

**BROTHERHOOD: An Assessment of the Experiences of Black and Latino Male Engineers
at the University of Pittsburgh Swanson School of Engineering**

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Retention and graduation rates of Black and Latino male students in higher education continue to be an issue. More specifically, Black and Latino male students fall well behind other groups in retention and graduation rates within STEM education broadly, and engineering education specifically. Institutional support specifically designed for Black and Latino males in engineering may assist this population in addressing and overcoming this obstacle. BROTHERHOOD is a student led organization designed to support and encourage the men of color at the University of Pittsburgh, Swanson School of Engineering. This inquiry explored the experiences of current and former Black and Latino BROTHERHOOD leaders. An outcomes assessment was used to assess areas where BROTHERHOOD is succeeding and areas where the organization may improve in addressing the unique needs and challenges of Black and Latino males in the Swanson School of Engineering. The inquiry incorporated a qualitative method using open-ended, semi-structured interview questions. Participants were invited through simple random sampling. Sixteen participants were interviewed, including eight current BROTHERHOOD leaders and eight alumni who were former leaders. Three key findings emerged from this inquiry: 1) BROTHERHOOD provides social and emotional support; 2) BROTHERHOOD leadership fosters student empowerment; and 3) BROTHERHOOD has four areas of improvement. This outcomes assessment may be utilized to support a future program evaluation of BROTHERHOOD to further measure how the specific organizational components

assist the participating men of color in their educational, professional, and social experiences as undergraduate engineering students in the Swanson School of Engineering.

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Preface

I would like to take this moment to thank some individuals that have supported and encouraged me throughout the dissertation process. I would like to first thank my loving parents, Karyn and Lee Saunders for all their support, guidance, prayers, and sacrifices. I would not have accomplished any of my educational endeavors had it not been for the teaching, wisdom, and encouragement from my wonderful parents throughout my life. Thank you mom and dad, I love you both dearly! I would like to thank my family, all my brothers and sisters, uncles, aunts, niece and nephews, and cousins for their love and support. I love you all to pieces! A special thank you to my pastor, Bishop Melvin E. Clark Sr., and my church family for all their prayers and encouragement. My spiritual makeup is the foundation of all that I am, and I thank God for placing me in the loving care of such faith-centered people. God bless you all! I want to thank my Pitt colleagues and friends, particularly Dr. Alaine Allen and Yvette Moore for their support and collaboration in Pitt EXCEL. A special thank you to Kathleen Kyle who gave me my professional start in the department of residence life. I want to thank the 2016 SCAE cohort, Andy Pitrone, Kendria Boyd, Tchetchet Digbohhou, Meiyi Song, Mist McKeehen, Tiffany Lumpkin, and Scott Hwang. It was a great ride getting through this doctoral program together! In addition, a big shout out to my advisee groupmates, Keith Caldwell and Terri Carr for all their encouragement, accountability, and support throughout the dissertation research and writing process. I would like to also thank the young men of BROTHERHOOD past and present. Without the support and buy-in from these great student leaders, BROTHERHOOD would not exist. I owe so much to these men, particularly the six founders, Will Owens, Miguel Mignott, Nate Roberts, Dominic Malloy, Cedric Brown, and Ohi Dibua. Thank you men for supporting and believing in me as your mentor,

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1.0 Chapter 1: Overview

Retention and graduation rates of Black and Latino male students in higher education continue to be an issue. More specifically, Black and Latino male students fall well behind other groups in retention and graduation rates within STEM (science, technology, engineering and mathematics) education broadly, and engineering education specifically (Hurtado, Eagan, & Chang, 2010; Lord et al, 2009; Palmer, Moore, & Hilton, 2010). Black and Latino male engineering students are lagging behind other student populations, as seen in the huge disparity in the number of engineering degrees earned by these two groups (see Appendix A and B, figures 1 and 2). In 2015, Black males earned 2,879 engineering degrees, Latino males earned 7,751 engineering degrees, and White males earned 49,390.

Black and Latino males also represent significantly lower percentages working in engineering occupations compared to other groups (see Appendix C). For these two groups, there appears to be a direct correlation between lower graduation and retention rates in postsecondary education and lower participation in the engineering workforce than their White male counterparts. In other words, since so few Black and Latino males are earning engineering degrees compared to White males, there are fewer Black and Latino males working as engineers by trade. The small numbers of Black and Latino males entering the engineering field is a core issue for the United States.

Many factors contribute to the retention and graduation inequities of Black and Latino male students in STEM education; however, issues pertaining to race, identity, and campus climate play a significant role in this population's ability to navigate the challenging social and academic rigors and systemic exclusion embedded in the STEM educational experience, particularly at

predominately White institutions (PWIs) (Williamson, 1999). Strayhorn et al. (2013) discuss key findings in their study, which illuminate some macro issues concerning Black and Latino male academic success in STEM and engineering education including,

(a) alienation and invisibility, (b) lack of same race peers and faculty upon whom students could depend for support, (c) difficulty applying theory and curriculum to practice, as well as few opportunities to do so in introductory engineering courses, and (d) lack of pre-college preparation for collegiate STEM coursework. For example, almost all participants described feeling “invisible” or nonexistent in engineering classrooms as they are usually “one of few” URM men, if not “the only,” enrolled in a course. Additionally, participants indicated that they are rarely called upon by name and that many of their comments go unacknowledged by professors, unlike their White and Asian peers who are encouraged by the professor (p. 5).

I witnessed similar concerns and issues highlighted by Strayhorn et al. (2013) in the Swanson School of Engineering (SSOE) at the University of Pittsburgh (Pitt) when I first began working for Pitt EXCEL, the SSOE undergraduate diversity program, in the summer of 2010. These issues and others are what prompted an effort to provide a structural outlet for inclusion and additional targeted support for Black and Latino engineering students at Pitt through a program called BROTHERHOOD (*Brothers Respecting Open Thought Helping Every-man Realize His Own Original Dream*).

1.1 Problem of Practice

Through my work as the Academic Counselor and Coordinator of Diversity Outreach in Pitt EXCEL, I have seen how many of the racially minoritized males in the School were disconnected from their peers, struggle to find avenues of leadership development and expression, and feel isolated and ill-equipped to manage the academic, social, and professional burdens of the engineering experience. Upon beginning my work within Pitt EXCEL, I immediately recognized and identified with the needs of the racially minoritized male students. The Black and Latino male students seemed disengaged and under-supported in their academic programs, and in the larger School of Engineering experience. Additionally, the academic performance of Black and Latino males within Pitt EXCEL were lower compared to other groups. The average cumulative GPA of Black and Latino males at the time was a 2.8.

Most of the Black and Latino male students were also disengaged from the Pitt EXCEL program and the larger Office of Diversity experience, including the student run organizations. During this period, Black and Latina women held most leadership positions. Within each of the organizational leadership functional areas, including peer mentoring, tutors, the National Society of Black Engineers (NSBE) and the Society of Hispanic and Professional Engineers (SHPE) top 5 leadership positions, Black and Latino males constituted less than 15% of peer leadership positions. The reason(s) for such disengagement were not clear. Perhaps these organizations and the Pitt EXCEL experience at the time simply was not adequate in addressing issues pertinent to the Black and Latino males' experiences or needs. In any case, these conditions led me to create a space to address some of the potential underlying social, cultural, and academic issues that led to the isolation and disengagement of Black and Latino males.

My problem of practice involves an outcomes assessment (Bresciani, Gardner, & Hickmott, 2009) of a program created in response to this disengagement, specifically for Black and Latino male students in the SSOE. In the year 2012, I, with the assistance of six Pitt EXCEL alumni men of color, officially created BROTHERHOOD to provide a counterspace for Black and Latino male engineering student empowerment. Counterspaces are safe spaces, which may include student organizations, social outlets, programs, or institutions that provide cultural, social, and identity agency for groups who are not historically included in the cultural predominance of White male scientists (Ong, Smith, Ko, 2018).

BROTHERHOOD is a place where resilience can be fostered and nurtured safely, constructively, and purposefully. Social bonds, networking, and peer-to-peer mentoring is organically and intentionally developed within this organization. All these factors are instrumental in helping Black and Latino male students succeed in higher education (Strayhorn, 2008). BROTHERHOOD, unlike other student organizations within STEM education, is not directly or specifically about academics or STEM curriculum. Instead, BROTHERHOOD is about addressing the underlying social, cultural, political, racial, and/or personal issues that add additional stressors, which negatively affect the socio-emotional state of Black and Latino males at PWIs. Underlying social issues, identity development, personal validation, and support structures are crucial for the development of underrepresented students on college campuses (Solorzano, Ceja, & Yosso, 2000).

As a Black male higher education practitioner, BROTHERHOOD is particularly important to me for several reasons. First, I attended a PWI as an undergraduate student, so I can identify and empathize with various personal feelings that connect me with the larger experiences of many minoritized students attending PWIs, including social isolation, racial tensions, lack of cultural inclusion, appreciation, and understanding, and general hostile campus climates. My first

interaction with a higher education professional at my undergraduate institution involved some of these social stressors concerning my race.

As I was walking on campus on my first day of class, I asked an administrator, who happened to be a White woman, for directions to a certain building. The administrator was kind and provided directions to the location. This administrator was cordial and kind, but as I was about to leave her presence she said to me, “Don’t worry, you are an athlete, so everyone will treat you well here.” At the time, I was in much better physical shape, as I played football in high school. Therefore, I simply laughed off the statement. She was such a nice woman and I did not want to believe she meant any harm. However, as I thought about the interaction more that day, I could not help but feel as though others on campus were going to judge me while assuming I was only on campus to play ball because of my physique, and most glaringly because I was a Black man.

Secondly, as a higher education practitioner with over ten years of experience, I have been drawn to serving in an official and an unofficial capacity as a mentor, guide, supporter, and friend to many Black and Latino male students. Many Black and Latino male students have been drawn to me. These students seemingly identify with me on various personal, social, intellectual, and cultural levels. Therefore, understanding that many Black and Latino male students view me as a mentor and supporter, I have a stake in helping these students navigate the often challenging social, cultural, and academic landscape of a PWI. It is important to me that this student population not allow the stressors and challenges of being a minoritized student at a PWI push them away from their goals and dreams of obtaining a college degree.

1.2 Inquiry Purpose

In order to understand the ways BROTHERHOOD supports Black and Latino male engineering students at Pitt's SSOE, two inquiry questions were explored. These questions were: 1) What are the experiences of current BROTHERHOOD leaders? 2) What are the experiences of alumni who were former BROTHERHOOD leaders? With these inquiry questions, I sought to explore and understand the dynamics and functions of BROTHERHOOD for Black and Latino males through the experiences of current and former leaders. As a key stakeholder in this organization, serving as a founder and the professional advisor—the successes, failures, areas for improvement, and areas for growth and further development are extremely important to me.

It is important to identify specific areas where diversity and inclusion efforts within minority engineering programs (MEPs) can project optimal outcomes for minoritized students. Exploring the prevailing issues that persist within the lives of minoritized engineering students is important for assisting with the continued evolution of MEPs, while exploring what is working programmatically, for these students is also essential. This inquiry was designed to further unpack and bring to light certain social, cultural, racial, and academic issues that persist for Black and Latino males within engineering education at Pitt's SSOE, while also highlighting how empowerment, affirmation, and resilience are essential to their success. This outcomes assessment intended to provide an even deeper analysis of how innovative peer led initiatives for underrepresented students within STEM can be applied within already established MEP systems and programming models.

1.3 Demonstration of Excellence

The findings of this dissertation in practice was presented in a formal presentation to invited SSOE, Engineering Student Services Suite personnel on Friday, May 31, 2019 in Benedum Hall. The units that comprise the suite are the Associate Dean for Academic Affairs, First Year Engineering Program, Cooperative Education Program, International Engineering Initiatives, K-12 Outreach and Community Engagement, Pitt EXCEL, and the Office of Diversity. Select faculty, undergraduate administrators, personnel from the Provost office, and the Dean of Engineering were also invited. The Engineering Student Services Suite, as well as certain engineering faculty members and administrators, work closely with the Pitt EXCEL program and the Office of Diversity. In addition, each of the units and the selected faculty members either support, teach, supervise, mentor, and/or advise the men of color in BROTHERHOOD. Therefore, presenting the findings to the staff, administrators, and faculty was important in helping to inform the greater SSOE support system of the work transpiring in BROTHERHOOD, and the efforts required to improve the organization to further support and engage the engineering Black and Latino male student population and alumni.

1.4 Overview of Methods/Approach

I secured permission from the University of Pittsburgh Institutional Review Board to conduct this study (see Appendix D). This problem of practice utilized an outcomes assessment to assess the BROTHERHOOD organization by exploring the experiences of current and former

student leaders. The type of assessment utilized for this inquiry is *formative*. Formative assessment is key in the early formation of programs to measure their usefulness and effectiveness in development (Harlen & James, 1997).

I interviewed current and former Black and Latino male engineering student leaders who participated in BROTHERHOOD as a form of assessment. Semi-structured qualitative interviews served as the method to draw unique and personalized narratives from the students interviewed (Cohen & Crabtree, 2006). I coded the data through inductive thematic analysis. Through this process, emerging and dominant themes helped compile a narrative about the effectiveness of the program.

This outcomes assessment provided an understanding of how the BROTHERHOOD organization provides personal, professional, and academic empowerment for current and former Black and Latino male leaders at Pitt's SSOE. This assessment drew a connection between student leaders, both past and present, and key stakeholders, identifying larger relationships between various barriers experienced by many underrepresented males within STEM at PWIs (Williamson, 1999).

Assessing and understanding the needs and issues of underrepresented male leaders in STEM, and engineering specifically, was the cornerstone of this problem of practice. Grasping the larger social, academic, and personal issues of this student population as it relates to their experiences as underrepresented males at a PWI was essential. If BROTHERHOOD is to be a source of inspiration, motivation, empowerment, and opportunity for men of color in engineering at a PWI, it is imperative that any assessment makes clear for practitioners its salience, relevance, and needs for continued improvement.

1.5 Overview of Setting

BROTHERHOOD is housed within the Pitt EXCEL program in the SSOE at the University of Pittsburgh. Pitt EXCEL is the undergraduate diversity program dedicated to the recruitment, retention, and graduation of underrepresented engineering students. As an academic program and part of the student services operations within the School, Pitt EXCEL operates in conjunction and in collaboration with all academic services within the School. BROTHERHOOD is an extension of the mission of the Pitt EXCEL program. As an addendum to Pitt EXCEL, BROTHERHOOD also serves to assist students academically and professionally, albeit through a different functional aesthetic.

BROTHERHOOD, by design, is a disruptive and transformational organization within the broader context of the SSOE. The organization's unique approach to cultivating experiences and expressions rooted in cultural, ethnic, racial, and diverse social constructs and socializations is an important part of understanding its effectiveness (Harper & Quaye, 2007). Addressing issues that challenge the status quo, or that illuminate problems concerning race and racism, unhealthy school or campus climate, or general feelings of isolation and misunderstanding is often not part of the academic and professional aesthetic and functionality of STEM education. BROTHERHOOD picks up where other support programs in the SSOE stop. Meaning, the organization attempts to address the larger social issues that Black and Latino men in engineering deal with beyond academic struggles and professional development. BROTHERHOOD seeks to help racially minoritized men understand that there are macro-level issues that are working against their academic success as well as their future success in the field.

1.6 Significance of Inquiry

This inquiry is important for several reasons. First, the six alumni that helped create BROTHERHOOD are committed to proving the relevance of the organization in the SSOE. Although each of these alumni are now either working as professional engineers in industry or are enrolled in graduate school, they were all undergraduate students during the early stages of BROTHERHOOD's formation. Additionally, there are currently over fifty Black and Latino men who successfully graduated from the SSOE that were active participants and or leaders in the organization. These former students are important stakeholders for BROTHERHOOD as alumni who have and will have an important say in the future direction of the organization in the form of financial gifts, mentoring, and organizational and professional advocacy.

Other stakeholders include current staff, faculty, and administrators within the SSOE who work closely with Pitt EXCEL, the Office of Diversity, and the students individually. These stakeholders are important supporters and allies for the BROTHERHOOD organization and the participating student body (Johnson & Sheppard, 2004). These individuals are an important part of the larger diversity and inclusion efforts of the Pitt EXCEL program as they work and interact with Black and Latino male students throughout their undergraduate careers. These professionals are the ones who shape the larger climate and support systems for students within the SSOE. Their influence, involvement, and guidance has direct leverage in the graduation and retention of the Black and Latino male students that BROTHERHOOD serves. Lastly, the Pitt EXCEL staff, the Office of Diversity, and I are primary stakeholders. The operation of BROTHERHOOD is crucial in the work we do on a day-to-day basis, as our unit is looked upon as ground zero in addressing all diversity issues, needs, and concerns for the SSOE.

Many individuals, groups, organizations, and institutions can benefit, and learn from this inquiry. Understanding the effectiveness of BROTHERHOOD is key to promoting the program in the future. Other institutions of higher education may also gain insight, motivation, and encouragement to organize and develop organizations similar to BROTHERHOOD. Additionally, prospective students and parents may find great comfort knowing that additional support measures uniquely designed for participating underrepresented male students exist. Perhaps the visibility and successes of BROTHERHOOD may cause prospective students to choose the SSOE over its competitors. Moreover, certain departments, faculty, and staff that need, and are looking for outlets and opportunities to engage with diversity and inclusion work may find an interest in the work being done within BROTHERHOOD. Finally, Pitt EXCEL, and the Office of Diversity may benefit from this inquiry by learning how best to support Black and Latino male student leaders in the engineering school, and the greater campus. Overall attention to diversity work within the School is always appreciated and needed for those who work within the unit. External attention and positive support for our work helps our student population with research opportunities, scholarships, co-op opportunities, graduate and professional school opportunities, and networking and corporate relations building. In addition, it assists in marketing for potential external funding avenues for the office.

1.7 Delimitations of Study

This dissertation in practice was limited to an outcomes assessment of the BROTHERHOOD program by exploring the experiences of Black and Latino current and former

leaders. Therefore, the scope of this inquiry did not address many areas concerning the interests, needs, and problems of Black and Latino male engineering students. BROTHERHOOD is a program uniquely established for undergraduate male students at Pitt's SSOE. Any schools, programs, initiatives, or students outside of this area were not included in this assessment. There are many services, initiatives, organizations, and programs within the SSOE for student populations outside of this inquiry. Some of these outlets include, PittStrive, a supportive initiative for underrepresented graduate students within the Office of Diversity; D.I.V.A., a peer led supportive initiative for the underrepresented female participants in Pitt EXCEL; the Society of Women Engineers (SWE), a national student led organization for women engineering students; the Society of Asian Scientists and Engineers (SASE), which is a student led national organization for Asian engineering students. Assessments of these supportive programs, organizations, and initiatives would be a productive, meaningful, and important inquiry effort to measure the successes or areas of improvement for these organizations within the SSOE; however, it was beyond the scope of this inquiry. Additionally, this inquiry was limited to the experiences of current BROTHERHOOD leaders and alumni who were official leaders in the organization as undergraduate students. The experiences of current general members and alumni who were never official BROTHERHOOD leaders was not measured in this inquiry.

This inquiry also did not assess the larger Pitt campus community or other students beyond those identified as Black and Latino undergraduate males in engineering. Many supportive initiatives and programs exist for underrepresented students or marginalized groups at Pitt. Not all underrepresented supportive initiatives function the same as BROTHERHOOD, nor do they all focus on specific identities within underrepresented groups. Additionally, the inquiry did not assess BROTHERHOOD within the larger scope of Pitt EXCEL, the Office of Diversity, or the

supporting student run organizations (NSBE and SHPE). Although BROTHERHOOD is situated within the Pitt EXCEL program, this assessment was singularly focused on BROTHERHOOD as an organization within its own mission, structure and system. Lastly, although issues concerning race, ethnicity, gender, and culture was addressed in this dissertation in practice, these issues, and other important social issues, were not directly or specifically assessed in this inquiry.

1.8 Conclusion

Black and Latino males in engineering, and STEM education broadly, at PWIs experience many social and academic barriers and stressors that make professional and academic achievement challenging. Issues concerning race, ethnicity, campus climate, and macroaggressions may weigh heavy on this population, causing social isolation and general neglect within their social and school setting (Garcia & Hurtado, 2011; Solórzano et al. 2000). BROTHERHOOD is an organization within the Pitt SSOE that was created to address some of the underlying and prevalent issues that hinder academic and professional achievement. BROTHERHOOD is not and does not purport to be the only, or even the primary support system within the SSOE for Black and Latino males. BROTHERHOOD also does not purport to meet all needs of Black and Latino male engineering students. Yet, the potential for BROTHERHOOD to provide a necessary counterspace for this population may add to institutional support that many key stakeholders, both within the SSOE and beyond, can learn and benefit from, especially involving issues of personal and academic success of Black and Latino males. Therefore, an outcomes assessment through qualitative analysis was utilized to explore the experiences of the men of color in the BROTHERHOOD organization.

2.0 Chapter 2: Literature Review

It is widely known that academic achievement disparities exist for Black and Latino male students compared to their White counterparts at PWIs in the field of engineering (Lord et al., 2009) with research showing a number of factors that contribute to those disparities (Museus, Palmer, Davis & Maramba, 2011). This review of literature sought to explore factors that create such disparities for Black and Latino male students in engineering and STEM education broadly. Additionally, I reviewed literature about ways to support underrepresented students in engineering and STEM. Specifically, I explored two major themes in the literature including: 1) Social and institutional support for Black and Latino college men generally and within STEM; 2) Social and institutional hindrances for Black and Latino males within STEM. I ended this literature review by talking about anti-deficit framing, which I used to guide this inquiry. It is important to note that for this review, STEM education was utilized as a broader context to assist in exploring issues that are relevant to Black and Latino males in engineering at PWIs, due to the nature of existing research, which often conflates engineering and STEM.

2.1 Social and Institutional Support for Black and Latino College Men

Institutional support for Black and Latino males in STEM education is important for retention and graduation. Baker (2013) addresses the prospect of shaping the social and academic environment as one major process of institutional support for Black and Latino male students. Structurally challenging, reshaping, or even transforming the social and academic environments is

necessary to address social and academic needs of many Black and Latino males within STEM education. To understand how to support Black and Latino males in college, it is important to consider what structures support Black and Latino males in higher education.

Intentional and strategic organizational peer-to-peer engagement is important for men of color in higher education (Palmer & Gasman, 2008; Saenz & Ponjuan, 2011). For many men of color in higher education institutions, how they feel about themselves is as important as their intellectual and academic prowess in their academic achievements. Peer-to-peer mentoring provides a sense that male students of color matter, and their interests, ideas, and agency has value and is supported (Huerta & Fishman, 2014) . Mentoring also assists in helping students of color find their place in environments that they may not be accustomed to. This concept is relevant in relation to attending a PWI, particularly if students have not had academic experiences in White dominated spaces. Budge (2006) states, "...mentoring is successful in assisting minorities to accomplish goals in unfamiliar settings" (p. 78). Engineering can be an unfamiliar space for certain men of color as engineering schools are often White male dominated environments.

Brooks, Jones, and Latten (2014) discuss peer mentoring as a significant emotional support structure for men of color particularly within the STEM fields. Strayhorn et al (2013) highlight for some men of color in engineering and STEM fields students feel a sense of isolation as a result of not having many peers who look like them in their classes. Strategic and intentional peer engagement outlets can serve as a way to address feelings of loneliness and isolation that many male students of color experience in engineering and STEM education.

Peer support and engagement may also serve as a bridge for men of color to more aptly and comfortably engage with their faculty and administrators. Strayhorn (2008) suggests that there are a number of factors that contribute to the creation of supportive environments for Black male

students in college including mentoring, supportive programming, and faculty relationships. Faculty can play a major role in the social and environmental support system for

2.1.1 Peer Mentoring and Engagement

Black and Latino males in STEM. The participation and involvement of faculty, especially faculty of color, is identified as a major support outlet that fosters a supportive environment for Black and Latino males (Baker, 2013). Utilizing the concept of personal support and an ethic of care through racial and cultural identity between students and higher education professionals is part and parcel of addressing the various issues that hinder academic achievement.

One of the most significant issues in addressing the education of STEM undergraduates of color is the role of faculty (Williamson, 1999). Faculty play a major role in shaping an inclusive climate for students of color in STEM (Gasiewski, et al, 2012). Supportive faculty have the necessary agency and tools to foster institutional inclusion, such as providing co-op experiences, international experiences, undergraduate research experiences, and department involvement that assists in creating supportive environments for Black and Latino STEM students (Eagan, Hurtado, & Chang, 2010). Opportunities to engage with faculty are critical in assisting diversity and inclusion efforts within PWIs, with faculty accessibility playing a role in establishing cues for students of color to freely engage with faculty (Hurtado et al. 2011). In other words, the more students of color know their faculty are available to them and accessible to network with, talk to, or engage within research labs and in out of classroom experiences, the more confident students feel concerning a healthy and supportive academic environment.

Moreover, faculty interactions are meaningful for URM students in STEM education both inside and outside of the classroom. The more visible the faculty member, the more underrepresented students feel comfortable approaching them for academic assistance and perhaps even mentorship. Underrepresented STEM students within PWIs often seek faculty who exhibit an ethic of care towards their teaching and advising (Hurtado et al. 2011). An ethic of care consists of student support and engagement that encourages dialogue, fosters relationship, and provides space for self-agency expression within the academic environment. This ethic of care helps establish and foster a stronger inclusive environment and institutional support that many URM STEM students seek within PWIs.

2.1.2 Student Involvement and Engagement

This inquiry utilized student campus involvement and engagement through a student organization as a frame in highlighting the salience of institutional and organizational support for men of color in engineering and STEM education. Campus involvement both in-class and out-of-class provides positive experiences and support for students of color (Flowers, 2004). The campus community provides the space and tools for many students of color to explore and discover avenues to constructively interact with peers, foster support, learn about themselves, and commit to leadership. Harper and Quaye (2007) highlight opportunities and experiences in student organizational leadership specifically at PWIs as spaces for Black male engagement in the campus community. Hudson-Fledge and Thompson (2017) discuss these spaces for men of color engagement as opportunities to enhance and grow their empathy for others and their community.

The more engaged men of color become to the campus community the more care they may exhibit in the overall health and success of their peers and campus community.

Engagement involves more than simply taking advantage of systems and opportunities that are already in place. For many men of color, strategically creating unique avenues for engagement that reaches students at a deeper social, cultural, and developmental level is also significant. Garcia et al (2017) emphasize cultural relevance within engagement and organizational involvement as an important aspect in the support and development of Latino males. Student involvement for men of color takes a more prominent role when avenues and organizations provide intentional outlets to express their race and culture (Saenz & Ponjuan, 2011).

2.1.3 Minority Engineering Programs

Organizational support structures can provide Black and Latino male students avenues for stronger personal agency development, confidence and growth within STEM education, feelings of personal empowerment within leadership, and greater campus engagement (Guiffrida, 2003). Supportive organizational structures specifically for underrepresented male students in engineering can potentially be the linchpin that connects their personal agency development with their academic and professional growth and development (Rankin & Reason, 2005).

Minority Engineering Programs (MEPs) are historical programs within many schools of engineering that serve a comprehensive function of specific and targeted academic and social support structures for students of color around issues of race, nationality, ethnicity, and culture within PWIS (Morrison & Williams, 1993). The Meyerhoff Scholars Program is perhaps the best illustration of a comprehensive and successful MEP that reaches the depths of institutional

supportive infrastructure for underrepresented students in engineering (Maton et al. 2012). MEPs are crucial counterspaces in fostering necessary sense of belonging and community development and advocacy for students of color (Ohland & Zang, 2002). MEPs have successfully helped advance the social, academic, and professional interests of students of color, with the whole design of MEPs being to provide healthy and comprehensive outlets and opportunities for social integration for students of color at PWIs. Social integration is crucial regarding the capacity to make predominately White spaces healthy and supportive for students of color.

Organizations and initiatives that already exist within schools of engineering, such as the National Society of Black Engineers (NSBE) and the Society of Hispanic and Professional Engineers (SHPE), are important in understanding how support structures foster and undergird academic achievement possibilities for students of color. NSBE and SHPE are student-led organizations that typically fall underneath an engineering school's established MEP or engineering office of diversity system.

NSBE & SHPE. NSBE is a historic Black student led organization that fosters a healthy community and organizational climate within the purview of race, racial, cultural and ethnic identity. NSBE provides opportunities for students of color engagement, student leadership opportunities, employment opportunities, and internship opportunities (Johnson & Sheppard, 2004; May & Chubin, 2003). Brown, Morning, and Watkins (2005) highlight that Black students have more positive outlooks concerning their campus environment when they are active participants in NSBE. Davis (1994) states that student attitudes are adjusted positively through the NSBE experience because of the ways in which NSBE functions as an institutional support within the curriculum and organizational apparatus within schools of engineering.

This counterspace for Black student engagement is a positive way to help students with their self-esteem, self-confidence, self-worth, racial identity development, personal agency, and empowerment, as the climate within NSBE has a way of fomenting these affectations within students of color. SHPE has also proven to be a crucial space for Latinx students with the same concepts of NSBE. SHPE is also a historic student organization serving as a counterspace designed to foster a sense of community, cultural and racial identity development, and personal empowerment for Latinx students in engineering (Crumpton-Young et al. 2010). Both NSBE and SHPE provide for students the opportunity to enhance their networks and improve their chances in succeeding in STEM (Chang et al. 2010)

It is important not to overlook the role that racial and ethnic identities play in a larger context regarding the necessary institutional support structures. If students of color thrived within PWIs and fit into the established dominate White male expressions, experiences and culture within STEM majors, these support initiatives and programs would not be necessary. However, literature illustrates how such support systems are indeed necessary for students of color at PWIs because students of color experience difficulties fitting in and feeling as if their voices and experiences matter within their STEM experiences both within the classroom and outside of the classroom (Good, Halpin, & Halpin, 2002). The benefits of these programs and other supportive initiatives within schools of engineering are important to highlight.

2.2 Social and Institutional Support for Black and Latino College Men

Many factors have been shown to hinder the persistence, success, and retention of men of color in STEM education (Garcia & Hurtado, 2011; McGee, 2016; Solórzano et al. 2000). These

stressors may delay or stymie Black and Latino men in their academic and professional growth by crushing their self-esteem, which then has a negative effect on their motivation and morale to succeed in STEM (Strayhorn, 2010; Strayhorn et al. 2013).

2.2.1 Racial Bias and Stereotypes

Racial biases also have a long-standing rootedness in the STEM fields. McGee (2016) asserts that the STEM fields were birthed in White male supremacy, mostly as a product of the value systems and academic practices in Eugenics in the 19th and 20th centuries. McGee (2016) suggests that stereotype management, or the ability of students of color to push through the emotional and psychological barriers of stereotypes, promulgates insensitivities and racial and cultural biases of students of color. In other words, the more students of color push through and demonstrate resilience in the face of racism or racial microaggressions, the less the underlying systemic or institutional racist behaviors or systems are being addressed. Institutions that fail to address stereotype threat by changing institutional culture and school climate indirectly forward long held internal belief systems about students of color in STEM as unqualified or underserving (McGee, 2016). Therefore, racism, in its various forms, are indeed present for many students of color in STEM education, mirroring the larger hostile racial climate experiences within the larger school system.

Stereotypes, racial biases, and racially hostile climates which may hinder success for racially minoritized men in STEM. McGee and Martin (2011) discuss stereotype threat as a key hindrance to students of color navigating the challenging academic, professional, and social terrain of STEM education. Stereotype threat is the feeling that minoritized persons have about being at

risk of conforming to stereotypes that are associated with a group to which they belong and has been documented as a major problem and contributor to low academic performances of minoritized students (Aronson, Quinn, & Spencer, 1998). Black and Latino students in STEM must contend with dominant racial and ethnic stereotypes and a preponderance of beliefs, assumptions, and biases about their ability to succeed in math and sciences (McGee & Martin, 2011).

2.2.2 Race, Culture, and Identity

Issues of race, culture, and identity are also important factors to consider regarding possible hindrances to academic success for students of color in STEM fields (Davis, 1994). At the root of the social disconnect for many Black and Latino male students majoring in STEM education at PWIs is the issue of unhealthy and unsupportive racial climates (Strayhorn, 2015). STEM educational experiences are different from other academic areas regarding the culture, curriculum, experiences and expectations. However, it is important to highlight how the STEM experience is positioned within the larger higher education system.

Solorzano et al. (2000) discuss how hostile campus climates and racial microaggressions negatively affect students of color in college. Moreover, Rankin and Reason (2005) found that campus climate is experienced differently by students in different racial groups. Overall, students of color are more likely to experience higher levels of harassment, and experience more racially charged derogatory comments, than their White counterparts. This is a concern since Hurtado et al (1998) explain that negative racial campus climate environments can negatively affect Black and Latino students' grades, their connection with the university, and heighten their sense of alienation on campus. Understanding reasons for differing perceptions of racial campus climate is

relevant in exploring and addressing underlying issues that cause tensions for underrepresented students attending PWIs and possible steps in addressing those issues.

2.2.3 Sense of Belonging

Strayhorn et al (2013) outlines perhaps one of the most significant hindrances for Black and Latino male achievement in engineering and STEM broadly, which is the issue of sense of belonging. Sense of belonging is important because the more students feel as though they belong within a community, the more students become part of the community. PWIs have an important role in creating supportive environments for URM students (Chang et al. 2014). The issue of exclusion is a problem for Black and Latino students in STEM. Strayhorn et al (2013) suggest that feeling alone and not having other peers and professionals of color in STEM point to a larger lack of support for students of color in engineering schools. Higher education institutions must foster community to provide resources and avenues for underrepresented students to feel a greater sense of belonging and connection to the STEM community. If sense of belonging is not fostered and supported, student self-isolation may take root.

2.3 Theoretical Framework

Restructuring the frame, or lens through which Black and Latino males in STEM are understood, was the foundational perspective I possessed in developing this inquiry. This inquiry utilized an anti-deficit framework (Harper, 2010) to help understand the ways in which supportive

environments and outlets for social integration and student agency development may lead to positive academic outcomes for Black and Latino males in STEM. This framework was utilized to place BROTHERHOOD in a context of Black and Latino male empowerment and engagement with the SSOE. The organizational structure of BROTHERHOOD is grounded in an anti-deficit lens to counter an exclusive environment while supporting needs of Black and Latino male engineering students. An anti-deficit framework recognizes that research often frames students of color as deficient. With the proper and necessary support structures at their disposal, Black and Latino men can be successful, yet these successes are often overlooked in research (Harper, 2010). In practice, an anti-deficit framework is also crucial in exploring how the processes of supportive organizational and institutional infrastructures work in advancing the academic achievement for male students of color (Kim & Hargrove, 2013).

Valencia and Solórzano (1997) examine anti-deficit thinking in a broader encompassing racial lens by placing deficit thinking within the context of historic and institutional systems of racial oppression from slavery to today. Moreover, they believe deficit thinking is a construct of racism and Whiteness (Valencia & Solórzano, 1997). A racial inferiority complex may be a driving force within deficit thinking concerning students of color and education. Therefore, it may be fair to surmise that an anti-deficit framework, within this racialized context as outlined by Valencia and Solórzano (1997), is a transformative mindset to empower students of color by shifting the narrative to racial and ethnic agency development within educational contexts. Deficits in educational success and attainment is not predicated on intelligence, but because of a construct rooted in the forwarding of racial inferiority within the expression of historic racism, intelligence deficit thinking is easy for people of color to embrace (Valencia and Solórzano, 1997). This way of viewing an anti-deficit framework is relevant, especially within the context of STEM education

and engineering education concerning the disparities and inequities of students of color compared to their White counterparts.

An anti-deficit framework was salient in informing this inquiry. Utilizing this framework provided a deeper understanding regarding STEM education achievement for Black and Latino males by demonstrating how achievement for this student population is strengthened by supportive initiatives and or organizations that address underlying socio-emotional and cultural issues that may hinder academic success. This framework highlighted strategic student organizational support of Black and Latino males as an anti-deficit effort to achieve positive outcomes within STEM education environments.

2.4 Conclusion

This literature review framed my inquiry by drawing attention to the various stressors, hindrances, and supportive structures that men of color experience in engineering and STEM education at a PWI. There are certain social and institutional support systems and experiences necessary to assist Black and Latino males in STEM education. Creating supportive environments, promoting leadership engagement, the efforts of minority engineering programs, and peer-to-peer engagement have been identified as salient support structural efforts that help Black and Latino males achieve within STEM at higher education institutions. In addition, certain issues around culture, race, racism, and sense of belonging were identified as contributors to social hindrances of Black and Latino males in STEM education.

An anti-deficit framework is used as the theoretical framework in this inquiry to provide a view of the possibilities to change deficit thinking concerning the prevailing disparities in graduation and retention rates of Black and Latino males in STEM. In addition, an anti-deficit framework is the grounding to explore the propensity for Black and Latino males to change the narrative concerning STEM education achievement at PWIs.

3.0 Chapter 3: Methodology

Retention and graduation rates among Latino and Black males in STEM education broadly, and engineering specifically, lag behind other student groups (National Science Foundation, 2018). Many social barriers, including a lack of pre-college preparation, a lack of sense of belonging, unhealthy racial climates, and racial microaggressions play a role in this hindrance for Black and Latino male engineering undergraduates at PWIs. When I began work at Pitt's SSOE, I too realized a major social disconnect for many of the Black and Latino male students within the Pitt EXCEL program. As a result, I instituted a supplemental male support initiative called BROTHERHOOD to provide a space where the Black and Latino males could feel free and empowered to express and exercise their agency as student leaders and future engineers. This inquiry assessed the ways that BROTHERHOOD has supported current and former Black and Latino male leaders in the SSOE, and potential areas where the program can evolve and improve.

To understand the ways in which BROTHERHOOD supports Black and Latino male engineering students in the Pitt SSOE, two inquiry questions were explored: 1) What are the experiences of current BROTHERHOOD leaders? 2) What are the experiences of alumni who were former BROTHERHOOD leaders? With these inquiry questions, I explored the role and function of BROTHERHOOD, and areas where the organization can improve.

3.1 Inquiry Setting

The inquiry setting was Pitt's Swanson School of Engineering (SSOE). The SSOE is a medium sized engineering school with programs and degrees for undergraduate and graduate students. In 2007, the school was named after SSOE alumnus John A. Swanson, the founder of the computer software firm, ANSYS, after he contributed over 41 million dollars to the School. The SSOE has 10 degree granting programs; the bioengineering program is the most popular. There are 114 tenured faculty in the SSOE and over 140 research laboratories, centers, and institutions. The SSOE is ranked #47 in best engineering schools according to *U.S. News & World Reports*. More than 3,600 undergraduate students attend the SSOE. Underrepresented minorities, including Black, Latinx, and Native American, make up only 7.1% of the school's population. More specifically, Latinx make up 2.5% and Blacks represent 3.6%. The majority of enrolled students are White students, representing 81.9% of the undergraduate student population. Additional demographics include women, which make up 29.6%, Multiracial at 3.7%, and Asians at 8.1%.

The Office of Diversity is housed within Pitt's SSOE. The office is comprised of three components: pre-college, undergraduate, and graduate. The pre-college initiative is INVESTING NOW. INVESTING NOW serves students in grades 9 through 12. The goal of INVESTING NOW is to serve as a bridge and community outreach effort to gain local high school students' interest in STEM education throughout greater Pittsburgh schools. The undergraduate diversity initiative is Pitt EXCEL. Pitt EXCEL's mission is to recruit, retain and graduate historically underrepresented engineering students in the SSOE. Pitt EXCEL works in collaboration with all the engineering student services within the SSOE, faculty, and administrators to provide support and create an inclusive and supportive academic, social, and professional environment for

minoritized students. Pitt EXCEL achieves its retention and graduation goals through intrusive academic counseling, supportive social and professional development programming, mentoring, tutoring, and undergraduate research programming. The Associate Dean of Diversity leads the graduate level. Similar to Pitt EXCEL, the graduate support system serves to recruit, retain and graduate underrepresented graduate students in the SSOE. These efforts are achieved through various recruitment and retention focused initiatives and programs including mentoring, the Pitt-Strive program, the Pre-PhD research program, and the various graduate student fellowships and student organizations.

Formerly called IMPACT, Pitt EXCEL evolved in the early-2000s as Pitt dramatically increased its enrollment standards. Part of that evolution included molding a new strategic direction for the program to serve the academic, social, and professional needs of prospective students. In the mid-2000s, as retention and student involvement in the newly structured Pitt EXCEL program faltered, professional staff identified a need for a recommitment to the socio-emotional, cultural, and co-curricular aesthetic structuring of the program. Currently, Pitt EXCEL serves over 250 undergraduate students who identify as Black, Latinx, and Native American. Of the 250, roughly 140 actively participate in the Pitt EXCEL program. Out of the 140 active participants, 87 students identify as male students.

BROTHERHOOD is part of the SSOE's Pitt EXCEL program. The organization's name is an acronym: *Brothers Respecting Open Thought Helping Every-man Realize His Own Original Dream*. The organization was officially founded in 2012. Since 2012, active participation has steadily increased, averaging 1.2% increase each academic year. BROTHERHOOD is part of the manifestation of Pitt EXCEL's recommitment to the engagement, and holistic and inclusive development of underrepresented students in the SSOE. Focusing on identifying Black and Latino

male students, BROTHERHOOD continues to operate as a supplemental extension of the mission of Pitt EXCEL in recruiting, retaining, and graduating historically underrepresented students. Currently 65 students are active participants in BROTHERHOOD. Originally the organization consisted of 25 active participants.

The early formation of BROTHERHOOD was unconventional and organic. BROTHERHOOD started in the fall of 2011 when a verbal altercation broke out between myself and an upperclassmen male Pitt EXCEL student (see Appendix E). From that verbal altercation, this particular student and I began to understand that the Black and Latino males of Pitt EXCEL needed to establish an outlet, or a counterspace, to foster stronger relationships and to support one another through our socio-emotional growth. The following summer, six of the upperclass Pitt EXCEL males and I came together and developed the structure of the BROTHERHOOD organization, including designing the official BROTHERHOOD logo (see Appendix F).

The BROTHERHOOD organizational structure (see Appendix G) consists of peer leadership teams called “Foundations.” The Foundation leadership teams are responsible for planning, creating, and executing BROTHERHOOD workshops, seminars, programs, and social outings. Foundation teams are guided, mentored, and supported by the professional advisor, but serve as the peer headship of the organization. BROTHERHOOD leaders are selected by the former Foundation members and the professional advisor. Apprentices are also chosen. These leaders are underclass students that exhibit leadership potential. Apprentices support the leaders and develop their skills under the mentorship and guidance of the Foundation members to eventually become official Foundation leaders. A captain and a co-captain, chosen by the professional advisor with input from previous Foundation leaders, lead each Foundation. The Founders, the original six leaders, also have input on the strategic direction of BROTHERHOOD.

The Founders provide continuous support, accountability, and guidance for the organization each academic year.

BROTHERHOOD is a student led organization, but not a student owned organization. BROTHERHOOD is part of the Pitt EXCEL program. The organization does not currently operate as an independent student run organization like NSBE or SHPE. All programs, initiatives, seminars, and workshops are held at the University with the approval of the professional advisor and the Pitt EXCEL program. Additionally, all BROTHERHOOD workshops and functions are guided by 25 tenets (see Appendix H) that the original six founders and advisor established. These tenets serve as the collective guiding value systems the students work from to support, encourage, mentor, and develop each other and the organization.

3.2 Epistemology

I used a transformative paradigm in this inquiry, grounded in an epistemology dedicated to social justice and equity, as well as social, cultural, and racial consciousness. Mertens (2008) says that a transformative approach in research is critical in moving marginalized constructs, ideas, issues, and voices to the center of research. This evaluation of BROTHERHOOD, therefore, was rooted in an epistemology of equity and opportunity for minoritized engineering male students and in trying to understand the social and cultural challenges they face in a PWI. Mertens (2003) states that a transformative paradigm is of “central importance on the lives and experiences of marginalized groups such as women, ethnic/racial minorities, members of the gay and lesbian communities, people with disabilities, and those who are poor” (p. 139). This paradigm is

paramount in the continued labor of equity, opportunity, and agency expression of the Black and Latino males in engineering, and specifically within Pitt's SSOE.

In capturing the experiences of current and former Black and Latino male student BROTHERHOOD, this inquiry sought to disrupt the larger environment and organizational systems within the SSOE. The degree to which such disruptions can elevate the voices and the work within the Pitt EXCEL program, both within the SSOE and beyond, is illuminated in this outcomes assessment. How we come to know the needs and concerns of Black and Latino male engineering undergraduate students, and the institutional structures that support them, is grounded in a transformative lens.

3.3 Reflexivity

Johnson (2013) highlights his personal journey and challenges as a Black male at a PWI. Some of Johnson's (2013) challenges included the significance of race and racism on campus for Black male college students, particularly concerning the issue of having double consciousness and enduring racial symbolism on campus. Double consciousness refers to the constant internal battles that many people of color experience concerning having to prove oneself in an oppressive society (Du Bois, 1968). Johnson (2013) contextualizes racial symbolism as the symbolic acceptance and or celebration of people of color on campus. As a Black man, I relate to these issues and concerns, especially the struggle of navigating the space of PWIs and enduring the various stereotypes and social issues and behaviors that foment heightened levels of racial battle fatigue and emotional distress. My position within this research is quite personal and grounded in life experiences as a

former Black male undergraduate student attending a PWI. Additionally, as a Black staff member at a PWI, and within the SSOE, while working with minoritized students on a personal and intimate level causes heightened levels of relatability, concern, frustration, disappointment, and empathy concerning many of the social issues around culture, race and ethnicity.

Harper and Davis III (2012) contend that higher education can be a liberating experience for Black males, relieving them of the clutches of racism in all its forms. I somewhat agree with this concept. Although education can be one avenue where feelings of liberation or escape from the daily realities of institutional racism, it most certainly is not a fix to the issues Black and Latino men endure. As a higher education practitioner, and as a founder and professional advisor to BROTHERHOOD, I anecdotally recognize how higher education as a holistic experience assists many Black and Latino males with their ability to cope, overcome, and most significantly challenge unhealthy racial climates, hostile and unsupportive academic environments, and racism on campus. Part of the holistic experience within higher education must include mentorship and role models. Without Black role models on campus, I know I would have felt even more isolated and abandoned as an undergraduate Black male student attending a PWI. Having role models is an important part of the higher education experience for men of color (Saenz & Ponjuan, 2011). I have come to view myself as being that role model and supportive higher education practitioner for many underrepresented male students within the SSOE.

The experiences I have felt, endured, and learned from concerning being a Black male undergraduate attending a PWI, and now as a professional practitioner at a PWI, has led me to value and foster mentorship, socialization, and community development within spaces and organizations that promote diversity and inclusion. Knowing the feelings of isolation,

discouragement, and doubt that stems from being Black at a PWI positioned me well for carrying out this inquiry.

My reflexivity also created the potential for bias in conducting this inquiry. Due to my experiences at a PWI, my identity as a Black male, and my role within the Pitt EXCEL program and the BROTHERHOOD organization, I have an interest in the success of the organization. To minimize any potential biases, I reviewed my findings with professional peers that do not work within the area of diversity and inclusion within the SSOE. Verifying my findings with peers who do not work in the same area provided an accountability measure to focus on the inquiry findings and discourage any cultural affectation to supersede the data. Additionally, my dissertation committee members also served as accountability partners to help limit any potential bias in this inquiry.

3.4 Inquiry Approach

Outcomes assessment was utilized to conduct this inquiry (Bresciani et al. 2009). This assessment approach is best utilized when informing, program decision making, reflection, and comparing a program to its established mission (Bresciani, Zelna, & Anderson, 2004). Although BROTHERHOOD is an organization that has officially existed for six years, it continues to evolve and is still in the early stages of implementation and development. Interviewing the alumni who were former leaders in BROTHERHOOD at its earliest conception, as well as current student leaders, provided information to assist in potential organizational improvements and adjustments. The goal of this assessment was to understand areas where the BROTHERHOOD organization

has been successful and to understand where structural and strategic adjustments or improvements are needed.

The type of outcomes assessment utilized for this inquiry is *formative*. Formative and summative are descriptors used to define types of evaluations and assessments (Harlen & James, 1997). A summative evaluation or assessment is conducted at the end of a program or educational experience to analyze the outcomes or levels of success of the educational experience (Bloom, 1971). Alternatively, a formative evaluation or assessment is conducted during the implementation or execution phase of a program to determine if the goals of the program are being accomplished. Andrade and Cizek (2010) state the following about formative assessment.

...a formative assessment is administered midstream, in the course of some unit of instruction. In addition, the primary purpose of formative assessment is one or more of the following: to identify the student's strengths in guiding their own learning, revising their work, and gaining self-evaluation skills; and to foster increased autonomy and responsibility for learning on the part of the student (p. 4).

Although BROTHERHOOD is not a formal classroom setting, instructional learning is part of the BROTHERHOOD experience, aesthetic and culture. Through peer-to-peer, advisor-to-student, and alumni-to-student mentoring, teaching, workshop and seminar development, participating students are learners in a holistic student development experience. Therefore, the implementation, execution, and goals of BROTHERHOOD exhibit student learning as a foundation for participating students. Exploring the ways in which the holistic learning experience of BROTHERHOOD is assisting Black and Latino male students in their development within the SSOE was the overarching purpose of this outcomes assessment. Since BROTHERHOOD was founded seven years ago, the organization is still in its infancy stage. There is room for growth and

improvement as the organization continues to evolve and take on new challenges that come with each passing cohort and generation of students. This assessment assists with the program's continued development.

3.4.1 Sample

Current and former Black and Latino male BROTHERHOOD leaders were sampled for this inquiry. To gain some information about each participant, a demographic collection form (see Appendix I and J) was given to each participant to voluntarily fill out before each interview was conducted. Participants were selected with specific criteria in mind to provide a broad experience for this assessment. Due to time limitations, and the need to interview a balance of alumni and current student leaders, a total of sixteen participants were interviewed for this inquiry (see Appendix K). Concerning the process of determining qualitative sample size, Sandelowski (1995) states,

There are no computations or power analyses that can be done in qualitative research to determine a priori the minimum number and kinds of sampling units required, but there are factors, including the aim of sampling and the type of purposeful sampling and research method employed, which researchers can consider to help them decide whether they have collected enough data. (p. 179).

Determining the sample size in a qualitative study is mostly a judgment call (Sandelowski, 1995). Studies can be too big or too small, but much is determined by the intent and design of the study (Boddy, 2016). Since there have been roughly sixty total current and alumni leaders since BROTHERHOOD's founding, utilizing sixteen participants was the number chosen for this study

to provide a balance between having too many participants and not quite enough to provide a depth and breadth of relevant information for the formative assessment.

Simple random sampling was used to identify the participants. First, I developed a list of all former and current BROTHERHOOD leaders by using the Pitt EXCEL student database from 2012 to 2018. From this list, I created a list of current leaders and a list of alumni leaders. From these two lists, I created separate lists of the identifying Black and Latino current leaders and the Black and Latino alumni former leaders. I then sent an invitation to all current and former Black and Latino participants from the current and alumni leaders' lists. I then used the first eight current leaders and the first eight alumni leaders that responded to the invitations while keeping room for a mixture of Black and Latino representation. The final sample comprised of five Latino participants (three alumni and two current students), eleven Black/African American participants (five alumni and six current students), four graduate student participants, three professionals working in industry, one entrepreneur, seven senior participants, and one junior participant.

3.4.2 Data Collection

Many methods can be utilized to collect data for an outcomes assessment (Bresciani, et al. 2009). I used a qualitative method using semi-structured, open-ended interviews to draw unique and personalized narratives from the students interviewed (Cohen & Crabtree, 2006). I utilized this qualitative method to interact with the participants on an interpersonal level and to provide a space for them to share their individualized experiences. Divergent discussions arose, but these discussions were formidable in pulling more information about the holistic experiences of the current and former BROTHERHOOD leaders. Open-ended interview questions provide space for

the interviewee to explore their thoughts and allow time for follow-up questions by the interviewer (Turner III, 2010). Using interviews as the main form of data collection provided the necessary space for participants to express their thoughts and ideas about BROTHERHOOD with the freedom to be critical and reflective of their own individual experiences and needs.

Recruitment and consent. All current and former BROTHERHOOD leaders were emailed a recruitment letter inviting them to participate in this study (see Appendix L and M). Interviews were conducted in person with students and alumni who are living on Pitt campus or in the Pittsburgh area. Interviews were conducted via telephone for those students or alum who do not reside on Pitt campus or within the Pittsburgh area. In addition, identified student and alumni participants were provided a written consent form (see Appendix N) to review and sign at the start of the interview granting their permission to be interviewed for this inquiry.

Interview questions focused on the experiences of current and former BROTHERHOOD leaders. I created two interview protocols (see Appendix O and P), one for each group of participants. The questions were designed to address and draw upon the unique experiences of current student leaders and alumni concerning the organizational influences BROTHERHOOD has had during their time in the SSOE. Particular emphasis and attention was placed on 1) ways in which BROTHERHOOD has helped students and alumni deal with and overcome any issues around race, racism, culture, or any social hindrances in their personal growth and development as engineering students and as young men. 2) areas where BROTHERHOOD has contributed to students' and the alums' individual empowerment, leadership development, and their self-awareness.

3.5 Data Analysis

I coded the data through inductive thematic analysis by pulling emerging and dominant themes from the interviews. Fereday & Muir-Cochrane (2006) explain thematic analysis as,

a search for themes that emerge as being important to the description of the phenomenon.

The process involves the identification of themes through “careful reading and re-reading of the data” It is a form of pattern recognition within the data, where emerging themes become the categories for analysis. (p. 82)

Additionally, Boyatzis, (1998) explains thematic analysis as a way of seeing, or a way of making sense of material. Boyatzis (1998) further states, “Thematic analysis enables scholars, observers or practitioners to use a wide variety of types of information in a systemic manner that increases their accuracy or sensitivity in understanding and interpreting observations about people, event, situations, and organization” (p. 5). Thematic analysis makes qualitative research available to a wider audience (Braun & Clark, 2014). Thematic analysis provides patterns of meaning. This approach enables qualitative research to extrapolate meaning without becoming entrenched in some of the more the complexities of qualitative data analysis (Braun & Clark, 2014). Furthermore, thematic analysis enables a researcher to extrapolate broader context of meaning within the data (Alhojailan, 2012)

An inductive coding approach enables the themes found within the study to formulate from the bottom-up (Ormston et al. 2014). In other words, themes are identified, which lead the researcher to develop and construct ideas about the larger narrative concerning the experiences and expressions of those interviewed. The identified themes provided a foundation for further analysis within the assessment. These themes provided the necessary information to crystalize the

ways in which BROTHERHOOD is assisting or has assisted current and former Black and Latino male leaders through their educational, social, and professional tracks within engineering.

I manually transcribed each interview. Then colored coded various similar concepts and statements throughout each transcription and placed those statements and concepts in an Excel spreadsheet. I then categorized the statements and concepts with identifiers in another Excel spreadsheet to create themes. I did this process several times until the dominant themes emerged from each interview. I then separated those dominant themes and categorized them under three key findings.

3.5.1 Trustworthiness

A four-person committee including my advisor, two Pitt faculty members, and a higher education practitioner holding a terminal degree, increased trustworthiness of this inquiry. In addition, to ensure a level of trustworthiness in my study I utilized peer debriefing. Peer debriefing is the process of using a peer, ideally with an external lens, to review or debrief a researcher's transcripts, themes, and findings (Anney, 2014). Creswell and Miller (2000) explain peer debriefing as a support and accountability partnership stating, "A peer reviewer provides support, plays devil's advocate, challenges the researchers' assumptions, pushes the researchers to the next step methodologically, and asks hard questions about methods and interpretation." (p. 129). Spall (1998) states that, "Peer debriefing contributes to confirming that the findings and the interpretations are worthy, honest, and believable." (p. 280). I sought the assistance of a peer within the SSOE, but not with the Office of Diversity. I asked this peer to review all transcripts and the themes identified to determine if they are clear and accurate. Utilizing peer debriefing is a useful

way to hold a qualitative researcher accountable to the processes and application of their research inquiry.

3.6 Limitations

This inquiry presented several limitations worth considering. First, there are approximately forty-five total male students who are and/or have been BROTHERHOOD leaders. The time constraints of this inquiry limited my ability to interview all forty-five BROTHERHOOD leaders, some of whom may have provided deeper information for this evaluation. Secondly, this inquiry solely focused on the experiences of current and former BROTHERHOOD leaders. The experiences and opinions of current general members and alumni who were never official BROTHERHOOD leaders were not considered. The experiences and opinions from these students and alumni may be important for a more comprehensive program assessment. Also, statistical information was not drawn from this inquiry due to the qualitative approach. However, a quantitative analysis, including graduation rates, retention rates, grade point averages, and other pertinent academic data, would be helpful for a future evaluation of the organization.

This outcomes assessment also only included the narratives of current and former BROTHERHOOD leaders who identify as Black and Latino. Although Black and Latino students are the primary racial/ethnic groups that form and have formed BROTHERHOOD leadership teams, there are and have been a few current and former leaders who do not identify as Black or Latino. It would be interesting to hear their narratives and identify any emerging themes from these students for a further assessment and analysis.

Program assessment is limited in providing information applicable beyond the program or educational outcomes being assessed. Astin and Antonio (2012) state, "...assessment results are of most value when they shed light on the casual connections between educational practices and educational outcomes." (p. 10). Additionally, outcomes assessments may assist in program evaluation but it is not an evaluation (Bresciani et al. 2004). Therefore, this assessment is limited in being utilized as a program evaluation tool.

Lastly, semi-structured interviews may lead the interviewee to deviate too far from the main point or question at hand (Brinkmann, 2014). Therefore, a semi-structured interview protocol may have provided the interviewee the space to elaborate and expand upon their experiences beyond the scope of BROTHERHOOD. Although BROTHERHOOD is part of a larger ecosystem of institutional support, an analysis on how BROTHERHOOD functions and contributes within that larger ecosystem has relevance. However, this inquiry was limited to an outcomes assessment of BROTHERHOOD and not other organizations, systems, or programs that may support Black and Latino male engineering students in the Pitt SSOE.

3.7 Conclusion

The purpose of this inquiry was to analyze the experiences of current and former Black and Latino male engineering students in the BROTHERHOOD organization. A qualitative, outcomes assessment, utilizing semi-structured interviews provided the opportunity to measure the effectiveness of BROTHERHOOD as a young and evolving organization in assisting Black and Latino males through the various social stressors they experience within the SSOE. The

epistemology of the research is grounded in a transformative paradigm as issues of race, culture and ethnicity are critical in the assessment of BROTHERHOOD and the students the organization supports. With this approach, I identified themes that assist with the development of BROTHERHOOD as a functional and supportive organization for Black and Latino males within Pitt EXCEL and the Office of Diversity in the SSOE at Pitt.

4.0 Chapter 4: Findings

Current leaders and alumni shared their perspectives and thoughts pertaining to the BROTHERHOOD organization, which brought many issues to light that are relevant to this formative program evaluation. Specifically, three prominent findings emerged that shed light on the BROTHERHOOD experience. These findings include: (1) outcomes of participation, (2) organizational structure, (3) future directions. Outcomes of participation is identified as areas where BROTHERHOOD is succeeding primarily through the workshops, peer-to-peer engagement, social events, and the leadership selection process. There was a nuanced opinion concerning the organizational structure. This nuance is highlighted in the participants' appreciation for leadership autonomy, but the need for stronger leadership accountability. Important to this outcomes assessment, areas of improvement were identified and listed in the future directions finding.

4.1 Outcomes of Participation

Four outcomes of participating in the organization emerged from the interviews with current BROTHERHOOD leaders and alumni. These outcomes include: (1) manhood and masculinity, (2) race, cultural pride, and leadership development, (3) mental health support, (4) preparation for post-undergraduate life. Specifically, these outcomes emerged as participants discussed BROTHERHOOD workshops, the tenets, and peer-to-peer engagement. The four

outcomes can be best explained as providing a level of social and emotional support for the current leaders and alumni both during and after their SSOE undergraduate experiences.

4.1.1 Manhood and Masculinity

Manhood and masculinity were prominent themes throughout all the interviews. Challenging the stereotypes of manhood and masculinity, exposing and addressing toxic masculinity, and promoting and advocating healthy masculinity is a fundamental part of the BROTHERHOOD leaders' experiences in their workshops, social events, and peer-to-peer engagements. Respondents talked about how they experienced the development of their manhood within BROTHERHOOD workshops as guided by the tenets. James stated,

One of the things BROTHERHOOD has helped me overcome is learning what it means to be a man. In that, a man does not always have to be this vibrato, chauvinistic, like, 'I get all the girls, I got all the money'—it doesn't have to always be that. It is cool to be confident in yourself but you have to make sure you walk that fine line between confidence and arrogance.

Ramon identified the tenets as the source in changing his views and understanding of masculinity, stating,

The tenets actually have eradicated in my mind what was masculinity—which was toxic because every man has his own personality but that does not make him any less of a man compared to others. I used to think like, 'Ok a man needs to protect and provide,' and they do, but I used to think, 'Ok if they are to provide that means they should probably be able to use their hands and fix things around the house.' But that is not necessarily true. If their

way of providing is being able to hire a handyman to do that work for me that does not make them any less of a man.

Similarly, Michael stated,

BROTHERHOOD helped me get a different perspective on manhood and masculinity. That is the beautiful thing about BROTHERHOOD. You find yourself not having to fumble through your own thoughts about manhood but you can hear about manhood from other men to help better understand it for yourself.

Current leaders expressed coming into a stronger, more productive, and clearer understanding of the concept of their masculinity and manhood. Many claimed that BROTHERHOOD helped to reject ideologies, feelings, and behaviors that is promulgated within society about manhood as toxic and harmful. James' experience in BROTHERHOOD illustrates his growing and conceptual development concerning manhood and masculinity in rejecting the ideas and behaviors of chauvinism, misogyny, and a tough-guy attitude or disposition. He identifies these behaviors as toxic masculinity and shares that BROTHERHOOD has been a vehicle whereby learning and sharing about manhood challenges these ways of thinking and behaving and has allowed him to focus on other ways of being strong and confident as a man that are more healthy and constructive.

Michael's expressions highlight that the community of BROTHERHOOD and the dialogue between the participating male students has helped him better understand manhood. Clearly, listening to other men's experiences, and understandings and feelings of manhood and masculinity has provided a perspective and a freedom to explore concepts of manhood and masculinity in his own way. The same can be said about Ramon's experience. Ramon attributes the BROTHERHOOD tenets as his guiding compass concerning conceptualizing and challenging stereotypical constructs of manhood and masculinity.

For Ramon, the idea of a man having to exhibit certain stereotypical skills and or abilities is not what it means to be a man. Men have different abilities, desires, and ways of understanding, behaving, and doing. It is this construct that he has found helpful and constructive in his own masculinity and manhood conceptualizations. Diversity of expression and ability, challenging manhood or masculinity stereotypes, and rethinking and reimagining the very concept or behaviors of masculinity is a major takeaway that many of the current leaders experienced in BROTHERHOOD.

The alumni also reminisced on how their experiences in BROTHERHOOD helped shape their understandings of masculinity. Guillermo stated,

I started with BROTHERHOOD before it was called BROTHERHOOD—back then it was just the men’s forum. I remember the first workshop was “The Mask of Masculinity.” It was interesting. I remember you could tell there was some guys trying to demonstrate this traditional sense of masculinity. You know the, ‘I get girls....I’m very confident....I’m dominant,’ that kind of deal. But then you had guys saying that it didn’t have to be that way. And I remember some of the guys saying how they didn’t party that much and that that was ok. And I am sitting there partying a lot, and it was just an opportunity for my mind to begin opening up about masculinity. What it is? And how do we shape it?

Mitch added,

BROTEHROOD has reinforced that manhood is not about being cool, or being dismissive, or reacting harshly to anything that is negative that comes my way. It has taught to me to emotional, to be in touch with my feelings, in touch with my spirit. It keeps me measured, and calm. This is in accordance with the tenets we founded BROTHERHOOD on.

Lastly, Malcolm said,

BROTHERHOOD reshaped the way I thought about a lot of things. Coming from the inner city and from a southern family, I really had only one idea from my dad and his family about how to be a man. You know, not showing emotion and being this type of tough person. Where I am from, how much money you make determines who you are. How many girls you get determines who you are. So you know, BROTHERHOOD challenged a lot of that in me.

As the alumni leaders reflected on their experiences concerning BROTHERHOOD's impact on their perceptions, attitudes and behaviors concerning manhood and masculinity, many expressed similar understandings. Guillermo reflected to the first workshop that discussed how many wear masks to disguise or hide their pain, emotions, weaknesses, and vulnerabilities. He shared that in listening to his peers discuss manhood from differing angles during that workshop, he was stirred to self-reflect on his own interactions and behaviors as a developing man. Mitch discussed how the BROTHERHOOD tenets shaped in value system concerning manhood and masculinity. For Mitch, the experiences in BROTHERHOOD reinforced his value as a man of emotions, sensitivities, calm and levelheadedness. In addition, Malcolm shared how BROTHERHOOD helped him challenge and unlearn some of the thoughts and traditions he gained from his family and environment growing up concerning manhood. His experiences in BROTHERHOOD has enabled him to consider new ways of thinking about his own masculinity.

4.1.2 Race, Cultural Pride, and Leadership Development

BROTHERHOOD appears to have had a profound influence on the leaders' further identifying with, clarifying, and validating their racial and cultural pride, and personal agency and leadership development in conjunction with their engineering, social, and professional development. James expresses BROTHERHOOD as an empowering experience, stating,

I think BROTHERHOOD encourages men, particularly Black men in the Swanson School, to seek opportunities to be a leader in other organizations and to take leadership roles in the things that excite them and that they enjoy.

And Manuel said,

BROTHERHOOD leadership has helped me with confidence. Being a part of BROTHERHOOD has given me confidence to speak out on underrepresented issues on campus and within the Swanson School of Engineering. I no longer feel uncomfortable going to any of the deans, or presenting an issue that I see to my department head; and I attribute this mainly to my role in leadership in BROTHERHOOD.

Ike expressed BROTHERHOOD leadership as an experience and space that fostered his personal agency, confidence and comfort in self-expression within White dominated space as a Black man, saying,

....we don't have to pretend. We don't have to put on a White voice. We don't have to code switch. You can be the natural Black man that you are. You do not have to try and fit in. There are guys from the streets, guys whose brother sold drugs, guys whose fathers are in prison. But then there are guys who were raised in the church, guys who come from strong

families and prosperous communities. So that diversity of Blackness goes a long way in making me feel comfortable, understood, and supported as a Black man.

Ramon discussed the tenets as catalysts in motivating him to embrace his call to leadership, stating, “The BROTHERHOOD tenets really had an effect on how I feel with leading other people. I was just going to wait forever to exercise my leadership, but the tenets spoke to me and said, ‘It’s time. You’re needed.’” Jacob added to this sentiment in simply stating, “BROTHERHOOD has shown me that as a Black man, I matter.” Joseph also articulated Black campus leadership empowerment by highlighting BROTHERHOOD as a platform for Black male engineers to be visible and involved in the campus community, “In my opinion, Black leadership on Pitt’s campus doesn’t really include Black engineers as much. So I feel like BROTHERHOOD has given Black engineers a platform to lead and impact the community in positive ways.”

Connections made between race and leadership development demonstrates areas where BROTHERHOOD is fostering greater senses of accomplishment and purpose beyond the curriculum in engineering. As Joseph explained, BROTHERHOOD has served as a “platform” whereby students can express their gained confidence, sense of belonging, and agency to move out in various areas on campus without fear and without compromise. These experiences are indeed encouraging, as BROTHERHOOD is not simply a space for reflection and encouragement, but it is also a space for empowerment. BROTHERHOOD is not a space to simply help students cope with the challenges and isolations that may come with being an underrepresented male engineering student at a predominantly White institution. It is also about students taking control of their experiences, claiming their space, and fostering a sense of engagement with their community to forward their interests and goals.

Personal agency and empowerment in leadership has been birthed out of the BROTHERHOOD experience for many of the current leaders. The intent of the founders and the founding advisor was indeed to create an organization that provided for the underrepresented male student population in the SSOE a stronger sense of self-determination and empowerment in leadership and in their communities. Manuel expressing his heightened confidence in approaching administrators and staff with certain problems or issues he faced as an underrepresented engineering student demonstrates a connection that BROTHERHOOD has made in encouraging students to express themselves and exercise their agency in predominantly White spaces.

Ike mentions the power of not having to compromise oneself as an underrepresented student. Feeling assured in his own racial and cultural identity has been gained through his BROTHERHOOD experiences. He also mentions the concept of “diversity of blackness.” This is an important issue in discussing cultural and racial pride. Ike articulates that acknowledging and celebrating diversity within the Black experience has been an important experience within BROTHERHOOD that has helped him feel even more comfortable and empowered as a leader. There is no one way to be Black or Brown, nor no one way to interpret Black or Brown. Celebrating and promoting diversity within diversity is an important concept for further expressing and validating personal agency and racial and cultural pride for the men of color.

Ramon shared how BROTHERHOOD motivated him to action by embracing leadership and moving out in confidence to engage his community as a leader. And James explained how the organization has encouraged him to take on leadership experiences in other organizations. Each of these experiences demonstrate ways in which the experiences within BROTHERHOOD has encouraged current leaders to embrace their identities in leadership.

Alumni expressed their desires to continue their leadership engagement they learned through BROTHERHOOD. Corey discussed his desires to continue to foster his leadership at his place of employment, stating,

After being a part of something as powerful as BROTHERHOOD, I found that I still want to lead. So today I led a round table discussion for people in my leadership development program at my job. And I followed the same format as we did in BROTHERHOOD....To this day I still look to connect to a community that aims to help people develop. It was such an empowering thing that I realized I can't be without it.

Likewise, Malcolm said,

A lot of stuff I am using as the lead of my development program is a lot of the informal relationship building things. The efforts to form a type of family like BROTHERHOOD did to create that special unit or network.

Corey and Malcolm both express that they have implemented values and methods they gained through their BROTHERHOOD leadership experiences into their current leadership responsibilities in their work. BROTHERHOOD instilled a desire to continue to lead beyond college. It is evident that leadership was understood not simply as an exposé of student organizational involvement on campus, but as a way of living—something that is to be carried out in life holistically. The value of using their learned leadership to change systems, or to enhance organizational experiences, is a special quality that was brought forth through BROTHERHOOD for these former leaders.

Wayne expressed a deeper connection to leadership through his racial identity saying,

When I was in high school, I never asked for help. I didn't think as a leader, a Black man could ask for help without being seen as weak, lazy, or incompetent. But you know, brothers in BROTHERHOOD ended those feelings. I learned the power of being a Black

leader is the ability to lean on and learn from others. I learned it was ok to trust my peers and it helped me graduate as a Black engineer.

For Wayne, stereotypes about Black leadership had a negative effect on understanding himself as a leader in undergrad. BROTHERHOOD has helped him dismiss notions that a strong, capable, and competent Black leader cannot seek help. This new way of thinking and envisioning himself as a Black male leader encouraged him in his leadership development as an engineer.

4.1.3 Mental Health Support

Some of the current leaders and alumni experienced emotional and mental health situations that affected their ability to navigate their place in the Swanson School of Engineering. A common theme around managing and overcoming certain mental health or emotional roadblocks was prevalent in the interviews. Ramon shared a personal story with me concerning some hardships he was dealing with in his family, stating,

BROTHERHOOD helped me get through some tougher times—like my dad and my sister not getting along. And although I didn't share on this openly in the workshops because I like to deal with things like that and process things first before fully expressing them...[the incarceration and sudden death of a family member].

Similarly, Joseph discussed his mental health struggles in the context of fear. Not feeling as if he has the capacity to share certain emotional situations with his White peers, faculty, or staff is a significant point. Joseph tends to hold onto his feelings and deals with them internally, yet BROTHERHOOD provides for him that necessary release of emotion. He stated,

BROTHERHOOD has been helpful for my mental and emotional health....It's a great release for people that have been holding onto things for so long....being Black in engineering can really be lonely. You really feel alone in the classroom especially.... Sometimes what we need is just to get things off our chest that we feel we have to hold in and can't share with White people.

Ike attributes the mental and emotional support found within BROTHERHOOD as an experience that helped keep him in engineering, stating,

BROTHERHOOD has been helpful for my mental and emotional health. It has been a good source of peer to peer leadership for strengthening and developing people....As much as I was in a slump and really struggling to keep my energy up and stay motivated and want to keep going, if it weren't for the brothers in BROTHERHOOD I know I would have been in a much worse situation—probably would not still be at this university.

And Juan shared the ability to freely and openly express his emotions as salient for his emotional and mental health, stating,

In the academic system there is often a lack of support, especially with young minority men. A lot of times guys don't feel as if they can speak from their heart. If something is bothering us a lot of times we have to bottle it up or express it in ways that can be negative. BROTHERHOOD was created to give young men a support system and a place where we can know that it is ok to feel sad, that it is ok to express anger, but this is how you deal with it.

BROTHERHOOD workshops, social events, and interactions between peers is a safe space for emotional release. The ability and freedom to share intimate, private, and personal feelings and experiences is prevalent among many of the leaders. Both Ramon and Joseph's challenges within

their school experiences in the SSOE, and in their personal lives, have waned on their mental health. The outlet to discuss their feelings, and listen to the experiences of others through the dialogue and interactions within the organization has assured them that they can overcome the emotional burdens they face.

Many underrepresented male students keep emotional pains to themselves. As Joseph expressed, many times out of distrust, or feelings of loneliness, or not feeling safe to share in the dominant White space. However, within the diverse safe confines of BROTHERHOOD, students have expressed the freedom to open up is an important opportunity for emotional and mental healing. Ike shared how through the peer-to-peer support found within BROTHERHOOD he was able to find refuge from the emotional and mental challenges he was facing. He attributes this support system to retaining him at Pitt. For many current leaders and alumni, BROTHERHOOD serves as a space where some of the most sensitive and private experiences can be discussed and shared, and this is an important function of the organization concerning creating an environment of support and safety. As Juan shared, there tends to be neglect of the emotional and mental needs for men of color in higher education. The safe and supportive space to express feelings, thoughts, and emotions without judgement has been important for his emotional and mental support also.

4.1.4 Preparation for Post-undergraduate Life

BROTHERHOOD alumni expressed ways in which their experiences as undergraduate leaders prepared them for some of the challenges, opportunities, and realities of life after college. Guillermo recalled the feelings of overconfidence he had as an undergraduate engineering student and how the BROTHERHOOD experience humbled him. He said,

When you're in college, especially as an engineering student, you feel like you're the shit. You know—we are the hardest major. We get great jobs when we graduate. We get co-ops while in school—and you think you're the shit. You think you know everything. But, what BROTHERHOOD shows us is, we're not the shit, and we don't know. everything. It brings about that humility that is so vital especially for beyond undergrads.

Removing the sense of invincibility, or an attitude of privilege, appears to have been an important part of Guillermo's journey as an engineering student. BROTHERHOOD provided a healthier way of channeling his confidence. Humility is a key characteristic that came from his BROTHERHOOD experience, a characteristic that Guillermo finds important now as an engineering graduate student.

Wayne shared the impact that BROTHERHOOD had in allowing him to understand his engineering education as a tool that opened him up to other professional experiences beyond the field. He said,

BROTHERHOOD helped me come to the realization of what I want to do in my life.

Whether I go into counseling or therapy or whatever it may be, we will see, but I know I want to start with helping people by talking and sharing with me.

Oftentimes engineering students can feel locked into the field of engineering. They fail to comprehend that the knowledge, study skills, discipline, problem solving skills, and research skills they obtain in their engineering education can be applied and exercised in so many different professional areas. Engineering is in everything, and Wayne gained this insight from his experiences as a BROTHERHOOD leader. He is now open to widening the scope of his career ambitions outside of engineering with confidence by drawing on the lessons that he gained while in BROTHERHOOD.

Malcolm discussed the skill of listening and taking in information as a fundamental skill attained through BROTHERHOOD that is helping him in his current profession, stating,

For me in my profession, learning how to listen more is what BROTHERHOOD has helped me with. In BROTHERHOOD, although I didn't always agree with all that was being said, but the way we went about the dialogue helped me understand how listening can help shape my own thoughts, feelings, and emotions about things. Listening skills is essential in life after school.

For many of the alumni BROTHERHOOD has provided some tangible and transferable skills that is being utilized to grow them in their professional places of employment. The experiences gained through the dialogue and peer-to-peer engagements has not only shown to be advantageous in navigating through the emotional, academic, and social stressors of engineering, but some important social and professional soft-skill sets are also being acquired for the men of color through the BROTHERHOOD experience that can be utilized in their professional careers.

Rick discusses how BROTEHRHOOD encouraged him to diversify his interactions and trust more in others, saying,

BROTHERHOOD has had a ripple effect on what I am doing now in my life. I can now take the council or the support of a White man much easier now because I have seen White brothers in BROTHERHOOD love on me. When I was growing up, I didn't have White people supporting me. But, BROTHERHOOD exposed me to that experience with White people and I can now take that into the graduate school experience and make those meaningful relationship with certain White people, which is essential.

One of the more important aspects found within the BROTHERHOOD experience is not only encouraging men of color to cope within White space, but developing the courage and resolve in

navigating and taking control within White space. Rick expressed through interacting with White peers within BROTHERHOOD he gained a deeper appreciate for interracial brotherly bonds. Through his experiences fellowshipping with not only the men of color in BROTHERHOOD, but also with some of the White male students who have participated in BROTHEROOD, he has gained a more productive perspective that has led him to have the necessary confidence and trust to work with White men in his post-undergraduate experiences. This lesson is salient as White males dominate the field of engineering. Men of color must challenge and encourage themselves and each other to work, lead, and follow co-workers and colleagues who may not look like them or have similar social and cultural experiences in the field.

4.2 Organizational Structure

The BROTHERHOOD organizational structure was designed to operate in a different capacity than most student led organizations. The organization is structured to provide student leaders a high degree of independence, autonomy, and freedom. There is a nuanced opinion of the organizational structure. Overall, students appreciate the freedom, autonomy, and respect the structure provides, however they also feel the structure fosters inadequacies in leadership accountability.

Most student organization leaders are selected through voting or applying. BROTHERHOOD leaders however, are appointed by observational selection. The advisor and the leadership team members actively and strategically observe and evaluate student participants beginning in their first year. Members are assessed by their workshop and social events attendance,

their participation in workshop dialogue, by their engagement with their peers on campus, and how they generally carry themselves outside the BROTHERHOOD organization.

4.2.1 Leadership Structure

Unlike most student organizations where the leaders have assigned titles, positions, and roles, the leadership structure of BROTHERHOOD is set where roles (except for the Captain and Co-captain) and responsibilities are defined as the student leaders see fit. Michael shared his thoughts on the uniqueness of the BROTHERHOOD leadership structure, stating, “It is an interesting structure. I haven’t seen anything like it. The organic structure lets people gain a feel for the organization and an ownership to shape the organization without fear.” Manuel expressed how the leadership structure functions to provide a level of stability and unity amongst the students, stating, “Professional structures in other organizations seem to create rifts between leaders and the general body. Within BROTHERHOOD, the leadership is integrated within the leadership and general members.”

Jacob also appeared to value the organic structure of leadership positioning. According to Jacob, selection of leaders distinguishes BROTHERHOOD from other student organizations he has been a part of. Jacob credits this system to providing opportunities to engage his leadership more freely, not having to worry about assigned positions from voting. He stated,

When I first came into BROTHERHOOD I didn’t understand it. I thought it was going to be like NSBE or some other group where you know we vote on positions and stuff. But as I grew and become more involved I realized that, oh ok, this is more free flowing and I actually like that better than structured organizations....Other leadership organizations lock

you into a specific leadership area. But, BROTHERHOOD gives autonomy to be more expressive and flexible in leadership interest.

The student leadership structure fosters stronger community amongst the leaders, and provides freedom to lead without the pressure of expressing leadership within the limitations of an actual defined and structured role. Student leaders and general body members can more aptly see themselves as co-laborers, or equals. There is less of a top down, hierarchal expression of leadership, both within the leadership team and within the general body. This expression and experience in leadership enables the leaders to feel they can be themselves, which strips certain barriers between the leaders and the students they lead. BROTHERHOOD depends on openness, transparency, and honesty amongst the leadership team, between the leadership team and the advisor, and between leaders and general members. The more students feel equal to one another, the more they feel they can relate to one another, and the better leaders can engage their peers on interpersonal, social, and emotional levels.

4.2.2 Leadership Selection

Although BROTHERHOOD is not an independent student run organization, meaning the organization is housed under the SSOE undergraduate diversity program (Pitt EXCEL), the leadership structure creates a student leadership centered expression of independence that governs the direction and general operation of the organization. The current students appear to enjoy several components of the leadership structure. Perhaps the greatest appreciation is in the student leadership selection process. Student leaders expressed that they really appreciate the selection process of leadership teams. Joey, a junior, mentioned his appreciation of leadership selection,

which is done by the advisor and the leadership team members over time, as an important function of the leadership structure. He said,

I like how it is set up where the leaders chosen are proven over time—that they have a commitment to the organization. You know there are other organizations where leaders take on those positions to have as a resume builder, but the way we are structured you have to prove yourself overtime and that provides a sense of commitment to the organization beyond self-ambitions.

Ramon interprets the leadership selection process as essential in providing a sense of maturity and wisdom to the Foundation teams. He stated,

BROTHERHOOD is a special type of thing, so it needs a different structure than most. I think the structure we have now is really because when dealing with the emotions of other people you need to pick, not necessarily only people that excel in grades or like varsity captains, but you need people that have a strong mental health and also people who can understand or empathize with other men having troubles....

Observational selection appears to be a strength for BROTHERHOOD leadership, which includes the process of grooming potential leaders by watching how they interact with their peers from their first year, observing how students navigate their experiences in the SSOE, and taking note of their involvement and commitment to BROTHERHOOD. All these actions appear to be important in measuring the level of seriousness potential leaders will bring to the leadership.

Joey's discussion about how observational selection removes the common reasons student leaders get involved in student organizations, which is often to enhance their own ambitions and resumes, is an important point to note. So much of the relevance of BROTHERHOOD hinges on student leaders' selflessness. In fact, "A man is selfless" is one of the foundational tenets of the

organization that guides the students in their development. And the point about maturity, wisdom, and experience is also significant. “A man is to be wise and a keeper and disseminator of knowledge” is another one of the tenets. BROTHERHOOD leaders must have the capacity to lead their peers from a certain level of maturation. The way in which the leaders interact with their peers, the topics they discuss, and the knowledge they pass down really is the foundation of the organization’s successes. If observational selection for the leadership team helps foster wiser and more mature leaders than student voting would, then this is definitely a salient point.

4.3 Future Directions

Current and alumni leaders also expressed several prominent areas where the BROTHERHOOD organization can make some improvements. Four themes emerged as areas of improvement, including, (1) leadership accountability, (2) alumni engagement, (3) expansion and campus presence, and (4) inclusion.

4.3.1 Leadership Accountability

The data illustrates that although students appreciate and respect autonomy in the leadership structure, there still needs to be some level of organized, traditional, and clearer administrative structuring within the peer leadership system for the purposes of accountability. Jacob articulated how the organic structure that lacks detail causes confusion amongst leadership members and fosters a system that lacks accountability.

BROTHERHOOD leadership should be able to be easily explained to others. It shouldn't be a mystery—like you have to be in BROTHERHOOD to understand how our structure works. So, there needs to be some kind of by-laws or constitution that highlights the leadership breakdowns.

Jacob discussed the issue of accountability as it relates to the ability for student leaders to thoroughly and adequately communicate BROTHERHOOD to others, both within the organization, and beyond the organization. The leaders need to be accountable to the general members. If the general members lack an understanding of the organization's leadership structure, they may not be as well prepared to serve as leaders themselves. The general members may also not understand or respect the roles or authority of the leaders beyond what they see at the workshops. Jacob thinks that the best way to create a better understanding of the leadership structure is to have these structures formally written so that not only are the leaders more understanding and accountable to the positions, but also the general members.

James also expressed his concerns about the lack of accountability due to the autonomous culture within the leadership team system, stating,

One thing that needs improvement is getting everyone involved. One of the hard things about being a leader is that some leaders are movers and shakers, and some are, you know, doers and takers, for lack of a better term. You know what I'm saying? I think the biggest thing is more administrative and advisory support for the guys who do a lot of the moving and shaking and pulling up the guys who do more of the doing and taking.

James suggests that there is an unequal and perhaps even unfair consequence regarding the work and commitment of the leaders that the autonomous leadership culture advances. The lack of defined roles and positions fosters a culture among the student leaders where students who are

more available, more experienced in organized leadership, more accustomed to independent leadership, have more of a know-how, or are more dedicated to the work of BROTHERHOOD, get stuck having to do much of the work within the organization. There is an assumption built into the leadership structure that students will automatically understand their roles, or have the capacity to create and define their own roles, but James suggests that the opposite happens. With no established direction or concrete guidance within their leadership positions, students can operate as they see fit, which sometimes may not be adequate, depending on where the students are in their own experiences in organizational leadership.

Juan expressed his concerns regarding accountability from the perspective serving as captain. He stated, “Accountability was often on me as a captain. It was hard because I didn’t always want to push people. So I definitely feel more shared accountability needs to take place among foundation members.” The captains may inadvertently feel the need to take on more responsibilities because the structure lacks a way for leadership accountability to be enforced collectively. Since there are no defined roles, this permits certain students less accountability to any expected or assumed roles because the reality is that no specific roles beyond the captainships actually exists for the leadership team.

4.3.2 Alumni Engagement

Alumni engagement is an area where many of the current leaders expanded their discussions. Many current leaders expressed their appreciation and thankfulness to the BROTHERHOOD founders and alumni; but they yearned for a more prominent role for the alumni to take to assist in the growth and expansion of the organization. Ramon stated,

The alumni can be a little bit more involved. I know they have their jobs and professions, but the one thing I really enjoyed is our all Foundation call—we haven't had that in a while. I found that really crucial in getting everyone connected. I mean if they could fly up for a workshop at least once a semester that would help make longer lasting connections, especially with younger ones. If this happens I think the leadership and general body will feel more comfortable going to them with questions or issues relating to BROTHERHOOD.

According to Ramon, alumni are important leaders in the BROTHERHOOD experience in relation to connecting with the current students to foster more comfortability in seeking support, advice, or addressing issues concerning the direction of the organization. The leaders' "Foundation call" (*Foundation* being the name for the leadership team, and *call* referencing a periodic conference telephone call between current leaders and alumni) has been a strong way to keep the leaders and alumni connected. However, without these kind of consistent and intentional connections between current leaders and alumni, it appears that students may not feel comfortable with engaging the alumni because they do not know them well enough. Perhaps if the student body, and even the leadership team, would see and hear from the alumni more frequently that would create relationships between the alumni and the current leaders that could encourage the organization to strategically utilize the alumni more often.

The alumni network is an important structure that is intended to help BROTHERHOOD grow and expand. The alumni serve a vital role in the health and development of BROTHERHOOD. Guillermo discussed this alumni network in saying,

I feel like I have been doing kind of a bad job, because I haven't been able to attend the Founders Day and stuff like that. I think one thing that is cool in this lineage that forms out

of BROTHERHOOD is that the younger generations feel they can reach out and ask those in the older generations questions or issues that they may not feel comfortable asking you for example. It's a cool network to have. So the way I see my role is to continue to support the growth of BROTHERHOOD in any way I can. I want it to continue to grow, not only at Pitt, but at other institutions.

Guillermo identifies the alumni network as a "lineage." In other words, former BROTHERHOOD members are to maintain their identity as BROTHERHOOD leaders beyond their undergraduate careers. As these alumni go into industry or academia, a vibrant network should naturally blossom to create and then sustain a pipeline of BROTHERHOOD support within various industries, graduate programs, and academic institutions. Guillermo acknowledged however, that he has not done a good job at actively fostering this desired alumni lineage. However, he does understand its significance and the potential that exists for BROTHERHOOD if the alumni consistently and productively forward a network of support.

Amaru, also believes the alumni connection needs to be stronger. He states,

Incorporation of alum could be better, especially outside of the original founders. If every so often we could bring back some of those alum from their respective graduate schools or industries. Just incorporating them would be a real benefit to the organization.

It is clear Amaru believes a more strategic and diligent effort in getting the alumni back needs to happen within the organization. Amaru is not a founder, but he believes alumni leaders' involvement and giving back is just as crucial as the role of the founders.

4.3.3 Role Models and Mentors

The BROTHERHOOD pipeline is fundamentally about providing opportunities for mentorship and networking with alumni. Mitch, a mechanical engineer alum, explains his process of giving back through establishing himself as a role model for others. He said,

I have more of a responsibility to represent as a Black male in engineering. What I mean is I just want minority engineers to look and see ‘Hey that’s a Black man who is an engineer.’ This is a big thing. And I see my role in that process now.

Mitch expressed a pride in being a Black male role model for other aspiring Black male engineers. His experiences as a former BROTHERHOOD leader has shaped his thinking about being a Black male engineer and the power that wields in potentially opening up opportunities for others to pursue their dreams. Mitch understands that being a role model for aspiring Black male engineers is not only a desire, but a responsibility. Black males continue to lag behind in representation in the field of engineering. As an alumnus of BROTHERHOOD, Mitch connects giving back and serving as a role model as a way to strategically address the severe underrepresentation of Black males in the field.

Mentorship is also important to many alumni leaders. Giving back through mentoring is what many former leaders identify as their foundational role and responsibility to the organization. Rick stated,

I have always desired to be a mentor to BROTHERHOOD. What BROTHERHOOD helped me realize was the right way of doing that....through BROTHERHOOD I realized that if your goal is to impact or influence others, you need to get to a point where you can relate to be where they are.

Rick shares that his experiences as a BROTHERHOOD leader was about preparing him to be a mentor to the organization as a graduate student. Learning how to bring himself down to the experiences of those younger than himself in his undergraduate leadership experience was key in strengthening his ability to eventually serve as an alumni mentor.

James expounds upon the relationship building aspects of alumni involvement. He sees the alumni as potential mentors. A mentor/mentee relationship could provide an avenue for structured, consistent and visible involvement from the alum. He stated,

It would be great to have an assigned mentor within the alumni leadership so that they could check in on us a little more often. I think that one of the things I would appreciate if one alumni leader was responsible for like me and maybe three or four other guys and his job was to check in on us from time to time and take us out to eat or something when he is in town.

Mentorship is an important aspect of BROTHERHOOD. BROTHERHOOD was designed to foster mentorship between current leaders and the general body they lead, but also between alumni and the current leadership. If mentorship between the alumni and the current leaders is not taking place either structurally or organically, then the organization is failing in this regard. Assigning alumni mentors may be a solution in closing that void. Organic relationship building and interaction between alumni and current students may not be the best approach. The current students may need more structured connecting between the alumni to create the meaningful relationships and opportunities for mentorship between alumni and current students that the organization values.

Ike believes the lack of alumni involvement in the organization is a reflection on the advisor and his role in maintaining those connections. He states,

The bridge between alum and current leaders should be the advisor. The advisor can help facilitate the alumni involvement more. And the alumni would most definitely respond because they already have demonstrated a sincere and committed interest in helping us.

But I question to the extent this is happening administratively from the advisor.

According to Ike, the bridge between alumni and current student leaders is the advisor. Ike sees the advisor as the one who has the agency, experience, and connections with the alumni to foster mentorship opportunities between the alumni and the current students. This critique is important and may prove to be beneficial in helping the advisor understand his responsibility in expanding his administrative and structural role in the organization. Perhaps the advisor should not leave alumni mentorship up to the organic or autonomous culture of the leadership team. Instead, strategic, active involvement, and direct efforts should be made by the advisor in this area of BROTHERHOOD to foster relationships between alumni and current students.

4.3.4 Expansion and Campus Presence

There was a strong sentiment from the current leaders that BROTHERHOOD exists too much in a silo. The desire for expansion and more of a presence on campus and in the community was evident. Leaders appeared to be anxious and even a bit frustrated that the organization has yet to really be known broadly on campus and has not plugged into larger community and campus outreach efforts since its founding. Ramon expressed this sentiment by saying,

BROTHERHOOD does not have enough social or volunteering events. Does not mean we have not thought about it. I agree with our decision to make sure our house is in good shape

before we start branching out, but it does need to happen. This will make the BROTHERHOOD community stronger.

Jacob also expressed his disappointment with the organization with regard to having a larger presence and networking with other organizations, meetings, or events on campus. He said,

The BROTHERHOOD Foundation can have a stronger presence. One example is like the AAAC meeting the other day—I mean it would have been great for some of us to have been represented in that kind of meeting where conversations about Black students and alumni is taking place.

Ramon and Jacob both highlighted a relevant point concerning the need for expansion, but more specifically, areas where the organization's expansion can take place to reach beyond the SSOE and the BROTHERHOOD organization itself. The idea of utilizing programs, outreach efforts, and organizations that already exist could be a viable way to begin the process of expansion and to engage with the wider university community. Ike also added, "BROTHERHOOD needs to be more forceful on campus....we focus too much of our energy on workshops and events." The workshops and events are the cornerstone of BROTHERHOOD. But, if expansion is in the interest of the current leaders, the organization must explore areas on campus to connect with to establish itself as a more viable, active, and meaningful student organization.

There are many outlets other student organizations and the university community utilize to engage in volunteering, community service, and campus involvement that BROTHERHOOD could easily tap into. BROTHERHOOD does not have to find resources or engage in complex efforts on its own to be seen and heard on campus. Networking with other established organizations may not only make BROTHERHOOD more visible in the campus community, but it may also create networking and mentoring avenues that could be beneficial as BROTHERHOOD continues

to seek to improve and expand. As Jacob stated, utilizing AAAC, the African American Alumni Council, could be an excellent way to engage with BROTHERHOOD alumni.

National Organization. The alumni leaders were quite enthusiastic about a future objective for BROTHERHOOD. The desire for the organization to spread to other institutions and eventually become a national organization was a prominent topic. The enthusiasm for this prospect, which has long since been a strategic goal of BROTHERHOOD as beset by the founders, was expressed enthusiastically by Amaru who exclaimed, “Man if I could make another BROTHERHOOD chapter at another university that would be so awesome!” Juan, a recent graduate, also expressed his eagerness to launch BROTHERHOOD into a national organization. He believes it is the alumni responsibility to make this happen by saying, “Definitely BROTHERHOOD should become a national organization. I can see other chapters, especially in the next few years being grown and developed by the alumni.” Rick also believes that other underrepresented male engineers at other institutions would be well served if BROTHERHOOD spread and became built into the minority engineering program experience, stating, “I want to see other people have the opportunity to experience BROTHERHOOD. I think a national expansion needs to happen. There are things of value that BROTHERHOOD provides that others at these universities I have been to do not have.”

However, there is a concern that currently BROTHERHOOD is not prepared to realistically entertain moving into a national organization. As Guillermo explained,

I think in terms of organizing, we don’t have a formal way of organizing things or keeping track of things. So that kind of like—for something like a national organization, there is not an infrastructure in place to keep alumni informed of things

BROTHERHOOD becoming a national organization is most certainly a passion that was expressed by many of the alumni leaders. Their experiences as former BROTHERHOOD leaders encouraged them to continue to see the organization as important and worth their investment and time. The former leaders take pride in the feeling that such an expansion effort lies within their role as alumni. Many of them, especially those who are graduate students, have observed how a BROTHERHOOD chapter may be needed at other institutions to foster the same kind of community and support that they had the opportunity to be part of as undergraduate students. Despite this sense of optimism and vision for a national organization, some leaders did not feel the organization is structurally ready. The groundwork by which the alumni could even begin the process of launching a national organization has yet been established. This is an area that would need a great deal of attention before BROTHERHOOD could even begin to conceive transforming into a national organization. Nevertheless, the passion and optimism for a national organization amongst most of the leaders is still strong.

4.3.5 Inclusion of LGBTQ+ Students

One final glaring issue that definitely stood out as an improvement point deserving of some attention is the issue around LGBTQ+ student inclusion. Joey articulated his concerns with LGBTQ+ student involvement in the BROTHERHOOD experience by stating,

I think the one thing I haven't seen in BROTHERHOOD—it is not so much that it is not a part of the spirit of BROTHERHOOD, but the LGBTQ presence is not there. It is not something that is rejected at all, BROTHERHOOD is a safe space, but I feel that that has not been a factor or a presence. I consider myself an ally to LGBTQ, but I do not know

how to push the boundaries of this issue. But when you talk about a safe space for all, there is no presence there....

BROTHERHOOD is intended to be a safe and inclusive space for all students. However, Joey said that perhaps there is an unintentional patriarchal and heteronormative cultural aesthetic organically built into the BROTHERHOOD experience that may cause male students who identify as LGBTQ+ to feel uncomfortable participating in the organization. This topic was not a dominant theme in the data collection, but it certainly stands out and warrants attention within the evaluation process as BROTHERHOOD is committed to being a place where every man can be heard, loved, and respected without fear or judgment.

If there is any area where inclusion is not fully expressed within BROTHERHOOD than the organization is simply failing in its mission and purpose. It is important that BROTHERHOOD takes any issue of exclusion, whether intentional or not, seriously. It is easy for issues of sexual orientation or gender identity to be passed over or assumed not to be an issue where no participating student is open with their identity or sexual orientation that is different than heterosexual, cisgender males. Yes, BROTHERHOOD was designed to be a support for any student that identifies as male, but above this, the organization is inclusive and does not aim to discriminate in any way. Joey's critique is important because BROTHERHOOD, in its six years of existence, has ever created a workshop addressing LGBTQ+ issues, has never collaborated or supported any LGBTQ+ groups, or has never provided LGBTQ+ allies training for its leaders. Simply because no open LGBTQ+ student participates in the organization, does not mean there are no students with differing identities, who are not part of the organization, or that want to be involved in the organization.

4.4 Conclusion

Current and former BROTHERHOOD leaders shared many thoughts concerning the function, purpose, goals, and lessons gained from their experiences in the organization. Their experiences assist in further understanding areas where the organization is succeeding and areas that require some improvements to better move the organization forward. Current leaders and alumni expressed that BROTHERHOOD helped with their personal development concerning their understanding of masculinity and manhood, enhanced their race and cultural pride, and leadership development, and is a support for mental health. However, the organization needs to make certain improvements to continue its success and to grow as a whole.

Current leaders and alumni expressed that the student autonomy built into the leadership structure of the organization is appreciated and respected, but also has created dynamics where peer leadership accountability is absent or weak. Additionally, alumni engagement needs to be stronger, particularly concerning efforts by alumni in giving back to the organization. Leaders expressed that the organization needs to expand and have a stronger presence on campus. Moreover, some expressed a desire to one day become a national organization. Collaborating with other established student organizations and utilizing systems and resources within the university system can help BROTHERHOOD in this capacity. In addition, the organization must always keep inclusion in mind, particularly pertaining to LGBTQ+ students. BROTHERHOOD prides itself on being an inclusive, safe, and supportive student organization. However, if not all students feel that support, then the organization is missing the mark.

5.0 Chapter 5: Conclusion & Recommendations

The purpose of this inquiry was to conduct an outcomes assessment of BROTHERHOOD, the undergraduate diversity program's (Pitt EXCEL) male support forum in the Swanson School of Engineering (SSOE) at the University of Pittsburgh. The objective was to explore the areas where BROTHERHOOD has been succeeding and areas where the organization needs improvement. To execute this inquiry, sixteen men of color were interviewed, eight current BROTHERHOOD leaders, and eight alumni who were formerly BROTHERHOOD leaders. The sixteen participants were selected from the Pitt EXCEL internal database and invited to participate.

5.1 Key Findings

Three key findings emerged from this inquiry: 1) BROTHERHOOD provides social and emotional support; 2) BROTHERHOOD leadership fosters student empowerment; and 3) BROTHERHOOD has four areas of improvement. The findings emerged from the sixteen interviews and through the data analysis process.

5.1.1 Key Finding #1: BROTHERHOOD Provides Social and Emotional Support

BROTHERHOOD has provided various levels of social and emotional support for current leaders and alumni. The social and emotional support found within BROTHERHOOD stems from the many workshops and peer-to-peer interactions the current leaders and alumni have

experienced. BROTHERHOOD workshops are a space where open thought and communication is forged to allow members to engage in sensitive, emotional, reflective, introspective, and controversial topics. These interpersonal and reflective experiences are designed to help students cope with, confront, and overcome some of the stressors that come with being a man of color in engineering and STEM education.

Manhood and Masculinity. Garnering a deeper, more substantive, and a more meaningful understanding of manhood and masculinity is a significant social outcome for the underrepresented leaders and alumni of BROTHERHOOD. The workshops and social interactions has challenged their thinking and conceptualizations of manhood and masculinity in ways that has helped them better understand themselves and their place as men in transforming their professions and the larger society.

Lomas (2013) suggests men are seeking to redefine manhood to establish healthier and more productive lifestyles. BROTHERHOOD leaders discussed behaviors and expressions of toxic masculinity as a male stereotype that needs to be rejected, and that they indeed have the desire to redefine and reimagine masculinity to help them grow as leaders in their community. BROTHERHOOD has provided deeper conceptualizations and knowledge concerning manhood and masculinity which current student leaders and alumni have tapped into to see themselves as young male leaders in a different light. This effect in transforming the mentalities of men of color in engineering concerning toxic masculinity goes to the heart in redefining the culture and social environment of the engineering experience (Baker, 2013).

Racial and Cultural Pride, Awareness, and Empowerment. Shaping and re-defining the culture within White dominated space is an important aspect of underrepresented males' social and academic growth (Baker, 2013; Sues & Ponjuan, 2011; Rankin & Reason, 2005). Garcia et al

(2017) emphasizes how cultural relevance within organizational involvement is an important support system for men of color. The BROTHERHOOD experience provides current leaders and alumni men of color a space where their voices, issues, and agency can be expressed and taken seriously. Good, Halpin and Halpin (2002) highlight the importance of spaces within PWIs in providing such spaces for personal agency development for underrepresented engineers. Harper and Quaye (2007) discuss supportive student organizations as spaces where underrepresented males can gain their resilience. Confidence, self-esteem, and self-awareness are all important factors gained through the workshop experiences and peer-to-peer interactions of BROTHERHOOD to provide students a stronger sense of purpose in their academic pursuits.

Issues of racial biases, stereotypes, and hostile climates are prevalent hindrances for many men of color in engineering and STEM education (McGee, 2016). BROTHERHOOD is providing an outlet for many underrepresented male leaders to challenge hostile systems, experiences, and attitudes by encouraging dialogue and supportive peer-to-peer interactions. Through their peer interactions and workshop constructs, an energy of racial and cultural uplift has manifested within the consciousness of many of the BROTHERHOOD men of color leaders and alumni.

Mental Health Support. The ability to overcome obstacles or hindrances begins with how one mentally and emotionally feels about their conditions or circumstances. Supporting the mental wellbeing of underrepresented males in engineering is an important area of creating a safe space for growth and development. Student organizations can serve as a framework to achieve a resilient disposition and a strong emotional capacity to challenge systems and overcome hardships (Harper & Quaye, 2007). Discussing topics not often openly shared among the men of color in the SSOE has been beneficial for many of the students' emotional and mental wellbeing.

Knowing or feeling that ones' thoughts and feelings are taken seriously is an important aspect of support for men of color in education (Harper & Davis III, 2012). Many underrepresented males in engineering feel lonely, not adequately represented, and misunderstood (Moore III et al. 2003; Strayhorn et al. 2013). Providing avenues or experiences where underrepresented males in engineering feel more connected, and that they belong, may serve the students well in their academics (Strayhorn et al. 2013). Rejecting the notion of failure, and gleaming onto hope, opportunity, and optimism is a fundamental aspect of an anti-deficit framework (Harper, 2010).

Preparation for Post-undergraduate Life. BROTHERHOOD alumni expressed how they were more equipped to address the various social and professional challenges after college as male engineers of color. Their experiences in BROTHERHOOD helped in developing their agency as professionals to engage the White male dominated engineering professional world in both industry and graduate school. The post-undergraduate experience for men of color consists of its own unique challenges and hindrances. For BROTHERHOOD alumni to identify their experiences in the organization as helpful in addressing issues beyond their collegiate experience is promising.

The longevity of BROTHERHOOD's personal impact on men of color is an important aspect of the organization. The lessons, relationships, and skills gained through the experience is intended to have a lasting impact beyond undergrad. The process of empowering and encouraging alumni and the current leaders who will become alumni, to engage society with a more emboldened, self-assured, and confident outlook is the cornerstone of an anti-deficit mentality (Valencia & Solórzano, 1997). BROTHERHOOD seeks to ensure and encourage male engineers of color that despite the various barriers, social hindrances, and data that suggests they cannot succeed in engineering—they can not only succeed, but master the field and carve out their own space as men of color.

5.1.2 Key Finding #2: Organizational and Leadership Structure

The structure of BROTHERHOOD, particularly concerning the role of student leadership responsibilities and the student leadership selection process, was identified as key in empowering and encouraging student leadership

Leadership Structure. A strong supportive environment is key in fostering meaningful relationships, interactions, and organizations for Black and Latino males in higher education and in STEM education specifically (Strayhorn, 2008; Saenz & Ponjuan, 2011). The autonomy built into the student leadership structure of BROTHERHOOD provides a sense of confidence and self-assurance to encourage and support students to engage their campus and school community. Harper and Quaye (2007) discuss how underrepresented males seek leadership to engage others and work on their leadership skills. The BROTHERHOOD leadership structure provides student leaders an opportunity to shape their leadership style in their own way. It encourages autonomy and fosters confidence in their ability to think for themselves, be creative and innovative, and forward teamwork.

Personal agency development and feelings of empowerment are important for many Black and Latino males in STEM education (Guiffrida, 2003). The BROTHERHOOD leadership process provides freedom to express personal agency as burgeoning leaders without the expectation of conducting leadership a certain way. This autonomy and latitude fosters a sense of empowerment for the students to define their leadership and express their agency on their terms with the support of their fellow leaders and professional advisor. The freedom and confidence in being oneself is an important aspect of being a strong BROTHERHOOD leader as authenticity is an essential part of the BROTHERHOOD leadership experience.

5.1.3 Key Finding #3: BROTHERHOOD Has Four Areas of Improvement

There are four prominent aspects of BROTHERHOOD that need improvement according to current students and alumni. Placing attention on the areas of improvement is vital in helping BROTHERHOOD move forward in having a greater reach and impact for the men of color in the SSOE.

Alumni Engagement. Alumni are to play a key role in creating a pipeline of continued support for the current student leaders and general members. However, current leaders expressed they do not believe the alumni are as involved, present, or known even among the current leaders and within the organization in general as they could be. This organizational shortcoming can prove to be a major problem as BROTHERHOOD advances. Alumni may provide an advanced peer-to-peer mentoring support network for the current BROTHERHOOD leaders and general members. Engaging alumni is an expectation of the organizations functionality. If alumni engagement is not prevalent in BROTHERHOOD, the organization will falter in its capacity to create a supportive pipeline beyond the undergraduate experience. This may also hinder the organization's ability to grow beyond Pitt.

Peer mentorship and engagement is a critical support structure for men of color in engineering and the STEM fields (Brooks et al, 2014; Huerta & Fishman, 2014; Saenz & Ponjuan, 2011). Alumni peer leadership could prove even more advantageous for current leaders and general members as the alumni are gaining deeper experiences and opportunities to implement and execute the knowledge and agency they gained through BROTHERHOOD in the field and or in graduate/professional school. Additionally, BROTHERHOOD alumni may have the ability to network with and engage key stakeholders for undergraduates such as faculty, administrators, staff,

and corporate stakeholders. An ecosystem of professional support is important for underrepresented male engineering students (Gasiewski et al. 2012). Therefore, the prospect for alumni to serve as staunch and influential advocates for the undergraduate students must become more structured and normalized in the BROTHERHOOD culture.

Organizational Expansion and Campus Presence. BROTHERHOOD is not as well-known of an organization in its school and campus community as it could and should be. Established student organizations such as the National Society of Black Engineers (NSBE) and the Society of Hispanic Professional Engineers (SHPE) are important avenues of support for engineering students of color. Supportive organizations such as these provide opportunities for engineering and STEM students of color in leadership development, employment opportunities, campus engagement, and internship opportunities (Johnson & Sheppard, 2004; May & Chubin, 2003). Organizations like NSBE and SHPE exhibit a strong campus presence and network system, resulting in providing for students the opportunity to enhance their networks and improve their chances in succeeding in STEM (Chang et al. 2010).

Although BROTHERHOOD's purpose and structure is different than that of NSBE, SHPE, and many campus student organizations, the notoriety, presence, and opportunities that stem from these organizations has not taken root within the organization. This means that BROTHERHOOD is yet an organization that provides clear professional or networking avenues and opportunities for the members. In addition, the organization's lack of presence and networking limits the organization's ability to gain external funding, marketing, recruiting, and expanding to other institutions. Current leaders desire BROTHERHOOD to provide the same opportunities through the organization's uniqueness and grounding in underrepresented male socio-emotional support as more established and traditional organizations provide.

Student Leadership Accountability. Student accountability to their leadership roles and to their peers in BROTHERHOOD is important. Soria et al (2013) suggest the more students participate and engage in student leadership the more likely they will become social change agents for their communities. Since the leaders operate BROTHERHOOD, there is an important emphasis on following through with responsibilities. However, the current leadership structure being so free flowing, with leaders not having established roles or defined titles and work, student leaders find themselves not being accountable to anything that is firmly structured, which may give credence to students not following through evenly in their roles and may create unbalanced implementations of work.

Leadership accountability is key for an optimal BROTHERHOOD experience. The issue of student leadership accountability stems from the leadership structure. BROTHERHOOD current leaders value the autonomy and empowerment granted through the leadership structure but believe this structure also enables leadership apathy and neglect. The desire amongst current leaders is for the organization to maintain its leadership structure and yet implement more leadership accountability within that structure.

Inclusion of LGBTQ+ Students. Exclusion and marginalization of LGBTQ+ students in higher education systems and organizations continues to be an issue (Pryor, 2017). BROTHERHOOD may not be doing a good job at ensuring an inclusive and supportive environment is established for LGBTQ+ students and allies. Even without current active participation of any open LGBTQ+ students, it must be abundantly clear that the organization is a safe space for all students regardless of sexual orientation. The clarity of this desire resides in the organization's intentional efforts to foster a climate of support for the LGBTQ+ community. These intentional efforts could involve reaching out and collaborating with the various LGBTQ+

organizations on campus, having some workshops that discusses LGBTQ+ issues, highlighting and discussing LGBTQ+ leaders, engineers, and innovators throughout history.

5.2 Implications for Practice

Participants of this inquiry provided insightful information to enhance the BROTHERHOOD experience. Current leaders and alumni have identified areas where BROTHERHOOD has had, and continues to have, great success. The role of the workshops, the principles and tenets that guide and shape the workshops, student leadership autonomy, and observational leadership selection have all been highlighted as areas that work in helping to encourage, inform, support, and inspire the men of color in the SSOE. Maintaining the workshop content, social events, utilizing the tenets as guides, the leadership selection process, and the leadership development process is crucial in continuing to foster this supportive environment. However, several areas of the organization may be adjusted to maximize organizational and student leadership effectiveness.

First, it is clear that BROTHERHOOD leaders' roles and positions need defined. Establishing more structured student leadership roles may be critical to enforce more accountability within the leadership team. Rather than simply placing students on the leadership team and having them autonomously decide what to do, the students may benefit by establishing clear positions and roles on the team at the start of their leadership tenure with the support and approval of the advisor and the captains. The advisor and the leadership captains could conduct a leadership assessment at the end of each semester to help keep the leadership team members

accountable. Additionally, each student leader could participate in scheduled one-on-one meetings at the start of the following semester with the advisor and the captains to discuss the results of their assessment and share areas where they can improve within their leadership roles for the upcoming semester.

Secondly, alumni engagement could be stronger. To foster a stronger alumni engagement and support system, an internal database of alumni may be necessary that includes alumni leaders' names, addresses, occupations, and emails. This database could be updated at the start of each academic year. Leadership team members could have access to the database for easier access to the alumni network. Alumni could be copied on all email correspondences throughout each academic year concerning upcoming workshops, events, and activities so the alumni are always aware of organizational activities and events. Additionally, the creation of an alumni mentoring outreach program may be a great structural benefit for stronger and more persistent alumni engagement. An alumni mentoring outreach program could help foster more fluid and systemic mentoring opportunities for alumni and current students. Placing an alumnus in charge of this mentoring outreach program could place the ownership of alumni mentoring on the alumni and not on current student leaders or on the advisor.

Third, BROTHERHOOD could have a stronger campus presence. Establishing a mandatory campus collaboration effort each academic year could provide a culture whereby BROTHERHOOD leaders intentionally seek collaborative campus partners, and establish meaningful relationships and networks with other student leaders, professionals, and organizations to strengthen its campus presence.

Campus presence may also become stronger through organizational expansion efforts. Student leaders and alumni appreciate the autonomy and leadership empowerment built into the

fabric of the organization's culture and structure. Establishing BROTHERHOOD as an independent student run organization may prove to be important in advancing the student leaders' autonomy and empowerment. Becoming an independent student run organization may require that BROTHERHOOD trademark the logo, create a written constitution, a mission statement, by-laws, and organizational procedures. In addition, this process also may require the organization to register as a student organization with Pitt's Student Organization Resource Center (SORC). Once registered with SORC, BROTHERHOOD would become an established chapter, which then provides students and alumni the opportunity and incentive to create chapters at other colleges and universities, providing the local and regional framework for establishing a potential national organization.

Lastly, BROTHERHOOD must always be mindful and intentional in maintaining and fostering an environment of inclusivity for all, but particularly concerning the LGBTQ community and allies. BROTHERHOOD leaders could be provided with voluntary LGBTQ allies training during their fall semester leadership training session. In addition, BROTHERHOOD could include LGBTQ organizations as part of their collaboration and networking efforts on campus. Additionally, BROTHERHOOD leaders could consider inviting an open LGBTQ engineering man of color to speak at a seminar to discuss his experiences, challenges, and issues as an LGBTQ male engineer. And finally, sharing and discussing issues around sexual orientation and gender identity in workshops where relevant could also be put into practice.

5.3 Implications for Research

The purpose of this inquiry was to explore areas where BROTHERHOOD is having success, and areas where the organization can improve from the perspective and experiences of current student leaders and alumni. There are several implications this study highlights for further research. First, researchers should consider the student development theories, concepts, and existing research to unpack specific areas that challenge or support Black and Latino male engineering students. For example, one of the prominent themes this study uncovered involved ways in which the content of BROTHERHOOD workshops and student dialogue helps students confront and address their mental health struggles. Researchers could examine how student organizations address or support Black and Latino male engineers with their mental health. Such an inquiry could be drawn from any of the prominent themes that emerged from this study.

Secondly, further research connecting Black and Latino male centered organizational leadership and/or student organizations with academic performance, retention, and graduation rates in engineering may also be explored. Future studies might unpack ways in which student organizations foster better academic and professional development outcomes from specific designs, functions, and structural efforts of student organizations similar to BROTHERHOOD.

This inquiry could also assist in shaping theory concerning underrepresented male engineering student development. Utilizing the experiences of current BROTHERHOOD leaders and alumni, a specific theory could be explored to expand knowledge of Black and Latino male issues in education and STEM broadly. Such a theory or theories could help researchers further explore the various challenges and issues pertaining to Black and Latino male engineering students' achievement challenges at PWIs.

In addition, this inquiry also provides researchers the opportunity to further evaluate BROTHERHOOD after the implementation and execution the recommendations. A future evaluation of the effectiveness of the organization's LGBTQ inclusion efforts, the establishment of more defined student leadership roles and positions, BROTHERHOOD as an established independent student run organization, and the implementation of the organization's strategies in establishing a stronger campus presence, will be useful in the continued growth, development, and impact on underrepresented engineering men of color. In addition, conducting an evaluation involving general body members and alumni who were never leaders may also be advantageous to further understanding the salience and future improvement areas for the organization.

Lastly, as an outcomes assessment, this inquiry may provide researchers the opportunity to conduct a future program evaluation of BROTHERHOOD. This outcomes assessment utilized the experiences of the men of color to assess BROTHERHOOD's effectiveness in assisting current and former leaders in navigating the various challenges and obstacles in engineering. However, a formative program evaluation of BROTHERHOOD could look into the actual components of the organization (the workshops, social events, leadership structure, outreach efforts, etc.) to determine the effectiveness of the organization's specific functions and organizational structure as it continues to grow and evolve.

5.4 Conclusion

This inquiry is designed to inform practitioners and researchers on the relevance of BROTHERHOOD in the SSOE. Three key findings were highlighted that provides information

concerning BROTHERHOOD. These findings include: the outcomes of the organization, organizational structure, and future directions. Through the workshops and peer-to-peer engagement, BROTHERHOOD has succeeded in helping participating students address their mental health issues, expand their knowledge of manhood and masculinity, student leadership empowerment, and racial and cultural pride awareness. However, the organization could improve with its presence on campus, student leadership accountability, LGBTQ+ inclusion, and engagement with alumni.

BROTHERHOOD is a student organization that is continually evolving to meet the needs of the men of color in the SSOE. Current student leaders and alumni provided data that can be used to further strengthen and grow the organization. As BROTHERHOOD continues to grow, future research may explore new opportunities for organizational evolution and advancement.

Appendix A: Bachelor Degree Earned

TABLE 4

Representation for black and Hispanic men varies a great deal by field relative to their white male peers

Bachelor's degrees earned in a given field per 1,000 bachelor's degrees awarded, 2013 through 2015

Hispanic men relative to white men			
Field of degree	Degrees earned by Hispanic male students	Degrees earned by white male students	Ratio of Hispanic male student to white male student degrees
Underrepresentation			
Education	18.9	30.5	61.9%
Physical sciences	16.4	24.3	67.4%
Engineering	81.0	88.6	91.5%
Overrepresentation			
Social sciences	97.6	87.7	111.3%
Visual and performing arts	51.6	46.1	111.9%
Homeland security, law enforcement, firefighting, and related protective services	60.0	37.1	161.8%
Black men relative to white men			
Field of degree	Degrees earned by black male students	Degrees earned by white male students	Ratio of black male student to white male student degrees
Underrepresentation			
Engineering	41.5	88.6	46.8%
Biological and biomedical sciences	36.4	50.4	72.1%
Education	26.7	30.5	87.6%
Overrepresentation			
Computer and information sciences	63.0	51.2	123.1%
Parks, recreation, leisure, and fitness studies	39.7	32.0	124.2%
Communication, journalism, and related programs	52.3	40.0	130.6%
Multi/interdisciplinary studies	25.7	19.0	134.9%
Psychology	44.0	31.8	138.4%
Health professions and related programs	48.7	35.1	138.7%
Homeland security, law enforcement, firefighting, and related protective services	70.8	37.1	190.9%

Source: Center for American Progress analysis of data from the Integrated Postsecondary Education Data System from 2013 through 2015. See National Center for Education Statistics, Integrated Postsecondary Education Data System, "Use the Data," available at <https://nces.ed.gov/ipeds/use-the-data> (last accessed April 2018).



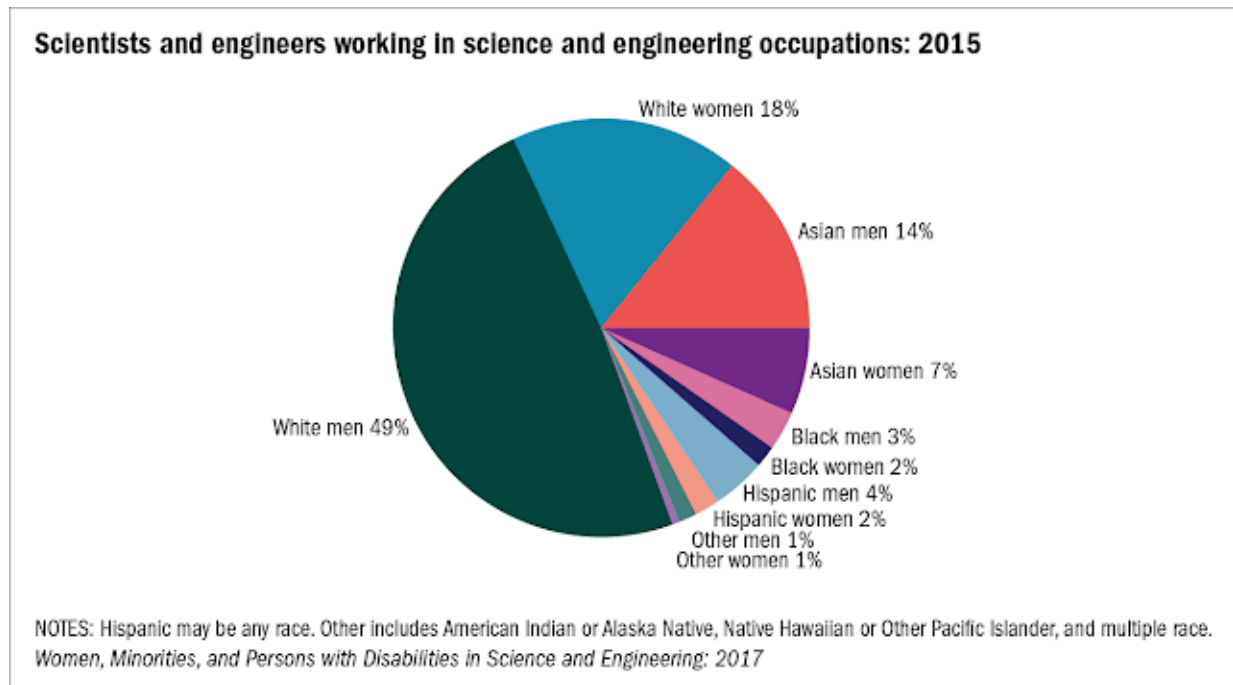
Engineering Bachelor degrees earned by Black and Latino males (Libassi, 2018)

Appendix B: Degrees Awarded

	2000					2015				
	All	Female	Male	Female (%)	Male (%)	All	Female	Male	Female (%)	Male (%)
Black or African American										
All fields	58,508	68,679	35,662	65.8	34.2	182,778	32,845	65,589	64.1	35.9
S&E	32,993	20,975	12,018	63.6	36.4	53,649	32,845	20,804	61.2	38.8
Engineering	3,069	1,090	1,979	35.5	64.5	3,852	973	2,879	25.3	74.7
Natural sciences	10,796	6,464	4,332	59.9	40.1	17,286	8,920	8,366	51.6	48.4
Social and behavioral sciences	19,128	13,421	5,707	70.2	29.8	32,511	22,952	9,559	70.6	29.4
Non-S&E	71,348	47,704	23,644	66.9	33.1	129,129	84,344	44,785	65.3	34.7
Hispanic or Latino										
All fields	88,445	53,772	34,673	60.8	39.2	226,009		89,640	60.5	39.5
S&E	27,980	15,456	12,524	55.2	44.8	79,203	44,386	34,817	56.0	44.0
Engineering	4,075	988	3,087	24.2	75.8	9,960	2,209	7,751	22.2	77.8
Natural sciences	8,842	4,499	4,343	50.9	49.1	25,845	12,528	13,317	48.5	51.5
Social and behavioral sciences	15,063	9,969	5,094	66.2	33.8	43,398	29,649	13,749	68.3	31.7
Non-S&E	60,465	38,316	22,149	63.4	36.6	147,697	92,874	54,823	62.9	37.1
White										
All fields				56.7	43.3				56.2	43.8
S&E				49.2	50.8	373,795			47.3	52.7
Engineering	39,025	7,274	31,751	18.6	81.4	60,596	11,206	49,390	18.5	81.5
Natural sciences		46,570	56,761	45.1	54.9	153,497	67,674	85,823	44.1	55.9
Social and behavioral sciences		79,270	48,715	61.9	38.1	776,270	97,985	61,717	61.4	38.6

Degrees (numbers and percent) awarded to U.S. permanent residents, sex, race, ethnicity, broad field category and degree level: 2000 and 2015 (National Science Foundation, 2018)

Appendix C: Engineering Occupations



Percentages of Black and Latino males working in engineering occupations compared to other groups (Kirkpatrick, 2017).

Appendix D: University of Pittsburgh Institutional Review Board Approval

APPROVAL OF SUBMISSION (Exempt)

IRB:	STUDY18100037
PI:	Simeon Saunders
Title:	BROTHERHOOD: An Assessment of the Experiences of Black and Latino Male Engineers at the University of Pittsburgh Swanson School of Engineering
Funding:	None
Date:	December 6, 2018

On 12/6/2018, the Institutional Review Board reviewed and approved the above referenced application through the administrative review process. The study may begin as outlined in the University of Pittsburgh approved application and documents.

Approval Documentation

Review type:	Initial Study
Approval Date:	12/6/2018

Exempt Category:	(2) Tests, surveys, interviews, or observation
Approved Documents:	<ul style="list-style-type: none">• Alumni and Student Recruitment Letter (IRB).pdf• Alumni and Student Demographic Information (IRB).pdf• Alumni and Student Demographic Information (IRB).docx• Consent Form for Interview (IRB).pdf• HRP-711- WORKSHEET - Exemption_Tests, Surveys, Interviews, Observations_Version_0.02.docx• Interview Protocol (IRB).docx

As the Principal Investigator, you are responsible for the conduct of the research and to ensure accurate documentation, protocol compliance, reporting of possibly study-related adverse events and unanticipated problems involving risk to participants or others. The HRPO Reportable Events policy, Chapter 17, is available at <http://www.hrpo.pitt.edu/>.

If this trial meets the definition of a clinical trial, accrual cannot begin until it has been registered at clinicaltrials.gov and a National Clinical Trial number (NCT) provided. Contact ctgov@pitt.edu with questions.

Research being conducted in an UPMC facility cannot begin until fiscal approval is received from the UPMC Office of Sponsored Programs and Research Support (OSPARS). Contact OSPARS@upmc.edu with questions.

If you have any questions, please contact the University of Pittsburgh IRB Coordinator, Carolyn Ivanusic at ivanusic@pitt.edu.

Please take a moment to complete our [Satisfaction Survey](#) as we appreciate your feedback.

Appendix E: A Complete History of the Founding of BROTHERHOOD

In May 2010, Simeon Saunders was hired to serve as the Academic Counselor and Coordinator of Diversity Outreach in Pitt EXCEL, the undergraduate diversity program in the Swanson School of Engineering. Upon beginning his new position, he was encouraged by his then supervisor and director, Alaine Allen, to think about ways to engage the young men of Pitt EXCEL. Within his first few months, Simeon quickly noticed that many of the male students in Pitt EXCEL were disengaged. Connection, comradery, and support appeared absent between the older male students and the younger ones. Many of the male students did not hold leadership positions, nor were they active in the various diversity centered student organizations. The students would often come to EXCEL programs only to eat the food and then leave, or they would be disruptive during the programs. In response to these observations, Simeon created a Pitt EXCEL male forum in an attempt to bring the male students of Pitt EXCEL together.

The first male forum activity was in the fall of 2011. It was a workshop entitled, *The Mask of Masculinity*. Simeon led this workshop, and about twenty-five Pitt EXCEL men attended. The message of the workshop was that as men, particularly men of color, many hide behind an invisible mask to hide their true selves from the world so as not to feel judged, embarrassed, alienated or inadequate in the face of the stereotypical affectations of manhood and masculinity that is often promulgated in society through sports, music, culture, and media. The workshop was a great success, and many of the men in attendance asked Simeon if he could organize more events like that.

The next organized activity was a flag football game. This game was held on the muddy grass of the Cathedral of Learning lawn in the fall of 2011. The event was a tremendous success.

It was clear after the flag football game some of the men of Pitt EXCEL were buying into Simeon's efforts to change the Pitt EXCEL culture by actively and strategically supporting and engaging with the male students through the male forum.



However, not all the Pitt EXCEL male students bought into Simeon's efforts, most of whom were upperclass students.

The following week, Simeon sent a lengthy email to the upperclass Pitt EXCEL male students challenging them to step-up to the plate as leaders and become more engaged with the Pitt EXCEL experience and with the male forum. A few of the upperclass students responded back to the email in support. However, many others were clearly upset with the challenge and critique.

A few weeks after Simeon sent his challenging email to the upperclass male students, Pitt EXCEL held its annual fall retreat. During lunch on the second day of the retreat, Simeon was speaking with Masar Sakr, who at the time was a graduating senior. Masar was interested in applying to graduate school but was conflicted on whether he should go into industry first. Simeon began counseling Masar, telling him some of the advantages of going directly into graduate school. Will Owens, who at the time was a junior, overheard the conversation. He unsolicitedly engaged the conversation and began telling Masar that he should not go to graduate school, and that he should not take Simeon's advice because he did not know what he was talking about and could not be trusted. This interjection angered Simeon, and quickly he and Will began arguing loudly. Simeon noticed the argument was getting heated and that other students were beginning to listen. Simeon then stopped the conversation, and he and Will went on to their separate tables to finish their lunch.

As Simeon was eating his lunch, he found himself lost in his thoughts. He was confused and angered by Will Owens' actions. He could not understand why Will felt the need to challenge him in front of the other students. Simeon then decided that after lunch he would ask Will to step away from the group and come talk with him outside by a hillside. Will agreed to meet, and both men sat together and began talking.

As Will and Simeon shared, both men began to better understand one another. Both were angered and disappointed by the disunity, the lack of involvement, and the lack of structural support for the men of Pitt EXCEL. Both realized they had similar desires, passions, and visions



to support men of color and address the various challenges that young men deal with in life. Simeon then instructed Will to gather some of his most trusted upperclass friends and meet with him later that evening to discuss further.

In the evening, around 7:00pm, Simeon met with students Will Owens, Miguel Mignott, Cedric Brown, Nathan Roberts, Ohi Dibua, Masar Sakr, and Dominic Malloy. Simeon and these upperclass students walked into the woods and began having an honest and open dialogue concerning the plight of the male students of Pitt EXCEL. Many issues were discussed during this meeting, but after nearly four hours of discussion, it was clear that each of the men had similar issues and passions and were eager to help Simeon further develop the Pitt EXCEL male forum.

After the retreat, Simeon and the seven upperclass students began meeting regularly. During these meetings, many discussions about life, relationships, politics, history, racism, school, goals, and manhood were shared. Through these dialogue sessions, sometimes spanning eight hours, Simeon was beginning to develop a close relationship and bond with these seven

upperclass students. Simeon then asked the students to help him create and execute the male forum workshops. The first male forum workshop conducted with the assistance of the seven upperclass students was called, *Rope-A-Dope Your Challenges*. The message of this workshop concerned using wisdom and keen strategies to overcome some of the hardships and challenges men face. Using the historic Muhammad Ali vs. George Foreman 1974 fight, *The Rumble in the Jungle*, as the framing—where Ali leaned on the ropes and let George Foreman punch his body until Foreman tired himself out, giving Ali the chance to go in for the knockout. Muhammad Ali called his strategy the “rope-a-dope,” hence the title of the workshop.



The upperclass students really enjoyed working with Simeon to develop workshop concepts while standing before their peers and leading the conversations. As the upperclass students began leading, attendance and active involvement among the Pitt EXCEL men, particularly the upperclass students, grew. Alaine Allen, the Pitt EXCEL director at the time, also took notice of the advancements and growth of the male forum and decided to allocate programming budget funds to help support the efforts. Toward the close of the 2012 spring semester, Simeon realized with the complete buy-in from the underclass and upperclass male students, with a team of passionate and dedicated student leaders, and with some available programming funds, the male forum could perhaps become a student organization. Furthermore, Simeon was deeply touched and inspired when the seven upperclass leaders came together and gave him a gift,



thanking him for his efforts in creating the male forum, and for empowering them to help lead it. The gift was a digital clock, and inside the clock was engraved, “Men Who EXCEL.”

In the summer of 2012, Simeon called a meeting with the now six upperclass student leaders (Masar graduated) to discuss making the male forum an actual student organization. The leaders were excited about the opportunity to transform the male forum. At this meeting, ideas were shared concerning what the male forum could become and how it could be structured. Among these concepts included social events, medallions for the student leaders to wear at workshops or seminars, blazers, and a logo. However, perhaps the most significant idea that came from the meeting was establishing a formal name for the organization.

Simeon informed the leaders that the “Pitt EXCEL male forum” was too generic of a name. The organization needed an identity, and a name would help establish that identity. The leaders began brainstorming name ideas for the organization. After several hours of deliberation and collaboration, the name BROTHERHOOD was settled upon. The name is an acronym the leaders developed that means, *Brothers Respecting Open Thought Helping Every-man Realize His Own Original Dream*. Simeon then established himself as the professional advisor and the six upperclass leaders became the official student leaders of BROTHERHOOD.

One afternoon while on his lunch break, Simeon began thinking about a potential logo for the newly founded BROTHERHOOD organization. In his thoughts, Simeon envisioned a shield with a big gold star, with unifying hands in the center of the star, and a chain linking the hands.

Simeon drew this concept on a piece of paper. He then called a meeting with the student leaders



and showed them his illustration. The students loved the concept and agreed that it should be the official BROTHERHOOD logo. Simeon then contacted Madhur Malhotra, who at the time was a sophomore engineering student. Madhur was

proficient with graphic arts designing. Simeon asked Madhur if he would be willing to create the official BROTHERHOOD logo. Madhur agreed, and a month later Madhur gave Simeon his designed logo.

Simeon called another leaders meeting later that summer. At this meeting, Simeon informed the leaders that the organization needed guiding principles to help keep the leaders and members accountable to concepts and messages larger than themselves. The principles would serve as the organization's guide in creating workshops. The leaders agreed and immediately began brainstorming concepts that would be used to guide BROTHERHOOD. After several hours of collaborating and discussing, twenty-five guiding principles were developed that the leaders called, the BROTHERHOOD Tenets.

In the fall of 2012, at the annual fall retreat, Simeon announced BROTHERHOOD as the official Pitt EXCEL student led male support organization. The logo was also unveiled. The



BROTHERHOOD leaders were introduced as the founders. And together, they led their first BROTHERHOOD workshop.

Appendix F: BROTHERHOOD Logo



The Official BROTHERHOOD Logo. This logo was designed in 2012 by BROTHERHOOD Alumnus Madhur Malhotra. The design exhibits three symbols. The big star represents a man's dreams and goals, the linked hands represents male unity, and the chain represents a man's commitment to service and to his community

Appendix G: BROTHERHOOD Structure Breakdown

Founders: The BROTHERHOOD founders are the six former upperclass students who assisted the founding advisor, Simeon Saunders, in transforming the Pitt EXCEL male forum into an



actual student led organization. The Founders' role is to continue to support the organization in various capacities including mentoring, participating in the annual Founders' Day, providing support and guidance to the leadership teams, and holding the professional advisor, the leadership teams, and the general members accountable to the mission of the organization.

Professional Advisor: The professional advisor is responsible for advising, supporting, and guiding the BROTHERHOOD leadership team. The advisor keeps the organization accountable to its mission and provides the professional link between Pitt EXCEL, BROTHERHOOD alumni, and the organization.

Foundation: "Foundation" is the name given to BROTHERHOOD leadership teams. The original six founders created this name. The concept is that the student leadership teams are the *foundation* of



the organization, and that participating students can stand on and build upon the *foundation* that leadership teams lay each year. The leadership teams keep the organization strong, forward moving, and accountable. Foundations create and execute BROTHERHOOD workshops, social events, and outreach and marketing efforts. Each Foundation is labeled with a number to keep track of each leadership team's tenure. The numbers progress each academic year (ex. 1st Foundation, 2nd Foundation, 3rd Foundation, and so on.). A former BROTHERHOOD leader may

say, “I was part of the 4th Foundation.” Meaning he was on the fourth BROTHERHOOD leadership team. The Foundation team name began with the 2013 leadership team.

BROTHERHOOD leadership is currently in its 7th Foundation.

Captains: There are two appointed BROTHERHOOD captains, a lead captain and a co-captain. Both captains serve as the leaders of the Foundation. The professional advisor selects the captains from the Foundation team, with the input and suggestions from the previous Foundation. Only juniors and seniors in good academic standing can be captains. The captains are responsible for keeping the other leaders accountable to their responsibilities. The captains meet regularly with the professional advisor providing updates and information concerning the direction of BROTHERHOOD. The captains lead leadership meetings and maintain open lines of communication with the professional advisor, alumni, and the founders.



Apprentices: BROTHERHOOD apprentices are potential leadership members in training. The current Foundation and the professional advisor select apprentices through observational selection. An apprentice must be at least a sophomore in good academic standing. Apprentices work closely with the leadership team. They attend all leadership meetings and assist with workshops and social events.



Apprentices are not guaranteed to become official leaders. Apprentices are officially appointed to a Foundation by the current Foundation and the professional advisor if they satisfy all their requirements and prove themselves qualified during their apprenticeship.

Observational Selection: Observational selection is the strategic selection method BROTHERHOOD leaders and the professional advisor use to select leaders, captains, and apprentices. The professional advisor and the Foundation members immediately begin observing

students as cohorts enter Pitt EXCEL. Individuals are observed and evaluated in several areas: social behaviors out of the classroom, academic/class behaviors, campus participation and involvement, student organization involvement, attendance, participation, and engagement with BROTHERHOOD, expressions and thoughts shared in workshops, interactions with Pitt EXCEL staff, and interactions with Pitt EXCEL students. As leaders graduate, and apprentices elevate to official leadership, the professional advisor and the current Foundation discuss their observations of potential students and collectively decide who will be selected.

Medallions: BROTHERHOOD medallions are bestowed upon leaders to signify their Foundation and alumni status. The medallions are passed down to each new Foundation at the start of the spring term during the Pitt EXCEL Mid-Year Motivation Conference, and/or at the end of the spring term during the Pitt EXCEL End of Year Celebration. BROTHERHOOD medallions consist of a black band with a silver plate



with the logo engraved in the center. The captains are granted gold plates to signify their captainship status. As the leaders graduate, they turn in their

leadership medallions and are given alumni medallions. The alumni medallions consist of a gold band and a gold plate with the logo in the center. Graduating students who were never placed on



a Foundation, but were actively involved and committed to the organization, are also granted honorary alumni medallions. The six founders' medallions consist of red bands with gold plates. The alumni medallions are worn at the

students' graduation ceremony with their caps and gowns.

Members: BROTHERHOOD general members are all the students who comprise the organization that are not apprentices or official leaders. There is no application or membership dues to become a



member or to maintain membership. All male identifying Pitt EXCEL students can become a member of BROTHERHOOD simply by participating. Members are able to assist Foundations with special projects, recommend ideas for workshops and social events, and they can create and lead initiatives with the approval of the Foundation. However, general members cannot create or lead workshops.

Workshops and Social Events: Workshops and social events are the cornerstone of BROTHERHOOD teaching, learning, and fellowship.



Foundations are responsible for creating and implementing the workshops and social events with the support of the professional advisor. Select BROTHERHOOD tenets are used to provide the



framing for all workshop topics, themes, and messages. Workshops are typically very informal. Free thought, expression, and open and honest dialogue is encouraged in the workshop format. The social events are an opportunity for leaders and members to bond, and get to know one another on

a more intimate and personal level.

Founders' Day: Founders' Day is the annual celebration of the original six founders. The celebration is held during Pitt's Homecoming weekend.



During Founders' Day, the six original founders and BROTHERHOOD alumni return to Pitt and lead a workshop for the members. The current captains deliver a "State of BROTHERHOOD" address, and a current member is honored with the annual

BROTHERHOOD Visionary Award for their outstanding work and commitment to the



organization. The intent of Founders' Day is to keep the connection between the founders, alumni and new cohorts of BROTHERHOOD

members strong. It is also designed to provide the founders and alumni updated information about the direction and plans of BROTHERHOOD for the academic year.

Appendix H: BROTHERHOOD Tenets

1. A man is to be wise and a keeper and disseminator of knowledge
2. A man is to be respectable and carry himself with dignity
3. A man is to be strong willed and strong minded
4. A man is to be comfortable expressing his complete humanity
5. A man is to be sensitive, supportive, and understanding of women
6. A man isn't guided by his fears
7. A man solves problems
8. A man cares for, and is accountable to his family and community
9. A man is purposeful
10. A man embraces leadership and respects respectable authority
11. A man knows and values his history
12. A man must be comfortable in his own skin
13. A man values mentorship
14. A man is courageous
15. A man should have the capacity to feel the pain of others
16. A man doesn't allow power, positions, money, or titles to compromise himself
17. A man respects the opinions and thoughts of others
18. A man's life should match his rhetoric
19. A man is humble
20. A man is self-aware
21. A man is an overcomer
22. A man is selfless
23. A man should be a living example for others to follow
24. A man is a critical thinker
25. A man takes ownership of his successes and his failures

The BROTHERHOOD tenets were created by Simeon Saunders and the six BROTHERHOOD Founders, Will Owens, Miguel Mignott, Cedric Brown, Nate Roberts, Dominic Malloy, and Ohi Dibua. These tenets serve as the guiding principles and values for BROTHERHOOD's teaching, mentoring, networking, reflection and social bonding efforts.

Appendix I: Alumni Demographic Information

Filling out this form is voluntary; however, the information you provide will be helpful in knowing some information about you as a former participant in the BROTHERHOOD organization.

About you

SSOE Graduation Year:

Undergraduate Major(s):

Undergraduate Minor(s):

Race/Ethnicity:

Certificate(s) earned:

Current Occupation

Graduate Student

School:

Major(s)

Degree Type:

Industry

Place of Employment:

Title:

Other

How many years were you involved in BROTHERHOOD?

How many student organizations were you involved in during undergrad?

How many years were you actively involved in Pitt EXCEL?

How many campus leadership positions did you hold in undergrad?

Appendix J: Current Student Demographic Information

Filling out this form is voluntary; however, the information you provide will be helpful in knowing some information about you as a participant in the BROTHERHOOD organization.

About you

Current academic year:

Undergraduate Major(s):

Undergraduate Minor(s):

Race/Ethnicity:

How many engineering student organizations have you been involved in?

How many years have you been actively involved in Pitt EXCEL?

How many campus leadership positions have you held?

Plans upon graduation (please check the box(es) that apply):

Industry ☐

Graduate School ☐

Other ☐

Unsure ☐

Appendix K: Demographics Sample Table

Pseudonyms	Current Occupation/Academic Year	Race/Ethnicity	Years Involved with BROTHERHOOD
Amaru	fifth year graduate student	Latino/Hispanic	8 years
Corey	electrical engineer	Black/African American	6 years
Guillermo	fourth year graduate student	Latino/Hispanic	8 years
Ike	fourth year senior	Black/African American	5 years
Jacob	fourth year graduating senior	Black/African American	4 years
James	fourth year senior	Black/African American	4 years
Joey	junior	Black/African American	3 years
Joseph	fifth year senior	Black/African American	5 years
Juan	first year graduate student	Latino/Hispanic	5 years
Malcolm	industrial engineer	Black/African American	6 years
Manuel	fourth year graduating senior	Latino/Hispanic	4 years
Michael	fourth year senior	Black/African American	4 years
Mitch	mechanical engineer	Black/African American	8 years
Ramon	fourth year senior	Latino/Hispanic	4 years
Rick	fourth year graduate student	Black/African American	7 years
Wayne	entrepreneur	Black/African American	8 years

Appendix L: Alumni Recruitment Letter

Dear BROTHERHOOD Alum,

I would like to formally request your participation in my research study this fall. This study is for the sole purpose of completing a dissertation at the University of Pittsburgh, in partial fulfillment of the Doctorate in Education degree. The aim of this study is gauge your experiences in the Pitt EXCEL male support forum, BROTHERHOOD during your time as an undergraduate student at the University of Pittsburgh.

Your participation will include:

- A 45-60 minute phone interview
- A demographic survey

This study is being conducted under the guidance of Dr. Gina Garcia, assistant professor, Administrative & Policy Studies. She can be reached at ggarcia@pitt.edu

Thank you for your consideration.

Sincerely,

Simeon Saunders, MEd

simeons@pitt.edu

412-624-9944 (W)

Appendix M: Current Student Recruitment Letter

Dear BROTHERHOOD Student Leader,

I would like to formally request your participation in my research study this fall. This study is for the sole purpose of completing a dissertation at the University of Pittsburgh, in partial fulfillment of the Doctorate in Education degree. The aim of this study is gauge your experiences in the Pitt EXCEL male support forum, BROTHERHOOD during your time as an undergraduate student at the University of Pittsburgh.

Your participation will include:

- A 45-60 minute phone interview
- A demographic survey

This study is being conducted under the guidance of Dr. Gina Garcia, assistant professor, Administrative & Policy Studies. She can be reached at ggarcia@pitt.edu

Thank you for your consideration.

Sincerely,

Simeon Saunders, MEd

simeons@pitt.edu

412-624-9944 (W)

Appendix N: Consent Form for Interview

Study Title:

BROTHERHOOD: An Evaluation of the Experiences of Black and Latino Male Engineers at the University of Pittsburgh Swanson School of Engineering

Principle Investigator

Simeon Saunders is the principle investigator (PI) of this dissertation. He may be contacted with any questions, issues, or concerns at 412-624-9944 (W) or at simeons@pitt.edu. Additionally, Dr. Gina Garcia serves as Simeon's advisor and committee chair. She may be contacted with any questions or issues at ggarcia@pitt.edu.

INTRODUCTION:

You are being asked to participate in this study because you are either currently an active participant in the BROTHERHOOD organization, or you were once an active participant in BROTHERHOOD during your undergraduate career at the University of Pittsburgh. This research is being conducted to evaluate the experiences of current and former BROTHERHOOD participants to explore areas where the organization is assisting self-identifying Black and Latino male engineering undergrads and or areas where the organization can improve. This research is being conducted to improve and advance the BROTHERHOOD experience for future participating students. As a potential participant you will be one of 16 identified current and former BROTHERHOOD participants being interviewed for this study. Your interview session will last between 45-60 minutes. This study is expected to conclude in April 2019.

STUDY RISKS:

The risks in participating in this study are minimal. Participants may experience emotional sentiments while drawing upon or reflecting upon their experiences, either positive or negative, during their undergraduate career in the SSOE, the Pitt EXCEL program, or in the BROTHERHOOD organization.

STUDY BENEFITS:

By participating in this study participants may assist BROTEHRHOOD in gaining more notoriety with key stakeholders within the SSOE the University of Pittsburgh and beyond. Such notoriety may provide avenues for supportive funding, resources, and recruitment of future diverse students.

PRIVACY (Person) and CONFIDENTIALITY (Data):

Your interview will be coded manually coded. All the information you provide will be transcribed and kept in a secure location on the SSOE internet server. All paper transcriptions will be kept securely locked in the Pitt EXCEL office files in which I alone have access to.

- *I will do my best to keep your personal information private but confidentiality cannot be guaranteed. You will not be identified by name or other identifiable information in any publication or presentation at a scientific meeting unless you sign a separate form giving your permission.*
- *Internet Transmission: I will do everything possible to protect your privacy and confidentiality but information transmitted over the internet is insecure and no method of electronic storage is perfectly secure therefore absolute confidentiality cannot be guaranteed*

WITHDRAWAL FROM STUDY PARTICIPATION:

You can, at any time withdraw from this research study

- *To formally withdraw from this research study, you should provide a written and dated notice of this decision to the principal investigator of this research study and email it to simeons@pitt.edu. Your decision to withdraw from this study will have no effect on your current or future relationship with the SSOE Office of Diversity, the Pitt EXCEL program, or the BROTHERHOOD organization.*

VOLUNTARY PARTICIPATION:

- *Your participation in this research study is entirely voluntary. If there are any words you do not understand, feel free to ask us. The investigators will be available to answer your current and future questions.*
- *Whether or not you provide your consent for participation in this research study will have no effect on your current or future relationship with the SSOE Office of Diversity, the Pitt EXCEL program, or the BROTHERHOOD organization.*

Consent to Participate:

The above information has been explained to me and all of my current questions have been answered. I understand that I am encouraged to ask questions, voice concerns or complaints about any aspect of this research study during the course of this study, and that such future questions, concerns or complaints will be answered by a qualified individual or by the investigators listed on the first page of this consent document at the telephone numbers given. I understand that I may always request that my questions, concerns or complaints be addressed by a listed investigator. I understand that I may contact the Human Subjects Protection Advocate of the IRB Office, University of Pittsburgh (1-866-212-2668) to discuss problems, concerns, and questions; obtain information; offer input; or discuss situations that occurred during my participation. By signing this form I agree to participate in this research study. A copy of this consent form will be given to me.

Participant's Signature

Date

Appendix O: Interview Protocol: Current Leaders

Thank you for participating in this interview. I appreciate any insights you can provide into your experiences with the BROTHERHOOD program. Your participation in this interview is voluntary. You can stop the interview at any time or skip any questions. The interview should last no longer than 45-60 minutes. I will be typing notes as we speak. I will keep the notes and any transcripts confidential and will not share them. All data received from you will be given an ID#. All stored data will have this number on it and not your real name. All your responses are confidential, and data will be kept under lock and key. I will not associate the information you provide with your name in reports, but it may be possible for someone to think they can identify you.

Given these conditions, do you agree to participate in today's interview?

[If YES, continue. If NO, stop interview and thank them for their time.]

I would like to audio-record the conversations to check the accuracy of my notes. Do you agree to this? *[If participant agreed to have interview recorded, start recording. If not, prepare to take detailed notes.]*

Do you have any questions before we begin?

This research study is being led by Simeon Saunders, under the supervision of his advisor Dr. Gina Garcia, in the Doctorate of Education program at the University of Pittsburgh.

Questions

1. Tell me your name, year you graduated, major, and how long you were involved with BROTHERHOOD.
2. What role has BROTHERHOOD played for you as student in the SSOE?
Probe—Has BROTHERHOOD helped you overcome any particular academic, social, or personal challenges? If, so how?
3. Any thoughts concerning the role BROTHERHOOD leadership has played in negotiating your experiences in the SSOE, or the larger Pitt community, specific to being an underrepresented male engineering student?
Probe—Any thoughts concerning how BROTHERHOOD contributes to diversity and inclusion in the SSOE?
Probe—Do you view BROTHERHOOD as a safe or counterspace for underrepresented males? If so, can you elaborate?
4. Can you share your thoughts on the organizational and leadership structure of BROTHERHOOD?

Probe—Any adjustments or changes you would make to the BROTHERHOOD structure?

5. Can you discuss your thoughts on the guiding BROTHERHOOD Tenets?

Probe—How have these tenets guided you as a leader?

Probe—How have these tenets guided you as an engineering student?

Probe—How have these tenets helped you understand manhood and masculinity?

6. Can you share your thoughts on the role of your BROTHERHOOD advisor and or alumni leaders?

Probe—any suggestions, ideas, thoughts on how your advisor and or alumni can help BROTHERHOOD in the future?

Probe—Any areas where your advisor and or alumni can make improvements in their BROTHERHOOD leadership?

7. Are there any suggestions you have to help improve the BROTHERHOOD leadership experience? If yes, can you elaborate?

Probe—Anything you would take away from BROTHERHOOD leadership?

Probe—Anything you would add to BROTHERHOOD leadership?

8. Can you share any thoughts concerning BROTHERHOOD organizational deficiencies, or areas where BROTHERHOOD as an organization is not quite reaching or impacting leaders, students, or the broader SSOE/Pitt community?

Probe—Any thoughts or suggestions to address these deficiencies?

9. Is there anything else about your experience with BROTHERHOOD that is important for me to know that we have not yet talked about?

That is all the questions I have for you today. Thank you for your time and participation, I appreciate your willingness to discuss this important topic. If you have future questions regarding the interview or the use of data, please contact me at: simeons@pitt.edu

Appendix P: Interview Protocol: Alumni

Thank you for participating in this interview. I appreciate any insights you can provide into your experiences with the BROTHERHOOD program. Your participation in this interview is voluntary. You can stop the interview at any time or skip any questions. The interview should last no longer than 45-60 minutes. I will be typing notes as we speak. I will keep the notes and any transcripts confidential and will not share them. All data received from you will be given an ID#. All stored data will have this number on it and not your real name. All your responses are confidential, and data will be kept under lock and key. I will not associate the information you provide with your name in reports, but it may be possible for someone to think they can identify you.

Given these conditions, do you agree to participate in today's interview?

[If YES, continue. If NO, stop interview and thank them for their time.]

I would like to audio-record the conversations to check the accuracy of my notes. Do you agree to this? *[If participant agreed to have interview recorded, start recording. If not, prepare to take detailed notes.]*

Do you have any questions before we begin?

This research study is being led by Simeon Saunders, under the supervision of his advisor Dr. Gina Garcia, in the Doctorate of Education program at the University of Pittsburgh.

Questions

1. Tell me your name, year you graduated, major, and how long you were involved with BROTHERHOOD.
2. Tell me about your experiences as a member of BROTHERHOOD during your undergraduate career.
 - Probe—Why was BROTHERHOOD created?
 - Probe—What did BROTHERHOOD mean to you in college?
 - Probe—What does BROTHERHOOD mean for you today?
3. Can you share how BROTHERHOOD helped you navigate college specifically as an underrepresented male?
 - Probe—Would you consider BROTHERHOOD a safe space? If so how?
 - Probe—Can you elaborate on the ways in which BROTHERHOOD plays a role in diversity and inclusion efforts in the SSOE?

4. Can you share areas where BROTHERHOOD has impacted your current professional career and or your personal life experiences since undergrad?
5. How do you perceive or understand your role with BROTHERHOOD as an alum?
Probe—Do you give back to the organization? If so, in what ways?
6. Can you discuss any areas where BROTHERHOOD can improve?
Probe—Any ways where you can be an active participate in its improvements?
7. Can you discuss your thoughts on the guiding BROTHERHOOD Tenets?
Probe—How have these tenets guided you as a professional or graduate student?
Probe—How have these tenets helped you understand manhood and masculinity?
8. Where do you envision BROTHERHOOD going in the future?
Probe—Do you have a role in these future plans?
9. Is there anything else about your experience with BROTHERHOOD that is important for me to know that we have not yet talked about?

That is all the questions I have for you today. Thank you for your time and participation, I appreciate your willingness discuss this important topic. If you have future questions regarding the interview or the use of data, please contact me at: simeons@pitt.edu.

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