Increasing the number of nurses of color is one solution for eliminating health disparities and increasing quality of care. This study examines the impact of a 2-tiered outreach, education, and intervention approach on candidates of color applying to and gaining acceptance in a graduate nurse anesthesia program. The authors implemented individual- and social-level recruitment strategies over three 12-month periods targeting candidates of color nearing eligibility for applying to nurse anesthesia programs at 2 points: colleges and workplace. Strategies included developing information sessions and workshops, partnering with diversity organizations, and strategic recruiting. Because institutionalized admissions criteria play a role in patterns that may present barriers to candidates of color, admissions processes were reviewed. Interventions were developed and implemented to move toward equitable admissions processes, including increased panel diversity, interviewer training, standardized question pool, revised scoring rubric, online scoring, and inclusion of nontraditional evaluation criteria. Demographic data were collected when candidates completed an application. Data analysis compared 2016-2018, 2017-2019, and 2018-2020 candidates with historical applicant data using regression analysis at 3 stages of the admissions process: completed applications, interviews, and admission offers. Recruitment strategies resulted in significant gains in applicant diversity (P < .05). Targeted education resulted in increased diversity across program candidates and enrollees.

Keywords: CRNA diversity, diversity in nursing, diversity recruiting for graduate programs, graduate nursing admissions.

The diversity in the United States continually increases, with the population predicted to become a majority people of color by 2043. It therefore becomes increasingly important that the healthcare workforce represent the populations they serve. Anticipated growth in diverse populations underscores the need for a more diverse nursing workforce. However, in nursing, those who identify as people of color are consistently underrepresented, especially at the graduate level and in the field of nurse anesthesia. The American Association of Nurse Anesthetists (AANA) reported in 2017 that of the more than 52,000 practicing Certified Registered Nurse Anesthetists (CRNAs) in the United States, only 10% are people of color, and 90% classify themselves as white.1,2 In Tennessee, Georgia, and Mississippi—the states targeted for this study—the nursing workforce and the CRNA workforce in particular reflect a grave disparity in racial and ethnic diversity. Although those who identify as people of color comprise 22% of Tennessee’s population,3 people of color constitute only 18.2% of Tennessee’s nursing students and only 5.4% of Tennessee’s CRNAs.4,5 In Mississippi, more than 40% of the population is nonwhite, but only 27.2% of the state’s nursing students are from ethnically/racially diverse groups.3,4 Likewise, 41% of Georgia’s population identify as people of color, but only 15.8% of the state’s registered nurse workforce is nonwhite.6

In 2002, the Institute of Medicine (now the National Academy of Medicine) released the report Unequal Treatment, highlighting the fact that those who are racially and ethnically diverse, even those with equal levels of healthcare access, received lower quality care than white patients for many conditions.7-9 A comprehensive body of literature also supports that increasing the racial diversity of the healthcare workforce is a strategy to increase access to healthcare, reduce health disparities, and work toward health equity in the United States.9,10 One method for diversifying the nursing workforce is for nursing programs to recruit, enroll, retain, and graduate more students of color.11

The purpose of this study is to outline a recruitment method for increasing racial and/or ethnic diversity in the applicant pool and the admitted student population for a master’s-level nurse anesthesia program (NAP) in the Southeastern United States. Secondly, the study identifies a strategy to examine institutional admissions processes of a master of science in nursing (MSN) NAP and offers a model to establish an inclusive admissions framework.

Addressing the topic of racial and/or ethnic diversity is a complex endeavor. The authors acknowledge that in
the pursuit of addressing systemic barriers to applying and gaining admission to a NAP, and in even writing a publication about those topics, a stance of cultural humility rather than assuming cultural competency is necessary. Cultural humility is an openness to an ongoing learning “process-oriented approach toward cultural competency.” The construct is based on a commitment to self-critique, a desire to fix power imbalances, and an aspiration to partner with people and groups who advocate for others. Through the process of pursuing this research, many individuals and leaders have been the authors’ patient teachers on the broad subject of diversity. One recurring dilemma has been around language for respectfully identifying people of color.

- **Terms Used.** The authors have selected the term **people of color or nurses of color** to describe participants who identify as a race and/or ethnicity other than white, for several reasons. Many scholars and journalists have noted that as America’s racial and ethnic makeup changes, so does the language around racial and ethnic descriptors. Using the word **diverse** to represent everyone but white people has been described as depersonalizing and is often confusing, because it may encompass more factors than race within a group, or even nonsensical when referring to a single person. The word **minority** has been noted to the authors as potentially offensive and not preferential; in addition to the connotations of “other” and/or “lesser than” inherent in the word minority, it is also inaccurate in many cases, or soon will be, as the racial and ethnic demographic of cities, states, and the country shifts. The term **minorities** is declining in use but continues to be used more often than **people of color**. **Nonwhite** is a term that suggests a person of color be defined by the absence of “whiteness” rather than in positive, specific terms. The authors limited the use of terms that are exclusive in nature (eg, **nonwhite**) in favor of inclusive terms (eg, **people of color**) throughout the article while still attempting to clearly communicate the intent of the study and its findings.

- **Background on Health Disparities.** One approach to reducing health disparities is to increase healthcare access. The 2012 Agency for Healthcare Research and Quality’s “National Healthcare Disparities Report” outlined that health access and quality of care for people of color and low-income populations were worse than other groups. Research supports that racially diversifying the nursing workforce would help create greater healthcare access for underserved populations. Communities with a high population of black and Hispanic residents have been identified as 4 times as likely as other communities to experience physician shortage, regardless of income. Evidence from the Health Resources and Services Administration (HRSA) Bureau of Health Professions supports that health professionals who identify as racially diverse and come from socioeconomically disadvantaged backgrounds are more likely to serve in resource-poor and rural communities, where people of color as well as poor people are overrepresented. Nurses of color are more likely to live in medically underserved areas. They are also more likely to practice in those communities where other people of color, poor people, and immigrants live. When factors of race and ethnicity are controlled for, black physicians care for significantly more black patients and Hispanic physicians for significantly more Hispanic patients than do other physicians. They also tended to practice in communities whose residents share their race/ethnicity. The issue of access is especially relevant and critical in the field of anesthesia and in the Southeastern United States. Research shows that the availability of CRNAs is critical to ensure the quality of regional healthcare, particularly in rural areas. Certified Registered Nurse Anesthetists are the sole providers of anesthesia in one-third of all hospitals and 85% of rural hospitals. Without CRNAs, these facilities would be unable to provide obstetric, surgical, and trauma stabilization services. Among the states represented by the most applicants to the NAP at the authors’ institution—Tennessee, Georgia, and Mississippi, 61% of Tennessee counties, 69% of Georgia counties, and 83% of Mississippi counties are rural. A racially and/or ethnically diverse nursing workforce can reduce health disparities and achieve health equity by increasing access to high-quality care and health resources. This is particularly important to the CRNA workforce because CRNAs frequently provide healthcare to vulnerable populations, including low-income and uninsured individuals. Recruiting a diverse CRNA workforce is critical, especially in the Southeast, where the social determinants of education create barriers to nurses entering and completing CRNA programs and where the social determinants of health create tremendous needs for a diverse and culturally competent CRNA workforce.

In addition to addressing issues of access, diversifying the nursing workforce affects quality of care by improving patient outcomes. Evidence supports that when the healthcare provider and the patient share the same race/ethnicity and/or language, patient-provider communication and trust increase, which leads to reports of higher quality care and improved patient-provider interactions. Research supports that shared life experiences between nurses and patients enable nurses to better understand the patient’s culture, communicate better, and establish trust that leads to improved patient outcomes. Black patients rate their physician visits as less participatory than do white patients, but when they share the same race as their provider, they rate visits as significantly more participatory. Black patients tend to rate black physicians as excellent and are more likely to report receiving preventive care when they have the same-race physician;
Hispanic patients who see Hispanic physicians report higher levels of healthcare satisfaction than those who see a non-Hispanic provider. The correlation between patient satisfaction and care providers’ race/ethnicity is well documented, as is how racial/ethnic diversity in care providers can improve healthcare access; however, there remains a disparity between acknowledging the benefits of a racially diverse nursing workforce and achieving a racially diverse nursing workforce. Although the diversity of the nursing population is growing, nurses of color are still underrepresented across the profession and vastly so in the field of nurse anesthesia.

Nurses of any race or ethnicity can certainly provide high-quality care for people of color, poor people, and immigrants; however, this information emphasizes that increasing healthcare workforce diversity is one way to increase access and quality of care. It also underscores the value of the provider-patient relationship, especially for underserved populations, and how cultural and linguistic nuances affect perception of quality of care and therefore the patient-provider partnership and, ultimately, patient outcomes. It is critical to recruit and prepare CRNAs of color to overcome health disparities and improve care; we must take action to increase the diversity of a CRNA workforce that can affect the root causes of the disparities.

Barriers hindering recruitment, admission, and retention of students of color in nursing programs include financial constraints, inflexible admissions practices, and the institutional climate for diversity. Barriers to recruitment have often been explored alongside retention obstacles and frequently overlap. For undergraduate nursing programs, evidence supports that financial constraints, lack of emotional and moral support, lack of mentoring, and a lack of guidance about program requirements are all hurdles to both recruitment and retention. Lack of mentoring has specifically been identified as a recruitment roadblock for Hispanics interested in nursing. The most common barrier to admission is lack of financial support. At the graduate level, entry into a CRNA program is especially competitive, and the rigors of required clinical training along with the duration of the program does not allow for full-time or, often, part-time work, heightening the financial barrier to program entry compared with other graduate-level nursing programs.

Other barriers to admission for students of color are a lack of knowledge regarding the admissions requirements and processes and experiencing limited admissions criteria. Educational pre-entrance preparation interventions have been shown to result in higher undergraduate admission rates. Although many students of color have outstanding grade point averages (GPAs) and standardized test scores, they are more likely to experience educational and economic disadvantages than others. Because many applicants of color experience academic deficits from disadvantaged educational structures (eg, low-performing high schools), quantitative admission measures that include only GPA and standardized test scores may hinder acceptance of otherwise highly qualified applicants. Expanding eligibility criteria that can account for achievements beyond GPA is necessary while also adhering to a rigorous standard.

A public health report from 2014 calls for a “robust and measurable strategic plan” for recruiting and retaining students of color in nursing programs that incorporates organizational commitment and financial support, targets resources, and builds strong community and professional partnerships with diverse organizations. The same report calls for enhancing workforce diversity “at all levels—in nursing and in all health care practice and research arenas.” Successful recruitment strategies that lead to an increased enrollment of students of color in nursing programs have been identified as mentoring; offering financial and social support; developing an inclusive institutional environment; and assigning dedicated staff to identify students of color who are “committed, motivated, and likely to succeed in nursing.” Recruitment efforts are aided by a supportive environment that includes students, faculty, and staff of color, and policies that address and expand diversity efforts beyond recruitment. Institutional commitment to diversity identified in the mission or strategic plan with actionable items is an important factor for recruitment and retention. This can be reflected in a growing diverse student body and faculty as well as resources such as a dedicated recruiter or advisor committed to recruiting students of color and aiding in retention efforts. University leadership plays a key role in providing resources and support services to foster a climate of inclusivity. Implementing faculty development workshops on how to improve teaching methods and cultural awareness have been found to aid in recruiting diverse students through creating an inclusive institutional climate. Faculty development is a strategy that also contributes to a culturally competent healthcare education framework to better prepare all students to serve a growing diverse patient population.

Other factors to aid in recruiting and retaining students of color include working with community partners who support diversity initiatives and providing academic support. Individualized pathway programs can aid in pre-entrance education to break down barriers such as financial planning hurdles and understanding admissions expectations. Preadmission support was identified as a positive factor in aiding program entry, and ongoing student support was identified as a retention factor. University partnerships with clinical institutions that included mentor and financial support for diversity initiatives have been shown to aid in recruitment efforts and in diversifying the nursing workforce.
mended that students and faculty of color are represented in marketing materials for underrepresented groups, and recruiting from communities with high numbers of underrepresented populations attracts students of color.28

These recruitment and retention methods have been replicated and expanded on. However, in nurse anesthesia, the disparity between the diversity of providers and patient population remains much higher than the overall nursing workforce.1,2 There are numerous recommendations for successfully recruiting and retaining students of color to undergraduate nursing programs, and process barriers in higher education that may prevent many

<table>
<thead>
<tr>
<th>Recruitment strategy</th>
<th>Implementation</th>
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<tbody>
<tr>
<td>Information sessions for professionals</td>
<td>• Host information sessions in major cities and racially diverse areas within a 208-km (130-mi) radius. Host 6 sessions annually, at least 1 in each nearby major city and 2 on-campus at UTC.</td>
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<td>• Advertise online (website and social media) and at area hospitals with flyers 3-6 wk in advance.</td>
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<td>• Network with nursing educators to advertise information sessions to critical care nurses.</td>
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<td></td>
<td>• Include nursing student and faculty representation in marketing.</td>
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<td></td>
<td>• Ensure that sessions include academic expectations, application criteria, how to apply, deadlines, and financial planning.</td>
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<tr>
<td>Information sessions for college students</td>
<td>• Network with nursing school directors to host information sessions at nearby community colleges and undergraduate institutions.</td>
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<td>• Reach out to historically black colleges and universities to inquire about hosting an information session.</td>
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<td>• Host an information session for undergraduates at home institution.</td>
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<td></td>
<td>• Advertise student information sessions online.</td>
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<td></td>
<td>• Ensure sessions include educational pathway to becoming a CRNA and financial planning tips.</td>
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<tr>
<td>Online information sessions</td>
<td>• Audio-record information sessions and post recorded content on program website, available at any time.</td>
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<tr>
<td>Partnerships</td>
<td>• Obtain letters of support from clinical partners.</td>
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<td>• Partner with Diversity in Nurse Anesthesia Mentorship Program and ask program to host “Diversity CRNA” workshop annually.</td>
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<tr>
<td>Institutional support (UTC)</td>
<td>• Recognize that diversity goals are explicitly stated in university strategic plan.</td>
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<td>• Partner with Office of Equity and Diversity to help host events and foster environment of inclusivity for admitted students.</td>
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<td>• Hold mandatory faculty workshop on cultural competency.</td>
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<td>• Hold mandatory interdisciplinary conference on cultivating inclusivity in curriculum.</td>
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<tr>
<td>Inclusive marketing</td>
<td>• Review and revise digital and print program materials to ensure they reflect the diversity of the program’s student body and faculty.</td>
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<tr>
<td>Targeted recruiting</td>
<td>Dedicated recruitment and retention coordinator (RRC):</td>
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<td>• Attends and exhibits at conferences for nurses of color such as National Association of Hispanic Nurses and Black Nurses Rock.</td>
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<td>• Follows up with networking and one-on-one inquiries from conference attendees.</td>
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<td>• Networks with nursing educators at hospitals with high numbers of nurses of color, to advertise program information sessions.</td>
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<td></td>
<td>• Networks with undergraduate institutions with high numbers of students of color, to ask them to host program information sessions.</td>
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<td>• Emails School of Nursing directors to invite their students to program information sessions.</td>
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<td></td>
<td>• Keeps website and social media up to date; announces all information sessions, campus visits, or conference exhibits in advance and posts about them afterward for awareness and relationship building with potential candidates.</td>
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Table 1. UTC MSN Nurse Anesthesia Program Recruitment Strategies and Implementation

Abbreviations: CRNA, Certified Registered Nurse Anesthetist; MSN, master of science nursing; UTC, University of Tennessee at Chattanooga.
students of color from gaining admission are well documented. However, there is a lack of literature on how to successfully diversify graduate-level nursing programs’ candidate pools and admitted student profiles, specifically, for NAPs. Addressing this gap in knowledge by applying a multifaceted approach, built on supportive literature, to recruiting NAP applicants of color will likely increase the racial diversity of the NAP candidate pool, admitted student demographic, and ultimately, the national profile of CRNAs.

Methods
This study implemented both individual- and social-level recruitment strategies over three 12-month periods to target candidates of color nearing eligibility for applying to CRNA programs at 2 entry points: colleges and workplaces. Strategies included developing information sessions and workshops, partnering with diversity organizations, gaining institutional support for diversity initiatives, creating inclusive marketing materials, and using targeted recruiting efforts (Table 1). Demographic data were collected from completed applications. Data analysis compared program candidates for 2016-2018, 2017-2019, and 2018-2020 with historical applicant data in the preintervention cohort year 2015-2017. These data informed the role of strategic recruitment interventions targeted toward potential candidates of color in developing a diverse candidate pool for an MSN NAP.

Self-assessment of admissions processes revealed potential barriers for candidates of color after the first year of recruitment interventions (2016-2018 cohort). Interventions to the admissions process, which included all aspects of candidate review for program admission after a candidate completed an application, were developed and implemented for the next 2 admissions cycles reflected in 2017-2019 and 2018-2020 admitted student data. Interventions included increasing diversity of the interview panel diversity, implementing interviewer training, developing a standardized question pool, revising the scoring rubric, creating an online scoring format to
avoid scoring errors and to hold reviewers accountable, and including the Health Sciences Reasoning Test (HSRT) to consider critical thinking skills alongside GPA and scores on the Graduate Record Examination (GRE). The HSRT measures critical thinking skills for health science education programs. Each intervention is detailed in the Discussion section, and the resulting scoring rubric is displayed in Figure 1. An analysis of candidate demographic data was conducted to determine the impact of intervention strategies compared with preintervention admitted student demographics. These data informed a greater understanding of the impact of the admissions process on the racial makeup of the accepted cohort.

**Sample.** The study consisted of 407 candidates applying for admission to the University of Tennessee at Chattanooga (UTC) MSN NAP in Chattanooga, Tennessee, in 4 combined datasets. Applications were collected from the UTC graduate school over the course of 4 years—which is 4 applicant cycles consisting of program applicants for the 2015-2017 (n = 83), 2016-2018 (n = 98), 2017-2019 (n = 92), and 2018-2020 (n = 134) cohorts. The total sample size over 4 years was 407. The 2015-2017 candidate pool data were used as the recruitment preintervention baseline comparison for the candidate pool data in the 3 consecutive years. Data from the admitted students were analyzed based on cohort size, because the number of students able to be accepted each year varied; the total sample size of admitted students across all 4 years, who made up a portion of the candidates, was 97. No applications were omitted from the sample size because of incomplete data.

Only candidates who completed their applications were included in the sample; those who began but did not complete applications to the UTC NAP were not included in either the applicant or admissions datasets. It was voluntary for all applicants to include demographic data on their application to the UTC Graduate School and School of Nursing. Of the 407 applicants, only 63 did not provide their race/ethnicity information over the duration of the 4-year data collection period, or 15.5% of the total sample. These candidates were still included in the sample and data analysis as “unknown.” Race identification was voluntarily provided by 344 candidates for a response rate of 84.5% of the total sample. All data collected and reported on for the purposes of this study were kept anonymous.

**Data Collection.** After obtaining approval from the UTC institutional review board and financial support from HRSA, the demographic data for applicants who completed applications to the MSN NAP were recorded. Each applicant was assigned a number, removing all personal identifiers, to maintain participant anonymity during data analysis. The same demographic information collected from candidate applications was used to analyze the diversity of both the candidate pool and admitted students, because all admitted students were also candidates. Participants voluntarily submitted their racial and ethnic information on their program applications; an option to not disclose information was provided. Sixty-three candidates chose not to report their race over the course of the study, or 15.5% of the total sample. These candidates were still included in the sample and data analysis as “unknown.” Race identification was voluntarily provided by 344 candidates for a response rate of 84.5% of the total sample. All data collected and reported on for the purposes of this study were kept anonymous.

**Data Analysis.** The data were analyzed using statistical analysis software (SPSS, IBM Corp) to identify statistically significant differences in racial demographics.
for preintervention and postintervention strategies. The areas of analysis lay in 2 different areas: (1) recruitment as represented in candidate pool racial diversity and (2) admissions as represented in the racial diversity of the admitted student cohort. Three years of postrecruitment intervention data in the form of racial composition of the candidate pool was analyzed and compared with the historic candidate diversity of the 2015-2016 candidate pool. Data across the 3-year intervention timeline were also analyzed on a yearly basis and compared with each previous year’s candidate pool diversity in the 3-year period. Cohort racial and ethnicity data were analyzed for the 2 years of postadmissions process intervention, 2017-2019 (n = 25) and 2018-2020 (n = 30) cohorts, and compared with the preintervention 2016-2018 (n = 25) admitted student cohort’s racial and ethnicity data. A variety of statistical analyses were used, including descriptive statistics, 2-sample t tests to determine significant change across groups (P < .05), and correlation and regression statistics to investigate any patterns within and between candidate groups.

Results
Among the 407 candidates, 92 identified as candidates of color. Baseline data from the 2015-2017 cohort’s completed applications indicated that 14.4% (12/83) were candidates of color (Table 2). After recruitment strategies were employed to target candidates of color, the data reflect that 24.5% of candidates (24/98) for the 2016-2018 cohort identified as nonwhite—a significant change (P < .01) resulting in an increase of 100% over the previous year. Subsequent years’ candidate pools reflected a similar increase in racial and ethnic diversity over baseline data. Among the 2017-2019 cohort applicants, 22% (20/92) were people of color, and 27% (36/134) of the 2018-2020 candidate pool identified as people of color.

Enrollment (97 students over 4 years) increased for candidates of color from 6% (n = 1) in the 2015-2017 cohort to 20% (n = 5) in the 2016-2018 cohort; however, applications for candidates of color in 2016-2018 represented 24.5% (n = 24)—nearly 5% higher than the admitted student rate for applicants of color. This difference was not statistically significant, but a proactive approach was implemented. Admissions interventions began after the 2016-2018 application cycle was complete and aimed at overcoming potential process barriers for candidates of color to move from completed application to program admission.

Postadmissions intervention data analysis found the proportions of white candidates, candidates of color, and candidates who did not report their race/ethnicity remained consistent from application, to interview, and to acceptance, with no statistically significant differences between the 3 stages. The proportion of black candidates in the 2017-2019 cohort advancing from application to program admittance increased dramatically from the 2 prior cohort years. The increase in retention of black candidates across the 3 stages of the admissions process was highly significant (P < .001). Data analysis revealed a significant (P < .05) upward trend in the percentage of applicants of color who were offered an interview and ultimately gained admittance to the program over the duration of the study. Postadmissions intervention data in the 2017-2019 cohort illustrates this trend: 22% (n = 20) of the applicant pool were people of color, and 24% (n = 6) of admitted students identified as people of color.

In the 2018-2020 cohort, 27% (n = 36) of applicants were people of color, and 24% (n = 7) of admitted students identified as people of color.

Over the duration of the study, there was a 61% increase in total applications, and representation of candidates of color in the applicant pool increased from 14.4% to 27%. Overall, the number of applications from candidates of color increased 87.5%. The percentage of accepted students of color increased from 6% (n = 1), the baseline data from cohort 2015-2017, to 24% (n = 7) in the 2018-2020 cohort, year 3 of the study. Additionally, as the candidate pool increased in number of completed applications and the admissions processes were streamlined, the overall academic profile of admitted students continued to strengthen throughout the duration of the study. In the 2015-2017 cohort of admitted students, the composite undergraduate GPA was 3.413, the average GRE score was 303, and the average HSRT score was 61; the average scores for the 2018-2020 admitted student cohort were 3.485 for GPA, 303 for GRE, and 69 for the HSRT.

Discussion
Outcomes demonstrated a sustained increase of applicants of color compared with prestudy data (Figure 2). Recruitment strategies resulted in significant gains in overall racial and ethnic diversity among program applicants. The model for recruitment strategies across
the bachelor of science in nursing students and the nursing workforce to the CRNA pathway has proved to be highly successful and one that could be easily replicated. Education on program information and exposure to CRNA-related tasks targeted toward nursing students and professionals of color resulted in increased racial diversity across program candidates and enrollees.

The sample of 407 participants for the study may introduce some bias because it represents candidates for a single graduate program. Because only candidates who completed an application were included in the study, factors that deterred potential applicants from completing applications are not accounted for and are beyond the scope of this study. The authors speculate that the 63 candidates who elected to not disclose their race and/or ethnicity on their applications may have done so out of fear that their race/ethnicity would negatively affect their likelihood of obtaining an interview and/or being admitted into the program. The role of race as a discriminatory and/or influential factor in admissions' processes and hiring practices has been a highly publicized and controversial topic.30,31

• Recruitment. Over the duration of the study, both the number of applicants and the percentage of applicants of color increased. Recruitment strategies implemented were conceptualized as a 3-component recruitment model focusing on education, targeted recruitment, and cultivation of an inclusive institutional climate (Figure 3). This study measures the effectiveness of the interconnected strategies of the overall model over the course of 3 years in recruiting nurses of color to a NAP. The long-term impact of individual interventions such as making shifts in the institutional climate through workshops for faculty on cultural inclusivity in the classroom remains unknown.

Recruitment strategies were comprehensive and required a dedicated Recruitment and Retention Coordinator (RRC). Over the 3-year study, recruitment and education efforts resulted in reaching 105 community college nursing students; more than 6,000 undergraduate nurses at national conferences and events; and 7,000-plus diverse nursing professionals at national conferences specifically for nurses of color such as the National Association of Hispanic Nurses Annual Conference and the Black Nurses Rock Convention. These conferences served as awareness-building venues to target racially diverse audiences. These recruitment visits also served as a gateway to relationship building for interested candidates with the RRC. Over the duration of the 3-year project period, conference attendance was adjusted, because it was cost-prohibitive to attend many conferences, and some proved to garner less program interest than others. The RRC found that associations and conferences for nursing professionals of color solicited the most program interest, and conference recruitment

**Figure 3. Inclusive Recruitment Model**

Abbreviations: CRNA, Certified Registered Nurse Anesthetist; DNAMP, Diversity in Nurse Anesthesia Mentorship Program; esp, especially; HBCUs, historically black colleges and universities; info, information; lab, laboratory; Org, organization.
efforts were adjusted to focus on awareness building and relationship building at these national conferences in exhibit halls. The RRC formed relationships with undergraduate institutions with a high number of students of color and led information sessions about how to become a CRNA, including details about how to apply to graduate programs and be a competitive applicant.

Information sessions for professional nurses played a large role in recruiting nurses of color. Sessions were held near hospitals with highly racially diverse staffs, and advertising at the hospitals for these sessions occurred 3 weeks in advance. All marketing materials for the program and information sessions were reviewed to ensure they were reflective of the student body demographic. They were updated to include students of color as well as white students. Sessions included program representatives, including at least one student in the program, and covered all aspects of the application and admissions process, such as academic expectations, work experience, and how to financially prepare.

Partnerships played a role in the success rates of recruiting and admitting students of color. The UTC strategic plan highlights the importance of diversity as one of its goals, and the Office of Equity and Diversity partnered with the School of Nursing to help provide a welcoming environment that was appealing to students of color. The provost and the School of Nursing partnered to facilitate a faculty development conference on creating inclusive curriculum and fostering inclusivity in the classroom. Partnering with the Diversity in Nurse Anesthesia Mentorship Program enabled the UTC to host an annual Diversity in Nurse Anesthesia Workshop; nurses of color interested in pursuing nurse anesthesia attended the workshop to learn about the pathway to becoming a CRNA. Each year, nurses who attended the workshop applied to UTC’s MSN NAP—5 in the first year (2016-2018), 4 in the second year, and 12 in the third year—which resulted in a total of 6 admitted students. Several applicants of color who applied because of exposure to the university’s MSN NAP through the Diversity CRNA Workshop declined an interview or admission. The authors speculate that this is due to the conference’s nationwide draw, and some highly competitive applicants accepted spots in other programs.

These interventions are extensive, and some may be cost-prohibitive, especially hiring full-time personnel dedicated to recruiting nurses of color. Strategically recruiting applicants of color was only one step toward diversifying the admitted student profile. Examining admissions processes and taking steps to ensure they were all equitable was the next step in this study to diversifying the admitted MSN NAP student body and, ultimately, the CRNA profession.

• Admissions. As a result of admissions process intervention strategies, race-based patterns, once visible across the 3 stages of admission (application, interview, admittance), diminished. After implementation (from the 2016-2018 cohort to the 2017-2019 cohort), there was improvement in the proportion of candidates of color advancing from application to the interview stage.

A comprehensive examination of the admissions processes for the MSN NAP was conducted to determine if any admissions patterns existed that may have presented barriers to candidates of color. The initial step involved an investigation of the applicant pool from the previous 2 cohorts, 2015-2017 and 2016-2018. By examining candidates’ application, interview, and acceptance data across various demographic variables, the authors found that despite a statistically significant increase in the number of candidates of color who applied and were invited to interview, the proportion of white men steadily increased as the process moved from application to acceptance. The point at which the proportion of candidates of color diminished most was during the interview stage. Data were based on candidates who completed the interview stage. In the 2016-2018 cohort, 61 candidates were offered interview slots. Ten candidates (14%) declined the offer to interview. Of those individuals who declined, 6 (60%) were female and 5 (50%) were candidates of color. Survey data from those who declined interviews revealed that interview timing was a factor, as were location and type of program (MSN vs doctor of nursing practice).

Although attrition from completed applications by applicants of color to accepted student status was not alone statistically significant in the 2016-2018 cohort, the authors were proactive in examining admissions processes and implementing interventions designed to create an equitable admissions process and to aid in overcoming potential barriers for applicants of color. Examining, enacting, and reporting retention strategies for students of color in graduate programs is beyond the scope of this article but is a recommended area of research to follow up these findings.

To improve admitted student racial/ethnic diversity and eliminate any potential race-based patterns, the authors implemented multiple strategies designed to strengthen the process and increase objectivity and consistency. All interview evaluators underwent training before the interview process regarding the qualities and qualifications being sought during the interview. Interview panel diversity increased for candidate interviews for the 2017-2018 and 2018-2020 cohorts. Before the intervention, panel interviews were composed of 12 individuals, all of whom were white, 9 of whom were male, and all of whom were 10 or more years removed from having graduated from a NAP. Panel demographics were adjusted to more accurately reflect the racial and gender representation of the population of the state (Tennessee) of the NAP; panel interventions also included diversifying panelists according to the number of years
since they had graduated from a NAP. The logic for the latter decision arose out of concern for what had historically been labeled as “program fit.” Because of the subjectivity of the category, “program fit” was removed altogether from rubric criteria and replaced with “likelihood of success” based on the entirety of the applicant’s profile documented on the interview scoring rubric (Figure 1). Increased racial and gender representation resulted in a panel with a multifarious range of years from having graduated from a NAP. The postintervention panel was composed of 12 individuals with more diversity: 2 (17%) of the 12 identified as people of color; 6 (50%) were male and 6 (50%) were female; 2 (17%) had graduated within the past 3 years, 4 (30%) graduated within the past 6 years, and 6 (50%) graduated 10 or more years earlier.

The addition of the Health Sciences Reasoning Test (HSRT), an instrument that measures reasoning and decision-making processes for health science educational programs, was weighted as a factor in candidates’ overall application score along with GPA and GRE scores to increase the data points in the candidates’ profiles, allowing for broader candidate assessment. A candidate's overall composite HSRT score is a reflected percentage compared with that of other graduate nursing students. Test items range in difficulty, and test takers apply their reasoning in a variety of scenarios; items require no health science knowledge. In the interview rubric, the score accounted for no more than 6.25% of an applicant’s overall score for gaining admission to the program. Interview timing was moved from late October to late September, to remove the variable of losing candidates to other programs with earlier admission offers. During the postinterventions admission, all interviews were timed, so that candidates received equal opportunity to present their knowledge. All panel scoring was adjusted to be done online, resulting in instantaneous, confidential, and secure scoring. Categories on the rubric (see Figure 1) were weighted so that no one area accounted for more than 31% of a candidate’s score. Additionally, a bank of questions of equal difficulty level to be selected from for each candidate interview was established by nurse anesthesia faculty before interviews. The development of a question bank for each clinical area was drawn from a critical care nursing textbook to ensure consistency of rigor and appropriate topics. Last, it was required that all panelists provide an explanation and/or comments on the interview scoring document if a candidate’s score was below a 3 (of 5) on any one category.

Overall, admitted student academic profiles increased after admissions interventions were implemented for the 2017-2019 and 2018-2020 cohorts compared with preintervention averages. This finding combats the false narrative that streamlining admissions processes that may lead to a more racially diverse admitted student cohort, as it did in this study, is a result of “lowering the bar.” Ongoing assessment and internal conversations among program facilitators and faculty regarding admissions goals, strengthening of the metrics used by interviewers, and best practices are suggested to discuss which factors are important indicators in the selection process and determine whether they are properly weighted in the candidate scoring.

**Conclusion**

The UTC has implemented an innovative and critically needed approach to increase racial and ethnic diversity and to promote culturally inclusive recruitment and admissions among NAPs. The lack of CRNAs of color is severe. Strategies proposed here build on and extend the success of previous inclusive recruitment and admissions strategies to fully institutionalize and transform opportunities for disadvantaged and underrepresented candidates to increase racial diversity in the CRNA workforce. The interventions based on a 2-tiered model to address issues of recruitment and enrollment of students of color to a graduate NAP ultimately strengthens cultural competence and access throughout the region’s healthcare system. The proposed strategies and outcomes of the study add to the body of evidence that increasing racial diversity in the CRNA profession is a matter of addressing issues of access and demystifying graduate programs’ application and admissions processes. This is critical in a region where the social determinants of health and education are stacked against people of color and people struggling with educational and economic disadvantages. Although this study is limited in its scope to one graduate program, strategies and interventions offered can serve as an easily replicable model for increasing racial diversity in candidate pools and admitted student cohorts at other universities’ NAPs and in other nursing graduate programs.

**REFERENCES**


AUTHORS
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