used to guide the planning phase and assist in the development of strategic initiatives to ensure a successful project design. The KTA concepts were used to integrate the knowledge formation process with the process of knowledge application. KTA channels new knowledge through a systematic process of seven phases known as the KTA cycle (Graham, Harrison, & Logan, 2005; Anderson, 2018). It is cyclical because the framework is responsive to feedback incurred throughout the design, planning, and implementation process. A key feature is that it can also be used to test action theories as a means of tailoring interventions in agreement with a targeted population to produce a desired change (Graham, Harrison, & Logan, 2005; Anderson,

2018). The target population for this project design were minorities considering applying to nurse anesthesia school. The project initiatives were centered around the implementation of a diversity CRNA information session and basic airway skills lab that increased the number of successful minority applicants. Thus, the KTA framework was instrumental in the planning and implementation phase in ensuring that appropriate interventions were selected to promote change.

The central theme of evidenced-based practice is the translation of knowledge acquired through research to the practice setting. Knowledge-to-action (KTA) was developed in Canada by Dr. Ian Graham and his colleagues at the University of Ottawa (Graham, Harrison, & Logan, 2005). Their model is compared to a funnel through which a planned intervention enters and is synthesized and processed, continually being transformed by feedback from the contextual environment to which it is applied. The result is an intervention that is easily applicable to the target population and yields the highest results. The knowledge-to-action framework has been used previously by projects that target the public and nursing field (Field, Booth, Ilott, & Gerrish, 2014). The KTA framework was selected because of its value in facilitating knowledge translation (Field, Booth, Ilott, & Gerrish, 2014).

The three fundamental characteristics of the framework are simplicity, adaptability, and synergy with additional frameworks (Field, Booth, Ilott, & Gerrish, 2014). A systematic review of the KTA framework concluded that this framework offered researchers the flexibility to include other frameworks and assisted projects in an idiosyncratic manner (Field, Booth, Ilott, & Gerrish, 2014). The flexibility to also include the Deming theory on quality improvement is beneficial to the design of this project. The use of multiple frameworks assists in being able to

prepare for and respond to the dynamic and complex factors influencing knowledge translation into practice.

The knowledge-to-action framework was used in this project to sustain knowledge use. The information generated from the participants' survey responses was used to refine future interventions. While the diversity workshop may be effective in eliminating old barriers, it will not be feasible to predict future barriers. However, in using the model's concept of information passing through a funnel, feedback from participants was used to identify new barriers to access. Thus, the original initiative has room to grow within a dynamic contextual environment despite a multitude of unpredictable factors (Graham, Harrison, & Logan, 2005). A lasting change is produced by systems that can respond to their environments, adapting to meet needs as they occur (Field, Booth, Ilott, & Gerrish, 2014).

The core concepts of Dr. Deming's philosophy on quality improvement involve the use of statistical principles in a top-down continuous process towards quality improvement (Walton, 1986). Dr. Deming's concepts toward quality improvement were utilized in this project while keeping the goal of increasing diversity in mind. Specifically, Dr. Deming's belief that education was vital to maximizing the full potential of an organization's greatest resource—its workers—was used to achieve the aim of increasing participants' knowledge about nurse anesthesia ("The Deming Institute," 2018). One of the tenets of Dr. Deming's theory, training and retraining, emphasizes education as key to quality improvement. In implementing a diversity-focused workshop, this project utilized a pretest posttest intervention to improve participant's knowledge of basic anesthesia principles. Using leaders in the workforce as mentors reinforces the philosophy of Dr. Deming that the ultimate responsibility for quality lies with management.

Hurtado et al. (1998) developed the campus climate model as a framework for appreciating how an institution's history of inclusion or exclusion, structural diversity, and psychological and behavioral climate shape the context in which minority students learn (Hurtado, Milem, Clayton-Pedersen, & Allen, 1998). To achieve the goal of increasing diversity and inclusion, Hurtado's model was used to develop a diversity focused mentorship program that provides longstanding support to both objectives. The advantages of mentorship include benefits to both the mentor and the mentee (Miller, 2015). Individuals receiving mentorship display increased productivity, enhanced skills and knowledge acquisition, as well as improvements in professional development (Dutta et al., 2011; Flexman & Gelb, 2011; Francis & Vilma, 2018; McLaughlin, 2018). This project's intervention includes the formation of a pilot nurse anesthesia mentorship program at USF. The relationship between a mentor and a mentee is defined as varying between informal and formal, short-term and long-term, where a person with useful knowledge, experience, or training offers support to another in the form of advice, information, opportunity, or guidance. This relationship takes place with the goal of advancing the mentee's development either personally or professionally (Dutta et al., 2011; Flexman & Gelb, 2011; Francis & Vilma, 2018; McLaughlin, 2018).

Critical Race Theory (CRT) is a race-based epistemology that serves as a filter through which to design and develop this doctoral project. It challenges and critiques commonly held beliefs about the effect racist ideologies have had in shaping government policy efforts pertaining to African American involvement in higher education (Delgado & Stefancic, 1993). CRT values and highlights the lived experience because of the unique perspectives offered by it. Minority nurse anesthetists shared their lived experiences with the participants during the question and answer session. CRT also refutes the argument of meritocracy when used to silence

disenfranchised populations based on the misconception that “blindness to race will eliminate racism” (Harper, Patton, & Wooden, 2009). This principle was used to guide the creation of inclusion and exclusion criteria for the project mentors and participants. CRT rejects the notion of a colorblind society because it leads to misconceptions regarding racial equity in institutions (Harper, Patton, & Wooden, 2009). Embracing an inclusion criterion that focuses on ethnically and racially diverse undergraduate nursing populations recognizes people of color as a historically disenfranchised population. A prerequisite for a therapeutic relationship with mentors and mentees of diverse racial backgrounds is an appreciation of the complexity of race relations in America (Acosta & Ackerman-Barger, 2017). The diversity and inclusion in nurse anesthesia project included mentoring as a psychological strategy to recruit undergraduate minority nursing students into the profession of nurse anesthesia (Haizlip et al., 2012; Shaw, 2015; Smeltzer, 2007).

### **Integration of Project Framework with Supporting Evidence and Literature**

**Literature review.** The literature review that was conducted for this project involved several databases including CINAHL, EBSCO Open dissertations, ProQuest, PubMed, Cochrane Library, and Google Scholar. Search terms for this subject included “diversity”, “nurse”, “anesthesia”, “race” “disparity”, “mentoring”, “inclusion”, “CRNA”, and “education”. The lack of diversity in nurse anesthesia is a longstanding issue that is the result of multiple factors including social, psychological, and economic. A review of the evidence supports mentorship programs, on campus diversity and inclusion events, and the use of simulated training (Miller, 2015; Worthington, 2012). Increasing awareness through education and providing a support network of diverse nurse anesthesia professionals have been viewed as key factors in increasing the number of minority nurse anesthesia applicants (Diversity in Nurse Anesthesia, 2019).

Mentoring marginalized youth may encourage them to select nurse anesthesia as a career choice (Shaw, 2015). The implementation of a mentorship program as a hands-on science-based workshop is in accordance with the recommendations for increasing diversity on campus by informing, empowering, and mentoring minority students (Worthington, 2012).

Evidence suggests that increasing diversity provides several benefits. A culturally diverse workforce is better equipped to serve diverse populations by providing culturally sensitive care to patients (Porter, 2011). Diversity also provides greater depth and breadth to the skill sets in the workforce due to the increase in the variety of talents and traits present amongst diverse groups of people (Samuels-Jones & DeCoste, 2016). Lastly, a diverse workplace in anesthesia broadens the perspectives of nurse anesthesia professionals allowing them to see the world through the lens of cultures outside of their own (Porter, 2011).

**Summary of supportive evidence.** Increasing diversity within the profession of nurse anesthesia is a goal of current AANA leadership. Juan Quintana CRNA, DNP, MHS is a Hispanic American who has served in the past as the president of the American Association of Nurse Anesthetists. Currently Quintana sits on the committee for diversity and inclusion with Jorge Valdes DNP, CRNA, ARNP who is the committee chair. The diversity and inclusion committee goals include improving cultural competency training, supporting resources for increasing diversity in the field of nurse anesthesia, and developing a model based on the recommendations of other nurse anesthetists and external experts to improve cultural sensitivity (AANA, 2019). Evidenced-based recommendations to improve diversity and inclusion on campus consist of open discussion forums with students and faculty members on campus, raising awareness about the profession of nurse anesthesia, and developing a mentoring program for underrepresented student populations (Samuels-Jones & DeCoste, 2016). Raising awareness is a

critical recommendation because it can increase minority nursing students' likelihood and success in taking steps toward a career in nurse anesthesia (Shaw, 2015). Campuses that attempt to improve campus climate by creating a diverse campus environment produce well-rounded students who are skilled at facing challenges present in real world scenarios both occupational and social (OIRE, 2018).

## CHAPTER 3: PROJECT DESIGN

### Methodology

**Project design plan.** Evidenced-Based Practice project design was selected because the purpose of EBP is to integrate evidence into practice. Working to increase diversity in nurse anesthesia was an evidenced-based practice project. This EBP project's goal was to improve diversity in the nurse anesthesia workforce by using recommendations from the best available evidence. The project's main goals were integrating the evidence from both the literature and clinical experiences into a pilot diversity CRNA workshop at the University of Saint Francis. Translational research supports the project's goals of integrating the evidence from both the literature and clinical experiences into a pilot diversity workshop

Instilling diversity into the atmosphere of a college campus allows for the inclusion of a broader range of perspectives which enables a deeper understanding of the world (Brigit et al., 2015). Increasing diversity in the nursing workforce can reduce health disparities present in marginalized populations (Brigit et al., 2015).

The therapeutic relationship between mentor and mentee is important to achieve longstanding results in the form of an increase in minorities interested in pursuing a career in nurse anesthesia. The review of the evidence surrounding mentorship in academic medicine supports mentorship programs and identified them as key components in academic medicine to support career advancement (Dutta et al., 2011; Flexman & Gelb, 2011; Francis & Vilma, 2018; McLaughlin, 2018). A high demand for mentorship in anesthesia was suggested by a survey in the United Kingdom in which approximately 70% of anesthesia trainees stated that they would have benefited from a mentor during their training (Flexman & Gelb, 2011). Therefore, it is not

uncommon for CRNAs to enter education after serving as mentors in the nurse anesthesia mentorship program (“Increasing Diversity-One CRNA at a Time,” 2019).

### **Ethical considerations.**

There were no ethical considerations for this project. The participant’s involvement in this project was 100% voluntary and could be rescinded at any time. The participant’s informed consent and the lack of the use of deception made ethical considerations a non-issue.

### **Instruments and Tools to Collect Data**

Flyer – (see Appendix E).

Pre-Survey – (see Appendix F).

Pretest – (see Appendix G).

Pretest Answer sheet – (see Appendix H).

Posttest – (see Appendix I).

Posttest Answer Sheet – (see Appendix J).

Post Survey – (see Appendix K).

### **Work breakdown.**

The University of Saint Francis hosted a diversity-focused workshop using evidence-based recommendations for increasing diversity and improving the success of current students of diverse backgrounds. These recommendations included using mentorship, encouraging participation from all members of the campus community, and increasing diversity through education and empowerment to remove barriers to access (White, 2016).

A project timeline was constructed and distributed among team members to distribute tasks associated with the project’s completion to encourage interprofessional collaboration. The project manager maintained a strong presence at the site of implementation and constant

communication with team members, participants, and management to ensure a shared vision with clarity of purpose for all those involved.

All data was captured and collected by the project manager to ensure consistency and stability in the collection process and limit the potential for external biases. Data storage was a partnership between the project manager and DNP project team members. Hard copies of data were stored in a locked file cabinet in the NAP office. The project manager used IBM SPSS 24 for data analysis.

### **Implementation Methods**

**Process.** Implementation of this project occurred on February 7, 2020. A sample size of approximately 25 participants was projected to be recruited from undergraduate nursing programs. Forty-three applicants preregistered by completing the pre-event survey. On the day of implementation, one student presented approximately forty-five minutes after the selected start time of 8:00 am.

The DNP project team was constructed and finalized. It included a diverse group of students, faculty, and expert consultants. Dr. Lena Gould, Dr. Paul Porter, Dr. Lisa Osborne, Dr. Carolyn Yoder, as well as current student registered nurse anesthetists Okechukwu Gubor, and Rebecca Ngaling formed this project's team. The team formation was a critical step in the implementation phase because it required recruitment of personnel who served as an asset to the implementation phase. The question that this project sought to answer was does a diversity focused CRNA mentoring program increase minority nurse student recruitment to nurse anesthesia. After a review of the literature that acknowledged the current ethnic and racial disparities in the nurse anesthesia workforce, a plan was constructed given the current body of evidence to address these racial and ethnic workforce disparities. This project sought to expose

the relationship between mentoring and minority recruitment using a focused recruitment project design for diversifying the workforce for nurse anesthetists. The project manager in collaboration with the rest of the DNP project team developed a campus workshop for minority students that provided them with an opportunity to be taught and mentored by practicing CRNAs and SRNAs of minority backgrounds.

This project was implemented using education and mentor-mentee interaction. The educational component was built upon by three forms of instruction. The first component was a PowerPoint presentation covering various topics concerning nurse anesthesia such as admission criteria, professional roles and responsibilities, and basic airway management concepts. The content for this PowerPoint was obtained from the National Board of Certification and Recertification for Nurse Anesthetists (NBCRNA) and the American Association of Nurse Anesthetists websites. This PowerPoint represented a formal block of instruction and augmented the informal instruction provided in the airway equipment familiarization lab. The second component was a hands-on airway management skills lab. During this portion participants would work with CRNAs and SRNAs to gain familiarity with airway management techniques and equipment. The third and final component included the surveyed responses of participants pre and post intervention.

The aims of this project were to (1) increase minority students' awareness about nurse anesthesia as a viable career option, (2) increase recruitment of minorities to nurse anesthesia, and (3) provide an opportunity for ethnically diverse CRNAs to mentor minority nursing students. A successful achievement of project outcomes occurred when the participant demonstrated an increase in knowledge of nurse anesthesia by scoring at least 25% higher on the posttest than the pretest. Participant's survey responses also indicated an increase in interest in

pursuing a career in nurse anesthesia as reflected by a Likert scale. The participant remains in contact with her mentors from the implementation day and has sought guidance on securing a facility to shadow a CRNA while completing her undergraduate nursing curriculum.

**Protocols & procedures.** The inclusion and exclusion criteria for the recruitment of the sample group for this project was developed in close coordination with the University of Saint Francis DNP faculty. Considerations for inclusion in this project were that the proposed participant must be considered a minority according to the International Minority Rights Group (International Minority Rights Group, 2016). This organizations criterion established seven key minority groupings within the US. These groups were: Latino, African American, Asian-American, Arab and other Middle Eastern American, Native American, Native Hawaiian or another Pacific Islander, and Alaskan Native. A flyer was developed for distribution on the campuses from which the sample group was selected. This flyer was developed in cooperation with Dr. Paul Porter whose guidance was instrumental in providing context and clarity. Each flyer included a description of the event, time, date, and building room number. Persons interested in becoming a participant were invited to contact the project manager on his University email account for more information regarding the event. The recruitment period ran from November 30 to February 7 after which the participant was consented to participate in the University's inaugural diversity and inclusion in nurse anesthesia program. The policies for hosting the event were that the DNP project team upheld the Franciscan values throughout the administration of the workshop.

**Teaching plan.** The larger objectives of the education plan for this project were to educate minority nursing students on the profession of nurse anesthesia. The goal was to determine if this education in combination with a mentoring component led to an increase in

minority student nurses interested in pursuing a career in nurse anesthesia. The education was delivered as a PowerPoint, question and answer session, and Simulation lab experience. The PowerPoint consisted of 15 slides: five slides dedicated to professional roles and responsibilities of the certified nurse anesthetists (CRNA), five slides assigned to discussing admission criteria and preparation for applying to anesthesia school, and five slides reviewed basic anesthesia concepts regarding airway management. The first objective for the PowerPoint presentation was to increase the participants' knowledge of the professional role of a nurse anesthetist.

Information presented included work settings, job responsibilities, and how the practice of nurse anesthesia is governed concerning licensure, certification, and hospital privileges. The second objective was to inform the participants of application criteria for CRNA school. This objective was met by distributing information which included a link to the NBCRNA website detailing each university's department of nurse anesthesia admission guidelines. The third objective was to increase the participants' knowledge of basic airway management techniques. This objective was met by incorporating a hands-on airway management simulation lab. The assessment of this block of instruction was performed using a pretest/posttest format. Both tests included a total of ten questions covering the three main sections of the PowerPoint presentation: roles and responsibilities, admission criteria, and basic airway concepts. The pretest was administered prior to the presentation and the posttest was administered at the conclusion of the event.

**Measures, tools, instruments.** The tests involved in this project were developed by the project manager and reviewed for accuracy and content by the University of Saint Francis nurse anesthesia program director. Both the pretest and the posttest were composed of the same ten questions, but the order of the questions was different on the pretest than the posttest. The project manager developed the questions based on content from the NBCRNA and AANA websites. The

type of questions included on the tests were multiple choice, select all that apply, and true or false. Each of the ten questions was worth one point for a total of ten possible points. The goal of the project was for minority students who attended the workshop to score 25% higher on the posttest regarding key information on the CRNA profession such as: preparation, applying, education, board certification, and job responsibilities.

Additional measurement tools consisted of a pre and post intervention survey derived from the DNP project expert's nonprofit organization known as diversitycrna. Dr. Gould, DNP project subject matter expert, supported the project manager's construction of two surveys based off the content from previously used diversitycrna event surveys. Questions pertaining to demographic characteristics such as age, race, sex, and profession were included. Also captured was data concerning the likelihood a participant would pursue a career in nurse anesthesia using a Likert scale. This data was important to capture because it was used to reflect the participant's interest level post intervention. This project surveyed participants before and after the intervention. The participant was an undergraduate nursing student from USF. The expected outcome was that participants indicated via surveyed responses their desire to pursue a career in nurse anesthesia.

### **Evaluation Plan**

**Plan.** Marian Edelman Wright is an American civil rights activist who is renowned for her published works supporting diversity and inclusion. Her quote "you can't be what you can't see" is the maxim used to support mentorship for minorities (McLaughlin, 2018). This project's results will be used to support whether or not diversity and inclusion workshops involving education and mentorship increase the minority nursing student's knowledge of and interest in pursuing a career in nurse anesthesia. To accomplish this, strategic initiatives such as an

information session, a simulated basic airway skills lab, and a mentorship program were implemented at the University of Saint Francis Fort Wayne campus to diversify a workforce displaying a racial/ethnic disparity. There were four major points of data collection during the implementation of this project. The first data collection point was the initial demographic and background data obtained from the pre-event survey. The second data collection point consisted of the scores of the pretest. The third data collection point consisted of the scores of the posttest. The fourth and final data collection point consisted of the post event survey.

**Data sources.** The data captured during this event was obtained from the pretest and posttest as well as two surveys completed at the beginning and at the conclusion of the event. The DNP project manager was responsible for the collection of all data in the form of written tests and electronic survey responses.

**Methods for collection of data.** A written pretest was administered prior to the initial presentation. The responses were tallied on an answer sheet and collected by the project manager. The same procedure occurred for the administration of the posttest. After the conclusion of the event, the project manager transferred the point scores into an electronic format. IBM SPSS was utilized to analyze and record all data sets captured in written form during the course of the event. All data sets were transferred to IBM SPSS by the project manager.

**Data analysis plan.** Descriptive statistics included analysis of the pretest posttest score data, the mean, the median, and the mode of scores from all participants on the pre and posttest. Computation of Gain score using SPSS (posttest-pretest). Gain score measures the relationship between each participant's posttest and pretest while controlling for individual differences in pretest scores. Positive gain scores would reflect successful outcomes. Demographic data was

also collected to measure the percentage of men, women, racial and ethnic groups, average age of attendees, and percentage of participants who indicated an increased interest in pursuing a career in nurse anesthesia.

### **Dissemination Plan**

**Plan for USF presentation.** This project will be presented in the Summer of 2020 after its implementation in the Spring of 2020. The project manager's executive summary will be condensed and distributed to all DNP faculty members and project team members. In addition, the project manager will distribute copies of the completed executive summary to the Fort Wayne chapter of Chi Eta Phi as well as the National Black Nurses Association. The Diversity CRNA Organization will be provided a copy as well to provide substance for a follow up article on the nonprofit organization's website discussing the results of the project.

### **Disclosure of Feedback**

All participants are provided the opportunity to request a copy of the study's findings and results of the data analysis. If the participant would like to obtain a copy of the study's results, they can send written correspondence to the University of Saint Francis Attn: Nurse Anesthesia Department, 2701 Spring Street Fort Wayne, IN 46808 or email the project manager with any additional questions.

## **Chapter 4: Results and Outcomes Analysis**

### **Data collection techniques**

As previously mentioned in chapter three, the data collected for this project occurred primarily on the day of implementation. The only data not generated on February 7, 2020 was collected from the pre-event surveys. The Survey Monkey link for the pre-event survey was emailed to participants on the day their initial inquiry was received by the project

manager. All survey submissions were submitted online via Survey Monkey including the one post event survey from the individual who participated in the workshop. Test score data was collected on the day of implementation by the project manager. The single participant completed the pretest within the allotted 20 minutes and the test and answer sheet were collected and stored in the NAP office. Following completion of the hands-on activities, the posttest was administered and again completed within a 20-minute timeframe. Posttest answer sheets and test papers were collected by the project manager. Lastly, the participant submitted the post event survey prior to dismissal from the implementation site. All hard copies of collected responses were locked securely in the NAP office when not in use for data analysis.

### **Measures/indicators**

The quantifiable outcomes for this project were measured by analysis of pre and posttest scores. A comparison of pre-and-post survey responses concerning knowledge, awareness, and interest in nurse anesthesia were also included. In total, respondents were provided nine questions to answer on the pre-event survey. The data captured in the initial survey included: gender, race, ethnicity, current knowledge level about nurse anesthesia, education level, and level of interest in becoming a nurse anesthetist. Answer choices for each of the nine questions were structured in a multiple-choice format. Respondents also had the option of entering free text responses if their answer was not found in the answer choices.

Provided answer choices to the survey question about gender were male, female, or other with an option for participants to free text in a specific response under the other category. With 32 female and 11 male respondents, females comprised 74.42% and males made up 25.58%.

Age distribution for participants included five different age ranges. There were ten responses generated in the 17-22 age range, three responses in the 23-28 age range, ten responses

in the 29-34 age range, three responses in the 35-40 age range, and seventeen responses from the 40 and older age range. Participants ages 40 and older made up 39.53% which was higher than all other age groups.

The third question of the pre-event survey asked respondents about their racial identity. Answer choices for this question included white, black or African American, American Indian, Asian, Native Hawaiian or Pacific Islander, multiple races, or other with a free text option available to list additional races not included in the listed answer choices. Forty-two of the forty-three respondents answered this question. One participant elected to skip the question. Analysis of the forty-two responses indicated that twenty-six of them identified as black or African American, and eight identified as white. Six participants selected “other” as their answer choice and included in their free text responses that they identified as Hispanic or Latino/Latina. One participant indicated that they were Asian, and another participant identified as Native Hawaiian or other Pacific Islander.

### **Data analysis inferences**

Due to the lack of participation on February 7, 2020, not enough data was available to make inferences on the effectiveness of this project’s interventions. The information generated from the single participant was collected and analyzed. Her pretest score improved by 30% and the responses in the post event survey indicated an increased interest in nurse anesthesia, an increased awareness of the profession, and the participant indicated feeling more knowledgeable about nurse anesthesia after the intervention.

Forty-three individuals completed a pre-event survey but did not attend the actual event. Analysis of the pre-event results yielded data that was examined for trends and their potential impact on the project. Over 70% of the sample group for the pre-event survey indicated that they

were currently enrolled in a BSN program. Though, the age distribution revealed the majority of respondents were 40 and over. Therefore, a high percentage of non-traditional nursing students expressed interest in the project. Life experience factors into the differences that exist in the learning experience for non-traditional and traditional students (Bamber & Tett, 2010). Bamber and Tett (2010) reveal a characteristic unique to non-traditional students in that they possess an entitled attitude toward higher education that traditional students do not display. An appreciation of the different experiences for non-traditional students can lead to better project design by including tailored interventions to address a more mature audience. Given that the majority of respondents were non-traditional students the project manager could have addressed the attitude of entitlement by emphasizing the benefits of gaining expert knowledge and establishing a professional network of peers and mentors.

### **Gaps**

The gaps for this project centered around an absence of data collected related to a smaller than expected sample size (N=1). After successfully completing the diversity and inclusion workshop, the participant scored a 100% on the posttest. Professor Gregory Louck, SRNA Rebecca Ngaling, SRNA Okechuku Gubor, and Dr. Lisa Osborne served as mentors and instructors during the workshop. The participant was able to meet with each of them individually as part of the designed simulated training exercises. In addition to test score improvement, the surveyed responses indicated an increase in knowledge, awareness, and interest in nurse anesthesia.

This project was intended to be a pilot program at USF, used to establish a longstanding program for educating, mentoring, and recruiting minority nursing students into anesthesia. The results of this project were to be used towards improving diversity and inclusion in the NAP at

USF. The gaps present between the expected and actual results post implementation are likely the result of two key factors: (1) with the announcement of the closure of the NAP after the final class graduates in 2022, USF lacks the infrastructure necessary for a long-term commitment to minority recruitment in nurse anesthesia, and (2) with the cancelled enrollment of the class of 2023, there will be no new entries into the program, and, therefore, no sample from which to measure improvements in diversity and inclusion in the NAP at USF.

### **Unanticipated consequences**

After a review of the respondents' pre-event survey data on Survey Monkey, it was noticed that most of the respondents submitted their surveys on January 31, 2020. With forty-three respondents, there was strong initial interest generated that was not sustained. It was on February 4, 2020 that an email was distributed to all USF students from Sister Elise Kriss, USF President announcing the decision to discontinue selected academic programs on campus to include the BSN-DNP Nurse Anesthesia Program and Post-Master's DNP Program. To what degree this announcement affected turnout if at all is unknown. However, the consequence of failing to secure an adequate sample size, limited the findings of the project. In spite of its lack of generalizability the project's problem statement and aims demonstrate a continued need for interventions to increase diversity and inclusion.

### **Expenditures**

This project was designed to incur minimal expenses to the University and the project manager. Importance was placed on utilizing resources through the NAP at USF who were readily available. As previously mentioned, USF provided the project manager with a room within the Doermer Health and Sciences building to implement the project. The NAP also provided the project manager with airway management equipment in the form of a flexible

fiberoptic bronchoscope, two Glidescope video laryngoscopes, multiple sizes of Miller and Macintosh style laryngoscope blades and handles, laryngeal mask airway devices, manual resuscitators also known as artificial manual breathing units (AMBU) bags, and finally pediatric and adult sized airway management training mannequins. The provision of this equipment, free of charge, represented a significant cost savings to the University and the project manager. The average cost of the airway management simulators is \$1,500 excluding accessories and maintenance equipment.

### **Chapter 5: Leadership and Management of the Project**

This project was implemented on February 7, 2020 at the University of Saint Francis in Fort Wayne, Indiana. Prior to implementation, forty-three undergraduate nursing students and minority registered nurses had indicated their desire to attend the event by completing the pre-event survey. The project's design and interventions were supported by evidence supporting the use of mentorship programs to increase minority recruitment and retention in academic programs. During the implementation of this project, the project manager and team members faced various challenges. Analysis of the leadership style, organizational culture, interprofessional collaboration, and conflict management strategies determined how these factors impacted the outcomes of the project.

#### **Organizational culture**

The organizational culture at the University of Saint Francis was supportive throughout the design and implementation of the project. The Franciscan values encourage building a community dedicated to compassionate service ("University of Saint Francis", 2019). The university's goals for diversity and inclusion aligned well with the aims of the project. This project aimed to increase diversity on campus by recruiting more minority nurses into nurse

anesthesia. The higher education consulting firm CREDO works with institutions of higher learning towards the advancement of diversity and inclusion related practices and principles (CREDO, n.d.). Since 1995 they have partnered with higher education institutions nationally to promote positive changes to the environments of independent colleges and universities. Practical interventions are rooted in the firm's five core values: a servant's heart, courageous leadership, research based and action centered solutions, risk taking, and financial stewardship (CREDO, n.d.).

The University of Saint Francis began working with the higher education consulting firm CREDO in 2016. During this collaboration, enrollment targets and timelines for underrepresented minority students were clarified, a diversity task force was established to improve the student experience, and the multicultural center was relocated to increase visibility and student engagement (Samuels-Jones & deCoste, 2016). The campus leadership in a partnership with CREDO established the diversity and inclusion department led by Dr. Paul Porter. The development of this department along with additional CREDO recommended interventions are part of ongoing efforts to transform the campus climate to a more diverse and accepting environment.

The culture of an organization helps define its vision. Members of organizations who possess a strong organizational culture work together towards the achievement of a shared goal communicated by the standards, values, ethics, and beliefs of their leadership. A culture of acceptance aligns with the University's mission statement. With an organizational commitment to altruistic ideals and values, it was presumed that the University of Saint Francis in Fort Wayne would make an excellent site for implementation. Less than 10% of undergraduate nursing students are minorities (Flexman, 2011). The lack of diversity in the Saint Francis undergraduate

nursing program may have played a role in a smaller than expected sample size during implementation. The project manager, being aware of the small minority presence in the undergraduate nursing program, made attempts to also include surrounding colleges and universities such as Indiana Fort Wayne (IFW) and Ivy Tech. The project manager contacted the head of the nursing department at Ivy Tech and distributed copies of the project flyer as well as a copy of the executive summary explaining the aims of the project. The nursing department at IFW was contacted as well on multiple occasions via electronic mail but no response was received. Post implementation, consideration was given to selecting the Crown Point campus location as a more suitable site for implementation due to its geographical location and proximity to several local hospitals. This recommendation will be passed along with others to improve the next adaptation of the project.

### **Change strategy**

Leaders are responsible for ensuring that team members are motivated and working well together to achieve project goals. Project leaders assist team members and participants with adjusting to change. The empirical-rational change management strategy influences others by using incentives. To motivate the SRNAs who volunteered to assist in implementation, the project manager reminded them that the hours that they volunteered would count towards their DNP practice hours. Fulfilling a requirement for graduation was a key incentive used to promote SRNA involvement. Empirical-rational change management strategy relies on clear and effective communication to inform people on the advantages and disadvantages of adopting the proposed change. There were multiple advantages for participating in the intervention. Participants would be able to include the event on their applications to nurse anesthesia programs as evidence of their preparation for beginning a program. Participants would also have access to advanced

simulation equipment at no charge to them and learn from licensed nurse anesthesia professionals. The Saint Francis nurse anesthesia program director volunteered her time to answer student questions and assist with the hands-on simulation. Participants were informed that the opportunity to personally speak with a program director was a rare opportunity in their pursuit of a career in nurse anesthesia. The disadvantages included students would have to devote a portion of their personal time to attend this extra-curricular event. The time of day could have potentially been disadvantageous because an 8:00 am start time might have conflicted with participants' schedules. Participant feedback was not used to set the start time of this event. Changes to future implementations could include surveying registered participants to capture feedback regarding what time would be most compatible with work/school schedules. A more flexible start time could potentially produce a larger sample size. To effectively implement this strategy the project manager needed to communicate weekly with project team members. The participants could have received more information on the benefits of attending the workshop. Properly informing attendants could have increased team member and participant investment in the project.

Dansereau's leader-member exchange theory describes the relationship between leaders and members as fluid and highlights how important it is for leaders to adapt to tasks as they present (Dansereau, Graen, & Haga, 1975). Adaptations were necessary throughout the implementation of this project. One example occurred when the event's room assignment changed. The project manager notified respondents of the room change via email and placed clear signage throughout the building. Adapting to changes related to projected versus actual sample size required flexibility on the part of all team members. Effective leaders must also respond to the individual challenges that team members and participants present on an individual

basis (Salas-Vallina, Simone, & Fernández-Guerrero, 2020). This means treating team members differently in the process, but it ensures that they can respond to challenges as they evolve over time. In the implementation of this project the leader-member exchange theory was the most useful approach towards maintaining fluidity as new variables such as weather and organizational changes developed.

### **Leadership style**

A leader's interaction with followers is affected by cultural influences and personality characteristics that help define their leadership traits (Ahmed, Nawaz, Shaukat, & Usman, 2010). An understanding of the approaches towards leadership highlights the importance of understanding the relationship between team performance and leadership style. The primary leadership style used by the project manager during this project was task-oriented leadership. The project manager's military background influenced his leadership style. The project manager's military training and education focused on successful completion of objectives and essential tasks. All communications with the Fort Wayne Nursing department, Indiana University, and Ivy Tech centered around three interrelated tasks: (1) informing nursing leadership about the purpose and design of the project, (2) requesting that nursing leadership and staff distribute the information to all undergraduate nursing students, and (3) requesting permission to distribute flyers around campus to advertise the project.

Leadership is defined as the ability to influence an individual or group towards the accomplishment of a common goal (Limbare, 2012). It is the responsibility of a managerial leader to complete tasks by utilizing subordinates. It is important for leaders to possess skills in the area of human relations, technology, and emotional intelligence (Ahmed, Nawaz, Shaukat, & Usman, 2010). The project manager's secondary style of leadership focused on the inclusion of

team members in decision making. Democratic leaders lead by fostering mutual respect among team members and encouraging active participation. The project manager's use of a democratic leadership style promoted communication and buy in from team members. Involving team members in the development of the project conveyed that their opinions would be heard. During the design phase, each team member stated their strengths and weaknesses. This allowed them to actively participate in selecting roles that played to their strengths. The information was used to collaboratively decide which team members would serve as instructors for each simulation station. Similar open discussions influenced decisions throughout the project. Leaders must also be capable of adapting, learning from mistakes, and rapid decision making (Limbare, 2012). Considering the outcome post implementation, results demonstrated that an inspirational leadership approach may have exerted a more substantial impact on team members and participants. By inspiring preregistered applicants and focusing less on the tasks at hand, the project manager could have generated greater attendance. Inspirational leaders impact followers more effectively when they exhibit positive characteristics (Salas-Vallina, Simone, & Fernández-Guerrero, 2020).

### **Interprofessional collaboration**

Incorporating the roles and responsibilities for collaborative practice is essential to optimal performance and facilitates the achievement of project aims. For interprofessional collaboration to occur there are multiple domains that must be addressed: values and ethics, roles and responsibilities, communication, and teamwork. The values center around relationship building promoting favorable team dynamics. The benefits of interprofessional collaboration for the doctoral project include making good use of the knowledge and expertise of all team members, embracing the unique cultures and values of a population by appreciating the diversity

within the team, and developing efficient and effective joint solutions to problems. In this project the interprofessional team consisted of students, faculty members, and program directors. Faculty members afforded SRNAs time off from clinical experiences to assist in the implementation. Nurse Anesthesia faculty members were also instrumental in the set-up of the simulation equipment used in the lab portion of the event. Students and faculty collaborated effectively to achieve project aims.

An area of improvement in interprofessional collaboration was the communication between the department of nursing at IFW. The project manager was unsuccessful in receiving a response back via electronic mail. Following this implementation, advertising on campus bulletin boards and displaying signage prominently on the entrances of nursing departments was encouraged. An additional strategy to pursue for the next rendition would be to include a visit to the campus to speak directly to nursing students and promote the event during scheduled class time (Brown & Crabtree, 2013). This effort would require collaboration with undergraduate nursing faculty and administration to secure a date to present the event.

### **Conflict management**

The style of conflict management organizational members use with peers is related to the levels of intrapersonal, intragroup, and intergroup conflict that are experienced by that organizational member. The level of conflict and the style of conflict are two key factors in deciding which conflict management style is most suitable. Implementation faced several setbacks including a snowstorm. When this occurred, the project manager remained calm and spoke with team members to discuss the impact weather may have on participant turnout. The adverse weather was found to be responsible in part for the tardiness of one participant who arrived later than the scheduled start time of 8:00 am. Out of the preregistered forty-three nurses

and nursing students, only one participant attended this event. Forty-three preregistered applicants did complete a pre-event survey which captured demographic data and baseline anesthesia knowledge and awareness of the nurse anesthesia profession. To determine the best course of action, following the realization that only one student was going to be in attendance for the event, the project manager calmly met with the project advisor and nursing anesthesia faculty. This meeting demonstrated the leader's conflict management style as he attempted to take control of the situation by remaining calm and adjusting the event to meet the needs of a much smaller than expected sample size. An adjustment was made to begin the presentation later than scheduled and tailor the presentation and simulation learning to accommodate the needs of one individual student.

Thomas-Kilmann defines five styles for managing conflict. They are avoiding, accommodating, collaborating, compromising, and competing (Khan, Langove, Shah, & Javid, 2015). Avoidance styles of conflict aim to postpone conflict resolution by withdrawing from the situation to buy more time for conflict management (Khan, Langove, Shah, & Javid, 2015). A combination of collaboration and compromising style was the approach utilized during this project. The project manager kept team members informed at all times when changes occurred. The lack of participation presented a potential primary conflict for team members. Team members adjusted to a low participant turn out by restructuring the format to allow for more hands-on time at the simulation trainer stations. Specific alterations to the presentation included asking direct questions, actively listening, and encouraging participant involvement to ensure all areas of participant interest were addressed. Part of conflict management is the exploration of solutions (Kaushal & Kwantes, 2006). An additional factor that may have contributed to a smaller sample size include the announcement of the closure of the nurse anesthesia program.

When following up with students and nurses who had completed the pre survey but failed to attend the event, a common response was that the pending closure of the program impacted their perceived significance in attending a nurse anesthesia event at the university. In the future, the project manager could assume a more aggressive leadership style by assuring participants that their participation would benefit them in applying to any program regardless of the university's decision.

## **Chapter 6: Discussion**

### **Impact of project**

This project was designed to address the barriers between minorities and nurse anesthesia. Common issues affecting minorities in the nursing workforce are isolation, lack of support, and an absence of mentors. This aim was to target these issues directly with a diversity and inclusion workshop at a university with an established platform for hosting such events. Minority students were connected with diverse mentors in nursing anesthesia and given the opportunity to learn from them in a simulated operating room environment. The project findings included an increased familiarity and interest in nurse anesthesia, while a limitation was sample size; however, it is important to note the methods used in this project's design have implications outside of nurse anesthesia.

Colleges and universities examining the gaps between admission and graduation rates for minority students at the undergraduate and graduate level should consider developing programs similar to this project's design. The interventions--mentorship, education, and training--are evidence based and have been proven to promote minority student recruitment. Given the proper setting, a project design incorporating these interventions can increase minority representation on campuses across the United States. Increasing diversity and inclusion should not be limited to the

profession of nurse anesthesia but should also be integrated into undergraduate nursing programs as well. To increase the number of graduating minority nurse anesthesia students, a long-term commitment must be made between an institution's leadership and professional organizations to establish mentoring programs with recruitment of minority candidates in mind (Loftin, Newman, Dumas, Gilden, & Bond, 2012). Mentoring is a practical step towards increasing diversity which can be introduced into secondary and post-secondary education. Increasing diversity should be the goal of every educational institution because it prepares graduates with a wider range of skills to better meet the needs of an increasingly diverse national population. The benefits of cultural diversity extend to the workplace as well by increasing employee engagement, expanding productivity, reducing employee turnover, and cultivating creativity (Clarke, 2020).

### **Decisions and recommendations**

The three major project aims were knowledge acquisition, increased interest in pursuing a career as a nurse anesthetist and added exposure to diverse mentorship. To further the project's aims, it is recommended that *Increasing Diversity in Nurse Anesthesia* be reimplemented at colleges and universities with an active nurse anesthesia program. Forty-three minority nursing students and nurses completed the pre-event survey which demonstrates there is interest among minorities in a mentoring program for nurse anesthesia. The recruitment of qualified minority candidates into nurse anesthesia should continue to be pursued by academic leadership. A mentoring program directed at increasing minorities' exposure to minority healthcare professionals is an evidence-based method to addressing the racial disparity in medical and nursing career fields, including nurse anesthesia.

Diverse students receiving training and education from nurse anesthesia professionals that are also from a minority background is a key intervention to sustain. The exposure of

students to nurse anesthesia professionals resembling them facilitates the establishment of a mentor/mentee relationship. Also, this involvement provides minority students with a resource that evidence demonstrates they lack (Sackett, 2014). The training and education participants received during implementation addressed barriers to nurse anesthesia that minorities face such as a lack of support, limited access to minority nurse anesthesia professionals, and a lack of knowledge regarding requirements for pursuing a career in nurse anesthesia.

### **Limitations of project**

The sample size (N=1) is too small to generate conclusions on the direct impact of this project's interventions. However, evidence from a study utilizing similar interventions supports the continued use of mentoring programs in future projects (Sackett, 2014). The outcomes should not limit the use of mentoring, education, and hands-on training as proven strategies for increasing diversity in academic medicine. Providing minority mentors and role models to minority students overcomes one of the challenges faced by diverse students and facilitates their successful completion of a nurse anesthesia program (Amaro, Abriam-Yago, & Yoder, 2006). Other limitations are that the project was not implemented in any other setting outside of the University of Saint Francis. Further work including diversity and inclusion should include additional implementation sites including hospitals, high schools, and local law enforcement.

### **Application to other settings**

The strategies incorporated at USF could be used towards increasing diversity in other fields of academic medicine (Sackett, 2014). Other health care professions also lack the minority representation to be considered reflective of the general populace (Loftin, Newman, Dumas,

Gilden, & Bond, 2012). Increasing diversity in all health professions is key due to the role race and ethnicity play in the care minority patients receive. According to Loftin, et al. (2012), increased diversity will impact national health outcomes by improving the quality of care provided. Mentoring has also been studied as a strategy to address gender disparities by increasing the recruitment of women into anesthesiology (Sackett, 2014).

### **Strategies for maintaining and sustaining**

Securing a more optimal location for future projects about diversity and inclusion will be key towards maintaining and sustaining engagement from a sample population. A literature review by Loftin, et al., (2012), revealed that minority students felt a lack of cultural awareness from their Caucasian peers which they described as “uncomprehending” and “insensitive” in nature. Minority students also expressed difficulties in establishing relationships with non-minority faculty members (Porter, 2015). The implications for academic faculty and nurse anesthesia program administrators are that improving cultural competency among faculty can improve the educational experience of minority students (Loftin, et al., 2012). The NAP faculty at USF showed their support for establishing an environment of acceptance by volunteering their time to educate minority nursing students regarding the curriculum and admission requirements for nurse anesthesia school. Institutions committed to recruiting minority students and improving retention and graduation rates will invest in cultural competency training as a means of improving the campus climate for minority students and faculty members (Porter, 2015). Cultural competency training can increase faculty’s appreciation of the role they play in minority student’s education (Porter, 2015).

**Lessons learned.** Communication must be sustained throughout the course of the project to ensure continued active engagement amongst participants. The project manager should

communicate frequently with participants via email, telephone, or face-to-face interaction to ensure participants are informed of events that impact the project in a timely manner. Higher education can also take a more proactive role in supporting training and education programs for minorities interested in careers in medicine or nursing. A renewed appreciation by higher education of the current issues surrounding diversity with respect to its historical context can lead to the development of organizational policy changes that support diversity and inclusion across all departments (Porter, 2015).

## **Chapter 7: Conclusion**

### **Potential impact on health outcomes outside of USF**

As the largest workforce in professional healthcare, registered nurses represent a key population to address the underrepresentation of minorities in healthcare. Similar to other healthcare professions, racial and ethnic disparities exist between the nursing workforce and the general populace. Undergraduate and graduate nursing programs are in a unique position to increase minority representation by increasing recruitment and improving retention and graduation rates of minority nursing students (Loftin, et al., 2012).

**Health policy implications.** The United States is becoming increasingly more diverse. Over 37% of the United States population is made up by minorities. Yet, less than 17% of all nurses, advanced practice nurses included, are of a minority background. The widespread use of nurses implies that they have the potential to impact the health of communities across the lifespan and in a variety of healthcare settings (Betancourt & Maina, 2004). The Institute of Medicine (IOM) report, *Unequal Treatment*, documented the disparities between healthcare received by Caucasians and minorities. Minorities were found to lack access to quality healthcare (Betancourt & King, 2003). A contributing factor to the finding was the lack of racially and

ethnically diverse healthcare professionals. To improve the health outcomes of minorities and the overall health of the nation, increased access to quality healthcare from a diverse workforce must be achieved (Betancourt & King, 2003).

Multicultural competence training is needed to address the growingly diverse population (Porter, 2015). Multicultural competence can be described as the skills and knowledge necessary to collaborate with individuals of varied cultural backgrounds while being aware of and respecting one another's differences. The content from multicultural training may be applied to both academic and professional settings to improve cultural sensitivity among all staff members. An organization possessing a culturally sensitive staff is better equipped to meet the holistic needs of a diverse population (Betancourt & King, 2003).

### **Proposed future direction for practice**

*Increasing Diversity in Nurse Anesthesia* was driven by the presence of a persistent lack of diversity in nurse anesthesia. The link between nurse anesthesia programs (NAPs) and undergraduate nursing programs is that all nurse anesthetists must first obtain a Bachelor of Science in nursing prior to being accepted into a NAP. Undergraduate nursing programs in the United States display a similar struggle with racial diversity. The underrepresentation of minority students in both undergraduate and nurse anesthesia graduate nursing programs highlights the need to invest in building and sustaining programs capable of addressing the explicit needs of minority students.

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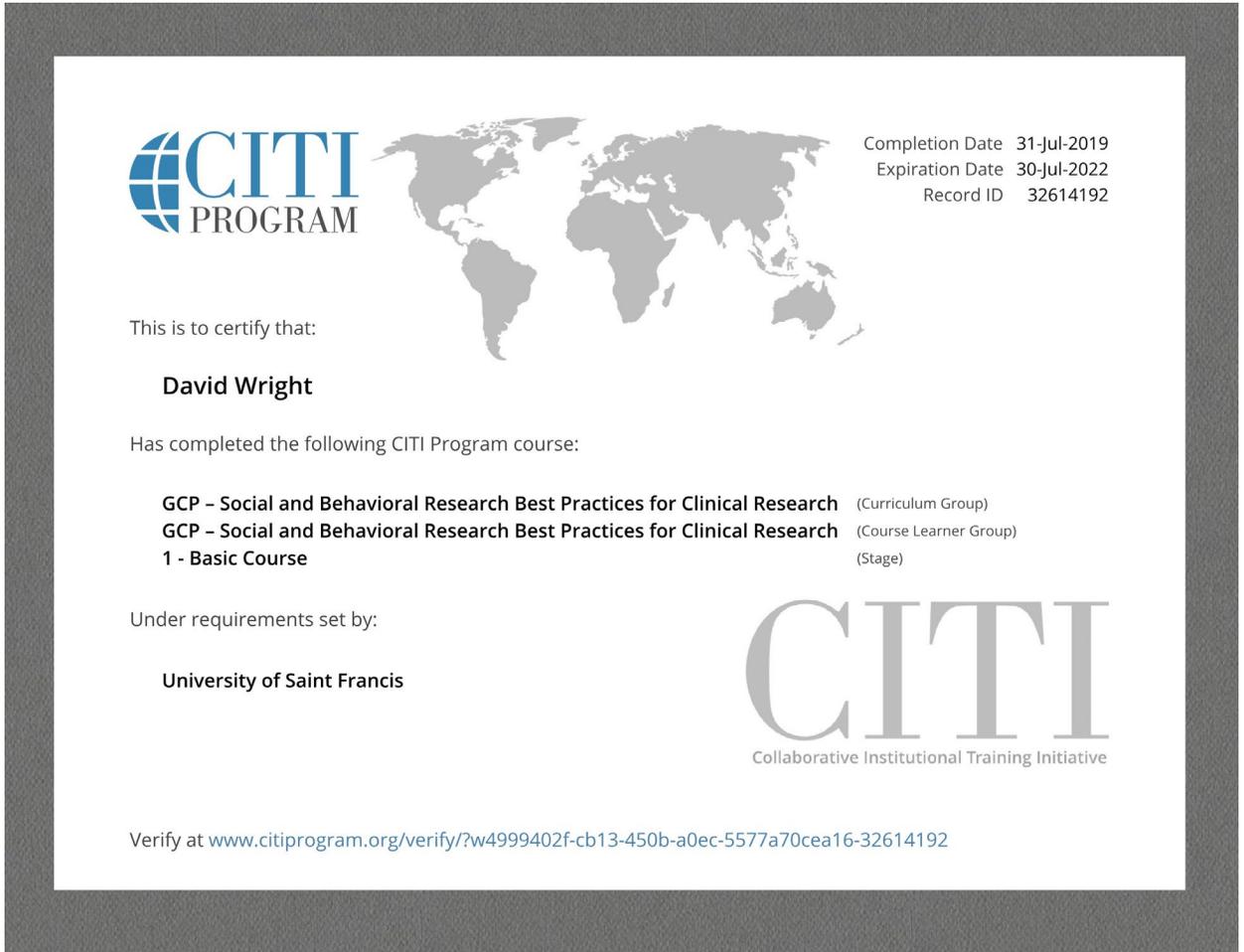
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Appendix A

Collaborative Institutional Training Initiative (CITI) Training Certificates





Completion Date 31-Jul-2019  
Expiration Date 30-Jul-2022  
Record ID 32614193

This is to certify that:

**David Wright**

Has completed the following CITI Program course:

**Public Health Research** (Curriculum Group)  
**Public Health Research** (Course Learner Group)  
**1 - Basic** (Stage)

Under requirements set by:

**University of Saint Francis**



Verify at [www.citiprogram.org/verify/?w77f5c1b3-4794-4deb-a935-31662c14eb67-32614193](http://www.citiprogram.org/verify/?w77f5c1b3-4794-4deb-a935-31662c14eb67-32614193)



Completion Date 01-Aug-2019  
Expiration Date N/A  
Record ID 32614190

This is to certify that:

**David Wright**

Has completed the following Citi Program course:

**Information Privacy Security (IPS)** (Curriculum Group)  
**Researchers** (Course Learner Group)  
**1 - Basic Course** (Stage)

Under requirements set by:

**University of Saint Francis**



Verify at [www.citiprogram.org/verify/?w8d61e48a-ff11-4486-9840-3a30ffb86fbe-32614190](http://www.citiprogram.org/verify/?w8d61e48a-ff11-4486-9840-3a30ffb86fbe-32614190)



Completion Date 01-Aug-2019  
Expiration Date 31-Jul-2022  
Record ID 32614189

This is to certify that:

**David Wright**

Has completed the following Citi Program course:

**Social & Behavioral Research - Basic/Refresher** (Curriculum Group)  
**Social & Behavioral Research** (Course Learner Group)  
**1 - Basic Course** (Stage)

Under requirements set by:

**University of Saint Francis**



Verify at [www.citiprogram.org/verify/?w9c2589a2-f37a-4d61-8098-20fd984c87fb-32614189](http://www.citiprogram.org/verify/?w9c2589a2-f37a-4d61-8098-20fd984c87fb-32614189)



Completion Date 01-Aug-2019  
Expiration Date 31-Jul-2022  
Record ID 32614191

This is to certify that:

**David Wright**

Has completed the following CITI Program course:

**Social and Behavioral Responsible Conduct of Research** (Curriculum Group)  
**Social and Behavioral Responsible Conduct of Research** (Course Learner Group)  
**1 - RCR** (Stage)

Under requirements set by:

**University of Saint Francis**



Verify at [www.citiprogram.org/verify/?wcc49acd8-4254-4ac2-9072-19355698f3ff-32614191](http://www.citiprogram.org/verify/?wcc49acd8-4254-4ac2-9072-19355698f3ff-32614191)

## Appendix B

## Letters of Support

Wallena Gould, Edi), CRNA, FAAN

39 West Wolfert Station Road

Mickleton, NJ 08056

November 9, 2019

University of Saint Francis

Nurse Anesthesia Program

Dr. Lisa Osborne, DNP, CRNA

Fort Wayne, Indiana 46808

RE: DNP Committee Member for David Wright, SRNA

Good Morning Dr. Osborne,

I am writing on behalf of David Wright, SRNA currently enrolled at the University of Saint Francis Nurse Anesthesia Program. I am formally submitting a letter of support and honor to serve as a member on his Doctorate in Nurse Practice Committee.

As the Founder & CEO of the Diversity in Nurse Anesthesia Mentorship Program and former Chief Nurse Anesthetist, I have mentored over 510 nurses of color to successfully matriculate into 68 graduate nurse anesthesia programs. I graduated from Wilmington University with a Doctorate in Education in Higher Education (2013). My dissertation was on the professional socialization of underrepresented minority nurse anesthesia students and CRNAs. I was inducted as the only CRNA of color as a Fellow of the American Academy of Nursing. In 2016, I was the lead consultant of the HRSA Workforce Diversity Grant for the University of

Tennessee at Chattanooga Nurse Anesthesia Program. That same year, I was the Chair for the Diversity Task

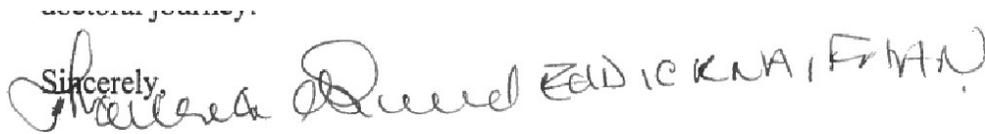
Force for the American Association of Nurse Anesthetists. In 2018, I was the recipient of The Trailblazer Award from the National Black Nurses Association. Lastly, in August 2018, I was the recipient of the Agatha Hodgins Award for Outstanding Accomplishment from the American Association of Nurse Anesthetists at the Annual Conference.

On October 4, 2019, Mr. Wright actively participated with diverse CRNAs and nurse anesthesia students for the Diversity CRNA Historically Black Colleges & Universities School of Nursing Tour at North Carolina A&T State University. Mr. Wright was sponsored by the Diversity in Nurse Anesthesia Mentorship Program to attend this one-day event to increase exposure to first generation college students about nurse anesthesia. Also, Mr. Wright was able to participate in a hands-on airway simulation lab and speak with students about his military experience as well.

In 2020, Mr. Wright will serve on the Nurse Anesthesia Student Panel for the Diversity CRNA Information Session & Airway Simulation Lab Workshop at Case Western Reserve University across the country intended for diverse nurses interested in applying to a graduate nurse anesthesia program. Again, Mr. Wright will be able to interface with nurses and be an ambassador for the University of Saint Francis Nurse Anesthesia Program during the weekend of May 2<sup>nd</sup> — 4<sup>th</sup>.

I am very much aware of Mr. Wright's gap analysis, proposed DNP project, survey construction and recruitment of his targeted population. His participation in the initiatives from

the Diversity in Nurse Anesthesia Mentorship Program will prepare him for his readiness of a rigorous DNP scholarly project at the University of Saint Francis. I look forward to advising him on his doctoral journey

Sincerely,  
 Wallena Gould EdD, CRNA, FAAN

Wallena Gould, EdD, CRNA, FAAN

Founder & CEO

Diversity in Nurse Anesthesia Mentorship Program [www.DiversityCRNA.org](http://www.DiversityCRNA.org)

[lenacrnamsn@gmail.com](mailto:lenacrnamsn@gmail.com) 609-417-6958

November 15, 2019

To the University of Saint Francis Institutional Review Board,

I am happy to write this letter in support of David Wright's Doctor of Nursing Practice Scholarly project entitled *Diversity and Inclusion in Nurse Anesthesia*.

Diversity is a critical part of the mission at the University of Saint Francis and central point of focus in the USF NAP. David's project not only addresses the need for greater racial diversity in the field of nurse anesthesiology, but also proposes activities that will lead to mentorship of future students, increased recruitment of diverse students to the University of Saint Francis, as well as encourage our faculty and staff to be aware of their own cultural competence. allow the University of Saint Francis to continue reverencing the unique dignity of all individuals, as well as further promoting peace and justice.

I am confident that this project will have a positive impact on the nurse anesthesia profession, the USF NAP and the University of Saint Francis. Please feel free to contact me if there's anything else I can do to further my support of David's work.



Paul Porter, Ph.D.

Director of Diversity and Inclusion

University of Saint Francis



October 29, 2019

University of Saint Francis Institutional Review Board:

This letter is being written in support of University of Saint Francis NAP/DNP student David

Wright's Doctor of Nursing Practice Scholarly Project entitled Diversity and Inclusion in Nurse Anesthesia. We understand that the aims of the DNP Scholarly Project are to increase knowledge and awareness about the CRNA profession and promote minority student recruitment using education and mentorship. The University of Saint Francis is supportive of the aims of the project. We believe that the participation of USF nurse anesthesia and undergraduate students in this project will be beneficial to the students as well as provide information on diversity recruitment effort that will be useful to CRNA educational programs. We support Mr. Wright's efforts to identify diversity and inclusion data relating to minority nurse anesthesia students. Should this proposal receive approval from the IRB, to whose judgment we defer, we look forward to hearing the results of his project.

Sincerely,

Dr. Angela Harrell

Dean, School of Health Sciences [aharrell@sf.edu](mailto:aharrell@sf.edu)

Dr. Lance Richey

Vice President for Academic Affairs [lrichey@sf.edu](mailto:lrichey@sf.edu)



October 26, 2019

To the University of Saint Francis Institutional Review Board:

This letter is being written in support of University of Saint Francis Nurse Anesthesia Program (NAP) student David Wright's Doctor of Nursing Practice Scholarly Project entitled "Diversity and Inclusion in Nurse Anesthesia". The University of Saint Francis NAP acknowledges that the aims of this DNP Scholarly Project are to increase awareness about the nurse anesthesia profession by promoting minority student recruitment in nurse anesthesia and providing diverse CRNA mentors to underrepresented student populations. Implementation of this event will further promote a culture of diversity and inclusion within the USF NAP that is promoted by faculty and administration.

The USF Nurse Anesthesia Program is supportive of the aims of the Scholarly Project. The NAP intends to provide David Wright with facility space, printing support, and access to NAP simulation equipment to support the success of the diversity and inclusion workshop.

Promoting a culture of respect for all aspects of diversity among students, faculty, and the community at large is of the utmost importance to the NAP. Reverencing the unique dignity and needs of each nurse anesthesia student as an individual begins in the recruitment stage, by only extending offers of admission to highly qualified candidates. Mentoring diverse undergraduate nursing students on these requirements sets them up for future success in the field of nurse anesthesia. The USF Nurse Anesthesia Program faculty and administration fully support David

Wright's DNP Scholarly Project implementation at USF. David Wright's Scholarly Project, "Diversity and Inclusion in Nurse Anesthesia", will positively impact current undergraduate nursing students of diverse backgrounds, as well as sustainably impact diverse nursing students and diversity of the nurse anesthesia profession for years to come.

Sincerely,



Lisa Osborne DNP, CRNA

Nurse Anesthesia Program Director

University of Saint Francis

Work: (260) 399-7700 x8559

Email: losborne@sf.edu

Appendix C

Release and Waiver of Liability, Assumption of Risk, and Indemnity Agreement



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**University of Saint Francis**

### **Release and Waiver of Liability, Assumption of Risk, and Indemnity Agreement**

*For Participants age 18 and over please fill out section 1 and leave section 2 blank. For Participants under the 18 please leave section 1 blank and fill out section 2. Section 3 will apply to all Participants.*

1) I, (name of participant) \_\_\_\_\_ request that I be allowed to participate in the (activity) \_\_\_\_\_ on \_\_\_\_\_ (date).

2) I (name of parent/custodial parent/legal guardian of participant under age 18) \_\_\_\_\_, the parent/custodial parent/legal guardian of (name of participant) \_\_\_\_\_, request that my child be allowed to participate in the (activity) \_\_\_\_\_ on \_\_\_\_\_ (date).

3) I understand that as part of the activity, I, or my child, may participate in various indoor and outdoor educational and recreational activities. I understand that such activities may expose me, or my child, to certain associated risks in addition to those normally associated with a classroom environment, and understanding such risks, hereby consent to my, or my child's, participation in all activities. I agree and warrant that I, or my child, will examine and inspect each activity in which I, or my child, will take part as a participant and that, if I, or my child, observe any condition which I, or my child, consider to be unacceptably hazardous or dangerous, that I, or my child, will notify the

proper authority in charge of said activity and will refuse to take part until the condition has been corrected to my, or my child's, satisfaction.

I further understand that I, or my child, will be required to follow all rules of conduct for the activity, all rules of the University of Saint Francis, and will abide by all rules, direction, and instructions received from any representative, agent, administrator, employee, or volunteer of the University of Saint Francis at all times.

In consideration of my, or my child's, being permitted to participate in the activity, on behalf of myself, or my child, my spouse, my personal representatives, heirs, and assigns, I hereby release the University of Saint Francis, its representatives, agents, administrators, employees, and volunteers from, and waive, any and all suits, actions, claims, judgments, liability for any injury, whether personal or property, that I, my child, my personal representative, estate, spouse, heirs, or assigns now have, ever had, or may have due to my participation in the activity that are attributable to the fault of myself, my child, or any third party, and to the extent permitted by law, the University of Saint Francis, its representatives, agents, administrators, employees, and volunteers.

I understand that by signing the Release and Waiver of Liability, I give up substantial rights, and I herein represent that I have signed it freely and voluntarily, and that it constitutes a release and waiver of all claims of liability to the greatest extent permitted by law.

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**University of Saint Francis**

**Release and Waiver of Liability, Assumption of Risk, and Indemnity Agreement**

I agree to indemnify and hold harmless the University of Saint Francis, its representatives, agents, administrators, employees and volunteers, from and against any and all loss, costs, damages or expenses, including but not limited to, attorney fees incurred by the University of Saint Francis arising out of any act by me or my child during my or their participation in the activity.

\_\_\_\_\_

\_\_\_\_\_

(Print Participant's Name)      (Print Parent/Custodial Parent/ or Legal

Guardian of Participant Under Age of 18, If

Applicable)

\_\_\_\_\_

\_\_\_\_\_

(Street Address)

(City, State, Zip)

---

---

(Primary Telephone Number)  
Parent or Legal Guardian)

(Signature of Participant/Parent/Custodial

**PRIMARY EMERGENCY CONTACT INFORMATION**

**NAME:** \_\_\_\_\_ **RELATIONSHIP**

**TO PARTICIPANT:** \_\_\_\_\_

**PHONE NUMBER(S):** \_\_\_\_\_

**SECONDARY EMERGENCY CONTACT INFORMATION**

**NAME:** \_\_\_\_\_ **RELATIONSHIP**

**TO PARTICIPANT:** \_\_\_\_\_

**PHONE NUMBER(S):** \_\_\_\_\_

I agree to permit my or my child's, photograph or likeness to be used by the University of Saint Francis for any legitimate purpose.

\_\_\_\_\_ (Initial to accept)

Approved: Dec. 6, 2012

Risk and Safety Management Council

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Appendix D

Informed Consent

University of Saint Francis

INFORMED CONSENT FORM

Diversity and Inclusion in Nurse Anesthesia

## I. Introduction

As universities become more diverse, they're faced with the task of creating a campus environment amenable to all races and ethnicities that support inclusion and provides equal opportunity for success. Obstacles that are common in underrepresented populations include lack of mentors, lack of resources, and isolation. Disparities in higher education can lead to disparities in the workforce. To address the racial and ethnic disparities in the predominantly Caucasian nurse anesthesia profession, strategic initiatives must be implemented to increase awareness amongst individuals of diverse backgrounds. Efforts to provide diverse mentorship to

prospective nurse anesthesia school applicants supports the removal of the barriers such as isolation and lack of mentorship.

The purpose of this project is to increase diversity within the profession of nurse anesthesia by informing, empowering, and mentoring minority nursing students. To accomplish this the following interventions will be implemented: an information session, a simulated basic airway skills lab and interaction with racially and ethnically diverse mentors at the University of Saint Francis Fort Wayne campus.

The project manager for this project is David Wright a 3<sup>rd</sup> year graduate student in the Doctoral Nurse Anesthesia program. The project team consists of Dr. Wallena Gould EdD, CRNA, FAAN, Dr. Paul Porter, Prof. Gregory Louck, and Dr. Carolyn Yoder. This is a study of how to promote racial diversity in nurse anesthesia and interventions to increase recruitment of racially diverse minority nurses to the nurse anesthesia profession. Your participation in this study is greatly appreciated, as it will assist in the formation of recommendations for increasing ethnic and racial diversity in the nurse anesthesia profession as well as lead to activities that will create a platform for mentoring future minority nursing student on the University of Saint Francis.

1. In the initial phase of the workshop, participants will be selected based on response to posted campus flyers advertising the event. Once the project manager receives an email from a student interested in becoming a participant, the project manager will send the student a presurvey to complete. The goal of the project manager is to recruit a group of 25 minority nursing students. The inclusion/exclusion criteria for participation will be enrollment full-time in either a 4-year or 2-year registered nursing degree program. Part-time and Licensed practical nursing students will be excluded. The presurvey will capture

demographic information as well as measure student's perceived level of understanding about nurse anesthesia. In addition, student's will be questioned regarding their interest level in pursuing a career in nurse anesthesia prior to attendance at the workshop.

2. The workshop will take place on February 7<sup>th</sup>, 2020 from 8am – 12pm. At the beginning of the workshop students will be asked to complete a pretest prior to the start of the information session. This test will cover information related to pursuing a career in nurse anesthesia. This test will be composed of 10 questions in total. Questions will cover the professional roles and responsibilities of certified registered nurse anesthetists, admission criteria and preparation for applying to nurse anesthesia school, and basic anesthesia concepts regarding airway management. Participants will not be expected to have prior knowledge on the subject matter and are encouraged to answer questions to the best of their ability. Each participant will have a maximum of 20 minutes to complete the pretest.
3. The information session will consist of the delivery of a PowerPoint presentation regarding the topics covered in both the pre/posttests.
4. Following the information session participants will be paired with a mentor and convene in the simulation lab to practice on simulated airway training equipment. Participants and their mentors will engage in hands on practice in a simulated environment.
5. Participants will take a posttest similar to the pretest administered at the start of the workshop. Each participant will also have a maximum of 20 minutes to complete this test also. In total participants can expect to spend a total of 4-5 hours to complete the entire workshop. Additional time may be spent meeting with mentors after the conclusion of the workshop at the discretion of the participants

6. Lastly, all students in attendance at the workshop will be emailed a post workshop evaluation survey to collect their responses regarding their experiences during the workshop as well as their perceived knowledge of nurse anesthesia and interest in pursuing a career as a CRNA.

## II. Risk and benefits

1. This project presents minimal risk to the participant in the form of slip hazards, injuries from mechanical falls on campus grounds, and what one would normally encounter during daily living including psychological, physical, or mental testing.

2. No monies will be exchanged between project team members, mentors, or participants. This event will be free to attend for all those recruited. There will be no financial compensation provided to any participant. Additionally, all mentors will serve on a volunteer basis.

3. All participants will be required to sign the University of Saint Francis's release and waiver of liability, assumption of risk, and indemnity agreement. If a medical injury occurs while on campus for this workshop participants who are USF nursing students may receive treatment at the health clinic on campus. In the event of a medical emergency, 911 and local EMS will arrange transport to one of the local hospitals. Participants will be responsible for all medical bills incurred due to injuries occurring during participation in the workshop.

## III. Personal Information Safeguards

1. No personally identifiable information will be collected by project team members. Hard copies of all written tests and participant forms collected will be stored in a locked filing cabinet inside of the secured office in the University of Saint Francis Nurse Anesthesia Department.

3. USF DNP faculty will receive a release of the project's findings to include all aggregate data and the results of data analysis.

4. Any published data for this project will be in aggregate form whenever applicable.

#### Freedom to Withdraw.

1. Any participation in this project is completely voluntary. Participants may withdraw from the project at any time.

2. There are no punitive actions taken for those that wish to no longer participate at a later time.

3. The project manager reserves the right to terminate any participant's participation based on them attempting to use unauthorized aid during either the pre or posttest. Participation may also be terminated for conduct that is detrimental to the rest of the group (loud talking during lecture, reckless behavior with simulation equipment, refusing to follow mentors' instructions on proper use and damage to other participant's person or possessions).

Inquiries & Request for additional information

Upon completion of this study, if you would like to obtain a copy of the study's results send written correspondence to University of Saint Francis Attn: Nurse Anesthesia Department 2701 Spring Street Fort Wayne, IN 46808. Or you may email [wrightdc@cougars.sf.edu](mailto:wrightdc@cougars.sf.edu) if you have any questions.

*“I have received an explanation of this study and agree to participate. By signing this form, you are indicating you understand and agree to participate in this study according to the terms outlined in this Informed Consent form. I understand that my participation in this study is strictly voluntary.”*

Name \_\_\_\_\_ Date \_\_\_\_\_

Appendix E

Flyer



Diversity and Inclusion in Nurse Anesthesia

# THE CHANGING FACE OF NURSE ANESTHESIA

A workshop for minority nursing students interested in becoming a CRNA.

**07 FEBRUARY 2020**  
**UNIVERSITY OF SAINT FRANCIS**

Register by emailing [wrightdc@cougars.sf.edu](mailto:wrightdc@cougars.sf.edu)

Appendix F

Pre-Event Survey



Diversity & Inclusion in Nurse Anesthesia Pre-Event Survey

David Wright GSRNA DNP-NAP

Thank you for submitting this short survey. It will take just a few minutes and your responses w remain confidential.

1. What is your gender?

Female  Male

Other (specify)

2. Which category below includes your age?

17-22  35-

23-28  40 40 or

older

29-34

3. Are you White, Black or African American, American Indian or Alaskan Native, Asian, Native Hawaiian or another Pacific islander, or some other race?

White

Asian

Black or African American

Native Hawaiian or other Pacific Islander

American Indian or Alaskan Native

From multiple races

Some other race (please specify)

4. Are you Mexican, Mexican American, Chicano, Puerto Rican, Cuban, Cuban-American, or some other Spanish, Hispanic, or Latino group?

I am not Spanish, Hispanic, or

Cuban

Latino

Cuban American

Mexican

Some other Spanish,

Mexican American

Hispanic, or Latino group

Chicano

From multiple Spanish,

Hispanic, or Latino groups

Puerto Rican

5. What is your student status?

- Enrolled in a BSN program
- Enrolled as a Pre-Nursing Student (not currently accepted into a BSN program)
- Enrolled in an ASN program

6. Are you a first-generation nursing student?

- Yes
- No

7. What is your current level of knowledge about nurse anesthesia?

- A great deal
- A moderate amount
- A little
- None at all

8. How much do you know about Nurse Anesthesia or Certified Registered Nurse

Anesthetists (CRNAs)?

- A great deal
- A moderate amount
- A little
- None at all

(please specify)

9.

How likely are you to pursue a career as a Nurse Anesthetist?

- Very likely
- Likely
- Somewhat likely
- Somewhat unlikely
- Unlikely
- Very unlikely
- Unsure

## Appendix G

## Pretest

## Diversity and Inclusion in Nurse Anesthesia

## Information Session Pretest

1. What determines the scope of nursing anesthesia practice?

A.) The scope of nurse anesthesia practice is determined by education, experience, state and federal law, and facility policy.

B.) The Standards for Accreditation of Nurse Anesthesia Educational Programs

C.) The Council on Accreditation

D.) AANA Standards for Nurse Anesthesia Practice

2. While stellar performance is strongly encouraged in all undergraduate courses, which courses are weighted most heavily for admission into a nurse anesthesia program by admission faculty?

*Select all that apply.*

A.) Mathematics courses

B.) English courses

C.) Science courses

3. The laryngoscope used for direct laryngoscopy is a right-handed instrument.

A.) True

B.) False

4. Which of the following is the most important airway goal for the nurse anesthetist?

A.) Avoid using airway devices to establish a patent airway

B.) Endotracheal intubation

C.) Allow adequate ventilation to provide for adequate oxygenation

5. The minimum work experience required as a registered nurse in a critical care setting for application to a nurse anesthesia program is:

- A.) Two years full-time work experience
- B.) Three years full-time work experience
- C.) One-year full-time work experience, or its part-time equivalent

6. Graduates of nurse anesthesia educational programs must pass which exam in order to practice anesthesia?

- A.) ETS's Graduate Record Examination
- B.) NBCRNA's National Certification Exam
- D.) AACN's Adult Critical Care Registered Nurse Exam

7. ALL students accepted into an accredited program for nurse anesthesia must be enrolled in a doctoral program by what year?

- A.) 2025
- B.) 2023
- C.) 2021
- D.) 2022

8. Certified Registered Nurse Anesthetists practice in which of the following settings?

*Select all that apply.*

- A.) Obstetrical delivery rooms

- B.) Ambulatory surgical centers
- C.) Offices of Dentists, Podiatrists, Ophthalmologists, or Plastic Surgeons
- D.) Pain management specialty clinics
- E.) Traditional hospital surgical suites and Veteran's Affairs healthcare facilities

9. The CRNA School Search website is a database that provides up to date information about nurse anesthesia programs across the country, for those interested in attending nurse anesthesia school. What is the web address for this database?

- A.) <https://www.coacrna.org/accredited-programs/Pages/CRNA-School-Search.aspx>
- B.) <https://www.aana.com/membership/become-a-crna/crna-fact-sheet>
- C.) <https://www.aacnnursing.org/Diversity-Inclusion/DEIG>
- D.) <https://www.sf.edu/>

10. What is the first step in managing a patient's airway?

- A.) Secure an endotracheal tube
- B.) Assess the patient
- C.) Push intravenous medications
- D.) Cricoid pressure held by the operating room RN

Appendix H

Pretest Answer Sheet

\_\_\_\_\_ Nurse Anesthesia Pretest \_\_\_\_\_

Choose the Best Answer.  
Fill-in Bubble Completely.

A  B  C  D  E

test score - do not mark in this box

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- 
1. <sup>T F</sup>  A  B  C  D  E  F
2.  A  B  C  D  E  F
3.  A  B  C  D  E  F
4.  A  B  C  D  E  F
5.  A  B  C  D  E  F
6.  A  B  C  D  E  F
7.  A  B  C  D  E  F
8.  A  B  C  D  E  F
9.  A  B  C  D  E  F
10.  A  B  C  D  E  F

## Appendix I

## Post-test

## Diversity and Inclusion in Nurse Anesthesia

## Information Session Post-test

1. Which of the following is the most important airway goal for the nurse anesthetist?
  - A.) Avoid using airway devices to establish a patent airway
  - B.) Endotracheal intubation
  - C.) Allow adequate ventilation to provide for adequate oxygenation
  
2. What is the first step in managing a patient's airway?
  - A.) Secure an endotracheal tube
  - B.) Assess the patient
  - C.) Push intravenous medications
  - D.) Cricoid pressure held by the operating room RN
  
3. ALL students accepted into an accredited program for nurse anesthesia must be enrolled in a doctoral program by what year?
  - A.) 2025
  - B.) 2023
  - C.) 2021
  - D.) 2022

4. The laryngoscope used for direct laryngoscopy is a right-handed instrument.

A.) True

B.) False

5. Graduates of nurse anesthesia educational programs must pass which exam in order to practice anesthesia?

A.) ETS's Graduate Record Examination

B.) NBCRNA's National Certification Exam

D.) AACN's Adult Critical Care Registered Nurse Exam

6. The CRNA School Search website is a database that provides up to date information about nurse anesthesia programs across the country for those interested in attending nurse anesthesia school. What is the web address for this database?

- A.) <https://www.coacrna.org/accredited-programs/Pages/CRNA-School-Search.aspx>
- B.) <https://www.aana.com/membership/become-a-crna/crna-fact-sheet>
- C.) <https://www.aacnnursing.org/Diversity-Inclusion/DEIG>
- D.) <https://www.sf.edu/>

8. In what settings do Certified Registered Nurse Anesthetists practice in? Select all that apply

- A.) Obstetrical delivery rooms
- B.) Ambulatory surgical centers
- C.) Offices of Dentists, Podiatrists, Ophthalmologists, or Plastic Surgeons
- D.) Pain management specialty clinics
- E.) Traditional hospital surgical suites and Veteran's Affairs healthcare facilities

9. The minimum work experience required as a registered nurse in a critical care setting for application to a nurse anesthesia program is:

- A.) Two years full-time work experience
- B.) Three years full-time work experience
- C.) One-year full-time work experience, or its part-time equivalent

10. While stellar performance is strongly encouraged in all undergraduate courses, which courses are weighted most heavily for admission into a nurse anesthesia program by admission faculty?

*Select all that apply.*

A.) Mathematics courses

B.) English courses

C.) Science courses

Appendix J

Post-test Answer Sheet

\_\_\_\_ Nurse Anesthesia Post-Test \_\_\_\_\_

Choose the Best Answer.  
Fill-in Bubble Completely.

A  B  C  D  E

test score - do not mark in this box

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- 
1. <sup>T F</sup>  A  B  C  D  E  F
2.  A  B  C  D  E  F
3.  A  B  C  D  E  F
4.  A  B  C  D  E  F
5.  A  B  C  D  E  F
6.  A  B  C  D  E  F
7.  A  B  C  D  E  F
8.  A  B  C  D  E  F
9.  A  B  C  D  E  F
10.  A  B  C  D  E  F

Appendix K

Post Survey



Diversity & Inclusion in Nurse Anesthesia Post Survey

David Wright GSRNA DNP-NAP

Thank you for filling out this evaluation. Your feedback is essential for us to make improvements to the workshop. Your responses will remain confidential.

1. Overall, how would you rate the workshop?

- Excellent
- Very good
- Good
- Fair
- Poor

2. How convenient was the time that the workshop was held?

- Extremely convenient
- Very convenient
- Somewhat convenient
- Not so convenient
- Not convenient at all

3. Describe your previous exposure or lack thereof to minority nurse anesthesia professionals?

4. How useful was the information presented on the PowerPoint?

- Extremely useful
- Very useful
- Somewhat useful
- Not so useful
- Not at all useful

5. How well did your mentor answer your questions?

- Extremely well
- Very well
- Somewhat well
- Not so well
- Not at all well

6. What did you like about your time with the mentors? What did you dislike about your time with mentors?

\* 7. How likely are you to pursue a career in nurse anesthesia?

- Very likely
- Likely
- Somewhat likely
- Somewhat unlikely
- Unlikely
- Very unlikely  Unsure

\* 8. How much do you know about Nurse Anesthesia or Certified Registered Nurse Anesthetists (CRNAs)?

- A great deal
- A lot
- A moderate amount

A little

None at all

9. What are the most important takeaways for you from the workshop?

10. How likely is it that you would recommend this workshop to a friend or colleague?

Not at all likely

Extremely likely

**0    1    2    3    4    5    6    7    8    9    10**

11. What improvements would you make to this event?