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# Investigating Institutional Support for a Minority Engineering Program at a Historically White Institution

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# Investigating Institutional Support for a Minority Engineering Program at a Historically White Institution

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# Abstract

Engineering programs at historically White institutions (HWIs) often perpetuate stereotypes and racism against Black students, impacting their experiences and opportunities in the field. Minority engineering programs (MEPs) provide support and resources to minority students in engineering, challenging stereotypes and fostering positive identity development. MEPs push back on cultural norms by rejecting the stereotypical narrative of what it means to be Black in engineering. Despite their significance, MEPs face challenges in garnering institutional support and recognition within engineering departments. It is imperative to understand what institutional support for MEPs looks like to mitigate barriers identified in the literature. To address these barriers and promote equity, this dissertation study explored the impacts of racism on the alignment between the perceived value of MEPs, institutional commitment, and MEPs' designated structures with the following overarching and sub-research questions:

**To what extent are the perceived value of MEPs, the institutional commitment towards MEPs, and the designated structure of MEPs aligned?**

**(1) What are the university-level and college-level stakeholders' perceptions of the MEP's role(s), mission, and value?**

**(2) To what extent do the university and college of engineering demonstrate commitment to fulfilling the role(s) and achieving the mission of the MEP?**

**(3) To what extent are perceptions and commitments enacted through MEP's organizational and programmatic structures?**

A qualitative, in-depth single-case study was conducted at Bravo University, a historically white institution (HWI), to explore institutional support for PEACE, its MEP. Through a three phase qualitative analysis and the interpretive lens of the theory of racialized organizations, the study found that while PEACE benefits students, it also exposes a new form of racial inequality within

the College of Engineering (COE). This inequality persists by maintaining the exclusionary culture of HWIs like Bravo, thereby limiting the impact of PEACE on racially and gender-marginalized students. Despite PEACE's efforts, structural barriers and exclusionary practices at Bravo, such as strict financial and admissions criteria, hinder significant increases in the enrollment of these target students. The COE's reliance on PEACE to provide positive experiences for racially and gender-marginalized students, without embedding these values into the broader institutional culture, creates a "separate but equal" approach, reinforcing the grounding racial ideology of education in America. Furthermore, the study highlights how the political climate negatively affects diversity, equity, and inclusion (DEI) initiatives, leading to the rebranding of PEACE as an inclusive program for all students. This shift undermines PEACE's mission and the safe spaces it created for racially and gender-marginalized students and takes a meritocratic, color-blind approach to student support. Ultimately, the study illustrates how racism manifests through the support structures of an MEP at an HWI. The findings have significant implications for the practice and research of implementing and supporting student support programs in higher education institutions.

# Dedication

To my Old Man Blue and Nos, this one is for you.

*"ND x 2, they would be proud"*

To Le Damas, I did it so we'd know it was possible. We are unicorns.

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*"The LORD will perfect that which concerneth me" - Psalm 138:8*

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# Chapter 1

# Introduction

## 1.1 Higher Education Institutions in America

Throughout the course of American higher education, the humanity of Black students was an afterthought. At the onset of public higher education in America, historically White institutions (HWIs) were built primarily through Black slave labor, founded to serve, educate, and advance White students, and promoted the exclusion of Black-ness/people (Harris, 2021). Most institutions in America, serving more than 50 percent of the student population, are HWIs. Studies have shown that although the representation of Black students at HWIs has slowly increased over the years, their experiences have not been appreciably enhanced (Solorzano, Ceja, & Yosso, 2000; Griffith, Hurd, & Hussain, 2019; McGee, 2021). This is partly due to the lack of reconciliation with the racism that legitimized the historical mistreatment of Black students (Harris, 2021). Racism and white supremacy ground the culture of HWIs and negatively impact the overall experiences of Black students (Harris, 2021; Tichavakunda, 2021).

HWIs were forcibly required to enroll and educate Black students years into their existence after the 1954 U.S. Supreme Court ruling on Brown v. Board of Education declared that separate schools are "inherently unequal,". Many HWIs, especially in the south, responded with intense aggression and fatal hostility (i.e., the University of Mississippi's 2000 White rioters in response to James Meredith's enrollment). Black students' lives were consistently put at risk for access to the education they were entitled to under the law and as Americans. HWIs held fast to the grounding racist belief that Black students were inferior, did not belong in the same classrooms as

White students, and should not have access to the same educational opportunities as Black students. This belief translated to racist admissions requirements, disproportionate representation of Black faculty, and the devaluing of Black humanity (Harris, 2021). The mistreatment and exclusion of Black students were commonplace as instructors, students, and administrators made their feelings regarding integration clear (Harris, 2021). The period of integration was rife with violent riots and protests from White students who felt that Black students did not belong on their campus (Slaton, 2010; Harris, 2021). Their feelings were reinforced by the support of high-level administrators who took glaring stances toward the exclusion of Black students (Harris, 2021). While Black students were allowed to be admitted to HWIs, they were still subjected to "separate but equal" educational experiences (Slaton, 2010; Slaughter, Tao, & Pearson Jr, 2015; Harris, 2021).

Scholars often discuss whether integrating higher education in America provided a net benefit or deficit towards Black student experiences. HWIs currently engage in the unequal covert treatment of Black students coupled with fallacious visions of change, such as diversity goals and strategic plans that seldom address the institutionalized racism that plagues the experiences of Black students (Dumas & Ross, 2016; Baber, 2015; Harris, 2021). Black students have led many on-campus protests against racism to motivate their institutions to implement meaningful changes in policies and cultural practices. Many have taken stands against the permanence of statues that honor institutional founding fathers who were racist slaveholders (Eliahou & Zdanowicz, 2018). Black students at HWIs have been forced to engage in radical expressions of disdain against racism to get the attention of high-level administration to secure basic human decency and respect towards Black students.

The fight for basic respect and human decency can also be seen in the treatment of Historically Black Colleges or Universities (HBCU). HBCUs are institutions that were established and accredited, or making progress toward accreditation, before 1964 and created for the education and advancement of Black students (Outcalt & Skewes-Cox, 2002; Arroyo & Gasman, 2014; Harris, 2021). HBCUs have long struggled with receiving equitable resources such as funds and technology compared to HWIs, often in the same city or region (Harris, 2021). To this date, HBCUs are owed millions in back pay from funds promised to them by the American government (Harris, 2021). Over the course of history, HBCUs have been forced to prove their competence and relevance while navigating the struggles of maintaining a full-functioning university with minimal resources (Outcalt & Skewes-Cox, 2002). The American higher education system legitimized the unequal distribu-

tion of resources to HBCUs by being motivated by racist beliefs regarding the inferiority of Black people. Black education has consistently been considered an afterthought by White power-holding stakeholders. These racist ideas permeated majors as well, specifically engineering majors.

### 1.1.1 Engineering Academia

The Morrill Act of 1862 established engineering as a major at HWIs (Main, Smith, Fentiman, & Watson, 2019; Rohde et al., 2020). From the very conception of the engineering collegiate culture in 1862, Black students have been ostracized, and unwelcomed (Slaton, 2010). Engineering as a major at HWIs was not created with Black students in mind. As HWIs began establishing themselves as educational and research powerhouses, White male supremacy was the grounding ideology for science, technology, engineering, and mathematics (STEM) education (Slaton, 2010; Dietz, McCray, & Douglas, 2019; McGee, 2020). This led to the establishment of racial ideologies such as scientific racism in the 1800s and 1900s, which was a product of perceptions and beliefs about the inferiority of Black people (Roberts, 2011), and beliefs regarding who could be an engineer (Rohde et al., 2020).

Following the integration of HWIs, engineering stakeholders within the institution developed barriers to maintain the White, masculine nature of the field. They adopted the meritocratic belief that everyone should be able to pull themselves up by the bootstraps to meet the criteria for engineering success (Slaton, 2015). This color-blind, liberal viewpoint neglected the systemic disadvantage that the education system in America had on the experiences and education of Black students and assumed that all individuals existed on a leveled field. HWIs developed rigorous curricula and adopted a "weed out" culture to maintain their image of the American engineer (Tsui, 2007; Slaton, 2010; Mejia, Revelo, & Pawley, 2020; McGee, 2021). This was further reinforced by historic national propaganda and the individual beliefs of educators and students in the field. Stereotypes grounded in racism were developed regarding the capability of Black students to succeed in foundational mathematics and science courses. Stereotypes and racist ideologies have shaped beliefs about the ideal engineer's appearance, where they come from, and what they can do (Roberts, 2011; McGee & Martin, 2011; Collins, 2018).

The state of engineering cultures and practices mirrors the way that society treats Black people and regards them as less than others (Solorzano et al., 2000; McCoy & Rodricks, 2015; McGee, 2020; Dorve-Lewis, 2023). The engineering culture among HWIs takes on the armor of racism in America to justify practices that historically exclude Black students and the contributions of Black

people to the engineering enterprise (Slaughter et al., 2015). The devaluing of Black-ness/people in engineering has led to attrition gaps and significant underrepresentation of Black students. Some Black students leave the engineering major before attaining their engineering degrees. Racist studies attribute this "leaky pipeline" to the ability of Black students to achieve and neglect the historical nature of HWIs to build barriers against the advancement of Black students (Griffin, 2019; McGee, 2020). The experiences of Black students at the hands of engineering programs grounded in racist beliefs are largely negative. While some students succeeded despite their toxic environments (McGee & Martin, 2011; M. S. Ross, Huff, & Godwin, 2021), it is important to explore the nature of their experiences.

### 1.1.2 Black Student Experiences (BSEs) in Engineering at HWIs

The journeys of Black students in engineering have been scattered with negative interactions and traumatizing experiences at HWIs (Solorzano et al., 2000; McGee & Martin, 2011; Griffith et al., 2019). The nature of the negative experiences of Black students in white spaces is unique to their Blackness. STEM fields and majors allow Black students to navigate societal and discipline-related stereotypes (Good, Halpin, & Halpin, 2000; McGee & Martin, 2011; Dorve-Lewis, 2023). This multiplicity in barriers presents a significant challenge that White students do not traditionally experience. These experiences are often filled with but are not limited to, the presence of racism, microaggressions, and stereotype threat (McGee & Martin, 2011; Samuelson & Litzler, 2016; Griffith et al., 2019; M. J. Lee, Collins, Harwood, Mendenhall, & Huntt, 2020). Racist beliefs, culture, and practices embedded in engineering programs at HWIs create environments that inhibit Black student thriving (Damas & Benson, 2023).

Black students who exist at the intersection of multiple identities even face racism as students in the communities of their non-racial identities. Intersectionality studies show us how race is salient across identity groups, which further explains how inequitable the experiences for Black students are compared to White students. In studies that outline the experiences of women in STEM, it was found that White women receive higher regard than Black women (Blosser, 2020; Givens & Jeffries, 2003). Experiences of sexual harassment, microaggressions, exclusionary practices and cultures have often led Black women to survive in STEM majors instead of thriving and, in some cases, leave the major or institution (Nkhata, 2018; M. J. Lee et al., 2020; M. S. Ross et al., 2021). In the queer community, Black students must navigate experiences that their white counterparts do not have to

(Strayhorn, Blakewood, & DeVita, 2010; Dumas & Ross, 2016; López, Morgan, Hutchings, & Davis, 2022; Tichavakunda, 2024). Black students with disabilities, physical or learning, have also found that inequities in education lead to policed access to resources that benefit White students and are inaccessible for Black students (Ford & Moore, 2013; Frederick & Shifrer, 2019).

The experiences of Black students in engineering are negative and unequal to those of White students in higher education (McGee & Martin, 2011; McCoy & Rodricks, 2015; McGee, 2016). These unequal experiences can often lead to achievement gaps (Steele & Aronson, 1995) that can be traced back to ongoing issues of racial stigma and racial tension in the school (Zirkel, 2008). Although some scholarship makes suggestions to remedy the experiences of Black students (McGee & Martin, 2011; Borum & Walker, 2012; McGee & Bentley, 2017), very few studies focus on the role of the institution in perpetuating hostile engineering environments that foster the negative experience.

In some cases, Black students have taken stances against racist cultures and practices at their own institutions. This can be seen in Black students historically engaging in protests and demonstrations to achieve change in engineering programs. Protests arose in the wake of the murders of George Floyd, Breonna Taylor and Mike Ramos. The academic Strike for Black Lives and #ShutDownSTEM day was a mass shutdown of academia that took place around the world on June 10, 2020. The main goals of the strike and the shutdown were to reflect upon anti-Black racism in academia and STEM and to commit to actions to eradicate it. Members of the University of Texas at Austin (UT-A) National Society of Black Engineers (NSBE) chapter contributed greatly to this mission by presenting their college of engineering administration with a list of demands geared towards making UT-A meet the needs of their Black students (Amer, 2020). The demands highlighted the gross misrepresentation of engineering faculty and the inadequate outreach efforts in the community.

Many Black students in engineering rely on safe spaces such as NSBE to curate their own thriving experiences in engineering programs at HWIs and to empower them to demand change (Tichavakunda, 2021, 2024). These spaces include but are not limited to sororities, fraternities, and student organizations (i.e., NSBE, Black Student Union) (Tichavakunda, 2021, 2024). In other cases, Black students rely on designated centers or programs at their HWI, such as cultural centers or minority engineering programs (MEPs) (McGee, 2016, 2021). While each of the aforementioned spaces has been proven to have positive impacts on Black student experiences in engineering (Tichavakunda,

2021), MEPs are institution-implemented programs that consider a student's racialized experience in the engineering discipline (Brawner, Mobley, Lord, & Main, 2024).

## 1.2 Minority Engineering Programs

MEPs were created in response to a growing recognition of the need to diversify the engineering workforce (Landis, 1988, 1991). These programs aim to increase the representation of underrepresented minority groups, such as African Americans, Hispanics, Native Americans, and women, in the field of engineering (Morrison & Williams, 1993; Brawner et al., 2019; George, Castro, & Rincon, 2019). The creation of MEPs can be attributed to six main themes: (1) the Civil Rights Movement of the 1950s and 1960s (Slaton, 2010), (2) landmark supreme court cases such as 1978 case Regents of the University of California v. Bakke that reaffirmed the legality of affirmative action in college admissions (Shehab, Murphy, & Foor, 2012), (3) federal legislations such as Title VI of the Civil Rights Act of 1964 and Title IX of the Education Amendments of 1972 (Civil Rights Act, 1964; Education Amendments, 1972), (4) industry partners that developed MEPs in collaboration with universities (Branigan, 1975), (5) advocacy from minority students, faculty, and community organizations that pushed for the creation of these programs (Landis, 1991), and (6) institutional initiatives that took steps to establish MEPs (Landis, 1991; Slaton, 2010).

MEPs were not created to address the racist underpinning of the engineering academia and its gruesome impacts on the experiences of Black students. MEPs were positioned to provide an in-house mechanism to help Black students get to the finish line within the racist system (Slaton, 2010). Still, MEPs serve as community and academic support sources for Black students at HWIs (Landis, 1991; Tichavakunda, 2021; K. Thomas & Coley, 2023). MEPs primarily focus on increasing marginalized students' retention and graduation rates. Some focus on gender marginalization (i.e., women), racially marginalized communities in engineering fields, first-generation students, and students from low-income families. They aim to provide focused resources and intervention to students historically disadvantaged in engineering education in America (Rincon & George-Jackson, 2016; George et al., 2019). They are characterized by affiliation with existing STEM colleges in institutions that majorly serve White students, targeted recruitment strategies, and focused resources such as tutoring, scholarships, and mentorship (Rincon & George-Jackson, 2016).

MEPs have historically contended with beliefs regarding their legitimacy and need in the

field of engineering. Stakeholders who hold strong colorblind beliefs regarding the nature of engineering to be a field where everyone has equal opportunity to pull themselves up from their bootstraps served as barriers to the advancement and existence of MEPs. Many studies arose in the 1990s and early 2000s, that mirrored the fight MEPs had to endure to prove themselves worthy to be in the field. This will be further discussed in the next chapter.

Time and time again, MEPs have been cited as a significant contributor to the success of racially marginalized students, specifically Black students (Reichert & Absher, 1997; Tsui, 2007; Buckley et al., 2019). In a NSBE white paper, Ross and Yates (2016) urged stakeholders interested in enhancing the experience of Black students in engineering to enhance support efforts towards MEPs. Thus, my study is motivated by the racialized experiences of Black students to investigate how an HWI provides institutional support to its MEP. This study answers the following overarching research question: **To what extent are the perceived value of an MEP, the institutional commitment towards an MEP, and the designated structure of an MEP aligned at an HWI?**

# Chapter 2

# Literature Review

In the following sections, I will identify how studies have positioned MEPs as counterspaces for Black students. I will follow this by outlining how scholars have studied institutional support for MEPs and the constructs they have identified are relevant to said support. This section will end with a thorough discussion of the theory of racialized organizations (Ray, 2019) and its relevance and use to my dissertation study.

## 2.1 MEPs Impact on BSE

MEPs remain community focal points and provide resources that help Black students succeed in engineering (Newman, 2016; Good et al., 2000). Scholars have found that many Black students attribute their engineering success to MEPs, mentioning the positive environment, academic support, and access to representative advocacy (Good et al., 2000; Ohland & Zhang, 2002; W. C. Lee & Matusovich, 2015, 2016). Thomas et al. (2023) found that MEPs serve as a counterspace for Black students by providing them with a space where their racial identity can be empowered.

### 2.1.1 MEPs as Counterspaces

Solórzano et al. (2000) identified that Black students create or rely on "counter spaces" in response to the daily microaggressions they face. They define counterspaces as "sites where deficit notions of people of color can be challenged and where a positive collegiate racial climate can be established and maintained" (p. 70). In STEM, Black students develop physical spaces that

challenge racist norms and actions to support their persistence in STEM postsecondary programs (Tichavakunda, 2021). Counterspaces can manifest in diverse ways, encompassing abstract concepts like mentor relationships and tangible concepts such as safe havens for minority groups, such as clubs and organizations within STEM departments or institutions. Watkins and McGowan (2022) found that Black communities outside of science and engineering departments served as counterspaces for Black men pursuing degrees at PWIs. While not affiliated with their areas of study, these spaces helped support their unique and often troublesome experiences at their institution. In another study examining Black women's experiences in undergraduate engineering on a primarily White campus, Blosser (2020) suggested that institutional change could begin with supporting and creating counterspaces for Black women and other students with marginalized identities. This institutional change could begin with understanding a possible counterspace that many majority White-serving institutions have: MEPs.

The argument can be made that MEPs push back on cultural norms by existing as a space that rejects the stereotypical narrative of what it means to be Black in engineering. A space like this can lead to elevated levels of agency and positive identity development and facilitate thriving within one's engineering program (Case & Hunter, 2012; K. Thomas & Coley, 2023; Damas & Benson, 2023). The following subsections will explain how MEPs impact Black student experiences by serving as counterspaces, redefining the image of achievement, valuing holistic student experiences and promoting social capital.

### 2.1.2 Redefining the Image of Achievement

The programmatic efforts of MEPs provide students with academic enrichment that prepares them for core courses in their engineering majors. In the late 1990s and early 2000s, as many MEPs struggled to maintain legitimacy amidst battles against affirmative action, a multitude of studies emerged to reaffirm the impact of MEPs on the academic achievement of minority students (Lam, Doverspike, & Mawasha, 1999; Aken, Watford, & Medina-Borja, 1999; Adair, Reyes, Anderson-Rowland, & Kouris, 2001). These studies primarily took an evaluative approach to understanding how MEPs impact Black students. In a study evaluating MEPs through focus groups, Aken, Watford, and Medina-Borja (1999) found that students mentioned how academic workshops benefited their academic success. Lam, Doverspike, and Mawasha (1999) identified the significant impacts the MEP had on student GPA and how involvement motivated students to participate in study halls

and other academic enrichment. Adair et al. (2001) further identified how students reported high confidence levels after participating in a group learning initiative created by MEP. Good, Halpin, and Halpin (2000) specifically mentioned how, when faced with similar academic challenges, students who participated in the MEP did not consider leaving the major because they felt a strong sense of determination and belief in their ability to succeed. They attributed these feelings to their involvement in the MEP.

This impact has continued to hold beyond that period. Murphy et al. (2010) found significant impacts on graduation rates favoring students who participated in the programmatic offerings of the MEP. Lee and Matusovich (2018) discovered that when students were asked their perceptions of the impact of their MEP on their experiences, many identified that it served as a source of support academically. Shehab, Murphy, and Foor (2012) identified how a previous model of an MEP provided students with academic support that helped them believe that academic achievement was not solely associated with a White racial identity. These papers identify how MEPs push back on racist beliefs that Black students are incapable of academic excellence. The MEPs studied in these papers provided students with academic support, reaffirming their ability to learn and grasp challenging concepts.

### 2.1.3 Valuing Black Students' Holistic Experiences

MEPs have proved to be safe spaces for Black students. Many studies highlight how they consider the MEP a space where they could be themselves (McCartney, Reyes, & Anderson-Rowland, 1997; Shehab et al., 2012; W. C. Lee & Matusovich, 2018). Specifically, Lee and Matusovich (2018) found that students perceived their MEPs to be a source of comfort for students. The participants perceived the MEP space as a semblance of a "home away from home." They felt that the MEP gave them family.

This was particularly evident in Shehab, Murphy, and Foor (2012). The students in the study spoke about how the previous model of the MEP greatly impacted their sense of belonging because they could come to a safe space, share their experiences, and see others who looked like them. This camaraderie was so significant that as the MEP in the study began to shift in structure, it lost what students considered to be the heart of the program, which was a sense of family among individuals who understood each other's experiences. This shift pushed many students of color to no longer consider the MEP a "safe space." Although May and Chubin (2003) identified that a focus on

academics rather than student support services (i.e., outreach, admissions, advising, counseling) is the best way to remain effective as an MEP, it is essential to note that at the time of this publication, there was a need to prove legitimacy for MEPs and the accepted proof was academic achievement. Nonetheless, May and Chubin (2003) further supported that services such as counseling and advising contributed to the success of minority students whom the MEP served.

The commonality here also aligns with the need for counterspaces to be a refuge for students of color. The MEPs exist as a place to receive counsel, vent, and take a load off, which is critical as many studies have shown that Black students have traditionally negative experiences in engineering programs at PWIs (Solorzano et al., 2000; Strayhorn et al., 2010; McGee & Martin, 2011; McGee, 2021; M. S. Ross et al., 2021; Tichavakunda, 2021).

### 2.1.4 Promoting Social Capital

Social capital refers to the collective value that arises from the social networks, relationships, and interactions within a community or society. For students of color, Yosso (2005) defined social capital as the students' "peers and other social contacts" and emphasized how students utilize these contacts to gain college access and navigate their institutions. MEPs leverage representation and advocacy to help students develop networks among peers, professors, and professionals.

MEPs exposed students to key faculty through program events and initiatives (Adair et al., 2001; Good et al., 2000; W. C. Lee & Matusovich, 2018). Adair et al. (2001) revealed how the MEP strategically exposed students to core faculty through an academic workshop and helped them build relationships with faculty. Students reported positive impacts on professional development and academic success through meaningful relationships established with faculty. Lee and Matusovich (2018) identified how the students perceived MEPs as a source of connection by helping them network among peers, upper-level students, and engineering professionals and meet diverse people. This reinforces that Black students are within reach of opportunities through the people around them. The uplifting of peer-to-peer, student-to-mentor (upper-level students), and student-to-professional relationships increases the value of what exists around the student.

### 2.1.5 Summary

MEPs play a crucial role in reshaping perceptions of achievement among minority engineering students, particularly Black students, by providing academic support and creating safe spaces where they can be themselves and find a sense of belonging. Studies spanning from the late 1990s to recent years have consistently shown that MEPs significantly impact academic achievement, graduation rates, and students' confidence levels. These programs challenge racist beliefs about the capabilities of Black students and provide a supportive environment that fosters academic success and personal growth. Additionally, MEPs serve as platforms for promoting social capital by facilitating connections between students, faculty, and engineering professionals, thus expanding networking and mentorship opportunities. While historically focused on academic achievement, MEPs are increasingly recognized for their broader role in supporting the holistic experiences of minority engineering students, including counseling, advising, and fostering peer relationships, ultimately contributing to their success in navigating engineering programs at predominantly white institutions (PWIs). Thus, understanding institutional support MEPs is imperative for ensuring equitable access to resources and opportunities for minority engineering students.

## 2.2 Institutional Support for MEPs

Studies have identified that MEPs lack support from institutional actors (i.e., faculty and college administrators) (Morrison & Williams, 1993; Rheingans, 2011; Holloman, 2023). MEPs also struggle with legitimacy and recognition within engineering departments (Morrison & Williams, 1993; Rincon & George-Jackson, 2016). Most faculty and engineering administrators hold their own perceptions and beliefs towards MEPs that limit the level of influence MEPs have (Hackett & Martin, 1998; Landis, 1991; Park, Kim, Salazar, & Hayes, 2020). Hackett and Martin (1998) found that faculty mostly supported providing students with the resources necessary to overcome the achievement gap, but clustering components (e.g., awards banquets and career fairs) were unnecessary. Faculty perceptions and beliefs can affect their involvement with and advocacy towards MEPs ((Landis, 1991); Hackett & Martin, 1998). Studies overwhelmingly cite that the majority of faculty involvement in MEPs is from minoritized faculty (Morrison & Williams, 1993; Newman, 2016)) who often experience burnout as they attempt to conduct outreach, achieve tenure, navigate oppressive work environments, and teach courses (Chen, Mejia, & Breslin, 2019). Many HWIs with

MEPs have highly esteemed engineering programs that yearly garner large amounts of funding and recognition for the university. Thus, it is imperative to understand what support for these programs looks like to mitigate barriers identified in the literature.

### 2.2.1 Model of Support for MEPs

The NACME/NAMEPA conceptual model for MEPs has three core groups: institutional environment, pre-enrollment activities, and matriculation services. The institutional environment houses fiscal resources, staffing, office space, faculty involvement, reporting lines, and institutional commitment. Morrison and Williams (1993) reported that the institutional environment in this model was the source of institutional support for MEPs. They found that each item listed in the institutional environment impacted the success of MEPs and was also noted by MEP directors as necessary for the overall functioning of the MEP. Since then, studies have furthered our understanding of the impact of fiscal resources (McCartney et al., 1997; Newman, 2016), staffing (Buckley et al., 2019), office space/location (George et al., 2019), faculty involvement (Hackett & Martin, 1998; Newman, 2016; Holloman, 2023), and institutional commitment (Terenzini & Reason, 2005) on MEPs. Morrison and Williams (1993) also identified perceived value as an indicator of institutional support for MEPs, tying value to legitimacy and influence. In a recent study, Rincon and George-Jackson (2016) further established how legitimacy accorded to an MEP can impact how the MEP receives funding, location, and presence in an engineering program and university. This work further highlights how institutional support for an MEP is defined by the perceived value of the MEP, institutional commitment to the MEP, and the structure of the MEP, as visualized in Figure 2.1. One element, however, remains understudied in research focused on MEPs: the institutional environment. Most studies neglect the historical context of the institution that houses the MEP. Research on institutional environments has discovered that environments have a major effect on the nature of experiences for students (McGee, 2016; Blosser, 2020; M. S. Ross et al., 2021; Damas & Benson, 2023) and faculty (Chen et al., 2019), yet our understanding of how environments affect institutional support for MEPs is limited to an outdated model (Morrison & Williams, 1993) and studies examining MEPs that underwent structural changes (Shehab et al., 2012; Newman, 2016). MEPs exist to support minority students, who were not considered when the institution and the engineering program were established (Landis, 1991). It is important to view support for MEPs through a critical, historical lens because they are embedded in institutions founded on the racial

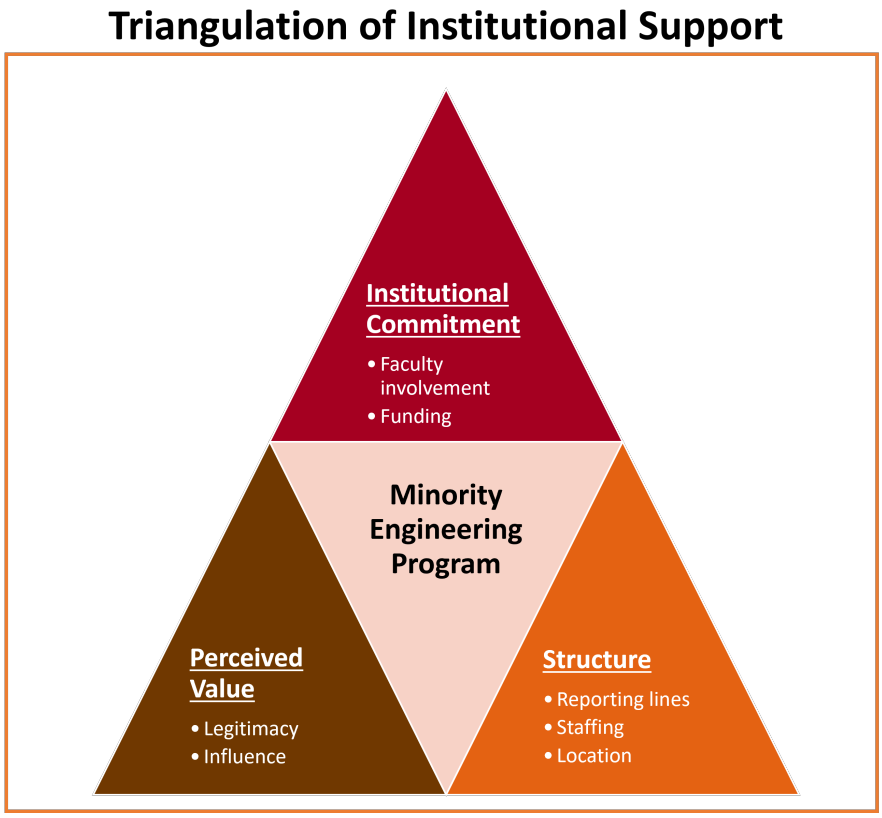


Figure 2.1: *Model for Institutional Support* Conceptualization of literature on institutional support for minority engineering programs. This model depicts the factors that impact institutional support for MEPs. Perceived value, institutional commitment, and structure are all constructs that can demonstrate how an institution provides institutional support. The institutional environment is the culture and practices of the university that hosts the MEP and shape the extent to which an institution supports its MEP.

underpinnings of education in America (Slaton, 2010; Harris, 2021).

Many stakeholders are motivated to implement diversity programs in STEM through interest convergence, the tendency to act only when there are direct benefits to the stakeholder (i.e., the university) (Bell, 1980; Delgado & Stefancic, 2001; Baber, 2015). Motivation to maintain or start an MEP based on interest convergence can perpetuate dominant hegemonic ideologies that negatively impact Black students in engineering programs (J. M. Thomas, 2018; Tremaine, Hagman, Voigt, Damas, & Gehrtz, 2022). Implementing diversity programs that neglect the role of race can subject students to neo-liberalist ideologies built on color-blind perspectives (Aleinikoff, 1991; Bell, 1992; Bonilla-Silva, 2006; Collins, 2018). Neo-liberalism claims equality and progress without facing the reality of access and equity as it relates to race (Bell, 1992; Dumas & Ross, 2016). Thus, a study

investigating institutional support for MEPs must consider how racism impacts said support to achieve meaningful change. To centralize the role of race in institutional support for MEPs at an HWI, I focus on an MEP as a race-conscious entity (Holloman, 2023) and use a critical theoretical lens: the Theory of Racialized Organizations (Ray, 2019).

## 2.3 Theoretical Framework

### 2.3.1 The Theory of Racialized Organizations

Implementations of organization theory typically neglect race and are presented as race-neutral (Ray, 2019). Most scholarship on race and ethnicity neglects the organization's role, leading to only understanding racialization at the state/national (i.e., institutionalized racism and the racial state) and individual (i.e., prejudice, racial attitudes, implicit bias) levels. Ray (2019) found that the state/national and individual racialization process is enacted at the organizational level (i.e., schools, churches, and/or workplaces). Thus, organizations are vehicles for reinforcing, challenging, or altering racial meanings, which Ray referred to as the Theory of Racialized Organizations. Racialized organizations are "constituting and being constituted by racial processes that may shape the policies of the racial state and individual prejudice" (Ray, 2019, p. 27). This theory posits that racialized organizations enhance or diminish the agency of racial groups and legitimate the unequal distribution of resources. It also suggests that Whiteness is a form of property within racialized organizations, and the decoupling of formal rules from organizational practices is racialized.

To understand the tenets of the Theory of Racialized Organizations, one must understand the relationship between racial schemas, racial structures, and racial ideology. Schemas are general representations of knowledge typically abstracted and used to fit ideas into a given context. In layman's terms, schemas are unwritten rulebooks that explain how to write rules. Racial schemas provide fundamental tools to members of an organization for collecting and distributing organizational resources dependent on race. Racial structures are created when racial schemas become connected to resources. When racial structures are in place, a racial ideology (i.e., racism) arises to justify the unequal distribution of resources along racial lines (Ray, 2019). The ideology serves as a reinforcement of the underlying racial schemas. The racial ideology defends racial structures, endowing White actors with differential forms of agency and justification (Ray, 2019). This strategic relationship between racial schemas, structures, and ideology is enacted and enforced in and

through racialized organizations. Through this strategic relationship, racialized organizations control the agency of non-White people, legitimize the unequal distribution of resources, treat Whiteness as a credential, and separate efforts toward equity from formal practices and policies.

### 2.3.2 The Use of the Theory of Racialized Organizations to Study Institutions

Few studies have used the Theory of Racialized Organizations (Ray, 2019) as a central analytical and interpretive tool that considers the university a racialized organization. Stitch (2021) implemented an embedded case study analysis to investigate how the admissions practices of an HWI led to tracking based on race. Stitch (2021) identified how the admissions practices legitimized the unequal distribution of resources for "low track" students, diminished the agency of racially minoritized students in the "low track," reinforced Whiteness as a credential, and decoupled its commitment to equity and access from program policies and practices. Another foundational qualitative case study conducted by Nelson, Graham, and Rudin (2023) leveraged the Theory of Racialized Organizations to examine how an elite college's racial structure and ideology shape undergraduates' attitudes and behaviors in ways that maintain racial ignorance. Focusing on student perspectives, they identified how elite colleges remained White spaces and why their diversity goals were not fully realized through policy and programs. This further established the university as a racialized organization that credentialed Whiteness and decoupled efforts toward racial equity from formal rules and practices. These studies serve as foundational studies to further our understanding of how racialization permeates university policy and practices that have lasting adverse effects on the experiences of non-White students.

Still, there is much to be understood regarding how racialization permeates academic departments. In engineering specifically, cultural norms and practices are rooted in unique racial ideologies and schemas that create racial structures different from other disciplines, which call for a more focused analysis (Slaton, 2010). While studies have leveraged organizational theory in STEM with a consideration of race theory, they are limited to organizational learning (López et al., 2022) and faculty careers (White-Lewis, Bennett, & Redd, 2022)) and do not disaggregate the STEM disciplines. The implementation of organization theory that considers the role of race is limited in the engineering education context (Dietz et al., 2019).

| Level of Analysis | Study Context | Examples |
|---|---|---|
| Institution | the policies, practices, and employees/appointees that govern the university are considered at the institution level | university president, chief diversity officer |
| Organization | the policies, practices, and employees/appointees that govern the colleges are considered at the organization level | college dean, associate deans |
| Individual | the actors affected by policies and practices but have limited control over them exist at the individual level | MEP director and staff, faculty |

Table 2.1: Hierarchical levels of analysis adapted for the study context (Ray, 2019)

### 2.3.3 Relevance for Dissertation Study

This study will apply the theoretical lens of the Theory of Racialized Organizations (Ray, 2019) (TRO) to investigate an HWI's role in facilitating thriving for Black undergraduate students in engineering through institutional support (perceived value, institutional commitment, and structure) for their MEP and its mission.

Considering the relationship between the racial schema (anti-blackness), resources (education), racial structure (education system in America), and racial ideology (racism) that undergirded the foundation of HWIs, it is appropriate to consider an HWI a racialized organization. Throughout history, HWIs have legitimized the unequal distribution of resources, enhanced/diminished agency for different racial groups, credentialed Whiteness and decoupled formal rules from organizational practices in a racialized way (Wilder, 2013; Harris, 2021). I maintain the view of the selected HWI in my study as a racialized organization to explore how racialization at university and department levels plays a role in how a race-conscious MEP is perceived by and receives support from power-holding stakeholders at its HWI. Ray (2019) defines the micro-, meso-, and macro-levels within the context of a state. I adapt these levels by likening the HWI to a state in Table 2.1.

This distinction allows for an understanding of the hierarchical levels that exist within a university in relation to its MEP. I aim to demonstrate how the distribution and hierarchy of power and influence within a university's organizational structure are racialized at different levels and play a role in how an HWI supports its MEP. I will be guided by my overarching research question: **To what extent are the perceived value of an MEP, the institutional commitment towards**

**an MEP, and the designated structure of an MEP aligned at an HWI?** The following questions will be investigated to answer the overarching research question:

**(1) What are the institution-level and organization-level stakeholders' perceptions of the MEP's role(s), mission, and value?**

**(2) To what extent do the institution (university) and organization (college) demonstrate commitment to fulfilling the role(s) and achieving the mission of the MEP?**

**(3) To what extent are institutional and organizational perceptions and commitments towards the MEP enacted through its organizational and programmatic structures?**

# Chapter 3

# Methodology

A case study is defined as an empirical inquiry that investigates a contemporary phenomenon within its real-life context (Yin, 1994, 2003; Merriam, 1998). Case studies provide an in-depth description of a single unit within a bounded system. Stake (1995) defines the single unit of analysis as a specific, complex, functioning entity. A bounded system ensures that a focus on a single unit is maintained. The relationship between the single unit and the bounded system is a desire to understand a phenomenon (i.e., single unit) in a context (i.e., bounded system) where the boundaries are unclear between the phenomenon and the context (Yin, 2003; Baxter, Jack, et al., 2008). Case studies use multiple data collection methods. The intended outcome of the study (e.g., interpretive, descriptive, evaluative), the process of conducting the study (e.g., qualitative, mixed), or the case selected for the study (e.g., multi, psychological) define case studies. I chose to employ a qualitative descriptive case study. I used qualitative data collection methods to provide a detailed, descriptive account of the enactment of institutional support for an MEP at a historically White institution (HWI). This understanding is largely missing from the literature, so an in-depth single case study enabled me to provide a deep understanding of a context that the field does not yet fully understand.

While case studies have been criticized for their perceived lack of rigor, reliability, validity, and generalizability, this study employed Walther et al.'s (2017) practice-oriented version of the quality framework for qualitative research to ensure validity and reliability. Using a methodology widely accepted and implemented when studying MEPs (Morrison & Williams, 1993; W. C. Lee & Matusovich, 2016; Newman, 2016; Shehab et al., 2012), namely, a case study, will help support procedural validity (Walther et al., 2017).

## 3.1 Research Questions

This study highlights the unique perspective of engineering and diversity administrators on enacting institutional support for an MEP. I will be guided by my overarching research question: **To what extent are the perceived value of an MEP, the institutional commitment towards an MEP, and the designated structure of an MEP aligned at an HWI?** The following questions were investigated to answer the overarching research question: **(1) What are the institution-level and organization-level stakeholders' perceptions of the MEP's role(s), mission, and value? (2) To what extent do the institution (university) and organization (college) demonstrate commitment to fulfilling the role(s) and achieving the mission of the MEP? (3) To what extent are institutional and organizational perceptions and commitments towards the MEP enacted through its organizational and programmatic structures?**

## 3.2 Case Selection

To conduct my investigation, I selected one case, an MEP, within a bounded system, the selected university. The university bounding this case study was based on five inclusion criteria:

1. The institution is an HWI. The implications of an institution founded to serve only White students align with my theoretical lens and support theoretical validity (Walther et al., 2017).

2. The institution is a Doctoral University with very high research activity (R1) (Carnegie Classifications, n.d.), as this institution traditionally secures more significant funding than other institution types. The attainment of such funding indicates the financial opportunity afforded to an institution (Bellis et al., 2022).

3. The institution has a robust college of engineering with highly ranked degree programs in the U.S. News and World Report (N.d., 2023). Studies have shown that Black students traditionally have negative experiences in highly-ranked engineering programs (McGee & Martin, 2011) and that many rely on safe spaces such as MEPs to succeed.

4. The institution has an MEP, which is the case required for conducting this study.

5. The institution has an administrative position (such as an associate dean) whose title includes student experiences, diversity and inclusion, or equivalent, which looks like valuing student experiences and prioritizing diversity and inclusion (Terenzini & Reason, 2005).

Based on the selection criteria, the selected institution bounding this case study will be referred to as Bravo University. The case is the institution's MEP, which will be referred to as PEACE. I developed strategic relationships with stakeholders at the selected institution that ensured my access to relevant participants and artifacts.

### 3.2.1 Study Context

PEACE is an MEP that focuses on both gender and racial identity. It exists as a student support center at Bravo that separately focuses on ethnic and gender diversity in engineering but under common administration. It has the founding characteristics of an MEP, which include pre-enrollment activities (i.e., outreach, summer bridge program) and matriculation services (i.e., academic support, community building, and student personnel and professional development) (Morrison & Williams, 1993). The participants in this study refer to PEACE's target population as underrepresented minority students in accordance with the National Science Foundation. When reporting and discussing their findings, I will use the same language.

## 3.3 Data Collection

Data for this study includes interviews and artifacts. This section will outline how both data types were collected and handled in preparation for data analysis.

### 3.3.1 Interview Data

Semi-structured interviews were conducted with each participant virtually via Zoom. An IRB-approved interview protocol guided all interviews Appendix C. The interviews were 60-90 minutes in duration. My data collection had two special cases. One administrator participant needed accommodations for an abbreviated interview, so an abbreviated protocol was created to meet the time constraint. This abbreviated protocol (Appendix C) was guided by the information provided by my other participants regarding which interview questions would be most relevant to that participant. This administrator required 2 abbreviated interviews (Appendix C). One faculty participant

exceeded the allotted 90-minute interview time, so a follow-up interview was scheduled to complete the protocol. I completed the interview with this participant three days later in a 60-minute session. No changes were made to the protocol for this follow-up interview.

### 3.3.2 Artifact Data

Artifacts (Appendix A) were collected concurrent with and independent of interviews. A list of proposed artifacts and websites was developed independently of the interview data. I visited Bravo, COE, and PEACE web pages and extracted necessary text from websites that were listed in my artifact list. All text and websites were imported into an Excel spreadsheet, categorized by artifact type and date retrieved. Additional artifacts were collected based on recommendations by participants and were collected either directly from participants via email or by following links and files they inserted in the chat function of Zoom. Artifacts were bounded by Bravo University and were focused on relevant information for the case (PEACE). Thus they were departmental and university artifacts, including but not limited to budget reports, websites, and strategic plans. A full list of included artifacts is provided in (Appendix A).

### 3.3.3 Participant Selection

This study used purposive criterion sampling and snowball sampling to identify participants at the institutional, college, and individual levels. The primary participants were selected using the PEACE and COE websites to identify PEACE staff and COE administrative personnel to provide valuable insight into the enactment of support for the program. These purposively sampled participants contributed to snowball sampling by identifying other university administrators, engineering faculty, and staff they felt could contribute to understanding how institutional support for PEACE is enacted. At the end of each interview, I asked participants: *Before I end the recording, is there anyone else you think I should be talking to who would provide me with more insight into how the institution supports PEACE?* Participants were allowed to suggest anyone, as I did not inform them of the bounds of my study. I also asked the participants why they felt I should speak to the person they identified to shed light on what they felt was a relevant perspective.

All participants were recruited via email (Appendix B). In accordance with IRB guidelines, the recruitment email identified the study's title, the IRB protocol number and the expectation of

the interview modality. An informed consent letter was attached to the recruitment email. Participants were sent a link to an online calendar to streamline the scheduling process. I interviewed 14 participants in total, spanning individuals at each hierarchical level. The strategic relationships I developed with Bravo and PEACE personnel helped to increase my rapport with participants, which supported communicative validity (Walther et al., 2017).

### 3.3.4 Protocol

In developing my protocol, I relied on a comprehensive approach that drew from existing literature regarding institutional support for MEPs and other diversity-motivated programs and the expertise of my committee members and memoing. I employed an iterative process that modified my protocol over time, as visualized in Figure 3.1. This section will describe how I organized my protocol and the iterative process I used to refine it.

#### 3.3.4.1 Protocol Sections

The institutional support model for MEPs (Figure 2.1) served as a visual guide, depicting various aspects of institutional support across three key branches: institutional commitment, perceived value, and structure. These domains formed the basis for crafting targeted questions. My protocol had an opening, body, and closing. The protocol opened with role exploration. The next section was the body which included the three key branches of support: institutional commitment, perceived value, and structure. The protocol closed with the political landscape. The semi-structured interview protocol followed this sequence: role exploration, perceived value, structure, institutional commitment, and political landscape.

The role exploration section allowed my participants to center their roles in their perspectives and define the connection between their duties and PEACE. The perceived value, structure, and institutional commitment sections helped to center my institutional support model and gauge how my participants believe each branch is enacted at Bravo. The political landscape section reminded my participants that institutional support for PEACE at Bravo is not immune to external events that impact higher education. This decision was further solidified after many participants mentioned political events, unprompted, in earlier sections of the interview and contributed to the theoretical validity of my study (Walther et al., 2017). Ray (2019) explains how historical and current political events significantly impact racialized organizations. The questions in each protocol section drew

from existing literature, theoretical frameworks, and previous dissertation studies.

As I crafted my interview protocol, I also added probing questions to elicit artifacts from my participants explicitly. The following line of questioning is an example of my artifact elicitation:

- What value does PEACE hold for Bravo? For COE?
- How is the value of PEACE communicated to others?
  - *If no tangible evidence is mentioned*: Can you identify any artifacts supporting this communication?
  - *If tangible evidence is mentioned*: Can I get a copy of [insert items]?

#### 3.3.4.2 Iterative Review Process

Throughout protocol development, I employed an iterative process to ensure the effectiveness of the questions in capturing the phenomena under study. The process included two rounds of reviews and modifications. This timeline is visualized in Figure 3.1. I sought input from my dissertation committee members specializing in qualitative methodology and social justice and equity research through mock interviews, emails and one-on-one meetings.

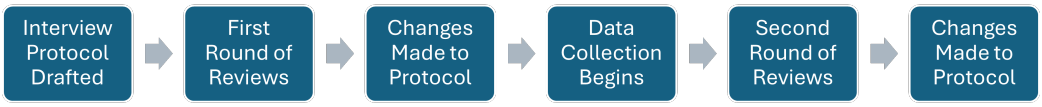


Figure 3.1: *Protocol Review Process.* I employed two rounds of reviews to modify my protocol. Each round came with changes that were informed by the expertise of my committee members, literature, data collection and my memoing

*Reviews Round 1* The first round of reviews focused on ensuring my questions were reasonably ordered and enhancing the overall flow and structure of the protocol questions. I conducted mock interviews with my advisor to verify that the order and wording of my questions made sense

to an interviewee. I also emailed my committee members deidentified versions of my interview protocol to solicit feedback regarding wording and flow. Based on feedback, I added specific names of legislation that were prominent at the time to my political landscape section (Appendix C). No other substantial changes were made to the protocol during the first round of reviews. After the first round of reviews, I began data collection.

*Reviews Round 2* The second round of reviews was more iterative than the first and came about after I began data collection. The first changes to the interview protocol in the second round resulted from post-interview memos after my interviews with my PEACE staff participants. Through memoing, I realized that my questions could not capture the phenomena present. Responding to complex or nuanced questions, some participants provided simple answers that appeared to have been prepared before our interview. I reached out to my committee members and set up two one-on-one meetings to review my protocol questions. We developed targeted probing questions that would allow my participants to answer complex questions differently (Appendix C). For example, multiple questions were added to the perceived value section to further gauge the influence of PEACE on the COE, such as:

- What influence does PEACE programming have on your classroom?
- What influence, if any, does PEACE programming have on how the COE course curriculum is structured?
  - For example:
    - When do students take classes?
    - What classes are they taking?
    - How many classes are they taking?
- What influence does PEACE programming have on COE course content?
  - What is being taught?
  - How is it being taught?
    - i.e., pedagogy, instructional practices?
- Is PEACE impacting faculty practices?
  - Are they becoming involved in PEACE?

Adding more targeted questions helped to probe more specific responses from my participants regarding the influence of PEACE on COE. As I collected data and continued to memo, I identified areas in my protocol that were more fruitful than others for participants at different levels. This led to secondary changes to the interview protocol. Through one-on-one meetings with my advisor, I addressed my concerns by modifying protocols for participants at different levels of analysis. For example, I found that the participants I interviewed at the institutional level of analysis had little to no awareness of the COE strategic plan but were highly aware of the Bravo strategic plan, so I did not ask about the COE strategic plan in my protocol for those participants.

#### 3.3.4.3 Summary

Overall, my semi-structured interview protocol was intentionally curated to address my research questions and accurately depict the phenomena of my study case. To ensure this, I leveraged literature regarding institutional support for MEPs and Ray's (2019) TRO to create the basis of my protocol sections. I also employed an iterative review process consisting of two rounds informed by my dissertation committee's expertise and memos created during data collection. Full interview protocol scripts can be found in Appendix C.

## 3.4 Data Analysis

Interviews and artifacts were analyzed concurrently to provide a holistic, in-depth description of the phenomenon (Yin, 1994, 2003; Merriam, 1998). The analysis timeline in Figure 3.2 depicts three phases: exploratory, analytical, and theoretical. The exploratory phase primarily focused on familiarizing myself with the data and gaining a preliminary understanding of my participants' perspectives. The analytical phase was a guided three-pronged approach designed to answer RQs 1-3. The theoretical phase was geared towards making sense of my findings with respect to the institutional context.

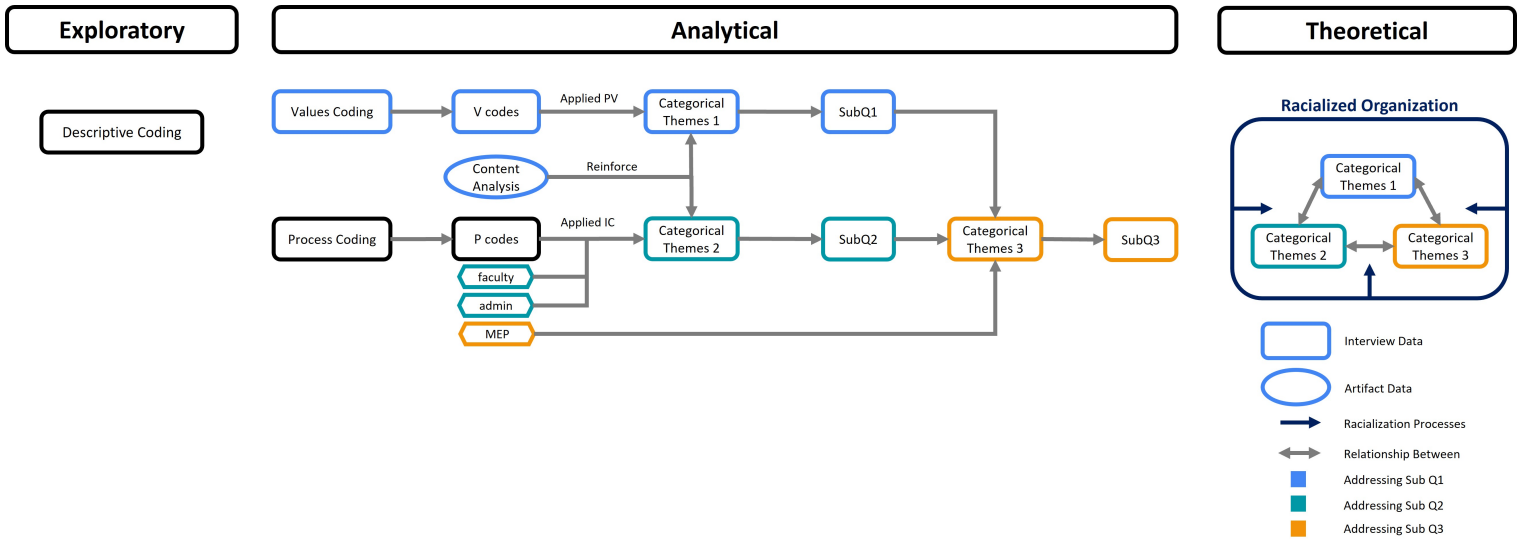


Figure 3.2: *Three Phase Data Analysis* This visualization depicts the three phases of analysis that I underwent to address all my research questions. I began with the exploratory phase to familiarize myself with the data. I then entered the analytical phase, where I took three analytical approaches to answer my three guiding research questions. These three approaches informed my third and final phase, which helped me make sense of my data and address my overarching research question.

### 3.4.1 Phase 1: Exploratory

#### 3.4.1.1 Interview Data

All interviews were transcribed through Zoom AI transcription services. First, I downloaded transcripts and corresponding video recordings and uploaded them to a secure storage location. Each file was renamed using a pseudonym selected by the participant. After downloading the transcripts, I found and replaced their names and other identifiable information with pseudonyms to support ethical validity (Walther et al., 2017). Zoom provided 80-90% accuracy, so I conducted a first pass for correctness and to familiarize myself with the data. This process was formalized using descriptive coding to arrive at rich descriptions of what my participants were talking about. This led to the development of descriptive categories to describe the data collected and maintain the rigor of my analysis process. A codebook was inductively developed and used throughout the first pass. After each interview, I wrote memos to identify which research question I felt the participant would contribute to the most. I also developed a synopsis of the essence of each participant. Each memo followed the following prompts:

*What is [insert participant's name] sound? Where did [insert participant's name] provide the most insight?*

This process helped me get to know my participants and document their sounds. This included their tone of voice and their overall sentiments towards PEACE and institutional support for PEACE. For example, some participants had a frustrated sound, and others appeared resigned, hopeful, or confident, to name a few.

### 3.4.2 Phase 2: Analytical

This phase includes three analytical approaches to answer RQs 1-3, as shown in Figure 3.2.

### 3.4.3 First Analytical Approach: Perceptions of PEACE

#### 3.4.3.1 Interview Data

I began my analysis by addressing research question 1 (RQ1): **What are the institution-level and organization-level stakeholders' perceptions of the MEP's role(s), mission, and value?** I began this approach by conducting a second pass using values coding. I downloaded

| Item | Abbreviation | Description |
|---|---|---|
| Legitimacy | (L1) | the extent to which participants believe PEACE is part of COE |
| Legitimacy | (L2) | the extent to which PEACE programming or involvement is seen as a benefit for COE and Bravo |
| Influence | (I1) | the extent to which PEACE programming or involvement leads to action or inaction. |

Table 3.1: *Description of Themes Addressing Participant Perceptions.* This table depicts the abbreviations and themes discovered in phase 2 through the first analytical approach

versions of my transcripts that did not include my first pass coding for this pass, and I leveraged MAXQDA 2024 (VERBI Software, 2024), a qualitative coding software. While my interview protocol had only one section targeting participants' perceived value of PEACE, participants spoke about their perceived value during all interview sections.

I inductively developed a values codebook by coding the participant's responses as either beliefs, attitudes, or values (Saldana, 2021). Values were participants' judgment of what was important when considering institutional support for PEACE. Attitudes were how participants felt about a particular aspect of institutional support. Beliefs were defined as the participants' acceptance that something was true based on their values, attitudes, personal experiences, opinions and morals (Saldana, 2021). The values codes were developed inductively. I took an emic approach grounded in the perspective of the participant. Only the participants' values, attitudes, and beliefs that were situated within the bounds of the study (Bravo University) were captured for this study. Values, attitudes and belief codes were progressively refined as I began to identify similarities and differences between codes.

After completing the second pass, I examined the codes through the Perceived Value construct within my conceptual framework of institutional support for MEPs to uncover emergent themes to address RQ1. Perceived value can be defined through legitimacy and influence (Morrison & Williams, 1993; Rincon & George-Jackson, 2016). Legitimacy was viewed as (L1) the extent to which participants believe PEACE is part of COE and (L2) the extent to which PEACE programming or involvement is seen as a benefit for COE and Bravo. Influence was viewed as (I1) the extent to which PEACE programming or involvement leads to action or inaction.

I formed three groups of codes based on these three defining concepts. I identified emergent themes within each set of codes by combining values with corresponding beliefs and attitudes. To

maintain inter-rater reliability, I leveraged the insights of my advisor and research group members to go over my themes and determine if they explained the reality of my codes. Seven themes emerged that address RQ1: three each for L1 and L2, and one for I1, as seen in Table 3.1.

#### 3.4.3.2 Artifact Data

Concurrently, I conducted a content analysis for the artifacts using conceptual analysis to assign labels to the content in the artifacts based on the existence and frequency of concepts in each text (Indulska, Hovorka, & Recker, 2012). I focused primarily on artifacts that reinforced participants' perceptions of the MEP's role(s), mission, and value (Appendix AA). To begin my conceptual analysis, I imported the tabulation of artifact text from the Excel spreadsheet into a Word document. I deidentified all artifacts in the Word document using identical pseudonyms from my interviews. This document was then uploaded to MAXQDA, 2024 (VERBI Software, 2024). Artifact data was analyzed using concept descriptions as identified by Indulska et al. (2012). These concepts allowed me to map artifacts to participant perceptions to reinforce values revealed in themes L1, L2, and I1. For example, I was able to confirm participants' descriptions of PEACE's attainment of awards through articles posted on their website.

### 3.4.4 Second Analytical Approach: Demonstrations of Commitment

#### 3.4.4.1 Interview Data

The second analytical approach was guided by my second question: (2) **To what extent do the institution (university) and organization (college) demonstrate commitment to fulfilling the role(s) and achieving the mission of the MEP?** I conducted a third pass using process coding to reveal actions toward institutional commitment. Process coding was appropriate for answering the second research question, which involves an action (demonstrate) because it involves describing data using gerunds. I combined this coding style with subcoding to differentiate between actions taken at different structural levels to expose any nuances at those levels. Accordingly, I separated my process codes into the subcategories (a) faculty, (b) COE administrators, COE, Bravo administrators, Bravo, and (c) PEACE staff and PEACE.

Category (a) included any action that faculty took towards fulfilling the mission of PEACE. This included actions faculty identified as taking themselves or actions non-faculty identified on

| | |
|---|---|
| Category (a) | Actions towards fulfilling the mission of PEACE taken by faculty |
| Category (b) | Actions towards fulfilling the mission of PEACE taken by COE and Bravo as a collective or by administrators |
| Category (c) | Actions towards fulfilling the mission of PEACE taken by PEACE as a collective or by staff members |

Table 3.2: Division of process codes to depict actions taken at different levels consistent with stakeholders identified in the hierarchy of analysis from Table 2.1.

behalf of faculty. For example, faculty identified collaborating with PEACE on grants, and non-faculty participants also identified this same action. Both were labeled as an action taken by faculty. Category (b) included any actions taken by COE and Bravo as a collective or as individuals towards fulfilling the mission of PEACE and included actions participants who were administrators took or as actions non-administrator participants identified administrators took. For example, administrators identified that COE advertised PEACE on their website, and non-administrator participants also identified this same action. Both were labeled as an action taken by COE. Category (c) included any actions taken by PEACE as a collective or as individuals towards fulfilling the mission of PEACE. Similar to the first two subcodes, both actions participants who were PEACE staff took and actions non-PEACE staff participants identified PEACE and/or PEACE staff took were labeled as actions taken by PEACE. For example, PEACE staff identified that they attained industry funding to execute large-scale retention programs, and non-PEACE staff participants also identified this same action.

A codebook was inductively developed to standardize the process codes (Appendix D). Codes were combined and changed as needed. My codebook was reviewed by my advisor and my research group to aid in the consolidation process and to maintain reliability, as identified by Merriam (1998). To address RQ2, process codes for categories (a) and (b) were grouped according to the institutional commitment construct in my conceptual framework of institutional support for MEPs. Institutional commitment was defined by faculty involvement and funding. These two defining concepts were used to group the codes and identify emergent themes. Specifically, I grouped codes based on three guiding questions derived from the literature regarding faculty and institutional support for MEPs (Landis, 1991; Morrison & Williams, 1993; Hackett & Martin, 1998; Rincon & George-Jackson, 2016):

1. *How are faculty enabled/disabled to involve themselves in fulfilling the PEACE mission?*

2. *How do faculty involve themselves in fulfilling the mission of PEACE?*

3. *How does the institution fund PEACE to fulfill its mission?*

After codes were separated by their contribution to answering the guiding questions, I grouped them to identify emerging themes that defined the phenomena in each question. My research group and advisor reviewed these emergent themes, and codes were regrouped as needed to achieve the best placement among the emergent themes. The first two guiding questions helped to understand how the institution demonstrates commitment through faculty involvement, and the third helped to understand how the institution demonstrates commitment through funding.

### 3.4.5 Third Analytical Approach: Perceptions and commitments enacted through programmatic structures

The third analytical approach addresses RQ3: **To what extent are these institutional and organizational perceptions and commitments enacted through MEP's organizational and programmatic structures?** This approach leveraged the process codes identified during the third pass. First, the process codes for Category (c) (action taken by PEACE) were grouped to identify emergent themes that describe how PEACE fulfills its mission through programmatic and organizational structures. Next, I grouped all emergent themes from the second analytical approach to identify the overarching commitments the participants from Category (a) (faculty) and (b) (institution) demonstrated. This introduced an additional consideration for addressing RQ3: lack of enactment of commitment. Each of the three overarching processes that explained how perceptions and commitments towards PEACE were enacted through programmatic structures included a set of emergent themes from the first and second analytical approaches.

To identify the process in RQ3, I mapped the emergent themes from Category (c) that described how PEACE fulfills its mission through programmatic and organizational structures to the overarching commitments that served each theme. Lastly, I mapped the emergent themes from the first analytical approach (participants' perceptions of the value of PEACE) to each overarching commitment, paying close attention to perceptions that contributed to each one. The results of this process are identified in Section 4.3.

### 3.4.6 Phase 3: Theoretical

In the third phase, the theoretical phase, the results from the second phase were analyzed to identify emergent themes of alignment related to my overarching research question: To what extent are the perceived value of MEPs, the institutional commitment towards MEPs, and the designated structure of MEPs aligned? To make sense of the alignment between perceived value, institutional commitment, and structure, I leveraged the constructs of the theory of racialized organizations (Ray, 2019). This theoretically guided approach enabled me to map the results of my analysis to the constructs of the theory and identify the impact of the institutional environment (i.e., Bravo and COE) on the three constructs of support (i.e., perceived value, institutional commitment, and structure). This analysis revealed the major characteristics of institutional support for PEACE within a racialized organization, Bravo. These findings are discussed in Section 5.1.

During this phase, I combined the results from my interview and artifact data to provide a holistic understanding of how institutional support for PEACE is aligned at Bravo. I began by identifying relationships between perceptions of PEACE, enactments of commitment towards PEACE, and the programmatic and organizational structure of PEACE. I leveraged the tenets of TRO to identify how racialization shaped perceptions, commitments, programmatic structures, and their alignment with each other. This created a robust framework to understand how each construct interacts with each other to depict institutional support. It also illuminated the racialization process that occurs due to the nature of the alignment of support at Bravo for PEACE.

## 3.5 Positionality

As a Haitian American, I value education, faith, and community. These pillars lead me as I conduct this study and collect and interpret my results. I view reality as connections, experiences, and beliefs. My work is often personal because the quest for education in all its forms is part of who I am. Valuing education enables me to dig deep as I approach answers to my research questions. I conduct "me-search" because knowledge creation aligns with my values (Gardner et al., 2017). Further, my faith values motivate me to pursue the truth tirelessly. This faith guides me as I collect and analyze my data, keeping me committed to revealing the accurate reality of the phenomena I study.

As a Black woman, my lived experience is shaped by who I am perceived as in America.

My pursuits of knowledge are grounded in my lived racialized experiences and my responsibility as a member of the Black community to make a positive impact on the experiences of those who come after me. I view reality through a critical lens. I am a Black electrical engineer who graduated from Florida State University, a predominantly White institution that has a scattered history of racialized actions toward racially marginalized groups. My time in engineering at this institution was shaped by racialized experiences both in and out of the classroom. I align myself with the racialized experiences of the many Black engineering students who share my experience in engineering, both past and present, to problematize the current anti-Black racial structures of engineering that continue to perpetuate in higher education institutions that majorly serve White students (Holly, 2020). My Haitian heritage heavily impacts my interpretation of my own racialized experience and that of others. Being born American yet raised Haitian removes me from the personal connection that many Black students who endured the early foundations of education in America were exposed to. While many Black students relied on primary sources and storytelling from family members, I relied on the retelling of stories through racist historical textbooks during my K-12 education. As a first generation American in my family, I leverage my own lived experience as an American as opposed to also drawing from the experiences of my ancestors. This contributed greatly to my relationship with racism in America and also how I contended with being a Black woman doing this work while traversing the politics of the field.

My intersectional identity also contributed to how I presented my work. I was forced to contend with the reality of being a Black woman doing equity work in America at a time when equity work was under attack. The political climate had a significant impact on my own mental state as this data was collected in the midst of me also searching for a job. In reporting the data, I had to carefully ensure that I was not code-switching to make my findings more palatable for the majority. I also contended with the stereotype of being perceived as an angry Black woman. To maintain the integrity of my writing, I leveraged my research group and committee to review my manuscript.

As a professional, I have dedicated a significant amount of my time to supporting and enhancing the experiences of racially marginalized students through outreach, student support programs, and mentorship. I currently serve as a staff member for two student support programs that serve racially marginalized students. In my professional experience, I have served as a giver of services rather than a receiver. This professional experience also shapes the way I analyze and collect data. Inherently, I leverage this experience to consider my participants' experiences, as they are all

givers of services rather than receivers. At the same time, I had to separate my own lived experience from the data. As a practitioner in this space, I have been exposed to certain practices that I had to mentally separate from what I learned through my participants. Some elements were also similar to my experience as a practitioner, so I had to ensure that I was interpreting said elements in the context of my case and not in the context of my experience.

I identify as a transformative researcher (Mertens, 2008), and I approach this study through the lens of a transformative paradigm. I aim to create meaningful change within engineering to support Black students better. Transformative research focuses on social justice issues and addresses the political, social, and economic problems that lead to social oppression, conflict, struggle, and power structures at whatever levels these might occur (Mertens, 2008). Leveraging this paradigm, I align myself with the ontological beliefs that the socially constructed reality, in my case, is shaped by social, political, cultural and historical forces (Mertens, 2008). This is reflected in my theoretical framework, TRO (Ray, 2019). My transformative approach grounds my study in the epistemological and axiological beliefs that the paradigm holds. They allow me to find knowledge in my participants' values and experiences and to reveal the positive or negative nature of values concerning their impact on racially marginalized student experiences (Mertens, 2008).

## 3.6 Quality Considerations

This study employed Walther et al.'s (2017) practice-oriented version of the quality framework for qualitative research to ensure validity and reliability. Table 3.3 depicts decisions made to maintain validity and reliability throughout the study design, data collection, and data analysis.

| Quality Consideration | Decision | Explanation |
|---|---|---|

| | | |
|---|---|---|
| Procedural Validity | selection of methodology single-case study | The case study methodology is widely accepted and implemented when studying MEPs (Morrison & Williams, 1993; W. C. Lee & Matusovich, 2016; Newman, 2016; Shehab et al., 2012). It has proven to be a tried and true methodology. |
| Theoretical Validity | selection criteria to include HWI | The implications of an institution founded to serve only White students align with my theoretical lens. This enables me to address the racialization processes identified in Ray's (2019) TRO. |

| | | |
|---|---|---|
| | inclusion of a Political Landscape section in the protocol | The political landscape section reminded my participants that institutional support for PEACE at Bravo is not immune to external events that impact higher education. This aligns directly with my theory. Ray (2019) explains how historical and current political events significantly impact racialized organizations. |
| Communicative Validity | development of strategic relationships as a selected university | The strategic relationships I developed with Bravo and PEACE personnel helped to increase my rapport with participants. This created a safe space where participants were comfortable communicating with me. This helped participants to respond to questions authentically. |

| | | |
|---|---|---|
| Ethical Validity | data deidentification | I replaced my participant names and all identifiable information in the transcripts and artifacts to ensure my participant's identities were protected and to mitigate the risk of participation. |
| | exclusion of participant titles and pseudonyms in quotes | Participants authentically presented their perceptions towards PEACE. To protect their identities within the institution, I opted not to use their pseudonyms or titles. This helps to mitigate the risk of other participants in the study identifying who quotes came from. All of my participants were from different hierarchical levels, so it was my responsibility to leverage my power in the study to maintain their anonymity. |
| | | |

## 3.7 Limitations

I would like to begin with the methodological limitations of this study. For starters, I only spoke to faculty who were involved with PEACE. Participants all had overwhelmingly pleasant interactions and beliefs regarding PEACE. My results are thus limited to the perspective of individuals who have already bought into the PEACE mission. Considering I employed a snowball sampling method, this is expected. Participants likely led me to other stakeholders who shared their values and beliefs towards PEACE. My artifacts helped ensure I captured the holistic realities of institutional support for PEACE.

A second limitation of this study is the political climate in which data was collected. While the climate produced rich discussion and interpretation of my results, it caused some of my participants to feel uncomfortable as they were interviewed. It also made my results more critical than they may have been without the political climate. My participants gave thought-out responses that, in some cases, were related to recent events in their lives. One participant disclosed that their hometown high school was undergoing backlash for changes they made towards advancing diversity, equity, and inclusion (DEI), which impacted my participants' state of mind. While I present this as a limitation, I leverage my research paradigm to help me consider these possibly skewed responses as being rightfully influenced by historical processes.

Finally, another limitation of this study is the perceived lack of generalizability due to my focus on one study. I selected a single case study to understand the particular in-depth, not to discover what is generally true of many. Even still, I provide a detailed, thick description so that readers can determine how much the case matches their research situation (Merriam, 1998).

# Chapter 4

# Findings

This section will explore the findings from data collected via interviews and artifacts. The findings outlined in this chapter will address the following research questions: (1) What are engineering stakeholders' perceptions of the MEP's role(s), mission, and value? (2) To what extent do the institution (university) and organization (college) demonstrate commitment to fulfilling the role(s) and achieving the mission of the MEP? (3) To what extent are institutional and organizational perceptions and commitments towards the MEP enacted through its organizational and programmatic structures? The chapter will follow this order.

## 4.1 Perceived Value: Institution-level and organization-level stakeholders' perceptions of the MEP's role(s), mission, and value in relation to Bravo-COE

Perceived value is defined as a function of legitimacy and influence. Legitimacy is broken down into the extent to which participants believe the MEP is part of the COE and the extent to which MEP programming or involvement carries weight for the COE and university. Influence is defined as the extent to which the presence and success of the MEP incites collaborations with other programs with similar missions. This section will highlight participants' perceptions towards the role(s), mission, and value of PEACE: how they legitimized PEACE as part of COE and carrying weight for COE, and how they identified the influence PEACE had on other student support

| Theme | Subthemes |
|---|---|
| Legitimization of PEACE as part of COE | Participants felt a responsibility to take ownership towards PEACE as part of the engineering college |
| | Participants expressed ways in which PEACE is structurally for COE (subtheme) |
| | PEACE is instrumental in achieving the long-term strategic goals of the college of engineering (subtheme) |
| Legitimization of PEACE as carrying weight for COE and Bravo | PEACE serves as a place to serve target population or underrepresented minority students, URM students |
| | PEACE's results in programming and staff success bring praise to COE |
| | PEACE's success is often leveraged to attain opportunities for engineering stakeholders at Bravo |
| The presence and success of PEACE incite collaborations with other programs with similar missions | Student support programs in COE, and Bravo collaborates with PEACE to fulfill their missions, visions, and goals. |

Table 4.1: *Summary of Perceived Value Themes* This table includes the three themes found in the first analytical approach: values coding of Phase Two: Analytical Phase and a list of subthemes that contribute to each theme. These themes are thoroughly discussed in this section

programs as seen in Table 4.1.

### 4.1.1 Legitimization of PEACE as part of COE

PEACE was legitimized by being viewed and positioned as part of the COE. Participants highlighted multiple ways that the COE and stakeholders in COE perceived PEACE as theirs. They noted a feeling of responsibility to take ownership of PEACE as part of the COE. They also identified how PEACE was embedded in COE's organizational structure. Finally, PEACE has been perceived as instrumental in achieving the long-term strategic goals of COE.

#### 4.1.1.1 Participants felt a responsibility to take ownership of the MEP as part of the engineering college.

This shared support of responsibility and ownership manifested in participants' views towards responsibility for PEACE's initiatives. One administrator highlighted this by stating, *"So I would say the leads would be Raven and Lorraine with support from... But it's everyone in the college's responsibility."* and another specifically mentioned the mission of PEACE was the respon-

sibility of *"the faculty involved... the staff, and not just within PEACE, but within the entire college."* A PEACE staff member also spoke of their perceptions towards shared responsibility among all stakeholders of COE: *"I think all of our team members and our college. I just don't think it's a one-man show. I think that we have a specific focus. But I think our faculty members, our students, our staff, our Dean, everybody's responsible."* Faculty also echoed this sentiment, noting that involvement from students in the college fosters a sense of ownership, with one faculty member commenting: *"I think having students involved is helpful to kind of having them see it as like, they're saying, like, this is, this is my program as a student."*

This sense of ownership was further emphasized in the viewpoint regarding who PEACE was created for and who it serves. Participants mentioned PEACE was created to serve students in STEM fields but particularly referenced underrepresented minority (URM) groups such as women, African American, and Hispanic/Latino students within the COE. A PEACE staff member explained, *"We aim to serve women in STEM, African American, Hispanic Latino, the underrepresented population that's in the College of Engineering."* While participants varied in identifying exactly which racial and gender demographic PEACE aimed to serve, they agreed that PEACE served students in COE and majoring in engineering:

*"I believe the mission of PEACE to be to help those [URM students] reach their full potential in mentoring and support structure, building a community to help them navigate the journey at Bravo, within engineering." - Administrator*

Within the discipline, participants believed PEACE served URM students, undergraduates, and in some cases, everyone.

*"PEACE was created for underrepresented students in stem." - PEACE Staff*

*"However, it is open. Let's not forget. It is open to everyone ... PEACE is open to everyone you know." - Faculty*

*"So the mission of PEACE is essentially ensuring student success and experience, right, and primarily it is focused on undergraduate students." - Administrator*

#### 4.1.1.2 Participants expressed ways in which PEACE is embedded in COE's organizational structure

The physical location of PEACE was another key value that legitimized PEACE as part of COE, with participants stressing the importance of a central location for PEACE, making it easily accessible to engineering students. An administrator mentioned, *"Is it accessible? Is it, you know, a place that [engineering] students will come easily?"* while a faculty member noted, *"It's pretty centrally located to all the different engineering buildings."* PEACE's location was originally in the same building as the COE administrative offices, then was moved to its own location in a nearby engineering building, seemingly still central to the engineering community and operation. The physical accessibility is key for identifying the legitimization of PEACE because participants viewed the location as part of the engineering community. While there are no physical lines of demarcation for the engineering community at Bravo, the perception of PEACE's centrality to other engineering buildings created an unofficial network that participants defined as the engineering community. One faculty member realized this after being asked where PEACE was physically located *"Chase [Hall], Chase [Hall] has engineering discipline right in there. So it's the same building. .... Oh, [engineering discipline] is right there, right next to it. yeah. So it does seem pretty close to a lot of the engineering."* As previously highlighted by an administrator, this location was intentionally chosen to be *"a place that [engineering] students will come easily."*

There were strong beliefs regarding the funding structure for PEACE and what participants felt it should look like. Their perceptions were so motivated by the extent to which they felt PEACE was part of the COE that some faculty believed PEACE should have guaranteed financial support from COE to ensure the program's sustainability.

*"There should definitely be like a guaranteed budget from the university or college." - Faculty*

*"I think there has to be financial buy-in that's coming from the top in order to support all the programming that comes out of PEACE" - Faculty*

This sentiment of guaranteed funding was echoed by an administrator who mentioned funding for PEACE from COE was motivated by their desire to alleviate uncertainty for PEACE: *"And so [high-level college administrator] have made sure that financial uncertainty at the university or college level, shouldn't affect them [PEACE]" - Administrator*

Moreover, COE valued exposing others to PEACE information through regular events and

processes. Advertisement for PEACE was embedded in orientation and onboarding for students and faculty. *"Yeah, I was gonna say, yes, I learned about it at faculty orientation." - Faculty*

*"...onboarding process for every new student who comes in. We talk about the various organizations that are available to parents and students during the first orientation, and we talk about the various clubs and societies and organizations and PEACE is always highlighted." - Administrator*

Furthermore, participants felt that PEACE events and offerings should be known college-wide. One PEACE staff member mentioned that *"the dean or associate dean, everybody in our college should be, should be knowing what we do, what we have to offer and where to direct the students."* Their sentiments were echoed by other participants who also believed that individuals joining COE, running COE and in COE should be aware of PEACE and what it has to offer, underscoring how PEACE was perceived as structurally embedded in COE.

PEACE was perceived as structurally belonging to COE even more by its organizational structure. PEACE has a direct reporting line to an associate dean in COE. Participants regarded this structure as beneficial and highlighted ways that it further solidified PEACE's place in the college. One participant commented,

*"I mean, I think it's good because that's probably where it should be. I mean, it needs to be directly connected to the college and not necessarily to individual departments."- Faculty*

Another participant identified how the organizational structure ensured that PEACE was considered in decisions regarding COE students:

*"In fact, the office of undergraduate education is responsible for student experience and student success for all our undergraduate students. And so PEACE is a key component of that, ensuring that success... And so having a seat at a table with the the Associate Dean for [Undergraduate Education] ensures that PEACE has an input in whatever decisions are being made." - Administrator*

Here we see how an administrator ties the value of PEACE to undergraduate students to the value it has reporting directly to the administrator responsible for undergraduate students. Another administrator emphasized this value by pointing out how even though PEACE was a diversity program, *"Having that line item to the... Associate Dean of [Undergraduate Education]. That's how [PEACE] can have that impact as well."* In the words of a faculty member, PEACE's structure was perceived as giving it a *"proverbial seat at the table"* in COE.

#### 4.1.1.3 PEACE is instrumental in achieving the long-term strategic goals of the COE.

Emphasis is placed on how PEACE impacts the goals, reputation, and future trajectory of the college. A faculty member highlighted this by stating, *"We're supposed to be supporting the overall kind of development of the state, right? And so PEACE is one of those ways that I know the college does some of that work, whether it's through camps for middle school girls or connecting students to mentoring opportunities with high school students. So I mean, all of these things are important."* An administrator reinforced this by noting, *"The majority of our student population comes from [Local State]. So PEACE is naturally doing that with the College of Engineering, those students who they're gonna have. That's the same. So they're gonna have that same."* A PEACE Staff member emphasized the role that PEACE played in helping COE meet its goals based on Bravo's classifications as a Research 1 institution. When asked what role PEACE played in achieving the strategic goals of COE, they responded,

*"I feel like the community portion of it.... How we can help the community, how we can bring more people, get them more... college educated. Let them know about the resources of the college. I think that that community piece is important. I think the research, we're a research 1 institution. We're a good place that people can study and work with to find out how we can do this work better." - PEACE Staff*

PEACE also contributed to COE's strategic long-term goals regarding representation and student experience. A PEACE Staff member remarked that PEACE impacted experience and increased representation by, *"making sure all students feel belonged, making sure that all students have opportunities to know about all the opportunities and resources, making sure that we retain the best and the brightest in our college, and that we produce students that will be ready to be global citizens and a part of the workforce."* There is a strong belief among participants that the field of engineering needs to increase representation and diversify its population and that this necessity is mirrored in COE. An administrator remarked, *"When you look at historically marginalized populations, they fall into engineering, right? So that's an area that we [COE] need to increase representation."* Another administrator added, *"Within engineering, women also constitute a very large underrepresented population. Right? So that's why we have [gender as a focus in the] PEACE program."* Here, we see an administrator specifically identified PEACE as contributing to increasing the representation of women in engineering through its targeted sub-program focused on gender. Some participants

specifically identified how PEACE contributed directly to the graduation rate of underrepresented students in COE, which in turn positively impacted COE's goals to increase representation.

*"They [underrepresented students] did not drop out of school, that they actually graduated with their engineering degree." - Faculty*

Some participants also called out the institution through accountability toward their own goals. In some cases, participants felt that Bravo and COE should be doing more to achieve their personal goals, as highlighted in a PEACE staff's remark that recruitment efforts needed to be increased, *"But I think we [COE] need to recruit more and do better with that. The College of Engineering, not us [PEACE]."* In other cases, participants identified how the existence of PEACE was the way Bravo and COE held themselves accountable. A faculty member emphasized this by referring to COE's goals and advertisements geared towards diverse populations as commercials and that consumers coming to buy an advertised product were like students of diverse backgrounds enrolling in COE programs:

*"Even if you did go out and put out a bunch of commercials and a bunch of marketing, it's like, okay, once people actually get here, how are you gonna handle it? How are you gonna be prepared? And PEACE is their preparation."*

This underscored participants' feelings towards the necessity for the institution to "put their money where their mouth is" to ensure that PEACE can effectively support its mission due to the way it significantly contributed to achieving the goals of COE and Bravo.

### 4.1.2 Legitimization of PEACE as carrying weight for COE and Bravo

The legitimacy afforded PEACE in COE was also expressed through the weight participants perceived it carried for the college. They identified how PEACE served as a place to serve underrepresented students. They also outlined how PEACE's accolades were perceived as bringing praise to COE. Finally, participants felt that the success of PEACE was often leveraged to attain opportunities for engineering stakeholders at Bravo.

#### 4.1.2.1 MEP serves as a place to serve target population or underrepresented minority students, URM students

PEACE serves as a place where faculty and staff could provide a critical support system for URM students in COE.

*"I learned very quickly that if you need support helping a student you know, and you're within COE, you should be going to the PEACE office. Unfortunately, the college itself doesn't really provide that support, but the PEACE office does." - Faculty*

The PEACE office is recognized as a vital provider of student support within the COE. It is acknowledged as a crucial resource for helping students, especially in the absence of sufficient support from the college itself. This recognition is highlighted by an administrator regarding the mission of PEACE:

*"The core mission of PEACE is to make sure that... both women ... and underrepresented students have a place and have a resource that will support them to be most successful at Bravo." - Administrator*

This positions PEACE to be a space for altruistic involvement among students and faculty. For all faculty and students who wanted to give back to their community, PEACE was the place to do so in COE. Some participants identified being involved with PEACE because of a personal connection or because they identified with the overall mission of the program. They noted that most involved faculty were driven by a desire to empower others. One faculty member expressed their motivation to participate in one of PEACE's keynote programs, a middle school camp.

*"Trying to empower the next generation of women, I thought that the [middle school camp program] for middle school girls is really a neat thing. And I really wanted to be involved in that." - Faculty*

This was especially significant for this participant because they recalled their own experience as a woman in a STEM field and pointed out how they were glad to have a place where they could specifically contribute to the representation of women in STEM. This was a common sentiment among faculty members who were motivated to become involved in PEACE. An administrator mentioned, *"Many faculty members remember that there was someone during their career who helped them, and they want to give back."* For faculty in COE and some in other STEM colleges, PEACE was the primary provider of an opportunity to carry out their desire to give back.

PEACE also acts as a representative community for URM students, prioritizing the creation of a space where students can see themselves reflected in their peers and mentors.

*"At the very start, they provide a space which I think is really important to have, a space where you see people who look like you going after the goals that you're going after." - Faculty*

PEACE created an inclusive environment unlike any other place on campus where under-

represented students in COE could congregate. One faculty member identified how PEACE served as a *"home for students. . . .giving them an opportunity to really interface with each other."*

This sense of camaraderie and belonging is further emphasized by another faculty member, who highlighted the importance of seeing peers who resemble them, reinforcing that students *"are not alone."* Additionally, the program helped prevent feelings of isolation, ensuring that students have a supportive community even if they lack such support at home. *"A lot of time, our students leave Bravo, or the engineering department, because they feel like they are isolated or they feel alone. So I want to make sure that they feel they have a community. They have a safe space, and they have our support, you know because a lot of times they might not have that support even at home." - PEACE Staff*

Participants further identified the impact community provided by PEACE for underrepresented students:

*"The the other piece with social acclimation is that you know, if I'm coming, if I'm a student from a historically marginalized group, or if it even doesn't matter, just coming in as a first year, if I have something that's already built, or even if I'm not a first year, right? If it's something that's already built, and it's a tribe that's welcoming for me. Then I'm getting in. I'm meeting new people, right? I don't feel I'm alone." - Administrator*

*"I know of students that have, through PEACE, learned that, oh, well, you actually don't have to take calculus, physics and chemistry in the same semester. What you could do is take calculus and physics, and you can take chemistry at [Local Technical College] this summer, right?" - Faculty*

PEACE's community had lasting impacts on students, helping them navigate their first year by coming into an already structured system of support and contributing to their academic experience by creating a network that exposed the "hidden curriculum" (Villanueva, 2018) of course knowledge. The community provided by PEACE also provided a niche refuge for URM students at Bravo. The institution had a cultural center, Bravo Cultural Center, that served as the main support for URM students institution-wide. One faculty likened PEACE to BCC mentioning that PEACE essentially served as the BCC for COE. The impact, in their perspective, was so significant that they believed there would be a *"...very large kind of void in the student experience, especially for students, you know, that are underrepresented or students of color"* if PEACE did not exist.

The existence of a place to serve the URM student population had an impact on student

belongingness. Some participants believed providing students with an opportunity and space to feel included was crucial for building a sense of belonging. They highlighted that once students are confident they belong and see they are doing well, they would feel more comfortable taking on leadership positions. The support from the community increases students' confidence and identity as engineers, particularly in a HWI,

*"Okay, because we're such a predominantly white institution, it is, I would imagine that it's hard because that's just as a woman in STEM. It was hard to come in and believe that I belong there, and so the support that that community provides, I often see it in what comes across as increased confidence, increased identification as an engineer" - Faculty* The weight of having a place to serve URM students at an HWI was further emphasized in one faculty's description of PEACE:

*"a space where students who don't typically or who don't see themselves in our faculty or... in their classmates, are reminded that they are important and that they belong, and that the place is better with them."*

#### 4.1.2.2 PEACE's programming and staff success brings praise to COE.

PEACE's weight within COE is further underscored by its role in attaining awards and recognition, which enhances the program's visibility and legitimacy. PEACE was regarded as a top program of its kind in the field. While some participants believed this to be true based on their experience, some also mentioned the ability of PEACE to attain national awards that further solidified their beliefs regarding the program,

*"But I think nationally [PEACE] has been rated as one of the top programs. It has won awards, national level awards, okay, for being an exemplary organization that needs to be replicated."- Administrator*

Awards obtained by PEACE reflected positively on COE. When speaking about the value of PEACE and how that value was communicated, one participant included a conversation about the reputation of PEACE in the institution because of said awards:

*"So, PEACE is well known. PEACE has won national awards, so it's well-known across Bravo. It is probably one of the best organizations for what it does." - Administrator*

Even awards attained by PEACE staff contributed to increasing the visibility of the program, COE and Bravo. One PEACE staff highlighted how their own award attainment created an access point for more individuals to navigate the institution's website:

*"When I myself won the [Local Diversity Award]. I think, then people, [say] 'Oh, that's [PEACE Staff]. They're in PEACE.' So they then might also say, 'Where is, what is PEACE?' And they might begin to look at it and say, 'Oh, this is what they have to offer,' because we are on the website, Bravo's website as PEACE."*

PEACE was also instrumental in attaining recognition for COE and Bravo by attaining a notable national award for diversity.

*"..we [Bravo] went for [Prominent Higher Education Diversity] award. When we submitted our application ... we put that on there, so they helped us get a national award for diversity and inclusive excellence." - Administrator*

PEACE's success contributed greatly to Bravo attaining the award for multiple years, creating visibility for COE. The award garnered articles and recognition for COE and PEACE at the institutional level, making COE even more attractive to potential donors and opportunities.

#### 4.1.2.3 PEACE's success is often leveraged to attain opportunities for engineering stakeholders at Bravo.

Participants perceived PEACE's weight to be in its success's impact on attaining opportunities for engineering stakeholders at Bravo. PEACE was believed to create a segue to other opportunities internal and external to the institution for students, faculty and COE at large. Students involved in PEACE are often seen as effective leaders due to the reputation PEACE has had at COE for empowering students to have exemplary character and academic success. This reputation opened doors to research and other opportunities,

*"They know that PEACE students [are] great leaders, and perform well, so they may say, 'Hey, come do research' or other opportunities start popping up." - Administrator*

PEACE also connected students to opportunities by informing them about scholarships and other campus activities.

*"Making sure they know, [are] in the know of things that's going on in campus, getting in the know [of] scholarships that you know they can get cause there's a lot of scholarships that COE offers, and making sure that they're in the know of those scholarships, so they can apply" - PEACE Staff*

PEACE served as a launching pad for students engaged with its programming. Particularly for URM students, PEACE helped to connect them with communities even outside of PEACE.

*"It becomes their kind of launching pad into all sorts of, you know, campus activities, whether it's fraternities and sororities, or whether it's student organizations like NSBE, for example, or SHPE, or SWE" - Faculty*

For faculty, PEACE facilitates grant success and partnerships for diversity and STEM inclusion efforts. Several faculty include PEACE in their grant applications in efforts to fulfill broadening participation efforts required by national funding agencies such as the National Science Foundation (NSF, n.d.). Their grants were often endorsed using official letters from the PEACE director, which they cite as part of their success in attaining the grant.

*"So I did put [the PEACE director] on grants like they've written a letter of collaboration for my grants. And I think that helps grants to be successful." - Faculty*

Including PEACE in grant applications became so common that administrators and PEACE staff partnered to formalize the endorsement process:

*"Recently, I've devised a form because a lot of faculty members, because they go after NIH and NSF grants, they need to do their broader impacts, especially for NSF." - PEACE Staff*

Moreover, PEACE was a pathway for stakeholders to conduct diversity efforts, so many faculty leveraged PEACE in their grant applications to keep their diversity efforts in-house, further reflecting positively on COE. This was reflected in one participant's mention of the natural fit PEACE provided between faculty in COE who wanted to contribute to broadening participation,

*"[PEACE] automatically provides opportunities for diversity efforts or STEM inclusion. You know, efforts, things that you can write into your grants that you may be interested in. You have somewhere within Bravo that you can partner naturally, and so that's very helpful." - Faculty*

The program also carries weight for COE by connecting and making it more attractive to industry partners and donors. A significant amount of donations and increased alumni giving was tied to PEACE.

*"I do think that there are certain, there are certain partnerships that the college leverages and PEACE is an important part of that engagement"- Faculty*

*"[Local Industry Partner 1] gave us [a large amount of money], part of a significant initiative. We have seen more alumni giving back to PEACE.." - Administrator*

PEACE positioned COE as an active participant in furthering COE's overall mission toward diversity efforts. The program provided proof that COE had a plan to contribute to diversifying the workforce. The success of PEACE at graduating and retaining diverse students reflects positively

on COE as a potential partner. Early in the interview, when an administrator participant was asked about the value of PEACE, they responded saying, *"That is attractive, having a program like PEACE, to industry partners, because they're wanting to build a diverse workforce..."* Later in the interview, the participant also further highlighted the weight PEACE carries for COE:

*"When we're talking to donors, you know, we are pulling PEACE in, talking about their great support, the structure they have in place and their impact has been positive."*

PEACE's existing partnerships with industry partners helped create access points for partnerships to be forged with COE. One participant specifically highlighted how PEACE's mission aligned with a local industry partner and played a part in establishing a partnership.

*"Like [Local Industry Partner 1], for example. Local Industry Partner 2. Part of, the part of their engagement is they want, you know, they want, they want to participate in these kind of diversity initiatives, because that, they're, they're looking for the same sorts of things, right? And so it's an important point in, I think, Bravo's pitch to those companies for engagement." - Faculty*

### 4.1.3 The presence and success of PEACE incites collaborations with other programs with similar missions

The impact can be seen in how stakeholders in COE and Bravo collaborate with PEACE to develop new initiatives or bolster existing ones. Evidence of the impact can be seen by the extent to which PEACE's success motivates collaboration.

#### 4.1.3.1 Student support programs in COE and in Bravo collaborate with PEACE to fulfill their missions, visions, and goals.

Participants identified that other student support programs collaborated with PEACE to carry out their programming. A staple student support on the Bravo campus is the Bravo Cultural Center (BCC). The BCC supports all students at Bravo, and it developed partnerships with PEACE. When an administrator was asked why this partnership was forged, they highlighted this notion of finding a natural fit between their missions,

*"It's [a] natural fit, right? It's, Hey, go, get Bravo Cultural Center, it is focused on, you know building well broadening knowledge when it comes to different cultures. Right? So then they're, they would partner naturally with a program like PEACE because PEACE focus[es] on historically*

*marginalized groups." - Administrator*

This concept of a natural fit was a motivator for collaborations with other student support programs as well. One participant identified how PEACE's mission and success influenced a collaboration with a student support program they were involved in,

*"I think particularly with the [Undergraduate Diversity Engineering-Discipline Scholar Program]. You know, that was a great way for us to interface with PEACE because of the population of students that we are aiming to serve with the program." - Faculty*

Here, this faculty member identified a point of alignment between their program and PEACE regarding who they aim to serve. They later noted that the collaboration was a *"good natural fit. So work with PEACE and the programming that they already provide is very much in line..."* PEACE even impacted the creation and plans for creating other student support programs collaborating with them. One faculty member identified how a significant structural change at the institution created a gap in support for students in another college and how the existence and success of PEACE influenced the creation of another student support program in that college. They outlined the nature of the collaboration between the new program and PEACE:

*"...the [STEM-Discipline Student Support Program], so it's kind of like the [other college's]...PEACE. I think they do collaborate. Just to kind of get ideas, right? Like what's been working for many years because [STEM-Discipline Student Support Program] is much newer." - Faculty*

Here, the faculty highlights how [STEM-Discipline Student Support Program] is essentially PEACE for another college. The faculty also identifies how the collaboration includes learning about successful tactics from PEACE. An administrator described it this way:

*"I know they pair with [STEM-Discipline Student Support Program]. You know, it's just,it's a natural [fit]. It's a natural [fit]." - Administrator*

Participants also identified a collaboration for student support they felt PEACE had an impact on but hadn't materialized: collaborations with the Bravo Teaching Center (BTC).

*"I think it would be phenomenal, and maybe this is a later question. But to see them partnered a little bit more heavily with Bravo Teaching Center (BTC). I think we're missing, to use an overused word, some synergy that's possible. That would be possible there. I think, for we don't have that currently, and I would love to see that education better spread out among COE and the university at large." - Faculty*

This sentiment regarding a missing collaboration between PEACE and BTC was identified by several participants when asked about the influence of PEACE on the classroom. Participants understood that PEACE had a wealth of knowledge regarding students' learning experiences that, if collaborations had been established, could positively influence BTC programs and the extent to which students' learning experiences were enhanced. One participant in particular outlined it perfectly:

*"I think, well, in terms of your question related to how is PEACE impacting the teaching, the instruction in the classroom, like how things are being taught, right? Yeah. I think this is what BTC does, but does BTC look at what programming already exists at Bravo and how this programming is helping our students be successful? And what aspects of that are helping to be successful? And are things, are there things that we can pull from that to incorporate in the sessions that we provide to our own faculty to show them how we can be more engaged in these types of things that are already happening at once? I think that would be great training, but it would probably require them first to be engaged with the PEACE office." - Faculty*

An administer who also mentioned the missing collaboration with BTC further identified the influence PEACE has by highlighting its ability to provide answers to certain questions:

*"...what kinds of things can PEACE tell us... about our courses or our programs... what are the, what [courses] are you seeing the most struggles or the most questions or the most need [in].....Are there things that, through the mission of PEACE and what we're seeing in terms of tutoring and all of that, that are spots that maybe we need to, like, take a closer look at and see if we can do a better job." - Administrator*

PEACE's influence became evident in the many collaborations participants identified and a missing collaboration they felt should have existed. Providers of support for students in COE and Bravo acknowledged and acted on the impact they knew PEACE had on students through intentional "*natural fit*" collaborations.

### 4.1.4 Summary

Overall, PEACE's perceived value in COE is its ability to serve underrepresented students, foster a sense of belonging, provide critical support, attain prestigious recognition, connect the COE to valuable opportunities and funding relationships, and influence other student support programs.

| Commitment towards PEACE | Summary |
|---|---|
| Advertisement and promotion for PEACE | actions taken by faculty and administration (COE and Bravo) to spread information about PEACE throughout Bravo and to the greater engineering community. |
| Integration of PEACE mission into faculty's role | actions taken by faculty to align themselves with PEACE mission through teaching practices, research programs, etc. |
| Collaborative efforts with PEACE | actions taken by faculty and administration (COE and Bravo) to intentionally collaborate with PEACE to fulfill its mission |
| Use of PEACE to challenge exclusionary university/college practices | actions taken by faculty to leverage their PEACE involvement as a means to challenge the exclusionary culture of COE and Bravo |
| Provide PEACE with financial support | actions taken by faculty and administration (COE and Bravo) to provide monetary funds to PEACE for programming or other uses as determined by PEACE |
| Provide PEACE with alternate forms of support | actions taken by the administration (COE) to support PEACE through means that do not include monetary transactions |

Table 4.2: *Summary of Institutional Commitment Themes* This table includes the six themes found in the second analytical approach: process coding of Phase Two: Analytical Phase and a description of the themes. These themes are thoroughly discussed in this section.

## 4.2 Institutional Commitment: Institution (university) and organization (college)- level demonstration of commitment to fulfilling the role(s) and achieving the mission of PEACE

This section highlights how COE stakeholders demonstrate commitment to PEACE through actions. Each theme represents a collection of actions enacted by faculty and administrators towards supporting PEACE and its mission, as seen in Table 4.2. This section will not include actions enacted by PEACE or PEACE staff.

### 4.2.1 Advertisement and promotion for PEACE

Faculty and college administrators demonstrated commitment to fulfilling the role(s) and achieving the mission of PEACE by advertising and promoting it in different ways. Participants identified how stakeholders at the collegiate level created access points for faculty to be involved with

PEACE. Higher-level administration would take action by telling faculty to participate in PEACE. One faculty member highlighted how their department leadership advertised PEACE to faculty in the department and promoted resources PEACE offered to faculty and how to get their students connected. This sentiment was shared among other faculty as they mentioned that the Dean of COE would promote involvement in PEACE to faculty by stressing its importance and expressing how it would be valued in the college.

*"It was just more like the Dean sort of gave the message that PEACE is important and participating in it, you know... kind of just to everybody like, you know, it is good, you know, and, and it will be seen as like a benefit on your yearly reports or your CVs." - Faculty*

COE also advertised PEACE at university and college events and outlets. PEACE was included in events and shared throughout different outlets that the college and university have to increase the visibility of PEACE to more students. One PEACE staff remarked, *"We also try to get... different information published in various materials that come out through Bravo."* This participant was referring to getting PEACE advertisements disseminated through university websites. Some participants also made mention of PEACE also being advertised on COE's website. Artifacts confirmed both websites promoted PEACE and had hyperlinks that directed viewers directly to PEACE's website. Even further, PEACE is included in other events that align with its mission, such as the Bravo Diversity Conference.

*"We also have events in the [Nearby City] area. We also have events in the [Local Region]. PEACE also advertises itself to the Bravo Diversity Conference. So there are various engagement events that Bravo University, not just the college, does and PEACE is always involved with that." - Administrator*

COE also advertised PEACE to incoming students via tours, orientation, emails and website features as previously mentioned in Section 4.1.1.2. One participant highlighted how PEACE was presented to students at COE orientation.

*"Even in freshman orientation things with informing students who are coming in that [PEACE] is going to be available to them, that they're supported in this way and welcome, and we expect to see them here. And it just really sets up those pieces in the beginning." - Faculty*

Some faculty reinforced their commitment to PEACE through advertisement and promotion by being vehicles of communication. Participants identified how some faculty became involved with PEACE because other involved faculty encouraged them to do so. Some faculty would tap on the

shoulder of other faculty to help with PEACE initiatives or programs. One participant, in particular, shared how even though they were aware of PEACE, they became involved faculty because another involved faculty recommended them for a role in the summer bridge program.

*"I believe it was actually through [Another Faculty] who teaches in that program that they had asked if [Another Faculty] knew anyone who would be interested in teaching the [technical course], and they recommended me for that." - Faculty*

In other cases, faculty demonstrate their commitment by serving as a liaison between PEACE and their department if they are in COE or their college if they are outside of COE. This is particularly important for this case study because PEACE is in a college of engineering that does not include all STEM majors. Bravo underwent a restructuring that impacted the involvement of some STEM faculty outside of COE. One faculty outside of COE that is heavily involved with PEACE identified that they supported PEACE by *"being like a support person so sort of being the [foundational science] contact with the [foundational science] department..."*

### 4.2.2 Integration of PEACE mission into faculty's role

Commitment to fulfilling the role(s) and achieving the mission of PEACE is further demonstrated through the faculty's integration of PEACE into their role. Some faculty interface with PEACE to support students in the classroom. One faculty highlighted how their role was intertwined with this action: *"My role is to find ways to interface with PEACE so that I can engage with our students and help them to be successful."* Some faculty regard their positions as faculty to be connected to the expectation that they'd serve as a resource for students, namely students in PEACE. This was regarded as supporting the mission of PEACE by one participant.

*"Well, I think because a lot of the things that they do that might require like faculty participation... connect students with resources in, in a particular department. I think those types of tasks really support, like, the mission of you know, retaining students, you know, supporting students towards their, you know, their goal of getting a STEM degree. Yeah. So I guess that's how I see, see the support [from faculty]." - Faculty*

This intentional motivation for interfacing with PEACE also led to some participants implementing inclusive teaching practices that align with the mission of PEACE. Some faculty identified how their involvement with PEACE helped them consider the impact of inclusive teaching practices in and outside of the classroom. One faculty identified how their involvement with PEACE helped

them feel empowered to change their approach to different projects in their classroom. They reflected on when they allowed their students to leverage their lived experiences to implement a class project. They made their projects *"less prescriptive and more student-directed so that students can investigate the things that are interesting to them."* It is important to note that this participant's involvement with PEACE contributed to their self-awareness regarding their tendency to leverage their own *"limited experience prescribing something to [my students]."* Other faculty members identified how their involvement with teaching classes for the PEACE Summer Bridge Program (PSBP) exposed them to alternate teaching practices that would appeal to diverse learners. For one faculty, it was not a deliberate action but one that, in retrospect, the faculty member realized they had done. After teaching PSBP courses, they realized the benefits of teaching a small class: *"It's more conversational and less me just writing stuff on the board all the time. So maybe that's helped me make my course, my larger lecture course a little less rigid."* For another faculty member they were motivated to consider the different ways that students express their knowledge and provide multiple ways for students to demonstrate mastery of course material.

*"Giving students different ways of indicating their knowledge, so you know, if a student, you know not all students are good at writing, and, you know, expressing their work in writing, so giving students a chance to like verbally express their knowledge" - Faculty*

Outside of the classroom, one faculty member developed an office hours structure that would appeal to students who may have felt averse to a one-on-one consultation. They instructed their students one summer to *"... 'meet me at the cafeteria, even though it's super early, and if you guys had any questions about the homework? We could have breakfast and talk and meet in the cafeteria.' So about half of them took me up on that."* This faculty member recounted this experience as successful because it also allowed them to get to know the students in their classroom. While they acknowledged the size of the class created a unique situation, they highlighted the benefits that getting to know their students had on their teaching development. These practices further emphasized how faculty demonstrated commitment to fulfilling the mission of PEACE to recruit and retain diverse students in COE.

Some faculty actively leveraged their individual beliefs to motivate their PEACE involvement. They used their identity or personal beliefs regarding PEACE's mission to become involved. One faculty highlighted their viewpoint on this:

*"I think it's really just like a personal connection, you know. I mean, I don't think that*

*there's any official link between my position and PEACE you know, it's something that you know I'm passionate about, and you know I've made a connection with the PEACE staff." - Faculty*

A PEACE staff also recognized that faculty leveraged their personal beliefs and identification with PEACE's mission to become involved with PEACE.

*"I think a lot of them want to give back, and they see the need to fill the pipeline with students of color, with women... they can take that challenge and charge and help implement [PEACE programming]." - PEACE Staff*

This is viewed as actions towards demonstrating commitment because there are hands-on and hands-off faculty:

*"it's faculty that just have a personal passion for those areas. I'm sure that there's faculty there [that] just need to put something now on a grant, but I mean, they don't really have continuous engagement."*

For faculty who are committed, the identification with PEACE's mission is translated into active involvement. These faculty take a step further by making themselves available and visible to help PEACE. A participant exemplified this action by stating,

*"I just try to be available, you know. Make sure that they know who I am, so that if they need to tap me for something that you know they know that I'm here. And I'm willing to help.." - Faculty*

Some participants further identified that faculty integrated support for PEACE's mission into their roles by prioritizing efforts towards helping PEACE as part of their research program. Faculty would include PEACE in their research grants and even encourage their graduate students to be involved in PEACE to fulfill expectations of broadening participation. Faculty also made conscious decisions to contribute their service hours to PEACE. This was further reinforced by the COE administration's consideration of PEACE involvement as fulfillment of the service requirements for faculty. When speaking about faculty involvement in PEACE, one participant stated,

*"This falls under service – [faculty requirements are] teaching, scholarship, research, and service. So they can, I write the specific activities that they do in support of service. And that, that is valued by the department chair and, and by [high-level administrator] as part of the 10-year promotion reappointment." - Administrator*

Yet, some faculty did not feel that recognition of their efforts toward fulfilling the PEACE mission at the college level. When asked how their contribution to the PEACE mission was recognized in COE, one faculty participant simply responded, *"Next."* This missed opportunity will be discussed further in the next chapter.

Faculty demonstrated commitment by integrating PEACE into their role as a faculty member, leveraging their personal beliefs, implementing inclusive practices, and fostering intentional involvement experiences.

### 4.2.3 Collaborative efforts with PEACE

Commitment to fulfilling the role(s) and achieving the mission of PEACE was demonstrated by collaborating with PEACE to broaden participation. For starters, mutually beneficial relationships were established with PEACE. This included but was not limited to grants and research projects. One participant identified an example of a mutually beneficial relationship established between faculty that collaborate on grants with PEACE.

*"So it's definitely very helpful for getting funding and then it also, I feel like also helps PEACE because they get some of the money" - Faculty*

Faculty also reach out to PEACE for involvement opportunities that would enable them to take action towards supporting PEACE.

*"So we have a lot of faculty that we reach out to, and they just reach out to us. 'What can I do to help?'" - PEACE Staff*

One faculty identified some opportunities they took advantage of to collaborate with PEACE because they *"sought out"* PEACE staff directly. Some also dedicated time to developing and teaching courses during the PSBP. This action is particularly significant because this is how PEACE establishes connections with some of the faculty.

*"...[we] have great involvement because a lot of them that we make connections with are the professors that teach our summer bridge program." - PEACE Staff*

Collaborations with PEACE are reinforced at the college administrative level by ensuring PEACE

has a *"seat at the table"* in meetings about the implementation of the strategic plan, in leadership meetings with department chairs and associate deans and, as noted in Section 4.1.1.2, when decisions are being made regarding undergraduate student success:

*"and I've been in a few groups with [PEACE Director] regarding that [COE strategic plan]. And so I know that they had been involved in those talks and things" - Faculty*

*"[PEACE Dircetor] is part of the leadership meetings for the college, which contains all the chairs, and associate deans for the college. So [PEACE Director] kind of has a seat at the table for these larger meetings too." - Administrator*

### 4.2.4 Use of PEACE to address exclusionary university/college practices

Commitment towards fulfilling the role(s) and achieving the mission of PEACE was demonstrated by faculty participating and advocating for PEACE to address exclusionary university and college practices. Some faculty problematized the university's selective branding for different students and took issue with the brand or marketing of the university to specific audiences. While none of the participants acted on their thoughts in a direct way that would change the university or college's practices, their awareness was noted in how they spoke about COE and Bravo and how their thought on the college and university exclusionary practices motivated their dedication to PEACE. For example, one faculty member specifically outlined their perception of the Bravo brand: *"It's the brand for only a particular type of student and it's like the student experience of your, and I really like hate the stereotype of this, but like your traditional like middle to upper-class white student... from [Local State]."* This participant mentioned their issues with branding at Bravo to emphasize further the value of PEACE and why they dedicated time and effort towards the program, *"which is why programs like PEACE are so important, 'cause they provide kind of that supplement. Right? It's like, okay, well, the university itself is not catering to you. Then you, at least, have this."* Other participants pointed out the nature and culture of being at a PWI, what that meant for the student experience, and why they also supported programs like PEACE. One faculty, in response to questions regarding the impact of the political climate on PEACE, stated, *"they don't understand that when you are already in the minority, and you come to a place like Bravo, where it's a predominantly white institution, you need to have community among other underrepresented populations to help*

*you to thrive at the university and not feel isolated and alone."* This participant earlier identified PEACE as the provider of community for *"underrepresented populations"* at *"a predominantly white institution."*

Another faculty challenged the nature of Bravo to prioritize sports over the recruitment and retention of URM students:

*"you know the the program [PEACE] is there, so there's some some effort. There is the adversity of what we've mentioned multiple times about a lack of diversity on this campus. And so the university is doing something. I don't think they're doing enough [of] it... You know the things you spend money on are the things that you were saying to the world are important. So Bravo has said, [sports] is important and some other things [addressing underrepresentation] are less important. And so I don't think the University has made quite the commitment to recruiting and retaining [as] they should." - Faculty*

This action is important because it identifies how faculty actively connect their involvement and dedication to PEACE efforts to address the problem of the institutional culture and environment.

Some participants also problematized the separation between PEACE and other entities. A few faculty members specifically pointed out the missing link between PEACE and the BTC, identifying it as a seemingly missed opportunity to provide support for students whom PEACE served.

*"There's a Bravo Teaching Center that is really focused on teaching. I don't know how connected they are with, like, PEACE or anything else. But I think on the faculty level, that's where we know to get resources related on teaching... Yeah. it would be nice to have more of that pulled in from you know, what's happening in PEACE. And what's working for our student populations here." - Faculty*

This participant went on to express how this missing link would help faculty in COE provide better support. Again, we see participants essentially advocating for students PEACE served who would otherwise not be supported at the university.

### 4.2.5 Provide PEACE with financial support

Faculty and COE administrators demonstrate commitment towards fulfilling the role(s) and achieving the mission of PEACE by providing PEACE with financial support. As mentioned in Section 4.1.1.2, COE secures funding for PEACE by making sure funding is available despite what may happen at the college or university level. This sentiment was highlighted in an administrator's comment regarding PEACE being in COE's budget.

*"And so this budget supports PEACE, no matter what like, whether grants, [Local Industry Partner 1] grant, so whether they get grants like that or not. [PEACE programs]all have funding through the college." - Administrator*

This financial support extends to operating costs for PEACE as well. COE provides financial support to keep PEACE running on a day-to-day basis.

*"PEACE itself has to function as well, and I'm reasonably sure that they do get some being an entity of the, of Bravo University, that they do get some and support from Bravo itself." - Faculty*

Here we see a faculty member emphasizing how PEACE's basic functioning costs are covered through an institutional budget. An administrator and PEACE staff confirmed that this budget came directly from COE.

*"You know, that comes from the college. They handle... you know, salaries and fringe benefits." - Administrator*

*"the Dean's office, pays our salaries, the professional staff and the students salaries. They pay some of the tutors salaries, and they pay some of the graduate students salaries....mainly the Dean's office [funds] is [to] support the professional staff, and make sure we have what we need to run the unit." - PEACE Staff*

COE keeps PEACE operating by covering basic-level costs such as salaries, fringe benefits, and

utilities. This provides a sense of certainty that PEACE will always be up and running and that employees will continue to be compensated for their efforts regardless of the attainment of external funding. While some participants highlighted how PEACE could indeed use some additional funding, they each positively viewed and even expected the base costs of keeping PEACE running to be covered by COE as mentioned in quotes included in Section 4.1.1.2. One administrator mentioned, *"Initially the key was, it was an integral organization. And so [high-level administrators] have made sure that financial uncertainty at the university or college level shouldn't affect them."* Here, the participant was responding to an interview question regarding why PEACE was financed by COE using the current funding structure of being included in the base budget.

Faculty also contributed to the financial support of PEACE by funding PEACE programming and events. Some faculty wrote in financial support for different PEACE outreach events into their grant applications. One participant, in particular, highlighted how a grant they applied for helped to provide scholarships to fund the participation of some students in a large outreach program.

*"So in my collaboration. You know, I talked with Lorraine and had been a part of [sub-program focused on gender] and kind of showing that collaboration, so that helps me to get the grant... And then, as part of the budget in the grant, I included money for a certain number of students to get a scholarship to [sub-program focused on gender] so families that couldn't afford it... would have a full scholarship to the [sub-program focused on gender]." - Faculty*

Here, this participant identifies a combination of their relationship with the PEACE director, which helped them to fund PEACE in a way that was beneficial to the PEACE mission. This is important to note because it ensures that the financial support is effective and used as PEACE needs it to be used.

### 4.2.6 Provide PEACE with alternate forms of support

PEACE was also provided alternate forms of support that demonstrated commitment to their mission. These examples of support do not come in the form of funds directly paid to PEACE personnel but rather an alleviation of costs by providing services through the college. For example, COE provides additional administrative support for PEACE. One faculty member identified that COE provided PEACE with *"administrative support, you know, things like accounting and grants*

*management, support like infrastructure type things that you need to be able to run something."* This differs from operating costs because it includes the outsourcing of personnel. Even for human resources (HR) services or hiring issues, an administrator identified how the COE chief of staff and operations *"always clears all the problems for [PEACE Director]."* COE also alleviates costs for PEACE by dedicating and maintaining a space for PEACE operations. So much so that an administrator mentioned a new location for PEACE being included in a strategic plan,

*"...We have in Chase Hall a dedicated facility for PEACE, okay, with a study hall and office space, but also what we have in the strategic plan, it will be housed in a new building that we are proposing to build." - Administrator*

This plan was not acquired as an artifact but was verified by the PEACE director in response to questions about the current location of PEACE,

*"we're looking forward to be in [0-5 years] getting a new office in [the] new building. And it's gonna be very nice. But right now we're in Chase [Hall]."*

COE maintains the current space for PEACE by funding renovations and ensuring that it is intentionally designed.

*"After we renovated and we have given a store front entry, it has a much more prominent sort of location within the college. Make sense to you? Having a better study hall. Before that, it was, it was like an afterthought. But now it is not." - Administrator*

A PEACE staff emphasized the COE administration's role in securing the renovation by confirming they *"gave money and said we could renovate. And so it's renovated."* This was also reflected in the updating of furniture in the PEACE space. A PEACE staff member expressed how the act of maintaining the appearance of PEACE space impacted students whom PEACE aimed to serve,

*"I think there was a need, because from what I gather, from some of the old pictures that I've seen, it was horrible. I mean, it was just, it needed [updating] so the students would feel that*

*they were valued, you know–upgrading to [a] better quality of things, you know, from the seating to where they could eat and feel comfortable." - PEACE Staff*

### 4.2.7 Summary

Commitments to fulfilling the role(s) and achieving the mission of PEACE were demonstrated by faculty and administrators (Bravo and COE). Demonstrations included promoting and advertising PEACE, faculty integrating PEACE into their roles, collaborating with PEACE, faculty using PEACE to address exclusionary college and university practices, and PEACE receiving financial and alternate forms of support. This section underscored some perceptions of PEACE outlined in Section 4.1.

## 4.3 Institutional and organizational perceptions and commitments towards the MEP enacted through its organizational and programmatic structures

PEACE's programmatic and organizational structures are the outputs by which the program achieves its mission. In previous sections of the findings, participants' perceptions of (Section 4.1) and commitments toward (Section 4.2) PEACE have been discussed at length. I position those perceptions and commitments as inputs to PEACE to help it arrive at its outputs. Based on traditional convention, inputs lead to outputs. This section will explore the inputs leveraged by PEACE, knowingly or unknowingly, to help it arrive at its outputs. Three themes encompass how the connections between inputs and outputs are created: PEACE Awareness, PEACE Formalization in COE, and PEACE for Student Support. These themes explain the categorical processes participants have identified to enable the outputs of PEACE.

This section will begin with a discussion of the outputs of PEACE and who they benefit. A summary of the outputs can be found in Table 4.3. Next perceptions and commitments will be reviewed to reveal their connections to the outputs of PEACE. Finally, missed opportunities will also be discussed as relevant to each theme.

| Theme | Subthemes |
|---|---|
| Outcomes that sustain PEACE | PEACE developed internal communication structure |
| | PEACE leverages its own success to sustain itself |
| | PEACE takes ownership of its organizational presence in COE |
| Outcomes that Benefit Students Directly | PEACE provides academic financial assistance |
| | PEACE creates opportunities for workforce development |
| | PEACE acclimates students to the college experience |
| | PEACE retains students |

Table 4.3: *Summary of Programmatic Structure of PEACE* This table includes the two themes found in the third analytical approach: Perceptions and commitments enacted through programmatic structures of Phase Two: Analytical Phase and a list of the seven subthemes that contribute to each theme. These themes and subthemes are thoroughly discussed in this section.

### 4.3.1 Programmatic Outputs of PEACE: Outcomes that sustain PEACE

#### 4.3.1.1 PEACE developed its own internal communication structure.

PEACE has developed a significant communication structure within COE and beyond. While underrepresented student organizations in COE did not officially run through the PEACE office, they built strong relationships with students in leadership as many of them also used PEACE services and the organizations aligned with the PEACE mission. One PEACE staff member shared, *"we use NSBE and SHPE as also communicators for us."* PEACE specifically tapped into this network because they want students to know that they are here for them. Another PEACE staff remarked, *"Whether it be through NSBE or SWE or SHPE that you know that we're here and that we want [them] to, you know, have all the other opportunities, as everyone else has."* Within PEACE's communication structure, they also distributed materials to communicate their value to others. One PEACE staff highlighted, *"We also have a brochure that we distribute when we go to various high schools or events that we want to recruit. We have that material out there as well."* In some cases, PEACE also used electronic dissemination to make people aware of their presence.

*"A lot of things are electronic now. So social media, LinkedIn, you know, whatever we need to do to put the word out that'll let people know that we're here." - PEACE Staff*

PEACE's communication structure also heavily relies on its outreach efforts. When asked how PEACE's value is communicated to people outside of Bravo, an administrator responded, *"PEACE runs camps. They run K through 12 camps. Okay, they did middle school camps. They run high school camps throughout the summer. PEACE is active and within the community for community events, like [Community Outreach Event 1]..."* PEACE conducts a multitude of outreach programs to expose the local community and those who have been traditionally under-served to STEM. They implement targeted programs to broaden participation and, in turn, raise their visibility in the community. The ongoing involvement PEACE has garnered in the community helps to spread awareness of the program's impact and what it has to offer potential students. PEACE also engages the local community by maintaining email communication with *"families and parents in regions in lower economic areas of [Local State]."*

Moreover, PEACE intentionally advertises itself as being something for everyone. This strategy is geared towards all majors and students of all backgrounds. One administrator pointed out how PEACE is *"open towards everybody... not just for Black students or underrepresented students. But it's for all students."* This sentiment was echoed by a PEACE staff who responded to the misconception that PEACE was only for African American students by intentionally engaging *"Caucasian and Hispanic males and females and let them know about our program that is open to everyone. It's just not for the underrepresented population, though that's our target. But we're still open to everybody."* Here, we see the PEACE staff reaffirming their intentional effort to communicate and engage students outside of their target population.

#### 4.3.1.2 PEACE leverages its own success to sustain itself

PEACE garnered significant recognition due to a multitude of ways that it raised awareness and demonstrated the impact of its programs. PEACE developed strong relationships with local industry partners and other partners external to COE and Bravo. They sought out partnerships with individuals and companies who aligned with their mission and could spread awareness of PEACE further. In some instances, PEACE leveraged its success to establish relationships with local industry partners. One faculty member outlined how PEACE sustained a relationship with an industry partner *"because I think that [Local Industry Partner 2], you know, the partnership had to start kind of small. And then, just as they started to see the impact, like as the [Local Industry Partner 2] people saw the impact, they continued to give money, and they kind of, you know, supported*

*that again and continued their support."* Here, we see that PEACE's success raised the industry partner's awareness of PEACE's impact. A faculty member underscored PEACE's ability to be recognized through industry partnerships by mentioning, *"But lately there's been a lot of funding that's been coming from industry, so like [Local Industry Partner 1] and [Local Industry Partner 2] outreach program, and [both] sponsoring the PEACE summer bridge program. So it's like, now this industry support is coming to kind of support these programs."* Here, the faculty member mentions the outreach programs that were products of PEACE being recognized for their sustained success at broadening participation in the region.

Students in PEACE were known to be successful beyond graduation and PEACE took significant pride in this and tapped on the shoulders of their alumni to also give back financially. One administrator remarked that *"PEACE has their own alumni base, students who are successful alumni who give back to PEACE."* The relationship PEACE forged with their alumni underscored this idea and ensured they could rely on their alumni to get involved with PEACE. When companies hire PEACE alumni, those companies come back and recruit from PEACE because they're aware of the success of PEACE students.

*"A lot of times company, industries that some of our alums have graduated from want to recruit from us, so they'll send [PEACE Director] some invites, you know. They want to come. [The Bravo] career fair's coming up, so they're like, can we come and do industry night and invite some of your students for internships, coops and permanent jobs?" - PEACE Staff*

Here, we see how the reputation of PEACE students is being recognized by companies that have employed PEACE alumni. Overall, PEACE leveraged its own success to create access points for PEACE awareness, consistent funding from industry partners, and career opportunities for its students.

#### 4.3.1.3 PEACE takes ownership of its organizational presence in COE

The PEACE director ensured that throughout changes in administration, PEACE maintained an organizational presence in COE and remained organizationally under the Office of Undergraduate Education. When the COE developed a leadership position to coordinate DEI efforts, the PEACE director described how they advocated for PEACE to retain its direct report:

*"They spoke of moving me to [report to] the [DEI leadership position]. I feel it is a better fit for me to be where I am because I feel like I need to make sure that where the majority students are receiving, they don't forget about our students. And if I'm just over here in a slot with just this group, I'm not to say that they would forget me, but I feel like I'm more in the know if I'm with everybody... So I kind of fought against it. To tell you the truth."*

As previously discussed in Section 4.1.1.2, some participants who felt that PEACE was structurally embedded in COE underscored the PEACE directors' belief regarding the benefits of PEACE's reporting line. Even further, PEACE personnel leveraged this presence to have access to administrative staff, faculty and students. As stated by an administrator, *"[PEACE Director] will reach out to [multiple COE administrators]. They'll reach out to faculty. They'd reach out to our [COE] students."*

### 4.3.2 Programmatic Outputs of PEACE: Outcomes that Benefit Students Directly

#### 4.3.2.1 PEACE provides academic financial assistance

PEACE staff identified ways that PEACE took action to benefit students in their journey at Bravo and through COE. PEACE gave guidance and financial assistance to students wanting to attend Bravo, eliminating financial barriers for some students to attend. One PEACE staff member spoke about a process they put in place to help students offset the cost of application fees:

*"When they've come through some of our programs, they can get [an] application waiver, so that deletes, you know, them having to worry about the $80 or $100 for application fees. So you know, we have eliminated some of the barriers,"*

Even further, PEACE provided financial support to students by giving them materials and school supplies. A PEACE staff member identified the importance of having this resource for students because *"a lot of, again like I said, many students come in not having all the materials. You know some of the supplies that they need, and if we, we try to have it, you know. Some like I said, we've*

*had students come in with a book need, just basic supplies, pencil, paper, notebooks.*

#### 4.3.2.2 PEACE creates opportunities for workforce development

Beyond academic enrichment, PEACE also enacted support to students by providing opportunities for professional development and preparing them for the workforce. They gave students leadership opportunities that helped to develop them professionally. For example, one PEACE staff member identified how their role expectations for student workers helped teach the students skills needed to be retained in the workforce:

*"Preparing them for when they do enter the workforce, how you might be given tasks and their deadlines because when we're planning events, we give students different assignments that we need done in order to make sure that the plan falls through. Or we might have one do some gathering of supplies, getting venues, ordering food. We give them those because they might, those are tasks that need to be done. Not that they are minimal, but showing them, okay, this is a team effort."*

According to another PEACE staff member, PEACE *"develop[ed] and train[ed] them so that they can be ready to be a part of the workforce."* An artifact revealed a high-level Bravo administrator's emphasis on PEACE's contributions to workforce development by their statement that PEACE's production of URM engineers was how Bravo helps the United States remain a global innovation leader. A faculty member also identified this workforce development through their beliefs regarding how PEACE helped students build their resumes *"I think it also provides opportunities for more senior students to be engaged... as well as mentors, and have leadership positions through the PEACE office that really helped those students to build their own resumes as well."* PEACE also created an environment where students who took advantage of PEACE resources and programs often came back to PEACE to seek leadership opportunities:

*"Yeah, well, several of the [PEACE summer bridge program] students have taken on sort of leadership roles and helping roles in PEACE." - Faculty*

PEACE's investment in students' professional development had overwhelmingly positive results as PEACE students developed a widely known professional reputation in COE. Many participants,

when asked about the engagement of PEACE students in COE traditions, engagement, and leadership, identified that many of them took on leadership roles in COE student organizations, in PEACE, and in student advisory boards. One faculty member gave an outline of the type of students that PEACE cultivated, mentioning how PEACE students were known for *"asking questions, talking to the instructor, having things to contribute, going to the career fair, talking about their internships and their things because they've been prepped and mentored and pushed to go after these extra activities."* Here we see that this faculty member identified that PEACE mentored and pushed students to go the extra mile and develop themselves beyond academic success.

#### 4.3.2.3 PEACE acclimates students to the college experience

PEACE helped students to acclimate to the college experience through its summer bridge program for incoming first year students. This is identified as an action because PEACE made a conscious effort to help students adjust to being in college for the first time. The summer bridge program allowed students to come on campus early and explore the campus. One faculty member identified the impact this had on students:

*"I feel like it's just it really helps just that little bit of, you know, 3 extra weeks on campus, meeting other people having a like a group that they can identify with and like friends, you know, and coming to this huge campus meeting some faculty that they know are, like, on their side."*

Here, we see that students were able to become familiar with the campus, build relationships with other students, and make connections with key STEM faculty. PEACE was aware of the traditional profile of their target population and took intentional action to address the concerns that could negatively impact their experience. Another faculty member identified how PSPB's schedule and structure exposed students to life in college:

*"...to get accustomed to the college life, you know, because it's completely different than living at home. You know what I mean? Where you have to take care of everything yourself. I mean, that wasn't so hard, but you know, but also, you know, maintaining schedule, go into class and all that, especially when it's an 8 AM class."*

#### 4.3.2.4 PEACE retains students

In addition to helping students become acclimated to being in college, PEACE also assisted students in staying in college. An administrator explicitly expressed how PEACE achieved its mission *"by ensuring that students [who] start in our college [of] engineering and computing persist and continue to have an engineering and computing degree."* A faculty member witnessed how PEACE single-handedly kept students from dropping out of school and that many elements of PEACE programming were geared specifically toward retaining students:

*"Oh, yeah, I definitely witness, them singlehandedly keep students from dropping out of school... I can speak from personal experiences now... in terms of my experience, and and, you know, witnessing the same thing with others and other students, the PEACE Office is supporting retention here at Bravo. I can speak from personal experience: students that were going to drop out of school, but the PEACE Office supported those students, or that they did not drop out of school that they actually graduated with their engineering degree."*

The role of PEACE is further emphasized by a PEACE administrator's belief that it was their role to *"continually keep the students engaged because a lot of time our students leave Bravo, or the engineering department because they feel like they are isolated or they feel alone."* Here, the PEACE administrator highlights why PEACE's role in retaining students is so important for their target population.

PEACE provides opportunities for academic enrichment while also providing students with a community and safe space. PEACE achieved this by exposing students to skills like how to talk to professors and effective study habits by way of the summer bridge program and their mentoring program. PEACE developed a model where academic success was intertwined with community. Students had access to additional tutoring services, a test bank and study spaces through PEACE. An administrator described how PEACE helped students *"find their tribe to help them in having that academic support system so they can be successful during their academic journey."* Students were empowered to form peer study groups and to attain success with the help of their fellow students.

*"It's a safe place for them to go when they feel isolated and they can go and see other under-*

*represented peoples. And be able to partner and tutor with them, I mean tutor and study and things of that nature with them. Those are definitely benefits." - Administrator*

One faculty member identified that PEACE implemented a cohort system with students who participated in the summer bridge program to ensure that students who were on similar academic levels were taking courses together.

*"[in the] PEACE office, [PEACE director and staff] is trying to keep the cohorts together in their STEM courses so that they can have this, you know, sort of family of, you know. The, yeah, their class, they have their friends in their class, you know, hopefully, their friends. If they become friends, but at least that they have their, their, their colleagues, that they, they met in the [summer bridge program]." - Faculty*

PEACE actively puts students in touch with others like them who could help them succeed. This integration of community and academic enrichment was the primary driver of PEACE programming and ultimately helped the program retain many students in alignment with its mission.

### 4.3.3 Enactments of Commitment & Perceptions through Programmatic Structures

This section will explore three key themes that define how certain perceptions of PEACE and commitments towards PEACE are enacted through specific programmatic structures PEACE developed to sustain itself and benefit students.

#### 4.3.3.1 PEACE Awareness

Recall in Section 4.1.1.1, there were strong beliefs that PEACE was the responsibility of all COE personnel. In Section 4.1.2.2, outlined how PEACE was also valued for its capacity to bring praise to COE. Finally, in Section 4.1.2.3, I highlight how some participants also perceived that PEACE's success is often leveraged to attain opportunities for the college and for faculty. Participants identified how PEACE attained many awards at the state and national levels, which raised the visibility of PEACE and, in turn, the visibility of COE.

In Section 4.2.1, I discussed how advertising and promoting PEACE was one way COE demonstrated commitment to the perceptions of PEACE values. The way COE advertises PEACE to incoming students and faculty speaks to the sense of ownership and responsibility participants identified in Section 4.1.1.1. The commitment demonstrated by advertising and promoting PEACE was motivated by participants' beliefs regarding COE's ownership of PEACE, PEACE's ability to bring praise to COE, and the leveraging of PEACE to attain opportunities for COE and faculty. PEACE's communication structure and leveraging of its own success to sustain itself are the primary beneficiaries of this commitment.

While PEACE succeeds in its ability to communicate its events, presence, and accomplishments through its own communication structure, this structure is supported by COE's larger capacity to reinforce PEACE communication through additional advertisement and promotion at university and college events and outlets. Even further, PEACE's recognition, both internally and externally, is supported by the weight participants perceive PEACE holds for COE as a segue to opportunities. COE's advertisement and promotion of PEACE reinforces its leveraging of PEACE's success to raise awareness of COE and attain opportunities. The relationship between perceptions, commitment, and programmatic structure here reveals a one-directional relationship where PEACE is ultimately positioned to bring glory to COE. This is seen in COE's claiming of PEACE as its own and leveraging PEACE for opportunities and COE praise. Contrastly, participants did not identify that PEACE is able to claim COE's successes for its own or leverage it to gain external opportunities.

#### 4.3.3.2 PEACE Formalization in COE

As discussed in Section 4.1.1.2, participants perceive PEACE's structure to be a marker of the extent to which it is part of COE. Participants also perceive PEACE as the responsibility of all COE personnel (Section 4.1.1.1). Finally, participants identify PEACE's value also to be found in its influence on other programs of student support in COE, other STEM colleges and Bravo as discussed in Section 4.1.3.1. These perceptions of value undergird COE's commitment to PEACE demonstrated through collaborating with PEACE and COE providing PEACE with financial support and alternate forms of funding. These demonstrations of commitment have been discussed at great length in Sections 4.2.3, 4.2.5, and 4.2.6.

The discussed perceptions of and commitments toward PEACE support PEACE as it takes

ownership of its organizational presence, as discussed in the programmatic outputs that benefit PEACE earlier in Section 4.3.1.3. Its ability to reach out to all levels for support and assistance and be greeted with willingness underscores the perception that PEACE is included in COE's structure and that it is the responsibility of all COE personnel. The support network created by COE's commitment through financial backing, alternate funding and collaborative efforts enables PEACE to maintain its presence in COE. This network creates an environment where PEACE is formalized as an entity of COE.

#### 4.3.3.3 PEACE for Student Support

This theme explores how the process by which specific perceptions of and commitments towards PEACE are enacted through a specific programmatic structure integrates PEACE into COE. As discussed in Section 4.1.1.3 and 4.1.2.1, respectively, some participants believe PEACE to be instrumental in achieving the long-term strategic goals of COE and a place to serve URM students. In essence, PEACE helped to keep COE accountable to its strategic goals, especially its goal of providing all students with an exemplary student experience and its mission to produce workforce-ready graduates. These perceptions undergird COE's commitment by leading faculty to integrate the PEACE mission into their practices and use PEACE to address exclusionary practices as discussed in Section 4.2.2 and Section 4.2.4, respectively. Some faculty challenged the extent to which COE achieved their strategic goals and intentionally dedicated their time to PEACE as a means to address their concerns regarding the exclusionary culture of COE.

Commitments toward PEACE undergirded by the perceptions of PEACE discussed in this section are enacted through PEACE's outcomes that benefit students directly. Section 4.3.2 outlines how PEACE achieves student retention, acclimates students to the college experience, provides guidance and financial assistance, and enforces workforce development. Perceptions of the value PEACE has for COE as a provider of student support for URM students and its role in achieving the long-term strategic goals of COE aligns with what PEACE has in place to benefit its students. COE's goals and mission rely heavily on producing diverse graduates who are prepared for the global workforce. COE's websites reveal its strong desire to produce well-rounded, globally aware graduates. However, the commitments that contribute to the outcomes that benefit students directly in Section 4.3.2 are commitments demonstrated by faculty (Section 4.2.2 and Section 4.2.4). While participants at all levels hold perceptions of PEACE that lay the foundation for commitments to be taken at

the administrative level, faculty highlight the limited rewards for service through involvement with PEACE and for enacting inclusive pedagogical practices. This presents a missed opportunity on the part of the COE administration that will be discussed in Section 5.1.2.4.

#### 4.3.3.4 Summary

This section addressed RQ3 regarding how perceptions of and commitments towards PEACE are enacted through programmatic structures viewed as outputs. These outputs sustained PEACE and directly benefited students. The processes by which perceptions and commitments were enacted through them could be defined by three themes: PEACE awareness, PEACE formalization in COE, and PEACE integration into COE.

# Chapter 5

# Discussion and Conclusions

This chapter will open with a discussion of the results, followed by the implications for practitioners and researchers. I close this chapter by discussing the future directions of this work and conclusions.

## 5.1 Discussion of Results

### 5.1.1 Model of Institutional Support

This study was guided by a model of institutional support I developed from existing literature on MEPs. The model I developed distinctively positioned perceived value, institutional commitment, and structure as equal parts that individually impacted the MEP within the context of an institution. I realized my model was limited in depicting how Bravo supported PEACE. While perceived value, institutional commitment, and structure contribute to institutional support, the relationships uncovered in this study revealed that the level of independence I afforded to the elements is inconsistent with how it manifested. Furthermore, additional elements were identified that contributed to institutional support for PEACE.

#### 5.1.1.1 The relationship between perceived value and institutional commitment

Perceived value undergirds demonstrations of commitment from faculty and administration; commitments were grounded in perceptions of what PEACE means for COE. In essence, perceptions

of PEACE's value laid the foundation for faculty and administrators to explain and sometimes justify their commitment actions. Thus, commitments embody perceptions and bring them to life. While perceived value can stand alone in some cases, commitments do not.

#### 5.1.1.2 Demonstrations of commitment rely on beliefs in the context of actors' sphere of influence

Actions are motivated by an actor's belief system in context (Copp, 1997; Leicester, 2008; Strand & Lizardo, 2015). Context is important for understanding the model of institutional support because while actors may have their individual belief systems, In reality, our actions are not always motivated by our true beliefs because we don't have the power to act on those beliefs depending on what setting we're in (Kornblith, 1983). Thus, the context is key in understanding commitments to PEACE, which could only be carried out in the context of my participants' sphere of influence. This is consistent with my division of process codes by level (i.e., faculty, PEACE, college; see Section 3.4.4) for my Second Analytical Approach (process coding), which addressed demonstrations of commitment towards PEACE. The limitations of one's sphere of influence also align with the hierarchical levels of analysis for this study. Power and privilege within an organization influence the demonstrations of commitment that an individual at different levels of the hierarchy enacts. For example, the faculty problematized the exclusionary culture of COE and Bravo, but their actions were limited to PEACE involvement and changes they made to their faculty practices. They did not mention the ability to impact policy or change culture. They relegated that to COE and Bravo administrators by putting the onus on them as a collective, as identified in Section 4.2.4; one faculty mentioned that "the university itself is not catering to you [URM student]". In the same section, another faculty member placed the onus on Bravo by saying that it demonstrated addressing underrepresentation was not as important as sports.

#### 5.1.1.3 Structure's embedded role in institutional support

The structure identified in the original model in Figure 2.1 appeared to be a function of demonstrated commitment. The structure was identified as a separate construct, including reporting lines, staffing, and location. These structural elements were included in the model because the nature of their existence is key to characterizing institutional support. This remains true for this case study; these elements were ways that COE demonstrated commitment to PEACE. Structural elements of

PEACE were not stand-alone concepts. They existed within the demonstrations of commitment. This was because each structural element encompassed decisions made at the college level. However, my consideration of the elements was limited in that PEACE and faculty-level actors did not impact the structural elements as defined in the original model. My study revealed that each structural element only serves PEACE when leveraged by PEACE-level actors to benefit PEACE programming, resulting in a more nuanced structural element: programmatic structure.

#### 5.1.1.4 Introduction of programmatic structure as part of the model of institutional support

The programmatic structure is defined as the structures PEACE-level actors developed for themselves to facilitate programming that helps sustain and fulfill their mission. The programmatic structure was characterized into two subsets: benefit to students and benefit to PEACE, with benefits to students being synonymous with fulfillment of PEACE's mission and benefit to PEACE with program sustainability. This expression of structure describes the case more accurately and is included in the refined institutional support model.

#### 5.1.1.5 Reconsideration of existing environments that impact support

The model situated MEPs within institutions and neglected the role of the institutional division hosting the MEP (COE). COE was instrumental in supporting PEACE, particularly regarding the demonstration of commitment to PEACE and the legitimization of PEACE's role. PEACE's value is more so attached to what it does for COE than what it does for Bravo. As such, I modified the model to include the COE as an additional environment in which PEACE operates. Still, the nature of the support for PEACE is rooted in anti-Black racial ideologies that are reinforced through the cultures of Bravo and COE. As such, Figure 5.1 depicts the refined model of institutional support.

### 5.1.2 Illuminating Racism in Institutional Support for PEACE

This section sheds light on how racism impacts institutional support for PEACE. The results, at first glance, illuminate an alignment between perceptions, commitments, and programmatic structure. A critical examination is needed to make sense of how perceptions grounded in

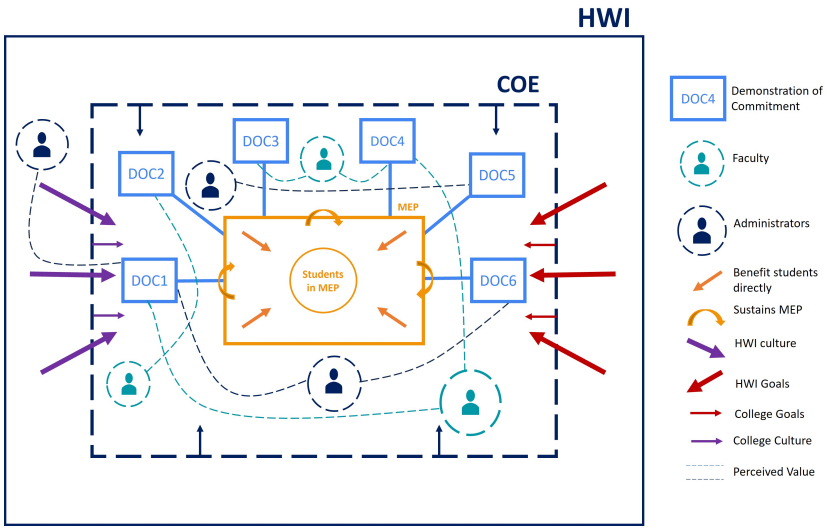


Figure 5.1: *Refined Model of Institutional Support* The refined model emphasizes the pivotal role of perceived value in driving institutional commitment, where perceptions of PEACE's value underpin and guide faculty and administrative commitments. Demonstrations of commitment are shaped by the actor's sphere of influence and hierarchical position, which influence their capacity to effect policy or cultural change. The model also integrates the role of COE as an additional environment influencing PEACE.

racial schema and ideology make room for racial structures that uphold Bravo and COE, thereby impacting institutional support for PEACE.

#### 5.1.2.1 Emergence of a novel mechanism of racial inequality

While PEACE's benefit to students is clearly evident in the data, COE transposes its existing racial schema (its exclusionary HWI culture) to a new set of organizational resources (access to the exemplary student experience), revealing a novel mechanism of racial inequality (Ray, 2019). This mechanism does not mirror traditional forms of racial inequality and works well for COE because its valuing of PEACE appears impartial. Impartiality is in itself a colorblind perspective in this context, as it assumes neutrality and freedom from discrimination. In reality, this is not an impartial value because it dishonors the historic experiences of PEACE's target population at HWIs and the history of MEPs.

HWIs such as Bravo have continuously built internal systems to keep Black students out and control the resources of education, leading to the gross underrepresentation of Black students at HWIs and in engineering (Slaton, 2010; Slaughter et al., 2015; Harris, 2021). Bravo's financial

barriers, admissions requirements, and branding favor the experiences of White students and serve to exclude those of Black students. These aspects of Bravo set the stage for COE to reinforce the exclusion of Black students by legitimizing PEACE as carrying the weight of providing racially and gender marginalized students with an exemplary student experience.

Participants identified how Bravo is a place that does not facilitate thriving experiences for PEACE's target population. They also emphasized the problematic nature of the exclusionary culture of COE. Yet, when asked about the value of PEACE for COE and Bravo, participants highlighted how PEACE helps to provide URM students with an exemplary student experience. Participants believed the responsibility of PEACE to be shared, but the aforementioned reality presents an environment where the responsibility of URM student experiences is on PEACE alone to secure and excuse COE and Bravo's exclusionary cultures. Recall in Section 4.1.1.1, an administrator mentioned that the mission of PEACE is *"essentially ensuring student success and experience"* and went on to identify that "student" referred here to URM students.

While this covert responsibility does not stop PEACE from benefiting URM students, it undercuts PEACE's mission. PEACE is exploited for its ability to benefit URM students, but its mission to foster thriving experiences for URM students in COE is limited because COE hands off the responsibility to PEACE rather than positioning itself to reinforce the culture of PEACE. In Section 4.1.1.3, an administrator acknowledged the underrepresentation of women in engineering and followed the statement by mentioning, *"so that's why we have... PEACE program."* Whereas COE should lead the facilitation of student success and experience for URM students in engineering, it clearly relegates that job to PEACE as the remedy, effectively neglecting its responsibility. In Section 4.1.2.1, a faculty member identified how their experiences as a faculty member in COE taught them to lean on PEACE for URM student support because, *"unfortunately, the college itself doesn't really provide that support."*

Furthermore, PEACE's reach in COE has limitations. Primarily, PEACE can only provide resources and positive experiences for admitted students, and the enrollment of its target population has not risen to a satisfactory level. One PEACE staff identified their dissatisfaction with the number of Black students at Bravo:

*"If I was given a chance to go to, from what I gather, the Board of Trustees has a lot to say with admissions, I'm not sure, but if I could get in front of them and say, Okay, what's the*

*process? Because we're still at this 6-10% all these years. It's got to be a disconnect because you, you should have moved the needle upward. If we're saying we want this, we want to increase our underrepresented students, what are we doing?"*

Here the staff member is highlighting that Bravo's admissions process serves as a barrier for the enrollment of students from racial and gender marginalized backgrounds. A faculty member reinforced these sentiments of dissatisfaction when speaking about COE's representation:

*"As far as who's in the classroom, I, I would imagine that the PEACE program does factor into the recruiting of students and producing a more diverse new body, although like 11-15%, nothing to brag about."*

Here, the participants emphasize PEACE's role in diversifying the classroom but reckons with the reality that Bravo and COE still have a long way to go.

PEACE appears to be a cog in a larger machine rather than having the value participants identified. The responsibility for this is not on PEACE but rather on COE and Bravo. HWIs tend to address the experiences of URM students, specifically in engineering, through bare minimum approaches (Slaton, 2010; Slaughter et al., 2015; McGee, 2020). COE presents PEACE in a positive light for the experiences of URM students and overwhelmingly cites it as where these students could get access to an exemplary student experience. PEACE serves as an extension of its target population. Thus, COE's inadequate regard for providing an exemplary student experience for URM students allows COE to use PEACE to maintain its grounding racial schema. This is clearly seen in the lack of enrollment of PEACE's target population and neglect of PEACE's overall mission in the college.

In summary, COE diminishes the agency of PEACE, thereby diminishing the agency of its target population. The exemplary student experience advertised in Bravo's brand is "separate but equal"; racially and gender-marginalized students can have an exemplary student experience like all Clemson students, but they only have access to it through PEACE.

#### 5.1.2.2 Racialized decoupling

COE engages in the exploitation of PEACE's ability to achieve its strategic goals regarding student experiences without implementing cultural change through college-wide policies and practices. The college decouples PEACE, its formal commitment to diversity, equity, and inclusion in engineering, from its organizational practices. This mirrors the tendency of HWIs to commit to separate but equal efforts towards Black student experiences. HWIs have engaged in the outward expression of diversity to meet requirements such as integration and affirmative action while inwardly upholding racist practices that keep Black students excluded and mistreated (Slaton, 2010; Harris, 2021).

Ray (2019) identified how organizations are able to perpetuate racism in light of commitments to change through decoupling. Ray defines this as a separation of formal rules from organizational practice within a racialized organization. The previous discussion on the novel mechanism of racial inequality highlights how Bravo and COE make no impactful progress towards changing their culture and practices to extend safe spaces beyond PEACE. This is expected of racialized organizations.

Recall that COE and Bravo position PEACE as their formal commitment to diversity. This can be seen throughout the findings, specifically Section 4.1.1.3 regarding PEACE's instrumentality in achieving the long-term strategic goals of the COE. For Bravo, this same approach, PEACE as the commitment to diversity, is underscored by a high-level administrator's public statements regarding Bravo's commitment to addressing diversity through programs such as PEACE. Their commitments, however, are exploitative in nature because they do not achieve the true mission of enhancing the experiences of their racial and gender-marginalized students. Participants highlight how PEACE's success brings recognition to COE and Bravo and how PEACE is leveraged to attain opportunities and recognition, but there is no mention of the cultural changes that were brought about because of the presence of PEACE. Specifically in discussions regarding teaching practices, PEACE was seen as valuable although no actions were in place to facilitate its impact and influence on classrooms or curricula.

The current legitimization of PEACE reinforces, or at least does not challenge, existing racial hierarchies (Ray, 2019). It perpetuates the expectation of racially marginalized students to conform to White norms and standards (Ray, 2019). In section 4.2.4, I highlight how a faculty

describes that the "exemplary student experience" at Bravo is for *"...like your traditional like middle to upper-class White student... from [Local State]."* While Bravo's culture favors the traditional experiences of White students, administrators justify their positioning of PEACE. As one faculty member stated, Bravo and COE operate from the belief that *"well [since] the university itself is not catering to you, you at least you have [PEACE]."* The consideration of Black student experiences as an afterthought is commonplace among racialized organizations. These actions are rooted in racial ideologies that permeate COE's engineering culture as racial schemas and connect to resources (i.e., access to thriving experiences in COE) to develop racial structures that uphold PEACE.

The practice of racialized decoupling at Bravo mirrors the current discourse on the permeation of anti-Blackness in engineering. Scholars have identified how many institutions develop intervention programs and diversity initiatives without ever making tangible plans toward cultural change (Milem, Chang, & Antonio, 2005; Dumas & Ross, 2016; Harris, 2021). This is particularly due to the neglect of the role of racism in creating environments in the engineering academia that perpetuate anti-Black ideologies through pedagogical practices, stakeholder perspectives, and engineering college structures (M. J. Lee et al., 2020; Holly, 2020). Industry partners, accreditation boards and government agencies have historically recognized the limited commitments of HWIs toward broadening participation (Slaton, 2010, 2015; Fester, Gasman, & Nguyen, 2012; Tremaine et al., 2022; Headley & Damas, 2024) while devaluing the contributions of HBCUs and Black inventors to the engineering enterprise (Slaughter et al., 2015; Headley & Damas, 2024).

#### 5.1.2.3 Inverted influence of PEACE on COE

*"PEACE is really good, but the argument I've been making is why can't we make PEACE larger, and actually take some of the best practices developed in PEACE, and actually apply it to all students across [the] college"*

The meritocratic neoliberalism found in the grounding ideologies of engineering education in America (Slaton, 2015; Rohde et al., 2020) directly aligns with participants' desires to bring PEACE to everyone. There was an overarching aspiration at the administrative level to provide PEACE to all students in the COE. The quoted administrator specifically campaigned for PEACE to be extended to every student, emphasizing the importance of finding ways to achieve this goal. This sentiment was so strong that various faculty members echoed the administrator's views, positioning PEACE

as a support mechanism for all students.

Interestingly, while participants recognized the administration's desire to offer PEACE to all students, there was no mention of any cultural change within COE or the broader institution (Bravo). This is problematic because it assumes that the resources provided through PEACE, which are targeted toward racially and gender-marginalized students, should be accessible to everyone. This neglects the identities and experiences of students from these marginalized backgrounds and overlooks the role of racist and sexist ideologies prevalent in COE that perpetuate these experiences.

The institution primarily enrolls White students, while PEACE serves mainly racially and gender-marginalized students. By leaning towards inclusivity for "everyone," the experiences of the majority—White students—are prioritized. It also implies that the MEPs were created to exclude all students, which is not true. Such assumptions are dangerous and align with neoliberal ideologies, which adopt a color-blind approach and falsely believe that everyone has equal opportunities for achievement, ignoring the systemic inequalities in place (Slaton, 2015). This approach creates an environment where it becomes a reality that underrepresented minority (URM) students are perceived as incapable of "keeping up," reinforcing racism and leading to structural inequality.

As PEACE becomes open to White students, the safe space and targeted environment created for racially marginalized students are at risk. Studies have shown that this structural change, positioning MEPs as something for "everyone," negatively impacts marginalized students. Shehab, Murphy, and Foor (2012) identified that students who previously benefited from an MEP no longer had the same access to resources after the MEP was opened to "all students" due to various reasons, including discomfort and unavailability. This exploitive inclusive approach is evidently detrimental and perpetuates racism, neglecting the racialized experiences of marginalized students and aligning with neoliberal ideologies. This ultimately leads to the unequal distribution of resources and impacts agency for different racial groups (Ray, 2019).

#### 5.1.2.4 Missed opportunities for alignment of institutional support

Alignment between perceptions, commitments, and programmatic structures revealed missed opportunities for PEACE, faculty, COE and Bravo.

Some participants outlined aspirational collaborations they felt were missed opportunities to extend PEACE's influence beyond its office walls and into COE and Bravo practices. PEACE staff emphasized that their limitations of only being able to help students who have already been

admitted could be addressed by forging a relationship with the admissions office. PEACE staff spoke passionately about the role admissions played in addressing the representation of URM students and their desire to tap into their processes and knowledge.

*"And then how can we like, I said, admissions of the students that say they want to come to Bravo, excuse me, and the ones that say they want to be coming in the college of Engineering. What do what? What happens [in admissions]? Because we have all these Caucasian males, but very few female male African American. I had 25-30 students this summer and I think when I get a list of how many African American came, how many African [American], female, Hispanic, I had a majority of them in my program, which so that's not saying a whole lot."*

Some faculty and administrators also identified a missing link between PEACE and the BTC. When asked about the impact of PEACE on the classrom or teaching practices across the college some administrators and faculty mentioned BTC handled teaching practices and departments handled curriculum. Other faculty and administrators amended that a relationship between PEACE and BTC would positively impact students learning experiences extending the academic empowerment provided by PEACE to the classroom. Recall in the previous chapter, Section 4.1.3.1, participants highlighted how BTC was missing a crucial component: PEACE's expertise on the experiences of their URM students.

*"but it would probably require them to first be engaged with PEACE office." - Faculty [refer to quote in Section 4.1.3.1*

Administrators describe how faculty involvement in PEACE is valued as service fulfillment for their roles as faculty, but faculty do not view this action as sufficient or evident in their experiences. Recall in Section 4.2.2, a faculty member simply responded, "Next" when asked about how contributions to PEACE or the PEACE mission were recognized in the department. While PEACE retained their involved faculty, faculty and administrators highlighted how there is still work to be done regarding faculty awareness and involvement in COE.

Further, a missed opportunity for COE and Bravo to support marginalized students was revealed. One faculty member identified how PEACE provided a supplement because the university

itself "is not catering to you [URM students]." Cultural institutional change did not appear to be a priority. COE and Bravo uplifted PEACE as their contribution to cultural institutional change.

### 5.1.3 Influence of Political Climate

#### 5.1.3.1 Political climate at the time of this study

This study was conducted when targeted student support programs related to DEI were under attack in the United States. Many institutions in multiple regions were negatively impacted by legislation being passed and presented in their states (Staff, 2023). Figure 5.2 depicts the status of anti-DEI legislation at a moment in time during data collection, resulting in many states experiencing political strife. The initial response to this figure will be to feel a sense of relief that some states have legislation that was tabled, failed to pass or vetoed, but the existence of any anti-DEI legislation in any state is a potential threat to DEI programs and initiatives.

The state of legislation caused uproars across higher education regarding DEI and targeted student support programs such as MEPs. Publications and commentaries emerged to address the looming, retraumatizing effects of politics on initiatives that seek to address systemic inequities (Holly, 2020; Russell-Brown, 2023; Lafferty, McKenney, Hubbard, Trujillo, & Beasley, 2023). Particularly in higher education, many support programs and offices nationwide underwent renaming and restructuring to avoid legal issues. During this time, many DEI departments were shut down, risking and, in some cases, resulting in employees becoming unemployed.

#### 5.1.3.2 Impact of political landscape

Some participants were on edge during the interview and were careful of their phrasing. As previously mentioned in section C, I had to change my protocol twice to circumvent politically related responses.

COE structurally positioned PEACE as something for all undergraduate students in COE but overwhelmingly used PEACE as something for "URM students." As previously discussed, PEACE reports to the Associate Dean of Undergraduate Education. When speaking about the value of PEACE, some participants mentioned that students of color were disproportionately impacted by PEACE compared to their non-underrepresented counterparts. Participants emphasized the impact of PEACE on racially marginalized students even though, in the same response, they men-

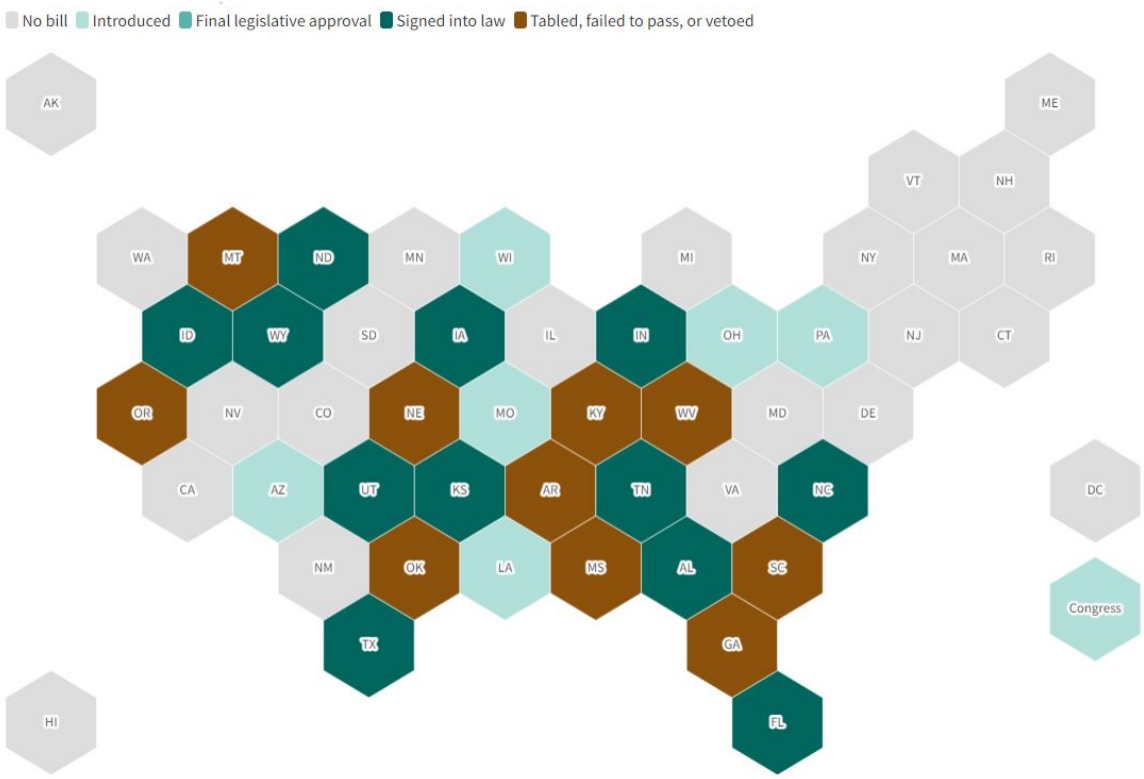


Figure 5.2: *Anti-DEI Legislation Tracking* This depicts the state of anti-DEI legislation across the U.S. as of February 2024. This provides insight into the political landscape at the time of my study.

tioned that PEACE impacts all students, often correcting themselves to clarify the intended target population of PEACE, physically switching their demeanor. Participants modified their language to align with the preferences of the white majority, driven by their desire to *"be compliant with the law"*

*"But so now we have to explain in such detail that it's open towards everybody, not just for black students or underrepresented students, but it's for all students... Now, over the past year has been more pronounced because of all the anti-DEI measures that are happening across the country, but it's been amplified because of those." - Administrator*

This tendency was evident in participants' recall of their initial responses during interviews, where they expressed the truth followed by statements like *"but you know we can't say that"* or temporal

phrases like *"the intended purpose of the MEP was for black and brown students, but now we have to say, everyone."* One PEACE staff used a *"hands up, don't shoot"* gesture when describing how they navigated the linguistic dynamics that were necessary to meet the legal pressures of advertising PEACE as something for everyone. This further emphasized the extent to which participants felt pressure to present their beliefs regarding PEACE in a certain way to avoid legal violation.

Participants felt the need to mention the changes in who PEACE served in the beginning versus who they have to say they serve now. When asked who PEACE serves, participants either immediately responded that it served URM students and then amended their response to say that it serves everyone, but was originally created for URM students. It is intriguing that the racialization dynamics did not originate internally but trickled down from external factors. Organizational politics dictated when discussions about race are allowed or restricted. In response to political strife, COE administration restructured the advertisement of PEACE as something for everyone.

*"We're trying to shield it. But we've had to, and I hate using this word, pivot, and reframe and rename a lot of things." - Administrator*

*"Well I mean, this is the party line at Bravo, 'PEACE is for everyone' because of state politics. We've been extra mindful about how we describe the activities of PEACE. Not that the activities have changed. Activities have been, you know, steady and growing in the areas that we want to grow but how we identify and describe the program.You know, you asked me what the goals were, and I said, retention in first year, and you know I didn't say anything about marginalized communities, but there's an undertone of all that." - Administrator*

Specifically in response to a question about the impact of the current political climate on PEACE, an administrator responded,

*"So one of the things is, we'll have to articulate that the program is open for everyone, because that's what we'll have to do."*

These are uncertain times and that is reflected in the messaging regarding PEACE. The advertisement of PEACE to everyone can have negative implications on its capacity to sustain targeted

programming and maintain safe spaces for racially and gender marginalized students. PEACE staff and faculty worry that Bravo's response to the political climate will negatively impact admissions and overall institutional culture.

*"Well, if we don't get the students that we target then what would PEACE [do]? That's the target area, and we only can get those, like I said before, the admissions..." - PEACE Staff*

*"But culturally I think that these things could potentially undermine the university. And it, you know, as a whole, I mean, I could, I could see a situation where, you know, you had some group on campus or some outside force that found out about PEACE, and was like, Oh, look! There's a program that's doing this and this, and they shouldn't be doing that. And that could cause some issues." - Faculty*

Participants did not feel particularly sure about the back-up support from administration at the COE or Bravo level regarding protecting PEACE's mission. One PEACE administrator outlined their frustrations towards the political impact on PEACE.

*"I think it's mostly admissions, but we already are low in numbers and to me that needs to be known, not to be unfair, but to be fair. And we're not gonna be able to reach that critical mass of students that we desire if we're not intentional and everybody doesn't come from equitable math and science backgrounds. And so it's very hard to already get through to Bravo, but now I feel like we're walking around with, with blindfolds on and just hoping that certain people apply. And I feel like it's unfair, because I think when we recruit [athletes] and all of that....or whatever. I know there's different rules. But you know, why can't we do something like that when it comes to trying to get the critical mass of students that we need in the pipeline? So I think it's sad, and I don't know where we're headed, and I don't know what we're gonna do."*

While political strife is inevitable, it is important to consider racial activism still and implement responses that address systemic inequity in spite of politics – student experiences are at stake. It is imperative that institutions like Bravo take top-down, middle-out, and bottom-up action to advance social justice for its vulnerable student populations. Some leaders in the STEM field use the excuse of "not becoming political" to avoid addressing racial apathy and inaction (McGee, Morton,

White, & Frierson, 2023). This avoidance perpetuates the current inequalities and effectively takes a political stance against equity (McGee et al., 2023).

## 5.2 Implications

### 5.2.1 Implications for Practice

Alignment can be seen as the point at which choices, beliefs, and actions harmonize with an entity's core values. The extent of alignment between the perceptions of, commitment to, and structure of MEPs and an awareness of the role that racism plays in them at an HWI has serious implications for the nature of institutional support afforded MEPs. This study identified the alignment of support for PEACE and missed opportunities. Understanding the alignment of an institution's support of their MEP and the missed opportunities for support exposes potential ways to improve communication between stakeholders at different levels (i.e., university, college, MEP). This would help to build trust, accountability, and awareness among those that concern themselves with the experiences of marginalized students in engineering.

#### 5.2.1.1 Addressing Black student experiences in engineering programs at HWIs

This study is grounded in the historical and contemporary experiences of Black students in engineering programs at HWIs. As previously mentioned, MEPs provide support for Black students in engineering. Still, due to the nature of their experiences in the context of institutions built on anti-Black racial ideology, it is important to consider how institutions have the potential to exploit MEPs to address concerns regarding Black student experiences in engineering at HWIs without confronting the racism embedded in its racial structures. As revealed in this study, MEPs can be leveraged by institutions in such a way that they reinforce racial inequality. Institutions should carefully examine their perceptions of their MEP and how it aligns with their strategic goals.

Baber (2015) highlights how HWIs campaign for DEI so long as it aligns with their goals towards institutional advancement, leading to the neglect of achieving DEI efforts simply because of our human dignity (Holly, 2020). This same concern is rampant in engineering colleges (McGee et al., 2023; Cross, Lee, Gaskins, & Jones, 2018; Damas & Benson, 2023). The motivation to address the experiences of Black students in engineering through the implementation of support programs because it aligns with strategic goals perpetuates the idea that their experiences are an

afterthought. I challenge institutions and engineering colleges who aim to redress the experiences of Black students (Holly Jr & Quigley, 2022; McGee et al., 2023) to augment their implementations of student support programs with institutionalized change that is reinforced by changes in anti-Black policies and procedures at the college and institution levels. Marginalized students in engineering should have access to thriving experiences in more than one place in an engineering college.

### 5.2.2 Implications for Research

#### 5.2.2.1 Using Ray's Theory of Racialized Organizations to expand support for racially marginalized student support at HWIs

Studies examining how organizations such as HWIs have been built around control of resources and racist ideas in the engineering context are largely missing. The findings of this study expand our understanding of the use of Ray's TRO by establishing a precedent for its use in discipline-based education research. Researchers interested in studying student support programs for racially marginalized students should consider how racialization takes shape at the institutions housing those support programs. Leveraging a critical theory like TRO would allow researchers to uncover the novel ways racial inequality permeates the higher education system. This new knowledge could help dismantle misalignment and change the game for racially marginalized students. Even further, we will be able to expand the reach of student support programs to hold institutions accountable for the experiences of racially marginalized students in all spaces.

#### 5.2.2.2 Using the model of institutional support for minority engineering programs and the like

The model of institutional support was developed to provide a structure for understanding how HWIs support MEPs. The refined model that emerged from this study will enable researchers to examine how institutional support takes shape at other institutions critically. The existing model of institutional support for MEPs (Morrison & Williams, 1993) does not aggregate the perceptions of, commitments towards, and programmatic structure of MEPs. It is important for researchers to explore these elements and the relationship between them to provide an accurate description of the many ways MEPs can be supported. Moreover, researchers can leverage the refined model to examine how MEPs are leveraged at institutions. This is a particularly important area of research as we are

currently living in a time where the validity of MEPs is being questioned by anti-DEI initiatives. Highlighting MEPs' value for institutions and uncovering the ways in which their influence could be expanded to lead cultural change would position MEPs as true powerhouses for achieving student success.

The refined model of institutional support is grounded in literature but, at present, has only been refined based on one case. Researchers seeking to advance diversity and inclusion through support programs should leverage this model to evaluate and examine the extent to which it accurately explains the reality at other institutions. Even further, there is a need for the model to be adapted to other types of institutions. Researchers could apply the model to non-HWIs to examine the robustness of the model at various types of institutions. Considering there are Tribal colleges and HBCUs that have been successfully providing support to racially marginalized students in STEM unfettered by the institutional culture of HWIs, it is important to highlight how that support manifests programmatically.

## 5.3 Future Work

### 5.3.1 Future Directions for Student Support

Because this was a single case study, an area to expand my findings would be an embedded multi-case study to understand how an institution supports its various student support programs. Specifically, participants identified other student support programs collaborating with PEACE at Bravo, creating a support network for racially marginalized students across campus. By examining additional programs, researchers could identify the commonalities and differences regarding institutional support for student support programs in different disciplines and organizational divisions. Many non-STEM colleges have implemented specialized programs for students with vulnerable identities. Understanding how these programs are supported and sustained will help ensure they are equipped to lead systemic change that can enhance student experience across the entire campus.

We could implement a multi-case study focusing on institutions where MEPs or student support programs in other disciplines influence or align with the institution's culture. My study confirmed how institutional culture can impact the nature of support given to an MEP. Participants outlined how many Black students and families opt out of the Bravo educational experience to attend HBCUs where they feel more welcome. It would be interesting to further this study by investigating

the nature of support given by institutions whose culture demonstrates alignment with their MEP's mission. This would be particularly important to practitioners and researchers as they seek to understand how to engage institutions to take responsibility for the experience of their marginalized students and intentionally increase recruitment efforts in tandem with the changing institutional environment. The creation and use of success models informed by institutions whose mission aligns with racially marginalized students specifically challenge institutions that aim to create environments conducive to racially marginalized student success in STEM (Arroyo & Gasman, 2014; Williams & Taylor Jr, 2022). As such, a multi-case study at institutions whose culture mirrors the environment provided by MEPs could transform my findings and reveal ways to provide meaningful student support.

### 5.3.2 Future Directions for Faculty Involvement

My study identified a gap in my understanding of motivations for faculty non-involvement. It revealed that faculty perceptions of MEPs influence their commitments towards the MEP. I seek to further this study by investigating the perceptions of faculty not involved in PEACE, specifically those who began involvement and then stopped. I am interested in uncovering these individuals' points of departure and entrance, what motivated them to take action in the first place and what led to them discontinuing that action. This future direction presents an opportunity to investigate my interpretation that faculty involvement was impacted by COE's missed opportunity for faculty recognition as discussed in the discussion of results regarding missed opportunities for alignment in Section 5.1.2.4.

Finally, my research findings can be expanded through work with STEM education practitioners to develop policies and procedures to recognize and reward faculty in a way that would promote institutional and systemic change. The findings of my study lay the foundation for understanding how faculty contribute to the success of MEPs through their commitment. It is important to institutionalize how STEM programs and colleges create pathways for faculty contributions to hold value for their advancement and recognition. COE perpetuated its exclusionary culture by decoupling formal rules and procedures from practices that advance DEI. To exact systemic change, we must critically examine the current policies. An initiative focused on analyzing policies and procedures for the purpose of transformation would leverage the findings of my dissertation study.

## 5.4 Conclusions

I developed this research study to make novel contributions to understanding how institutions support MEPs. Specifically, I sought to reveal how alignment in perceptions of, commitments to and structure of an MEP was impacted by racism at an HWI. Accordingly, I implemented an in-depth descriptive single case study to highlight how one HWI, Bravo, supported its MEP, PEACE, through its engineering college, COE. I collected interview data from administrators, PEACE staff, and faculty and artifact data from websites (COE, PEACE, Bravo), brochures, strategic plans, and pictures (organization leadership structure and campus map). Through a three-phase analysis, I discovered that alignment between the perceived value of PEACE, commitment towards PEACE, and the programmatic structure of PEACE were the primary drivers of institutional support but were heavily impacted by new mechanisms of racism that are grounded in the foundational racial ideology of American education.

I found that the alignment of perceptions, commitments, and programmatic structures illuminated a novel mechanism of racial inequality. COE's legitimization of PEACE led to the exploitation of PEACE as the remedy for the exclusionary culture of their engineering program. Unbeknownst to them, COE demonstrated a separate but equal approach to providing URM students with Bravo's exemplary student experience by identifying PEACE as the place to get access to that experience. While COE and Bravo appeared to value PEACE and be committed to its success, viewing Bravo as a racialized organization allowed me to interpret the data through a critical lens and highlight how racism operated in the structure of my study case. Bravo's foundational hegemonic, racist culture as an HWI permeated through COE, providing it with the justification needed to legitimize its own exclusionary culture.

While PEACE may have been well-intentioned, its current positioning allows COE and Bravo to purport commitments to broadening participation without addressing the internal systemic barriers set in place at the beginning of their existence. Missed opportunities for support highlight how PEACE is not equipped with the necessary connections or bandwidth to have an outward meaningful impact on the culture of COE. The nature of my case study limits its generalizability; however, my refined model of institutional support will lay the foundation for further studies regarding how institutions of higher education can support student success programs that target marginalized student populations in such a way that does not perpetuate racial inequality.

Institutions must hold themselves accountable for making meaningful cultural changes to ensure support programs that serve marginalized students are not exploited as performative commitments to broadening participation.

# Appendices

# Appendix A Artifacts

## A.1 Set A: Verbal & Written Artifacts

- Statements
  - PEACE Mission
  - COE Mission
  - COE Vision
  - COE Student Engagement
- Public Statements & Articles
  - Prominent DEI News Magazine Award Announcement
  - High-Level Bravo Administrator Statement
  - High-Level COE Administrator Statement
- Websites
  - College of Engineering Website
    - Home Page
    - Diversity Page
  - MEP website
    - Home Page
    - Prospective Students Page

## A.2 Set B: Structural & Programmatic Artifacts

- Reporting Lines
  - COE Leadership Organization Chart
- Location
  - Campus Map
- Staff List

  - PEACE Website Staff Page
  - COE Website Staff Page
- Tutoring Courses List
- Reports
  - COE Strategic Plan
  - Bravo Strategic Plan
  - Undergraduate Viewbook

# Appendix B Recruitment Email

Subject: Participate in Dissertation Study Investigating Institutional Support for a Minority Engineering Program at a historically White institution

Body: Greetings!

My name is Stephanie Damas, I am a graduate student working with Dr. Lisa Benson in the Department of Engineering and Science Education at Clemson University, the principal investigator of this study. We are conducting a study as part of my dissertation to understand how the minority engineering program (PEACE) at this institution is supported by the university. I am inviting you to participate because, in your role as [insert position], you can provide meaningful insight into understanding how PEACE is supported at Bravo University.

Your part in this study will include a one-on-one interview that will be audio-recorded through Zoom. I will ask you about your experience in your position with regard to PEACE. The interviews will take about 60 – 90 minutes. If you accept and wish to participate in my study, I kindly ask that you review the informed consent form attached to this email and respond with your availability. I will work within your availability to schedule a meeting for our interview.

This research study is exempt of Institutional Review Board review by Clemson University (IRB2023-0410). If you have any questions or concerns, please contact me, Stephanie Damas, at damas@g.clemson.edu or Dr. Lisa Benson at lbenson@clemson.edu.

I appreciate your time and look forward to hearing from you! Thanks!

Best Wishes,

Stephanie Damas — Ph. D Candidate

# Appendix C Interview Protocol Sample Questions

In this section I will list all interview protocols used in this study. Changes to each to the protocol are highlighted and outlined.

## C.1 MEP Director & Staff

Title of Study: Institutional Support for Minority Engineering Programs at Historically White Institutions: A Critical Examination

Thank you for participating in this study. We are interested in understanding your perspective on how the university supports PEACE based on your experience in your position. Before we begin, do you have any questions about the informed consent? Do you consent to this being recorded?

{IRB information will be emailed beforehand but also will be provided in the chat or printed depending on interview modality}

At the end of this interview, I will ask you for a pseudonym to maintain your privacy during the analysis process. This pseudonym will also ensure that no one but myself will know what you've said during this interview. Everything we speak of is confidential.

Some of the questions may feel repetitive, but I am aiming to get a full picture. You may stop the interview or decline to answer a particular question at any point if necessary. Do you have any questions?

Role Exploration

- What role do you currently hold, and what are the duties of this role w.r.t PEACE?
  - How would you define the connection between your role and PEACE?
- What influenced your decision to work with PEACE?
- What has your experience in this role been like?
  - Follow-up questions - What did you like/dislike about your experience in this role? What are the challenges you face in this role? What have been your accomplishments in this role?

- *In what ways would you describe your own personal or social identities being a part of this role?*

  Perceived Value

- What do you believe the mission of PEACE to be?
  - *[If not mentioned]:* Who does PEACE aim to serve?
- How is the mission carried out in the program?
- Who is responsible for upholding/carrying out the mission?
  - Do you have a role in upholding the mission?
    - *[If yes]*, how would you define that role?
    - *[If no]*, to whom do you delegate this responsibility?
  - Who else plays a role in upholding the mission?
- What value does PEACE hold for Bravo? For COE?
  - How is the value of PEACE communicated to others?
  - if no tangible evidence is mentioned: Can you identify any artifacts supporting this communication?
  - if tangible evidence is mentioned: Can I get a copy of [insert items]?
- Tell me about COE strategic plan. *relevant artifact: COE Strategic Plan (booklet)*
  - *[If not mentioned]:* Tell me about the COE student engagement plan. *relevant artifact: Student Engagement (text from COE website)*
  - How is the COE Strategic Plan: [Plan Slogan] implemented in the college?
    - Is it working? Why or why not?
    - *[if PEACE is not mentioned]*: What is the role of PEACE in implementing COE Strategic Plan: [Plan Slogan]?
- What other roles does PEACE play for COE?
- How would you describe the influence of PEACE on COE? Please provide examples.

- What other departments/initiatives in COE collaborate with or rely on PEACE? in Bravo?
  - How did the relationships come about?
  - Are there any departments or initiatives you feel PEACE should collaborate with? Why?

Thank you for that! Now, I want to transition to some questions regarding the structure of PEACE.

Structure

- Tell me about the history of PEACE
  - probing questions: when was it established? Have there been any notable changes in its structure? What has brought on the changes?
- Where is PEACE physically located?
- How was that location chosen?
  - Who selected the location?
  - Have there been any changes in location?
    - *[If yes]*: What led to those changes?
- Has the location of PEACE impacted the overall functioning of the program?
  - If yes, how so?
  - If not, why not?
- Tell me about how PEACE operates.
  - Where is the program situated in the college's organizational structure?
    - probe if necessary: What department/unit does PEACE operate in?
  - What is the staffing structure for the program?
  - How many employees are on the team?
    - How are the roles of the staff established?
      - Who establishes them?
      - Have these roles changed over time?
      - What has brought on these changes?

- Who does the PEACE Director report to?
  - Has that been the case throughout your entire time as [insert role]?
    - If not, how has it changed?
  - How does this impact the overall functioning of the program?
- Are there any additional factors that contribute to how PEACE is structured?
- How does the current structure of PEACE help fulfill its mission?
  - Do you think this is the best structure to fulfill the mission?
    - Is the current structure working?

Thank you for your responses thus far. I want to transition to speaking about some factors to think about from an institutional perspective.

Institutional Commitment

- Are there any university-related challenges that have affected the overall functioning of PEACE?
- How is PEACE financially supported?
  - Why is PEACE supported this way?
  - How was this support model developed?
    - Please describe any changes in funding you have seen and why they came about.
  - Who developed this support model?
  - Is it working? Why or why not?
- What do you believe to be the intended use of funding in the program?
  - Do you agree/disagree with the intended use of funding?
- Describe the nature of involvement in PEACE from the college faculty.
  - What motivates faculty involvement?
  - Are there any involvement trends from faculty?
- How are faculty contributions to the mission of PEACE recognized in COE?

Thank you..... I have one final question that relates to factors outside Bravo that impact PEACE minority student support programs.

- How do you think PEACE might be affected by recent Supreme Court rulings on SFFA v Harvard & SFFA v UNC?
- How do you think PEACE might be affected by the recent legislation in [another State]?

Thank you so much for your time and responses. Before I end the recording, is there anyone else you think I should be talking to who would provide me with more insight into how the institution supports PEACE?

## C.2 Faculty, Bravo Administrators and COE Administrators

### C.2.1 Outline of Changes

*Changes highlighted are changes from MEP Staff protocol implemented during protocol reviews round two

1. Added text to opening to provide more detail regarding questions participants may not know
2. Removed additional questions from role exploration because participants experience in the role was outside of study scope
3. Added several questions to perceived value section in response to concerns about participant's "politically correct" answers. These questions allowed me to explore value and influence of PEACE more.
4. Made clear distinction of when to ask certain questions regarding strategic plans based on role.
5. Added several questions to institutional commitment to leverage more probing questions to gain full understanding of funding structure and participant's beliefs towards commitment

### C.2.2 Questions

Thank you for participating in this study. We are interested in understanding your perspective on how the university supports PEACE based on your experience in your position. Before

we begin, do you have any questions about the informed consent? Do you consent to this being recorded?

{IRB information will be emailed beforehand but also will be provided in the chat or printed depending on interview modality}

At the end of this interview, I will ask you for a pseudonym to maintain your privacy during the analysis process. This pseudonym will also ensure that no one but myself will know what you've said during this interview. Everything we speak of is confidential.

Some of the questions may feel repetitive, but I am aiming to get a full picture. **I will also ask questions you may not know the answer to. That is okay. Part of my data collection is identifying what my participants do and do not know and what they are unaware of.** You may stop the interview or decline to answer a particular question at any point if necessary. Do you have any questions?

Role Exploration

- What role do you currently hold, and what are the duties of this role w.r.t PEACE?
  - How would you define the connection between your role and PEACE?

  Perceived Value

- What do you believe the mission of PEACE to be?
  - *[If not mentioned]:* Who does PEACE aim to serve?
- How is the mission carried out in the program?
- Who is responsible for upholding/carrying out the mission?
  - Do you have a role in upholding the mission?
    - *[If yes]*, how would you define that role?
    - *[If no]*, to whom do you delegate this responsibility?
  - Who else plays a role in upholding the mission?
- **How would you describe the influence of PEACE on COE?**
  - **What advantages does PEACE offer students who are in COE?**

- **If PEACE didn't exist, how would student experiences in COE be impacted?**
- **Do you have any experience with Bravo before PEACE?**
  - **if yes: What trends have you noticed since the establishment of PEACE?**
    - **How was the state of COE before PEACE?**
    - **What motivated the creation of PEACE?**
    - **How has the state of COE been impacted after PEACE?**
    - **Do you have any data to support the trends?**
  - **if no: What trends have you noticed since you've been involved with PEACE?**
    - **Involvement trends?**
    - **Impact of COE trends?**
- **Do you have any information regarding the impact of PEACE on the recruitment and retention rates of COE? Of Bravo?**
- **How would you define the engagement of students actively participating in PEACE. . . ?**
  - **in COE activities, customs and traditions?**
  - **in Bravo activities, customs, and traditions?**
- **How would you define the post-graduation engagement of students who participated in PEACE?**
  - **in COE activities, customs and traditions?**
  - **in Bravo activities, customs, and traditions?**
- What value does PEACE hold for Bravo? For COE?
  - How is the value of PEACE communicated to others?
  - *[if no tangible evidence is mentioned]:* Can you identify any artifacts supporting this communication?
  - *[If tangible evidence is mentioned]:* Can I get a copy of [insert items]?
  - In an ideal world, what value would PEACE hold for COE?

- **What influence does PEACE programming have on the classroom?**
- **What influence does PEACE programming have on how the COE course curriculum is structured?**
  - For example:
    - When students take classes?
    - What classes are they taking?
    - How many classes are they taking?
- What influence does PEACE programming have on COE course content?
  - What is being taught?
  - How is it being taught?
    - i.e., pedagogy, instructional practices?
- Is PEACE impacting faculty practices?
  - Are they becoming involved in PEACE?
- (Institution Level) Tell me about Bravo Elevate.
- What relevance do minority support programs play in achieving the goals of the strategic plan?
- if PEACE is not mentioned: What relevance does PEACE play in achieving the goals of the strategic plan?
- (College Level & Faculty) Tell me about COE strategic plan. *relevant artifact: COE Strategic Plan (booklet)*
  - *[If not mentioned]:* Tell me about COE student engagement plan. *relevant artifact: Student Engagement (text & website)*
  - How is the COE Strategic Plan implemented in the college?
    - Is it working? Why or why not?
    - *[if PEACE is not mentioned]*: What is the role of PEACE in implementing the COE Strategic Plan?

  - **[If not mentioned]: Tell me about the COE DEI Strategic Plan.**

- What other roles does PEACE play for COE?
- What other departments/initiatives in COE collaborate with or rely on PEACE? in Bravo?
  - How did the relationships come about?
  - Are there any departments or initiatives you feel PEACE should collaborate with? Why?
  - **Are there any grants/proposals that include/collaborate with PEACE?**
    - **How does that collaboration serve PEACE?**

Thank you for that! Now, I want to transition to some questions regarding the structure of PEACE.

Structure

- No changes were made to structure.

Institutional Commitment

- Are there any university-related events that have affected the overall functioning of PEACE?
- **How is PEACE made visible/advertised at the collegiate level? university level?**
- How is MEP financially supported?
  - Why is MEP supported this way?
  - **How consistent is the funding for MEP?**
    - **Where does donor money go?**
    - **How are programmatic features funded?**
  - **What is supported by college/institution funds?**
  - **Is overhead charged on external donations/sponsorships?**
  - How was this support model developed?
    - Please describe any changes in funding you have seen and why they came about.
  - Who developed this support model?
  - Is it working? Why or why not?
- What do you believe to be the intended use of funding in the program?

  - Do you agree/disagree with the intended use of funding?

- **Describe an ideal funding structure for PEACE.**
- Describe the nature of involvement in PEACE from the college faculty.
  - What motivates faculty involvement?
  - Are there any involvement trends from faculty?
- How are faculty contributions to the mission of PEACE recognized in COE?
- **[For faculty only]: How are your contributions to the mission of PEACE recognized in COE?**
- **How would you describe commitment?**
- **How do you believe commitment to PEACE is communicated on the COE level? University level?**
- **How would you prefer commitment for PEACE to be communicated?**

Thank you..... One final question relates to factors outside Bravo that impact PEACE/ minority student support programs.

Political Landscape

- No changes were made to political landscape or closing

## C.3 COE Administrator (Abbreviated)

### C.3.1 Outline of Changes

1. Multiple changes were made to COE Administrator protocol to accommodate time constraint of interview.
2. Added two questions that were not in previous COE administrator protocol

### C.3.2 Questions

Interview 1

Thank you for participating in this study. We are interested in understanding your perspective on how the university supports PEACE based on your experience in your position. Before we begin, do you have any questions about the informed consent? Do you consent to this being recorded?

{IRB information will be emailed beforehand but also will be provided in the chat or printed depending on interview modality}

At the end of this interview, I will ask you for a pseudonym to maintain your privacy during the analysis process. This pseudonym will also ensure that no one but myself will know what you've said during this interview. Everything we speak of is confidential.

I will be asking questions based on an approved protocol. Some of the questions may feel repetitive, but I am aiming to get a full picture. I will also ask questions you may not know the answer to. That is okay. Part of my data collection is identifying what my participants do and do not know and what they are unaware of. You may stop the interview or decline to answer a particular question at any point if necessary. Do you have any questions?

Role Exploration

- How would you define the connection between your role and PEACE?

Perceived Value

- What do you believe the mission of PEACE to be?
  - if not mentioned: Who does PEACE aim to serve?
  - Probe if necessary: in what ways does it serve these students?
- How is the mission carried out in the program?
- Who is responsible for upholding/carrying out the mission?
  - Do you have a role in upholding the mission?
    - *[If yes]*, how would you define that role?
    - *[If no]*, to whom do you delegate this responsibility?
  - Who else plays a role in upholding the mission?
- How would you describe the influence of PEACE on COE?

  - What does PEACE offer students who are in COE?

- If PEACE didn't exist, how would student experiences in COE be impacted?
- **What motivated the creation of PEACE?**
- What trends in COE have you noticed since the establishment of PEACE? For example, enrollment, involvement?
  - **Do you have any data to support the trends?**
- Do you have any information regarding the impact of PEACE on the recruitment and retention rates of students in COE?
- How would you define the engagement of students actively participating in PEACE in COE activities, customs and traditions?
- How would you define the post-graduation engagement of students who participated in PEACE in COE activities, customs and traditions?
- What value does PEACE hold for COE?
  - How is the value of PEACE communicated to others?
  - if no tangible evidence is mentioned: Can you identify any artifacts supporting this communication?
  - If tangible evidence is mentioned: Would it be possible for me to get a copy of [insert items]?
  - In an ideal world, what value would PEACE hold for COE?

I want to transition to talking about the COE Strategic Plan. I have it pulled up here on my screen. Tell me about COE strategic plan.

- What is the role of PEACE in implementing the COE Strategic Plan?
  - Probe if necessary: Which goals does PEACE help achieve within the Strategic Plan?
- I understand there is a COE DEI Strategic Plan. Can you tell me about it?
- What departments or initiatives in COE collaborate with or rely on PEACE? in Bravo?

- How did the relationships come about?
- Are there any departments or initiatives you feel PEACE should collaborate with? Why?

Thank you so much for your time and responses. Before I end the recording, is there anyone else you think I should be talking to who would provide me with more insight into institutional support for PEACE? Can you provide me with a pseudonym?

Interview 2

Thank you so much for your responses during our last interview. Now, I want to start us off with some questions regarding the structure of PEACE.

Structure

- Tell me about the history of PEACE
  - probing questions: when was it established? Have there been any notable changes in its structure? What has brought on the changes?
- How was the location of PEACE chosen?
  - Who selected the location?
  - Have there been any changes in location?
    - *[If yes]*: What led to those changes?
- Has the location of PEACE impacted the overall functioning of the program?
  - If yes, how so?
  - If not, why not?
- Tell me about how PEACE operates.
  - Where is the program situated in the college's organizational structure?
  - What is the staffing structure for the program?
  - How are the roles of the staff established?
- Who does the PEACE Director report to?
  - Has that been the case throughout your entire time as [insert role]?

        * If not, how has it changed?
    - How does this impact the overall functioning of the program?

- How does the current structure of PEACE impact it's ability to fulfill its mission?

Thank you for your responses thus far. I want to transition to speaking about some factors to think about from an institutional perspective.

Institutional Commitment

- Are there any university-related events that have affected the overall functioning of PEACE?
- How is PEACE made visible/advertised at the collegiate level?
- How is PEACE financially supported?
    - Why is PEACE supported this way?
    - How consistent is the funding for PEACE?
    - What aspects of PEACE are supported by college funds?
    - **Have there been any changes in funding?**
- Describe the nature of involvement in PEACE from the college faculty.
    - What motivates faculty involvement?
    - Are there any involvement trends from faculty?
    - How are faculty contributions to the mission of PEACE recognized in COE?
- How would you describe commitment?
- How do you believe [commitment] to PEACE is communicated in COE?

Thank you..... One final question relates to factors outside Bravo that impact PEACE/ minority student support programs.

Political Landscape

- No changes were made to the political landscape section

Thank you so much for your time and responses. Before I end the recording, is there anyone else you think I should be talking to who would provide me with more insight into institutional support for PEACE?

# Appendix D Codebooks

## D.1 Perceived Value: Institution-level and organization-level stakeholders' perceptions of the MEP's role(s), mission, and value in relation to Bravo-COE

The following is the codebook generated for value codes used to address RQ1 in the First Analytical Approach of Phase 1. These codes depict perceptions towards PEACE from my participants.

| **Code** | **Description of Code** | **Exemplar** |
|---|---|---|
| Shared support for PEACE | emphasis on sharing the load/responsibility for carrying out the mission of or helping PEACE in any capacity | *So the mission, I believe, is everybody in the college, everybody in the College of Engineering* |
| This is ours | sense of ownership being identified for something or an element of MEP/college/university | *And I think having students involved is helpful to kind of having them see it as like, they're saying, like, this is, this is my program as a student.* |
| PEACE serves specific students from a specific field | Beliefs regarding who PEACE was created to serve | *Right and and primarily it is focused on undergraduate students.* |
| PEACE physical accessibility | emphasis being placed on whether students can find PEACE location | *the reason I say that is just the accessibility for students. Right? So if I'm in a place it's better to have something that's close where students come all the time.* |

| | | |
|---|---|---|
| PEACE funding | Beliefs about what funding for the MEP should look like | *So there should definitely be like a guaranteed budget from the university or college* |
| PEACE awareness | display of college valuing exposing others to MEP information | *We talk about the various organizations that are available to parents and students during the first orientation, and we talk about the various clubs and societies and organization and PEACE always highlighted.* |
| PEACE presence (seat at the table/inclusion) | display or expression of the value of MEP having a seat at the table | *PEACE has a seat at a table. Lorraine is is invited to every leadership meeting with the department chairs.* |
| Reporting Line | Presence afforded to PEACE due to the reporting line from PEACE to associate dean of undergraduate studies | *when we were talking about curriculum and influence on the classroom having that line item to the undergrad accos. Dean of undergraduate studies. That's how you can have that impact as well* |

| | | |
|---|---|---|
| Contribution towards achieving COE goals | emphasis is placed on how PEACE impacts the goals, reputation, and forecast of the college's trajectory | *making sure that we retain the best and the brightest in our college, and that we produce students that will be ready to be global citizens and a part of the workforce* |
| engineering needs an increase in representation | belief that the field of engineering needs to increase representation or URM or needs to diversity it's population | *there's and there's just such a discrepancy between the African American population in State versus African Americans at Bravo. It's just wildly out of balance.* |
| Brevard needs to be accountable | institution need to put their money where their mouth is | *if you read the mission statement, it specifically addresses citizens of Local State, the people of Local State [are] so important there are women and minorities in Local State. So we we need to address, we need to help them at Bravo University* |

| | | |
|---|---|---|
| Graduate rate | belief that MEP plays role in enhancing graduation rates for target population | *all the programming that comes out of PEACE that is, helping to retain our students, helping to increase that 6 year graduation rate. I think, without PEACE that number would be not great* |

## D.2 Institutional Commitment: Institution (university) and organization (college)- level demonstration of commitment to fulfilling the role(s) and achieving the mission of PEACE

The following tables is the codebook generated for process codes in the Second Analytical Approach of Phase 2. These codes depict actions towards fulfilling the mission of PEACE taken by administrators (Bravo & COE) as a collective or by staff members, and by faculty.

| **Level of Demonstrator** | **Codes** | **Code Description** | **Exemplar** |
|---|---|---|---|
| college | Creating access points for faculty involvement in PEACE | higher level admin taking action by telling faculty to participate in MEP | *like the Dean sort of gave the message that PEACE is important and participating in it, you know.* |

| | | | |
|---|---|---|---|
| college | advertising PEACE at university/college events/outlets | the act of including PEACE in events or sharing PEACE through different outlets that the college or univeristy have to increase visibility | *because we are on the website Brevard's website as PEACE.* |
| college | Advertising PEACE to incoming students | the act of promoting PEACE to incoming students of COE in various ways | *it was kind of advertised to like incoming students like at orientation.* |
| college | considering PEACE involvement as service fulfillment | college admin viewing PEACE involvement from faculty as a viable service fulfillment | *So they can. I write the specific activities that they do in support of service. and that that is valued by the department chair and and by me as part of the tenure promotion reappointment* |
| college | Ensuring PEACE has a seat at the table | the act of maintaining MEP's status in decision making, seat at the table | *PEACE has a seat at a table. Lorraine is is invited to every leadership meeting with the department chairs.* |
| college | Securing funding for PEACE | the act of making sure MEP has funding despite what may happen in college/university | *have made sure that financial uncertainty at the university or college level, shouldn't affect them* |

| | | | |
|---|---|---|---|
| college | Funding PEACE operating costs | the act of providing finacnial support to keep MEP running and operating | *not for salaries, you know. that comes from the college they handle. Could they cover. You know, salaries and fringe benefits* |
| college | Including PEACE in COE base budget | the act of having allocated funds for the MEP in the college budget | *We have direct budget funds for all our different programming. And so there is a specific Budget Fund just for PEACE* |
| college | Dedicating a space to PEACE | the act of dedicating a specific space for PEACE operations, including maintaining said space | *So that's kind of the college has guaranteed that that space is PEACE space and will be, you know, for the foreseeable future* |
| college | Providing administrative support for PEACE | the act of supporting MEP through administrative support funnelled through college level office | *and administrative support. You know things like accounting and grants management support like infrastructure type things that you need* |

| | | | |
|---|---|---|---|
| faculty | Encouraging others to engage w/PEACE | the act of telling or encouraging or tapping on the shoulder of another faculty to help with MEP | *I believe it was actually through [other faculty] who teaches in that program that they had asked if he knew any one who would be interested in teaching the [professional software], and he recommended me for that* |
| faculty | Serving as a liaison between PEACE and the department/college | participant defining what they do for MEP as being representative or connection between their department and the MEP | *Being like a support person so sort of being the [foundational science] contact with [foundational science] like weighs on to PEACE* |
| faculty | Interfacing w/PEACE to support students in the classroom | faculty identifying involvement with PEACE motivated by desire to support their students | *And think my role is to find ways to interface with PEACE, so that I can engage with our students and help them to be successful* |

| | | | |
|---|---|---|---|
| faculty | Implementing inclusive teaching practice | The implementation of inclusive teaching practice for reasons that align with PEACE mission | *Meet me at the cafeteria. even though it's super early. So a lot of like half of them, half of them were sleeping. And if you guys had any questions about the homework? We could have breakfast and talk and and meet in the cafeteria. So about half of them took me up on that* |
| faculty | Leveraging individual beliefs to motivate PEACE involvement | the use of participants identity or personal beliefs to motivate their involvement with MEP | *being a black male faculty member, I've been through kinda each step of the journey that the students are going through. So I understand the importance of it and yeah, just a desire to kind of if I'm gonna do you know service. Then I wanna direct it towards something I have personal connection with* |

| | | | |
|---|---|---|---|
| faculty | Prioritizing service towards DEI efforts as part of their research program | Encouraging graduate students to be involved in PEACE to fulfill the expectation of broadening participation | *I would have my graduate students in my lab in my research lab also like do the the demos and do that instruction [for PSBP]* |
| faculty | Directing students to PEACE | action taken by faculty to send engineering students to MEP | *When I've run the [2nd year course] for engineering discipline, I made sure we invited [PEACE Director] in to talk about the opportunities that PEACE offers* |
| faculty | making oneself available/visible to help PEACE | faculty's actions towards increasing their visibility and availablitiy to help MEP | *And yeah, I just try to be available, you know. Make sure that they know who I am, so that if they need to tap me for something that you know they know that I here* |
| faculty | using PEACE involvement to fulfill service requirement | faculty deciding to use PEACE to fulfill service requirement | *You put it on your yearly Cv, or you know your report to your supervisor, you know department chair. I did this this year* |

| | | | |
|---|---|---|---|
| faculty | Establishing mutually beneficial relationship w/PEACE | pointing out a relationship with MEP that benefits them and MEP | *So it's definitely very helpful for getting funding and then it also, I feel like also helps PEACE because they get some of the money* |
| faculty | Reaching out to PEACE for involvement opportunities | faculty reaching out to MEP to take action | *So we have a lot of faculty that we reach out to, and they just reach out to us. "What can I do to help?"* |
| faculty | Teaching for PSBP | participant identifying that they teach for PSBP | *I would say probably 6-10 years I've been one of the instructors for the the PSBP* |
| faculty | Collaborating with PEACE for grants | using collaboration with MEP to get funding | *I also in the process of research, apply for grants. So I get external grants. And so those can be related to PEACE because there's always broader impacts* |
| faculty | Problematizing university selective branding for different students | the act of finding issue with the brand/marketing audience of the university | *There is the adversity of what we've mentioned multiple times about. Yeah, a lack of diversity on this campus.* |

| | | | |
|---|---|---|---|
| faculty, college | Funding PEACE programming | providing funding in any way to MEP programming/events | *because I can get money from them to help, you know give scholarships for students to attend, [PEACE] Outreach Program* |

## D.3 Institutional and organizational perceptions and commitments towards the MEP enacted through its organizational and programmatic structures

The following is the codebook for process codes used to address RQ3 in the Third Analytical Approach of Phase 2. These codes depict actions towards fulfilling the mission of PEACE taken by PEACE as a collective or by staff members.

| **Codes** | **Code Descriptions** | **Exemplar** |
|---|---|---|
| Using student organizations as communicators | The act of funneling advertisement through student organizations | *Then we use Nsbe and shpE, as also communicators for us* |
| Distributing PEACE materials to communicate value | PEACE distributing their materials to communicate value they hold for students | *you know pens, pencils, things with our names on it. We have the brochures telling what we have.* |

| | | |
|---|---|---|
| Raising visibility through outreach | the act of PEACE raising the visibility through conducting outreach events in the community | *Damas: so I was talking about [advertised] outside of Bravo, like to other people that don't know Administrator: So PEACE runs camps. They run k through 12 camps. Okay, they did middle school camps. They run high schools camps throughout the summer PEACE is active and within the community* |
| Advertising PEACE as something for everyone | promoting PEACE as something that serves everyone | *let them know about our program that is open to everyone. It's just not for the underrepresented population, though, that's our target. But we're still open to everybody.* |
| Securing external funding | the act of PEACE securing external dollars | *PEACE usually gets funding from Local Industry Partner 2. I wanna say they get some. They got a huge grant I should say, from Local Industry Partner 1* |

| | | |
|---|---|---|
| Forging external partnerships with interested parties | the act of PEACE forming strategic relationships with individuals outside of Bravo that care about student success | *interact with the various constituency groups outside Bravo, who are interested in student success* |
| Maintaining relationships with PEACE alumni | actions towards keeping connections with alumni that graduated from university through PEACE | *So we invited back a lot of alums that are making a difference, who got their engineering degree from Bravo* |
| reporting to undergraduate education | the act of leveraging or maintaing reporting line | *I report to the associate Dean it's mainly focused on students and the student experience more than anything* |
| Reaching out to all levels for support/assistance | the act of PEACE office tapping on the shoulder of multiple other stakeholders to assist | *if we ask the different departments like industrial, mechanical, various. Yes, they'll work with us* |

| | | |
|---|---|---|
| Eliminating financial barriers for students to attend Brevard | act of providing fincnacila aid in any way to support students coming to university | *when they've come through some of our programs. They can get a waiver application waiver, so that deletes you know them having to worry about the $80 or $100 for application fees. So you know, we have eliminate some of the barriers* |
| Providing opportunities for professional development | actions towards helping students develop employability skills | *opportunities for more senior students to be engaged in that as well as mentors, and have leadership positions through the PEACE office that really helped those students to build their own resumes as well* |
| helping students with college transition | participant identifying how PEACE implements programming the helps students through college transition | *And then, secondly, just sort of the nuts and bolts of learning how university works before you actually get before you get tossed into it in August* |

| | | |
|---|---|---|
| Keeping students in school | the actions PEACE makes to keep students in school/retain students | *It also has an indirect influence by ensuring that students was start in our college in engineering and computing, persist and continue to have an engineering and computing degree.* |
| Providing opportunities for academic enrichment | instances denoting how PEACE provides academic enrichment | *reinforce things that they're learning in the classroom to to strengthen their you know, background and foundational knowledge right to help them to succeed. Providing programming, mentoring opportunities, tutoring all of that.* |
| Serving as place for representative community | PEACE role to be place where urm students can find other urm students | *to know that you're not alone, you know, when you're like the only person of color in in a huge class, you know, and at least you can go to the PEACE and see like there are other people* |

# References


Adair, J. K., Reyes, M. A., Anderson-Rowland, M. R., & Kouris, D. A. (2001). Workshops vs. tutoring: How asu's minority engineering program is changing the way engineering students learn. In *31st annual frontiers in education conference. impact on engineering and science education. conference proceedings (cat. no. 01ch37193)* (Vol. 2, pp. T4G–7).

Aken, E. M. V., Watford, B., & Medina-Borja, A. (1999). The use of focus groups for minority engineering program assessment. *Journal of Engineering Education*, *88*(3), 333–343.

Amer, A. (2020). *UT national society of black engineers releases list of demands to cockrell administration.*

Arroyo, A. T., & Gasman, M. (2014). An hbcu-based educational approach for black college student success: Toward a framework with implications for all institutions. *American Journal of Education*, *121*(1), 57–85.

Baber, L. D. (2015). Considering the interest-convergence dilemma in stem education. *The Review of Higher Education*, *38*(2), 251–270.

Baxter, P., Jack, S., et al. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The qualitative report*, *13*(4), 544–559.

Bellis, M., Bhattacharya, B., DeMuth, D., Hogan, J., Laureto, K., Malik, S., & Pearson, B. (2022). Enhancing hep research in predominantly undergraduate institutions and community colleges. *arXiv preprint arXiv:2203.11662*.

Blosser, E. (2020). An examination of black women's experiences in undergraduate engineering on a primarily white campus: Considering institutional strategies for change. *Journal of Engineering Education*, *109*(1), 52–71.

Borum, V., & Walker, E. (2012). What makes the difference? black women's undergraduate and graduate experiences in mathematics. *The Journal of Negro Education*, *81*(4), 366–378.

Branigan, T. L. (1975). The role of industry in minority engineering programs.

Brawner, C., Mobley, C., Brent, R., Orr, M., Rucks, M., & Waters, C. (2019). Overview of policies and programs for black students in engineering. *Collaborative Network for Engineering and Computing Diversity*.

Brawner, C., Mobley, C., Lord, S. M., & Main, J. (2024). Fit, faith, and family: Counterspaces for black male student veterans in engineering. *Journal of Women and Minorities in Science and Engineering*.

Buckley, J., Miranda, M., Trauth, A., Johnson, M. T., Vaughan, M. L., Zephirin, T., ... Davidson, R. A. (2019). The mep census: Characterizing essential programmatic and intrastructural elements of minority engineering programs (mep) nationwide. In *2019 asee annual conference & exposition.*

Case, A. D., & Hunter, C. D. (2012). Counterspaces: A unit of analysis for understanding the role of settings in marginalized individuals' adaptive responses to oppression. *American journal of community psychology*, *50*, 257–270.

Chen, D. A., Mejia, J. A., & Breslin, S. (2019). Navigating equity work in engineering: Contradicting messages encountered by minority faculty. *Digital Creativity*, *30*(4), 329–344.

Collins, K. H. (2018). Confronting color-blind stem talent development: Toward a contextual model for black student stem identity. *Journal of Advanced Academics*, *29*(2), 143–168.

Copp, D. (1997). Belief, reason, and motivation: Michael smith's" the moral problem". *Ethics*, *108*(1), 33–54.

Cross, K. J., Lee, W. C., Gaskins, W. B., & Jones, B. P. (2018). The structure of change: A content analysis of engineering diversity plans and mission statements. In *2018 ieee frontiers in education conference (fie)* (pp. 1–4).

Damas, S. A., & Benson, L. (2023). Environments affecting black student thriving in engineering (bstie). In *2023 asee annual conference & exposition.*

Dietz, G. A., McCray, E. D., & Douglas, E. P. (2019). Critical theories for unmasking the personal and structural racialized experiences of engineers. In *Asee annual conference proceedings.*

Dorve-Lewis, G. (2023). A narrative analysis of black, latino/a/x, and indigenous students' sense of belonging in engineering at a predominantly white institution. In *Zone 1 conference of the american society for engineering education.*

Dumas, M. J., & Ross, K. M. (2016). "be real black for me" imagining blackcrit in education. *Urban Education*, *51*(4), 415–442.

Eliahou, M., & Zdanowicz, C. (2018, July). This university is removing a statue of its slave-owning founder. *CNN*.

Fester, R., Gasman, M., & Nguyen, T.-H. (2012). We know very little: Accreditation and historically black colleges and universities. *Journal of Black Studies*, *43*(7), 806–819.

Ford, D. Y., & Moore, J. L. (2013). Understanding and reversing underachievement, low achievement, and achievement gaps among high-ability african american males in urban school contexts. *The urban review*, *45*, 399–415.

Frederick, A., & Shifrer, D. (2019). Race and disability: From analogy to intersectionality. *Sociology of Race and Ethnicity*, *5*(2), 200–214.

Gardner, S. K., Hart, J., Ng, J., Ropers-Huilman, R., Ward, K., & Wolf-Wendel, L. (2017). "me-search" challenges and opportunities regarding subjectivity in knowledge construction. *Studies in Graduate and Postdoctoral Education*, *8*(2), 88–108.

George, C. E., Castro, E. L., & Rincon, B. (2019). Investigating the origins of stem intervention programs: An isomorphic analysis. *Studies in Higher Education*, *44*(9), 1645–1661.

Givens, G. Z., & Jeffries, R. B. (2003). *Black women in the field: Experiences understanding ourselves and others through qualitative research.* Hampton Press (NJ).

Good, J. M., Halpin, G., & Halpin, G. (2000). A promising prospect for minority retention: Students becoming peer mentors. *Journal of Negro Education*, 375–383.

Griffin, K. A. (2019). Institutional barriers, strategies, and benefits to increasing the representation of women and men of color in the professoriate: Looking beyond the pipeline. *Higher Education: Handbook of Theory and Research: Volume 35*, 1–73.

Griffith, A. N., Hurd, N. M., & Hussain, S. B. (2019). "i didn't come to school for this": A qualitative examination of experiences with race-related stressors and coping responses among black students attending a predominantly white institution. *Journal of adolescent research*, *34*(2), 115–139.

Hackett, R. K., & Martin, G. R. (1998). Faculty support for minority engineering programs. *Journal of Engineering Education*, *87*(1), 87–95.

Harris, A. (2021). The state must provide : why america's colleges have always been unequal–and how to set them right. In *Ecco, an imprint of HarperCollinsPublishers.*

Headley, M., & Damas, S. (2024). *Illuminating disparities of ABET (accreditation board for engineering and technology) accreditation gaps at historically black colleges and universities.*

Holloman, T. K. (2023). Race-conscious student support: A comparative analysis of organizational resilience in engineering education.

Holly, J. (2020). Disentangling engineering education research's anti-blackness.

Holly Jr, J., & Quigley, L. T. (2022). Reckoning with the harm of anti-blackness in engineering education: A reparatory justice research approach. *Journal of Women and Minorities in Science and Engineering*, *28*(2).

Indulska, M., Hovorka, D. S., & Recker, J. (2012). Quantitative approaches to content analysis: Identifying conceptual drift across publication outlets. *European Journal of Information Systems*, *21*(1), 49–69.

Kornblith, H. (1983). Justified belief and epistemically responsible action. *The Philosophical Review*, *92*(1), 33–48.

Lafferty, D. J. R., McKenney, E. A., Hubbard, T., Trujillo, S., & Beasley, D. E. (2023, November). A path forward: Creating an academic culture of justice, equity, diversity, and inclusion. *Bull.*

*Ecol. Soc. Am.*.
Lam, P. C., Doverspike, D., & Mawasha, R. P. (1999). Predicting success in a minority engineering program. *Journal of Engineering Education*, *88*(3), 265–267.
Landis, R. B. (1988). The case for minority engineering programs. *Engineering Education*, *78*(8), 756–61.
Landis, R. B. (1991). *Retention by design: Achieving excellence in minority engineering education.* National Action Council for Minorities in Engineering.
Lee, M. J., Collins, J. D., Harwood, S. A., Mendenhall, R., & Huntt, M. B. (2020). "if you aren't white, asian or indian, you aren't an engineer": racial microaggressions in stem education. *International Journal of STEM Education*, *7*, 1–16.
Lee, W. C., & Matusovich, H. M. (2015). Minority/multicultural engineering program impact: A student perspective of co-curricular support. In *2015 asee annual conference & exposition* (pp. 26–1157).
Lee, W. C., & Matusovich, H. M. (2016). A model of co-curricular support for undergraduate engineering students. *Journal of Engineering education*, *105*(3), 406–430.
Lee, W. C., & Matusovich, H. M. (2018). Investigating how undergraduate students perceive co-curricular support in engineering. *Journal of Women and Minorities in Science and Engineering*, *24*(3).
Leicester, J. (2008). The nature and purpose of belief. *The Journal of Mind and Behavior*, 217–237.
López, N., Morgan, D. L., Hutchings, Q. R., & Davis, K. (2022). Revisiting critical stem interventions: a literature review of stem organizational learning. *International Journal of STEM Education*, *9*(1), 39.
Main, J. B., Smith, K. A., Fentiman, A. W., & Watson, K. L. (2019). The next morrill act for the 21st century. *Journal of Engineering Education*, *108*(2).
May, G. S., & Chubin, D. E. (2003). A retrospective on undergraduate engineering success for underrepresented minority students. *Journal of engineering education*, *92*(1), 27–39.
McCartney, M. A., Reyes, M. A., & Anderson-Rowland, M. (1997). Internal and external challenges for minority engineering programs. In *1997 annual conference* (pp. 2–259).
McCoy, D. L., & Rodricks, D. J. (2015). *Critical race theory in higher education: 20 years of theoretical and research innovations: Ashe higher education report, volume 41, number 3.* John Wiley & Sons.
McGee, E. O. (2016). Devalued black and latino racial identities: A by-product of stem college culture? *American Educational Research Journal*, *53*(6), 1626–1662.
McGee, E. O. (2020). Interrogating structural racism in stem higher education. *Educational Researcher*, *49*(9), 633–644.
McGee, E. O. (2021). *Black, brown, bruised: How racialized stem education stifles innovation.* Harvard Education Press.
McGee, E. O., & Bentley, L. (2017). The troubled success of black women in stem. *Cognition and instruction*, *35*(4), 265–289.
McGee, E. O., & Martin, D. B. (2011). "you would not believe what i have to go through to prove my intellectual value!" stereotype management among academically successful black mathematics and engineering students. *American Educational Research Journal*, *48*(6), 1347–1389.
McGee, E. O., Morton, T. R., White, D. T., & Frierson, W. (2023). Accelerating racial activism in stem higher education by institutionalizing equity ethics. *Teachers College Record*, *125*(9), 108–139.
Mejia, J. A., Revelo, R. A., & Pawley, A. L. (2020). Thinking about racism in engineering education in new ways [commentary]. *IEEE Technology and Society Magazine*, *39*(4), 18–27.
Merriam, S. B. (1998). *Qualitative research and case study applications in education. revised and expanded from" case study research in education.".* ERIC.
Mertens, D. M. (2008). *Transformative research and evaluation.* Guilford press.

Milem, J. F., Chang, M. J., & Antonio, A. L. (2005). *Making diversity work on campus: A research-based perspective*. Association American Colleges and Universities Washington, DC.

Morrison, C., & Williams, L. E. (1993). Minority engineering programs: A case for institutional support. *NACME Research Newsletter*, *4*(1), n1.

Murphy, T. E., Gaughan, M., Hume, R., & Moore Jr, S. G. (2010). College graduation rates for minority students in a selective technical university: Will participation in a summer bridge program contribute to success? *Educational evaluation and policy analysis*, *32*(1), 70–83.

N.d. (2023). Us news best colleges. *U.S. News  World Report*.

Nelson, I. A., Graham, H. J., & Rudin, N. L. (2023). Saving face while (not) talking about race: How undergraduates inhabit racialized structures at an elite and predominantly white college. *Social problems*, *70*(2), 456–473.

Newman, C. B. (2016). Minority engineering programs at a crossroads: An empirical multiple case study of two historically white public research universities. *Journal for Multicultural Education*, *10*(2), 217–233.

Nkhata, D. (2018). Experiences of black women students in science, technology, engineering, and mathematics at a historically white institution in the united states of america: A multiple case study.

Ohland, M. W., & Zhang, G. (2002). A study of the impact of minority engineering programs at the famu-fsu college of engineering. *Journal of Engineering Education*, *91*(4), 435–440.

Outcalt, C. L., & Skewes-Cox, T. E. (2002). Involvement, interaction, and satisfaction: The human environment at hbcus. *The Review of Higher Education*, *25*(3), 331–347.

Park, J. J., Kim, Y. K., Salazar, C., & Hayes, S. (2020). Student–faculty interaction and discrimination from faculty in stem: The link with retention. *Research in Higher Education*, *61*, 330–356.

Ray, V. (2019). A theory of racialized organizations. *American sociological review*, *84*(1), 26–53.

Reichert, M., & Absher, M. (1997). Taking another look at educating african american engineers: The importance of undergraduate retention. *Journal of Engineering Education*, *86*(3), 241–253.

Rincon, B. E., & George-Jackson, C. E. (2016). Stem intervention programs: funding practices and challenges. *Studies in Higher Education*, *41*(3), 429–444.

Roberts, D. (2011). *Fatal invention: How science, politics, and big business re-create race in the twenty-first century*. New Press/ORIM.

Rohde, J., Satterfield, D. J., Rodriguez, M., Godwin, A., Potvin, G., Benson, L., & Kirn, A. (2020). Anyone, but not everyone: Undergraduate engineering students' claims of who can do engineering. *Engineering Studies*, *12*(2), 82–103.

Ross, M., & Yates, N. (2016). Paving the way: Institutional interventions for academic excellence and success in engineering.

Ross, M. S., Huff, J. L., & Godwin, A. (2021). Resilient engineering identity development critical to prolonged engagement of black women in engineering. *Journal of Engineering Education*, *110*(1), 92–113.

Russell-Brown, K. (2023). The multitudinous racial harms caused by florida's stop woke and anti-DEI legislation. *SSRN Electron. J.*.

Saldana, J. (2021). *The coding manual for qualitative researchers* (4th ed.). London, England: SAGE Publications.

Samuelson, C. C., & Litzler, E. (2016). Community cultural wealth: An assets-based approach to persistence of engineering students of color. *Journal of Engineering Education*, *105*(1), 93–117.

Shehab, R., Murphy, T. J., & Foor, C. E. (2012). " do they even have that anymore": the impact of redesigning a minority engineering program. *Journal of Women and Minorities in Science and Engineering*, *18*(3).

Slaton, A. E. (2010). *Race, rigor, and selectivity in us engineering: The history of an occupational color line*. Harvard University Press.

Slaton, A. E. (2015). Meritocracy, technocracy, democracy: Understandings of racial and gender equity in american engineering education. *International Perspectives on Engineering Education: Engineering Education and Practice in Context, Volume 1*, 171–189.

Slaughter, J. B., Tao, Y., & Pearson Jr, W. (2015). *Changing the face of engineering: The african american experience*. JHU Press.

Solorzano, D., Ceja, M., & Yosso, T. (2000). Critical race theory, racial microaggressions, and campus racial climate: The experiences of african american college students. *Journal of Negro education*, 60–73.

Staff, C. (2023). Dei legislation tracker. *Chronicle of Higher EDucation*.

Stake, R. E. (1995). *The art of case study research*. sage.

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of african americans. *Journal of personality and social psychology*, *69*(5), 797.

Stich, A. E. (2021). Beneath the white noise of postsecondary sorting: A case study of the "low" track in higher education. *The Journal of Higher Education*, *92*(4), 546–569.

Strand, M., & Lizardo, O. (2015). Beyond world images: Belief as embodied action in the world. *Sociological Theory*, *33*(1), 44–70.

Strayhorn, T. L., Blakewood, A. M., & DeVita, J. M. (2010). Triple threat: Challenges and supports of black gay men at predominantly white campuses. In *The evolving challenges of black college students* (pp. 85–103). Routledge.

Terenzini, P. T., & Reason, R. D. (2005). Parsing the first year of college: A conceptual framework for studying college impacts. In *annual meeting of the association for the study of higher education, philadelphia, pa.*

Thomas, J. M. (2018). Diversity regimes and racial inequality: A case study of diversity university. *Social Currents*, *5*(2), 140–156.

Thomas, K., & Coley, B. C. (2023). "everybody gotta eat" and insights on leadership and resilient identity from black engineers. In *2023 asee annual conference & exposition.*

Tichavakunda, A. A. (2021). *Black campus life: The worlds black students make at a historically white institution*. State University of New York Press.

Tichavakunda, A. A. (2024). Studying black student life on campus: Toward a theory of black placemaking in higher education. *Urban Education*, *59*(1), 96–123.

Tremaine, R., Hagman, J. E., Voigt, M., Damas, S., & Gehrtz, J. (2022). You don't want to come into a broken system: Perspectives for increasing diversity in stem among undergraduate calculus program stakeholders. *International Journal of Research in Undergraduate Mathematics Education*, *8*(2), 365–388.

Tsui, L. (2007). Effective strategies to increase diversity in stem fields: A review of the research literature. *The Journal of Negro Education*, 555–581.

Villanueva, I. (2018). What does hidden curriculum in engineering look like and how can it be explored? In *Proceedings of the american society of engineering education annual conference and exposition, minorities in engineering division.*

Walther, J., Sochacka, N. W., Benson, L. C., Bumbaco, A. E., Kellam, N., Pawley, A. L., & Phillips, C. M. (2017). Qualitative research quality: A collaborative inquiry across multiple methodological perspectives. *Journal of Engineering Education*, *106*(3), 398–430.

Watkins, S. E., & McGowan, B. L. (2022). Black men doctoral scientists and engineers persisting: Peer support and racism in science and engineering. *Journal of Research in Science Teaching*, *59*(10), 1853–1875.

White-Lewis, D. K., Bennett, J. C., & Redd, K. (2022). Framing the dialogue for systemic equity reform in stem faculty careers. *Association of Public and Land-grant Universities*.

Williams, K. L., & Taylor Jr, L. D. (2022). The black cultural student stem success model: A framework for black students'stem success informed by hbcu environments and black educational

logics. *Journal of Women and Minorities in Science and Engineering*, *28*(6).
Yin, R. K. (1994). Discovering the future of the case study. method in evaluation research. *Evaluation practice*, *15*(3), 283–290.
Yin, R. K. (2003). Designing case studies. *Qualitative research methods*, *5*(14), 359–386.
Yosso, T. J. (2005). Whose culture has capital? a critical race theory discussion of community cultural wealth. In *Critical race theory in education* (pp. 114–136). Routledge.
Zirkel, S. (2008). The influence of multicultural educational practices on student outcomes and intergroup relations. *Teachers College Record*, *110*(6), 1147–1181.