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On Becoming a "Transfer Institution": Research on a Community College that Supports Diverse Black Students in their Transfer Aspirations

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Introduction

In recent years, community college student success has garnered increased emphasis at the national level. During the first Obama administration, the President set an ambitious goal of producing five million new community college graduates. To incentivize efforts to this effect, the federal government at that time allocated greater levels of funding in order to support stronger relationships between community colleges and business leaders (The White House, 2009). The Obama administration's goal around that time seemed to be matched by a substantial increase in community college enrollment across several two-year colleges.[1] For example, Mesa Community College (Arizona) grew from 680 to 1,695 freshmen (a 149% increase) from 2007 to 2008, while Arizona State University's freshmen numbers grew from 6,977 to 8,458 (a 21% increase) during the same period (Fry, 2010). Fry (2010) suggested that this substantial increase seen in two-year schools had to do with the Great Recession of the late 2000s. Students ostensibly were enrolling in community colleges because of their lower costs, when compared to four-year colleges and universities. Although the economy has improved, community colleges are still viewed as a viable first option in postsecondary education for students with financial need (Evans, Kearney, Perry, & Sullivan, 2017). Perhaps recognizing the need to support financially needy students, in his second term President Obama proposed that community college tuition should be free to all students across the U.S. (Calvert, 2015). Foregrounded by these trends, it is crucial to understand the support mechanisms that best support undergraduates in community colleges.

[1] There are different types of two-year schools, which can include vocational-technical colleges, community colleges, and career colleges (The College Board, n.d.). For this research, "two-year college" refers specifically to community college, and as such I will use the terms "two-year college" and "community college" interchangeably throughout this document.

Considerably large numbers of majority and minority STEM degree recipients enroll in community colleges prior to transferring to four-year institutions. According to the National Center for Education Statistics, of the over one million STEM degree recipients surveyed in 2008, 52% attended a community college at one point in their academic careers (National Center for Education Statistics [NCES], 2012). Moreover, 16% of all STEM bachelor's degree recipients earned an associate's degree (NCES, 2012). For engineering disciplines in particular, which are the subject of this article, the percentages for bachelor's degree recipients who attended community college, and for those who earned an associate's degree prior to earning their bachelor's degrees, were 44% and 8%, respectively (NCES, 2012).

It is noteworthy that across multiple racial or ethnic categories, the proportion of bachelor's and master's degree recipients that attended community colleges at some point is not widely different. The relative percentages of Black, White, Hispanic, American Indian/Alaskan Native, and Asian STEM degree holders who attended a community college during their academic careers was reported by NCES as 50%, 49%, 55%, 64%, and 44%, respectively (NCES, 2012). However, given the wealth of research that underscores the lack of participation of underrepresented racial and ethnic minorities (URMs), this suggests that an emphasis on Black, Hispanic, and American Indian/Alaskan Native community college STEM students is especially crucial (National Science Board, 2014; Museus, Palmer, Davis, & Maramba, 2011).

While the imperative to increase diversity in STEM disciplines in college is well-documented, less known are community college enrollment trends and transfer processes for URM STEM majors (McPhail, 2015; Palmer & Wood, 2013). Where scholars have written about URMs in STEM in community colleges, the articles more often discuss Hispanic students than other students of color. For example, Hagedorn and Purnamasari (2012) as well as Malcom

(2010) suggest that some Hispanic students in STEM majors may benefit from the community college experience. General searches of Google scholar and of EBSCO databases for relevant literature on this topic typically lead to a fair number of peer-reviewed articles on Hispanic STEM students in community colleges. By comparison, an EBSCO search of multiple databases using the words "Black[2] OR African American," "STEM," and "community college" result in about three relevant articles.

Not surprisingly, while little is known about Blacks in STEM majors at community colleges (or Black STEM transfer students), even less is known about Black community college/transfer students in *engineering* majors. In his article entitled, *Enhancing the Community College Pathway to Engineering Careers for African American Students*, Irving McPhail (2015) emphasized the paucity of research on this topic. According to McPhail (2015), "peer-reviewed studies focused specifically on African American students and the effectiveness of student support services and retention efforts as related to community college engineering success are limited" (p. 312). In fact, McPhail (2015) acknowledged that in order to ground his work, he had to reference research that explored Hispanic STEM students in community colleges. This re-emphasizes the comparative dearth in publications on Black STEM collegians in community colleges, compared to similar studies on Hispanic STEM collegians.

This article illuminates support structures provided by a single community college that has a high proportion of Black engineering students. Drawing from a larger study that explicated the factors that enabled six Black community college students at this school to transfer to a competitive four-year engineering college, this article examines the role of one of these key

[2] Although researchers and government publications use the descriptors "Black" and "African American" interchangeably, the term "Black" is better suited for this study. "Black" encompasses students born both in sub-Saharan African countries and those born throughout the modern African diaspora, whereas "African American" is often only understood to refer to Blacks born in the U.S.

factors. In particular, I examine the faculty, staff, and other institutional support provided by this community college, which seem to support the persistence and transfer of Black engineering students at this school.

Literature Review

In the following sections, I review and interrogate three areas of literature that informed my approach to this work. I first discuss scholarship on the role of faculty and staff for URMs majoring in STEM. Second, I explore research on enrollment trends for students in community colleges, looking specifically – where possible – at trends pertaining to Black or other URM community college undergraduates in STEM disciplines. Third, I look at scholarship on institutional support for students in community colleges, exploring ways in which faculty, staff, and/or other institutional actors influence enrollees' academic trajectories.

1. The Role of Faculty and Staff for URM Students Majoring in STEM Fields

When considering the variety of factors described in literature as critical for the persistence of URMs in STEM majors, I conducted a review of extant scholarship that revealed five important components cited as key to URM success: 1) Faculty and staff support; 2) Pre-freshmen and pre-college preparation; 3) Peer support and engagement; 4) Campus racial and cultural climate; and 5) Individual persistence (Berhane, 2016). In particular, faculty and staff support consistently was cited as a key component that supports persistence in these disciplines (Berhane, 2016). Several scholars point out that staff support is often manifested specifically through advising (see, for example Figueroa, Hughes, & Hurtado, 2013; Griffin, Pérez, Holmes, & Mayo, 2010; Maton & Hrabowski, 2004; Museus et al., 2011; Palmer & DuBord, 2013).

Griffin et al. (2010) provide evidence that both URM and non-URM advisors, professors, or other administrators have been lauded by former URM STEM students as critical to their ability to graduate in these disciplines.

However, a subset of this literature points to the idea that faculty of color have a distinct ability to assist URM students with navigating what can be an enervating racial climate (Griffin et al., 2010; Hurtado, Newman, Tran, & Chang, 2010). In a paper that addresses the nexus between faculty-student mentoring in STEM fields, Griffin et al. (2010) explain that "many professors of color once matriculated at predominantly white institutions (PWIs) where they encountered racist stereotypes" like some of the students of color in their classes. (p. 95). As a result, they add that these professors are able to "connect with students of color in deep and meaningful ways" (Griffin et al., 2010, p. 95). Later in the paper, they opine that students of color benefit from having campus administrators who are not only URMs themselves, but actually of the same racial or ethnic group. Yet, the literature is inconclusive as to whether having URM faculty or staff support actually leads to higher success rates than having the support of a member of a non-URM group. It would seem then that there are three possible recommendations from the literature regarding supportive faculty and staff: 1) Any administrator, regardless of race or ethnicity, can provide support to URM STEM students; 2) The involvement of URM faculty and staff leads to higher success rates for students in these fields; and 3) Campus administrators should not only be URMs, but actually of the same race or ethnicity as the students of color with whom they interact in order to make the most significant impact (i.e., Black faculty and staff are best suited to support Black students; Hispanic faculty and staff are best suited to support Hispanic students, etc.). This poses a quandary in the scholarship that reflects similar challenges in K-12 literature. For instance, Dee's (2005) work

intimated that hiring teachers from underrepresented racial backgrounds could help to reduce the achievement gap, but limited his findings to low-income students from the South. For this reason, the results were not necessarily applicable in other contexts. Scholars should continue to try to determine the set of attributes that make a particular faculty or staff member a good fit to support students of color in STEM.

While positive interactions with faculty and staff such as these are noted in literature, extant research also reveals the *challenges* that can define students' interactions with campus faculty or staff. For instance, Strayhorn (2009) describes a concept called *invisible man syndrome*, in which a group of URM men in STEM fields perceive that their thoughts go unacknowledged. His work suggests that underrepresented men of color may feel excluded from conversations in class, while their White and Asian American peers are more readily included as part of the dialogue. Participants in his study "described feeling 'invisible' or nonexistent in engineering classrooms as they were usually 'one of few' URM men, if not 'the only,' enrolled in a [STEM] course" (p. 2). Burrell, Fleming, Fredericks, and Moore (2015) also describe negative perceptions among faculty at Historically Black Colleges and Universities (HBCUs), who tend to view Black students born in the U.S. as less academically prepared than Blacks educated in other countries. This suggests that more work may be needed to understand how faculty/staff perceive U.S.-born and non-U.S.-born Black STEM collegians, and how students respond to these perceptions.

Despite the breadth of literature on the role of faculty/staff for URMs in STEM, many of these works tend to homogenize the experiences of all URMs. Comparatively few studies have explored the impact of faculty and staff in particular on *Black* collegians. Furthermore, few, if any reports have looked specifically at the role of faculty/staff as it relates to Blacks or other

URMs in STEM *within the community college context.* Rather than presume that all URMs have similar interactions with campus leaders across multiple types of institutions, this work attempts to unpack the role of administrators and instructors as it concerns Black students in community college. Furthermore, as the research question will reveal, this work attempts to illuminate the role of faculty and staff as it relates to diverse Black students, including collegians majoring in engineering from sub-Saharan African countries.

2. Community College Enrollment and Preparation Trends among Minorities in STEM

As stated in the Introduction, there has been an increased emphasis at the national level on community colleges, and with it a greater push for students to enroll in these schools. With this heightened attention on two-year schools, there is a need to better articulate the demographics of students who enroll in these schools. This section explores the literature on community college student enrollment, and the implications that this enrollment has upon STEM persistence among Black and other URM students.

While Black and Hispanic students are not much more likely to enroll in community colleges than their White/Asian counterparts, Dowd (2012) suggests that URM students are more likely to have weaker mathematics backgrounds. Dowd (2012) also notes that students from URM populations, along with lower income students, are more likely to take remedial classes than other community college undergraduates. These findings are particularly concerning when one considers that in order to pursue a challenging field of study like engineering, a student will need to take extremely rigorous mathematics courses. Given the popularity of engineering in many two-year schools, this has dire implications for prospective engineering Black and other

URM students who are academically underprepared (Dowd, 2012; Hagedorn & Purnamasari, 2012; McPhail, 2015).

To address underpreparedness, McPhail (2015) offers several potential interventions derived from prior research. He first advocates student support services that should provide intervention for students who are struggling in their courses. In addition, McPhail (2015) describes the positive impact of mentoring, hands-on research experiences, and tutoring. Concerning faculty in particular, McPhail (2015) states that "community college engineering instructional practices must be transformed to meet the needs of [Black] students" (p. 317). He recommends that instructors offer instruction to Black students, using tools like culturally responsive pedagogy and developmental mathematics. His position reflects other recommendations, such as those by Dimitriu and O'Connor (2004), who advocate for rigorous mathematics and science classes that will improve core competencies of students who may leave high schools without the best preparation for STEM majors.

While these suggestions are certainly worth considering, these recommendations tend to be based more around untested hypotheses than on empirical evidence from actual studies involving community college URMs. That is, these suggestions have not necessarily been tested in the context of Black engineering community college undergraduates. For instance, McPhail (2015) acknowledges that he is not able to point to studies in which faculty have implemented culturally responsive pedagogy for Black/African American engineering students at two-year schools. Instead, he seems to point to this and other teaching strategies as ideas for future work. This underscores the need to develop research studies that reveal the effectiveness of administrators who implement these and other programs for Black engineering community college students.

3. Institutional Support within the Community College Context

While relatively little has been published on the role of faculty and staff in community colleges for URMs in STEM disciplines, a small body of literature exists that underscores the importance of institutional support within the general two-year school context. This scholarship tends to describe faculty, staff, or other administrators as actors who can either positively or negatively impact the student experience. This research does not specifically examine URM undergraduate experiences, but rather addresses community college student experiences irrespective of race/ethnicity. These works also do not tend to isolate support specific to STEM majors, but rather explore practices that impact collegians across all disciplines in community colleges.

Foundational scholarship by Clark (1960) established that many community colleges historically tended to employ policies that redirected students' academic pathways. While an undergraduate may have enrolled at a community college with the intention of transferring to a four-year college or university, Clark (1960) explained that it was common for administrators to discourage transfer and suggest that enrollees pursue vocational programs. Brint and Karabel (1989) similarly argued that community colleges helped reproduce social class stratification. In a follow-up to this study, Brint (2003) noted that "the circumstances of community college have, in several respects, changed for the worse" (p. 16). Brint found that, among other maladies, student attrition rates continued to be dismal. In another publication, Labaree (1990) wrote that the original purpose of community colleges was to "block mobility" to bachelor's degree-granting institutions (p. 231). He found that these schools tended to create an anti-academic culture of "attenuated" student "upward mobility" (p. 230-231). Recently, Jennings (2017)

reaffirmed the importance of community colleges encouraging transfer. While noting that the overall population of international students enrolled in community colleges has grown in recent years, he admonished that international students would consider leaving one community college for another if a school did not present realistic pathways to transfer.

Scholars have also seemed to coalesce around the importance of a number of other components that community colleges should build into their infrastructures. Among these components, they assert that having articulation agreements with four-year colleges and universities can help ease the transition from one institution to another institution (Jennings, 2017; Mattis & Sislin, 2005; McPhail, 2015). Zhang (2015) also infers that where international students are concerned, community colleges can offer a better experience by working with undergraduates to have courses taken in other countries evaluated for credit in the U.S. In addition, Mattis and Sislin (2005) advocate for increased correspondence between community colleges and their four-year counterparts, opining that "frequent communication…demonstrates the desire of both institutions to work together" (p. 19). Financial aid/scholarships are also correlated with improved student outcomes for community college students who are planning to transfer (Mattis & Sislin, 2005).

As it relates to diversity and inclusion, Jennings (2017) underscores the importance of providing institutional support for both domestic *and* international students. He suggests that when community colleges are perceived to inculcate a caring and inclusive culture, and develop activities for students from both the U.S. and around the world, undergraduates will tend to have more positive experiences. Zhang (2015) describes advisors who use and develop cultural competencies to understand diverse students at their home institutions. Among the practices that Zhang (2015) promotes, she highlights the value of advisors who exercise patience and empathy

for international undergraduates who might not fully grasp institutional policies in and across schools.

Collectively, this body of scholarship indicates that faculty, staff, and other administrators within the community college have a major role to play with regard to the undergraduate experience. While historically, some community colleges may have not always provided the same level or type of support to all of its enrollees, evidence suggests that new practices can be adopted to influence positive change. Strong agreements with four-year colleges and universities, and a culture a caring for diverse undergraduates are just some practices that can be adopted within community colleges. Literature has not, however, explored the utility of these practices for engineering and other STEM majors in community colleges. This work will build on these prior studies to explore institutional support for a diverse group of Black engineering majors at one community college.

Theoretical Perspective and Research Question

After a review of relevant literature, no perspective or framework emerged that specifically conceptualizes the role of faculty and staff in influencing the transfer pathways of Black engineering community college students. To develop an approach to this work, however, I was guided by the work of several scholars who explore factors that influence the retention and/or persistence of Black STEM collegians (Berhane, 2017; Fries-Britt, George Mwangi, & Peralta, 2014; Maton & Hrabowski, 2004). These prior works adopt a success-oriented perspective in explicating the pathways of Black STEM undergraduates, and as such these works explore factors that lead to persistence rather than attrition. I therefore adopted a success-oriented perspective as a means of furthering narratives of successful Black collegians. This

perspective offers a different viewpoint from scholarship that has tended to magnify causes of attrition or underperformance among Black students in STEM majors. While this manuscript is indeed focused on faculty and staff, rather than students, it is understood from prior cited works that faculty/staff can lead to student persistence or attrition. In summary, I used the success-oriented perspective to explicate faculty/staff and other institutional practices that result in Black engineering student persistence.

I also drew from Wang's (2016) STEM transfer model, which presents several factors that may lead to the persistence and eventual transfer of community college students in these majors. Among the factors, Wang presents what she describes as *proximal contextual factors* that can influence transfer. These factors include "articulation agreements and transfer guidelines in specific STEM areas," as well as "interaction with faculty…and advisors regarding STEM transfer issues" (p. 52). In this article, I look at faculty/staff support at the community college as proximal contextual factors that might impact the Black engineering undergraduate pathway at a specific institution. Drawing on Wang's (2016) framework and the aforementioned perspective, I considered the following research question for this work: *To what extent do faculty and staff at a community college influence the persistence of Black prospective engineering transfer students?*

Research Methods

This manuscript expands upon research facilitated in the summer and fall of 2015, during which I completed a qualitative investigation of the pipeline from a single community college to a four-year engineering school (Berhane, 2016). During that study, I queried six Black engineering undergraduates about the factors that they believed to be valuable in enabling them

to transfer from one community college (Eastern College, a pseudonym) to a highly ranked engineering college (Tech College of Engineering, a pseudonym). Respondents all noted that the faculty and staff at Eastern College (EC) seemed to provide valuable assistance to them. For example, one interviewee remarked about a Black physics professor whose experience as a person of color seemed to inspire him to persist along his own academic journey. Another respondent described advising staff at the community college who seemed to provide him with the resources that he needed in preparation for transfer.

While the formal data for this study was generated exclusively by *undergraduates* who had recently transferred from EC, I also engaged in discussions with *faculty* and *staff* at EC to gain a better descriptive context for this school. These discussions were informal, and used solely for the purpose of garnering a broader understanding of EC's history of and current work with students. No formal Institutional Review Board (IRB) application was filed given the nature of these discussions with faculty and staff. When conferring with IRB staff for this manuscript, an IRB representative confirmed that no new application or other documentation (e.g., consent forms) were necessary because the data that was collected was not transcribed, coded, and further analyzed as was the student-level data.

In the following section, the *Qualitative Study Setting*, I provide more background of EC's enrollment trends and other demographic information. I primarily gathered this information through a meeting in 2015 that I was invited to on the EC campus. My role at this meeting was that of an administrator at the University of Maryland, and I attended this meeting as part of my responsibilities as a recruitment coordinator on the UMD campus. As such, I did not participate in this discussion as an educational researcher. However, the information that I was able to glean from the meeting was pertinent to understanding the role that EC has played in

supporting prospective transfers, and as such some of the data that was presented at that meeting is discussed in this paper.

After the *Qualitative Study Setting* section, I then describe in detail the history of EC from the perspectives of one faculty member and one advisor. I was able to develop a somewhat detailed understanding of this history through two discussions that I had with these two EC representatives in 2015. Combined with the information that was presented at the aforementioned meeting on EC's campus, these sections outline this community college's commitment to Black and other prospective engineering transfer students.

Qualitative Study Setting

EC is located in the largest county (by population measures) in the state in which it is located. Nearly 18% of all residents are classified as Black. However, state and county data suggests that many of the residents in the county represent above-average ethnic and cultural diversity. For instance, the percentage of the county residents that are non-U.S. citizens is about 16%, which is about 9 percentage points higher than the national average. In addition, nearly 29% of county residents speak one of many different African languages, which may be correlated with the relatively high percentage of Blacks at EC who were born outside of the U.S., as described in the next section. As it relates to economic indicators, EC is located in a major metropolitan region, with a median annual income of $98,917. This income level is over $40,000 higher than the median annual income reported nationally. County residents are highly educated, with fields like health sciences and computer sciences among the most popular professions.

EC is collectively composed of three campuses: 1) The Windsor campus, which opened in 1946; 2) The Barnesville campus, originating in 1965; and 3) The Harpersdale campus,

established in 1970 (all campus names are pseudonyms). EC is located in the same state as Tech College, and of all community colleges in the country, sends the highest number of engineering transfer students each year to Tech. Between 2009 and 2013, for example, it sent 476 students to Tech (Interim Dean of EC's engineering programs, Joint meeting of EC and Tech College administrators, October 8, 2015). This is noteworthy considering the fact that the next highest number of engineering transfers from EC to another four-year university during that same time period was only 125. Moreover, currently 10% of the undergraduates at Tech attended EC at some point in their college careers. This suggests that EC's transfer rates to Tech are comparatively very high, and as such it is particularly compelling to be able to research Tech students who attended this community college.

Based on data obtained in 2015, 1,482 current students at EC identified engineering as their major (Interim Dean, Joint meeting of EC and Tech College administrators, October 8, 2015). This number is over twice the number of students who were declared engineering majors at EC in 2003, when the same figure was only 700. In fact, this figure is over triple the population of students who selected an engineering discipline in 1999, when there were only 454 such students at EC. Furthermore, the community college has set an ambitious goal of enrolling 2,000 engineering students by the year 2020. These enrollment numbers underscore EC's history of developing future engineers in partnership with four-year colleges and universities.

As of 2014, 36% of all EC engineering students were classified as Black, 7% were classified as Hispanic, and 15% were women (E. Thomas, personal communication, December 16, 2014). Among the Black engineering students, 55% were non-U.S. citizens. This implies that the vast majority of EC engineering transfers may bring "within-group ethnic diversity" from their home countries to their experiences in the U.S. (Kibour, 2001, p. 49). For example, as

compared to native Black EC engineering students who may not always pursue a two-year degree, those born in other countries will typically earn their Associate of Science (A.S.) degree prior to enrolling in a four-year college or university (Interim Dean, Joint meeting of EC and Tech College administrators, October 8, 2015). The advantage, according to a source who works directly with international students, is that possessing an A.S. degree prior to completing a Bachelor of Science degree allows them to be able to gain practical work experience earlier in their academic careers (Vice President and Provost, Joint meeting of EC and Tech College administrators, October 8, 2015).

Whether students were educated in the U.S. or in other countries before enrolling at EC, data suggests that the number of Black students who transfer to Tech College is impressive. In the 2015-16 academic year, 120 Black transfer students transferred to Tech from EC, a figure that was nearly four times as high as the next largest feeder institution. In fact, between the 2013-14 academic year and the 2015-16 academic year, EC has consistently transferred over 90 Black engineering students annually to Tech College. These totals are larger than the second, third, and fourth largest feeder schools for Black engineering transfers combined.

Faculty and Staff Perspectives

Using my professional network as an engineering recruitment specialist at the University of Maryland, I met with Dr. Alan Roberts (pseudonym) and Mr. Scott Thomas (pseudonym). Dr. Roberts is an engineering and physics instructor who has been on the EC faculty for nearly fifty years. Mr. Thomas is a STEM internship coordinator at EC. In addition to their other responsibilities, Dr. Roberts and Mr. Thomas both advise engineering students. In fact, their combined efforts account for 90 to 95% of the engineering advising at one of the three EC

campuses. Both Dr. Roberts and Mr. Thomas phenotypically present as White males. I met with them twice in 2015 to obtain background information on EC.

In our first discussion, I queried Dr. Roberts and Mr. Thomas about the factors that they believed tended to lead to the high volume of Black students who transfer from EC to Tech College. Dr. Roberts explained that many first-generation students Black choose to attend EC because others from their home country previously attended the school. Others, according to him, attend EC because it is less expensive than four-year colleges and universities. The reduced financial burden in attending EC, along with the fact that students may not have been admitted to the first college/university of their choice, may lead both non-native and native students to choose to begin their postsecondary careers at EC.

Dr. Roberts expressed a very nuanced understanding of the ethnic and cultural differences among EC's Black student population. For example, he noted the large number of Cameroonian and Ethiopian students that attended the college, and in fact was able to identify the period in which the Ethiopian student population at EC grew significantly. During my interview with him, he also recounted an incident involving French-speaking African students who mentored an African American student on campus. Dr. Roberts noted that this same African American student went on to earn a Ph.D. According to Dr. Roberts, many Black first-generation students at EC foster positive relationships with native Black American students and help native students to feel a sense of racial and cultural pride.

For all students, regardless of race/ethnicity, EC Robert said that EC is also appealing because of the extent to which it supports students. In addition, Dr. Roberts explained that it has considerably more STEM/engineering staff than most other community colleges in the state system. Both Dr. Roberts and Mr. Thomas stated that they are very diligent in advising students

that in order to be successful in engineering, they will need to prioritize their education in relationship to other pressing matters like employment. In fact, Dr Roberts pointed out that he advises students not to work full-time while also enrolled in school on a full-time basis.

Dr. Roberts and Mr. Thomas do not look at EC as a community college where students rarely transition to four-year schools. Instead, they both see the school as a "transfer institution." They use this phrase to underscore the notion that faculty and staff empower students with the expectation that they will transfer. Furthermore, they believe that EC stands out from other community colleges that may not articulate this objective as clearly. Dr. Roberts commented that he also directs Black and other students to consider transferring to schools like the Massachusetts Institute of Technology and Georgia Institute of Technology while enrolled in EC. In fact, for years, Dr. Roberts encouraged students to consider schools like Georgia Tech instead of Tech College because he felt that Georgia Tech's engineering staff were more supportive to transfer students. However, Dr. Roberts explained that in recent years he has become much more comfortable with advising students to consider Tech because of his positive interactions with their college administrators. For this reason, he believes that the number of students who transfer to Tech has risen remarkably.

Dr. Roberts also explained that at EC, there is an overarching ethos that empowers engineering students from all racial/ethnic backgrounds to believe that they will be successful. He opined that students also benefit from advisors and other staff who treat students with respect, maintain a high standard of educational quality and rigor, and look for ways to support students throughout their academic journeys. In both Dr. Roberts and Mr. Thomas' perspectives, the students at EC are motivated to be successful.

According to Dr. Roberts, EC is known as the "Yale of the Boulevard."[3] Dr. Roberts asserted that this term was actually a "put-down" name leveled at the school by outsiders during its rise to prominence during the late 20th century. Based on Dr. Roberts' recollection, these detractors "denigrat[ed]" EC because they felt that the school was becoming too ambitious. Initially established as part of the Eastern County Public Schools (ECPS) system in 1946, the college was once viewed as the thirteenth and fourteenth grades for students who remained with ECPS after graduating from high school. However, from the onset, the county planned for EC students to spend only two years at their community college, and continue to a four-year college or university. In 1967, the Board of Trustees officially separated from ECPS and changed the name of the school to Eastern Community College. Over the course of the next few decades, the word "Community" was gradually removed from the name of the school and ultimately it began to be referred to as Eastern College. This may have had to do with the college establishing itself as a transfer institution rather than solely as a community college.

Analysis

Data presented in the *Qualitative Study Setting* section of this manuscript underscore EC's history of and commitment to Black and other engineering prospective transfer students. Not only has the school been able to enroll a relatively large number of community college undergraduates who intend to study engineering, but EC boasts the greatest number of transfer students who transition to Tech College. Moreover, the fact that EC facilitated a meeting with Tech College representatives to present data and discuss enrollment trends is noteworthy. As Mattis and Sislin (2005) point out, "frequent communication" of this sort can create an inter-

[3] The "Boulevard" referenced is a well-known commercial thoroughfare in the county. A number of high-performing businesses are located on or near the "Boulevard."

institutional culture that promotes a shared vision of supporting engineering transfer students (p. 19). By pursuing "greater cooperation," these two institutions should be able to partner throughout the academic year to develop new and sustained initiatives that promote Black and other minority engineering undergraduates (Mattis & Sislin, 2005, p. 19).

Results from the interviews with Dr. Roberts and Mr. Thomas suggest that EC has created a *structure for success*, which some community colleges promote through mentoring and other student support services (Palmer et al., 2013). This structure seemed to result in an ethos or culture that encouraged transfer. The idea of promoting transfer coincides with prior research, which indicates that community college students are more likely to transfer when institutional leaders champion the idea of transfer (Jennings, 2017). Furthermore, this transfer-culture stands in contrast to practices cited by Clark (1960), which often redirected two-year college enrollees to consider vocational tracks rather than four-year schools. In addition, rather than produce the type of social class stratification that Brint and Karabel (1989) describe, Dr. Roberts and Mr. Thomas seemed to encourage diverse students – regardless of their background – to transfer to a four-year school and continue to pursue engineering degrees.

It is worth noting that these two campus representatives did not seem to necessarily isolate Black students in their practices or in their own narratives. That is, they did not appear to offer separate advising or relate particular strategies that worked solely for their Black student population. Yet, Dr. Roberts and Mr. Thomas were able to adopt a cultural awareness that reflects recommendations by Zhang (2015) that community advisors should become more culturally sensitive. Rather than treat all students as a monolithic group, Dr. Roberts in particular was able to recognize enrollment trends within the campus' Black student population. Furthermore, he applied this lens to his own advising practices, encouraging Black international

students to work with Black domestic students on campus. Mr. Thomas was able to provide data presented earlier in the *Qualitative Study Setting* on demographics of Black engineering students at EC, such as data on the percentage of Black students who were non-U.S. citizens. This type of detailed information is seldom presented in higher education studies of Black students, and helps provide a much fuller picture of the student demographics at this school. When viewed in context of the literature that suggests that advisors who are of the same race/ethnicity as their students may make a better impact, these findings offer an alternate viewpoint (Griffin et al., 2010; Hurtado, Newman, Tran, & Chang, 2010). While Black professors and advisors may be able to form different types of bonds than the types of connections formed by Dr. Roberts and Mr. Thomas, the perspectives that Roberts and Thomas expressed were not insignificant. Their *Whiteness* seemed not to confound their ability to offer a very real and detailed portrayal of their students, and in Dr. Roberts' case, his *Whiteness* did not seem to preclude him from ensuring that students of color found support at EC. In effect, the two informants in this article demonstrate that regardless of race/ethnicity, campus officials who attend to cultural differences are able to provide important support to URMs.

Given the within-group diversity at EC, which includes undergraduates from non-Anglophone African countries, this article may support prior research that highlights the community college as a preferred starting point for students with limited English proficiency (Jennings, 2017; Zhang, 2015). Once again, however, rather than view non-native English speakers as somehow deficient, the two informants for this study appeared to focus on undergraduates' strengths as future engineers and future transfer students. This may result from the fact that these two campus representatives were affiliated with STEM majors, and as such were not directly responsible for guiding students who needed to improve their English. In other

words, Dr. Roberts and Mr. Thomas were potentially more concerned with their advisees' science, mathematics, and engineering core competencies than other EC staff, who may have been more focused on English or other general education requirements. That said, it is noteworthy that Dr. Roberts and Mr. Thomas represented a larger STEM/engineering advising staff than may have been available at other two-year colleges in the area. Once again, this illuminates earlier research by Zhang (2015), who underscores the appeal of specific degree program support for majors like engineering at some community colleges.

EC's enrollment of Black domestic and international engineering student is likely buoyed because of its location. Because it is in a major metropolitan area, it is highly likely that Blacks across the African diaspora may be more prone to enroll at EC than in community colleges with very different geographic or other demographic indicators (Jennings, 2017). Moreover, as Dr. Roberts intimated, the attraction of EC and the county in which it is located may result in the development of informal communication channels. This may be especially true of the Black international engineering students. As Jennings (2017) asserts, when students from other countries are able to see direct pathways from a community college to a four-year institution, they often may share this information with family and friends who are considering moving to the U.S. to study.

Limitations

This work offers a small illustration of a community college that is promoting success among its Black engineering population. A larger study could include more viewpoints from other administrators and professors at Eastern College, and might also employ rigorous research methods (e.g., transcribing interviews, coding interview data) that accompany other qualitative

studies (see, for example, Miles, Huberman, & Saldaña, 2013). This would offer a more robust way of interpreting and scrutinizing feedback from EC faculty and staff.

It is worth mentioning that EC administrators and professors represent only one group of stakeholders in the engineering pipeline between EC and Tech College. Other perspectives might include current and former EC engineering students that have or will transfer to Tech. Still other valuable viewpoints might be those of administrators at Tech College who interact with EC stakeholders throughout the academic year. If indeed EC and Tech College enjoy the type of partnership that Mattis and Sislin (2005) advocate, it would be beneficial to further explicate the experiences of other students, faculty, and staff that are directly impacted by this partnership. This article therefore acknowledges the absence of complex qualitative research methods and a comparatively small number of perspectives as limitations. At the same time, it is expected that these limitations will be more comprehensively addressed in future studies that detail the EC-Tech College engineering transfer process.

Implications and Conclusions

Like other educational institutions, each community college is distinct in terms of its resources and student demographics. It would therefore not be prudent to attempt to apply the same research methods as outlined in this work to largely homogenous community colleges, or to two-year schools that do not have the same educational mission as EC. For instance, it might not be necessary or even advisable to attempt to unpack ethnic or racial differences at an all-White campus, where economic or class distinctions are more salient than cultural distinctions. Similarly, for two-year schools that are more vocationally-oriented than focused on transfer, it is highly unlikely that one would find a large proportion of engineering majors.

Nonetheless, it is likely that EC is not alone as a school that serves a large proportion of minority students who are interested in transferring to four-year engineering schools. Given the large numbers of native-born and international Blacks who tend to live in places such as Chicago, Houston, and Los Angeles, it would be interesting to explore the degree to which results similar to those in this study appear in these parts of the U.S. (Reed & Andrzejewski, 2010). Scholars should identify other diverse community colleges with engineering programs to see to what extent enrollment trends such as those at EC are evident. At times, Blacks are treated as a monolithic group in published studies, with little attention to within-group differences. A growing body of scholars, however, has begun to explore these differences as a means of revealing distinctions across racial identity and undergraduate experiences on campus (Berhane, 2017; Burrell, Fleming, Fredericks, & Moore, 2015; Fries-Britt, George Mwangi, & Peralta, 2014; George Mwangi, 2014). Yet, the majority of these studies have been situated in the four-year school context, including Historically Black Colleges and Universities (HBCUs). While HBCUs and other four-year institutions are the destinations of many incoming college freshmen, this work underscores the importance of the community college for many first-time Black engineering college students from various countries.

While a broad number of STEM-diversity oriented publications have provided insight into *student* perspectives, Zhang (2015) suggests that community college advisors' points of view are also important. The community college, like other educational institutions, is comprised of multiple interconnected players who are often pursuing the same or similar goals. To the extent that different groups of community college players (faculty, staff, as well as students) are all interested in the transfer of Black and other engineering undergraduates, voices from each group of stakeholders should be included in scholarly literature. Studies that include

these various perspectives should attend to points of convergence as well as areas of divergence, noting that the student point of view is at times quite different from that of faculty/administrators.

With some exceptions, four-year and two-year college administrators often work independent of each other. Programs and policies can be created at one institution with little regard for how these initiatives will impact the other institution. Articulation agreements are certainly one way in which to ameliorate the inter-institutional disconnect (Mattis and Sislin, 2005), but beyond that, "frequent communication" is essential (p. 19). The process required for preparing an articulation agreement is largely administrative and may not require many more documents than four-year degree plans and the endorsement of senior administration. To the contrary, when four-year colleges and universities are provided with rich and detailed descriptions of the student body at feeder institutions like EC, they can be more prepared to offer support services and programs that extend beyond the classroom. Services may include bridge programs, mentoring opportunities, and engineering research experiences that take place just prior or even after transfer occurs (McPhail, 2015).

Finally, as it relates to the specific experiences of *Black* engineering undergraduates, leaders like Dr. Roberts and Mr. Thomas can serve as advisors to other two-year and four-year engineering schools. Their comments reveal a rich understanding of student demographics at EC, and indicate a cultural awareness that can only aid in their advising and instructional practices. At Predominately White Institutions (PWIs), where the Black students may not comprise the same percentage of the total population as in schools like EC, there may be a tendency to devote less attention to factors like English language abilities and country of origin. Evidence from this study, however, suggests that these factors are not insignificant.

Administrators and faculty, particularly at PWIs, should resist the tendency to treat Black and other minoritized populations as a monolithic group. By developing a fuller understanding of their student body, campus leaders may be better positioned to help improve retention and graduation rates in engineering and other STEM majors.

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