

UNDERSTANDING HIM IN STEM:  
SHARING THE STORIES OF AFRICAN AMERICAN MALE SCHOLARS IN ENGINEERING  
ACADEMIC PROGRAMS AT A PREDOMINANTLY WHITE UNIVERSITY

by

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## ABSTRACT

Globalization of the world economy has confirmed the need for citizens to exemplify competitive capacities in science, technology, engineering, and mathematics fields. Since the 1970s, American higher education has seen increasing numbers of students entering college but has witnessed a decline in the number of students enrolling in STEM programs. African American men fall behind other students in regards to academic performance, persistence, and success throughout primary, secondary, and tertiary schooling. Accordingly, participation of African American men in STEM disciplines is low in comparison to White males and other race groups. Various factors have been identified as contributing to the academic failures of Black men. Poor academic and social preparedness, racial identity issues, institutional climates, negative stereotypes, and fear of success have been cited as potential contributors to the relative invisibility of African American men in STEM disciplines. This study explores the life stories of five African American male scholars in the college of engineering at a predominantly White university. The goal of this qualitative investigation is to help university faculty and administrators understand the institutional, interpersonal, and collective mechanisms influencing the success identities of African American male undergraduates in STEM academic programs. Understanding the lived experiences of this population may help universities innovate stronger supports for students in college and promote greater success of all students in STEM.

*Keywords:* African American, education, STEM, racial identity, success

## DEDICATION

I dedicate this study to all those committed to changing the world's racialized landscape and to my colleagues who are actively engaged in the work of emancipation, equity, and justice through education.

This study is also dedicated to my mother, Cathy Jackson Hayes, whose humble brilliance, soulful commitment to justice, servant leadership, listening ear, and abiding faith in my own fortitude inspired my thinking and supported the completion of this project.

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CHAPTER I  
INTRODUCTION

**Introduction to the Study**

They don't expect us to amount to anything. It hurts, ya know. We are all created equal, right? Man is man. Woman is woman. This is supposed to be our world we live in but as an African American man it's not... Overtime you just keep going.

[Kevin, Civil Engineering]

African Americans have endured powerful prejudices, institutionalized oppression, and social struggle throughout their history (DuBois, 1996; Ogbu, 1990; Reiland, 2009). The American economic system of race-based slavery dehumanized African Americans and defined their status as property of White citizens (Harris, 1993; Lipsitz, 2006). Following emancipation by the Federal Government, oppositional forces raged against the social and economic promotion of Black people (Lipsitz, 2006). State legislation, separatist ideologies, discriminatory practices, and political disenfranchisement prohibited the social advancement of persons of African heritage. For many African Americans, second-class citizenship remained the common social position, even after the edict of emancipation in 1863 (DuBois, 1996; Harris, 1993; Lipsitz, 2006; Tozer et al, 2009). Frantz Fanon (1952) describes the pervasiveness of racism (translated by Philcox, 2008).

It (color prejudice) is nothing more than the unreasoning hatred of one race for another the contempt of the stronger and richer peoples for those whom they consider inferior to themselves and the bitter resentment of those who are kept in subjection and are so frequently insulted. As colour is the most obvious outward manifestation of race it has been made the criterion by which men are judged, irrespective of their social or educational attainments. The light-skinned races have come to despise all those of a darker colour, and the dark-skinned peoples will no

longer accept without protest the inferior position to which they have been relegated (97).

Racism has pervaded society, provoked resistance, yet has perpetuated throughout the entirety of American history (Bell, 1980; DuBois, 1996; Lipsitz, 2006; McClaren & Munoz, 2000; Reiland, 2007). Institutional, procedural, and personal racism has adversely affected opportunities for African Americans. Whiteness has established a system of oppression that protects the privileges of Whites, while restricting the advantages for communities of color (Harris, 1993; Lipsitz, 2006; McClaren, 2002). De facto segregation has persisted, separating Black citizens from White America in many meaningful social spheres; these segregated spaces include residential developments, public institutions, and even the workplace (Lipsitz, 2006). Among the most visible and valuable resources denied to African Americans has been access to quality education (Colclough & Beck, 1986; Lipsitz, 2006). The early public schools that served African Americans offered less than optimal conditions for learning and development. Black students were legally separated from Whites in the classroom, subjected to punitive prejudices by administrators and educators, and witnessed their cultural contributions rendered insignificant in the American story (Tozer et al, 2009). Various social movements helped African Americans earn recognition, access to opportunities, and the promise of democratic participation through integration; aimed at the achievement of equality, these events often involved violence, resistance, and death. The struggle for equity in education has had residual social repercussions for African Americans (Harvey, Harvey, & King, 2004). While African Americans have gained ground in regards to legalized freedoms, the consequences of racial inequality in United States history linger in a wide-variety of forms.

I believe it [racism] still exists. Yeah, it's in existence. But, I don't believe it's acceptable any more....Yeah, I believe it's more passive racism now. Now when my parents were growing up, it was a whole lot more physical, you know. Where now, it's like someone not wanting to help out another race.

[Timothy, Civil Engineering]

African Americans constitute 13 percent of the population of the United States, yet they represent a disproportionate majority of American citizens who fall below the poverty line (US Census Bureau, 2012). As a collective, African Americans lag behind Whites in educational achievement across all academic disciplines and at multiple grade levels (Thernstrom and Thernstrom, 2004). In their report on the status of racial and ethnic minorities in education, KewalRamani, Gilbertson, Fox, & Provasnik (2007) highlighted African American trends in participation, achievement, and outcomes in education. Though the data shows a narrowing margin of score intervals in the past 40 years, White students continue to outperform Black students in reading and mathematics on standardized assessments (KewalRamani et al, 2007). In 2005, 33 percent of the White population had attained at least a bachelor's degree as compared with 17 percent of African Americans who had earned an undergraduate degree (KewalRamani et al, 2007).

Lower educational access and achievement has had costly social effects for the African American population (Boudon, 1974; Callon, 2006; Colclough and Beck, 1986; Gollnick and Chinn, 2006; Lipsitz, 2006; McClaren, 2007; Tatum, 2007). African American families with children are more likely to earn less income than White families (Buras, 2011; Lipsitz, 2006). The unemployment rate for African Americans is significantly higher than the unemployment rate of Whites (KewalRamani et al, 2007). On average, African Americans fall victim to home foreclosures and other loan defaults more frequently than whites (Lipsitz, 2006). Thirty-six percent of African American children live in poverty

(Lipsitz, 2006). In the area of health, African Americans enjoy less access to preventive healthcare and suffer more frequently from obesity, malnourishment, and other related health issues (Wray, 1992).

I've seen like some of my sisters struggling now. They all – none of us have any problem working. That's something I can say about all of my siblings. We're hard workers. But you wouldn't have to work as hard, if you had gotten that education to get that job. Even if you are working hard at whatever profession you choose, you're probably going to be making more money, you know, if you have a college degree. I don't want that for her. I'm still encouraging her, and all my siblings to go to college. I don't care how old you are. She's thirty. She's in college now. She just started about a year and a half ago—my oldest sister. I'm still encouraging them all, you know. It's never too late. I don't care if you're fifty. If you get a degree, you can make more money when you work.

[Jordan, Civil Engineering]

But African Americans do not find themselves in the minority on all social issues. Crime and punishment is a category in which the percentage of minorities exceeds the number of those from the white majority who are involved in the penal system (Lipsitz, 2006; Litchenstein and Kroll, 1996). Litchenstein and Kroll (1996) report that while only 15 percent of the 13 million habitual drug users in America were black and 77 percent of this group were white, African Americans were four times more likely to be arrested on drug-related charges at the time of their 1990 study (as cited in Lipsitz, 2006). According to a 1992 study by the U.S. Sentencing Commission, men of color who are convicted of crimes receive prison sentences that are 20% longer than whites convicted of the same crimes (Lipsitz, 2006).

Nothing there for me in my hometown. Yeah, they've got like businesses, and things that deal with my major—industry, services, government businesses; but I was looking at the newspaper last weekend and read about one of my friends getting shot. I don't want to go back there. Because seeing people who graduated,

still at home making babies, and what not. Not doing nothing with their life. Going to jail. So I'm like I'm not trying to go back there.

[Matt, Metallurgical Engineering]

Science, Technology, Engineering, and Mathematics (STEM) are among the most aggressively growing career fields on the globe. Sixteen percent of all college students in American universities earn degrees in STEM disciplines; this number is substantially lower than in China (48%), South Korea (38%), and Europe (25%) (Washington, 2011). African American students are underrepresented in STEM academic programs in universities across the Nation and are a diminishing minority in the attainment of STEM degrees (Palmer et al, 2010; NCES, 2011). Eleven percent of the Nation's college students identify as Black or African American; only seven percent of the African American undergraduate student population earned undergraduate degrees in a STEM discipline in 2009 (Washington, 2011). Analysis of the data on degree attainment among US college students, there appears to be a decline in the already modest number of Black STEM graduates. From 2001 to 2009 the number of STEM degrees conferred to African Americans fell from 8.1 percent to 7.5 percent (NCES, 2011). Fewer than two percent of the terminal degrees in physical sciences in 2009 were awarded to African Americans (Washington, 2011). Though minority youth are the fastest growing demographic in the Nation, they are performing least proficiently in science and mathematics-based disciplines (KewalRemani et al, 2007).

### **Statement of the problem**

It's like everybody always tells us what **not** to do. "Don't fail. Don't mess up. Don't get a girl pregnant. Don't do drugs." Ya know? But it's like nobody is there telling us what **to** do. Like nobody tells us how to be successful for real.

[John, Mechanical Engineering]

National data on student persistence demonstrates that African American males are the least likely population to persevere through the educational system (National Center for Educational Statistics, 2011). When compared with other race and gender groups, Black males show the highest levels of high school drop-out, perform less proficiently on standardized exams, earn low grade point averages (GPAs), and are more frequently referred to special education programs (NCES, 2005). African American males also rank highest among other student groups in receipt of sanctions for negative behavior and academic performance, including suspension, expulsion, and disciplinary school programs (Campbell & Fleming, 2000). In 2004, the gender gap between African American women and men enrolled in higher education widened to the greatest dichotomy among all other racial and ethnic groups in the U.S. (KewalRamani et al, 2007; Thernstrom and Thernstrom, 2004). At present, African American women outnumber African American men nearly two to one in college (KewalRamani et al, 2007). More than two thirds of Black men who begin college never graduate (Harper, 2009; Thernstrom and Thernstrom, 2004). These data reflect a phenomenon that calls for thorough scholastic investigation.

Multiple theories attempt to explain the status of Black males in education. Minimization of Black culture in school environments has been linked with psychological stress in Black students (Harper, 2009). Personal fear of failure and low expectations of elementary and high school teachers have also been linked with the underachievement of African American men in schools (Tatum, 2007). STEM is seen as a difficult path for academic work, and therefore African American students may be less inclined to pursue these disciplines if they have not established academic confidence in their earlier educational experiences (Washington, 2011). Another common theme prevailing



throughout the literature on the Black male in education is racial identity (Bailey and Moore, 2004; Bonilla-Silva, 2003; Brooks, Balka, Brook, Win, and Gursen, 1998; Bynum, Best, Barnes, and Burton, 2008; Ladson-Billings, 2011; Mahalik, Martin, and Wan, 2006; Osyerman, Grant, and Ager, 1995; Pierre and Mahalik, 2005; Spencer, Noll, Solzofus, and Harplan, 2001; Steele, 1997; Tatum, 2007; Whiting, 2006; Wijeyesinghe and Jackson, 2001). African American students who display strong personal and racial identities have shown higher college enrollments, greater satisfaction in school, and improved graduation rates over students with weak personal and racial identities (Bean, 2005; Bynum et al, 2008; Campbell and Fleming, 2000; Harper, 2009; Helms, 1991; Kimbrough, Molock, and Walton, 1996; Mahalik et al, 2006; Wijeyesinghe and Jackson, 2001).

It means a lot to me to be an African American man. People say, "If you could pick any other race, what would it be?" But I would probably choose to be a black man. I know my ancestry went through a lot to be able to put me in the position that I am now. I'm proud of that. I've had opportunities that weren't available before – that even my parents didn't have. They went through a lot more things than I probably even realized when I was younger. They dealt with a lot of things. I deal with a little bit, but it's not even comparable.

[Timothy, civil engineering]

Various environmental factors have also been cited as contributors to the underrepresentation of African American men in college. The narrow margin of Black males entering the academy is inarguably reflective of the high percentage of African American males who do not surpass the K-12 level (Thernstrom and Thernstrom, 2004). A sense of belonging and connection to the institution has been identified as an important factor for African American students (Cuyjet, 2006); and when these students enter the predominantly white environment, which is common at most colleges and universities, success may seem far beyond reach (Harper, Patton, and Wooden, 2009; Tatum, 2007;

Tinto, 2008). Also, the absence of role models, mentors, and teachers of color at PWIs may also create challenges for Black students as they seek to bond with their university (Harper, 2009). When African Americans do not feel a strong connection with their institution, disengagement has shown negative effects on academic performance and persistence (Cuyjet, 2006; Harper et al, 2009; Tatum, 2007; Tinto, 1993). Until these issues are addressed at institutions of higher education, the status of African American males in college may not be effectively enriched (Harper, 2010).

The University needs to give African American men support. Opportunities. Support opportunities to succeed – to show them that they can.

[Matt, metallurgical engineering]

### **Purpose of the Study**

Census experts estimate that minorities will compose 39 percent of the population by 2020 (NCES, 2011). How will the Nation ensure that minorities are being adequately prepared for success in the global market? Through this study, I aimed to understand how African American men at PWI utilize resources to achieve success in engineering. What early life experiences have impacted the establishment of their academic identities? What specific challenges do these scholars face at a PWI? How do they develop the academic confidence required to embark upon study in STEM areas? What are the motivating factors that promote their persistence in these math and science-based programs? Among the goals of this study is to help university administrators understand the values, objectives, and needs of the contemporary African American man in higher education. Through an exploration of his challenges, strengths, and supports, universities may have a clearer conception of the factors required for the cultivation of an integrated scholar identity – the

development of his academic, psychological, and social self (Graham & Anderson, 2008). Enriching our understanding about the undergraduate experiences of African American science scholars may lead towards increased resources, innovative approaches, and improved outcomes for students. Highlighting this phenomenon may also assist faculty in constructing curriculums, tailoring teaching methods, and expanding STEM scholarship across broader audiences.

### **Research Questions**

I investigated the educational experiences of African American men in undergraduate engineering programs at a top-tier research university in the South. Through this qualitative study, I hoped to bring attention to the phenomenon shared among African American men in STEM disciplines at a predominantly White institution. I believe that an examination of their common experiences may yield unique insight, which may be valuable to administrators in various university settings and to students of color who are considering academic work in STEM at the college level. Hearing their voices through the words of their stories may help universities enhance student services and support the retention of African American men in math and science education. In approaching the study, I raised the following research questions:

- How do the early educational experiences of African American males inform (their) success capacities in math and science?
- What institutional factors contribute to the academic endurance (persistence) of African American males enrolled in undergraduate engineering programs?

- How do African American males in undergraduate engineering programs achieve academic success at a predominantly White university?

### **Significance of the Study**

It means a lot to finish this. First graduate from my family. First one in engineering. First graduate, overall. Proud moment... Engineering, a thousand enter, and only a few survive. I'm glad I'm one of the few. It's a proud feeling to be able to tell my kids how I finished school. Started out with about 1,200 engineering freshmen. I think from our freshman class, people I know, only about 50 people. Only about 10 graduated from my class.

[Matt, Metallurgical Engineering]

This study is significant because of present status of the African American man in higher education. African American males are among the most underrepresented groups in higher education (NCES, 2011). African American men are slipping down the slope towards invisibility in STEM programs (Washington, 2011). Various assumptions exist surrounding the rationale for the underachievement of African American men. Exclusion of cultural values, deficits of relevant social capital, differences in parental and community involvement, absence of models for success, and motivational factors related to identity are cited as potential plagues against the performance of African American males in schools (Ladson-Billings, 2005; Noguera, 2003; Tatum, 2007; Yosso, 2005). With a diversity of philosophies surfacing around the struggles of African American men in college, listening to the voices of those living the actual phenomenon becomes increasingly imperative (Solorzano and Yosso, 2002). Understanding their stories will help address the issue and innovate initiatives aimed at advancing the achievement of African Americans in STEM programs, such as engineering.

### **Theoretical and Conceptual Framework**

This study was guided by Critical Race theory in education and Critical Race theory in higher education. Critical Race theory provides a basis for negotiating issues related to race, class, and power (Brookfield, 2005; Degaldo and Stefancic, 2000; Ladson-Billings and Tate, 1995; Parker, Deyhle, and Villenas, 1990). CRT focuses on racial identification as the primary basis for discriminatory practices against persons. CRT was born of critical legal studies by a group of scholars of color who believed race to be a present factor, but not a prominent consideration, in analyzing the social experiences of Americans (Degaldo and Stefancic, 2000). The primary intent driving the development of CRT was to bring particular attention to the politics of race in both the United States and abroad (Bell, 1988; Ladson-Billings and Tate, 2005; Ross, 2009). CRT in education grew out of CRT as a paradigm for approaching the racial inequalities and social oppression in schools; CRT in education pulls from among the following schools of thought: critical theory, history, sociology, women's and ethnic studies (Yosso, 2005). Critical Race theory was applied as a framework for research in higher education soon after its adaptation as a conceptual framework for K-12 schooling (Liu, 2009; Solorzano and Yosso, 2000).

According to the critical tradition, all knowledge is subject to the influences of power and is derived through a socio-historical process of establishment and alteration (Brookfield, 2005; McClaren and Kincheloe, 2007). CRT critiques capitalism, contending that this economic system has solidified a social class hierarchy and exercised destructive effects on humanity. The examination of power and privilege are imperative planks of CRT in education (Degaldo and Stefancic, 2002; Ladson-Billings and Tate, 1995; Parker et al, 1999; Tatum, 1997). Privilege exists as a practical commodity and is manipulated to organize groups into life positions by rank of power (Brookfield, 2005; Harris, 1993).

Power is elusive and largely invisible to most persons; ironically, its victims often perpetuate power constructs through acts of unconscious transmission (Freire, 2000; McLaren, 2003). According to CRT in education, oppression exists in many forms in schools and may be widely interpreted by the oppressor and the oppressed (Hughes and Giles, 2010; Ladson-Billings, 1999; Lopez, 2003; Morrow and Torres, 1995; Parker et al, 1999; Picower, 2009). Lastly, an assumption of the CRT framework is that race and class are inextricably linked, and this postulation is important to the study (McClaren & Munoz, 2000).

The examination of social constructs in schools, which reproduce and rationalize racism, is central to CRT in education. Among the common tenants to CRT are a concentration on race and racism as the basis for evaluating for conditions in society, questioning dominant ideology, recognizing the lived experiences of persons of minority groups, and integrating an interdisciplinary approach in analyzing oppression (Matsuda, Lawrence, Degaldo, and Crenshaw, 1993; Yosso, 2005). CRT in education is attentive to the intersections of racism, sexism, ableism, and classism in the perpetuation of inequality through the learning processes in schools (Yosso, 2005). CRT in education and higher education promotes social justice through equitable consideration of communities of color. The ultimate goal of CRT in education is the elimination of oppression and transformation of the social world (Degaldo and Stefancic, 2002; Ladson-Billings, 1999; McClaren, 2003; Parker et al, 1999; Ross, 2009).

Conceptually, the research is framed around issues of Black identity development, most particularly in the work of Cross, Helms, and others. The Nigrescence Model of Black racial identity provides the specific lens through which I approached the study. I accept the

supposition that the African American life space includes multiple identities; aside from the commonly shared human and gender identities, persons of African heritage are also burdened with a need to negotiate their racial identity (Bynum, Best, Barnes and Burton, 2008; DuBois, 1996). William Cross (1991) identified five stages in the process through which one comes to accept and embody Blackness. In each of these stages, the African American man encounters an event, issue, or circumstance that forces him to come face-to-face with his personal identity and then his racial group identity (Cross, 1991). As he progresses through the stages of Nigrescence, his interests shift and his community evolves (Cross, 1991; Helms, 1990). The African American man experiences a systematic identity crisis in his search for a well-developed self. At the final stage of the model, the subject has explored the caveats of his own personality, negotiated the reality of his experiences, and embraced a Black identity (Cross, 1991). I utilize the works of Cross (1991), Helms (1991), as well as Wijeyesinghe and Jackson (2001) and others in exploring the personal and group racial identities of the African American male scholars in the study.

### **Overview of research design**

The questions asked by the researcher should determine the type of method used in research, and the framing of the questions help solidify the particular design for the study (Merriam, 2009; Seidman, 2006; Strauss & Corbin, 1990). I conducted a qualitative study for this investigation. The CRT method of counterstory-telling was also involved in the presentation of the research findings.

The research methodology is situated at the intersection of phenomenology and life story research. Moustakas (1994) describes phenomenology as a method centered on the

lived experiences of a number of members from a specific population group. The members of this group share in common practices, encounters, and stimuli around a particular phenomenon (Moustakas, 1994). The goal of phenomenological research is to focus attention on the 'structures of consciousness' in pursuit of the primary underlying meaning of a shared, human experience and to challenge normative assumptions (Creswell, 1998; Moustakas, 1994; Seidman, 2006). My objective through the research was to bring the voices of the African American male undergraduates to the forefront in telling the story of their experiences in the engineering curriculum.

Seidman (2006) identifies a phenomenological approach to in-depth interviewing, which emphasizes narratives as a means of knowing and understanding common experiences among a particular group. My research questions were aimed at the following: 1) inspiring participants to recreate their early learning environments, influences, opportunities, and experiences in relation to mathematics and science education; 2) assembling a descriptive inventory of institutional factors, resources, relationships, etc. that have been instrumental to the academic development of these participants; and 3) to outline strategies and/or supports for success of these Black men enrolled in engineering curriculums at a PWI. The phenomenological approach to in-depth interviewing is appropriate for this study of African American men in STEM academic programs because of the sociological roots of the method (Siedman, 2006).

Fanon (1952) contests that ontology does not allow for understanding the Black man, as this knowledge is exclusive to only those who have been Black men (as translated by Philcox, 2008). Per this logic, an effective means of gaining authentic insight into an



African American male phenomenon is to turn to African American men as the authors of their own experiences. Bell (1988) introduces counter-storytelling as a helpful tool for critical race research in education. This approach brings power to the characters of color whose contributions have influenced the social world, yet whose voices have been largely omitted from the historical record (Degaldo Bernal, 2002; Harper, 2009; Lynn, 2004; Solorzano and Yosso, 2002; Yosso, 2005). Counter-storytelling invites the stories from the minority perspective challenge the 'master narratives,' which have been accepted as objective truths throughout the ages (Baszille, 2008; Harper, 2009; Solorzano, Ceja, and Yosso, 2000; Yosso, 2005). I regarded this epistemological approach in the reporting of findings from the study. The narratives of the participants are presented as stories and in a manner that provides an opportunity for understanding, while preserving the context of their lived experiences.

### **Researcher Positionality**

In approaching this study, it is imperative that I identify my position in relation to the phenomenon under investigation. I am a White male administrator at a large, PWI research institution in the South. My professional work involves management of academic programs, curricular initiatives, and student affairs in a college of sciences. In my administrative role, I am able to see the struggles, stresses, supports, and successes of African American men enrolled in the college. I have seen Black men carve out spaces where their cultural tools were not the most effective, rise above incredible social obstacles, and achieve academic primacy among their White and female peers. I have also witnessed instances of failure among African American men who were unable to break through the barriers that blockaded their successes. My professional experiences, mentoring

relationships, and student development background have inspired my interest in this important field of study. I believe that I may be an effective vehicle of voice to inform other administrators about the interests, needs, and strategies of African American students and implement programs aimed at enriching the quality of these students' educational experiences at PWIs.

### **Definition of Terms**

African American – African American is the ethnic and group identification of Black Americans. This study is focused upon understanding the shared experiences of a particular group of Black male college students who share engineering as a common curricular thread. Throughout the study, African American, Black, and men of color are employed in reference to the members of this racialized group.

CRT – CRT is utilized as an abbreviation for Critical Race theory. Critical Race theory is applied as the conceptual framework for this study, and as is consistent with the discipline, holds that race is at the center of these undergraduate students' experience in engineering at the research site (Degaldo and Stefancic, 2000; Ladons-Billings and Tate, 1995).

PWI – PWI is an acronym commonly used in higher education literature in reference to a predominantly White institution. These colleges and universities have traditionally served a primarily White population and continue to educate a majority of White student learners.

STEM – STEM is an acronym that references science, technology, engineering, and mathematics. The study is centered on the experiences of African American male undergraduates enrolled in the engineering program at the research site. The engineering

curriculum is built around a considerable number of courses in natural or physical science and mathematics. STEM is used frequently throughout the study as a term constitutive of

Racial Identity (ID) – Racial Identity or ID is the effectual integration of one’s personal identification with his/her racial background and his/her connection with his/her racial or ethnic community (group). For this study, I will apply Cross’ (1991) model for Black Identity Development as the main scaffold for considering, interpreting, and discussing racial ID.

Whiteness – Whiteness is a social construction of privilege that protects the social status of those who identify as White through the progression of ideology. As a racial identity, Whiteness was constructed as a deliberative means of oppressing those who are non-White (Lipsitz, 2006). Whiteness as property categorizes White privilege as a tangible commodity and refers to the possessive ownership of this socially constructed identity (Harris, 1993; Lipsitz, 2006; Rich, 2010).

Success – Success may be defined subjectively and widely by a range of audiences. For the purposes of this study, success behaviors are defined as the deeds, decisions, actions, and activities employed by the participants that help bring about academic achievement in their particular engineering programs. The ultimate indicator of success is completion of the engineering curriculum with a GPA above the minimum required (2.5 on a 4.0 scale).

### **Summary and Transition**

In the second chapter, I review the literature around Critical Race Theory in Education, Whiteness, African American males in education, the achievement gap, African

American identity, African American males in college, and lastly, African American men in STEM disciplines. Through an assessment of the literature, I identify holes in the scholarship regarding the achievement and success of African American males. In chapter three, I describe the qualitative methodology used in the study. In the fourth chapter, I formulate the foundation for the stories spoken by participants. In chapters five through ten, I share and summarize the stories emerging from the study. In the eleventh and final chapter, I summarize the findings and recommendations for further research.

## CHAPTER II

### REVIEW OF LITERATURE

In this section, I review the literature related to African American males in STEM programs at a predominantly White university. As a means of organizing the content, I have identified three primary areas of scholarship from which I draw information for this review: critical race theory in education and higher education, Black identity and education, and STEM education of African American males. The first content area explores the origin, evolution, and adaptation of critical race theory (CRT). Utilizing the scholarship of the founding voices in CRT, I will show its transition from a binary model of (Black and White) race consideration into a broad-based set of tools for analyzing all varieties of oppression. The central tenets of CRT are outlined and interpreted based on the writings of the scholars who led the movement from Critical Legal Studies (CLS). I follow the progression of CRT into its most recent rendering as a scaffold for educational research. The adaptation of CRT as a mechanism for understanding inequalities in higher education is of primary importance to me, as CRT in education stands as the framework through which I approach this phenomenological study of African American males in higher education. I utilize Harris' (1995) Whiteness as Property, Bourdieu's (1977) cultural capital and Yosso's (2005) community of cultural wealth theories as foundational frameworks for the study. The CRT works of Degaldo and Stefancic (2000), Ladson-Billings (1995), Solorzano and Yosso (2002), Harper (2009), and Whiting (2006) are also significant towards informing my

research on Black males. Upon the conclusion of commentary about CRT in education, I move towards an analysis of the classical and contemporary scholarship on Black identity.

### **Critical Race Theory in Education**

Critical race theory was conceived in the late 1980s and early 1990s by a group of scholars of color who believed that critical legal studies failed to respect race as a fundamental variable in social analysis (Brookfield, 2005; Crenshaw et al, 1995; Degaldo Bernal, 2002; Degaldo and Stafancic, 2000; Ladson-Billings and Tate, 1995; Solorzano, Ceja, and Yosso, 2000; Yosso, 2005); therefore, the primary intent driving the development of CRT was to highlight the politics of race and racism in both the United States and abroad (Crenshaw et al, 1995; Degaldo Bernal, 2002; Matsuda, Lawrence, Degaldo, and Crenshaw, 1993; Ross, 2009). Trevino, Harris, and Wallace (2008) distinguish CRT from CLS because of the transformative ideology espoused through the program (Degaldo Bernal, 2002; Solorzano, Ceja, and Yosso, 2000). CRT draws from among the following schools of thought: critical theory, history, sociology, anthropology, women's studies, justice studies, and ethnic studies (Brookfield, 2005; Crenshaw et al, 1995; Ladson-Billings, 2000; Ladson-Billings and Tate, 1995; Solorzano et al, 2000; Yosso, 2005). Central to CRT is the examination of social constructs and systems across society, which reproduces and rationalizes racism (Brookfield, 2005; Degaldo and Stefancic, 2000). CRT scholars view race and racism as the basis for evaluating conditions in society, challenging dominant ideology, recognizing the lived experiences of persons of minority groups, and integrating an interdisciplinary approach in analyzing oppression (Ladson-Billings and Tate, 1995; Matsuda et al, 1993; McLaren and Kincheloe, 2007). CRT is attentive to the intersections of racism, sexism, and classism in the perpetuation of social inequality (Ladson-Billings and

Tate, 2005; Yosso, 2005). Critical race theorists promote a commitment to social justice. The ultimate goal of CRT is the elimination of oppression and transformation of the social world (Arai and Kivel, 2009; Brookfield, 2005; Crenshaw et al, 1995; Degaldo and Stafancic, 2000; Ladson-Billings and Tate, 1995; Matsuda et al, 1993; Ross, 2009; Solorzano, Ceja, and Yosso, 2000; Tatum, 2007).

CRT has evolved since its initial establishment as a sociological, economic, and political research movement (Dixson and Rousseau, 2005; Ladson-Billings and Tate, 1995; Powers, 2007). In its original form, CRT was fixated upon analyzing the color line, the longstanding binary between Black and White social worlds (Solorzano et al, 2000; Powers, 2007). Critique from scholars of color across various fields questioned an exclusive definition of racism as a Black and White phenomenon (Bell, 1988; Degaldo and Stefancic, 2000). CRT scholars recognized the limitations of this binary approach and broadened the borders of the paradigm to include other areas of racialized oppression (Powers, 2007; Trevino, Harris, and Wallace, 2008; Yosso, 2005). The CRT framework has expanded to include Latino critical studies (LatCrit), critical queer studies (queer-crit), critical White studies, critical race feminism, and other less renowned areas of oppression scholarship (Degaldo, 2000; Dixson and Rousseau, 2005; Ladson-Billings and Tate, 1995; Lopez, 2003; Solorzano and Yosso, 2002).

CRT scholars examine the mechanisms through which social systems create, circulate, mandate, and rationalize racism in day-to-day affairs (Crenshaw et al, 1995; Degaldo and Stefancic, 2000; Fasching-Varner, 2009; Ladson-Billings and Tate, 1995; Solorzano and Yosso, 2000). Six distinctive principles define critical race theory and distinguish the movement from other fields (Dixson and Rousseau, 2005; Ladson-Billings and Tate, 1995;

Matsuda, Lawrence, Degaldo, and Crenshaw, 1993). Matsuda et al (1993) define the following themes of CRT (as cited in Dixson and Rousseau, 2005):

- 1) Critical race theory recognizes that racism is endemic to American life.
- 2) Critical race theory expresses skepticism toward dominant legal claims of neutrality, objectivity, colorblindness and meritocracy.
- 3) Critical race theory challenges ahistoricism and insists on both a contextual and historical analysis of society. Aligned with this principle is the belief that racism is at the base of all inequality existing between groups of people, and that through various processes, hegemony perpetuates an ideology of inequality.
- 4) Critical race theory insists on recognizing the experiential knowledge of people of color and using the voices of oppressed groups to analyze social conditions.
- 5) Critical race theory is interdisciplinary in its approach to oppression analysis.
- 6) Critical race theory is committed to social justice for all humankind and works toward the ultimate elimination of racial oppressions as part of the broader goal of ending all forms of oppression. (p. 9)

The application of CRT methods to educational research became a more popular scholarly practice in the mid-1990s (Degaldo and Stefancic, 2000; Ladson-Billings and Tate, 1995; Ladson-Billings, 2000; Ladson-Billings and Tate, 2005; Lopez, 2003). The work of Ladson-Billings and Tate (1995) formally and directly introduced the utility of CRT as a means of understanding the complexities of difference and inequality in education. CRT in education stems from many epistemological perspectives, including legal studies, ethnic studies, Marxism, feminism, cultural nationalism, and other disciplines (Crenshaw, Gotanda, Peller, and Thomas, 1995; Degaldo and Stefancic, 2000; Ladson-Billings and Tate, 1995;



Lynn and Parker, 2006). The movement towards CRT in education grew from sentiments that the scholarship on multicultural and culture-centric fell short in addressing inequality in schools (Solorzano, Ceja, and Yosso, 2000). Just as race and racism are prime variables within CRT, CRT in education brings race and racism to the front in analyzing school environments (Ladson-Billings and Tate, 1995; Lynn and Parker, 2006). CRT in education connects race and property rights towards understanding the function of Whiteness in schools (Dixson and Rousseau, 2005; Ladson-Billings and Tate, 1995; Tatum, 2007). Ladson-Billings and Tate (1995) emphasized a need for a paradigm in education that would help to restore credibility to the capacities of persons of color. Traditional education research and legal activities have assumed a difference as deficit approach to communities of color, while CRT in education offers a theoretical avenue for an unbiased explanation of race and the law (Ladson-Billings, 1995; Lynn and Parker, 2006).

Solorzano and Yosso (2002) outline five tenets that are interwoven into the framework of CRT research in higher education. First, race and racism are always on the agenda and in motion in education. According to CRT researchers in higher education, the intersection of racism and classicism open manifold layers of oppression. Their belief is that race and social class permeate all social, political, and educational experiences of persons of color, which consequentially yields subordination on a variety of demographic levels (Solorzano and Yosso, 2002). The second tenet of CRT in higher education involves scrutinizing dominant ideology. CRT questions conventional claims such as meritocratic practices, colorblind policies, and equal opportunity in education. Challenging the inequalities in schools opens an avenue for CRT researchers to address privilege and its effects on the experiences of persons of color. Third, social justice is the goal of all CRT

research. Empowering the oppressed and deconstructing the discursive nature of schools are included among the action steps towards social justice in education. Schools send contradictory social messages to students; according to the CRT, education espouses egalitarianism ideals, while reconfirming the existing inequities in society through recurring acts of institutional oppression (Solorzano and Yosso, 2002). Fourthly, CRT places inherent value on the lived experiences of people. Reality is contextually constructed and differs widely depending upon the social space and life circumstances one experiences (McLaren and Munoz, 2002). Fifth and finally, Solorzano and Yosso (2002) highlight the transdisciplinary nature of CRT in higher education. In addition to historical analysis, the contemporary context for examining race and racism is important towards informing a holistic scenario in CRT (Solorzano and Yosso, 2002).

### **Standardized Testing**

Critical Race Theory in higher education seeks to dismantle the discourse about the intellectual ineptness and underachievement of persons of color. The struggle for equality for African Americans in the United States has involved many hardships, including the quest to conquer crippling stereotypes about their cognitive potential as a race group. Social scientists have historically generalized and misrepresented the cognitive capacities of African Americans, which has fed the folklore related to their secondary status in schools (Tatum, 2007). When Alfred Binet's intelligence test was introduced in the United States in the early 1900s, American psychologists altered the intent of the instrument in an effort to identify a singular measurement of ability level. To reveal the discriminatory bias of standardized intelligence testing, Tatum cites the commentary of Lewis Terman (1916) about the perceived state of low-ability for African Americans:

Among laboring men and servant girls there are thousands like them. They are the world's "hewers of wood and drawers of water." And yet, as far as intelligence is concerned, the tests have told the truth.... No amount of school instruction will ever make them intelligent voters or capable citizens in the true sense of the word.... The fact that one meets this type with such frequency among Indians, Mexicans, and Negroes suggests quite forcibly that the whole question of racial differences in mental traits will have to be taken up anew and by experimental methods.... Children of this group should be segregated in special classes and be given instruction which is concrete and practical. They cannot master abstractions, but they can often be made efficient workers, able to look out for themselves. There is no possibility at present of convincing society that they should not be allowed to reproduce, although from a eugenic point of view they constitute a grave problem because of their unusually prolific breeding (46).

Though Terman's (1916) sweeping assessment has been discredited since the publication of his text, the education of African Americans and other persons from marginalized groups has suffered from the aftershock of his misanalysis of intelligence (Engle and Conant, 2002; Tatum, 2007; Whiting 2006). Through increased opportunities, avenues for access, and enhanced educational outcomes, persons of color have persevered against punitive theories about their academic identities (Whiting, 2006).

### **Whiteness as Property**

In her work "Whiteness as Property," Cheryl Harris (1993) describes the objectification of African Americans throughout the history of America. She identifies the socio-historical movements towards European American dominance, the powerful significance of property in the American story, and the purpose of racializing groups around the interests of white privilege (Harris, 1993). Harris (1993) writes:

The racialization of identity and the racial subordination of Blacks and Native Americans provided the ideological basis for slavery and conquest. Although the systems of oppression of Blacks and Native Americans differed in form – the former involving the seizure and appropriation of labor, the latter entailing the seizure and appropriation of land – undergirding both was a racialized conception of property implemented by force and ratified by law.

The origins of property rights in the United States are rooted in racial domination. Even in the early years of the country, it was not the concept of race

alone that operated to oppress Blacks and Indians; rather, it was the interaction between conceptions of race and property that played a critical role in establishing and maintaining racial and economic subordination.

The hyper-exploitation of Black labor was accomplished by treating Black people themselves as objects of property. Race and property were thus conflated by establishing a form of property contingent on race – only Blacks were subjugated as slaves and treated as property. Similarly, the conquest, removal, and extermination of Native American life and culture were ratified by conferring and acknowledging the property rights of whites in Native American land. Only white possession and occupation of land was validated and therefore privileged as a basis for property rights. These distinct forms of exploitation each contributed in varying ways to the construction of whiteness as property (1716).

Through the lens of CRT and CRT in education, capitalist society is critiqued for promoting the rights of property over the humanity of persons (Bell, 1988; Degaldo and Stefancic, 2000; Ladson-Billings, 1997; Ladson-Billings and Tate, 1995; Lipsitz, 2006; Rothenberg, 2012). According to Tatum (2007) and others, Whiteness involves negotiating the meaning of privilege in a society that aligns particular advantages to being White (Bell, 1988; Buras, 2011; Harris, 1993; Ladson-Billings and Tate, 1995; Lipsitz, 2006; Rothenberg, 2012). Harris (1993) utilized Whiteness as Property as a theoretical frame for interpreting the pervasiveness of White privilege. Whiteness as Property is central to the CRT framework (Fasching-Varner, 2009; Harris, 1993; Ladson-Billings and Tate, 1995). Whiteness as Property contends that whiteness is more than a racialized status; based on its theoretical interpretation, whiteness is viable, group identity that has afforded those of European descent ownership of society's prime resources and opportunities throughout modern history (Arai and Kivel, 2009; Bell, 1988; Fasching-Varner, 2009; Harris, 1993; Ladson-Billings and Tate, 1995; Rothenberg, 2012; Tatum, 2007). Based on the idea of Whiteness as Property (1993), the politics of whiteness restricts persons of color from enjoying the same advantages as those who hold white privilege (Buras, 2011; Harris, 1993; Rothenberg, 2012). Along these philosophical lines, the disadvantages of persons of

color are directly connected to the advantages and privileges of whites (Harris, 1993; Lipsitz, 2006; Rothenberg, 2012).

Rather than a question of biological or genetic make-up, Whiteness as Property maintains that race is a social construction with political and economic implications for persons of color (Buras, 2011; Lipsitz, 2006; Harris, 1993). Whiteness as Property defines an “American” as one who is White, male, and heterosexual (Harris, 1993; Lipsitz, 2006). Power is regarded as the ultimate prize of Whiteness, and the exclusionary effects for communities of color often dictate their lower statuses in society (Bell, 1988; Harris, 1993; Lipsitz, 2006). George Lipsitz’s (2006) research expounds upon the work of Harris (1993) in the area of Whiteness as Property. Lipsitz (2006) defines an historical “possessive investment in Whiteness” that he contends propagates the systemic oppression of persons of color. Per his argument, European Americans have become invested in Whiteness as a means of preserving an elevated social status above African Americans and other minorities (Lipsitz, 2006). He identifies evidences of this passionate investment in White privilege across social, governmental, residential, economic, and educational spheres throughout the development of the United States (Lipsitz, 2006).

Lipsitz (2006) contends that Whiteness is an “unmarked category against which difference is constructed.” White supremacy has evolved over time in American society based on the contemporary need to distinguish particular groups as different and deviant to the shared values of the nation (Lipsitz, 2006; McLaren and Munoz, 2000). The desire for slave labor promoted a sense of superiority among European-American colonists and citizens, as well as the need to denigrate the social standing of the African American population (Lipsitz, 2006). In his historical analysis, Lipsitz (2006) writes about the hasty

wheels of whiteness tracking across the North American continent - seizing lands, enslaving immigrants, and structuring a system of government to serve the interests of European Americans. He upholds that over the course of centuries, the possession of whiteness has pummeled over the personhood of populations of Native Americans and immigrants of African, Asian, Latino, Hispanic, and any other ethnic minorities that have penetrated the White American world (Lipsitz, 2006). Whiteness names the disadvantages of minorities as consequences of innate cultural paucity, and discredits the argument that the state of affairs for minorities is a result of longstanding disenfranchisement and discrimination by the white majority (Arai and Kivel, 2009; Harris, 1993; Lipsitz, 2006; McClaren and Munoz, 2000; Rothenberg, 2012).

Lipsitz (2006) chronicles the social, political and economic disadvantages with which communities of color have contended over the past two centuries in America. Lipsitz (2006) contends that whites adopt a possessive investment in whiteness that continues to fuel white supremacy. Lipsitz (2006) offers the following in regards to the construction of race:

Race is a cultural construct, but one with deadly social causes and consequences. Conscious and deliberate actions have institutionalized group identity in the United States, not just through the dissemination of cultural stories, but also through the creation of social structures that generate economic advantages for European Americans through the possessive investment in whiteness. Studies of racial culture too far removed from studies of social structure leave us with inadequate explanations for understanding and combating racism (2).

According to the possessive investment in whiteness viewpoint, contemporary whiteness has embodied new forms that are more pervasive, punitive, and powerful than personal racism (Lipsitz, 2006). Lipsitz (2006) outlines the passage of governmental policies in the United States that have reshaped racism and allowed for the continuation of white

supremacist ideology. Lipsitz (2006) highlights urban renewal projects, environmental abuses in Black neighborhoods, and inequitable adjudication of crime against African Americans as evidences of the government's possessive investment in whiteness. According to Lipsitz (2006), the economic system in the United States is built upon a possessive protection of white privilege, including the rules and regulations associated with loan awards, credit ratings, and residential opportunities.

Interest convergence refers to the place at which the empowerment of persons of color intersects with the advantages of Whiteness (Bell, 1988; Degaldo, 2002; Harris, 1993). Based on the concept of convergence, whiteness will allow persons of marginalized groups limited escape from oppression, but still shy of the point where the interests of the dominant group are challenged (Arai and Kivel, 2009; Bell, 1988; Degaldo, 2002; Fasching-Varner, 2009; Harris, 1993; Ladson-Billings and Tate, 1995). The messages of whiteness filter from a variety of sources, and CRT scholars in education believe that pedagogy plays an important part in the promotion of oppression (Degaldo, 1989; Delpit, 1995; Ladson-Billings, 2005; McClaren and Munoz, 2000; Tatum, 2007; Warmington, 2009).

### **Critical Pedagogy**

CRT in education emphasizes that pedagogy is substantive of more than teaching methods and learning styles (Ladson-Billings, 1997; Ladson-Billings and Tate, 1995; Tatum, 2007; Yosso, 2005). Warmington (2009) purports that sound pedagogy involves a broader agenda of investigation and integration of both social and cultural components into the practice of teaching. CRT researchers believe that school curriculums are most effective when reflective of the students' life world (Degaldo and Stefancic, 2000; Ladson-Billings, 2005; Warmington, 2009). Tatum (2007) identifies her 'ABCs of educational environments'

as a means of extrapolating the components of an effective classroom for students of color: A) Affirming Identity B) Building Community C) Cultivating Leadership. Firstly, the inclusive classroom must help students affirm their racial, personal, and scholar identities (Reynolds, 2010; Tatum, 2007; Whiting, 2006). In situations where students of color feel that their personal characteristics and qualities are unacceptable or unfamiliar, their participation will be hindered. Tatum's (2007) second activity required of effective environments is building community among the students in the classroom. According to her interpretation, teachers must promote healthy interdependence among all students in order to achieve a true learner-centered community. Lastly, the effective classroom supports a leadership identity among students. Critical Race scholars have critiqued schools on the premise that state apparatuses perpetuate existing social structures and prepare a predominantly white leadership class (Degaldo and Stefancic, 2000; Delpit, 1995; Parker et al, 1999; Sharma, 2010; Tatum, 1997; Warmington, 2009). Through the deliberate incorporation of democratic teaching methods, educators may inspire critical thinking about societal issues and encourage success outcomes for students of color (McLaren, 2003; Tatum, 2007).

Critical pedagogy is another ideological element involved in the movement to equalize education for all persons (McLaren, 2003). Critical pedagogy is relevant to CRT in education because it questions the purpose of schools; critical pedagogy asks if education a utility of society or is society a utility of education (McLaren, 2003; McLaren and Munoz, 2000; Sharma, 2010). Critical theory examines the historical framework of education and rests its rationale in that educators can repair, restore, and renovate the world; the goal of this approach is liberation, which will result in a dramatically evolved state (McLaren,



2003). Schooling, from a critical perspective, is a form of cultural politics because it prepares the student for assimilation into the existing social order. Critical pedagogy challenges the popular portrayal of schools as the vehicles for social advancement and economic mobility; the critique is that whites are molded for entrance into the elite world of their predecessors, while persons of color are directed towards subservience and oppression at the hand of the ruling class (Castagno, 2009; Buras, 2011; McLaren and Munoz, 2000; Sharma, 2010). Understanding gender, class, and racial divisions is the encompassing objective of critical pedagogy. The goal for education is that teachers and students will consider reality as a social construction for citizens in society and activate a revolution for equality (Castagno, 2009; McLaren, 2003). Advocates of critical pedagogy attest that when students have achieved a contemplative analysis of the system of schooling they may then seek greater self-empowerment and social transformation (McLaren, 2003; Sharma, 2010).

According to the philosophy of critical pedagogy, true learning occurs when students are encouraged to explore the individualized impacts of democracy and its operations (Lynn, 2004; McLaren, 2003). Critical pedagogy calls for schools to operate as multicultural agencies, teaching the facets of democratic system through experiential learning (Buras, 2011). Critical pedagogy seeks social equality and strives to equip students with the tools necessary to make connections between fact and fiction about their world (Castagno, 2009; Lynn, 2004; McLaren, 2003; McLaren and Munoz, 2000). Rather than indoctrinating, a critical curriculum should involve students as characters in a democratic classroom (Lynn, 2004; McLaren and Munoz, 2000; Tatum, 2007). In the eyes of Freire (1973), "the less critical capacity a group possesses, the more ingenuously it treats

problems and the more superficially it discusses subjects,” (1973). According to McLaren (2003) and others, critical pedagogy is essential in transforming American social institutions and achieving the egalitarian ideals of CRT (Lynn, 2004; Sanchez-Casal and Macdonald, 2009; Yosso, 2005).

Curriculum is an important consideration for CRT scholars in education (Alridge, 1999; Baszille, 2008; Harper, 2009; Ladson-Billings, 1997; Ladson-Billings, 2000; Ladson-Billings and Tate, 2005; Lee and Bailey, 2005; Lynn, 2004; Parker et al, 1999; Tatum, 2007). Lee and Bailey (2005) echo the pedagogical perspectives of Ladson-Billings and Tate (1995) regarding substandard school curriculums in schools serving African American students. According to Lee and Bailey (1995), colorblind curriculums impede the educational development of some African American students (as cited in Bailey and Bradbury-Bailey, 2010). Harper (2009) suggests that schools hold lower expectations for students of color, which places African Americans at a disadvantage (Lynn, 2004; Tatum, 2007). In school systems serving predominantly African American, lower-income populations, the lack of college preparatory and advanced placement programs available to students affects their capacities to compete with students who enjoy access to these resources (Ladson-Billings, 1997; Tatum, 2007). Ladson-Billings (1997) espouses the incorporation of ‘pedagogy of cultural relevance’ as a means of enhancing the engagement behaviors of African American students (Alridge, 1999; Ladson-Billings, 2000; Lynn, 2004). A culturally relevant curriculum helps African American students connect the classroom with their every day experiences, which opens opportunities for the internalization of important concepts (Crenshaw et al, 1995; Lynn, 2004; Tatum, 2007).

Alridge (1999) purports that educational theories for African Americans have been largely ineffective because the irrelevancy of the curriculums for these students (Baszille, 2008; Ladson-Billings, 1997). According to Alridge (1999), the background experiences of African American students are seldom considered in the construction and implementation of formal educational structures. CRT scholars argue that educational constructs for African Americans are comprised of pedagogical practices, learning outcomes, and assessment procedures that have been organized outside of their life experiences (Baszille, 2008; Ladson-Billings, 1997; Tatum, 2007). When students of color are unable to contextualize the competencies and creative activities within the classroom, their capacities for knowledge development are hindered across various disciplines (Alridge, 1999; Harper, 2009; Ladson-Billings, 1997; Terry, 2010).

### **Capital**

CRT in education acknowledges the various forms of capital in schools and critically assesses the consequences for communities of color (Alridge, 1999; Carter, 2003; Hughes and Giles, 2010; Parker et al, 1999; Reynolds, 2010; Tatum, 2007; Yosso, 2005). Bourdieu (1977) has been regarded as the scholar responsible for the identification and explanation of capital, as it relates to power in society (as cited in Yosso, 2005). Capital is a tangible, exchangeable, and valuable commodity to which access is limited. His interpretation of capital positions the White, middle-class as the cultural standard and qualifies the cultural heritages of those outside of this standard in a state of deficit (Bourdieu, 1977). Bourdieu (1977) draws distinctions between three types of capital: cultural, social, and economic (as cited in Yosso, 2005). Cultural capital is the collection of cultural knowledge, experiences, and insights, which are inherited and shared by the privileged persons in society (Yosso,

2005). Language and education are two examples of what Bourdieu (1977) identifies as cultural capital (as cited in Yosso, 2005). Social capital refers to the social networks, relationships, and connections enjoyed by middle class society; these interaction-based structures help the dominant group maintain power because access is restricted to those who have the cultural tools required to cultivate these connections (Carter, 2003; Tatum, 2007; Yosso, 2005). Bourdieu (1977) defines economic capital as the financial resources and material possessions associated with privilege (as cited in Yosso, 2005).

Yosso (2005) challenges Bourdieu's conception of White, middle-class cultural dominance in her identification of 'community cultural wealth.' According to her theoretical perspective, people of color are not deficient in their attainment or expressions of culture (Yosso, 2005). Upon beginning elementary school, many students of color are bilingual, knowledgeable of personal heritage and family history, and have adapted life skills that are highly indispensable within their communities (Reynolds, 2010; Yosso, 2005). In contrast to Bourdieu's (1977) analysis of a dominant capital, Yosso (2005) utilizes CRT in education to redefine the value of culture. The community of cultural wealth concept challenges the philosophical practice of comparing diverse cultures to a particular standard, such as the White, middle-class norm. Yosso (2005) and others contest that cultural capital should be regarded as only one form of social currency, rather than the sole determinant of social mobility (Carter, 2003; Dixson and Rousseau, 2005; McLaren & Munoz, 2000; Tatum, 2007; Yosso, 2005). Per her assessment, community cultural wealth is an amalgamation of knowledge, talents, abilities, and connections operating within communities of color, which have been developed as tools towards overcoming oppression (Yosso, 2005).

Through the scope of CRT in education, Yosso (2005) identifies the following six types of capital: aspirational, navigational, social, linguistic, familial, and resistant capital. Aspirational capital is described as the capacity to hold fast to hope in the face of macro and microforms of racialized oppression (Yosso, 2005). The second commodity of community cultural wealth, linguistic capital, emphasizes the advanced communication and social skills that students of color tend to bring into the classroom; linguistic capital may refer to differing languages but this reference also encompasses varying applications or styles of the English language (Castagno, 2009; Yosso, 2005). Familial capital is interpreted as cultural knowledge established and shared among family members. Nurtured by extended family, this epistemology empowers students of color with a strong sense of community and an appreciation for the resources available through kinship (Yosso, 2005; Tatum, 2007). The definition of social capital according to the community cultural wealth perspective does not differ widely from the meaning ascribed by Bourdieu (1977); this includes the relationships, networks, and community connections that aid students in identifying and obtaining opportunities (Yosso, 2005). Navigational capital refers to the psychological, social, and other internal processes that help persons of color negotiate external stresses (Yosso, 2005). This ability to maneuver through oppositional structures, environments, and social spaces provides significant utility for students of color as they navigate schools. Yosso (2005) and other scholars have documented the effects of race and racism on students of color and have hypothesized the factors supporting their survival and success in education (Bailey-Bradbury-Bailey, 2010; Cuyjet, 2006; Hughes, 2009; Ladson-Billings, 1997; Solorzano and Yosso, 2002; Tatum, 2007; Whiting, 2006). The sixth and final form of community cultural wealth is resistant capital (Yosso, 2005). Students of

color acquire resistant capital through episodes of engagement with oppositional forces (Yosso, 2005). According to Yosso's (2005) analysis, the past experiences of parents are rooted in traditions of subordination (Tatum, 2007). Yosso credits parents as the primary agents in promoting the messages of resistance for youth of color (Harper, 2006; Picower, 2009; Tatum, 2007; Whiting, 2006; Yosso, 2005).

### **Counter-storytelling**

Solorzano and Yosso (2002) identify counter-storytelling as a popular methodology practiced by CRT scholars in education. 'Counternarratives' is used interchangeably with counter-storytelling throughout the literature and involves the contestation and deconstruction of dominant discourses (Baszille, 2008; Harper, 2006; Reynolds, 2010). One of the principle tenets of CRT is the belief that the lived experiences of people of color are inherently valuable (Crenshaw et al, 1995; Degaldo, 2002; Degaldo and Stafancic, 2000; Ladson-Billings, 2000; Picower, 2009). Historically, the voices of minorities have been unaccounted for in the literature, and thus, their stories have been unheard, overlooked, and misinterpreted (McLaren and Munoz, 2000; Reynolds, 2010; Tatum, 2007; Whiting, 2006). Counter-storytelling engages the voices of color as the primary knowledge sources for understanding the social and political complexities of the world (Baszille, 2008; Harper, 2006; Lynn and Parker, 2003; Solorzano and Yosso, 2002; Yosso, 2005). Persons from marginalized communities are empowered to rewrite the stories of our lives through counter-storytelling (Harper, 2009; Solorzano and Yosso, 2002). Within this approach, communities of color critique the dominant narratives and share experiential accounts from their own perspectives, which have been informed by oppression experiences (Harper, 2009; Lynn and Parker, 2006; Solorzano and Yosso, 2002). The narratives of

marginalized persons become new scholarship through CRT counter-storytelling (Baszile, 2008).

The purpose of counter-storytelling in research in education is to highlight discrepancies and distortions about communities of color that have been conveyed through dominant discourse (Baszile, 2008; Harper, 2009; McClaren and Munoz, 2002; Reynolds, 2010; Soloranzo and Yosso, 2000; Terry, 2010). Three variations of counter-storytelling exist as approaches within the method: personal stories, the stories of other people, and composite stories (Harper, 2009; Solorzano and Yosso, 2002). Personal stories are first-person accounts of phenomena experienced by the narrator that speak against conventional interpretations or normative understandings of social history (Harper, 2009; Lynn and Parker, 2006; Solorzano and Yosso, 2002). The two latter approaches of counter-storytelling involve biographical components, as those sharing the stories may or may not have been directly privy to the experiences they describe (Harper, 2009; Lynn and Parker, 2006; Solorzano and Yosso, 2002).

Like counter-storytelling, Critical Race testimony is another pedagogical strategy utilized in contemporary CRT research in education (Bonilla-Silva, 2003; Lynn, 2004; Lynn and Parker, 2006). CRT scholars who embrace CR testimony see the story of communities of color as important in understanding the breadth of the effects of racism and oppression (Hughes and Giles, 2010; Lynn and Parker, 2006). CR testimony highlights the hidden curriculum of whiteness in schools and the educational inequalities resulting from institutional racism (Bonilla-Silva, 2003; Fasching-Varner, 2009). CR testimony actively supports a subjective stance on epistemology (Harper, 2009; Ladson-Billings, 2000).

Through CR testimony, oppressed persons become the subject of their own narratives and

are able to construct their stories based on constructions of reality, which have been shaped by racism (Harper, 2009). CR testimony provides an autobiographical analysis of lived experience, because it is contextualized, conceived, and communicated by representatives from within communities of color (Lynn and Parker, 2003).

Fasching-Varner (2009) challenges CRT scholars in education to share the accounts of racial oppression in America. He believes that the means to achieving educational equity for all persons is to ‘unpack the story’ of race in schools (Fasching-Varner, 2009). According to his logic, racism enjoys a fictional eminence that keeps it from reaching full disclosure (Fasching-Varner, 2009). CRT scholars agree that the historical stories shared over the centuries have been sanitized to protect power, omit the social contributions of racial and ethnic minorities and women, and polarize the politics of difference (Bonilla-Silva, 2003; Hughes and Giles, 2010; Ladson-Billings, 2000; Ladson-Billings and Tate, 1995; McClaren, 2003; Tatum, 2007). CRT underscores the manner through which textbooks, pedagogical practices, curriculums, and personnel recreate oppressive structures in schools (Ladson-Billings, 1997; Picower, 2009; Tatum, 2007). Some scholars fault a culture of “identity blindness” in schools and argue that it is socially unacceptable for teachers to speak with their students about inequality (McLaren and Kincheloe, 2007; Sanchez-Casal and Macdonald, 2009). CR testimony, storytelling, counter-storytelling, and counter-narratives shine light upon the agencies responsible for racism and encourage action towards the elimination of oppression. Resistance is a common theme in CR testimony (Yosso, 2005). Yosso (2005) describes how bringing voice to communities of color may help members of those communities develop the tools required to navigate the structures of a racist society. Sanchez-Casal and Macdonald (2009) challenge the silencing power of schools. They argue



that masking the violent history of American society prohibits students from fully evaluating the racialized stories of their lives (Sanchez-Casal and Macdonald, 2009). According to CRT scholars in education, the inclusion of perspectives and texts composed by minorities empowers all students, regardless of race, to realize, reconsider, and reconstruct truths, which have been hidden from the consciousness world by White master narratives (Hughes and Giles, 2010; McLaren and Munoz, 2000; Sanchez-Casal and Macdonald, 2009).

### **The Achievement Gap**

Student performance data indicates a growing gap in achievement between students of color and their White peers, which appears early in elementary school and continues through high school (National Center for Educational Statistics, 2009; National Center for Educational Statistics, 2011; Thernstrom and Thernstrom, 2004). Politicians, educational policy makers, researchers, and reformists have deliberated about the “achievement gap” for nearly four decades (Harper, Patton, and Wooden, 2009; Ladson-Billings, 1997; Palmer, Davis, Moore, and Hilton, 2010; Schellenberg and Grothaus, 2011; Tatum, 2007; Whiting, 2009; Wiggan, 2007). Reports from the National Center for Educational Statistics indicate the development of a gap in African American and white student achievement as early as pre-school (as cited in Thernstrom and Thernstrom, 2004). When the *No Child Left Behind Act* was passed in 2001, race rose to the forefront of educational conversations about policy and practice (Tatum, 2007). This legislation called for specialized attention to “major racial and ethnic subgroups,” and the drive towards eliminating the academic performance gaps separating racialized groups became an important pillar in the national platform on education (Palmer et al, 2010; Tatum, 2007). Among the central goals driving *No Child Left*

*Behind* were to raise standards for students, improve standardized test scores, and increase teacher accountability; each of the objectives outlined in the legislation is politically consequential and difficult to implement (Tatum, 2007; Thernstrom and Thernstrom, 2004).

In *No Excuses: Closing the Racial Gap in Learning*, Thernstrom and Thernstrom (2004) provide a racialized analysis of the achievement gap in American education. In 1969, Congress established the National Assessment for Educational Progress (NAEP) to examine the state of affairs in education (Thernstrom and Thernstrom, 2004). The findings of the NAEP have become commonly regarded as the “Nation’s Report Card” and have been the motivation for multiple National reform movements in education (Ladson-Billings, 2011; McClaren and Kincheloe, 2007; Thernstrom and Thernstrom, 2004). This report assesses student performance at the fourth, eighth and twelfth grade levels (Thernstrom and Thernstrom, 2004). Thernstrom and Thernstrom (2004) highlight the consistent underachievement of Black students in comparison to white students at the same grade levels. On average, Black students in the twelfth grade are four years behind the white students (Thernstrom and Thernstrom, 2004). Seventy-seven percent of white students read at a higher level than the average Black student (Thernstrom and Thernstrom, 2009). In science education, one-third of white students are below basic standards; in comparison, three-fourths of Black students are below the minimum standard (Thernstrom and Thernstrom, 2004). While whites trail behind Asian students in science and mathematics education, the divide between white and Black students shows greater breadth (Thernstrom and Thernstrom, 2004). On standardized tests, white students outscore their

Black peers by 34 to 1 in science and 11 to 1 in mathematics competencies (National Center for Education Statistics, 2000; Thernstrom and Thernstrom, 2004).

There is compelling evidence indicating that the achievement gap is widening, despite governmental efforts to enrich the outcomes of students (Tatum, 2007; Thernstrom and Thernstrom, 2004; Wiggan, 2007). African American achievement in mathematics had improved from the 13<sup>th</sup> percentile in 1978 to the 24<sup>th</sup> percentile in 1987; however, Black math achievement plummeted dramatically in the 1990s (Thernstrom and Thernstrom, 2004). By 1999, the mathematical achievement scores for African American students had fallen to the 14<sup>th</sup> percentile, as it had been in the late 1970s (Thernstrom and Thernstrom, 2004). In 1999, the average scores for African Americans in mathematics, reading and science were lower or stagnant with the scores for African Americans in 1990 (Thernstrom and Thernstrom, 2004).

The gap in achievement between African American and whites is exacerbated as students move through the educational system (Allen, 2010; Bailey-Bradbury-Bailey, 2010; Delpit, 2006; Harper, 2009; Harper, 2010; Ladson-Billings, 1999; Thernstrom and Thernstrom, 2004; Whiting, 2006). Thernstrom and Thernstrom (2004) allude to legal history as a potential contributor towards the existence and continuation of the racialized gap in academic achievement. Jim Crowe restrictions on education in the South allowed for the enrollment of African Americans only through the eighth grade (Bell, 1980; Thernstrom and Thernstrom, 2004); the outcomes of this ceiling on education presented considerable challenges for equality in numeracy and literacy (DuBois, 1996; Tozier et al, 2009). Since the average academic achievement standard for African American high school graduates

rests at the eighth grade level, Thernstrom and Thernstrom (2004) present an issue that lends itself to theoretical investigation through the lens of CRT research in education.

The lurking legacy of the achievement gap affects the opportunities for college admission and success of students of color (Harper et al, 2009; Ladson-Billings, 1997; Palmer et al, 2010; Roach, 2001; Schellenberg and Grothaus, 2011; Wiggan, 2007).

Thernstrom and Thernstrom, 2004) frame the seriousness of the issue about the academic underachievement of minorities in the following manner:

These glaring disparities shape educational policy in the K-12 years and beyond. They drive the widespread and controversial use of racial double standards in admissions to selective colleges and universities. If Black and Hispanic applicants to highly competitive schools were judged by the same academic standards as whites and Asians, the number accepted in the immediate future would be very low – much lower than it is today. As it is, glaring racial double standards are needed in order to get a freshman class that is as much as 6 or 7 percent Black at schools like Wesleyan and the University of Michigan. The demand for academically highly accomplished Black and Hispanic students is much greater than the current supply (17).

The lack of adequate academic skills follows African American students into higher education and beyond (Cuyjet, 2006; Harper, 2010; Roach, 2001; Tatum, 2007). Many students of color require remedial courses upon admission to college, particularly in mathematics and English composition (Thernstrom and Thernstrom, 2004). A high volume of the minority students who enter higher education leave college before completing a degree (Roach, 2001; Washington, 2011). Three of four of the African Americans included in the 1988 National Education Longitudinal Study (NELS) entered college, but only one-of-six finished (as cited in Thernstrom and Thernstrom, 2004). Findings from the National Adult Literacy Survey (1992) revealed that African American college graduates read at a level consistent with whites that had attended college for only a brief period (as cited in Thernstrom and Thernstrom, 2004). In the same year, the NCES launched an instrument to

test quantitative literacy among college graduates (National Center for Education Statistics, 1993). The results of the quantitative literacy assessment showed that the numeracy skills of the average Black college graduate was no stronger than the skills of whites that held only a high school diploma (as cited in Thernstrom and Thernstrom, 2004).

Different theories exist related to the root causes of the achievement gap. Harper (2010) discusses the “mismatch” theory of African American achievement in education. The mismatch theory purports that Black students suffer in schools where the curriculum is too rigorous (Boeren, Nicalse, and Baert, 2010; Harper, 2010). According to this theory, African Americans attending predominantly white schools tend to lag behind in academic performance categories because they are not equipped with the capital and capacities necessary to succeed in a white majority system; in essence, these students are “mismatched” with their environment (Boeren et al, 2010; Harper, 2010). Other ideas about achievement discrepancies between black and white students include the absence of effective capital required for success in schools. As Solorzano and Yosso (2000) and others describe, students of color may bring different background experiences, family dynamics, and cultural habits with them upon entering school (Ladson-Billings, 2000; McClaren and Munoz, 2000; McClaren and Kincheloe, 2007; Parker, Deyhle, and Villenas, 1999; Solorzano, 1997; Solorzano, Ceja, and Yosso, 2000; Tatum, 1997; Tatum, 2000; Whiting, 2009; Yosso, 2005). When the learning environment is built upon values and cultural norms that differ from their own, African American students may encounter academic challenges (Allen, 2010; Edwards, et al, 1999; Lynn, 2004; Mandara, 2006; Yosso, 2005). Pedagogical practices have also been cited as potential contributors to the academic performance

differences in Black and White students (Bell, 1987; Howard, 2001; Jenkins, 2006; Ladson-Billings, 1997; McClaren and Munoz, 2000; Tatum, 2007; Terry, 2010).

Tatum (2007) and others demonstrate how CRT in education offers a frame through which the achievement gap may be critically evaluated, and thereby students of color may be offered sound opportunities for success (Dixson and Rousseau, 2005; Parker et al, 1999; Reynolds, 2010). Some scholars believe that the gap separating the achievements of students of color from their white classmates is a gap of social opportunities, as well as academic achievement (Allen, 2010; Bailey-Bradbury-Bailey, 2010; Delpit, 2006; Harper, 2009; Harper, 2010; Ladson-Billings, 1999; Tatum, 2007; Whiting, 2006). African American students have shown stronger engagement and academic success when schools embrace a culturally relevant curriculum and teachers exercise sensitive methods of instruction (Arai and Kivel, 2009; Harper, 2009; Hughes, 2001; Ladson-Billings, 1997; Solorzano, Ceja, and Yosso, 2000; Whiting, 2006). The psychological effects of racism have been regarded as detrimental to the academic success of African American students (Smith, Yosso, and Solorzano, 2006). The disconnection of parents is another factor that scholars have associated with the underachievement of Black students (Delpit, 1995; Edwards, Pleasants, and Franklin, 1999; Reynolds, 2010; Tatum, 2000; Tatum, 2007, Yan, 2000; Yosso, 2005). Students of color whose parents enjoy participatory relationships with their teachers and school communities have shown stronger academic achievement than students whose parents are not closely involved in their education (Mandara, 2006; Picower, 2009; Tatum, 2007; Yan, 2000; Yosso, 2005).

CRT scholars in education have found that teachers' expectations are often staged at a lower level for African American students, which may have significant effects on

achievement (Harper, 2010; Ladson-Billings, 1997; Reynolds, 2010; Tatum, 1997; Terry, 2010; Whiting, 2006). Ladson-Billings (1997) contests that the attitudes and biases of teachers must be addressed in order to encourage success among African American students. In urban school districts and other communities serving primarily minority students, high professional turnover and the lack of preparedness among teachers lead to negative outcomes for students (Harper, 2010; Tatum, 2007). The limited presence of African American teachers may also negatively impact the educational outcomes of Black students (Harper, 2010; Kayes and Singley, 2005; Ladson-Billings, 1999; Picower, 2009; Smith, Yosso, and Solorzano, 2006; Tatum, 1997). The demographics for teachers and administrators in public school systems across America are not reflective of the students whom they serve (Harper, 2009; Picower, 2009; Tatum, 1997). With some exception, many students of color are taught in schools with a majority of white educators and administrators (Harper, 2009; Picower, 2009; Tatum, 1997). African American male teachers are among the smallest minority in the teaching profession (Picower, 2009). The absence of persons of color in educational leadership continues through tertiary schooling and into the academy (Harper, 2010). In his qualitative study of success strategies among African American men in college, Harper (2010) reported that Black men valued teachers of color in the classroom as important supporters of their academic and professional growth and identities as scholars.

In the next section of the review, I analyze the literature related to the development of Black identity and the relationship between education and identity for African American males. I show how the identities of African American males may be influenced through social messages, stereotypes, and their communities; I continue with an examination of the

literature about how these influences and ideas about Black males interface with academic identity. I include a discussion about the effects of familial involvement, teacher expectations, and peer relationships on the academic identities of African American males across the various levels of schooling.

### **Black Identity and Education**

In the following section themed around Black identity (ID), I investigate the sociology of African American education following the post-slavery era. I proceed with an investigation of historical examinations of Black identity (ID). William Cross' (1971; 1991) Nigrescence theory is identified and explained as the lens through which I will consider racial, personal, and group IDs of the Black males in the study (Cross, 1971; Cross, 1991; Helms, 1990). Following the psychological analysis of Black ID, I move into an examination of contemporary literature about the perspectives of W.E.B. DuBois (1996), and specifically, his idea of a 'double consciousness' for African Americans (Rakaka, 2007; Tatum, 2007; Tozer et al, 2009; Trevino, Harris, and Wallace, 2008; Whiting, 2006). I include findings from studies on the effects of racism on the identities of Black males. Information about Black family and community identities and the effects these relationships have on the schooling experiences of African American males is presented in this section (Tatum, 2007; Whiting, 2006). Following the analysis of scholarship about Black identity, I conclude the review by reporting on the existing literature about the STEM education of African American males.

### **Dueling Philosophies Around African American Education**



Questions about the education for African Americans developed after emancipation, as former slaves sought improved life conditions, social opportunities, and economic gains (Harper et al, 2009). Public controversy about the purpose of education for African Americans ensued between two African American scholars and leaders of the period: Booker T. Washington and William E. B. DuBois (Tozer et al, 2009). Washington advocated for 'industry, thrift, intelligence and property' through a primarily agrarian agenda for African Americans (Tozer et al, 2009). His platform urged African Americans to work hard, be patient, and utilize industrial education in an effort to raise socio-economic status. In contrast to Washington's ideology, DuBois promoted a radical approach to equality through immediacy, access, and achievement (Harper et al, 2009; Rakaka, 2007). DuBois (1996) critiqued Washington's agenda as soft, arguing that it shifted the 'Negro Problem' from Whites back to the African Americans community (as cited in Alridge, 1999). In the eyes of DuBois, higher education held the enduring answer to the 'problem' of African Americans. DuBois saw his people as the 'promise' instead of the 'problem'. He critiqued the undereducated status of the race as the problem (DuBois, 1996; Tatum, 2007). DuBois (1996) states:

Yet after all they are but gates, and when turning our eyes from the temporary and the contingent in the Negro problem to the broader question of the permanent uplifting and civilization of black men in America, we have a right to inquire, as this enthusiasm for material advancement mounts to its height, if after all the industrial school is the final and sufficient answer in the training of the Negro race; and to ask gently, but in all sincerity, the ever-recurring query of the ages, Is not life more than meat, and the body more than raiment? And men ask this to-day all the more eagerly because of sinister signs in recent educational movements. The tendency is here, born of slavery and quickened to renewed life by the crazy imperialism of the day, to regard human beings as among the material resources of a land to be trained with an eye single to future dividends. Race-prejudices, which keep brown and black men in their "places," we are coming to regard as useful allies with such a theory, no matter how much they may dull the ambition and sicken the

hearts of struggling human beings. And above all, we daily hear that an education that encourages aspiration, that sets the loftiest of ideals and seeks as an end culture and character rather than bread-winning, is the privilege of white men and the danger and delusion of black (94-95).

W.E.B. DuBois (1996) is among the earliest scholars committed to formulating a philosophy of education for African Americans (Alridge, 1999; Dancy, 2010; Rakaka, 2007; Trevino, Harris, and Wallace, 2008). He believed education could lead to full emancipation for African Americans and that knowledge would equip the Black community with the tools necessary for the alleviation of oppression (Alridge, 1999; Dancy, 2010). Of the four million African Americans freed after the Civil War, only 28 had earned bachelor's degrees (as cited in Harper et al, 2009). In his metaphorical analysis of the state of affairs for African Americans at the turn of the twentieth century, DuBois (1996) identified a 'double consciousness' as a state of psychological flux for Black people. This concept of a dual identity for African Americans has continued to attract the attention of scholars in the century following his writing (Alridge, 1999; Dancy, 2010; Harper, 2009; Rakaka, 2007; Tatum, 2007; Trevino, Harris, and Wallace, 2008). According to this concept, African Americans are burdened with a distinctive duality in regards to their existence; Black persons live as both American and Negro (DuBois, 1996). DuBois contended that these personas challenge, complicate, and conflict the self-identity of African Americans; the result for African Americans is psychological oppression because one identity is never surrendered to allow for the internal integration of the other self. (Dancy, 2010; Tatum, 2007).

DuBois believed that racial uplift for African Americans was attainable through liberal education (Alridge, 1999; Dancy, 2010; Rakaka, 2007; Trevino, Harris, and Wallace,

2008). DuBois (1996) encouraged the identification of a “talented tenth” from among the Black community to serve as leaders for the race (Dancy, 2010). Through invasion of the social spheres, which had been historically reigned by Whites, this educated class of African Americans could carve out space for the success of others (Alridge, 1999). DuBois emphasized the importance of community in the Black experience. He theorized that segregated, community-based institutions and practices could eventually lead to the achievement of social, political, and economic equality for African Americans (Alridge, 1999; Dancy, 2010; Rakaka, 2007). DuBois (1996) emphasized the desire of Black persons to preserve parts of their ancestral identities, while negotiating the adaptation of Americanism into their life world (DuBois, 1996; Rakaka, 2007; Tatum, 2007).

During the decades following the Second World War, DuBois sharpened his perspectives about segregation and adapted social consciousness (Alridge, 1999). DuBois formalized his view of African Americans as second-class citizens in the nation they were helping to cultivate (Alridge, 1999; Trevino, Harris, and Wallace, 2008). DuBois compared the African American struggle for civil rights to oppression around the world and believed that finding commonality in these experiences could improve the lot for all persons of African ancestry (Alridge, 1999). He was suspicious of racial integration in schools, predicting a loss of professional opportunity for African American educators and a loss of cultural identity for students of color (Dancy, 2010). If African American students did not see teachers of color in their classrooms, the curriculums would lose relevance for them (Ladson-Billings and Tate, 1995; Tatum, 2007). In essence, DuBois redefined the “negro problem” in contemporary and cultural terms (Rakaka, 2007).

Alridge (1999) has applied the theoretical principles of DuBois and other African American theorists to establish an educational model for African American education. His DuBoisian-Based philosophy includes six tenets, which affirm the relevance of cultural identity and prioritize the needs of African American students in education (Alridge, 1999). The following principles provide the platform for Alridge's model: 1) African American-centered education, 2) Communal education, 3) Broad-based education, 4) Group leadership education, 5) Pan-Africanist education, and 6) Global education. African American-centered education teaches the history of Black America and celebrates the cultural achievements of unsung heroes of color (Alridge, 1999; McClaren, 2003). According to Alridge (1999), incorporating the contributions of Black characters in the retelling of American history promotes positive self-images for African Americans and supports an understanding of the social, political, and economic dynamics defining the Black experience. The second principle of Alridge's model, communal education, provides a "cohesive, community-based setting that is necessary to help African Americans maintain a historical and cultural base from which to navigate in the larger society" (Alridge, 1999). Thirdly, the broad-based education principle emphasizes an interdisciplinary approach to teaching and learning. By incorporating the natural sciences, social sciences, technology, and hard work into the curriculum, students of color are prepared to assume productive roles in society (Alridge, 1999; Rakaka, 2007).

To further explain broad-based education, Alridge (1999) uses DuBois' appraisal about the purpose of holistic education:

I believe that next to the founding of Negro colleges the most valuable addition to Negro education since the (Civil) war, has been, industrial training for

black boys. I insist that the object of all education is not to make men carpenters, it is to make carpenters men (DuBois, 1996, p.63).

Here, DuBois reveals his bias for a liberal education for African Americans. More than vocational training or scripted recitations, education for African Americans should engage the critical capacities of students (Castagno, 2009; Harris, 2006; Ladson-Billings and Tate, 1995; Lynn and Parker, 2006; McClaren, 2003; Tatum, 2007; Trevino, Harris, and Wallace, 2008). The fourth principle, Group leadership education, reflects the changing philosophy of DuBois regarding racial uplift. As Black society evolved and a middle class started to develop, DuBois revoked his “talented tenth” idea. He had believed that a powerful and educated few would help improve the social rank of the larger masses of Black people, however experience did not show success for this idea (Rakaka, 2007; Trevino, Harris and Wallace, 2008). The concept of group leadership education endorses DuBois’ “guiding hundredth” platform, which replaced the “talented tenth” approach to educating the elite. Group leadership education emphasizes the empowerment of all students of color, regardless of class or career interest (Alridge, 1999). The fifth principle is Pan-Africanist education for Black students. Pan-Africanist education seeks to unravel the miseducation about Africa that has fueled deep-seeded feelings of inferiority among Black people (Alridge, 1999). The intent is that understanding the reality of their African heritage may aid in negotiating the double consciousness some African Americans experience (Alridge, 1999). Sixth and lastly, global education broadens the perspectives for students of color and helps them contextualize problems both in their localized communities and abroad (Alridge, 1999). This ability to organize the affairs of the world and connect their culture to contemporary issues is an important part of the DuBoisian educational model for African Americans (Alridge, 1999; Dancy, 2010; Rakaka, 2007).

## Black Identity Development

More than a political distinction for a population group, Blackness may be seen as a state of mind for persons of color (Cross, 1991; Tatum, 2000). Children are born with particular racial characteristics but they do not inherit Black identity (Cross, 1991; Sanchez-Casal and Macdonald, 2009; Tatum, 2000). Blackness is acquired through much energy and intentional efforts. Cross (1991) contests that Blacks have been inappropriately depicted as “monadic” prior to his investigations of Black identity. The shared characteristics of persons of color rather than the processes involved in their life experiences have been utilized to define the Black identity. According to Cross (1991), understanding Blackness is achieved through the investigation of the processes of Black persons, not by the physical characteristics associated with those persons. Cross (1991) supports his argument with the words of Alain Locke (1925) from *The New Negro*:

In the last decade something beyond the guard of statistics has happened in the life of the American Negro and the three norms who have traditionally presided over the Negro problem have a challenge in their laps. The Sociologist, the Philanthropist, and the Race-leader are not unaware of the New Negro, but they are at a loss to account for him. He simply cannot be swathed in their formulae. For the younger generation is vibrant with a new psychology; the new spirit is awake in the masses, and under the very eyes of the professional observers is transforming what has been a perennial problem into the progressive phases of contemporary Negro life (189).

Ruth Horowitz (1939) published some of the first and most renowned works on the subject of Black racial identity (as cited in Cross, 1991). She believed that the ontology of the self could be traced through the formulation of social attitudes about race and gender. In her 1939 Racial Preference study, Horowitz comparatively examined the racial identities of Black and White children. Her findings revealed that Black children develop a consciousness of race earlier than White children. Horowitz identified a “wishful thinking”

in Black children that she interpreted as their desire to be White (as cited in Cross, 1991). Cross (1991) attests that the favoring of certain aspects of White culture by persons of color does not necessarily insinuate an anti-Black position. His criticism is that much of twentieth century research has used Horowitz's supposition about Black self-hatred as a standard condition (Cross, 1991). Though her methodology and findings have been rendered largely ineffective over the years, Horowitz's research provides a valuable frame for approaching the issue of race identification (Cross, 1991; Helms, 1990).

William Cross innovated a contemporary model for Black identity development (Cross, 1991; Helms, 1990; Wijeyesinghe and Jackson, 2001). Originally entitled the "Negro-to-Black conversion experience," this model was established in the 1970s to assist counselors who wished to enrich the psychology of African American clients (Cross, 1991). Cross' Model of Nigrescence outlines the process through which African Americans come regard themselves as Black. In advancing through the various stages, persons process their racial positionality, challenge existing internalizations, and grow to embody their Blackness (Cross, 1991). This paradigm accounts for factors such as self-concept, personal identities, and race group identities, and addresses the interplay of these dynamics in the cultivation of the Black self (Cross, 1991; Helms, 1990). Cross (1991) views the self-concept as a cumulative condition achieved after the self has incorporated personal ID and group ID into the psyche. The Model of Nigrescence includes five chronological phases that lead to the identity development of Black persons (Cross, 1991).

The Pre-Encounter stage is first of the phases involved in the process towards achieving Black identity (Cross, 1991). At this early stage, the person of color is blissfully unaware of the intricacies of his existence. The person of color rationalizes social realities

as endemic to the human experience (Cross, 1991; Helms, 1990). According to Cross (1991) persons of color actively participate in their own oppression during the pre-encounter phase. For example, the person of color accepts the White construct that social mobility is the result of personal talent and hard work (Helms, 1990); the person of color at the Pre-Encounter stage does not take any critical position in reference to this American standard (Helms, 1990). Persons of color in this early phase of development tend to think as the White majority think (Cross, 1991). Anti-Black sentiments and the use of stereotypes about Black people are common among persons at this stage (Cross, 1991).

The Encounter stage marks the point at which persons of color engage with an idea or experience that challenges their existing psychological framework (Cross, 1991; Helms, 1990; Wijeyesinghe and Jackson, 2001). Cross (1991) cites that an event or interaction awakens a sense within the self, causing persons of color to consider that they may in some way be a challenge to conventional race roles (Helms, 1990). Once persons of color engage with the stimuli, they are able to separate the psyche from its old self and escapes from their classical ideas and beliefs (Cross, 1991). This encounter stage opens the person of color to “conversion” (Cross, 1991). Cross (1991) shares the following scenario to exemplify the attitude during the Encounter stage of racial identity development:

I have a white education, a white accent, I conform to white middle-class standards in virtually every choice, from preferring Brooks Brothers oxford cloth to religiously clutching my gold cards as the tickets to the good life. I’m not really complaining about that. The world, even the white world, has been, if not good, then acceptable to me. But as I get older, I feel the world closing in. I feel that I failed to notice something, or that I have been deceived (199).

The character in the quotation, above, has been a cooperative citizen in the White world throughout the majority of the lifespan. Though a specific incident causing the shift in consciousness is not outlined in the commentary, this person has overcome oblivion, and in



alignment with the progression of Cross' model, appears to be moving towards critical self-introspection (Cross, 1991). Encounter stage may be the first acknowledgement of a Black identity (Cross, 1991; Helms, 1990; Tatum, 2000). At the end of this phase, persons are not yet Black but have made the decision to press forward in pursuit of that identity (Cross, 1991; Helms, 1990).

At the Immersion stage, new converts attempt to destroy their old ID and move towards a new self-identification (Cross, 1991). This phase marks a physical and psychological transition into Blackness. Persons at the Immersion stage integrate various images and ideas of the race group in their personal practices and behaviors. Persons of color act "black" based on the symbols sanctioned by White society (Cross, 1991; Wijeyesinghe and Jackson, 2001). Persons of color externally identify their race group orientation during this phase of development (Cross, 1991). Feelings that one must be either black or white dominate the thought process during Immersion (Cross, 1991; Helms, 1990). Persons of color may disdain and avoid any activities that might show any association with Whiteness (Cross, 1991). Stages three and four of the Nigrescence Model are often combined because of the closeness of the effects experienced during those phases. The period and progression between the Immersion and the Emersion phases is relatively indeterminable (Helms, 1990; Wijeyesinghe and Jackson, 2001). As persons of color move from Immersion to the Emersion stage, they develop positive, non-stereotyped conceptions of Black identity (Cross, 1991). Persons at this stage readily seek opportunities to experience facets of the Black community and gain greater emotional control as a result of this engagement (Cross, 1991; Helms, 1990; Tatum, 2007).

The fifth and final stage in Cross' (1991) Model of Nigrescence and Racial Identity Development is Internalization. During Internalization, persons of color blend their personal identities with the black identity that they have discovered throughout the developmental process (Helms, 1990; Wijeyesinghe and Jackson, 2001). Persons become real members of the black community at this stage (Cross, 1991). These persons are able to negotiate the white world order and demarcate their personal position as black members of the population (Helms, 1990). Internalization allows black persons to be conscious of racism while soundly reconnecting with White society (Cross, 1991). Once Internalization has been achieved, black persons no longer judge others based on group memberships; their renewed concern is identifying the commonalities associated with personhood (Cross, 1991). The acquisition of racial identity frees black persons to be individuals, members of their race group, as well as citizens in society (Helms, 1990).

Janet Helms (1990) built upon Cross' works and further adapted the Nigrescence Model for the field of counseling (Wijeyesinghe and Jackson, 2001). Among the revisions was the consideration of each stage as a particular worldview; this worldview provides a psychological frame through which persons make meaning of phenomena, process information, and interpret their existence (Helms, 1990). Helms (1990) also compared the Client-as-Problem (CAP) Model with the Nigrescence Model for Racial Identity Development (NRID). Like NRID, the CAP Model appeared in the 1970s as a strategy for counselors working with African American clients. This approach looks at behaviors exhibited by persons of color to identify the severity of the services needed in the counseling relationship (Helms, 1990). Three levels of Blackness were outlined in the model (i.e. Black, Colored, and Negro); theoretically, those who were classified as the most

“black” within the context of the model would be least open to the influences of white therapists (Helms, 1990). The CAP Model purported that black identity was developed out of consequence rather than through constructive efforts (Helms, 1990). Social pressures produced response behaviors in persons of color, according to the CAP perspective. Ultimately, this model was established for the benefit of practitioners and was not focused on the growth of Black clients (Helms, 1990).

### **Society and Identity Development**

Society has contributed to the cultivation of negative images of African American men (Boudon, 1974; Bynum et al, 2008; Cuyjet, 2006; Majors and Billson, 1992; Sharma, 2010). Many of these images portray black men possessing lower intelligence, as invisible fathers, irresponsible citizens, drug-addicts, criminals, and violent offenders against (white) women (Bynum et al, 2008; Cuyjet, 2006; Harper, 2009; Whiting, 2006). The culmination of these stereotypical associations has resulted in an ideology of inferiority across social, educational, economic, and political spaces (Bynum et al, 2008; Harper, 2009). Majors and Billson (1992) attest that African American men are involved in a constant struggle for status as citizens. According to their perspective, black men operate as strangers to American society and as outliers to the environments in which they live (Majors and Billson, 1992).

In light of the negative media about African American men, Harper (2009) traces the genealogy of ‘the N-word’ throughout African American history. Derived from the Latin term for the color ‘black,’ deCoy (1967) regards the N-word as a means of insult, categorization, and identity among African Americans throughout the last two centuries (as cited in Harper, 2009). In his article, “Niggers No More: A Critical Race Counternarrative on

Black Male Student Achievement at Predominantly White Colleges and Universities,” Harper (2009) establishes evidence of the academic successes of African American college students through the use of counternarratives. He argues that educational research generally reports on the failures of African American males in school, and through this bias, generalizes a greater phenomenon (Bonner et al, 2008; Graham and Anderson, 2008; Harper, 2009). For Harper (2009), the emphasis on poor academic performance in education research exacerbates the problem for Black men by tainting the attitudes of researchers and slanting the outcomes of their findings (Dancy, 2010; Tatum, 2007). Jenkins (2006) states:

On one hand, the society espouses rhetoric of concern and desire to elevate black males, but on the other hand, practices a policy of oppression, prejudice, and disregard. Put differently, the experience of the black man in America seems to be one in which he is called ‘mister’, but is treated with a ‘niggardly’ regard. And the result is the positioning of black males at the lower rungs of society and their experiencing underachievement in almost all aspects of life (p. 127) (as cited in Harper, 2009).

### **Identity and Education**

Like Harper (2009), other scholars in education contest that schools contribute negatively towards the identity development of African American males (Jackson and Moore, 2008; Ladson-Billings, 2005; McLaren and Kincheloe, 2007; Harper, 2010; Lee, 1996; Noguera, 2003; Ross, 2009; Tatum, 2007). The basis for argument concerning the impact of education on the psychology of African American males may be grounded in the philosophy of Louis Althusser (1971) in regards to power and state apparatuses. In his framework, Althusser (1971) identifies two mechanisms for social control by the state: repressive and ideological apparatuses. Firstly, repressive state organizations execute power through legal, political, and physical methods. These legal entities include the

national military, prison systems, and other official, authoritarian forces within society (Althusser, 1971). African American men are no strangers to the arms of repressive state organizations (Noguera, 2003). Trend data speculate that one in three Black men will be imprisoned at some point during their lifetimes (Terry, 2010). Clarence Page, contributing writer for the *Chicago Tribune*, stated the following about the familiarity of African American men and the penal system:

There are now more black men behind bars in America than in its colleges and universities. So says the Justice Policy institute, a Washington-based research center, which found a black inmate population explosion over the past two decades, an era of booming prison construction and get-tough-anti-crime legislation. In 1980 there were three times more black men enrolled in college and universities (463,700) than in prisons (143,000), the study said. By 2000, black male numbers grew to 791,600 in prison, but only to 603,032 on campus. Although the two groups are not directly comparable, since the college figures count a narrower student-age population, the numbers do dramatize a disturbing trend (2002) (as cited in Cuyjet, 2006).

Althusser's second mechanism of control by the state involves ideological apparatuses. Ideological state apparatuses are directly relevant to identity politics in education because schools are among the chief examples of these types of organizations (Althusser, 1971; Lopez, 2003; Mahalik, Martin, and Wan, 2006; McLaren and Munoz, 2002). Based on Althusser's (1971) definition, ideological state apparatuses dictate social authority through hegemony or the process through which the population absorbs, internalizes, and accepts the dominant discourse as reality. Althusser (1971) states that citizens live in a natural status of ignorance beneath an ideology that underwrites all human activity. According to Althusser (1971), ideological state apparatuses generate an atmosphere of unawareness, making it difficult for the population to see a clear picture of reality. As a result, those who engage with these apparatuses are confined within an engulfing ideological environment (Althusser, 1971).

McLaren and Munoz (2000) offer an Althusserian interpretation of the processes of teaching and learning in American education. They regard education as an ideological state apparatus, arguing that its mechanized practices, racist pedagogy, and misinterpretation of difference impress the discourse of oppression upon the minds of students (McLaren and Munoz, 2000; Ross, 2009; Sigelman and Tuch, 1997; Solorzano, 1997). Most CR scholars in education critique schools as the manufacturers of white, middle-class values (Bell, 1988; Delpit, 2006; McLaren and Kincheloe, 2007; McLaren and Munoz, 2000; Solorzano, 1997; Solorzano, Ceja, and Yosso, 2000; Tatum, 2007). Scholars who support a subjective position on epistemology believe schools endanger identities of persons of color by reestablishing and recycling social inequalities (Dixson and Rousseau, 2006; Ladson-Billings, 1997; Ladson-Billings and Tate, 1995; Harper, 2009; Noguera, 2003; Solorzano, 1997; Solorzano, Ceja, and Yosso, 2000; Scheurich and Young, 1997). The processes, practices, and routines of schooling impact the cultivation of academic identities among African American males (Noguera, 2003).

Sanchez-Casal and McDonald (2009) address issues of identity, race, and democracy in American education and relate the effects of these concepts to students of color. Their research was based around equal access to education resources between white students and students of color. At the time of their study, there was a 20% margin separating the graduation rates of white and black college students, with white students graduating at the highest rate (Sanchez-Casal and McDonald, 2009). The attrition rate of students of color is two to three times greater than the white student rate in college (National Center for Education Statistics, 2011). Sanchez-Casal and McDonald (2009) cite what they refer to as “critical access” as the root cause of this phenomenon. According to their definition,

establishing critical access involves “creating academic worlds and campus communities that are responsive to the pervasiveness of white privilege, and that transform all areas of educational life in ways that acknowledge, support and develop the intellect and full humanity of students of color” (p. 12) (Sanchez-Casal and McDonald, 2009). The following components are a part of their critical access platform for colleges and universities:

- 1) Culturally relevant curricula that is centered upon multicultural, multiethnic, and multiracial epistemologies;
- 2) Pedagogies that acknowledge racial identity and accommodate for the social position of minority students among the white majority on campus;
- 3) Faculty who hold consistent expectations for all students, regardless of race;
- 4) Equality of choice in academic fields of study;
- 5) Culturally sensitive and antiracist advising;
- 6) Commitment to the equal protection of all students by university administrators and campus safety officers;
- 7) Desegregated residential options that offer safety, privacy, and quality amenities to all students; and
- 8) A variety of extracurricular services and opportunities, which support the economic and social advancement of all students after graduation (Sanchez-Casal and McDonald, 2009).

According to CRT scholars, schools are the production centers of cultural norms and act as epicenters for the adaptation of behaviors regarded as socially acceptable (Boudon, 1974; Dixon and Rousseau, 2006; Ladson-Billings, 2000; McLaren and Kincheloe, 2007; McLaren and Munoz, 2000; Noguera, 2003; Venzant Chambers and McCready, 2011; Ross,

2009; Solorzano and Yosso, 2002). More often than not, these norms and behaviors do not reflect the cultures of persons of color (Bailey and Moore, 2004; Degaldo Bernal, 2002; Ladson-Billings, 1997; Ladson-Billings, 2005; Ladson-Billings and Tate, 1995; Tatum, 1997; Tatum, 2007; Venzant Chambers and McCready, 2011; Yosso, 2005). Levinson, Foley, and Holland (1996) contend, “student identity formation within school is a kind of social practice and cultural production which both responds to, and simultaneously constitutes, movements, structures, and discourses beyond school” (p. 12) (as cited in Noguera, 2003). For a plurality of students, school is the place where they first distinguish social differences and come to understand the meaning of race (Jackson and Moore, 2008; Noguera, 2003; Spencer, Noll, Solzofus, and Harpalani, 2001; Ladson-Billings, 2000; Tatum, 1997; Venzant Chambers and McCready, 2011; Whiting, 2009; Yan 2000).

Lee (1996) addresses the challenges that schools present against the development of intellectual identity and academic confidence in black males; he argues that schools are responsible for a “stifling of achievement, aspiration, and pride” in African American boys (p. 5) (as cited in Bonner et al, 2008). Various studies have reported that Black males suffer psychologically on campuses where their cultural values and racial identities are not appreciated (Abraham and Jacobs, 1990; Bailey and Bradbury-Bailey, 2004; Bailey and Moore, 2004; Campbell and Flemming, 2000; Cuyjet, 2006; Mahalik et al, 2006; Noguera, 2003; Ross, 2009; Sharma, 2010; Tinto, 2008). Whiting (2006) cites a trend of disengagement as African American males move through the educational system. According to his analysis, poorly developed academic identities may be at the root of this phenomenon (Whiting, 2006). Fries-Britt (1997) outlines negative forces in American society and education that undermine the affirmation of Black male identity:



The images of black men in our society often confine them to environments shaped by drugs, crime, athletics, and academic failure. In education, we have contributed to this negative portrait by the disproportionate amount of research that emphasizes remediation and disadvantage (p. 65) (as cited in Harper, 2006).

Data reported by the National Center for Education Statistics (2001) indicates that African American males are overrepresented in areas of school suspensions, expulsions, and enrollments in special education programs (Bailey and Bradbury-Bailey, 2010; Bali and Valentina, 2011; Graham and Anderson, 2008; Harper 2010; Jackson and Moore, 2008; Noguera, 2003; Terry, 2010; Venzant Chambers and McCready, 2011). In fact, black males are more likely than students from any other demographic group to be suspended or expelled from school (Noguera, 2003). African American males find themselves classified as having learning disabilities more frequently than white males (Bonner et al, 2008; Eisele et al, 2011; Kao and Thompson, 2003). There is a proportionately significant underrepresentation of black males in gifted education programs (Bailey and Bradbury-Bailey, 2007; Bonner et al, 2008; Graham and Anderson, 2008; Harper, 2009; Whiting, 2006). In disciplines like mathematics and science, where males typically show the strongest capacities, black males perform lower than their female counterparts (National Center for Education Statistics, 2011; Noguera, 2003; Terry, 2010). Socioeconomic status does not seem to flip the script for African American males, either. When compared to others in the same socioeconomic range, black males still fall behind other populations across all areas of academic achievement (Bailey and Bradbury-Bailey, 2010; National Center for Education Statistics, 2011; Noguera, 2003).

### **Impact of Stereotypes on African American Education**

Though the data speak loudly to disparities separating black males from other demographic groups, a growing number of scholars believe that too much emphasis is placed on the negative images of African American male students in educational research (Bailey and Bradbury-Bailey, 2007; Bonner and Bailey, 2006; Bonner et al, 2008; Fenning and Rose, 2007; Harper, 2009; hooks, 2004; Jackson and Moore, 2008; Ladson-Billings, 2005; Lynn and Parker, 2006; Reynolds, 2010; Tatum, 2007; Whiting, 2006). The majority of the research on black males has focused on their overrepresentation in remedial and special education programs, disciplinary problems, and disproportionate high school dropout rates (Allen, 2010; Bonner et al, 2008; Harper, 2009; Whiting, 2006). The data suggest that African American males are two-to-five times more likely to be suspended than white males and are subject to this disciplinary measure at younger ages than their white counterparts (Ladson-Billings, 1997). Finding solutions to the educational issues for Black males has not prevailed as the most popular practice in the literature (Bonner and Bailey, 2006; Bonner et al, 2008; Harper, 2009); substandard performance outcomes are common themes in the scholarship on African American men in education (Fenning and Rose, 2007; Graham and Anderson, 2008; Ladson-Billings, 1997; Tatum, 2007; Tinto, 2008; Whiting, 2006). Research on African American males in education most frequently focuses on evidences of general underachievement (Bailey and Bradbury-Bailey, 2007; Harper, 2009; Whiting, 2009).

The perpetuation of popular stereotypes influences the attitudes, identities, and decisions of Black males in regards to their own academic identities (Bonner et al, 2008; Eisele et al, 2011; Harper, 2009; hooks, 2004; Levinson et al, 1996; Noguera, 2003; Tatum, 2007). Tatum (2007) identifies “stereotype threat” as an ideological issue that actualizes in

the day-to-day affairs of students of color. For some African Americans, the fear of fulfilling the stereotypes associated with other members of their race group affects their classroom behavior (Bailey and Moore, 2004; Harper, 2009; hooks, 2004; Majors and Billson, 1992; Tatum, 2007). Profiling and categorizing by schoolteachers and administrators is a familiar predicament for many African American youth (Cuyjet, 1997; Harper, 2009; McClaren and Munoz, 2000; Roach, 2001; Tatum, 1997). Studies have demonstrated that this fear of stereotype fulfillment negatively impacts learning, test-taking skills achievement in high stakes classroom experiences, such as mathematics and science courses (Ladson-Billings, 1997; Majors and Billson, 1992; Palmer et al, 2004; Tatum, 2007).

The low numbers of black men enrolled in colleges and universities help confirm stereotypical images and give rise to negative misrepresentations of this cohort (Sigelman and Tuch, 1997). Noguera (2003) summarizes the common conceptions about and among African American males in schools:

For African American males, who are more likely than any other group to be subjected to negative forms of treatment in school, the message is clear: Individuals of their race and gender may excel in sports, but not in math or history. The location of Black males within school, in remedial classes or waiting for punishment outside the principal's office, and the roles they perform within school suggest that they are good at playing basketball or rapping, but debating, writing for the school newspaper, or participating in the science club are strictly out of bounds. Such activities are out of bounds not just because Black males may perceive them as being inconsistent with who they think they are but also because there simply are not enough examples of individuals who manage to participate in such activities without compromising their sense of self (p. 445).

Ogbu (1990) contends that African Americans adapt self-destructive behaviors as a result of generations of oppression. His idea suggests that black students may fail to speak out in class, complete assigned tasks, or study adequately for exams, because regardless of their efforts, they feel as though they will never excel above their white classmates (Ogbu, 1990).

Because academic success behaviors have been most commonly associated with White students, some African American males will forgo scholastic achievement to avoid accusations of “acting white” (hooks, 2004; Lee and Bailey, 1999; Majors and Billson, 1992; Noguera, 2003; Ogbu, 1990).

Personal image and social acceptance are highly prized among many African American males (Campbell and Flemming, 2000; Harper, 2010; Isom, 2007; Lee, 1996; Lee and Bailey, 1999; Lee and Bailey, 2005; Majors and Billson, 1992; McWhorter, 2001; Spencer et al, 2001; Staples, 1982; Tatum, 1997; Whiting, 2006). Neal (2006) attests that Black men endure a distressing dilemma involving their existence among White men. White men overshadow African American men in levels of educational attainment, employment, income, and other areas of the political economy (Bynum et al, Dancy, 2010; Isom, 2007; Neal, 2006; Noguera, 2003). Civic involvement, social affluence, wealth, and head-of-house status are characteristics commonly associated with white masculine identity (Lee and Bailey, 1999). Since a number are unable to achieve White prescriptions of economic success and social status, some African American men turn to alternative guises in order to demonstrate their manhood (hooks, 2004; Lee and Bailey, 1999; Majors and Billson, 1992; McWhorter, 2001). Majors and Billson (1992) outline a “cool pose” persona, which is commonly adapted by some African American men as they progress through adolescence. This persona involves distinctive costuming, accessorizing, ritual behavior, and different tools of language (Lee and Bailey 1999; Majors and Billson, 1992). The interplay of the various characteristics of “cool pose” juxtaposes the rigid social expectations of the white majority and confirms a distinctive black masculine ID (Lee and Bailey, 1999; Majors and Billson, 1992; Tatum, 1997). According to Cuyjet (2006), these

compensatory behaviors of black males often fuel stereotypes and foster discord with white society.

Masculinity and identity are conceptually entwined in much of the literature about African American males. The black cultural values of interdependence and community may not be compatible with individualism and autonomy, which have been conventionally associated with white masculinity (Mahalik, Pierre, and Wan, 2006; Neal, 2006). In their research on racial identity and masculinity in black males, Mahalik et al (2006) examined these two aspects of African American male identity in join context. The researchers hypothesized that how one feels about “being black” and “being a man” would have significant effects on self-esteem and psychological distress (Mahalik et al, 2006; McWhorter, 2001). Their findings indicated that race group membership was important towards the internalization of personal identity. The participants who rejected their African American cultural ID experienced greater psychological distress than those who embraced their black masculinities (Mahalik et al, 2006).

The level of racial identity development among African American males has been shown to impact their academic success in former studies (Campbell and Fleming, 2000; Cross, 1971; Helms, 1991; Ogbu, 1978). To some African American males, success in one area, such as academic performance or career, may have negative consequences in other personal areas of their lives (Campbell and Fleming, 2000). For example, the fear of rejection by particular peer or social groups may inhibit their desire to achieve in school, especially if achievement is not associated with masculinity, community expectations, and the like (hooks, 2004; Majors and Billson, 1992; Staples, 1982). Ogbu (1978) addresses the racial sense of self and the psychological stressors that accompany achievement

orientations among African American males (as cited in Campbell and Fleming, 2000). In their study on racial ID and academic performance among African American male college students, Campbell and Fleming (2000) investigated success avoidance behaviors among Black men. They found that black men with weaker racial identities showed a greater a fear of succeeding in college than did those with well developed racial IDs (Campbell and Fleming, 2000).

Differences in the racial identities of students and teachers have been shown to affect the academic engagement of black males (Bianco et al, 2011; Brown, 2009; Harper, 2009; Harper and Nichols, 2008; Hughes, 2011; Keck-Staley, 2010; Schellenberg and Grothaus, 2009; Ross, 2009; Tatum, 1997; Watson et al, 2002; Wiggan, 2008). Tatum (2007) highlights the challenges African American males face as result of cultural incongruence on campus (Allen, 2010; Ladson-Billings, 1997; Bianco, Leech, and Mitchell, 2011). The manner in which white teachers address their pupils, guide instruction, and exercise discipline in the classroom has meaningful implications for the participatory identities of African American males (Bailey and Moore, 2004; Eisele, Debra, and Renick Thomson, 2011; Graham and Anderson, 2008; Howard, 2001; Tatum, 2007). Directives and other instructional queues delivered by white teachers to students of color have been seen as ineffective in certain instances (Noguera, 2003; Tatum, 1997). In his 2001 survey of high school students, Noguera (2003) found that among female peers and those from other race groups, African American males believed that their teachers cared the least about them and their academic success (p. 448). Teacher attitudes have been identified as significant contributors to the educational success of African American students (Bianco et al, 2011; Eisele et al, 2011; Green et al, 2009; Howard, 2001; Tatum, 1997).

## **Extracurricular Involvement and Academic Success in College**

Active engagement with campus life has been correlated with the success of African American men in college (Astin, 1999; Cuyjet, 1997; Cuyjet, 2004; Green, Andre, Glasson, George, 2009; Kimbrough et al, 1996; Kuh, Palmer, and Kish, 2003; Ladson-Billings, 2011; McClure, 2006; Pascarella and Terenzi, 1991; Tatum, 1997; Taylor and Howard-Hamilton, 1995; Tinto, 1993; Upcraft et al, 2004). Love (1993) attests that African Americans suffer higher levels of isolation and estrangement as consequences of enrolling at PWIs. Campus involvement may help students of color overcome feelings of isolationism that minority students may experience at PWIs (Cuyjet, 1997; Harper and Wolley, 2002; Watson et al, 2002). Taylor and Howard-Hamilton (1995) conducted a study of African American college students based on Cross' Nigrescence Model of racial identity development. The researchers discovered that Black students who were involved in various elements of extracurricular campus life at PWIs were most often found at the 3<sup>rd</sup> and 4<sup>th</sup> levels of the Nigrescence Model, whereas the African American students who were least involved in activities outside of their academic courses showed statuses at the pre-encounter (first) level (Taylor and Howard-Hamilton, 1995). These findings indicate that involvement outside of the classroom may hold valuable developmental benefits for black students, as it helps them experience a broader community than they may have previously encountered (Taylor and Howard-Hamilton, 1995). Cuyjet (2004) cites a stronger self-esteem and sharply defined racial identification among men involved in campus activities than among those who are not members of student organizations. Positive self-esteem and a well-developed racial identity, which are often regarded as byproducts of campus

involvement, have been shown to improve the psychological health of African American males in college (Bynum, Best, Barnes, and Burton, 2008; Cuyjet, 2006).

Involvement in various curricular and extracurricular activities has been associated with the academic success of African American men in college (Cuyjet, 2006; Green et al, 2009; Kimbrough et al, 1996; Kuh et al, 2003; McClure, 2006; Pascarella and Terenzini, 1991; Tatum, 2007; Tinto, 2008). Kuh, Palmer and Kish (2003) emphasize the importance of campus involvement for African American students. Per their findings, involvement in a diverse array of activities throughout the undergraduate tenure enhances the learning process, improves knowledge acquisition, and supports student development (Kuh et al, 2003). Pascarella and Terenzini (1991) highlight numerous benefits associated with student involvement in college. Among the profitable outcomes of involvement are intellectual, moral, and ethical development, college adjustment, greater self-awareness and esteem, and higher persistence rates for undergraduate students (Astin, 1993; Kuh et al, 2003; Pascarella and Terenzini, 1991; Tinto, 1993; Upcraft et al, 2004). According to their studies, the more time and energy students put into their extracurricular experiences, the greater the gains in and beyond the undergraduate level (Pascarella and Terenzi, 1991). The optimization of extracurricular opportunities by students of color has been shown to have an important impact on learning (Green, Andre, Glasson, George, 2009; Kuh et al, 2003; Pascarella and Terenzini, 1991; Tinto, 1993; Watson et al, 2002).

Black students at PWIs tend to be less involved in campus activities than their White counterparts (Harvey, Harvey, and King, 2004; McClure, 2006; Tinto, 1987; Watson et al, 2002). Harper and Wolley (2002) assert that black men at PWIs are less involved in campus organizations because of four primary reasons. Firstly, the small number of Black



males in leadership positions within student organizations discourages the involvement of other black males (Harper and Wolley, 2002; Tatum, 1997). White students typically dominate the rosters of campus organizations and are highly visible in student leadership positions at PWIs (Harper and Wolley, 2002; Harvey et al, 2004; Pascarella and Terenzi, 1991; Tinto, 1987; Watson et al, 2002). The invisibility of African Americans in campus affairs often serves as an obstacle towards increasing black student participation (Douglas, 1998; Harvey et al, 2004; Tatum, 2007). Their second supposition relates to the gender stereotypes of different activities (Harper and Wolley, 2002). Black men are more insistent upon engaging in campus activities that are categorized as masculine, and therefore generally avoid participation with activities that may be characterized as feminine (Cuyjet, 2006; Harper and Wolley, 2002; Neal, 2006). Activities such as video games, heterosexual dating, weight-training, and sports may appeal more to black men in college than do the behaviors aligned with participation in particular student organizations (Harper and Wolley, 2002). The third rationale for the underrepresentation of African American males in extracurricular activities results from a lack of institutional efforts to attract them to campus organizations (Harper and Wolley, 2002). Watson et al (2002) highlight the impact that black administrators and faculty have on students of color in regards to the strength of their connection with the campus community, levels of academic engagement, and participation in student life on campus. Since, in many cases, meager efforts draw men of color into campus activities, relatively few participate; as a result of this phenomenon, African American men are largely absent from racially heterogeneous organizations (Cuyjet, 1997; Harvey et al, 2004; Kimbrough, Wallace, and Watson, 1996; Tinto, 1987; Watson et al, 2002). Fourthly, Harper and Wolley (2002) attest that the racialized nature of

organizations, events, and activities acts as a deterrent to black male student involvement. Exclusivity, Eurocentricism, and the absence of a diverse social agenda on campus may push black men further from the resources available to them in college (Harper, 2009; Harper & Wolley, 2002; Watson et al, 2002).

Family involvement has been cited as a pivotal component in the academic success of African American students (Bailey and Bradbury-Bailey, 2010; Edwards, Pleasants, and Franklin, 1999; Ladson-Billings, 2011; Mandara, 2006; Smith and Hausfaus, 1998; Smith et al, 2006; Tatum, 1997; Tatum, 2000; Tatum, 2007; Yan, 2000; Yosso, 2005). Familial support is an important arm of defense for African Americans (Delpit, 1995). In many cases, the family unit is the only shield covering them from the forces of oppression, which suppress their educational opportunities (Delpit, 1995; Mandara, 2006; Neal, 2006; Tatum, 2007). Traditional approaches towards integrating the parents of African American students into the school community have not been widely successful (Edwards et al, 1999; Gollnick and Chin, 2006; Tatum, 2000). Differences and perceived differences between parents and the school faculty and administrators have caused strain between the two groups (Bailey and Bradbury-Bailey, 2010). Knowledge of the students' experiences, understanding their family units, and appreciating the communities from which they rise are important factors in helping build a success system for African American students (Tatum, 2007; Yan 2000). Collaborative approaches among their families, school officials, and their communities have shown positive results in the retention African American male students (Gollnick and Chinn, 2006; Tatum, 2007).

The final section in this review of literature includes scholarship about the STEM

education of African American males. I connect the contemporary relevance of STEM to the global economy and highlight the status of African American men in these academic areas.

### **STEM Education and African American Males**

In the final section of the review, I present the scholarship about the science and mathematics education of African American males. I present general information about STEM programs in the academy, the global economic implications, and the status of minorities in these disciplines. Since my study is centered upon understanding the success behaviors, practices, and/or mechanisms for a group of African American males, I focus the review on effective strategies for black males in STEM education. Specifically, I will highlight the existing literature about the development of confidence in science and mathematics education during early school experiences and how this foundation is relevant in determining the success of black males in STEM disciplines at the post-secondary level. Factors that have been hypothesized as positive contributors to success such as academic preparedness, family involvement, scholar identities, faculty interaction, connection to the institution, and community on campus are appraised (Brown et al, 2009; Harper, 2010; Solorzano et al, 2000; Tinto, 1993). The research on issues specific to the success of Black males in math and science at PWIs is also addressed in this examination of pertinent literature.

Increasing the number of minorities in STEM careers holds significant implications for the future of the Nation. The demand for an adaptive workforce has accompanied the rise of a knowledge-based economy (Harper, 2010; Palmer et al, 2010; Terry, 2010). The educational and professional skill sets required for economic prominence differ from the capacities of the industrial economic era (Tozer et al, 2009). Critics argue that American

education has not evolved to meet the changing needs of a new global market (Palmer et al, 2010; Wagner, 2006). Economists predict that continued and increased competitiveness in the global market is dependent upon the future investment of human resource capital in STEM (Palmer et al, 2010). Science, technology, engineering, and mathematics fields are considered to be the most critical areas driving economic growth and advancement in the world (Callan, 2006; Palmer et al, 2010; Terry, 2010; Wagner, 2006). The growth of STEM occupations has been estimated at an increase of 26 percent from 2002 to 2012, but the United States has not produced adequate candidates to meet this swelling need (National Center for Education Statistics, 2009; SEF, 2005; Tyson et al, 2010; Washington, 2011). The Science Education Foundation (SEF) reports a waning number of STEM graduates from American colleges and universities (2005); this decline may be related to a growing trend of non-completion among college-eligible Americans in all fields (Callan, 2006; Palmer et al, 2010).

Callan (2006) reports a general decline in the overall number of U.S. students who enroll and graduate in higher education (as cited in Palmer et al, 2010). Though America once boasted the greatest percentage of students completing college degrees, this statistic is no longer true; per data reflected in the 2006 assessment conducted by the Economic Cooperation and Development (OECD) organization, the U.S. ranks 15<sup>th</sup> in the enrollment and graduation rates of students (Palmer et al, 2010). While the dynamics regarding college completion in the U.S. have shown a decline for all students, this phenomenon has been particularly evident among African American males (Callan, 2006). African Americans compose 12 percent of the national population and only 11 percent of students in higher education (Washington, 2011). Less than eight percent of the bachelor's degrees conferred

in the U.S. between 2004 and 2007 were awarded to African American men (National Center for Education Statistics, 2008). Less than one-third of the African American male students graduate college within a six-year margin (Harper, 2009; National Center for Education Statistics, 2009). Over a 30-year period spanning from 1976 to 2006, the graduation rates of African American males floated between 4.7 and 7.6 percent of all students who earned college degrees (Terry, 2010).

Black males pursue STEM degrees at a significantly lower rate than other populations of students (National Center for Education Statistics, 2009; Tyson et al, 2007). The number of black males who earn degrees in STEM fields may be reported in single-digit statistics (Harper, 2010; Palmer et al, 2010; Strayhorn, 2008; Washington, 2011). In 2009, African American males earned only seven percent of all STEM undergraduate degrees awarded in the U.S.; in the same year, black men received four percent of master's degrees and two percent of terminal degrees in STEM disciplines (National Center for Education Statistics, 2009). In their study of Black student persistence in college, Elliot, Strenta, Matier and Scott (1995) discovered that only one third of African Americans who had declared majors in STEM completed their degrees (as cited in Green et al, 2009).

Jackson, Moore, and Leon (2010) purport that increasing the number of black male graduates in STEM programs will help both the domestic and global economies. If the growth projections for the American population evolve as predicted, racial majorities in the United States will shift over the next several decades (Terry, 2010). Persons who identify as White will fall behind persons of color (i.e. Asian, Black, and Hispanic populations) as the numeric minority (Palmer et al, 2010; Tyson et al, 2007). Given the potential for population swings and global economic power through STEM, Palmer et al (2010) and others urge

educators to recognize the imperativeness of improving mathematics and sciences education for African American students (Green et al, 2009; Harper, 2010; Tyson et al, 2010). Persons of color composed a collective 23 percent of the American population in the mid-1990s, however this group only represented 6 percent of the total STEM workforce (Tyson et al, 2007). In their study examining the science and mathematics course participation of public high school students in the State of Florida's Education System, Tyson et al (2007) discovered that students who completed calculus during their secondary school experiences were more likely to persist in STEM fields. Nearly 35 percent of the survey group who took calculus courses in high school continued their education and graduated from STEM programs at the university level (Tyson et al, 2007).

### **Factors Influencing STEM Participation of African American Males**

A variety of factors have been speculated as causes contributing to this failing phenomenon of black men in STEM. The following are suggested contributors to the attrition of African American men who pursue STEM degrees: weaker educational backgrounds (Green et al, 2009; Tatum, 2007); psychological distress (Cuyjet, 2006; Harper, 2009; Palmer et al, 2010; Smith et al, 2006; Tinto, 1993); adjustment issues (Harper, 2009; Palmer et al, 2010); lack of belonging (Harper, 2009; Tinto, 1993); institutional racism and discouraging academic environments (Harper, 2009; Ladson-Billings, 2011; Smith et al, 2006; Solorzano et al, 2000); inability to pay (Green et al, 2009); lack of acknowledgement or recognition (Harper, 2010; Reynolds, 2010; Tatum, 2007); disengagement of parents (Ladson-Billings, 1997; Yan, 2000); ineffective or insubstantial cultural capital (Bourdieu, 1977; Delpit, 1995; Ladson-Billings and Tate, 1995; McLaren, 2003; Tatum, 2007; Yosso, 2005); and the individualized nature of higher education

environments (Harper, 2009; Cuyjet, 2006; Tatum, 2007; Tinto, 1993). Researchers have identified other factors that deter some black men from pursuing STEM degrees (Harper, 2010; Palmer et al, 2010; Strayhorn, 2008). The stigma that STEM curriculums are too difficult may discourage the enrollment of African American men (Isom, 2007; Tyson et al, 2007; Washington, 2011). Early school experiences may lead African American males to internalize self-doubt or other negative ideas about their intellectual capacities; these identities often lead to self-defeating behaviors and keep them from optimizing various educational and social opportunities that arise (Allen, 2010; Bailey and Moore, 2004; Bianco et al, 2010; Bonner and Bailey, 2006; Delpit, 1995; Fenning and Rose, 2007; Freire, 2000; Isom, 2007; Jenkins, 2006; Ladson-Billings, 2011; Mahalik et al, 2006; McWhorter, 2001; Tatum, 1997). For African Americans from lower socio-economic backgrounds, the demand to earn money quickly often discourages enrollment in college and in STEM academic programs (Green et al, 2009). The academic workload and assumptions about co-curricular requirements may deter students from pursuing STEM (Washington, 2011). Students who hold jobs as a means of paying their college tuition may elect alternate academic programs, which appear to be less rigorous and require less of a time commitment (Green et al, 2009; Washington, 2011). The lack of role models and African American teachers in STEM education is widely cited as a deterrent for black men who have aptitude for these disciplines (Bianco et al, 2011; Brown, 2009; Howard, 2001; Noguera, 2003).

Teachers of color have been regarded as highly important characters in the STEM education of African American males across all levels of schooling (Abraham and Jacobs, 1990; Allen, 2010; Bianco et al, 2011; Brown, 2009; Cuyjet, 1997; Howard, 2001; Kayes and

Singley, 2005; Kimbrough et al, 1996; Love, 1993; Noguera, 2003; Picower, 2009; Reid et al, 2008; Roach, 2001; Tatum, 2001; Tinto, 1987; Washington, 2011; Wiggan, 2007). Faculty members of color have been particularly in science and mathematics classrooms (Bianco et al, 2011; Ladson-Billings 1997; Ladson-Billings, 2011). Bonner and Bailey (2006) investigated the effects of teachers' expectations on African American males and discovered that the low expectations of their primary and secondary school teachers tend to follow them into their adult lives (as cited in Harper, 2009). For black males who do enroll in college, this phenomenon may have destructive psychological and self-defeating effects (Bailey and Moore, 2004; Bonner and Bailey, 2006; Cuyjet, 2006; Harper, 2009). Black male students attending PWIs have shown greater academic success in situations where they have cultivated strong relationships with same-race faculty and peers (Harper, 2009; Strayhorn, 2008; Cuyjet, 1997). The number of male African American teachers in schools is strikingly low in comparison to other race groups (Bianco et al, 2011; Harper et al, 2009). Lewis (2006) reports that African American males compose only one percent of the nation's teaching population (as cited in Bianco et al, 2011). Numerous scholars agree that increasing the number of male African American faculty at colleges and universities may improve the educational outcomes of students of color (Allen, 2010; Bean, 2005; Bianco et al, 2011; Feagin, 2002; Howard, 2001; Kayes and Singley, 2005; Ladson-Billings, 2011; Picower, 2009; Roach, 2001; Tatum, 2007; Tinto, 1993).

Bianco et al (2011) refer to the "leaky pipeline" that African American men must travel en route to academic success. Brown and Butty (1999) describe this problematic pathway in the following manner:

The relationship between African American students and African American male teachers is a symbiotic one – that is, the number of African American males



who go into teaching is influenced by the number of African American males who attend college, which is in turn influenced by the number of African American high school graduates and so on. Unfortunately, the pipeline that moves African American students from public school to public school teaching is a leaky one (p. 281) (as cited in Bianco et al, 2011).

African American faculty members serve as role models and academic mentors, while providing social support for black students at predominantly white campuses (Brown, 2009; Cuyjet, 1997; Harper, 2009; Tatum, 2007; Tinto, 2008). Offering insight on issues ranging from personal relationships to professional careers, black faculty members provide valuable assistance to students of color (Bianco et al, 2011; Hawkins, 2011; Kayes and Singley, 2005). In the study of African American male students' perceptions about teaching as a career by Bianco et al (2011), participants who had teachers from their same racial background reported stronger interests in teaching. Non-profit initiatives such as the Teacher Cadet Program and Pathways2Teaching have been established to recruit students of color for professions in education as a means of diversifying the teaching field in the future (Bianco et al, 2011).

Black faculty help students of color negotiate institutional racism and minimize racial battle fatigue (RBF) (Harper, 2009; Hughes and Giles, 2010; Smith, Allen, and Danley, 2007; Smith et al, 2006). According to Smith et al (2006), RBF is a condition similar to post-traumatic stress in soldiers of war, which includes physical ailments as consequences of the psychological distress of racism (as cited in Hughes and Giles, 2010). The active engagement of African American faculty members helps foster the development of academic confidence, self-efficacy, and stronger racial identities among students of color (Abraham and Jacobs, 1990; Bianco et al, 2011; Cuyjet, 2006; Feagin, 2002; Howard, 2001; Hughes, 2011; Russell and Atwater, 2004; Wiggan, 2007).

Many of the hypotheses that seek to describe the shortage of African American college men in STEM programs employ deficit theories to explain the underrepresentation of black students (Harper, 2010; Palmer et al, 2010; Whiting, 2009; Terry, 2010; Yosso, 2005). Harper (2010) outlines the following deficit-based theories about African American male persistence in STEM, which have been popularized in academic research:

- 1) Attribution theory (Weiner, 1985): Attribution theory emphasizes the obstacles and interferences that students of color encounter (as cited in Harper, 2010).
- 2) Campus ecology theories (Stranger and Banning, 2001): Campus ecology theories in education focus on academic settings dominated by White students and the challenges that students of color face as both numeric and racial minorities in these academic environments (as cited in Harper, 2010).
- 3) Critical Race theory (Degaldo and Stefancic, 2000; Delpit, 2005; Dixson and Rousseau, 2005; Harper, 2009; Ladson-Billings, 2005; Matsuda et al, 1993; Reynolds, 2010; Solorzano et al, 2000; Solorzano and Yosso, 2002; Tatum, 1997; Yosso, 2005): CRT and CRT in education have been discussed at great length throughout this review of literature. CRT associates the underachievement of racial and ethnic minorities with social inequality, which results from the racist information, ideologies, and institutions that are interwoven into society (as cited in Harper, 2010).
- 4) Cultural and social capital theories (Bourdieu and Passeron, 1977): These theories contend that students of color lack the necessary cultural and social tools required for success in the white world, and that the capital owned by

- communities of color is not widely valuable or exchangeable in the classroom (as cited in Harper, 2010).
- 5) Possible selves theory (Oyserman, Grant, and Ager, 1995): The possible selves perspective involves self-concept and and futuristic components. According to this theory, possible selves are the identities that persons hope to embody in the future, as well as the identities they wish to avoid (as cited in Harper, 2010).
  - 6) Self-efficacy theory (Bandura, 1997): Bandura's theory of self-efficacy (1997) has been commonly applied to examine why students of color struggle academically (as cited in Harper, 2010).
  - 7) Stereotype threat theory (Steele, 1997): The theory of stereotype threat contends that racist labeling and stereotypes about the black community suppresses African American males from achieving academic success (as cited in Harper, 2010).
  - 8) Theories on the retention of college students (Cuyjet, 2006; Pascarella and Terenzini, 1991; Tinto, 1993): These theories investigate the plurality of factors that affect student persistence, including academic, social, psychological, economic, and institutional obstacles (as cited in Harper, 2010).

Harper (2010) responds to these theories about the inadequacies of students of color with an anti-deficit approach towards African American male college student success in STEM disciplines. Harper (2010) reframes the language through which questions about background fairness and persistence are frequently phrased. Using this anti-deficit inquiry model, Harper (2010) assessed 219 black male undergraduate students enrolled at 42 different institutions across 26 states in the U.S. Instead of emphasizing the aspects that

discouraged their academic success, the center of questioning was rooted in the incentives that motivated them to persist (Harper, 2010). The students in Harper's (2010) study specified that peer relationships and close engagement with STEM faculty were imperative to their academic success. These findings are consistent with the outcomes of other studies of African American men in STEM academic programs, which identify support networks as wielding a powerful impact on persistence (Campbell and Fleming, 2006; Green et al, 2009; Harper, 2010; Jackson et al, 2010; Pascarella and Terenzi, 1991; Pierre and Mahalik, 2006; Strayhorn, 2008; Tinto, 1993).

### **Critical Literacy and Pathways to Success in STEM**

Researchers believe that understanding the pathway to professional careers in STEM may help direct more minorities into these fields (Harper, 2010; Palmer et al, 2010; Terry, 2010). One of the key factors associated with the persistence of African American males in STEM correlates with the participation of African Americans in higher education, in general (Tyson et al, 2010). Less African American men are enrolled in college than any other racial group, and therefore fewer are available to pursue STEM degrees (National Center for Education Statistics, 2009; Tyson et al, 2010). Whiting (2006) outlines the importance of developing scholar identities among African American males during primary and secondary schooling in order to encourage their future participation in higher education. Harper (2010) focuses on the following three conduits in his research on an anti-deficit achievement framework for African American males in STEM: 1) K-12 school socialization and preparedness for college, 2) achievement in college, and 3) persistence in STEM after college. Harper (2010) contends that these three pathways serve important functions in pushing African American men towards STEM professions.

The first of these pathways that lead to futures in STEM involves the early educational experiences of African American males and the level to which their academic backgrounds prepare them for higher education (Harper, 2010). In Selman's (1980) study of African American middle school students, participants realized racial bias as early as elementary school and began thinking about fairness and race equity in education (as cited in Hughes, 2011). Culturally relevant teaching, anti-racist practices, and parental engagement have been shown to improve the academic climate for students of color (Ladson-Billings, 2000; Lopez, 2003; McClaren and Munoz, 2000; Solorzano and Yosso, 2002; Tatum, 1997; Yosso, 2005). The second pathway identified by Harper (2010) refers to the performance and persistence of African American men during their undergraduate experiences. Cuyjet (2006), Kimbrough et al (1996), Tinto (1993), and others have identified various challenges that black students encounter in college and have suggested mechanisms for supporting their success both inside and outside of the classroom (Feagin, 2002; Harper and Nichols, 2008; Kayes and Singley, 2005; Love, 1993; Palmer et al, 2010; Solorzano et al, 2000; Tatum, 2007; Watson et al, 2002). Strong relationships with peers and faculty of color, connection to the institution, and well-developed racial identity has been associated with higher achievement among African American males in college (Campbell and Fleming, 2000; Cuyjet, 2006; Degaldo, 2002; Green et al, 2009; Harper, 2009; Harper and Nichols, 2008; Pascarella and Terenzini, 1991; Roach, 2001; Solorzano and Yosso, 2002; Tinto, 1993; Tyson et al, 2007). Harper's (2010) third pathway involves the endurance of African American men in STEM careers. Census data (2005) reports an underrepresentation of African Americans in high-status occupations and a gross overrepresentation of African Americans in lower-status jobs (as cited in Hughes, 2011).

Critical literacy in mathematics and science has been identified as an essential pathway for black male students in STEM (Keck-Staley, 2010; Ladson-Billings, 1997; Terry, 2010; Tyson et al, 2010). Research indicates that mathematics competency is correlated with student experiences in mathematics courses during the formative years of adolescence (Keck-Staley, 2010; Ladson-Billings, 1997). Black students are less likely than white and Asian students to take advanced-level mathematics and science courses (Tyson et al, 2010); black students also tend to score less proficiently on standardized assessments in math and science (as cited in Tyson et al, 2010). Terry (2010) describes critical math literacy as an important adaptation towards improving the future opportunities of African American male students in STEM. According to his interpretation, dominant literacies in mathematics include the mathematical competencies that empower students to “do” advanced level math (Terry, 2010). Critical math literacies are described as skills and capacities that engage students in reflective analysis and build support for social justice (Ladson-Billings, 1995; Terry, 2010).

Engle and Conant (2002) explore the process through which students engage with mathematical concepts and acquire a genuine understanding of math. According to their analysis, students are able to ‘do math’ when they connect in-class mathematical exercises with their lives in the outside world (Engle and Conant, 2002; Ladson-Billings, 1997). When implemented inside the classroom, culturally relevant approaches help students internalize academic information and obtain meaning from the messages introduced by instructors (Ladson-Billings, 2011). Teachers who utilize student culture as constructs in conversations about the curricula promote student engagement and encourage student investment in the classroom community (Ladson-Billings, 1997; Ladson-Billings, 2011;

Terry, 2010). A sense of belonging and active engagement in the classroom is vital towards the attainment of skills in mathematics (Engle and Conant, 2002).

In her study regarding the mathematics capacities of black and Latino middle school students, Keck-Staley (2010) investigated the human resource capital of adolescents in the context of math education. Her findings suggest that engagement with the learning community is critical towards the attainment of mathematics knowledge (Keck-Staley, 2010). While participants emphasized the value of hard work and personal expectations of high achievement in their academic efforts, parental support was also identified as a meaningful mechanism for encouraging student success (Keck-Staley, 2010). Her study revealed that a strong social cohort, cooperative learning measures, and hands-on activities in their mathematics courses were significant contributors to the students' (self) identification of success in mathematics (Keck-Staley, 2010). Findings from the study further suggest that social and cultural stimulation in the mathematics classroom impacts mathematics learning (Keck-Staley, 2010; Ladson-Billings, 1997). Studies conducted by Strayhorn (2008), Smith and Hausfaus (1998), Terry (2010), and others have revealed similar findings on the success of African American students in STEM academics; in each of these investigations, data supported the incorporation of collaborative learning activities and culturally relevant applications of content (Engle and Conant, 2002; Harper, 2010; Ladson-Billings, 1997; Tyson et al, 2010).

In their study of 11 African American men in biology degree programs, Russell and Atwater (2004) noted common themes related to the academic persistence and success of their participants. Enrollment in mathematics and science courses during high school emerged as an imperative factor for these African American males (Russell and Atwater,

2004). Other significant factors, which were cited as contributors to the success of these students, were the encouragement of family members, faculty relationships, and intrinsic aspirations (Russell and Atwater, 2004). These findings align with other research on the persistence of African American males in college STEM programs (Harper, 2010; Martin, 2009; Palmer et al, 2010; Terry, 2010). Colleges and universities have taken strides to improve the success of African American men in STEM. Hawkins (2011) reports the success of the Meyerhoff Scholars Program at the University of Maryland, Baltimore County. This program utilizes a variety of fiscal and support resources in recruiting and retaining men of color in STEM academic programs (Hawkins, 2011). Since the program was established in 1988, the number of African American graduates in STEM has greatly expanded; UM Baltimore County's 2010 graduation data revealed that half of the STEM degrees conferred were awarded to African American males (Hawkins, 2011).

Palmer et al (2010) suggest the following steps towards increasing the number of African American males in STEM disciplines: a) improve the quality of teachers who serve students of color, b) enroll greater numbers of African American males in math and science college prep courses during their high school experiences, c) challenge the financing structures of schools, d) pressure law makers and governmental officials to allocate adequate funds to finance the education of minority groups, e) continue offering remedial education in schools to help students come up-to-speed in areas where their knowledge is in deficit, and f) bridge the gaps between higher education and K-12 schools to help foster academic preparedness, access, and success in college (Palmer et al, 2010). All African American men are not the same, and it is important to regard their respective heterogeneity when theorizing strategies for success (Brown, 2009; Harper and Nichols,



2008; Schellenberg and Grothaus, 2011; Tatum, 2007; Tyson et al, 2007; Whiting, 2009; Yosso, 2005).

This review of the literature has involved an exploration into the scholarship about Critical Race Theory (CRT) in education, African American male identity as it relates to the formation of a black identity (ID) and academic experiences, and the state of affairs in black male engagement with STEM programs. The third chapter will outline my plan for this phenomenological study of African American men in STEM at a PWI.

CHAPTER III  
METHODOLOGY

**Introduction**

This chapter highlights the research methodology, methods, and participants in the study. My research is positioned at the intersection of phenomenology and life history research, and as a part of this chapter; I explain the nature of phenomenological research and life story research. I introduce the plan for identifying the sample, present the interviewing protocol, and outline the process for the research activities. Seidman's (2006) in-depth interviewing model is described as I summarize my process for collecting data. Further, I explain the procedures for organizing, chunking, and synthesizing the data that were collected from the interviews. The limitations of the project are illuminated. Lastly, I discuss the issues of reliability and validity in phenomenological research and in relation to this project.

Phenomenological inquiry is the guiding tradition for this qualitative study. A phenomenological approach is not effective as a method for developing theory, but is better suited for the attainment of contextual knowledge about a specific experience or collection of experiences shared by members of a particular population (Creswell, 1998; Merriam, 2009; Moustakas, 1994; Seidman, 2006; Sherman and Webb, 1990; van Manen, 1997). Phenomenology enables the researcher to see how members of a particular group perceive their world (Marcus and Fischer, 1999; Moustakas, 1994; Seidman, 2006). Given my objective of better understanding the success culture of African American, undergraduate

men in STEM majors at a PWI, phenomenology offers an appropriate framework for this research. In addition, since CRT in education provides the scaffolding of my theoretical frame, the voices of African American men are primary to obtaining a genuine understanding of their experiences as students in the engineering program at a PWI. In-depth interviewing opened an opportunity for me to gain credible insights from the men involved in the project (Moustakas, 1994; Seidman, 2006); and because the adequacy of a method depends on the purpose of research, this study is positioned soundly within the scaffold of phenomenological research (Marcus and Fischer, 1999; Merriam, 2009; Moustakas, 1994; Seidman, 2006).

Life story is another tradition from which I drew inspiration for this qualitative research study of African American male scholars in engineering at a PWI. Geertz (1973) describes life history or life story as a methodology in qualitative research that opens a door through which the investigator may enter the lives of others (Sherman and Webb, 1990). Trust between the observed and the observer is absolutely essential to the success of the life story approach (Langness and Gelya, 1985). This tradition utilizes thick descriptions of phenomena by the participant to compose a meaningful narrative (Geertz, 1973; Langness and Frank, 1985; Sherman and Webb, 1990). Sherman and Webb (1990) demonstrate the analogy of the two-way mirror as the ideal condition between the observed and observer in qualitative research. As a white male social science researcher, I had concerns regarding my ability to dive into the depths of the life experiences of African American male undergraduates in engineering. I feared that upon looking into this phenomenon, I might only see my reflection in their stories. The perceived differences posed potential complications for the quality of the research relationship. The life story

approach to qualitative research allowed me the methodological freedom to investigate the broader life situations of participants; and in doing so, establish a stronger connection with each participant in the study (Sherman and Webb, 1973). Participants allowed me to glance over their shoulders and into their stories as they retraced events of their life paths and reflected upon the meaning of past events on present phenomena.

### **Research Questions**

In qualitative research, the research questions are the driving force in determining other details of the study (Creswell, 1998; Merriam, 2009; Moustakas, 1994; Seidman, 2006; Sherman and Webb, 1990). African American male undergraduates serve the unit of analysis in this phenomenological study. Additional details related to the sample are described later in this chapter. I am interested in gaining insight into the individualized experiences of African American men who are pursuing STEM academic programs in college. Given that the theoretical framework for the study is CRT in education, I have positioned this study at a PWI. The lived experiences of students of color at a institution serving primarily White undergraduates presents a complex environment for engaging issues of race in education, racial identity in African American males, and racialized stimuli within the academic environment. The research questions have been designed to validate the voices of the participants and discern the way in which they experience this phenomenon. The following questions will guide this qualitative inquiry:

- How do the early educational experiences of African American males inform (their) success capacities in math and science?
- What institutional factors contribute to the academic endurance (persistence) of African American males enrolled in undergraduate engineering programs?

- How do African American males in undergraduate engineering programs achieve academic success at a predominantly White university?

### **Phenomenology, Life Story, and In-Depth Interviewing**

Phenomenology contends that authentic knowledge may be obtained through an investigation of human experience (Creswell, 1998; Moustakas, 1994; Seidman, 2006).

Phenomenology is a branch of human science centered upon the vivid description, holistic interpretation, and depth of understanding the life events of populations (Merriam, 2009; Moustakas, 1994; van Manen, 1997). In phenomenological inquiry, sensory experiences provide the data through which qualitative researchers glean empirical truths about social phenomena (Moustakas, 1994). The goal of phenomenological research is illuminating a life world, exploring the experiences, and helping others achieve an understanding of what it is like to go through some particular event or occurrence (Creswell, 1998; Merriam, 2009; Moustakas, 1994; Seidman, 2006; Sherman and Webb, 1990). Context is key in phenomenological inquiry (Merriam, 2009; Moustakas, 1994). Experiences are grounded in a particular setting, during a specific time, and relevant to contemporary factors (Moustakas, 1994; Seidman, 2006). Max van Manen (1997) emphasizes that the objectives of phenomenology intend to capture “pre-reflective” data from participants. The pure form in which the data is collected from the subject(s) preserves and protects the integrity of the phenomena (Moustakas, 1994). According to Moustakas (1994), the “essence of structures” of the experience is opened for the researcher through the elucidations of the individuals in the study (p. 13). According to Seidman (2006), the process of meaning making occurs when participants bring language to their experiences. In phenomenology, the researcher

develops a collective meaning by interpreting the reflections of multiple individuals sharing a common life experience (Creswell, 1998).

Langness and Gelya (1985) describe the five main tasks of the life story researcher in collecting qualitative data. According to their analysis, fieldwork in anthropological investigation involves the following activities: watching, asking, listening, doing, and recording. The researcher must observe attentively, inquire thoughtfully, and actively soak up the information that is made available through observations and interviews (Langness and Gelya, 1985). Absorbing the data in life story research involves understanding the experiences of the observed and is as important as any step in the process of conducting qualitative research (Geertz, 1973; Langness and Gelya, 1985; Sherman and Webb, 1990; Seidman, 2006). Recording the data helps protect from overtly subjective influences and preserves the intended meanings expressed and exhibited by the observed (Sherman and Webb, 1990). Qualitative inquiry involves more than just reporting the behavior of participants (Langness and Gelya, 1985). To emphasize the active investment required in conducting this type of research, Reynolds (1976) outlines the concerns of researchers following the qualitative tradition:

If we describe what people or animals do, without inquiring into their subjective reasons for doing it, we are talking about their behaviour. If we study the subjective aspects of what they do, the reasons and ideas underlying and guiding it, then we are concerned with the world of meaning. If we concern ourselves both with what people are, overtly and objectively, seen to do (or not to do) and their reasons for so doing (or not doing) which relate to the world of meaning and understanding, we then describe action (as cited in Langness and Gelya, 1985).

Interviewing is the basic mode of inquiry in phenomenological research (Creswell, 1998; Geertz, 1973; Langness and Gelya, 1985; Marcus and Fischer, 1999; Merriam, 2009; Moustakas, 1994; Seidman, 2006, Sherman and Webb, 1990). Researchers interview

subjects to understand their life experiences and how they derive meaning from those experiences (Seidman, 2006). Interviewing allows the researcher to see inside the world of another person, though it does not enable the researcher to live the experiences of the other person (Marcus and Fischer, 1999; Seidman, 2006). Stories are a way of knowing and a mechanism through which persons make meaning of their experiences (Seidman, 2006; Solorzano and Yosso, 2002). Through the interview, the researcher is given access to the context of the participants' lives and explores the meaning of their behaviors (Seidman, 2006). In dealing with stories, researchers must be conscious of bias and committed to keeping the participants and their stories at the center of the study (Moustakas, 1994; Seidman, 2006; van Manen, 1997). Seidman (2006) cites educational researcher Peter Reason (1981) to frame the connection of participant stories and science:

The best stories are those which stir people's minds, hearts, and souls and by so doing give them new insights into themselves, their problems and their human condition. The challenge is to develop a human science that can more fully serve this aim. The question, then, is not "Is story telling science?" but "Can science learn to tell good stories?" (as cited in Seidman, 2006; p. 8).

In phenomenology, participants tell the stories that form the frame through which understanding may be achieved (Merriam, 2009; Moustakas, 1994; Seidman, 2006). As the researcher for this study, I used the interviews as an opportunity to support participants in organizing past activities and events, and then progressing through a reflective exploration of the phenomena that have led them to their present state of being in the engineering program.

### **Setting**

The study was conducted at a large, public research institution in the Southeastern United States, which I refer to as Expansion University or EU. This coeducational university

has a total undergraduate population of nearly 27,000 and a graduate population of almost 5,000 students. Women outnumber men at Expansion University by 10 percent. Twelve percent of the undergraduate population identifies as black or African American as compared to 81 percent who identify as White, non-Hispanic. Eighty-five percent of students who enrolled for freshmen year in 2010 returned for their sophomore year in 2011. Expansion University achieves consistent rankings in the *U.S. News and World Report* as one of the top 50 public colleges and universities in America. The campus offers 300 student clubs and organizations, opportunities for undergraduate research with full-time faculty, tutoring and academic resources, as well as modern classroom and distance learning technologies for instruction. Among the prominent opportunities for student involvement is Greek life. Twenty-eight percent of the total student population at EU is involved with Greek organizations. Greek life at EU is a segregated model, which boasts 35 organizations for White students and eight organizations that have traditionally included African American students.

In the last decade, the number of African American men enrolled in STEM disciplines at Expansion University has nearly doubled. In 2001, 44 African American men were enrolled in STEM academic programs at EU; by 2011, this number increased to 78 African American men majoring in STEM. This growth corresponds with the institution's overall growth dynamics. In 2003 the administration launched an aggressive recruitment campaign to grow the student body, and EU has increased its total population by 14,000 students since that time. The total enrollment of African American men in STEM disciplines has climbed proportionately with the overall growth of the student body. While enrollments have increased substantially over the past decade, the six-year graduation



rates of African American men in STEM at EU has shown only slight improvement. Forty percent of African American men who began their STEM programs at EU in 2001 earned degrees within six years. Forty-six percent of those who enrolled in 2007 completed their STEM degrees in a six-year span.

This institution seemed particularly appropriate for the investigation of the experiences of African American male students because of its deep-rooted connection to issues of race and racism. The physical appearance of the academic architecture exudes southern style and a rich antebellum heritage. African Americans did not sustain enrollment at this university until 1963, nine years following the *Brown v. Board* decision. In the past five years, incidents of student-on-student racism have been documented, addressed by the administration, and critiqued by student, local, and national medias. In light of these recent racist incidents on the campus, one may assume that the student body at the institution is conscious of race and that students of color have experienced racialized phenomena at some point during their undergraduate tenures at EU. The findings, which are shared and discussed in the latter chapters of this dissertation, show varying perspectives among participants regarding issues of race and racism on EU's campus.

### **Sample**

African American male undergraduates who were enrolled in the college of engineering at EU and in good academic standing were asked to volunteer for the study. I worked with the department of engineering student services to identify students for the sample. The total sample consisted of five men who were enrolled as fulltime students in the College of Engineering at EU. The ages of participants in the study ranged from 21-25 years old. Preference was given to upperclassmen that had experienced at least one year as

a student in the College of Engineering and had attended only the university under study. Only one student who had transferred from another institution was included as a participant in the study; however, this student was in his third year of enrollment at EU. The students in the study were in good academic standing at the time the interviews were conducted. For the purposes of this study, “good academic standing” refers to the status of students who have GPAs at or above the progress standard expected of all students in the college of engineering at EU. In engineering, EU students must maintain a GPA of at least a 2.0 overall and in their major coursework in order to proceed in their particular academic program.

In qualitative research, the welfare of persons involved in the project is of primary concern for the researcher (Merriam, 2009; Moustakas, 1994; Seidman, 2006). Seidman (2006) discusses the politics of identifying the participants within the research group and to how this group will be referred throughout as the process. Based upon his analysis of designations for persons involved in the study, I decided upon ‘participants’ as the most appropriate reference for the group. In phenomenological inquiry, the members of the sample population actively participate in the work of interviewing, storytelling, and interpreting phenomena (Merriam, 2009; Moustakas, 1994; Seidman, 2006; Sherman and Webb, 1990; van Manen, 1997). In a similar vein, participants in life story research are the authors of their lived experiences (Langess and Geyla, 1985). The social consequences of participation present additional considerations in regards to publishing the personal stories of a particular group (Merriam, 2009; Seidman, 2006; van Manen, 1997). Particularly in the context of this study about students of color at a PWI, there may be serious repercussions for participants if their interests and identities are not protected.

Because of the nature of in-depth interviewing, researchers must preserve the identities of the participants and avoid compromising their right to privacy (van Manen, 1997). I took careful steps to preserve the anonymity of the participants in the sample. To ensure protective measures for the identities of students involved in my study, I asked them to identify pseudonyms by which they would be referred to throughout the dissertation. I also generalized or adapted the proper names of schools and cities that were shared in interviews as a means of further guarding the identities of those in the sample. This study was approved by IRB in November 2012.

I worked with the staff advisor for the EU Chapter of the National Society of Black Engineers (NSBE) to identify student participants for the sample. I requested and obtained signed acknowledgement from the organization's advisor indicating support for the study. The NSBE roster that was provided by the staff advisor included 14 students. It was confirmed that all members of the NSBE were African American and in good academic standing with the college of engineering. Five of the 14 NSBE members were female, and therefore, were eliminated from consideration for the study. Once the male members of NSBE were distinguished, I sent a personal email to each of the students in the organization. The email invited them to participate in the research study. This email briefly outlined the purpose of the study, the aims for the project, and the length/time of commitment that would be required of them if they elected to participate. I requested an email confirmation from respondents in order to confirm their interest in participating in the study. Seven of the nine African American men responded to the call for participation. The seven respondents received follow-up information through a second email. In this email, I requested permission to contact them by phone for the purposes of further discussing the

study and organizing interview appointments. All written requests for student participation were approved by IRB.

Upon receiving email responses from the respondents, I contacted each student by phone per the number they provided. During the phone conversation, I confirmed their personal information (i.e. academic major, class standing, academic status, age, etc). As a result of these efforts, I determined that two of the respondents were not eligible to participate based on the requirements for the study. One of the respondents had graduated from EU in 2010, and because of his separation from EU, I did not feel that he was an appropriate fit for the study. Another respondent had changed his academic major from metallurgical engineering to physics. Because the department of physics is housed in an academic division outside of engineering, I determined that this student was not an appropriate candidate for participation in this study of engineering majors.

In the phone conversations, I answered the various questions posed by the respondents. Questions ranged from inquiries about the length of time involved in participation to the location in which the interview would take place. I inquired about each respondent's availability for the interviews. I also introduced the concept of informed consent to each participant during the phone conversation. I established meeting locations and times with the five eligible participants for their first interview. The meeting times and locations for subsequent interviews were determined at the conclusion of the interview immediately preceding the next one in the three-interview series.

I offered suggestions for venues and allowed the participants to select the site most comfortable and convenient for them. Most interviews were conducted in a coffee shop on campus at EU. The third interviews with two of the participants were conducted at public

locations off-campus. The times of Interviews were scattered across late afternoons and early evenings, as the participants deemed evenings most convenient. I conducted three individual interviews with each of the five participants in the study. The questions designed for these interviews were approved by IRB. Following the conclusion of the formal interviews, I conducted follow-up conversations with participants to confirm the context and consistency of their narratives.

### **Relationship to study**

The students in the sample were identified from among the students enrolled in engineering programs of study at EU. I was intentional in this delimitation because of my relationship to the institution at which I situated the study. Though STEM fields include a host of academic disciplines across the natural sciences and mathematics, my work as a professional administrator in the liberal arts and sciences division at EU presents ethical concerns. The potential for a dual relationship with the participants would exist if I included any students majoring in biology, chemistry, physics, astronomy, marine science, or mathematics fields. With respect to power dynamics and in order to protect the interests of participants in the study, I did not invite participants from within the academic division in which I was employed at the time of the study.

### **Data Collection**

During the first in-person meeting with each participant, I shared the informed consent form, explained their rights and responsibilities as participants involved in the study, and asked them to sign the Informed Consent form if they wished to proceed in the research relationship. All participants signed the Informed Consent form. Once the Informed Consent form was signed, I moved forward in explaining the procedure for the

interviews and began the formal interview with introductory questions. During each of interviews, I made notes as the participant spoke about his experiences. These notes were later used to confirm details in the process of data transcribing, coding, and analysis.

With four of the five participants, I utilized a digital voice recorder to capture a detailed record of the interviews. I included a selection statement in the final section of the Informed Consent form, which asked the participant's permission to use an audio-recording device during the interview. Four of five participants agreed to the audio recording of the interview conversations. One participant did not wish for his comments to be recorded but agreed to take additional time after the interview to help confirm the accuracy of my notes from our conversation. The audio files were maintained on my laptop, which was protected with a password. Audio files were reviewed and transcribed shortly after the data was collected. Transcriptions were recorded verbatim using a word processor. The typewritten transcripts were shared with participants via email for their review. Participants requested no changes to the transcripts at that time.

The data was collected through a series of three interviews with each participant in the sample. Adapted from the in-depth phenomenological methods proposed by Siedman (2006), I followed a three-interview approach in the collection of data. This method combined both life history interviewing and practices in the phenomenological tradition (Seidman, 2006; Sherman and Webb, 1990). Seidman's (2006) in-depth interview protocol seeks to establish intimate relationships with the participants with the goal of improving the quality of the data obtained in the exchanges. Interviews were held individually with each participant and were scheduled over a three-week span (i.e. one interview per week). Seidman (2006) suggests 90 minutes as an appropriate length of time for these interviews

sessions; but he also supports the professional judgment of the researcher to determine when to deviate from the standard length of an interview in situations that may require adjustments, accommodations, or alternate arrangements (Seidman, 2006). The length of interviews varied from participant-to-participant in this study. The minimum length of any of the interviews was 51 minutes; in this scenario, this interview was a first interview with one of the participants. The personality of this participant was an important factor in determining when to conclude the conversation in his first interview. This participant identified himself as an introvert, and he provided succinct and direct responses to the questions and prompts presented before him. The maximum length of any of the interviews was 128 minutes. This lengthy interview was a third interview with one of the more verbal participants. I experienced a breakthrough with this participant during his second interview, and by the third conversation, he was very eager to synthesize the events of his experience into the story he wished to share. The length of time of the follow-up conversations varied widely across participants and largely depended upon the number and nature of questions I introduced to confirm specifics within their stories.

With Seidman's (2006) in-depth interviewing model, each interview has a specific theme, style, and purpose. The first interview established context for the participant and helped build rapport with the participant as a partner in the research project. During the first conversation, I encouraged each participant to share as much information about his family, friends, and background as possible in relation to the research topic. Questions during this interview were framed using "how" instead of "why" to encourage an open explanation of the participant's experiences, versus a validation of his feelings and experiences. The second interview challenged each participant to reconstruct details of his

academic past and reflect upon the meaning of these experiences. Through the second interview, I hoped to draw out specific information from each participant and extract concrete life examples of his experiences leading to and continuing through his enrollment as undergraduate in the college of engineering at EU. During the third conversation, I asked each participant to reconstruct the details of his current experience as a student in engineering and reflect upon the meaning of items that he had outlined as significant during earlier conversations. In the third interview, participants processed the significance of their life events and created connections to their experiences in college.

According to the phenomenological tradition, participants' opinions about their experiences must be preceded by a description of the actual experiences, themselves (Merriam, 2009; Moustakas, 1994; Sherman and Webb, 1990). I used intentional questioning to help each participant recall his experiences, rather than the interpretation of his experiences. After the experiences were identified, I encouraged each participant to describe his feelings about the phenomena. In closing the second interview, I asked each participant to explore the value of being an African American man in engineering at EU and to reflect upon how his past experiences have brought him to his present state of thinking, feeling, and being. I challenged each participant to embody the position of observer to his experience and give language about the meaning of his academic success from the perspective of his parents, peers, teachers, and community.

Each participant was presented with an Informed Consent form, which had been reviewed and approved by IRB. The informed consent document expressed the rights and responsibilities of participants who elected to participate in the study. The document outlined their projected time commitment, measures taken for their protection, and



inquired about their approval for audio recording during the interview. Only one participant declined to have his interview audio recorded. In all other instances, a digital voice recorder was used to capture the conversation between the participant and the primary researcher. These audio recordings were used to transcribe the data into text. I made notes and jottings throughout the conversations with the participants as a means of creating an immediate record and helping to maintain the focus during the work of the interview. I used probing as a means of prompting deeper participant reflection around particular issues during the interviews (Merriam, 2009). This technique helped broaden the responses of participants, which enabled the development of thicker descriptions in the presentation of the data. As they told their stories, I restated some of their sentiments and summarized particular segments to help confirm the details of participants' personal commentaries.

### **Analysis of Data**

Transcribing the information was the first step in analyzing the data. At the conclusion of each interview, I replayed the digital voice file from the session and began transcribing the conversations using a word processor. Interviews were transcribed verbatim to maintain the authenticity of the participants' commentary. I utilized my jottings from each interview to fill-in notes in areas where I noticed non-verbal communication and other queues that were not easily distinguishable through the audio record. Given the tradition of counter-storytelling in CRT, the authenticity of participants' voices is the utmost priority in research (Baszille, 2008; Degaldo-Bernal, 2002; Harper, 2010; Solorzano and Yosso, 2002). Transcribing between the interviews was helpful, as it allowed for the development of relevant questions for the second and third interviews.

An important consideration in regards to the data management process was the timeline for analysis of the transcripts. While I transcribed data throughout the interviews, I conducted all interviews before analyzing the detailed transcripts. Siedman (2006) emphasizes the importance of this measure in order to respect the breadth of data harvested during the interviews. By avoiding an in-depth analysis of the data until I had completed interviews with each participant, I hoped to refrain from imposing the ideas, insights or opinions of one participant onto another. Though never able to fully remove myself from the work of the interviews, I wanted to do my best to explain this phenomenon without forming premature conclusions about their strategies and stories of success. My goal was that the stories would be presented through the language of participants and with respect to the individual meaning espoused by each participant.

Merriam (2009) identifies the process of horizontalization as a method of data management in phenomenology. This methodical activity involves dividing the interview data into statements and regarding all the information as having equal, inherent value (Merriam, 2009; Moustakas, 1994). Once a session was transcribed in full text, I read and reread the accounts, thoroughly. After a line-by-line analysis of the transcribed text, I winnowed down the data by marking sections that stood out as significant in the context of the study. This process is known as open coding in qualitative research. Once classification areas were identified, I was able to group related remarks from each of the participants into chunks (Merriam, 2009; Seidman, 2006). By grouping chunks of interview data according to the emergent themes, I was able to organize the large quantity of information collected from participants into digestible blocks of information (Merriam, 2009; Seidman, 2006; Sherman and Webb, 1990). These chunks of interview data served as the frame for

categorizing the themes and constructing the stories, which are shared in chapters five through ten of this dissertation.

As with any qualitative method, the appraisal of information by the researcher is essential to the process of reduction (Creswell, 1998; Seidman, 2006; Merriam, 2009; Moustakas, 1994). In searching for the true essence of participants' experiences, I made strong efforts to lay aside any preconceived ideas about the realities of the African American men in the study and their experiences in engineering at EU. This practice of suspending the consciousness is known as 'epoche' in phenomenological research and is important because it helps the researcher absorb the phenomenon through the voices of the participants in the study (Creswell, 1998; Merriam, 2009; Moustakas, 1994). This practice is also consistent with counter-storytelling, as it allows for the narrative to flow from the authors of lived experience (Solorzano and Yosso, 2002). In an in-depth, phenomenological approach, trusting your judgment as the researcher is essential to the success of the project (Seidman, 2006). I used my best judgment to negotiate how the content of the interview related to the context for each participant, and I trust that my decisions were sound in organizing the participants' stories.

In the fourth chapter, I briefly describe the students in the study as the subjects of their narratives and introduce the stories that follow in subsequent chapters. Participants' narratives are presented over a series of five chapters. I discuss the relevance and richness of the findings throughout each of the stories to facilitate the flow of participant's narratives. In the eleventh and final chapter, I summarize the work, discuss additional findings of significance, and suggest recommendations for future research.

### **Limitations**

There were a few limitations associated with this study of African American men in STEM programs. Because of the small sample size, data is not widely generalizable outside of the students involved in the study. The temptation to broaden the scope of the findings to fit multiple audiences is not appropriate, as this would be a misapplication of the results (Moustakas, 1994; Seidman, 2006; Sherman and Webb, 1990). African American males are commonly grouped into categories of sameness, which further diminishes their individual and unique identities (Cuyjet, 2006; Harper et al, 2009; Tatum, 1997). This study is centered upon these particular student participants and the processes through which they make meaning of their STEM curriculum, campus relationships, and institutional climate. Since the interviews were conducted in relatively expedient fashion (over a three-week span), the relationship between researcher and the participants may have been less established than if the study had spanned over a broader time period. Genuine partnerships in the research relationship are imperative in producing data that accurately depicts social phenomena, and authenticity is sometimes difficult to achieve in moderate period of time (Merriam, 2009; Moustakas, 1994; Seidman, 2006). A final limitation may include my racial identity as a white male. The participants may have responded differently to a researcher whom they perceived to share commonality of race.

### **Reliability and validity**

Reliability and validity are imperative considerations in the qualitative research paradigm (Golfashani, 2003; Lincoln and Guba, 1985; Marcus and Fischer, 1999; Merriam, 2009; Moustakas, 1994; Seidman, 2006). Reliability refers to the consistency of results and the authenticity of application of the findings to the population being studied (Golfashani, 2003; Lincoln and Guba, 1985; Merriam, 2009). Validity asks whether the research really

measures what it claims to measure and if the outcomes of the investigation are accurate (Golfashani, 2003; Lincoln and Guba, 1985; Merriam, 2009). Often in qualitative research, trustworthiness is applied as the synthesis of reliability and validity (Seidman, 2006). Since reliability is used primarily as a tactic in quantitative inquiry, Lincoln and Guba (1985) introduce dependability as an appropriate term for assessing consistency in qualitative findings. According to their analysis, reliability and validity, or dependability and credibility, exist only in unison, therefore evidence of dependability constitutes credibility (Lincoln and Guba, 1985).

Since the researcher is the primary instrument of analysis in a phenomenological study, the trustworthiness of the subjective processes involved in data management must be examined (Golfashani, 2003; Lincoln and Guba, 1985; Merriam, 2009; Moustakas, 2009; Seidman, 2006). A critical examination of the methods, findings, and participant assessments helps confirm the trustworthiness or credibility of the research (Golfashani, 2003; Lincoln and Guba, 1985; Merriam, 2009; Moustakas, 1994; Seidman, 2006). The researcher may take steps towards enhancing the authenticity of the findings by critically reflecting upon the collected data (Merriam, 2009). Reflexivity helps the researcher cultivate a clearer understanding of both the phenomenon under investigation and the research process (Golfashani, 2003; Merriam, 2009). I used a reflective journal as a means of capturing my thoughts about the research, reflecting on the participants' responses, and thinking through the themes presented in the interviews. I also utilized the interview transcripts to search for evidences of validity throughout the content (Seidman, 2006). I reflected upon the data in the transcripts from the second and third interviews to examine response patterns and look for internal consistency in the messages shared by participants.

Triangularity is a process employed in the qualitative tradition to evaluate the consistency of the research findings, which incorporates external voices in validating or confirming the data (Golfashani, 2003; Lincoln and Guba, 1985; Merriam, 2009; Moustakas, 1994). This practice involves follow-up conversations with research participants to ensure that transcripts reflect sound interpretations of the data, and not misrepresentations resulting from researcher bias (Golfashani, 2003; Lincoln and Guba, 1985; Merriam, 2009; Moustakas, 1994). Seidman (2006) warns against placing too much emphasis on triangulation in phenomenological inquiry. He argues that the nature of qualitative research is subjective, and that the ultimate goal of human research is a better understanding of social phenomena (Seidman, 2006). Seidman's (2006) primary tenet in his trepidations about trustworthiness is the ongoing and inextricable process of interpretation in which the researcher engages in qualitative inquiry. Cognizant of the challenges associated with the interpretative nature of qualitative research, I employed a specific measure towards supporting the trustworthiness of the data in this study. I allowed participants to review their interview transcripts and the written manuscript. I encouraged participants to read the entire work and advise regarding any adjustments that should be made to the content. Participants were invited to offer feedback concerning my reflections about their experiences during a follow-up conversation following the third interview.

### **Summary**

The third chapter described the qualitative design and methods incorporated in this study of African American men enrolled in the college of engineering at EU. The history, methods, and limitations of the phenomenological approach have been discussed. The life

story tradition has been outlined as an influential method for the research. Seidman's (2006) in-depth interviewing approach to phenomenological inquiry has been illustrated in detail. Factors exclusive to this study related to the research sample, environment, and interview protocol were explicated in detail. In chapter four, I will formally introduce the participants and the stories that have been developed to feature the findings of the research. The results reveal the data that was garnered from individual interviews, reduced from interview transcriptions, and reviewed by the participants in the research group.

## CHAPTER IV

### SUBJECTS AND STORIES

They are the prototype of a EU student. The ones with the good GPA. Quote, unquote, in all these organizations. Still maintaining the face of EU, which is... uh, I don't know. On a commercial, you'll see somebody knowing how to get a good GPA working in a group with somebody. But in real life, no. In real life, a typical EU student is involved in a few organizations but is mostly in the library. Partying on the weekend. Not smiling for real... Well, it depends on what side of campus you're on. On engineering side, you'll never see anybody smiling. You'll see people outside smoking all the time. Business side, people smile. They speak to you there...I'll smile Saturday at graduation.

[Matt, Metallurgical Engineering]

Engineering's just a matter of developing that know-how, like that confidence. Sometimes I'll walk into a room and I'll be like I'm an engineering major. And they'll be like "Oh man! You're like a genius or something. " And then, I'm like not really; but that's their perception.

[John, Mechanical Engineering]

### Introduction

The purpose of this study was to explore the experiences of African American male scholars enrolled in undergraduate engineering curriculums. A wealth of literature exists about the failures and shortcomings of African American males in education (Bianco et al, 2011; Bonner and Bailey, 2006; Brown, 2009; Campbell and Fleming, 2000; Colclough and Beck, 1986; Cuyjet, 1997; Harper and Nichols, 2008; Harper et al, 2009; Hughes, 2011; Jenkins, 2006; KewalRamani, 2007; Ladson-Billings, 1997; Love, 1993; Ogbu, 1990; Tatum, 1997). My goal for this project was to focus attention on the success of Black males in higher education. Specifically, I hoped to concentrate on African American men in STEM education, which is an academic discipline uncommon for the majority of Black college students (Green et al, 2009; Jackson et al, 2010; NCES, 2011; Palmer et al, 2010;



Washington, 2011). In order to tell stories of success in STEM education, I enlisted a sample of students who were in good academic standing in the college of engineering at a PWI.

I worked with the staff advisor for the National Society of Black Engineers (NSBE) at EU to identify junior and senior-level engineering students in good academic standing. The pool of candidates for my study was markedly small, given the low number of African American students enrolled in the college of engineering. The NSBE roster included 14 African American students. Five of the 14 students were female. Of the nine African American males on the NSBE roster, seven responded to my invitation to participate. During the initial intake process for the study, it was determined that only five of the seven respondents met the criteria for inclusion. One of the students who failed to meet criteria had graduated one-year prior and had been mistakenly left on the organization's roster. The other ineligible participant had transitioned out of the school of engineering and into another major (i.e. physics) in the arts and sciences school. The five eligible respondents agreed to participate in the study. This chapter introduces the participants from whom data was collected through a series of three interviews, happenings observed during the interviews, and insight gained through follow-up conversations with participants after the conclusion of formal interviewing. The data from the interviews is presented in chapters five through ten of this dissertation. The data has been reviewed and approved by each of the five participants as reflective of their unique experiences in engineering at EU. This member check approach was incorporated to improve trustworthiness of the data and to help confirm the appropriate contextual re-representation of participants' perspectives (Siedman, 2006).

### **Participant Descriptions: Meet the Him in STEM**

In order to help bring meaning to the messages of the findings, I present short profiles of each participant in the study. These profiles include information about the background, family, community, and early education of each participant as he described in the interviews.

### *John*

John is a senior majoring in mechanical engineering from Montgomery, AL. The only child of his parents, John was raised at by the collaborative influences of his father and grandparents. His grandmother was a schoolteacher in the local, public school system and wielded considerable influence in his early academic development. John describes his neighborhood as lower-income, and smiles with sheepish innocence upon recounting this realization. "I'm from Montgomery, AL. Pretty much lower income, but I didn't realize that I was until high school. Everybody had cars, and I took the bus to school." Expansion University was the ultimate institution of choice in his national college search, and he credits this decision to three important factors: 1) the National Achievement Scholarship package; 2) family encouragement; and 3) EU's rich traditions and inseparable connection to black history. In his words, "I guess like where I'm from, like it could just be being an African American, Expansion University was such a central part in the Civil Rights movement."

John began college with an unwavering focus on his studies. Later into his sophomore year, he opened his mind to involvement outside of the classroom. "When I first came here, it was like, 'I've got this whole class thing done.' I'm like, 'Why is everybody else always stressed?' Then I realized, 'Oh, they're like doing all this other stuff, too.' So I was like, 'Maybe I should do more community service? Then I just kind of stumbled into stuff.'"

By plunging into the extra-curricular activities, John believes that he has found his niche at EU. He expresses fervent feelings about his involvement in a men's academic honorary on campus. "They're basically like my extended family on campus. Like they look out for me. Like everybody knows each other. It's been awesome. I've really enjoyed my time at EU." He plans to graduate from Expansion University in May 2013 and is already working diligently in search of job opportunities in his professional field.

### *Jordan*

Jordan graduated with his degree in civil engineering in December 2012. From a rural county in the South, Jordan is one of seven children and the proud father of a five-year old son. Jordan is "the only one" from his immediate family to attend college, and only one of two from his high school to attend Expansion University. Jordan states, "I was raised in an area that I would consider to be the projects. It wasn't the best school system that I came from." He bears a history of academic prowess, servant leadership, and confident passion in all of his personal, social, and family commitments. Reflecting on his educational background, he decrees, "Just the fact that I was able to come to Expansion University, with scholarships, it still amazes me. It really does!"

Jordan struggled somewhat during his early years at EU. "Honestly, in my early years here, it was kind of hard to get adjusted to things moving so fast... But when I came here, it wasn't what I didn't know? It was how am I going to learn?" Over time and as he adapted to his college environment, Jordan expanded his experience to include extracurricular activities. Involvement with the Greek System, engineering organizations, and campus administrators of color offered him a means of connecting more closely with his collegiate community. Regardless of the challenges that have been presented before

him, he has held proudly and firmly that mind-over-matter is all that matters in relation to one's personal success. "I was just so determined that I can make it. I can make something happen for myself." And Jordan did, in fact, make many things happen for himself through his education. In January 2013, he returned to his home county and began his new position as a civil engineer.

### *Kevin*

Kevin is a senior majoring in civil engineering from a lower income region in the deep South. He is 25 years old. Raised by his maternal grandmother, Kevin speaks of his youth as an "adult childhood." As almost as early as he can recount, he has played an active role in supporting his immediate family. Kevin articulates, "I was always taught 'you are the man of the house.' I had the mindset that I must take care of things for my grandmother. Around age 11-12, I was acting like an adult – cooking, driving, etc. My grandmother always says 'sorry you missed your childhood'." Kevin has carried this commitment to his family and community with him into his adult life. Kevin fell in love with engineering at an early age, while visiting his grandfather on the West Coast. "I visited the Golden Gate Bridge in California and was enamored with the structure of the bridge. I just couldn't stop thinking about it. From then on, civil engineering stood out for me."

Kevin's educational progression differs from what he deems the typical engineering student at EU. Before enrolling in Expansion University, Kevin graduated from a community college and worked multiple jobs. He remarks, "I graduated high school in 2005, and then I graduated from junior college in 2008. I am 25 years old, but people don't usually believe that about me." His tenure at EU has included academic and social challenges, but Kevin has channeled his thinking around strategies for success. "Grandma

explained to me that young African American men are not expected to do much with their lives, but if God puts it in your mind, then you can have it.” Kevin’s future goals align with his mantra for positive thinking, and his eyes are fixed upon founding his own engineering firm. “I want to graduate from EU. My dream job would be to work with the State Department of Transportation. Work five-to-seven years and then start an engineering firm of my own. The feeling of accomplishment that goes along with calling it my own is so great.”

### *Matt*

Matt is also a December 2012 graduate in metallurgical engineering from Expansion University. Matt is a man who is serious about his business, and his business is securing his success as an engineer. He contributes his persistent academic drive to the idea of escaping his hometown. Matt has no intentions of returning to the community of his native residence. He states, “Nothing there for me... Yeah, they’ve got like businesses and things that deal with my major, but I don’t want to go back there. Because seeing people that graduated, still at home making babies and what not. Not doing nothing with their life. Going to jail. So I’m like I’m not trying to go back to my county.” Matt researched the metallurgical engineering program very thoroughly before committing to EU. In his junior year of high school, he took advantage of a high school summer program on EU’s campus that promotes STEM interest and skills’ attainment among students of color. “We went through every discipline of engineering, here... I’m a hands-on guy. We got to do stuff. It was a small group. I liked the professors. MTE was a small major. I did research on it. There’s 100% job placement. I just stuck with it. I liked it.”

Matt speaks with a seasoned maturity about his development, motivation, and experiences as a college student at EU. "I'm probably one of the rare people who stayed with the same major for four years. I knew it in high school. I declared it. Signed my application. Stayed with it. I knew I wanted to be an engineer to help people the math and science way." On the idea of helping, Matt has found involvement in the National Society of Black Engineers (NSBE) to be a particularly helpful part of his experience at EU. "I've been all over the world since I've been here – Canada, Mexico... And like by joining NSBE, I learned about engineers who made it. And to see somebody like me who have made it, that was like wonderful." To use his words, this "first generation college student" has indisputably "made it" into the field of engineering. Over the past several months, Matt has received eight job offers and ultimately accepted an engineering position with Boeing in Seattle, WA.

### *Timothy*

Timothy is a December 2012 graduate in civil engineering. He is the youngest and only male of four children. "All my sisters... One is a genetic consultant. One's an anesthesiologist. One is a pharmacist and research professor; she's got two PhD's. I feel like I've always seen successful people around me." Timothy's parents were so fervently committed to his academic success that they closely structured his free time and involvement in activities outside of his schoolwork. He recalls, "Mom always used to make me read. She always made sure I was reading books. Like, I couldn't get outside until I read my book... They were kind of against me playing sports. In high school, I played football my freshman and sophomore year. In my junior and senior year, they just made me focus on my school work." Timothy received a myriad of scholarships from EU, which helped

confirm his decision to enroll. He was drawn to engineering because of his affinity for hands-on, active learning. “Engineering is more about hands-on. It’s more about learning what’s really going on, not just what’s in the textbook.”

Timothy was the only African American male from his high school to enroll at EU. He has encountered some social and academic challenges during his undergraduate years, but he has refused to let anything keep him away from his goal of becoming a civil engineer. Timothy is an amateur boxer and confidently believes that he can knock out any challenge laid before him – inside or outside of the ring. He announces, “I feel like if I can be good at this [boxing], I can be good at a lot of things. I’m an extremely competitive person – in everything. I don’t like losing. I’m not a sore loser; but if you beat me, then the next time you see me, I’ll challenge you to something.” His competitive nature has served him well on the professional front, as well. Timothy graduated from EU in December 2012 and began working with an engineering firm two days later.

### **Data Analysis: Sharing the Stories**

The participants in this study were asked to identify and expound upon their experiences as African American male undergraduates in the College of Engineering at a predominantly white research university. Personal interviews with each of the participants in the study were transcribed, coded, and analyzed. In the spirit of the life story tradition, I have organized the key findings into stories. These stories encompass participants’ learning experiences across the entirety of their formal education and culminate at their present point as undergraduates in engineering. The following stories emerged through analysis of the data: 1) the story of community; 2) the story of constructs; 3) the story of challenges; 4) the story of commitment; 5) the story of connections; 6) the story of

conqueror. In the next six chapters of this dissertation, I will share the participants' stories and connect their accounts to the relevant findings presently extant in the literature.



## CHAPTER V

### THE STORY OF COMMUNITY

As social beings, we exist in a plurality of communities. Residential settings, church families, school, friends, and social circles all provide spaces in which we formulate identities, ideas, and our outlook. The story of community in this dissertation encompasses the influences of family, happenings during their youth, and college experiences as described by each of the participants. While their experiences with each of these communities may be relatively unique, commonalities exist among participants in the study. Based on the observable findings and facts shared by participants in the study, participants credit their communities as carrying considerable clout in their personal development and academic success. While some participants feel that their communities have posed challenges for them at various points, these conflicts have played important roles in fortifying their academic growth and maturation. Specifically through this story of community, early environment, family influence, and college communities of participants will be discussed. We may observe that their worlds would be infinitely different if not for the powerful impact of relationships on their social lives.

#### **Environment and Early Education**

Diversity of learning environments has been correlated with differences in student academic achievement (Noguera, 2003; Tatum, 2000; Thernstrom and Thernstrom, 2003). The physical environments in which the participants were raised differed from person-to-person and community-to-community. Each of the scholars in the study spoke at-length

about the surroundings, socialization, and supports to which they were privy during their early lives. Kevin was raised in a small community on what he distinguishes as the “country-side” of his home county. “It’s predominantly Black and some Native Americans there. I went to church with Black people.” From a lower-income county in the rural South, Matt is firm in his opinions of the area. He grew up in a predominantly African American residential section of the county, an area that few ever leave. Because of what he deems lack of resources, opportunities, and life choices, he proclaims, “I didn’t want to be around there. I wanted to venture off. See life. Like a new culture or what not.” John was alarmed upon realizing that his neighborhood was lower-income. He gained this insight about his residential area when he enrolled in a magnet school outside of his immediate community. This enlightenment challenged John to rethink his identity in significant ways. He describes his community environment and his enlightenment about socio-economics in the following manner:

Like things were pretty good. And in my neighborhood it was really low income. I didn’t realize that, but I mean uh I mean there’s like drugs, it’s not like on TV, but you had dudes that sell drugs outside. You’ve got the gangbangers. But I don’t mean they harm people, it’s just like they have the guns, they have the friends that have the guns, and if you like insult them, it’s pretty much like if you mess with their little sister they might shoot at you. You know stuff like that when I tell people like there’s this pimp that lived down the street from me. They’re like What! Like all he did was have a house where he had prostitutes in the house. It wasn’t like a bad neighborhood. Everybody looked out for each other. Like I knew all my neighbors around me. Like they got us graduation gifts and stuff like that. Everybody was cool. They’d have barbecues and be laid back. It’s a nice neighborhood. It’s just the part that I lived in is like low income.

Other than that, it’s like really cool, I mean like uh, like it a lot of kids from there who are good kids, it’s just like they don’t have the resources. Like some of them go to school hungry. Like some of them don’t have parents that care if they go to school. That’s the horror about it. But I had parents who cared, so I guess that’s one reason I’m doing so well.

[John, mechanical engineering]

From deep in the Black Belt region of Alabama, Jordan expresses his ideas about the challenges faced by residents in his hometown. He passionately identifies the environment as a determinant of life chances and opportunities for many members of his low-income school district.

So when you're thrown in my school system, where you see all the fighting, and that's what your parents did. And they're on food stamps. They're on welfare. That's what your mind tends to settle with. If I can get this, and not have to do this, I'd rather do that, you know. It's just a mindset they're caught in. And you don't have that quality education in those areas like that, along with the violence and other things that go on in that area. Are you comparing those students to the white students that attend the top schools in the nation? You know what I'm saying? But I know if you compare that to a lot of the students that I went to school with, yeah, I'm sure they would be outranked. But are the majority of African-American students in schools like mine or in affluent districts? That's something to think about. Their upbringing. Financial status. A lot of that has a lot to do with what a student is capable of in school, and in life, period.

[Jordan, civil engineering]

Jordan's comments about the economic and social conditions in his native community speak loudly about the connection between socio-economics and educational opportunity. His comparison of academic capacities among students from lower income areas and "top schools" addresses issues of access and equity in education that is so prominent in the literature (Brookfield, 2005; Kozol, 1992; Lipsitz, 2006; Powers, 2007; Rich, 2011; Tatum, 2007). The stifling of educational opportunity and outcomes in school systems where resources and inputs are lack luster are prevalent themes in the research on communities of color (Jenkins, 2006; Kozol, 1992; Lipsitz, 2006; McClaren and Munoz, 2002; Yosso, 2005). Matt describes his early environment as an encourager for his academic focus and fortitude. The idea of escaping his home town propelled his diligence and drive for educational advancement. He asserts, "Like I'm going to do well in school, because I can't

wait to get away from here. ‘ That drove me like get all A’s in a semester. There was motivation there.”

Particular attention must be given to the learning environments in which participants experienced their elementary education. Four of five participants share stories of attending school with primarily African American students until later in their lives. On the subject of his elementary school, John shares that his elementary and middle schools served mostly African American students. Offering details about the physical space, he surmised that, “It was probably built back in the seventies or whatever. So I mean it had exposed pipe, and stuff like that.” Jordan utilizes striking imagery to depict the details of his early educational experiences. He states, “My entire school was 100% African-American. Have you ever seen *Lean on Me*? All the fighting.? Like a lot of that took place my last two years. It was a lot of fighting, and kids pulling the fire alarm, and calling the school with bomb threats. All types of stuff, you know.” Here, Jordan uses a popular documentary from the 1990s about the violence and happenings within an inner-city school system to make his point about the conditions in his own school community. Similar to the stories of John and Jordan, Kevin and Matt point out that their elementary and high schools served a majority of African American students from lower income families. Timothy describes his early school setting as “different” from what he expects that other African American students experienced.

Yeah, like, I’m, I believe I have a very unique case. My dad made a lot of money, but they were from the hood. When my sisters grew up, the north side was just like the black community of the county. But when I was born, I feel like I was a boy, and my mom didn’t want me to go the wrong path. I grew up in a white neighborhood. I was like the only black kid in the neighborhood.

[Timothy, civil engineering]

With excitement and pride, John shares the story of his high school years, recalling the wealth of resources, diversity, and relationships at his technology-oriented magnet school.

My high school magnet school was brand new, built in 2005. That's when they were building it. It was built with the aim of being technology. Like every classroom had a computer. We had an e-commerce academy, an IT academy, an engineering academy, a math/science academy, a building science academy, and a medical academy. That's what it was built upon, brand new, about 500 students total. We were basically like a family. Because my middle school fed into the high school so a lot of the kids I had been with them already for like three years. And like it was really laid back. Really good teachers. Awesome school.

[John, mechanical engineering]

His repetition of "new" in describing the school environment supports the theories about the significance of the learning environment on the student experience (Kozol, 1992; Colclough and Beck, 1986; Levinson et al, 1996; McClaren, 2003; Noguera, 2003; Tatum, 2000). During the interview, John exhibited a change in his energy as he discussed his magnet school experience. In his descriptive analysis of his elementary and middle schools John expresses no glow about their physical environments; rather, he focuses on the efforts of the teachers and his own ethic for academic excellence in his descriptions of these school experiences.

Each of the participants engaged in extracurricular activities during high school, which helped expand their interests, broaden the scope of their experiences, and centralize their attention on academic goals.

My mom kept me busy in Boy Scouts, as well as clubs, little social clubs and what not. Kept my mind off stuff. Plus, I was in band, and we traveled sometimes. I got to see a little bit of the country through that. That was neat, and let me see some parts of the country I liked. I wanted to do something that let me get out of there.

[Matt, metallurgical engineering]

Matt describes his mother's mission to keep him busy during his teenage years. His indication was that involvement in civic organizations, social clubs, and part-time jobs would unite him with healthy communities and guard him from other influences that his mother deemed less desirable. Kevin was a member of the marching band and played sports in high school. He had friends who were involved in a number of activities that distracted his focus on academics. He hails one of his teachers for who took a special interest in his success.

I had a teacher – Ms. Vold. She was my computer teacher FBLA advisor. She always encouraged me. She put me in activities and clubs to keep me away from bad things. You know, things like drug use and selling, robbery like some of my friends were into. Some of them would do that stuff for the high of it – adrenaline rush. Ms. Vold's influence is still active with me in my mind today. She pulled me away from the bad crowd, and looking back, that really changed things for me.

[Kevin, civil engineering]

Mrs. Vold saw the community surrounding Kevin during his adolescent years and stepped-in to fill his time with healthier activities. Kevin believes that her intervention may have made the ultimate difference in determining his persistence in school. He confirms the impact that this teacher had on his experiences during his youth, and now, in his adult life.

Another meaningful extracurricular activity for Kevin was the middle school science club. He describes, "In 7<sup>th</sup> or 8<sup>th</sup> grade I joined the SECME club, which is a science based organization, and I loved it!" Involvement in this organization gave him the opportunity to engage closely with other students and the faculty advisor who shared his interest in science. John also became involved with a STEM organization in high school. He credits this experience as impacting his decision to pursue a degree in engineering. In his words, "At my high school we had an Engineering Academy. And I'm like, "Oh yeah, this is pretty fun. Let me do this. I'm actually good at it." That's how I decided to choose engineering as my

major here at EU. Both John and Kevin's early engagement with math and science organizations offered an avenue through which they could explore their talents and develop their capacities for STEM. The literature confirms the role of mathematics and science enrichment programs in the development of critical literacy in science and mathematics (Frankenstein, 1990; Green et al, 2010; Ladson-Billings, 1997; Keck-Staley, 2010; Martin, 2009; Smith and Hausfaus, 1998; Terry, 2010; Tyson et al, 2007).

### **Parent and Family Influences**

One of the central findings that emerged in the participants' stories involved their early learning experiences and negotiation of knowledge. The strength and nature of these intimate relationships varied among participants, but there is inescapable evidence confirming the function of the family in framing the perspectives, preferences, and principles of participants. In each of their accounts, family acted as catalysts for launching their learning processes and were intentional in promoting educational achievement. Participants' extrapolations about the involvement of their immediate families align with the existing research on the influence of parent and family communities in the educational process (Connor, 2006; Edwards et al, 1999; Mandara, 2006; Reynolds, 2010; Smith and Hausfaus, 1998; Tatum, 1997; Yosso, 2005). In this next section of the Story of Community, I share the participants' narratives about the role of their families in their academic development.

John explains the role his grandmother, a former schoolteacher, assumed in building his literacy at a very young age.

My grandmother, being the teacher she was, would always have me do some random *Hooked On Phonics* stuff. When I was a kid, I would just like, like speed through the exercises. At the time it didn't seem like I was learning anything. But maybe I was, just by her doing it. So it kind of like gave me a head start when I went

to kindergarten and all that. Like pretty much in the beginning I went to school, and I was like, this is pretty easy.

[John, mechanical engineering]

Kevin remembers that his grandmother worked with him on basic skills before he ever began kindergarten. To help him with the alphabet and other rudimentary concepts, she used music as a tool for teaching. Matt still holds on to the flash cards that his mother used to build his numerical skills and word association. Jordan's mother utilized conversational engagement as a mechanism for broadening his basic language skills. He believes that her strong commitment to communicating during his formative years helped him adapt a powerful aptitude for knowledge. "I was always a smart child. She [mother] always talked to me. When I went to kindergarten, I could speak at the level with my kindergarten and first grade teachers." Jordan's interpretation of the value of his language capacities support theories of capital on student learning and achievement (Bourdieu and Passeron, 1977; Yosso, 2005).

Timothy's mother incorporated creative methods in helping him develop his language and literacy capacities before he started school.

I used to have to read out loud in front of my mom. If I missed a word, there was this wiffle bat and she would hit me with it. Every time I think about it, I still laugh [ha ha, yeah]. I'd be sitting on the stool, and she'd be sitting on the bed; and I'd be reading. If I missed a word, she'd hit me with the wiffle bat. But I became a great reader. This was when I was little. Even when I started school, I remember being in the accelerated reader program. I was on a really high reading level. I think my mom was afraid I would be behind, but I wasn't behind.

[Timothy, civil engineering]

Shared in humorous context but with meaningful intent, Timothy credits his advanced abilities with the demanding teaching tactics introduced by his mother. He underscores her ardent determination to make him learn to read. His mother's insistence on perfection



has persisted throughout his education, and continues to influence the way through which he manages his adult affairs. Similar to the other participants, Timothy's experience confirms research findings concerning the power of parental influence in framing the academic identities of black males (Edwards et al, 1999; Mandara, 2006; Reynolds, 2010; Smith and Haufaus, 1998; Strayhorn, 2008; Tatum, 2000; Yan, 2000).

The level of educational attainment of parents has been a significant factor towards encouraging the drive for achievement among participants in the study. Data on student persistence in higher education identify the prevalence of attrition of first-generation college students (Bonner and Bailey, 2006; Cuyjet, 1997; Harper, 2010; Pascarella and Terenzini, 1991; Roach, 2001; Tinto, 1993). Three of the participants identify as first-generation college students. Matt, Kevin, and Jordan are the first in their families to enroll in higher education. Kevin's grandfather joined the military to "escape the South," but he is the first in his family who turned to college as a means of social mobility. With a conspicuous smile, Kevin describes his delight about completing his engineering degree. "There have been ups and downs, but then I'll be able to say 'I did this' – that is just something I want."

I'm the only one. My family looks up to me a lot. My oldest sister is thirty. And she looks at me...we talk like I'm the older brother. I mean, they are so happy for me. They're so excited about coming to my graduation. It's a major accomplishment for me, as well as my family. You know, it's something they're going to take pride in, just as I will.

[Jordan, civil engineering]

Pride swells inside of Jordan as he describes his sentiments and the feelings of his family about his success in college. His reference to being like the "older brother" indicates a leadership identity or guiding role in which he has become situated as a result of his

enrollment in college. Matt recalls how his parents pushed him to work diligently throughout his K-12 schooling, so that he would enjoy socio-economic advantages and escape a cycle of financial struggle.

My parents pushed me in school. They didn't want me to end up like they did, working from paycheck to paycheck. You know, they didn't want nothing but A's and B's. They did not believe in C's. They pretty pushed me. Well, you know – you're like a teenager and you're mom's on your nerves about homework and stuff. They really pushed me a lot.

[Matt, metallurgical engineering]

The demand for high marks on his report card indicates his parents' belief in the liberating empowerment of education. According to Matt's parents, a sound education is the avenue to freedom. This finding is consistent with the literature regarding the expectations of parents of minority students and their association of high educational outcomes with the social mobility of their children (Edwards et al, 1999; Mandara, 2006; Reynolds, 2010; Yosso, 2005).

First-generation students of color encounter a number of challenges associated with the transition and adjustment to college life (Astin, 1993; Cuyjet, 2004; Kuh et al, 2005; Pascarella and Terenzini, 1991; Roach, 2001; Tinto, 2008; Upcraft et al, 2004). Participants verbalized their own challenges, as well as the challenges that others might face as students whose parents are not college graduates. Jordan explains, "Um, I'm the first generation college student, so I couldn't go to my parents for advice about college. But they were always there for encouragement." Though he refrains from seeking the counsel of his parents about college, he confirms the importance of their support in the broader sense of his life experience. John summarizes the involvement of his parents in his college experience in the following manner:

My parents are very hands-off. Neither one of my parents went to major universities. My dad went to the Navy and my mom went to a local community college. And like pretty much like they are always worried. They are like, 'So how are you doing in classes?' And they were like, 'Why are you always doing homework? Why are you always studying?' And they don't really understand, blah. My mom is like calling three or four times a day. And I'll be like, 'Yeah, yeah I'm doing homework.' And she doesn't understand.

[John, mechanical engineering]

Here, we notice some frustration emerging within John related to his parents attempts at be involved in his college education. Because of their unfamiliarity with his experience, they call and question John about his schooling. John admits that he has taken measures to distance himself from his parents to keep them from worrying about his college life.

Timothy is a second-generation college student; from this informed perspective, he shares his synopsis of the dilemma facing many African American students at Expansion University.

Sometimes there's a lack of information, not knowing all the – cause like a lot of – like most white parents went to college. And a lot of them went to EU. Where a lot of black kids' parents didn't go to college, or didn't go to EU. So they don't know about some things that EU may not publicize, because with them it's just common knowledge. And generally it is common knowledge. If my kids try to come to college, there's a lot of things that will be common knowledge to them. But if their friends' parents didn't go to college it won't be common knowledge to them. They never would have known. EU shouldn't take for granted that it's common knowledge. When it comes to like applying for scholarships every year. Or the emergency loans that are interest-free, or any little things like that.

[Timothy, civil engineering]

In this account, Timothy reveals his enlightenment about the advantages of experienced persons over those who have not attended college. He provides very insightful information for university faculty and administrators in his analysis that common knowledge is not always common. His perception of this reality for first-generation students supports the existing scholarship about student persistence in higher education. African American

students who do not enjoy the privilege of background knowledge about college may feel disconnected from their campus environments and suffer the consequences of disengagement (Cuyjet, 2004; Green et al, 2009; Harper, 2009; Kuh et al, 2003; Pascarella and Terenzini, 1991; Tinto, 1993; Yosso, 2005).

Participants garnered other meaning, motivation, and drive from their family communities. Each participant believes that his parents have been instrumental in the establishment of his own work ethic. Hard work emerged as a prominent theme throughout the stories, and will be discussed in the story of commitment later in the chapter. Throughout the research relationship, Matt repeatedly underlines the effect that his parents' experiences have had on his own behaviors and how their examples have motivated his actions.

To see where they came from was a big deal for me. My dad had like four brothers and sisters. My mom, she was the only child. And like they came from single parent homes and what not. So the fact that they were there for me is a big thing. You know most minority kids don't have that, where I'm from. So I took that over the years and took that value. And it's still inside me. So that's why I worked so hard in all my classes. Like intermediate on up. To become what I am now.

In this reflection, Matt examines his life story and credits the commitment of his parents as a powerful motivator for his academic success. His conclusion that most children who are from his lower-income, minority community are also from single-parent homes is in sync with the statistics about socio-economic status and family structures in communities of color (Howe, 2006; Lipsitz, 2006; Thernstrom and Thernstrom, 2003).

While parents were involved intimately in directing the early education of each participant, Matt deems his preschool experiences as particularly significant in cultivating his spirit of academic inquiry. He recalls, "My preschool was like a development center. Where we learned things like first graders already know. So I learned like first-grade

material while I was in kindergarten – dealing with numbers, as well as counting.” Matt’s reflections portray his accelerated preparedness for the formalized school as a result of his engagement with the stimuli and the structured curriculum at the pre-kindergarten program. He expounds upon the physical, social, and academic resources within his preschool environment and how these features impacted his development.

At my preschool, it was all black. We had a playground. We had a nap area. We learned...they had a kitchen to feed us lunch. We had a classroom where we learned to count, simple sentences where we learned how to write. That’s like where I got exposed to other races and what not. You had one computer. You had headphones to do like reading things and what not.

{Matt, metallurgical engineering}

As Matt has indicated with his comments about his elementary school, CRT researchers and identity scholars recognize schools as the environments in which students first encounter race and begin to understand racial ID (Howard, 2001; Isom, 2007; Ladson-Billings, 1999; Ladson-Billings and Tate, 1995; Lee, 1996; Majors and Billson, 1992; McClaren, 2003; Morrow and Torres, 1995; Oyserman et al, 1995; Sanchez-Casal and Macdonald, 2009).

Along the lines of racial separation in the community, Timothy shares his experience as a student in a racialized K-12 school system.

The school I went to was, I wouldn’t say, fifty-fifty. But it was a good number of blacks and a good number of whites. Most of the whites went to Baxter High School. I went to Baxter. Like the best people in sports, the best blacks in sports went to Baxter. Then Cabin High School was like the other high school that was like literally across the street. Cabin was the majority black, even though it may not have been, it just felt like it. It was smaller. Most black people went to Cabin.

[Timothy, civil engineering}

Timothy’s reflections on high school demographics in his hometown confirm that he was conscious of racial differences and the impact of white privilege on his community. While

no de jure segregation called for a separation, the perception of a Black school and a White school existed. Timothy described the difference in resources at these two institutions from his perspective as a student at Baxter High School, the white school, as he identifies, above. He identified his school, Baxter high school, as the best public school in his city. In his words, “Where I went to high school, just talking to my friends, it was the best public school around.” Timothy’s confidence in the quality of his early education and his conceptualization of the status of his high school inform his position on the politics of environment in a manner that distinctly differs from the four other participants in the study. This finding in his story correlates with stages in Cross’ Nigrescence Model of Black Identity Development; the stimuli that prompt African American men to engage in stages of Black identity development will be further expounded, later, in the story of constructs (Cross, 1991; Helms, 1990).

While the nature of the physical environment for some communities of color may stifle achievement, social mobility, or opportunities, all participants did not believe that these challenges pose insurmountable obstacles as a standard for all. A common theme in their stories is a staunch belief in themselves, the mobilizing power of hard work, and their abilities to succeed in any scenario. In describing the social consequences of the community setting, Timothy states the following:

They try to blame it on the environment. People say, oh, I’m from the hood. Nobody went to college. It’s funny, because people that went to college, you may not see them, but just because you’re from that area, doesn’t mean that’s all you can be. Especially, if you’re in college, because you’re not there any more, if you’re here at this point.

[Timothy, civil engineering]

We may see from Timothy's perspective that he feels one may exceed the expectations and escape the snares of lower socio-economic communities through higher education. In his language, we may see that his reality is different from the critical standpoint that some scholars hold about the crippling confines that poverty has placed on marginalized communities (Kozol, 1992; Lipsitz, 2006; Tatum, 2000). Jordan also argues against blaming the environment for its shortcomings.

I don't see anything hindering me, but myself. I can't see me allowing anything outside to hinder me. Like my mindset, when I visualize what I want in life. And I try my best to be grateful for what I do have. And just be a man, like period. My thought of life is that I can be a great man, who marries a beautiful woman with a great job, to raise a great family, and have a great home. You know, it's not a whole lot extra. I just want to live happy, and I will do it.

[Jordan, civil engineering]

In this account, Jordan expresses his confidence that his mindset is the only thing that will matter in regards to determining his future opportunities and success.

In regards to the relationship between early environment and higher education, John shares observations about his community. He explains a problem with the lack of guidance and direction that some students encounter in high school that may inhibit their success.

I think one of them is just coming from mediocre high schools. Like I was fortunate enough to come from a magnet program that prepared me for college. Meanwhile, a lot of high schools in low-income areas or rural areas, their schools don't prepare students for college. They're like "you got a diploma; here you go, get out of here."

[John, mechanical engineering]

Here, John expresses his feelings about the experiences of students of color exiting low-income communities after high school. Though his high school did not fall into the category that he outlines in his narrative, John speaks candidly about his observations of the

experiences of his friends with whom he socialized outside of the classroom and in his neighborhood. His reference to “Here to you; get out of here” indicates lower expectations of educators and a lack of success identities among students in low-income and rural areas, as is consistent with the literature (Bianco et al, 2011; Harper, 2009; Howard, 2001; Hughes, 2011; Keyes and Singley, 2005; Mahalik et al, 2006; Ogbu, 1990; Reid and Moore, 2008; Whiting, 2006).

### **Community at College**

I didn't expect to find a community like this. It's actually balanced with my community back home.

[John, mechanical engineering]

The literature on African American men enrolled in predominantly White universities indicates the strong impact of the social community on their college experiences (Bean, 2005; Cuyjet, 2004; Elliot et al, 1995; Kuh et al, 2004; Pascarella and Terenzini, 1991; Tatum, 1997; Tinto, 2008). Participants' narratives support this notion of their college community as significant to their success at Expansion University. Timothy describes his surprise at the number of African American students at EU. He expounds, “I didn't expect there to be as many black folks here as there were. I guess there's not, if you compare to ratios, but way more than I expected. I was surprised that EU had a really good black community here.” John also describes how the social community at EU offered more opportunities than he expected when he initially enrolled. Though he acknowledges the substantial size of the university throughout his accounts, he has found ways to sustain smaller communities of socialization.

It's actually been better than I expected, here. Like I said, I managed to get up with a good group of friends. And I managed to join a living learning community. It like really expanded my friend base like crazy. Like I'll walk to class and see like four



people I know, and it's like what's up, what's up? So like being around roommates and going to parties, you meet a bunch of people that way. They're like weren't you at blah, blah? I'm like yeah. It's just expanded, like ridiculous. And like playing soccer – a lot of people do that. They're like, "Don't you want to come out to the Rec and play soccer? We need to do that sometime." We go and do different things. It's actually more than I expected.

[John, mechanical engineering]

By engaging professionally in a campus organization, John has been able to connect socially with other students. John's commentary indicates his satisfaction with his community of friends and peers. Research on student persistence has shown that satisfaction with the social community on campus is a critical factor in the retention of students (Astin, 1993; Bean, 2005; Campbell and Fleming, 2000; Cuyjet, 2004; Harper and Wolley, 2002; Helms, 1990; Kayes and Singley, 2005; Kimbrough et al, 1996; Mahalik et al, 2006; Pascarella and Terenzini, 1991; Tinto, 1993; Watson et al, 2002).

Adaptation to the university environment is another significant issue that surfaced in the participants' stories. Some participants found adjusting to the campus community easier than did others. Jordan confidently confirms his ability to adjust at EU. He asserts, "If you were taught how I was, to fight for yourself and create a chance for yourself, then that's it. You will make it – easy as that." John found the most effective way for him to EU was to become a part of the campus. He declares, "You just have to like become a part of campus life. There's a lot of people here doing a lot of different stuff, and you can be a part of it if you put yourself out there." Matt shares a philosophical interpretation of adaptation in relation to his transition to the community at Expansion University.

If you don't adapt, you become extinct. I had to adapt here. I had to adapt with the black community and overall. The blacks here are so much different than where I'm from. The black guys hung around with the wrong people.

[Matt, metallurgical engineering]

Matt discusses his need to acclimatize at EU. Not only has it been necessary for him to adapt to the greater campus environment, Matt also describes having to adjust to the African American community, as well. Ideology has established a popular perspective about the widespread uniformity of persons within communities of color (Bynum et al, 2008; Harper and Nichols, 2008; McClaren and Kincheloe, 2007; Solorzano et al, 2000; Yosso, 2005). This objectification of persons of color based on a group classification ignores the uniqueness of individuals within these groups. Matt's interpretation of his adaptation experience emphasizes his uniqueness among other individuals in the African American community on campus.

The freshman year is widely regarded as the most imperative period of development for college students (Astin, 1993; Kuh et al, 2003; Kuh, Kinzie, Schuh, and Whitt, 2005; Pascarella and Terenzini, 1991; Tinto, 1993; Upcraft, Gardner, and Barefoot, 2004). Retention studies have linked academic success with the strength and level of connection that first-year students experience with their campus community (Astin, 1993; Kuh et al, 2005; Upcraft et al, 2004). Participants' stories highlight the freshman year as a pivotal point in their experiences at EU. Matt regards his freshman year as the time when he connected with his community. He shares, "I had a great freshman year. Met tons of people. Got tons of experience. Experiences I'll never forget. Now, my best friends are here. I don't know if I would have had the same experience anywhere else." When discussing his senior year, Jordan simply states, "It was amazing – a life changing experience." John speaks about how his freshman year really impacted his outlook and broadened his view of the world.

Like, as a freshman I just learned that where I was brought up is not the whole world. Like realizing that this town is not the main stop... It just made me want to go to different places, and see how different they really are. Before, it was just like I just want to come to college, get a job, and make money. I don't care where it is, I just want to make money and have a nice life. Being here, just kind of expanded my ideas about all that.

[John, mechanical engineering]

We see from these statements that John expanded his idea of opportunity during his freshman year experience at EU. Leaving high school, his plan was to attend classes, earn a degree, and have what he describes as "a nice life". Different dynamics and experiences during his first-year at EU opened his mind to the value of diversity, the importance of place, and the rotund breadth of experiences associated with higher education. John's enlightenment about his freshman year experience supports the literature about college student growth and development during the first-year (Astin, 1993; Kuh et al, 2005; Upcraft et al, 2004).

### **Campus Involvement and Student Organizations**

Involvement on campus is a tangible indicator of the connection a student feels with his campus community (Astin, 1999; Cuyjet, 1997; Kuh et al, 2003; Kuh et al, 2005; Pascarella and Terenzini, 1991; Tinto, 2008; Upcraft et al, 2004). Comparatively, the level of involvement among male undergraduates tends to be less than the average level of involvement among female college students (Kuh et al, 2003). African American men often show the lowest levels of campus involvement among any group on campus (Cuyjet, 2006). Participants in the study identify involvement among the foremost tenets in their stories. From Greek Life to professional organizations, participants associate their co-curricular involvement experiences with their success in college and in engineering.

Participants described the educational and social value of their co-curricular

Involvement experiences. For Matt, involvement helped him open-up, become more adept in social settings, and more comfortable in the expression of his identity.

I was shy at first – shy, kept to myself a lot. Then I started joining clubs. Opened up to leadership. Talking more. Just talking to a bunch of people. Presenting stuff. Becoming more outspoken. Articulated. Becoming more conscious of my surroundings. Watched myself grow from a dude, like I had little braids my freshman year. Then I started growing dreds, and what not.

[Matt, metallurgical engineering]

Matt credits his development of particular social skills, refinement of his language, and his expanded consciousness to his association with campus organizations. Timothy regards his engagement with Greek Life as an invaluable learning experience.

I took fraternity as a learning experience. It was difficult, and I was used to doing difficult things. There was no doubt in my mind that I was going to make it through, or be successful in the process. Because I feel like I do stuff like this all the time. And I took the experiences, and I took it to real life. You can relate it to real life, even though this doesn't really happen in real life. But, you can apply it like – life is hard. What we were doing was hard. You've just got to be determined and take it through.

[Timothy, civil engineering]

With this description of his fraternity experience, Timothy compares the struggle of the pledge process with the challenges one encounters in other spaces of existence. His idea of being able to overcome “difficult things” and having to overcome such stimuli “all the time” indicates a disproportionate set of challenges that have affected him over time. His reference to challenges correlates with CRT research on African American males in education; the struggles, exclusionary politics, and racial micro-aggressions endured by some African American males throughout their schooling have encouraged the development of certain survival characteristics, which are commonly found commonly among minority populations (Allen, 2010; Bailey and Moore, 2004; Bonilla-Silva, 2003;

Buras, 2011; Dixson and Rousseau, 2005; Freire, 2000; Harper and Nichols, 2008; Harris, 1993; Jenkins, 2006; Ladson-Billings, 2000; Noguera, 2003; Reynolds, 2010; Roach, 2001; Yosso, 2005). These challenges will be discussed at-length in the eighth chapter: The Story of Challenges.

John confirms the holistic value of student involvement towards his development of a critical consciousness with the following explanation of his participation in a men's residential learning community program.

Like the Markson Assembly – they're basically my extended family on campus. Just, just being around a group of people that are cool and a little different changed me. Because you're forced to interact with people. There's always people sitting in the lobby. So like you come in, and you just sit down with them. You're eventually going to find a topic you want to be a part of in the discussions. Like I used to live in another dorm. Like I was a member of Markson Assembly, but I didn't live there. I lived in another dorm, and I rarely ever saw my roommate. It was like, "Hi, what are you up to?" That was about it for me and my roommate. I think that's one of the downsides to these mega-dorms. Like you don't have to see anybody. Like you don't have to realize you hate this type of person. You don't even have to realize you like this type of person. You are just there, and just isolated. I think that's why a lot of students just kind of feel bad, like cause you have the option of going into your room. You don't have to see them at all. It's like if, like if you were in the same bed space area, they might get on your nerves, but you would at least know what's going on in their lives. Do you know what I'm saying? So I guess that's like one of the main things that help—just being in Markson, I got to be around people, and it forced me to interact, and that's how you learn to interact with other people.

[John, mechanical engineering]

John's experience in this living learning community at EU helped him realize the value of relationship building among his peers. In contrast to the "isolated" residential environment that he had lived in before becoming a part of the Markson Assembly, living in the common space with his peers "forced" him to reach outside of him. This structured immersion in a diverse community of scholars helped John negotiate difference in a way that he had not previously experienced. John also explained that the richness of the

intellectual community in the Markson Assembly helped him think more critically about a variety of issues. John's narrative on the benefits of his learning community experience supports the literature on the learning outcomes of undergraduate students engaged in residential learning communities (Kuh et al, 2005; Upcraft et al, 2004).

The research on the campus experiences of African American men at PWIs is ripe with references to the essentiality of associations and the consequences of enjoying less-established communities of engagement (Abraham and Jacobs, 1990; Bailey and Moore, 2004; Cuyjet, 2006; Feagin, 2002; Kimbrough et al, 1996; Pascarella and Terenzini, 1991). The stories of each of the participants included involvement in student activities, undergraduate research, professional organizations, or some other type of extracurricular endeavor. Participants emphasized the importance of involvement in their college community and associated these activities with their success at EU. John explains his introduction to campus involvement in the following way:

It just kind of came out of nowhere. When I first came here, it was like I've got this whole class thing done. I'm like why is everybody always stressed? Then I realize they're like doing all this other stuff, too. So I was like man maybe I should do more community service—that's what everyone else is doing. Then I just kind of like stumbled into stuff.

[John, mechanical engineering]

In this analysis of how he came to develop an interest in co-curricular engagement, John describes a concentrated focus on his coursework. He noticed his classmates and peers exhibiting symptoms of stress and inquired deeper into their experiences. Timothy also describes a lack of knowledge about organizations and involvement opportunities.

I didn't know anything about Greek, until I got here. I didn't care anything about it when I got here. But then I was like, I think I want to be in a fraternity. Then I got to thinking like, would I hang out with these dudes? If there was no fraternity,

who would I be friends with? It would probably be them. That's why I pledged that fraternity.

[Timothy, civil engineering]

The organic means through which John and Timothy arrived at involvement indicates reliance on personal discernment to navigate the university environment and the absence of guidance from university personnel about extracurricular opportunities. The experiences of John and Timothy correlate with findings in the literature about the lack of guidance and separation suffered by some African American men on a predominantly White campus (Bonner and Bailey, 2006; Cuyjet, 2006; Harper, 2009; Kimbrough et al, 1996; Solorzano et al, 2000; Tinto, 2008).

As referenced earlier, involvement in Greek Life is a prominent theme throughout the stories of the students in the study. The research on college student development includes Greek Life among the meaningful involvement experiences of college students (Astin, 1993; Kuh et al, 2003; McClure, 2006; Watson et al, 2002; Upcraft et al, 2004). Both Jordan and Timothy are involved in the National Pan-Hellenic Council, which is the division of Greek Life at EU that has traditionally served a majority of African American members. While they are in the same fraternity, their reflections describe distinctive, individual outcomes resulting from their experiences. Participants indicated the value of their membership in campus fraternities. Jordan is highly proud of having "crossed" his fraternity. To Jordan, membership in the fraternity is an achievement in which he and his family may take lasting pride. In sharing the story of his pledging process, he shares "I want him to know that his dad went to college, and pledged a fraternity." Timothy believes that the fraternity offered him an association through which he could enjoy experiences, which are not afforded to all students.

I'm in a fraternity, so that makes my college life a little different. A lot of black males that come to college, don't get the opportunity to be in a fraternity, and be exposed to different aspects of college. I feel like that influenced me a lot.

[Timothy, civil engineering]

Here, Timothy speaks about the privilege associated with membership in a Greek organization. By alluding to the fact that "a lot of black males that come to college don't get the opportunity to be in a fraternity," he indicates the exclusivity of this affiliation and the separation that divides the experiences of non-Greek men of color. His indication of this intra-racial division by fraternal association among African American male undergraduates supports the literature about the diversity of experiences for students of color on campus (Cuyjet, 1997; McClure, 2006).

Jordan served two consecutive terms as president of his fraternity. In his experience, the fraternity offered an arena through which he could connect with other black students at EU, build his leadership capacities, and serve others. Jordan was swift to cite the time commitment associated with his work in the fraternity as a challenge. He describes his demanding schedule of commitments as a student in engineering and chief officer of his fraternity.

It's a tough curriculum. And trying to balance engineering with a social life, especially a fraternity, where I was President for two years. And as a father, you're just trying to go through that curriculum with other important tasks, which mean a lot to you. You just basically have to divide your time up, and multi-task – just very effective time management. That's where it got very complicated for me. Knowing how to proportion your time. It's kind of hard to say sometimes, when you have to do this. My son needs this. As President, I have to do this. It was just times where all three of those clashed in the same week. It just really threw me for a loop. Balancing that with other things.

[Jordan, civil engineering]



Jordan's account of this battle to balance the social, parental, and academic spheres of his life reveal the challenges connected with his college experience. Timothy also confirms the time strain that goes along with membership in a fraternity and introduces some of the social distractions that are introduced through this involvement.

But I feel like the success rate is just the same for like African-American men that are not in a fraternity. Which you think would be the other way around. Since we were in a group together, ours would be a little bit higher. But I'm pretty sure it's not. It's either the same or lower. Cause we've got like parties. Sometimes, it can like hurt you to be in a fraternity, because you have all these parties, women, even like drugs.

[Timothy, civil engineering]

Skepticism surrounds the impact that fraternities have in the development of healthy habits among African American men (Brown, Parks, and Phillips, 2005; Cuyjet, 2004; Kimbrough, 2003; Kuh et al, 2003; McClure, 2006; Watson et al, 2002). Timothy's analysis about the effects of fraternity membership on student success confirms his belief that some of the social opportunities of Greek life serve as disruptions to the academic experience. His thoughts on this issue are informed by friends, fraternity brothers, and others who he has seen fall victim to this phenomenon. Timothy's identification of the various distractions, such as substance abuse, dating behaviors, and excessive social activities, confirm the risk factors, which have been commonly associated with African American fraternity life (Brown et al, 2005; Kimbrough, 2003; Kuh et al, 2003; McClure, 2006; Watson et al, 2002).

Though not official members of a fraternity, other participants' reference the overpowering presence of white Greek life on EU's campus. Participants identified privileges that white fraternities enjoyed, most often to the exclusion of students of color. As is characteristic of fraternities at large campuses, parties and coed social activities are prominent fixtures in the Greek life experience at EU (Brown et al, 2005; Kimbrough, 2003;

McClure, 2006). Matt references a hazing incident in a white fraternity at EU that attracted national attention in the fall of 2012; he uses this example to broach the subject of institutional discrimination in regards to an inequality of opportunities and consequences for African American organizations on campus.

Black students don't have the same experience as whites cause I've been here. I know there's like with the frat parties. The black frat can't have a party during the weekdays, but a white frat can; and you know there's only two black frat houses on campus, and like a million white frat houses. It's like if one black fraternity did something like the white frat did, they would have been done for forever. But it wouldn't have been a trial. They would have been done on the campus. So you know with like homecoming and what not, they get to do more events than the blacks.

[Matt, metallurgical engineering]

Here, Matt paints a vivid picture of the perception of the expansive white Greek system at EU. His comparative reference of the two black fraternity houses to "a million" houses among white fraternities reveals the dominant presence that white groups hold at a PWI. His confidence about the outcomes of a black hazing incident indicate a familiarity with the history of African American fraternities on predominantly white campuses, as well as his negotiation of racialized differences at his own institution. Since their initial founding in the early 1900s, historically black fraternities and sororities have suffered severe penalties for hazing offenses and other incidents regarded as campus violations (Brown et al, 2005; Kimbrough, 2003). Kevin also speaks to the perceived racialized decision-making practices of the Greek Life administration at EU. He states, "A lot goes on on-campus that the world doesn't know about. It's like it didn't happen when it's the white frats doing it. Then when something happens that involves a black kid, then everybody's like he was on drugs or he deals drugs or something." Kevin's commentary indicates a clear perception of separate standards and penalties at EU for white fraternities and African American fraternities.

More about participants' expositions regarding race and racism is discussed in the seventh chapter of this dissertation: The Story of Constructs.

The literature on college student development supports the demand for both academic challenges and supports for students within the university environment (Astin, 1993; Kuh et al, 2004; Pascarella and Terenzini, 1991; Tinto, 2008; Upcraft et al, 2004; Watson et al, 2002). Among the most evocative involvement experiences for participants is membership in the EU Chapter of the National Society of Black Engineers (NSBE). Co-curricular, professional organizations such as NSBE offer students opportunities to engage in curricular enrichment programs, peer discussions, research and creative activities, service, and faculty relationships (Kuh et al, 2003; Pascarella and Terenzini, 1991; Upcraft et al, 2004). NSBE provides a special space for students of color in engineering. Based on the accounts of participants, NSBE guides their paths through college and supports access to an empowerment within the field of engineering. Open to both males and females, NSBE constructs a social space for students of color within engineering. In each of the narratives, participants' involvement with the EU Chapter of the National Society of Black Engineers (NSBE) was unremittingly accentuated as meaningful and constructive to their success. This community of African American engineering scholars offers opportunities through which these men could engage socially, work collaboratively, grow professionally, and function communally. Timothy describes the purpose of the organization and the subsequent effects that his involvement in NSBE has had on his college experience.

It's a national society for black engineers. We go to conferences. We have regional conferences and national conferences, which puts you in the eye of like a lot of employers. It gets you used to – like we do a lot of resume work. We do resume workshops, interview workshops, study workshops, community service. And then we go to conventions. Where actually you can apply everything you've learned, and try to get a job, get internships. It's a good networking, like you're around your

peers. You know people that can probably help you out. Like I've met friends, and we're going to be friends all our lives.

[Timothy, civil engineering]

NSBE opens doors that have been traditionally unavailable to African American students at EU and in the field of engineering. Each year, the EU Chapter sends a delegation of students to the national NSBE conference. Matt reflects on his experience at his first NSBE conference.

At my first NSBE conference in Orlando, we had a speaker and he spoke. He was very inspirational. He made me realize, okay, I can do this, if I put my mind to it. At first, I was all about the money. He was like don't let it be for the money. You've got to find another, better reason to want to stay in this. It's not going to get any easier on you, just harder. I found my other reason. I stuck with it. Now I love it.

[Matt, metallurgical engineering]

Matt delivers very powerful prose in this short passage. Hearing the speaker at the NSBE conference inspired Matt and helped him internalize the value of engineering beyond the idea of vocation.

NSBE provides an important social network for African American males enrolled in engineering. In regards to networking in NSBE, John states, "It's been an awesome support group." Timothy describes, "In NSBE you're doing things like bowling and stuff like that, so you get to know people that's in your major. Cause like, all my friends that are engineers are in NSBE. I don't have a friend that's an engineer that's not in NSBE." Timothy's deduction that all of his friends in engineering are members of NSBE underscore the importance of professional organizations for African American men at PWIs, which has been highlighted throughout the literature (Bean, 2005; Cuyjet, 2004; Campbell and Fleming, 2000; Harper, 2009; Kayes and Singley, 2005; Taylor and Howard-Hamilton, 1995; Watson et al, 2010). His confirmation that his only friends in engineering are

members of NSBE also indicates racial segregation among students in the college; this finding will be further expounded in chapter seven of this dissertation: The Story of Constructs.

Participants attribute a substantial part of their success in the EU engineering program to their involvement in NSBE. Timothy describes the profusion of resources available to African American students through NSBE.

If I wasn't in NSBE, I won't say I wouldn't have made it, but my GPA wouldn't have been as good. It would have been a lot more difficult. When you meet a lot of cool people. Like a lot of older people that can help you, give you advice, like which teachers you should take and just advice in general about college. All the engineering teachers are there, and sometimes they can help you on your work. They may have just finished the class you're coming in. And like they've got the engineering commons in there. And when I first came here, they had just started the writing center.

[Timothy, civil engineering]

Timothy's knowledge about the resources available through NSBE authenticates the organization's effectiveness in connecting students of color with support services on campus. Unfamiliarity with resources and isolation from support services have been commonly cited as challenges for African American men on predominantly white college campuses (Cuyjet, 1997; Harper and Nichols, 2009; Harper and Wolley, 2002; Kayes and Singley, 2005; Kuh et al, 2003; Tinto, 2008; Watson et al, 2002). Not only does the organization offer a community of engineering scholars of color with whom they may engage, NSBE generates an atmosphere of hope and possibility among African American men. Matt explains how the organization showed him successes through other students whom he feels are similar to him in some way. He expounds, "And like joining NSBE, I learned about all the engineers who made it. And to see somebody like me who have made it – that was like wonderful." As Matt depicts in his analysis of NSBE, successful exemplars

of color have been shown as influential factors for African American men in college (Bonner and Bailey, 2006; Brown, 2009; Campbell and Fleming, 2000; Harper and Wolley, 2002; Hawkins, 2011; Jackson et al, 2010; Jenkins, 2006; Lee, 1996; Love, 1993; McWhorter, 2001; Noguera, 2003; Oyserman et al, 1995; Person, 2006; Smith et al, 2006; Solorzano et al, 2000; Watson and Kuh, 1996).

### **Conclusion**

In this chapter, I have shared the findings in relation to the communities that are central to the stories of participants. The early community experiences of these students introduces interesting findings regarding the development of their academic identities, literacies in mathematics and science, as well as their ethic for work and commitment. Through this exploration of their backgrounds, we glean insight into their initial school environments, teacher interactions, and their learning experiences both inside and outside of the classroom. Their reflections about community at Expansion University are helpful in highlighting the importance and impact of social relationships to their social and academic health. Their stories suggest the significance of race in relation to their experiences. Their connections with other students of color through NSBE, fraternities, and other outlets are indicative of the endemic nature of race in their life spaces. Their narratives surrounding the presence of meaningful relationships, as well as the absence of strong bonds with personnel in the college of engineering, reveal valuable truths about their realities as African American students in STEM at this PWI.

In the next chapter, I re-represent the narratives of participants around the theme of commitment in various spheres of their lives.

## CHAPTER VI

### THE STORY OF COMMITMENT

In The Story of Commitment, I share findings about the steadfast faithfulness of participants in different aspects of their lives. The realities of these men include inexorable areas of responsibility, comprising scholastic, societal, and self-commitments. Jordan is a committed father to his six-year old son. Kevin is a devoted grandson and caretaker for his retired grandmother. John is a dutiful officer in a campus-wide organization. Timothy has two jobs. Matt is staunch in his commitment to research. For the purposes of organization, I present their experiences into three categories of commitment: 1) commitment to the curriculum in engineering; 2) commitment to others; and 3) commitment to their personal success.

#### **Commitment to the Curriculum**

One of the consistent themes throughout the narratives involves the rigorous engineering curriculum. In this section, participants describe the factors that attracted them to STEM and led them to major in engineering. They discuss the necessity to identify an engineering major early in college and the difficulty that some students face in persisting within the major. The minimum mathematics load for engineering students is Calculus I, II, and II, plus the differential equations course. Even for the students who excel in mathematics, the load is described as cumbersome and challenging. Homework becomes a way of life for students in engineering. When trials and temptations of life pull them in

different directions, participants' commitment to academics keeps them on course towards their goals.

In citing reasons for selecting a major in engineering, participants share a variety of phenomena informing their decisions. Timothy explains, "Well, I've always loved math, so I knew I was either going into math or like economics or engineering. And like I like sticking to a schedule. And that's exactly what would be doing with an engineering project." Kevin conveys that attending a pre-college engineering preparatory program advanced his passion for engineering.

When I was younger I was always into science and technology. In high school, I was nominated by my guidance counselor for the EU SITE program and loved it! Why Civil Engineering? Well, I bounced back and forth between Chemical and Metallurgical Engineering but then CE stood out to me.

[Kevin, civil engineering]

Matt also attended the SITE program during the summer between his junior and senior years of high school. Through this experience, he was able to explore the various departments of engineering and learn more about the field of metallurgical engineering.

I came to a program called SITE. It was an introduction to engineering, and we went through every discipline of engineering here. And when we got to metallurgical engineers, I saw where they did a little more hands-on. I'm a hands-on guy. I like to do stuff. And I liked the professors. It was a small group. It was a small major. I did research on it. There was 100% job placement for MTEs. It was more one-on-one time with professors. And I just stuck with it. I liked it.

[Matt, metallurgical engineering]

Matt describes his attraction to the hands-on work of metallurgical engineers. His experiences at SITE prompted him to research more about the broader, professional aspects of the major. He expresses pleasure about the one-on-one time with faculty, the smaller size of the department, and the 100% job placement in the field. Matt's preference



for a small community, close relationships with his professors, and the guarantee of employment upon graduating are consistent with some of the needs identified in studies of African American in college (Bianco et al, 2011; Bonner and Bailey, 2006; Cuyjet, 2004; Harper, 2010; Kuh et al, 2005; Person, 2006; Strayhorn, 2009; Watson and Kuh, 1996). John shares the influence that one of his high school teachers had on his decision to pursue mechanical engineering.

Like I said, I was in the Engineering Academy. Being in it, I honestly didn't know which one to do, I just knew engineers worked and stuff. It's kind of like oh yeah, my high school teacher was an industrial designer, which is similar to mechanical engineering. He talked about how he designed all these parts and how he had flown all over the place doing stuff like that. I'm like okay that sounds pretty cool. I'm like alright, they can do all kinds of stuff like work on all kinds of stuff like cars, air conditioners. So it's like I don't know exactly what I want to do, but I can pick this one and figure it out later on. Also, my dad is very mechanically inclined. Like he does heating and air conditioning work. He does electrical work and plumbing – pretty much anything.

[John, mechanical engineering]

Though he did not have all the answers in regards to the different branches, his influences, interests, and father's abilities encouraged him to major in mechanical engineering.

Jordan's story also shows how the experiences of a family member played a pivotal part in directing his interests to civil engineering.

I have a cousin-in-law that's a civil engineer. It's actually a she, out of Georgia. And she was kind of a mentor growing up. We talked a whole lot. I'm going to say about my sophomore year in high, she actually started talking to me about civil engineering. It actually came down to electrical and civil, and I kind of steered toward civil, because basically I felt that she could be that guidance through the field, especially after graduation. Being that she is a PE. She has a professional license and is working on getting her own firm. That's basically the major deciding factor.

[Jordan, civil engineering]

These two instances indicate the impact that another's example can have on the decision-making process for students of color (Harper, 2009). Seeing that some African American

students may negotiate their own opportunities through the experiences of others also confirms the credibility of narratives and counter-storytelling in research (Baszille, 2008; Connor, 2008; Degaldo, 1989; Harper et al, 2010; Solorzano et al, 2000; Yosso, 2005).

Time and time again, an interest in the economics of engineering careers surfaces in the stories of participants. Participants acknowledge the salary margin for engineers as an attractive factor informing their decision about an academic major. John states, “With engineering, you’re going to get a job making pretty good money; that’s just how it is.”

Timothy plainly portrays his motivation to pursue a degree in engineering.

I’ve always had a goal of just being rich. Of course, engineering pays well, and I’ve had jobs every day of my life since I was sixteen years old. So I enjoy working. I like going to work. It’s a difficult job that requires a lot of work, but I don’t mind it. Of course, the pay is great.

[Timothy, civil engineering]

While one cannot ignore his repetitious references to the “great pay”, one can also see his emphasis on the hard work associated with the engineering field. Timothy is interested in becoming rich, but he realizes that hard work will be interwoven into his career as an engineer. While money was unmistakably a factor, Matt describes his distaste for writing as helping to steer him towards a profession in natural sciences and mathematics, as opposed to the social sciences.

Well, I saw the engineering salaries, and they make pretty good money. As a kid, my first thing was a doctor or a lawyer. I really didn’t like to read that much, and I hated to write. So, as the years went by, I kind of found a reason to go into STEM, instead of just the money on a piece of paper. So I realized that I liked helping people. And I figure if I can’t help people through the conventional way of being a doctor, I’d like to help people by science. I stuck with engineering – to help people the math and science way, instead of medicine.

[Matt, metallurgical engineering]

On the subject of engineering as a sustainable livelihood, Jordan states simply, “That’s something that society will need forever.” His analysis of the inherent value of engineering in our world is in tune with present demand and the projected spike for STEM careers (Harper, 2010; Hawkins, 2011; Elliot et al, 1995; Green et al, 2009; Palmer et al, 2010; Russell and Atwater, 2004; Strayhorn, 2009).

Participants emphasized early identification of their major as imperative for students in engineering. In order to follow the appropriate curricular progression, connect effectively with resources within the department, and finish the degree in a timely fashion, students must declare their specific engineering major before delving too deeply into an organized plan of study. In support of this early decision, Jordan contends, “The earlier you identify what it is that you want in life, the earlier you can start to prepare yourself for it.” Timothy admits that if he had known his major earlier, things would have been easier along the path to degree. He shares, “I would have come in and majored in civil engineering from the start. I knew I wanted to be an engineer, but I just wasn’t sure which form. That right there, alone, would change a whole bunch of stuff.” Timothy continues in recounting his past academic considerations and further emphasizes the importance of committing to a major early in college.

When I actually started, in my mind I thought it would be cool to be an aerospace engineer. Then I started taking the classes, and I realized that is not what I want to do. Sitting in front of a computer. So I guess I realized being outside. I was used to it. So that’s what made me go into civil. I thought, it’s still mathematics, it’s something I enjoy doing, and I’m not going to be in an office all the time crunching numbers. Just wish I had decided it all a little earlier.

[Timothy, civil engineering]

The data demonstrates a tendency among undergraduates to change academic majors at some point in their college lives (Astin, 1993; Bean, 2005; Dey and Hurtado,

1995; Douglas, 1998; Kuh et al, 2005; Pascarella and Terenzini, 1991; Tinto, 1993; Upcraft et al, 2004; Watson et al, 2002). While sizeable numbers of students matriculate as STEM majors, these students tend to move into other academic disciplines as they encounter curricular challenges during the first-year of college (Green et al, 2009; Hawkins, 2011; Palmer et al, 2010). Matt tells about two of his peers who started college as engineering majors and later transitioned into other academic programs.

A lot of people drop out of engineering. I know a girl that went from chemical engineering to speech pathology. It's people's choices. Some people just realize they can't hack it or they don't want to do it because it's too hard.

The typical student in engineering, is probably a 2.9 GPA. Business major is about a 3.2. I had a friend freshman year. He was in engineering at first. After the first year, he had like a 2.8 GPA. Then by sophomore year went to business and got like a 3.5.

[Matt, metallurgical engineering]

In contrast to the norm, Matt decided upon his major during his senior year of high school and has stood firm in this decision throughout the course of his college enrollment.

I knew my major since I was a senior in high school. I've had it ever since then. I held on to it. I'm probably one of the rare people who stayed with the same major four years. I knew it in high school. I declared it. Signed my application. Stayed with it.

[Matt, metallurgical engineering]

Matt defines the point in his experience at which he arrived at his major. He speaks with a pride in not only his decision, but in his commitment to his major in MTE. His language indicates association, ownership, and identification with the major. Matt's success in college may be largely related to his deep-seated commitment to his metallurgical engineering major, as is a common correlate among successful college students (Bean, 2005; Kuh et al, 2005; Upcraft et al, 2004).

Another substantiation of participants' commitment to the engineering curriculum is the amount of time that they devote to study and schoolwork. Jordan insists, "I probably study more than anyone my friends have ever known." John admits that class attendance is an essential priority for him.

Yeah, a lot of times I usually have no idea what I'm doing, so I realized the professors would sometimes do examples that would lead into the homework. So I realized I was going to have to go to class every day to figure out how to do this. You know, it really helps when the professor does the example for you.

[John, mechanical engineering]

John distinguishes the importance of class attendance in his experience. He commits time to attend class everyday in order to have direct access to professors and receive the support necessary for him to complete homework assignments. Matt expresses his belief in the significance of class attendance by sharing his thoughts about one of his engineering courses. He confidently asserts, "The only way you couldn't pass that class, was not to come to class." Timothy endorses the time commitment involved in engineering with the following explanation.

Being able to, well - I know I'm good at it - but like being time-oriented. Getting your priorities straight. Like you have to start your work, you have to do your homework. Some things like you might understand it, when they're teaching the class. But if you don't do your homework, you're going to fail it on the test. So some teachers will, pretty much all teachers will make you do your homework - like require it for a grade. But I don't see how people can not do their homework and then do well on the test. It's just too difficult.

[Timothy, civil engineering]

In his synopsis, Timothy identifies a mechanism that some engineering professors use to help promote student success. A number of his professors require students to complete and submit homework, which helps them comprehend the concepts covered during class.

Between homework, study groups, class attendance, and course projects, participants must commit substantial time to their work if they wish to be successful. Jordan summarizes, “I overworked myself in some of my classes, but I mean, that’s how I got my great results in my classes and grades.”

In many cases, an engineering degree requires a commitment longer than four years, which is the normative tenure prescribed for most undergraduate degree programs (Palmer et al, 2011). Kevin attributes his extended tenure in college to the demands of the engineering program. He shares, “I graduated high school in 2005 and then I graduated from junior college in 2008. I am 25 years old and still here in college.” Matt offers a real-life rationale for stretching an engineering college curriculum beyond the traditional four-year time span.

An engineering four-year degree doesn’t mean nothing, if you don’t have work experience. I don’t know about other majors, but I know if you’re going to be an MBA, four years and get out. That’s cool. You’ve got your plan, but in engineering you’ve got to go to school and work. Most of the black engineers spend about five years here on average. From what I gather, the five-year people are the ones who get jobs. Have a better chance of getting a job. Took time to do internships or research or what not, compared to four-year people who are just a bookworm. There are actual facts out there about that. They talked about that at NSBE conferences. Yeah, you know five-year people with experience have a higher chance than four-year people with no experience, just four years of college—Boom! No organizations, no leadership skills.

[Matt, metallurgical engineering]

Matt contends that graduates who are involved in internship and other co-curricular experiences have greater success in finding professional employment than those who do not commit to out-of-class enrichment activities. His analysis supports the literature concerning the benefits of student involvement in college on career opportunities after graduation; particularly in the sciences and engineering, students who have completed

research work or field placement endeavors are better prepared for their professional work experiences (Harper, 2010; Hawkins, 2011; Palmer et al, 2010; Strayhorn, 2009). Matt sees a difference in the academic work ethic among students at EU. He alludes that not all African American students work as diligently as the African American students in engineering. "It's very typical of a black man to walk around with no book bag. Spend three hours in the student commons."

### **Commitment to Others**

Participants emphasize a strong sense of responsibility and commitment to the other characters in their life stories. Each exhibits strong commitment to his family, peers, or community at home. Though separated by a great distance, Kevin carries a burden of responsibility for his grandmother.

I was always taught "you are the man of the house." I had the mindset that must take care of things for my grandmother. And like, work is a big part of life for me. Not only do I have EU payments for tuition and everything, but I take care of my grandmother back home. This is why I am still in college after all this time.

[Kevin, civil engineering]

Kevin reports that working has long been a part of his experience. Here, he demonstrates how he must balance the commitment to his education with the responsibilities he feels for his grandmother's financial wellbeing. Kevin's dilemma is reflective of the pressures and challenges faced by many students of color who must work to support both themselves and their families during college (Douglas, 1998; Green et al, 2009; Harper et al, 2009; Watson et al, 2002).

Jordan describes the strength of his commitment to his family. Firstly, he shares his sentiments about the role a father should uphold in the life of his child.

Now my son just happened to play a role that didn't play in a lot of early father's lives. My age would never serve as an excuse, because it's not. I'm a father, and that's what I've been since I was seventeen. That's one thing that would really make look down upon a man. I can't imagine having a child and not being there for him. If you don't have any money, your time means a whole lot. Period. If your child can remember that my dad was always there for me in general, he probably won't even remember or know that you didn't have the money to buy him this or buy him that. But if you instill those principles in him to better himself, you've done the best thing for him that you can possibly do for your child. You've encouraged him and taught him the right way. Like to work hard and become a man himself.

[Jordan, civil engineering]

Here, Jordan openly illustrates the importance of his relationship with his six-year old son. He rejects any excuses (i.e. young age, lack of financial resources, etc) that could keep him from fulfilling his duties as a parent. Jordan profoundly values the time he spends with his child and the responsibility he embodies for his son's learning. In regards to opportunities for his younger sister, a tenth grade student at the lower-income, predominantly African American high school that he attended previously, Jordan shares, "I made sure she had some very good ACT prep, which I didn't have coming through." Jordan works to ensure that his sister has access to supplemental educational resources and test preparation materials, though he did not enjoy these resources himself. Research on the achievement gap indicates that schools serving communities of color often devote less instructional time to standardized test preparation; as a result, students of color from these school systems tend to perform less proficiently on college placement exams (Bali and Alvarez, 2004; Lipsitz, 2006; Schellenberg and Grothaus, 2009; Terry, 2010; Thernstrom and Thernstrom, 2003; Wagner, 2006). Jordan's commitment to the quality of his sister's education supersedes any selfish lamenting over deficiencies in his past experiences. His feelings of responsibility expand beyond the borders of his immediate family. His concern for



improving the academic opportunities and educational outcomes for students in his home county pushes him to lobby local administrators on behalf of their interests.

That's something I've stressed, too, to the principal and superintendent of my high school back home. Get those students some ACT prep classes that's at the national level. You need to show how they're going to compete when they do go to college with students from all over the nation.

[Jordan, civil engineering]

Jordan's story of commitment to his community dates back to when he was a student leader at his high school. He describes the high school environment as rife with behavior problems, violence, and an atmosphere unsupportive of student learning. As discussed earlier in *The Story of Community*, the research on education and communities of color frequently includes discussion of the lack of resources and prevalence of violent behavior in lower-income areas (Bali and Alvarez, 2004; Bailey and Bradbury-Bailey, 2010; Fenning and Rose, 2007; Jacobs, 2004; Kozol, 1993; Tatum, 1997).

I created a program, called Safe School Ambassadors, and that's one of the reasons I got the ASH achievement - it's a national scholarship, with one given per state. It was in my junior year in high school. There was a lot of fighting, and kids pulling the fire alarm, and calling the school with bomb threats. All types of stuff, you know. And the program was, well, I took healthier guys. I played football and basketball, and I took guys from the football team and the basketball team who had at least a 2.5 GPA. I also took some females, you know, just to make sure that it wasn't sexist, or anything like that. And the program was set up to keep the hallways clear - to keep the school as safe as possible. And on each end of the hallway there would be one of those Safe School Ambassadors. So if a student wanted to go to the restroom, the teacher would come out, look for one of the ambassadors, call them, and tell them to take the student to the restroom, stand outside, and give them five minutes, and then go in to tell them to come out. Make sure that after they come out of the restroom, they're not trying to go out and skip class or do anything. It was a very, very effective program.

[Jordan, civil engineering]

Jordan's development of this campus safety program reveals a violent atmosphere at his high school, which he believed detrimental for student learning. His initiation of this

program as a high school student exemplifies his passion for other people and his commitment to uplifting his African American peers. Jordan believes that receiving his scholarship was a direct result of his establishment of this program.

Participants demonstrate a sense of responsibility for helping their fellow students in the engineering program at EU. In their commentaries, they express particular concern for the experiences of freshmen engineering majors. Matt displays his commitment to the underclassmen in the college of engineering through his involvement with an engineering mentoring program.

They've got the Mentor-Up program in engineering, where like upper-class engineers, we mentor three or four lower-classmen and freshmen and sophomores, about engineering life. We help them if they have any questions or what not. To see what they could do, and learn from our mistakes. As well as to see, "Yeah, I can make it. If they can make it, I can make it." I have a mentee. He was on the front end in math 100 and was like, "man"...I was like, "So, I started with math 100, and look where I am. I've made it all the way through. It's definitely possible." You've got the support of the upper classmen, and that's a great benefit, for what you've been going through.

[Matt, metallurgical engineering]

Through this example, Matt reveals his compassion for the struggles of students at the beginning stages of the engineering program. He uses the scenario of his own struggle to help his mentee internalize a personal idea of success. Matt continues, "If I could come back after I graduate, I'd tell the freshmen to have fun, enjoy yourself, but remember who you are. You are a college student now. Kind of balance out all of that." This advice to new students indicates Matt's desire to help others avoid the mistakes that he has seen in himself and other students up to this point in his college experience. Matt shares a specific situation in which his mentoring required the delivery of unpopular information to a female student in the college of engineering.

I had to tell a girl the other day, about two months ago, the truth, like, “You’re not going to get a job.” I had to break it to her. She asked me like who could she talk to or what not. I said, “let me see your resume.” She’s like, “I don’t have a resume.” “You’re a senior that’s going to graduate this Saturday, and you don’t have a resume?” She was like, “I never really needed one.” Then she’s graduating. I had to tell her the truth. I’m like, “man, I’ve already talked to my friends in industry, and like a girl engineer, graduating half a semester late. No resume. No work experience. No organizational skills. Pretty much nothing. It ain’t looking good.” Man I like had to tell the truth. She might be in denial at first, but she’s got to realize that you’re not going to get a job, with your current status. Because, like if I was an employer, I would ask, “You graduated a semester late, with no work experience. What have you been doing?” That’s the first question I would ask, “What have you been doing for the past four and a half years with a 2.3 GPA? No organizations? It’s clear you weren’t busy.” She didn’t believe it. Things just settled in her mind last month.

[Matt, metallurgical engineering]

In this account, Matt addresses a variety of issues related to student development, peer relationships, employability, and the field of engineering. We may gather that this female student values Matt’s opinion as an experienced upperclassman and that she has come to him for guidance; the nature of this helping relationship supports former research findings about the importance of peer influence on experiences of college students (Bailey and Moore, 2004; Brown et al, 2005; Dey and Hurtado, 1995; Douglas, 1998; Kimbrough et al, 1996; Oyserman et al, 1995; Pascarella and Terenzini, 1991). The fact that she has not engaged in meaningful social, academic, or professional activities during her college years implies her separation from advisors, faculty mentors, and other institutional supports. This divide between students of color and support resources has been commonly cited as a challenge for African American students at PWIs (Bean, 2005; Douglas, 1998; Green et al, 2009; Harper, 2009; Kimbrough et al, 1996). The importance of connection to peers will be discussed at-length in chapter nine: The Story of Connections. Through his counsel to this student, Matt emphasizes his support of co-curricular involvement as an undergraduate student; consistent with the literature on the college experience, he divulges the utility of

college involvement in helping prepare students for their professional field (Astin, 1993; Kuh et al, 2003; Sutton and Terrell, 1997; Taylor and Howard-Hamilton, 1995; Upcraft et al, 2004; Wagner, 2006; Watson et al, 2002; Wiggan, 2008). His reference to a “girl engineer” in the section about challenges in the profession reveal his perception of the sexism and male privilege still existing within STEM professions (Green et al, 2009).

Timothy feels that the college of engineering has made important strides towards supporting students’ success since he arrived on campus. He imparts, “When I first got here, they didn’t have the engineering commons, which is like the tutor station for engineering students. They didn’t have that when I first got here, but I’m glad it’s here for the students now.” He conveys his satisfaction with the resources available engineering students, but he maintains the irreplaceable value of a personal commitment to success.

I mean I want everybody to be successful. I’m not wishing bad upon anybody. But you’ve got to do your own work. Like I don’t wish anything bad on anybody. To be an engineer, you’ve got to be able to do your own work. And we’ve got like ethics. I know in engineering, we talk a lot about engineering ethics. Because you’re like responsible for people’s lives. Like being a doctor. So you have to be able to do your work.

[Timothy, civil engineering]

In this account, Timothy bridges into the commitment that professional engineers make to society. His discernment of the ethics and how these principles manifest through the integrity of engineers displays his commitment to improving the human condition. He believes that as an engineer he is “responsible for people’s lives” and commits to the work required to uphold his responsibility to humankind.

### **Commitment to Success and Personal Responsibility**

Common threads woven throughout the patchwork of participants’ narratives are an unflinching belief in the self and reliance on one’s own agency to achieve his goals. Relying

on another person for the betterment of one's situation is regarded as undesirable by some of the participants. Resentment and disregard for unearned advantage is prevalent in their stories. According to some participants' perspectives, we are the authors of our own success, and as such, we must write, revise, and represent the stories that we want to share with the world. In this vein, happy endings are the outcomes of an individual's will – his ambitious drive to succeed.

But I was just so determined that I can make it. I can make something happen for myself. There are so many black people who want to blame white people for their condition. Like, but it's not so. It's like what are you doing to make yourself better. I feel like any man, white or black, with that motivation to better himself, can do it.

[Jordan, civil engineering]

In the moving passage above, Jordan empowers himself as the determinant towards his destiny. Contrary to perspectives informed by whiteness as property and other critical philosophies, he rejects the idea that any past or present manifestation of racism can inhibit him from achieving success (Arai and Kivel, 2009; Baldwin, 2012; Carter, 2003; Harris, 1993; Jacobs, 2004; Kozol, 1992; Ladson-Billings, 2000; Lipsitz, 2006; Love, 2004; Lynn, 2004; McLaren and Munoz, 2000; Picower, 2009; Reiland, 2007; Rich, 2010). Throughout most of Jordan's life accounts the concept of the "self-made man" is a resounding theme. He highlights the motivating forces that pushed him to work hard in college.

That's what got me through: wanting more for myself; wanting more for my son; wanting more for my family, who I've seen struggle. I've seen my grandmother struggle. I've seen my grandmother cry, at three o'clock in the morning, when she thought I was asleep, about a bill she couldn't pay. I don't want that to happen, you know. I want to be able to say, here Grandmother, go pay your light bill. And to say to my son, here's your car at sixteen. Uh, just for me, you know – to have a beautiful wife, and to buy her that house of her dreams – that wedding of her dreams. We have the number of kids we want to have, and be able to take care of them for the

rest of our lives, and set up a college fund. It's just stuff like that. How are you going to be able to do that, if you just sit around and do nothing?

[Jordan, civil engineering]

Jordan centers his motivation to succeed on “wanting more”. He wants more financial privilege for himself, for his grandmother, for his son, his future wife, and the family that they may establish. He concludes his commentary with a question that is worthy of note, “How are you going to be able to do that (i.e. provide financially for your family), if you just sit around and do nothing?” Within this inquiry lies much testimony about his value system and how he regards African Americans who do not share his interpretation of an effective work ethic; this idea of generalized indolence has also been cited in the literature on views that white teachers may hold of African American male students (Noguera, 2003; Ogbu, 2004; Picower, 2009; Reynolds, 2010; Rovai et al, 2005; Tatum, 1997).

Timothy continues the idea that one must act as his own conduit in fortifying personal success. He expresses frustration in discussing engineering students who look for the easy way of their academic work.

Like I'm going to be real, there are some people that don't want to do the work. Like I'm always the first to get started on homework. So, like my friend, he calls me all the time. But I guess he helps me out, too. He knows I get started on it early. I know, like, I won't answer the phone if I know it's somebody like that. But I know he's been trying to get it, and he's calling me needing help. He's not going to want me to dissect the whole problem. He's going to call me when he hits a problem. He works through it, then he might hit another spot. Then he'll call me. He's not going to ask like, “Hey, how do you do this problem?” He's going to ask like a physics question.

[Timothy, civil engineering]

Here, Timothy opens up his thought process about helping versus enabling other students.

He exhibits concern for the success of his friend and other students in engineering;

however, he is prompt to point out that he will not do the work for other students. His

comments indicate a sense of resentment for students who attempt to get at the answers to homework without going through the process studying, comprehending, and applying the curricular lessons in engineering. His ardent ownership of the knowledge he has obtained through his program of study affirms his commitment to his personal success. Timothy goes on by expressing his intense feelings about entitlement, as opposed to personal responsibility.

I feel like sometimes, black people feel that they are entitled – entitled to something. That could stem from they feel they are entitled because they are black. They feel entitled to the same thing as a white person because they are black, because of slavery. I don't believe that. I know my culture went through slavery, but I personally didn't go through slavery, and I'm not going to hold that against you. You had nothing to do with slavery. You weren't even alive then. Why do you owe me money? You don't owe me nothing. That's just one example.

[Timothy, civil engineering]

Here, Timothy defines his feelings about the argument of reparations for African Americans. He adamantly opposes such a practice as restorative justice, citing the innocence or exemption of people living in present-day. Interesting to note in this instance, is that Timothy also closes his commentary with a question, as Jordan did in his earlier account. In this particular instance, the question was directed to me as the white researcher. Through asking, "Why do you owe me money?", but moving swiftly into his own answer of "You owe me nothing", we may assume that his decision on the issue was pre-determined. Another interesting finding from this account is Timothy's comparative reference to black wants and white status. His interpretation of a common African American attitude, "They feel entitled to the same thing as a white person because they are black, because of slavery", indicates a subconscious conception of white privilege. Timothy continues his thoughts regarding a personal commitment to success with the following:

I always believed I can show you the door, but you've got to walk through it. So that's why I just feel like, as long as EU is allowing the opportunities. It still takes that person to walk through the door. You can't force someone to something they don't want to do, and you can't do it for them. I always felt like that.

[Timothy, civil engineering]

Kevin acknowledges the challenges that he has encountered as an African American man, but holds firmly that he can conquer any obstacles that may arise before him.

“Grandmother explained to me that young African Americans are not expected to do much with their lives, but if God puts it in your mind, then you can have it.” His grandmother's testament to the power of the will and his reference to God's influence in formulating his thinking constitute supports for his achievement confidence. As is evidenced in Kevin's remarks, family and faith-based encouragement have been associated with positive outcomes for African American male students at various stages of development (Edwards et al, 1999; Kimbrough et al, 1997; Mandara, 2006; Neal, 2006; Noguera, 2003; Reynolds, 2010; Watson et al, 2002). Matt refuses to let environmental factors, social expectations, or other pressures keep him away from his goals. He boldly states, “I'm not afraid to let my race in society hold me back from learning new things, because it's not what they do.” Here, Matt introduces the issue of racial identity and attends to the stereotypical behaviors associated with African American men (Harper, 2010; Jenkins, 2006; Majors and Billson, 1992). His comments also emphasize his belief the powerful magnitude of his mindset. He holds firm to his personal agency as the governor of his choices, opportunities, and actions in his life.

Participants speak directly about the connection between personal commitment and success in the engineering curriculum. Jordan reveals how his unfailing commitment to



education pushed him above and beyond the levels reached by some of his high school classmates.

I did have a lot of teachers that cared a lot, but in the environment we're in, with there being probably thirty percent of the students in my high school actually being cared a whole lot about, you know, their education – not that others didn't care, they were just more laid back and not as aggressive in what they wanted to do. But when I came here, it wasn't what I didn't know, it was how am I going to learn. Like you can't make excuses. You can't say that I didn't understand the teacher. It's a matter of, if I fail the class, I fail the class. He's still going to get his paycheck. So I just found a way.

[Jordan, civil engineering]

Jordan illustrates the importance of confidence, personal responsibility, and motivation in his academic journey. He warns against making excuses for phenomena that have affected his experiences. Among the most impactful statements in this account is his decree that, "It wasn't what I didn't know, it was how am I going to learn." This striking statement encompasses the self-assured determination that drives his psyche towards learning and achievement.

### **Conclusion**

In this chapter, I have presented the narratives of participants around the concept of commitment. Participants ascribe intense meaning to their commitments in the various areas of their lives. The first section in the Story of Commitment involves the sense of responsibility participants uphold for their families, friends, and communities at home. Participants express a strong sense that their actions have broader effects than on their personal experiences and that succeeding in college is the only available option before them. Participants describe the pressures of associated with the expectations of their families and communities, in addition to the internalized stress linked with race group representation. The subsequent section shares the resonant narratives of individualism

from participants. With limited exception, participants convey their beliefs in self-made success stories. Confidence in their abilities, responsibility for personal decisions, and dedication to academic labor is labeled as essential commitments towards achieving academic and social success. The final section of the Story of Commitment engages the students' devotion to their engineering curriculums. Each participant demonstrates the willingness to forgo immediate gratification to secure future success in the profession. Among the evidences of this ardent dedication to their academic plan includes passing over parties, terminating or limiting certain social relationships, and exercising conscientious stewardship of leisure time.

In the next chapter, I present the Story of Constructs, which have played a prominent part in forming the narratives of each participant.

## CHAPTER VII

### THE STORY OF CONSTRUCTS

Where do I start? Being a black man – it means being 5-6-7 times better than the white guy. It means always having to better. There is a stereotype about my dreadlocks. They see me and then I wow them with my big words. I had someone tell me “I’ve never known a black guy with dreadlocks to come to college.”

[Kevin, civil engineering]

As affirmed by Kevin above, the realities for African American men differ from the realities of those who are not African American men. Scholars have theorized a distinctive uniqueness to the African American man that separates him from society (Cross, 1991; DuBois, 1996; Fanon, Harper, 2009; Neal, 2006). In this section, I present the participants’ stories related to African American male and academic identities. Stereotypes have influenced the way that these men negotiate their own identities and the identities of other African American men in their life worlds. Among the vast expanse of stereotypical images circulating about African American men, a scholar identity is not commonly correlated. Participants describe the means through which they established their scholastic selves. I include a synopsis of their stories related to race and racism and how each participant has made meaning of his racialized experiences.

#### **African American Male Identity**

Not all black men are the same. You do have those that are successful. You do have those who want to succeed in life.

[Matt, metallurgical engineering]

A common custom among researchers is the grouping of African American men into homogeneous categories (Cross, 1991; Harper and Nichols, 2008; Helms, 1990; Neal, 2006; Noguera, 2003; Person, 2008; Sigelman and Tuch, 1997). Ignoring or overlooking the individuality of black males further marginalizes the members of this group. In the quotation above, Matt reminds us of the heterogeneity among African American men. He contrasts the successful African American man against the normative persona. His analysis reflects his familiarity with the negative stereotypes of black men, as well as a need to establish an identity of the African American male as a conscious scholar committed to success.

When asked to describe the meaning of being an African American man, participants offer strikingly similar responses. Their internalizations of the characteristics comprising African American male identity differ from the media's popular portrayals of black men as lazy, deviant, violent, or lacking purpose in their lives (Brown, 2009; Bynum et al, 2008; Campbell and Fleming, 2000; Connor, 2008; Cross, 1991; Majors and Billson, 1992; Sharma, 2011). Matt believes that an African American man is "someone who's strong. Who can make it through anything. Don't fall under pressure. Can provide. Can adapt to any situation." He continues, "Yeah, like a real black man is somebody who can take care of himself. Who's got good judge of character. Holds themselves high. Who treats other groups with respect – equal. Doesn't let small things get to them. Don't break under pressure." In his two reflective accounts, Matt qualifies the conditions by which he measures an African American man. The ability to withstand pressure resounds as an eminent theme in their assessments.

In a manner similar to Matt, Jordan and Kevin describe their perspectives on what it means to be an African American man. Kevin classifies an African American man as, “Provider. One who takes care of everything. A man has nothing without his word.” In his description, he identifies particular standards of black manhood: Provider, self-sustaining, and integrity. Jordan’s analysis of the African American male persona is cohesive with the constructs conveyed by Matt and Kevin.

It’s about being protective. Being smart. Being a provider for a family. Religious. Godly. God-fearing. Strong. It’s all those traits you learn as a young boy, coming up in grade school. I remember we used to have the character trait of the day, and so many of them are what define you as a man, once you are older. As a man period. Are you smart? Are you intelligent? Are you hard working?

[Jordan, civil engineering]

These descriptions from Matt, Kevin, and Jordan show common themes of the black man as resilient, self-reliant, strong, and provider. Through their analyses, we may glean an underlying theme of struggle. Matt’s reference that African American men are able to “make it through anything”, Jordan’s description of the black man as “protective”, combined with Kevin’s statement that they “take care of everything” indicate evidence of trials that arise against African American men. A black man is able to survive these challenges and guard the people, property, or principles that constitute his community, culture, and character. The survival mentality implied through the voices of these participants is consistent with the historical struggles inherent with the African American narrative (Anderson, 1988; Bell, 1980; Bonilla-Silva, 2003; Coclough and Beck, 1986; decoy, 1967; DuBois, 1996; Fanon, 2008; Harper, 2009; Harris, 1993; Lipsitz, 2006; Lopez, 2003; Jalata, 2002; Jenkins, 2006; Reiland, 2007).

Jordan adds spirituality in his personal characterization of an African American man. His straightforward references to “Religious. Godly. God-fearing.” demonstrate his conviction about the presence of these traits in the persona of black men. Jordan also emphasizes his ardor for African American men to be intelligent. His shift from statements to rhetorical questions in this account reflects his need for an African American man to take active ownership of an intellectual identity. Jordan identifies school as the environment in which he adapted ideas about African American manhood. This finding supports the literature regarding the strength of the socializing power and values instruction in schools (Alridge, 1999; Althusser, 1971; Bell, 2004; Bourdieu and Passeron, 1977; Ladson-Billings and Tate, 1995; Levinson and Holland, 1996; McClaren, 2003; Morrow and Torres, 1995; Ogbu, 1990; Parker et al, 1999; Picower, 2009; Pinderhughes, 1989; Ross, 2009; Spencer et al, 2001). Jordan distinguishes characteristics that one must embody “As a man period”. This appraisal denotes a socially constructed conception of masculinity and gender identity, which is in harmony with the literature (Bynum et al, 2008; Campbell and Fleming, 2000; Graham and Anderson, 2008; Isom, 2007; Mahalik et al, 2006; Neal, 2006; Pierre and Mahalik, 2005; Sanchez-Casal and Macdonald, 2009). His verbalization of punctuation in concluding his depiction of a man assertively authenticates a separate manhood experience for African American males. His implication of a distinct black masculinity has been purported consistently throughout the literature on African American male identity (Cross, 1991; DuBois, 1996; Helms, 1991; Majors and Billson, 1992; Neal, 2006; Wijeyesinghe and Jackson, 2001).

Timothy believes that success is sewn into the soul of an African American man.

Being an African American man means being responsible. Being able to take care of yourself. Be independent. Just like, I’m going to use the word successful. Just

being a financially, morally, personally successful person. And successful doesn't mean like being the richest person, the smartest person. It just means being able to survive in life, and be comfortable in life. You're at a point where, like you're happy. And people could be at like different stages. It just depends on what you want in life. Other people want to have different levels of success. Just a point, a state of being happy, content.

[Timothy, civil engineering]

In his synopsis of the African American male ID, Timothy spans various spheres of identity: racial, moral, personal, intellectual, and success ID. Through this integration of identities, he constructs an equation for contentment. His insightful interpretation of informed identities and understanding of the different stages at which people may fall on the development spectrum indicate his enlightenment as a young adult. The heightened awareness of the self and the relationship of the self to others in his life world indicate Timothy's personal growth as an undergraduate student. This evidence of Timothy's personal development supports previous findings regarding the progressive development of students during their college experiences (Astin, 1993; Campbell and Fleming, 2000; Sanchez-Casal and Macdonald, 2009; Kuh et al, 2003; Pascarella and Terenzini, 1991; Taylor and Howard-Hamilton, 1995; Watson et al, 2002; Whiting, 2009).

Each of the participants expressed pride in his personal identification as an African American man. Throughout the entirety of Kevin's life story, being an African American man has held significant meaning. Having been raised in a single-parent home, Kevin felt compelled to fulfill a specific, social role for his grandmother. He recounts, "Around age 11-12, I was acting like a man – cooking, driving, and all that. I guess you could say that I had an 'adult childhood.' My grandmother always says 'sorry you missed your childhood'." In this account, we see that Kevin constructed a masculinity and social maturity at a very young age. Kevin grew up in a home where his adulthood could not be escaped and in a

community where his racial identity could not be ignored. His early maturation and “missed childhood” highlighted by his grandmother correlate with other examples in the literature about the adult responsibilities befalling many African American boys (Bailey and Bradbury-Bailey, 2010; Brooks et al, 1998; Carter, 2003; Jenkins, 2006; Ladson-Billings, 2011; Majors and Billson, 1992; Noguera, 2003; Pierre et al, 2002; Roach, 2001; Rovai et al, 2005; Wendt, 2007). Jordan shares, “I do take pride in being an African-American man. It’s just – it’s just what I am. I don’t know anything else. My fight to become all that I am is one to be an African-American man.” Here, Jordan describes the pride he gleans from identifying as an African American man; more than a socio-racial designation, to Jordan, the construct of African American man is “just what I am”.

Timothy affirms pride in his racial ID and acknowledges the challenges that his African American forefathers have endured as a racialized group.

It means a lot to me. People say, “If you could pick any other race, what would it be?” But I would probably choose to be a black man. I know my ancestors went through a lot to be able to put me in the position that I am now. I’m proud of that. I’ve had opportunities that weren’t available to them – even my parents didn’t have. They went through a lot more things than I probably even realized when I was younger. They dealt with a lot of things. I deal with a little bit, but it’s not even comparable.

[Timothy, civil engineering]

Timothy’s narrative confirms his consciousness of the struggle that persons of African descent have suffered throughout the course of history (Anderson, 1988; Bell, 1996; Coclough and Beck, 1986; DuBois, 1996; Fanon, 2007; Harris, 1993; Harvey et al, 2004; Jalata, 2002; Rose, 1965; Wendt, 2007). For perhaps the first time in his life, he actualizes racial discrimination at an intimate level. He comes to terms with the realities of racism on his family and the impact that racial discrimination has had on the nature of opportunities



afforded to his parents; this personal negotiation of racial ID is explicated as the Encounter stage in Cross' Nigrescence Model of Black Identity Development (Cross, 1991; Helms, 1990).

Participants associate pride in their respective racial identities with their enrollment at Expansion University. Prior to the Civil Rights Movement, access to higher education was denied to African Americans (decoy, 1967; Bell, 1980). Following the adoption of the Higher Education Act, institutional racism pervaded at EU until the Federal Government mandated integration. Some participants express their understanding of the racialized history of their institution and the pride they associate with their status as a student at EU. John describes, "I guess like where I'm from, like I guess it could just be being an African American, EU was such a central part in the Civil Rights Movement, and like, it makes me proud, you know." Jordan states, "Of course, you hear about the history, and the Civil Rights Movement, and all that stuff. Just the fact that as an African American, I was able to come to the Expansion University, with scholarships, it still amazes me. It really does." Jordan states the idea of his enrollment at EU "still amazes" him, even as a graduating senior.

What do African American men need from their university, and conversely, what do universities need from African American men? When faced with this question, participants shared responses that delve into different realms of socialized meaning. John believes that African American need to feel as though they are a part of the campus community. He explains, "I think African American men need to feel welcome - like they're actually a part of the university." His description of the needs of black men at EU indicates that he does not feel that black men are presently welcomed or regarded as a meaningful characters within

the campus community. This appraisal of black men as outsiders to the campus environment at EU is reflective of the literature on African American at PWIs. According to the literature, men of color may not internalize a strong personal identification or connection with their predominantly white college or university (Abraham and Jacobs, 1990; Bean, 2005; Bonner and Bailey, 2006; Cuyjet, 1997; Douglas, 1998; Harper and Wolley, 2002; Kimbrough et al, 1996; Love, 1993; McClure, 2006; Roach, 2001; Watson et al, 2002). Timothy surmises, “What a black man needs to get at a university, is an education – a good education. Actually learn something. Opportunities to grow. Like intellectually, spiritually, personally.” Here, Timothy reframes the question around what a black man “needs to get” at a university. Though his interpretation is only slightly different from the initial inquiry, there may be subconscious and substantial meaning in his response.

Matt explains the two central constructs that he believes EU needs from its African American male undergraduates.

The university needs commitment from its black men. The ability to show the university that they can succeed in the environment the university gives them. They need a better image. That’s about it, a better image and a commitment from the black men here.

[Matt, metallurgical engineering]

Above, Matt describes the commitment and image, which he deems vital to the status of African American men at EU. In his analysis, we gather Matt’s dissatisfaction with the image that he sees portrayed by other African American men. We also see his frustration with the level of academic steadfastness that he has witnessed among other African American men in the university community. While his reference to the “environment that the university gives them” may indicate the existence of challenges for black men, he expresses

confidence that these students can succeed if they will assume personal responsibility for their education.

## **Stereotypes**

Stereotyping is a familiar phenomena experienced by African American men (Majors and Billson, 1992; Sigelman and Tuch, 1997; Steele, 1997). The media has perpetuated popular objectifications of black men throughout history, and these exaggerated images have affected the status of black men in society (Carter, 2003; Harper, 2009; Jenkins, 2006; Lipsitz, 2006; Steele, 1997; Tatum, 1997; Terman, 1916; Tozer et al, 2009). Destructive images and ideas woven into the dominant ideology have portrayed the African American man in deviant and damaging ways (Bailey and Moore, 2004; Brooks et al, 1998; Sigelman and Tuch, 1997; Steele, 1997; Tatum, 2000; Tozer et al, 2009; Wendt, 2007; Wiggan, 2008). The typecasting of African American men has become such a mainstream expectation that these stereotypes are often personified in the behaviors of some black men (Majors and Billson, 1992). In the following passage, John outlines three categorizations that he feels have been manufactured for black men: 1) the black man as an intellectual, 2) the black man as a thug, and 3) the black man as an athlete:

I guess being an African American man is just pretty much like being expected to mess up. I guess that's what I see. When I grew up, being expected to mess up or be this certain person I guess....I guess, uh, it seems like when you're a black male—I guess I'll go with three categories. The black intellectual. Pretty much the thug. And I guess, the athlete. You go in one of those categories. Like people make jokes. They'll make jokes like black speed, always outrunning people and stuff. I'm pretty quick, and I didn't realize that. And like uh, folks would say, "Yeah, you're the fastest man I ever met," and stuff like that. You're expected to be like this certain athlete. I was in a wrestling match with one of my [white] friends, and he was like, of course, you're going to beat me. Like he knows more technique, and all that. I did win, but that's not the point. But it's just like in an athletic event I'm expected to win, if I'm not going up as the top athlete.

The black intellectual – it's pretty much like, "How do you feel about this race matter?" I'm always expected to side on the black side, even though, sometimes I'll just be like I kind of see where the other person is coming from. You know, it kind of like breaks their mind, or whatever. Like slavery. I'm not for slavery but I can see how there were people who were like, "Let's keep this around." I mean that's what you grew up in and like that was how it had always been. I'm like – people are like – they don't say anything, but they have this weird thought.

Then the thug, it's always like you've got to know all the rap videos and all that. I don't keep track of all that. I mean I know the ones that are popular – the ones that come on the radio, and I have a few albums. But I don't sit there and know every mix.

I guess the black intellectuals are a little more expected of us in college. Like I mean a lot of students here have strong feelings about different things if they're around it a lot. But I mean I think that one is expected a little more. And I guess maybe the thug category is a bit expected. I'm not really sure. But it's just one of those things. I don't know, it just kind of seems like it, and I don't know why.

[John, mechanical engineering]

John's account is perforated with conflicting ideas of African American male identity. His reflections connect closely with the theory of the double consciousness, named by WEB DuBois (1996). According to the theory of double consciousness, African American men simultaneously experience two realities throughout the lifespan; at all times, black men must negotiate their mutual selves – as men and as black men (DuBois, 1996; Rakaka, 2007; Tatum, 2007; Tozer et al, 2009; Trevino et al, 2008; Whiting, 2006). In his analysis, John is conscious of the social categories designed for African American men, as he is cognizant of his uniqueness. He describes the pressure associated with these constructions of identity. His perceptions support the literature about stereotype-threat, tokenism, and related phenomena in the lives and experiences of African American males (Bynum et al, 2008; Campbell and Fleming, 2000; Degaldo, 1989; Fenning and Rose, 2007; Smith et al, 2007; Tatum, 1997; Tozer et al, 2009; Whiting, 2006).

Timothy speaks to his mother's consciousness and criticality of the black athlete persona. He shares, "But there's more to being a black man than just being an athlete. I guess that's what my mama was trying to show me when I was younger and wanted to play sports. She didn't want that to be my focus." Timothy delves deeply into his life story to compose a character sketch of his mother, whose perspectives about her own racial ID has been influenced by the ideology of whiteness.

My mom is a real uppity person. Sometimes you might think my mom is racist against black people. She's real light skinned—almost your color. She wears makeup to make herself darker. She's like your color. I feel like Mama always wanted to be better than other black folks. She was a racist. It was always unique. I didn't grow up around most of my friends, or whatever. So I didn't see much of them. That's why I didn't like that. I was quick to notice that my mom was that way. My friends were like, because I'm growing up in a nicer neighborhood, they didn't really know me.

[Timothy, civil engineering]

Timothy's narrative regarding his mother's perspective on racial identity reveals the effects that her "racist" ideas had on his experiences. The influence among parents of color on the racialized perspectives of their children has been identified as significant (Connor, 2008; Reynolds, 2010; Yosso, 2005). His depiction of his mother's prejudice against African Americans demonstrates her own possessive investment in whiteness (Lipsitz, 2006). As Timothy begins his account, he considers the question of whether his mother may be "racist against black people;" by the conclusion of his commentary, he has confirmed, "She was a racist" against other African Americans. This phenomenon has been identified as a consequential effect of ideology, whereby negative messages of racial inferiority come to be regarded as the norm (Connor, 2008; Degaldo and Stefancic, 2000; Freire, 2000; Ladson-Billings, 1999; Ladson-Billings and Tate, 1995; Lopez, 2003; McClaren, 2003; Parker et al, 1999; Picower, 2007). Her influence and ideas about the inferiority of color has impacted

the way in which Timothy defines blackness. In the next passage, we see Timothy's struggle as he negotiates stereotypical ideas and the personification of black identity.

You may get somebody that's white and somebody may see them act black, but that comes from their environment. I said act black, just to get my point across, and it's bad that I said that. Because you can't really act black. I feel people act from their environment. And I guess people get the act black, act white thing just from the majority of blacks come from this part, these areas, this environment. To them, they act like that environment. But not every black person, not every white person is from that way. Not everyone is going to act that way. People might say majority, but it's just the majority of the people you're around.

[Timothy, civil engineering]

Here, we see an internal conflict for Timothy. In the immediacy of the moment, he speaks quite candidly about black identity. His use of racial dichotomy (i.e. white person acting black) as a comparative example reveals the power of ideology on his own perspective about racial identity. This offers an example of hegemony, where persons from oppressed groups come to participate in their own oppression (Althusser, 1971; Brookfield, 2005; Freire, 1973). In so many words, Timothy apologizes for personifying stereotypical images of African Americans. His explanation about "acting black" leads him into an analysis of the association of African Americans with particular environments.

A prevailing and punitive stereotype of the African American man is that he is less intellectually capable than men and women from other race groups (i.e. Harper, 2009; Ladson-Billings, 2011; McClaren, 2003; Tatum, 1997; Thernstrom and Thernstrom, 2004). John explains an experience during which he encountered this idea in a conversation with a female classmate. He shares, "She was like, I didn't realize you were that smart. I just thought you were kind of slow and stared. I was like, yeah, it's just because usually in class I don't want to be there. So I just kind of like sit there." Kevin describes how his hairstyle often marginalizes him. "There is a stereotype about my dreadlocks. They see me and then I

wow them with my big words. I had someone tell me ‘I’ve never known a black guy with dreadlocks to come to college.’” On the subject of hair and identity, Matt describes the point in his college experience when he felt confident as a both an African American man and an academic scholar. He recalls, “I watched myself grow from a dude – like I had little braids my freshman year. Then I started growing dreads, and what not.” His reference to the “dude” persona indicates incarnation of a popular stereotype in his own image (Majors and Billson, 1992). Matt’s evolution from “dude” to “dreads” suggests a deliberate movement to a more self-actualized state of being (Cross, 1991). Matt’s decision to grow dreadlocks reflects the progression in his racial identity development (Cross, 1991; Helms, 1991). Through various experiences, interactions, and internalizations during the early years of college, he has been able to integrate his racial and intellectual identities. This finding is consistent with the literature regarding the effects of involvement experiences on the identity development of students in college (Astin, 1999; Chickering, 1968; Evans et al, 2010; Kuh et al, 2003; Pascarella and Terenzini, 1991; Tinto, 1993; Upcraft et al, 2004; Watson et al, 2002).

Another stereotype identified by some participants involves the mismanagement of money, lack of financial planning, and a general disinterest in property ownership among African Americans (Lipsitz, 2006). Jordan refutes this stereotype in his story. He explains, “I don’t care what other folks do, I’m getting my degree so that I can make more money. I want to have certain things in this life for myself and my family.” Jordan expresses his diligent commitment to fiscal health and responsibility. He illustrates his motivation, further, in the following passage about his financial goals:

I mean, I have to save my son, you know. It wasn’t planned, of course. I was seventeen when he was born, but it’s taken an effect on who I’ve become, like for the

better. It pushed me to want better for myself. To make better friends, you know. That's always a thought. All the way down to me studying now. But there have been times when I think about him. I need to get better grades. You know, graduation. Better job opportunities. Yeah, yeah, because, I haven't really been able to do as much as I would like to do for him over my college years here. Especially, financially. Time-wise I've tried to pick him up every weekend that I have time to. But financially I just haven't been there. Especially with bills. I only work a part-time job, so it's kind of hard to pay those bills. So I've struggled with him. I would say, by far, that is the top motivation for me – wanting to just go for it all.

[Jordan, civil engineering]

We may easily observe Jordan's drive for financial stability and his plans for making sound decisions to sustain the necessary supports for his son. Along the similar lines, John shares insight into the financial management principles that guide his decisions. He discloses, "Once I graduate and get a job, there's no need for me to take money from my parents anymore. I will be on my own. My expenses will be my problem, and I will be responsible for saving money – using it wisely and all." John discusses his economic autonomy that will come after graduation and how managing his resources will be a personal necessity. Timothy believes that the economic disenfranchisement among African Americans is exacerbated by the media's representation of black cultural values.

And like the black people you see on TV are just blowing their money on bad things. That's probably hurting black people financially – to see guys spend like that. One of the worst investments you can have is a car. It just depreciates in value. Like homes are great big-ticket items to buy, cause they're going to stay the same price or go up according to the neighborhood. As far as cars, an old Benz is worth about the same as an old Corolla after twenty years, cause you know you've put all the miles on it.

[Timothy, civil engineering]

Timothy's comments reflect his ideas surrounding the injurious influence of the media on African American values; his comparative analysis of depreciation of vehicles versus the



increasing value of real estate indicates his financial vision and objectives for establishing long-term investments in property.

Movies, music videos, and other media have been cited as contributors to the immoderate characterization of African American men (hooks, 2004; Majors and Billson, 1992; Mutua, 2006; Neal, 2006; Sharma, 2010; Sigelman and Tuch, 1997; Staples, 1982; Steele, 1997). Participants passionately share their critical feedback regarding the misrepresentation of black men in the media. They promptly and directly identify Black Entertainment Television (BET) as an agency of transmission for stereotypes.

Man, it's BET that's the problem. They portray like real negative images with music videos and other shows like *Basketball Wives in LA*. *Maury* shows like the daddy not taking care of the kids. Then it's the whole trying to 'keep it real' thing. Too much Goochie Mane. It's just like men at EU; they just don't care. Treat women any kind of way. And the women let them. So, I'm not raised like that. I was raised to respect females. Respect anybody. Don't put down anybody.

[Matt, metallurgical engineering]

Matt references some of the contemporary programming on television in his critique of the BET enterprise. He believes that the BET network produces and perpetuates stereotypes that are later adapted by viewers within the black community. He recognizes the messages that are communicated through music videos, reality television, and film. According to his interpretation, black men are supposed to 'keep it real' in their appearance, actions, and interactions with others. He further expounds that the 'keep it real' persona involves misogyny, disrespect, and the disposal of the values his parents encouraged him to uphold in his relationships; his description of this distortion of black masculinity aligns with the dilemma of African American male representation identified by scholars (Harper, 2009; hooks, 2004; Majors and Billson, 1992; Neal, 2006; Sigelman and Tuch, 1997; Staples, 1982;

Steele, 1997; Whiting, 2006). Timothy speaks to the issues caused by the popular parody of African Americans in the media.

BET is bad now. It personifies black terribly wrong. But I kind of understand, like everything is a business nowadays. Nobody wants to see the average black person on TV. They either want to see the ghetto, ain't got nothing in the hood or like the Cosby's – where the mom is a doctor and the dad's a lawyer.

So that's what you see on TV. People are influenced by your environment. That's what you see on TV. If you're not around black folks, then that's how you think black folks are. I don't like BET. I'm not a fan of it.

[Timothy, civil engineering]

In this account, Timothy highlights the detrimental consequences associated with racist misrepresentations of African American culture. Scholars have identified the function of ideology through the media and the harmful psychological, social, and political effects of typecasting African Americans (Bonilla-Silva, 2008; Bynum et al, 2008; Campbell and Fleming, 2000; Fenning and Rose, 2007; Gollnick and Chinn, 2006; Harper and Nichols, 2008; hooks, 2004; Hughes, 2011; Isom, 2007; Jackson and Moore, 2008; Jenkins, 2006; Ladson-Billings, 2011; Lee, 1996; Majors and Billson, 1992; Matsuda et al, 2006; McClaren and Munoz, 2000; Neal, 2006; Noguera, 2003; Picower, 2009; Sigelman and Tuch, 1997; Staples, 1982; Steele, 2007; Tozier et al, 2009). Timothy is swift in his assessment of how hegemony operates in relation to this phenomenon. He describes, “Nobody wants to see the average black person on tv.” This analysis indicates his awareness of the popularity of exaggerated images associated with black stereotypes. He further identifies the predicament infecting the ideas of many people in this ostensibly segregated world. “That’s what you see on TV. If you’re not around black folks, then that’s how you think black folks are.”

The stereotypical figures portrayed on television often become role models among African America youth (hooks, 2004; Neal, 2006; Steele, 2007). Timothy illustrates his thoughts about African American celebrity and appropriate role models for young people.

That's what you see – a lot of black people look up to rappers. I feel that's what helped me, too. I didn't look up to anybody for anything. I feel like a lot of young people today are looking up to rappers and NBA players. Not to say they're not a role model, they're not good role models. I think Obama is a great black role model as President. He's rich. I guess, thinking about Cosby, too, he's a rich African-American that's not a rapper. Seems like all you see on TV are rappers and basketball players.

[Timothy, civil engineering]

In his account, he addresses the status of rap artists and professional athletes as important characters in popular culture. While he agrees that rappers and athletes are role models, he critiques these figures by attesting that they are not “good” role models. Timothy identifies President Obama and Bill Cosby as good role models for black Americans. Instead of emphasizing the leadership contributions, social philanthropy, or economic programs that these men have established for the world, he focuses more attention on their personal incomes. He unmistakably associates good role models as “rich” men in the African American population. In this next passage, Timothy expounds upon a particular role model and how he negotiated personal meaning from a hip hop artist.

Music videos are the worst! I watch them for entertainment. And I know they influence me, but I feel like I was able to see the bigger picture when I listen to hip hop. When I was growing up my favorite rapper was Young Jeezy. He was my favorite, and he's still my favorite. I remember when he first got big, he took a lot of heat from CNN, because they were like he was talking about the snowman, selling crack, and how he was with kids, whatever. Which they had a point. But I feel like he had a right to tell his story. I feel like when you're young, you don't see it, but I understood it. He was telling his story. He had the right to tell his story. I mean, that's his life, and he's telling you what he did to get to where he is now. He wasn't falsifying anything. He was telling the truth. And I feel like we have a lot in common, even though I wasn't ever a drug dealer and I never did the things he did. But he had a determination and a drive. But where I applied it to books, he applied it to what he

was good at. Like he was never the athlete. He was good at selling drugs, and that's what he did. I mean you have a right to tell your story.

[Timothy, civil engineering]

In this passage, Timothy emphasizes the "right to tell your story". As he was growing up, he was influenced by the testimony of a rapper. Timothy was able to distinguish the value of Young Jeezy's story and interpret meaning for his own experience. Where the rapper applied his background as a means of arriving at success in the industry, Timothy applied his energies toward the development of a scholar identity in education.

Participants spoke candidly about their feelings about stereotypes and about the freedom to veer from the behaviors commonly associated with African American men.

I went surfing last year. I learned how to surf. I can snowboard. I'm different. I'm not afraid to let my race in society hold me back from learning new things, because it's not what they do. Like swim. I'm a lifeguard, so I know how to swim. They're like, man why you want to be a lifeguard? You know black folks can't swim. That's really the main thing, to keep it real. Real thing, with their portrayal on TV, with people seeing them robbing and killing. Like, not telling the truth about stuff. About going to jail and what not. Cause they want to be down. That's probably some of the main things that keep black males in the negative light all the time. Like you see Little Wayne and stuff going to jail. I'm like, that's not cool. Going to jail is not cool.

[Matt, metallurgical engineering]

In this account, Matt offers remarkably rich insight into his thought processes about black stereotypes. He identifies himself as "different", which indicates his interpretation of behaviors, ideas, and opportunities that set him apart from the African American male prototype. He describes some of the leisure activities that are not conventionally regarded as characteristic habits of African Americans. He acknowledges the prevalence of attitudes among black men that align with the exaggerated stereotypes on television. In alignment with the research, Matt associates the "negative light" on black males with the socially

constructed ideas about African American identity (hooks, 2004; Majors and Billson, 1992; Neal, 2006; Sigelman and Tuch, 1997; Solorzano, 1997; Staples, 1982; Whiting, 2006). One of the most compelling components of Matt's narrative on stereotyping is his critique of the limitations society has placed before black males. Here, Matt confirms the heterogeneity among African Americans, affirms his own individuality, and expresses pride in his decision to diverge from a standard definition of black identity (Cross, 1991; Whiting, 2006).

CRT holds that race and social class are inextricably intertwined (Bell, 2004; Brookfield, 2005; McClaren and Kincheloe, 2007; McClaren and Munoz, 2000; Parker et al, 1999). Jordan explains phenomena that emerged at the intersections of race and class in their own lives.

There's one public school in my county, and there's a private school. Yeah, and... And, that was that separation. It was the fact that all of the white students would rather go to that small private academy than come into the high school with the rest of us. You know, I'm positive that some of the families were in the same predicament we were in. I wasn't from a very wealthy family at all. And I know my parents wouldn't have been able to afford to send me to a private school. But it was there. And there was a very clear separation. Because there are white and black people in the county, pretty evenly numbered. But they're separated, you know, in the schools. I didn't go to school with a white person, until I came to Expansion University. I had never sat in a classroom with a white person.

[Jordan, civil engineering]

In this account, Jordan negotiates the power of racism in his home county and how the construction of race was manifested in his community. The separation he describes is reflective of white flight from public schools as a means of escaping integration. Per the scholarship on whiteness as property, persons will pay dearly to protect privilege in education (Harris, 1993; Lipsitz, 2006). Though the populations of African American and white citizens in his home county are relatively equal, Jordan never sat in a classroom with a white student until his matriculation into EU. His identification of the white students from

lower-income families whose parents paid for them to attend the private school shows the power of ideology, still drawing lines of de facto separation within communities 60 years after the desegregation of schools (Bell, 1988; Bonilla-Silva, 2003; Feagin, 2002; Kozol, 1992; Lipsitz, 2006; Love, 2004; McClaren, 2003; Tatum, 2007; Tozer et al, 2009).

### **Academic identity**

The scholar identity for some participants developed through the intentional efforts of family members. Timothy credits his parents with encouraging his ethos for academic success. He explains, “I feel like my parents have a lot to do with my education and being successful. I would say my parents were really, extremely strict. They really had old-fashioned ways. They really made me focus on my schoolwork.” He describes their austerity in regards to his studies and largely attributes his success in education to their rigorous expectations. John describes that his father recognized his aptitude at a very young age and endeavored to help John construct a critical literacy in math and science. John shares, “Like my dad was always saying, “You’re not really trying, so I’m going to give you more work”, and he kept piling it on to challenge me.” Jordan recounts how his aunt used her influence as principal of his elementary school to help fortify a strong academic foundation for him.

But something I noticed is that my aunt that was the principal at my elementary school, and she made sure that I was taught by the best math teacher every single year. That’s something that she told me. And as I look back, it is very true, you know. So I want to say that that was a plus. She helped me along. That’s one thing that I can say.

[Jordan, civil engineering]

Jordan’s aunt invested in his success by hand-selecting the most effective math teachers from him. Her actions indicate a commitment towards building a base upon which he could

develop a strong skill set for mathematics. Another finding from his passage is the employment of competent teachers at his low-income, predominantly African American elementary school. A considerable quantity of the literature reflects the absence of qualified and committed teachers in schools where minorities comprise the majority of students (Buras, 2011; Carter, 2003; Lewis, 2006; Mandara, 2006; Solorzano, 1997; Thernstrom and Thernstrom, 2003).

Participants exhibited mathematical competency early in their academic careers. Each of the five participants identify as products of gifted or advanced-track high school programs. Each of the participants acknowledge the role that their K-12 educators played in helping to establish their academic identities.

I learned I was good at math in second grade. I got 100 on everything in math. A 100 on everything science-wise. When it came to writing and reading, not so good. The teacher was like, "You're good in math." I liked to read about how stuff happened, how stuff works, where it comes from, and what not. Rather than read about politics or what's going on in the world. Boring.

[Matt, metallurgical engineering]

Matt describes a teacher's influence in helping him establish a confidence for mathematics. While he earned perfect scores on his assignments in math and science, his confidence was influenced through the recognition and affirmation of his second grade teacher. Jordan also recalls the identification of his skills and early construction of a math identity in second grade.

I can vividly recall being pretty good in math. They placed me in gifted when I was in second grade. In math, I can recall adding, multiplication. We had a contest in math in the third grade. I did real well. And the fact that I had those great teachers. I went to third grade and so on and had those great teachers. All the way through high school I had great math teachers.

[Jordan, civil engineering]

As Matt has also described, Jordan credits “great math teachers” as contributing to his success in STEM. Kevin shares, “I learned that I was good at math in high school. My teachers were like, ‘You are good at this stuff.’” John adds his academic testimony to the story.

I don’t know, there’s just something about math that makes so much sense to me because with math, these numbers will always equal these numbers. You can rearrange them. It seems like math is very rule based, like if you have this rule, then you can speculate on this rule. It kind of like filters into physics. I did really well in math in school. I ended up being picked as a part of the magnet school system in Montgomery during Middle School, which fed into high school. That’s pretty much how I became exposed to engineering. I realized I was good at math, and I was good at physics.

[John, mechanical engineering]

Above, John outlines the process through which he established STEM proficiency, came to appreciate the logic of math, and was selected to attend the math and science magnet school. Timothy includes his account for discovering his gifts for numeracy. His experience as a cashier at a movie theater helped confirm his math identity.

I feel like I was always good at math. I realized when I was sixteen, but even before, I worked as a cashier at the movie. I always sold the most amount of tickets, because people would get in line, and I was the fastest. I memorized the prices of everything. I memorized the numbers on things. I could add it up. I always kept the line moving.

[Timothy, civil engineering]

Some of the existing scholarship on educational achievement suggests a self-destructive phenomenon among African American males. This tendency to self-destruct in the area of academic performance has been associated with a plurality of social causes (Brown, 2009; Campbell and Fleming, 2000; Delpit, 1995; Fenning and Rose, 2007; Jackson and Moore, 2008; Jenkins, 2006; Ladson-Billings, 2011; Majors and Billson, 1992; McWhorter, 2001; Noguera, 2003; Ogbu, 1990; Pierre and Mahalik, 2005; Reynolds, 2010;



Sigelman and Tuch, 1997; Spencer et al, 2001; Steele, 1997; Tatum, 2000; Terry, 2010; Whiting, 2006; Wiggan, 2008). Matt describes his perspective on the failure of African American men to optimize their educational opportunities at Expansion University.

The black men on campus they hold themselves back. They don't support each other. That's the biggest issue. The blacks on campus don't support each other at all. If you're not in a fraternity or sorority, you can forget about it. Like, the freshmen when they come in they ask about the frats and sororities are. They want to pledge. I'm like, "Get an education first". But it's a new generation. It's way different than when I was a freshman. Way different. They've got more opportunities now. They've got more resources. And once again, the minority have got to see they're holding themselves back. They've got to support each other.

[Matt, metallurgical engineering]

Matt describes the divisive nature of the African American male community at EU. He names fraternity membership as one outlet through which black men isolate themselves from one another on campus; this analysis correlates with the literature about the exclusivity within African American Greek organizations (Kimbrough, 2003; McClure, 2006; Watson et al, 2002). His repeated remarks that African American men do not "support each other" strongly suggest his belief that cooperation and community will improve the experiences of black men on campus.

Participants share other information indicating the absence of a strong scholar identity among some of their African American peers. According to Timothy's perspective on the issue, a lack of self-awareness holds black men back from achieving academic success.

Like people not really knowing who they are can hurt their chances. Sometimes when you get in a fraternity, and you don't really know who you are. You're going to end up being something you're not, or trying to be something you're not. Like, if you really know who you are before you get in a fraternity, you won't change for the bad.

[Timothy, civil engineering]

Timothy uses Greek life as an example of instances where his peers have become lost to particular influences. He associates their susceptibility to “not really knowing who they are”. His comments correspond with the literature concerning the impact of self-awareness on identity development among black men (Bynum et al, 2008; Campbell and Flemming, 2000; Cross, 1991; Helms, 1990; Wijeyesinghe and Jackson, 2001). Matt speaks to the preference of his peers to engage in social activities, rather than focus on professional development.

Like, say that there was a party and some group was like having a meeting, with a company coming out to hand out intern forms to co-op. Ninety percent of the time they're going to the party. That's the sad thing about it. They'd rather party, than like get internships, or something better they like.

[Matt, metallurgical engineering]

Matt uses “sad” to encompass his feelings about the absence of academic identities among some African American male college students. Jordan expresses strong emotion about African Americans who do not believe in themselves and their abilities to succeed, academically. He divulges, “Cause I get angry. I get so angry. I'm like, ‘Why don't you feel you can do more? You should just feel that you can do more; you should want more!’ But everyone don't feel that way.” Timothy emphasizes a need for greater professionalism from African American men at EU.

Black men need to be more focus-driven. More professionalism. I mean, “Aren't you in college to get a job”? That's why you're in college. So this is the in-between step, for you getting a job. So I don't know if EU needs to teach it or parents need to teach it, or I don't know. But you need to have it before you graduate.

[Timothy, civil engineering]

Here, Timothy stresses the importance of career preparation, social maturation, and personal development during the college experience. His unapologetic question to his

peers, “Aren’t you in college to get a job?” indicates his interest in uplifting his fellow man. Racial uplift and improving the socio-economic statuses of other African Americans has been a common theme throughout the narratives of black philosophers and scholars who have published on this issue (Alridge, 1999; Anderson, 1988; Brown et al, 2005; decoy 1967; DuBois, 1996; Fanon, 2007; Kimbrough, 2003; McClure, 2006; Tozier et al, 2009).

Participants speak about their own academic identities with pride and fulfillment.

You know I was in the library yesterday doing some research. I was reading the campus newspaper and there I was on page eight. There were so many people back home that had called my mom about it. You know, I’m like proud to be a black male doing something positive with books, instead of drugs, or going to jail or what not.

[Matt, metallurgical engineering]

Matt shares an experience in which he was featured in the EU campus newspaper for his contributions to a research project. He expresses his joy in seeing his face on the pages of the campus paper, as well as the pride that he feels knowing that others have recognized his accomplishments. His last statement in the passage is among the most powerful in the passage. “I’m like proud to be a black male doing something positive with books, instead of drugs, or going to jail or what not.” Matt’s comments reveal the pride he takes in having a strong academic identity. In contrast with the stereotypes and social failings of some African American men, Matt is validated in his life story and confident in his future opportunities. His self-respect, dignity, and academic confidence are consistent with the findings of other studies about black male scholars; success experiences in an academic setting tend to foster attitudes of possibility and hope among African American men (Bailey and Bradbury-Bailey, 2007; Brown, 2009; Bynum et al, 2008; Campbell and Fleming,

2000; Graham and Anderson, 2008; Harper, 2009; Harper and Wolley, 2002; Whiting, 2006).

### **Race and Racism**

It's harder as an African American man. Like when you go in for an interview. As an African American, you start in the negative; before you can show talent, you have to work way back. You've gotta be four or five times better because you are African American.

[Kevin, civil engineering]

In the passage above, Kevin describes the comparative disadvantage that he believes African Americans experience in contrast to the white majority. In this particular passage, he uses the analogy of a job interview to illustrate his point about the unbalanced challenges befalling black men in society. According to his logic, he must be a far stronger candidate than his white counterparts in order to be competitive for a position. He indicates that because of his racial ID, he starts the process "in the negative". Even before talent becomes a consideration, he must establish his credibility, exhibit exceptional skills, and affirm his value as a black man. Kevin's analysis of this predicament of deficit is consistent with beliefs shared among other African American men, which have been reported in the literature (Bell, 1988; Connor, 2008; Douglas, 1998; Eisele, 2009; Graham and Anderson, 2008; Harper, 2009; Jenkins, 2006; Neal, 2006; Ogbu, 1990; Staples, 1982; Whiting, 2009; Yan, 2000). His ideas also align with the double-consciousness dilemma described by DuBois (1996) and the stakes fairness argument by Jacobs (2004). Though Kevin's narrative reveals a strong perspective on the subordinate statuses of black men, the responses of other participants differ starkly from his synopsis.

Race and racism have taken on different forms for each of the participants, and thus hold diverse meanings for each of these men. Some acknowledge a distinct dichotomy of

existence and experience based on color racism. Matt describes his feelings about the lines of race that separate one side from another; he goes as far as to identify demarcations that divide persons within same-race groups. He shares, "In my experience, you're either colored or you're Caucasian. You're either a colored person or you're a white person. In my experience, we've got people that think just because I'm light-skinned, I'm considered something. You kind of are in the South. There are two sides – multiple sides." His comments reflect his comprehension of the multi-dimensional facets of race. The revelation that he is classified according to the shade of his skin (i.e. light-skinned) correlates with literature about whiteness and the resultant racism within groups (Harris, 1993). John summarizes his conception of race in the following manner:

I guess race is pretty much how people treat you, based on looking at you. Like, pretty much, like if you look at somebody, and you would treat them a slightly different way than another person. That's race. No matter what ethnicity you are, it's what people think you are.

[John, mechanical engineering]

Here, John depicts race through a description of racism. He begins to define race through an objective, visual means; race is what we look like or who one appears to be. By the end of his analysis, he transitions into a description of race as perceived difference or what people think one to be. This integrated understanding of race and racism reflects a common custom of defining this social construct as a condition of its application in discriminatory practice (Bonilla-Silva, 2003; Parker, Deyhle, and Villenas, 1999; Pinderhughes, 1989; Rothenberg, 2012; Sharma, 2010).

Timothy identifies a breach of culture between persons who identify as African American and those who identify as white.

I feel like more black people and white people need to have conversations like this interview. I feel like a lot of white people are intimidated by black people. I remember when one of my white friends was trying to describe somebody to me, and he was like, "He's kind of tall, he's got black hair." I'm thinking he's talking about a white person, but he's talking about a black person. I'm like, "I don't know who you're talking about." He's like, "Yes you do." I'm like, "Is he black?" He said, "Yeah. I'm like, "Why didn't you say that first? That would have been the quickest way. That narrows it down a whole lot." I feel like a lot of white people are intimidated by black people.

[Timothy, civil engineering]

In his story, Timothy shares an incident in which his white friend struggled to use a racial identifier to describe a mutual friend during a casual discussion. Timothy expresses frustration about his friend's avoidance of adding "black" to the character description. The white friend's decision to avoid a race identifier is reflective of the apprehension shared among many white persons uncomfortable in discussing issues of race with persons of color (Connor, 2008; Parker et al, 1999; Rovai et al, 2005; Sigelman and Tuch, 1997). Timothy believes that more conversations in which white and black persons convene around the issue of race will lead to broader understandings between groups and less anxieties about perceived differences.

Occasionally in qualitative research, the worth of unspoken words outweighs the richness of the participant's response. Throughout each of the interviews with Jordan, he swiftly shifts the conversation away from the issue of race and moves directly into a rationalization for racism. When asked what race means to him, he immediately jumps beyond the question and denounces any detrimental effects of racism on his experience.

I mean...I've met all types of people. Like I have some great friends that are not black. And, I don't know, there's greatness in all people. I never got the whole racist thing, you know. I've never had any hatred in my heart. It's never been there, you know. I've never had a reason to. It's like everything that has happened to me bad, I can identify it with something. You can't always point it to the white man, just to be honest.

[Jordan, civil engineering]

Jordan fights to confirm his relationship with “great friends who are not black.” He rejects racism as the source from whence any negative stimuli or phenomena has been derived. He discloses skepticism around the claims of prejudice or injustice that others have denoted. While his comments may reflect his personal perspective on racism, his narrative may be influenced by ideology or identity politics. His observable unwillingness to define the construct of race is indicative of a deeper chapter inside of his story. Given our differences in racial identity, Jordan may not have felt completely comfortable in expounding upon this issue with me, a white researcher. This reluctance was anticipated among some of the participants and was identified as a potential limitation in the study.

CRT scholars in education believe that for many students, their first encounters with race and racism often happen in schools (Degaldo and Stefancic, 2002; Ladson-Billings and Tate, 1995; McClaren and Kincheloe, 2007; Parker et al, 1999; Solorzano et al, 2000; Tatum, 1997; Yosso, 2005). Participants share their earliest encounters with racism. In nearly all of their stories, school provided the venue or variable through which participants came in contact with racism. John first recognizes racism through the actions of his classmates against a white student at his predominantly African American middle school. He recalls, “Actually, around fifth grade there was some racism now that I look back, because there was one white kid that they would pick on because he was white and joked around on him. That’s really messed up when you look back on it.” Here, John adds his enlightened understanding of justice in his reflection on this racist activity in middle school; through a broadened scope of social justice, he acknowledges that the bullying delivered from the black students to the white student was wrong. Per John’s reflective analysis, we see that

his developmental experiences have helped him make advanced meaning of justice and injustice in regards to social issues related to race. This finding is indicative of his personal progression through Cross' (1991) stages of Black Identity development (Helms, 1991).

Matt remembers the specific point in his high school experience when he and his teammates met racism on the playing field.

I first felt racism on the high school football field, actually. We were in some rinky-dink town for a game. They were still backwards. We went through the line, you know, shaking hands after the game. And the Caucasians were like "n" word, "n" word, "n" word left and right. Their coach didn't say nothing to them. I'm like, "Oh, okay"... It bothered me. Like I say, I knew it was still in the United States. It was 2006. I'm like we're still in that. Then in 2008, the school had its first integrated prom.

[Matt, metallurgical engineering]

Still shaking his head in disbelief, Matt describes this event in painful detail. Matt left this encounter with a particular understanding of whiteness. The failure of the coach to address the racist attacks of the opposing team provides a tangible example of whiteness at work. The direct aggressions that were experienced by Matt and his teammates created a space for Matt to investigate his status as an African American man. This example illustrates the concept that the racial aggressions and micro-aggressions experienced by students of color often wield psychological, social, and emotional effects (Bailey and Moore, 2004; Bonner and Bailey, 2006; Bynum et al, 2008; Delpit, 1995; Howard, 2001; Isom, 2007; Kimbrough et al, 1996; Lee and Bailey, 2005; Mahalik et al, 2006; McWhorter, 2001; Noguera, 2003; Pierre and Mahalik, 2005; Smith, Allen, and Danley, 2007).

Timothy confirms his realization of racial differences during his childhood. Instead of seeing racist stimuli in school, Timothy became conscious of race through relationships with other children in his predominantly white neighborhood.



I grew up with white neighbors, but I always played sports with black people, because I was part of the AAU basketball team. Everybody was from the hood but me. So I got to see like both sides – both sides of it. And like in my neighborhood, there would be some racist comments, or whatever. Cause I was like friends with a lot of white dudes in the neighborhood. But people still have racism underlying. But that's like their upbringing. Even though they don't realize it.

[Timothy, civil engineering]

Timothy describes his experience as an African American child growing up a community populated primarily by a white majority. He states that he has seen “both sides of it” in regards to race. By this statement, Timothy defines a dichotomy along racial lines – black and white. He closely aligns race with the residential communities that one experiences and distinguishes the “hood” from his experience in a predominantly white neighborhood. The residential politics of race are easily observed in his account and in the arrangement of neighborhoods across the United States (Connor, 2008; Kozol, 1992; Lipsitz, 2006). Timothy continues in demonstrating the pervasiveness of race in his experience. Though he grew up in white community, attended a white majority school, and engaged with white friends, Timothy is not white; and from the following passage, we see how a zip code does not a racial identity make. Despite the similarity of experiences among white persons and persons of color, the intersection of black identity with the white world may lead to confusion, frustration, and conflict (Bell, 1980; Cross, 1991; Helms, 1990; Mahalik et al, 2006; Wendt, 2007; Wijeyesinghe and Jackson, 2001).

I can remember this one incident when I got in a fight with a white dude. We were on the football team, together. He was like, “You're not black. You're from where I'm from. It has nothing to do with being black.” Then, I remember, I was like, “You don't think I'm black, then I'll beat your ass like I'm black.” We had a good fight, and yeah, I whupped his ass.

[Timothy, civil engineering]

In the account above, Timothy relives a fight that erupted between him and his white teammate in high school. The white student, with whom Timothy had grown-up over the years, questioned Timothy's racial identity. His white teammate brought forth this inquisition because of Timothy's background experiences in a predominantly white community. In response to this assaultive speech, Timothy took on the exaggerated stereotype of the black male as violent, brawny, and capable of physically hurting others (Fanon, 2007; Majors and Billson, 1992; Sigelman and Tuch, 1997; Steele, 1997). Timothy's response indicates his struggle as he worked to negotiate an African American identity in a white world (Brooks et al, 2008; Bynum et al, 1998; Cross, 1991; Helms, 1990; Isom, 2007; Mahalik et al, 2006; Oyserman et al, 1995; Ross, 2009; Sanchez-Casal and MacDonald, 2009).

Kevin describes racist phenomena that he experienced on a high school field trip in his hometown. His experience involves racist imagery on a much larger scale than in a one-on-one encounter or exchange.

Yeah, there was an instance back in high school when we couldn't access a road because of a KKK (Klu Klux Klan) rally in the middle of downtown. We were coming back from a school trip and this was the only road out of town. We couldn't get through. Couldn't go around it or anything. The road was blocked, and the bus couldn't get through.

The police are all involved in it. It's like the good guys are with the bad group. You don't feel safe. I had friends with crosses put in their yards and stuff; nooses put on the door. There was name-calling as kids. You can't do anything about it. My grandmother always told me to "run and run fast". It was rough, ya know.

[Kevin, civil engineering]

Kevin shares the feelings of fear, frustration, and futility of any efforts for change in his passage about this experience in high school. By witnessing the support the police displayed for the white supremacist activities in the center of his hometown, Kevin

internalized ideas about the lack of protection afforded to him through the institutions of the state. The prevalence of prejudice among social and governmental authorities against African Americans has been recorded throughout the history of American society (Aldridge, 1999; Althusser, 1971; Anderson, 1988; Bell, 1988; Bertram, Blachman, Sharpe, and Andreas, 1996; Colclough and Beck, 1986; Connor, 2008; DuBois, 1996; Harris, 1993; Jalata, 2002; Kozol, 1992; Lipsitz, 2006; Ogbu, 1990; Rich, 2010; Tozier et al, 2009).

### **Race and Expansion University**

According to the students' accounts and consistent with writings about its history, Expansion University holds a firm reputation as a racist institution. Participants express how they regarded this repute before and following their matriculation at EU. Timothy points out, "I was the only black male from my high school to go to Expansion University, or like not to go to an HBCU". John imparts his family's excitement about his decision to attend EU.

My family's always like, "Oh yeah that's the best school you could go to pretty much, realistically outside of Ivy League". It's always been like that, because I was kind of indifferent to it, not indifferent, but I wasn't passionate about going here. But my uncle, I could see the excitement in his eyes when I said I got a scholarship from EU. When I said I had a scholarship from other schools, there wasn't as much there. I guess it's just something about its connection to the Civil Rights Movement and all that makes it special to him.

[John, mechanical engineering]

Here, we see how the connection of EU to the Civil Rights Movement holds significant meaning for John's uncle. Timothy explains the pride he feels as a student at EU. He states, "I'm proud of myself, because I can't imagine too many people from where I come from with a degree in engineering, period – let alone from Expansion University. When I graduated high school, I was the only black male to go to EU." Timothy contends that he is

the sole African American man to attend EU from his high school. He also indicates that he is the only African American from his high school that elected to study engineering. These findings are consistent with the literature on college and major choice among African American men (Campbell and Fleming, 2000; Cuyjet, 2006; Dey and Hurtado, 1995; Douglas, 1998; Harper, 2010; Green et al, 2009; Harvey et al, 2004; Hughes, 2011; Love, 1993; Palmer et al, 2010; Watson and Kuh, 2002).

In Jordan's narrative, he shares the stories that are popular among African American students when they discuss enrolling at Expansion University.

If you've never attended EU, especially coming from an area where I'm from, you think that it is a PWI; it's a racist school.... You know the story about the guy standing in front of – you know, the governor not letting Lucy through the door. And that's the stuff you hear all the time. And that is what is branded on your brain when it comes to the Expansion University. But I didn't believe it, you know. It's like, if you bring up that incident, you've got to bring up everything that was happening in the United States, in the entire south, at that time. It wasn't just at Expansion University at that time. The South has changed, and so has Expansion University. There are so many people that are putting forth effort to expose that truth. There are so many organizations that did, as well. So I would just encourage anyone—experience it for yourself.

[Jordan, civil engineering]

Jordan shares historical facts commonly associated with EU. He indicates that many of his friends of students hold fast to the past history of the institution and reject the idea of enrolling themselves at a “racist school”. He is quick to discredit this idea of EU, which he is a proud to call his university. Jordan argues that Expansion University is just one part of a greater portrait of racism and highlights the time period during which the highly publicized racist incidents occurred. In the case of history, he believes that one may not separate place (i.e. the institution) from the context of the period (i.e. pre-Civil Rights era) in evaluating the institution. His emphasis on context in the retelling of the story of the institution is

consistent with the principles of phenomenological research (Creswell, 1998; Geertz, 1993; Golfashani, 2003; Marcus and Fischer, 1999; Merriam, 2009; Moustakas, 1994; Siedman, 2006; Rosaldo, 1993; Sinha, 1963). Jordan continues his defense of EU in the following account:

As so many of my friends that chose to go to an HBCU would always argue, 'No, I don't want to go to that racist school. They won't start a black quarterback and all that stuff.' I'm like, "I've never seen a black quarterback that was the best quarterback on the team. Period." I've attended...I've always followed Expansion football. I've never seen a black quarterback that was better than the white starting quarterbacks at EU. It's just that a lot of people don't understand. They want to believe that's what it is – what they've been trained to believe. Unless you go out and experience it for yourself, you'll never know. I can say that I experienced it for myself. I take pride that I'm an African-American male who graduated from Expansion University.

[Jordan, civil engineering]

Jordan uses intercollegiate athletics to reframe a racist argument that his friends make about EU. Since white males at EU traditionally hold the high profile position of quarterback, his friends of color make a case for racism. Jordan rejects their analysis by comparing the talent of the white players in that position to the African American players with whom they compete. Jordan maintains that his friends are speculating based on "what they've been trained to believe" about Expansion University. His mention of socially constructed beliefs reflects his awareness of the messages about race and racism that parents of color impart upon their children (Edwards et al, 1999; Reynolds, 2010; Tatum, 2000; Yosso, 2005).

Kevin speaks to the racial battle fatigue he has endured as a student at Expansion University (Allen, 2010; Smith et al, 2007). He explains, "I was always taught to think positively. You can compete, but it's harder as an African American man." While racist micro-aggressions against persons of color still transpire, instances of direct racism in

contemporary academy are not widely reported (Allen, 2010; Solorzano et al, 2000). Kevin describes the racial climate at EU. On the subject of active racial victimization he recounts, "There are multiple instances on campus. It happens every year. The N-word plastered all over campus – chalked on the sidewalks. Nooses around." His description of these phenomena is graphic, traumatizing, and disruptive to psychological safety of the learning environment. Kevin further illustrates the prolongation of racism at EU in the following account of an unexpected and upsetting experience in one of his engineering courses.

There was an incident in one of my classes where the professor used a racist image on one of his lecture slides. I was just sitting there like, "This can't be happening right now." I looked around at the one other black student in the class to see if she felt like me. She was just looking down and shaking her head. She looked at me and said, "I thought we were passed these days." I was like, "I guess not."

It just hurt seeing my white classmates laughing and chuckling around me when they saw a black figure hanging from a noose. I took the issue to the director of student services and he went to the dean of the college. He's black and he's been there for us. I felt like he was the only one we could talk to about it. Later on, he told us that the professor had been removed from teaching, but I don't feel any real repentance. Okay, so he doesn't have to come in and teach our class anymore. He still sits in his office and does he research and teaches other classes. I have to walk by his office everyday, and he's still there.

[Kevin, civil engineering]

This finding is among the most glaring instances of racism identified by any of the participants in the study. Kevin strains in anxiety as he relives the experience of seeing a black figure hanging from a noose on a projection screen in his engineering classroom. This direct assault on his racial identity is indicative of the aggressions and attacks that some black students experience at PWIs (Bonner and Bailey, 2006; Douglas, 1998; Solorzano et al, 2000; Taylor and Howard-Hamilton, 1995).

Matt shares his synopsis of racism at Expansion University. He acknowledges the differences in administrative leniency afforded to white students at EU.

Like with the darker community, I guess it's more hard to succeed at a predominantly white college. Whereas, with the fair-skinned people, they can do almost anything they want on campus, and not get in trouble for it. I've seen it a lot. Especially with the frats. Like one of white frats, they got in trouble for hazing and what not. They came back on campus. Had it been a black fraternity, they probably would have been kicked off campus. That's like with the parties, you know, the white fraternities can have a party during the middle of the week, whereas, blacks can't. They get more houses than we do. It's a different experience from my point of view, at least.

[Matt, metallurgical engineering]

Matt directly identifies disparities that he sees between white students and students of color at his university. His statement that, "It's more hard to succeed at a predominantly white college" is consistent with the literature on the factors affecting the persistence of black men at PWIs (Bonner and Bailey, 2006; Cuyjet, 2006; Dey and Hurtado, 1995; Elliott et al, 1995; Harper and Nichols, 2008; Harvey et al, 2004; Hughes and Giles, 2010; Kayes and Singley, 2005; Kimbrough et al, 1996; Love, 1993; McClure, 2006; Reid and Moore, 2008; Roach, 2001; Rovai et al, 2005; Smith et al, 2007; Russell and Atwater, 2004; Watson et al, 2002). Matt purports that white students tend to receive lighter punishments for violations of campus policies. This phenomenon is consistent with other research findings about the prevalence of African Americans in exclusionary discipline in schools and the imbalance of disciplinary penalties between black and white student groups in college (Engle and Conant, 2002; Fenning and Rose, 2007; Kimbrough, 2003; McClure, 2006; Terry, 2010; Wiggan, 2008; Watson et al, 2002). His shift from using "darker community" and "fair-skinned people" to "blacks" and "whites" reflects a growing confidence as he verbalizes his thoughts about racism with a white researcher. This strengthening of

rapport between researcher and participant as the interviewing relationship grows is reflective of the dynamics outlined by Siedman in his in-depth interviewing model (2006).

Participants allude to other privileges for white students that are not as common among African American students at EU. Kevin shares, "I have some white friends so I see how it is for them. They are better connected to resources. They actually know about them. In engineering, they get more help from the TAs (teaching assistants)." Kevin acknowledges his feelings that his white friends enjoy more access and a closer connection with campus resources, including educational support from teaching assistants in the engineering. Matt mentions specific areas, activities, and accommodations, which he feels are awarded at a greater frequency to white students than African American students.

From what I see, the majority of the campus gets more benefits than the minority; that's what I think, from the five and half years I've been here. Benefits like you know being more on the SGA. More like being funded for things. Like you know we didn't get funded for stuff. Like giving an office. I know a couple of guys, and they have an office to do their work in. We do our work in whatever place is convenient at the time. That's some of the benefits, I think.

[Matt, metallurgical engineering]

One of burning themes in Matt's commentary involves the concept of space. He makes reference to office space that has been earmarked for use by white students, and notes that the same accommodations have not been designated for students of color. Timothy asserts his own belief about the surplus of academic resources available to the white majority in engineering.

I joke with my buddy and say, 'Have white friends'. Cause it just seems like they get the tests. They get the solutions. I'm saying they, and it's probably bad. But there's more of them, so the odds are better. If you play percentages and you have a white guy in engineering and a black guy in engineering, who's more likely to have the solution? Yeah, I'd put my money on the white guy, just because there's more of them. It's more likely, because he's going to have more friends, more of his friends



came to college. He's in a bigger fraternity, who have bigger test banks. It's just more likely.

[Timothy, civil engineering]

Timothy shares his strategy to “have white friends” as a means of acquiring access to the study resources and past tests. In this account, he distinguishes fewer resources as consequences of being a minority student and connects success with the forging of relationships with members of the majority group. The scarcity of supports as a motivator towards the creation of connections has been identified as a common success strategy in the literature on African American students at PWIs (Bonner and Bailey, 2006; Cuyjet, 1997; Elliott et al, 1995; Harper et al, 2009; Kimbrough et al, 1996; Roach, 2001; Watson et al, 2002).

Research has revealed some challenges for students of color in educational settings where the faces and background experiences of their teachers are perceived as dissimilar to their own (Bianco et al, 2011; Howard, 2001; Kayes and Singley, 2005; Picower, 2009; Strayhorn, 2008; Tatum, 1997; Tinto, 2008; Watson and Kuh, 1996; Yosso, 2005). Timothy avows, “Black engineers are the minority within the minority”, and suggests no surprise that the majority of his professors are not African American. John illustrates the difficulties he has encountered as an African American student in the majority white academic environment at EU.

I think it's just tough being an African-American, because all your professors are white. Do you get what I'm saying? I don't even feel comfortable, I don't completely feel comfortable around this person, and she may not feel comfortable being in the study group with you. Because a lot of white people I know have completely different interests than what I do. You just have to kind of like, I mean they're cool people, but you don't have this common ground. It's like a little bit harder to ease your way into it, but it's one of those things you've got to do.

[John, mechanical engineering]

His commentary conveys the discomfort and isolation that he experiences as a minority student at the university. He acknowledges the feelings of discomfort that his presence of may arouse among other students. His use of the feminine pronoun, “she”, in this excerpt is significant, as it implies his awareness of the historical misrepresentation of black masculinity. For centuries, the ideology of whiteness has cast the black man as the depraved and ravenous huntsman of innocent white women (Fanon, 2007; Neal, 2006; Wendt, 2007). His gendered statement may also be informed by experiences with white females in his past. In his narrative, John highlights the differences of interests and absence of common ground existing among race groups as central to the divide between teachers and students of color at EU. His final statement confirms that adaptation to the discomfort as his only effective option. Assimilation to the dominant culture has been recurrently heralded as the normative expectation and function for minority students in education (Abraham and Jacobs, 1990; Anderson, 1988; Bell, 1988; Bonilla-Silva, 2003; Bynum et al, 2008; Carter, 2003; Degaldo, 1989; Freire, 2000; Harris, 1993; Howard, 2001; Kimbrough et al, 1996; McClaren and Munoz, 2000; Tatum, 2000). In very simple and self-reflective summation, Matt confirms his assimilation into the culture at Expansion University. He admits, “I had to assimilate here, you know. I had to get adapted to how it is – not seem like an outcast.”

Participants spoke specifically about the absence of faces of color in the college of engineering. Timothy contends, “When I came to EU there probably wasn’t a black student in engineering that I didn’t know... I feel like it’s real segregated still, but that’s just how it is in the south. Black people hang with black people, and white people hang with white people.” Jordan reveals, “I was actually the only African-American in my senior design

group.” Kevin describes how being an African American has isolated him in the college of engineering. He discloses, “I formed a study group with other African Americans just to make it. We are left out here; it’s like those who you don’t mix with. Most of my friends are from similar backgrounds and schooling. We have to work harder to learn the things that others take for granted.” Through his remarks, he paints a portrait of racialized exclusion within engineering. Kevin organized an assembly of African American students as a means of facing challenges, cooperatively. Because of their membership in the minority, he feels that he and his friends are “left out” and must work harder in order to sustain good standing as students. His need to associate in order to protect identity, interests, and is consistent with the literature about the tendencies of African American male college students to affiliate with other African American male college students (Brooks et al, 2005; Kimbrough, 2003; McClure, 2006; Taylor and Howard-Hamilton, 1995).

In contrast to Kevin’s isolation, Matt interprets his experience as an African American student in engineering quite differently. In the following account, he rejects the idea that acts of racism occur within the college of engineering.

I haven’t experienced no racism toward me personally. That happens to guys on the business side of campus all the time. But it doesn’t happen on the engineering side at all. I think we understand that when we together, we ain’t got time for that. Take care of your project first – the project. We stay busy, so I noticed that it happens on the business side of campus, a lot of racial stuff. But never on the engineering side. Not directed toward me, personally. Like maybe behind my back or something. But not to my face.

[Matt, metallurgical engineering]

Matt insists that racism occurs only in the college of business, not in the college of engineering. His logic for this argument is grounded upon the cooperative nature of the engineering curriculum and the camaraderie among students in the programs. This is not

the first occasion on which Matt critiques students enrolled in the college of business at EU. His earlier comments about business students relate to their inability to sustain the stress and academic demands of the engineering curriculum. Here, he indicates an absence of focus among business students, which may differentiate them from the students in engineering. According to his explanation, class projects consume the waking hours of engineering majors. Near the end of his analysis, Matt acknowledges the potential for racism behind his back but maintains that any such behavior would not be personally directed towards him. Jordan agrees with Matt's assessment regarding a lack of racism in the college of engineering. He describes open and meaningful conversations with white engineering students about race.

I have had the race conversation with white engineering students – some of my classmates. It really opened their eyes up, and my eyes up to how we all think alike, because we are alike. Because, I've always been like, "If you don't have a problem with me, I don't have a problem with you, regardless of what race you are." And I learned that a lot of them feel the same way.

[Jordan, civil engineering]

In this account, Jordan illustrates the enlightenment achieved through honest discussions about race. The most important detail in Jordan's discovery is the commonality between all persons, regardless of racial identity.

### **Conclusion**

In this chapter, I shared the participants' stories of social constructs in their lives. Participants' narratives outline interpretations of their identities as scholars and African American men. Participants describe the establishment of their academic identities as early developments in their educational background. Based on participants' analyses, their parents have played integral roles in supporting the development of their scholar identities.

Participants also share their understandings of stereotypes and racism, as well as the effects that these phenomena exert on their life worlds. Their stories reflect the influence of ideology on their thinking about racial identity. Each participant shares his own testimony of racism and how the manifestations of race have taken form in his education and experiences. The final sections of this chapter center upon race at Expansion University, and specifically, in the college of engineering. Through their narratives, we may assess that race is still a relevant factor for students of color at this PWI.

In the next chapter on challenges, I present the stories of trial, stress, and struggle as experienced by the students in this study.

## CHAPTER VIII

### THE STORY OF CHALLENGES

Like a lot of times they may have to drop out of college, because they don't have the money. And I feel like, I'm going a little off the subject, but I feel like there's a lot of blacks that could graduate from any college. But, let's say you don't score high enough to get scholarships, doesn't mean you're not smart enough to graduate with good grades from the Expansion University. So like not just your parents are in poverty, but your whole family is in poverty. So they may be able to get to college, but they're not on scholarships. So they have to deal with this money issue. They're like making decent grades. You might get to college and make all A's, and you still didn't get a scholarship. Like I haven't gotten any new scholarships. I've made pretty much all A's, but I haven't gotten any more scholarships. But I can only imagine. I guess you've got FASFA through the student aid, in between. I feel like my parents could, I mean they're not rich. My dad works a lot, so he makes a lot of money. He spends a lot of money. But a lot of people have cleared that level, where you don't get any financial aid, but your family still doesn't have money to send you to college, if you're right above that financial aid line.

[Timothy, civil engineering]

### Overcoming the Challenges

The literature on the higher education of African American males is riddled with accounts of the challenges experienced by black men in college (Cuyjet, 1997; Harper et al, 2009; Harvey et al, 2004; Kimbrough et al, 1997; Love, 1993; Palmer et al, 2010; Patton et al, 2007; Russell and Atwater, 2004; Roach, 2001; Smith et al, 2006; Strayhorn, 2008; Solorzano et al, 2000; Strange and Banning, 2001). Many of the challenges outlined by researchers as inhibitors of success exist in the lives of African American men before they enter the university environment. These childhood and adolescent challenges often have costly emotional, personal, economic, and political effects on African American males in their adult lives (Bailey and Bradbury-Bailey, 2010; Bell, 1988; Boudon, 1974; Fenning and

Rose, 2007; Freire, 2000; Jenkins, 2006; Lipsitz, 2006; McWhorter, 2001; Morrow and Torres, 1995; Ogbu, 1990; Palmer et al, 2010; Reynolds, 2010; Sharma, 2010). Participants discussed different trials that they faced during their K-12 education that challenged them to grow in maturity, responsibility, and in understanding the world around them. The hardships of life at Expansion University also emerged as prominent points in their narratives. While their challenges differed from individual-to-individual, there were some commonalities among their struggles that will be discussed in this section. In this story of challenges, I bring you their burdens and their strategies for breaking down the boundaries presented before them.

From his earliest recollections, Jordan has been taught to be a fighter. "I was taught that you have to fight for yourself and to create a chance for yourself, and that's it. Easy as that." This mentality served him well as he progressed through the life span into early adulthood. Jordan and his girlfriend became pregnant at the age of sixteen. This unexpected turn of events forced him to adapt his behaviors, thought processes, and to take parental responsibility for another person. While he could have reacted to this unanticipated life shift in a number of ways, he chose to embrace his role as a father and reinvent his identity around this newly discovered motivation.

My son is by far the best part of me. Because I can honestly say, I don't know where I'd be if it wasn't for him. Because, he wasn't planned. I was scared out of mind, when I found out my girlfriend was pregnant. I was sixteen. He was born when I was seventeen, but it turned my life around. I got a part-time job in high school. And it's just the thought of what I want to do for him. The man he sees as his father, like that's going to be stuck with him for the rest of his life. He graduated and got a job at the highway department. You know it pushed me a lot. My son pushed me a whole lot.

[Jordan, civil engineering]

While he acknowledges some of the challenges associated with teenage parenthood, Jordan maintains, “I was just motivated, you know. I’m still fighting. I’m not stopping here.”

Preparation for college is a prevalent finding surfacing in the participants’ stories of challenges. Timothy offers his ideas about the weaker academic preparedness of some African Americans. He states, “I feel like white people come to college better prepared for college, because of their environment. Yeah, like the average white person may have more money, so they’re in a better neighborhood.” Consistent with the literature, his ideas unite the environment and socio-economic situations of some students of color as obstacles to their educational opportunities (Kozol, 1992; Lipsitz, 2006; Reid and Moore, 2008; Tatum, 2000; Thernstrom and Thernstrom, 2004). Kevin does not feel that his academic background and early educational experiences prepared him to be successful at the university. He explains, “Coming to EU was a totally different ballgame for me. I had all these new experiences. Professors expect you to be at a certain level when you get into class. I just wasn’t there.” Jordan’s story aligns with Kevin’s synopsis of the differences in the university and his past experiences. He states, “Honestly, my earlier years here, it was kind of hard to get adjusted to things moving so fast.” While there were distinct differences in the academic expectations at EU, Matt believes that the broader education he received in high school helped him adjust in the new environment. In his words, “I wasn’t in culture shock. I mean I knew what I’d gotten myself into. High school did prepare me for college – one way or another.”

### **Challenges Introduced by Educators**

Yosso (2005) and others build the argument that educators who are not appreciative or understanding of the capital offered by communities of color may exercise



negative influences against the success identities of students (Brown, 2009; Degaldo, 1989; Degaldo-Bernal, 2002; Engle and Conant, 2002; Harper, 2009; Hughes, 2011; Ladson-Billings, 2011; McClaren and Munoz, 2000; Solorzano et al, 2000; Tatum, 1997). White teachers have shown lower expectations in regards to the educational outcomes of African American students (Allen, 2010; Baszile, 2008; Bonilla-Silva, 2003; Castagno, 2009; Delpit, 1995; Fenning and Rose, 2007; Harvey et al, 2004; Lee, 1996; Keck-Staley, 2010; Parker et al, 1999; Schellenberg and Grothaus, 2009). Three participants confirmed that middle and high school teachers had been agents of adversity along their paths to engineering. Particularly, participants described encounters with their guidance counselors.

When I was in the 7<sup>th</sup> grade, the guidance counselor gave my class a survey that asked, “What do you want to be?” I said engineer and turned it back in. The counselor took it up and then wanted to speak to me. I was like, “Is something wrong?” And she was like, “Not really but... You need to lower your goals. Go for something more reasonable.” She told me to evaluate my thought process and take it home and rethink it.

I told my grandmother about it, and she was livid! She looked at me and said, “Boy, you can do whatever you want.”

Hearing the counselor say this hurt. If I can do anything, then why don't they believe in me? I went back to school the next day and faced the counselor. I told her, “I WILL do this – I will become an engineer.”

[Kevin, civil engineering]

In this story, Kevin describes his negotiation of racism and the reproduction of social class in schools as an adolescent. Because his guidance counselor had not seen wide success of African American males in STEM fields, she discouraged Kevin from establishing the goal of becoming an engineer. Kevin's grandmother served a valuable function in this instance by giving Kevin the support he needed to believe in himself. The “hurt” Kevin describes resulting from his counselor's denial of his potential indicates the validity of studies

regarding racial micro-aggressions and psychological distress experienced by African American males in schools (Allen, 2010; Bailey and Moore, 2004; Kimbrough et al, 1997; Mahalik et al, 2006; Solorzano et al, 2000).

Matt's story includes his high school guidance counselor, her refusal to regard his interests in Expansion University, and her failure to help him in the college application process.

The guidance counselor wasn't worth a shit. She tried to send me to college somewhere in the boondocks. I'm like, "No, Mrs. Dewberry." Like if you were a senior, you could apply to school through this program for free. I'm like "Mrs. Dewberry, I need my transcript." And she's like, "Really? Already?" She didn't really believe me, so she called the school. She didn't like me. They got it sent to Expansion University a week later. Then a semester later I got my student ID.

I want to slap her with my degree and my job-offer; just let her see it. She sent like her – she helped her favorites out. Her favorites are not doing well in school now, which I love.

[Matt, metallurgical engineering]

We can easily sense the anger and disdain that Matt feels for this counselor. Not only did she hold low expectations for his future success at EU, she did not trust Matt. By questioning his understanding of the free college application program, she insinuated judgment about his character and his intellectual capacity to interpret information; this finding in Matt's story is consistent with the perceptions that some educators hold about students of color based on racial stereotypes (hooks, 2004; Majors and Billson, 1992; Mutua, 2006; Neal, 2006; Sigelman and Tuch, 1997; Staples, 1982; Steele, 1997).

In Jordan's account, he illustrates a teacher's lack of confidence in the ability of students from a predominantly black high school to be successful at a PWI.

I actually had a teacher in high school that didn't think that me, and a very good friend who came here with me, would do well. She thought we wouldn't excel as much at Expansion University as we would at a HBCU. Now look, I'm graduating

and he graduated a semester ago. Uh, so that's been something that's pushed me a whole lot here to show I can do well.

[Jordan, civil engineering]

Instead of accepting the idea that he could not achieve success at a predominantly White university, Jordan applied the doubts of his counselor as motivation for his endeavors at EU. The academic success of both Jordan and his friend at a PWI lend strong suggestion against the supposition that early environmental factors are the ultimate predictor of student success (Carter, 2003; Kozol, 1992; Thernstrom and Thernstrom, 2004).

Participants describe a variety of social, academic, and emotional factors that they have faced throughout their undergraduate experiences. Again, the significance of faculty members prevails throughout their stories about challenges at EU. Kevin shares an encounter with an engineering professor after class had ended. Having not fully grasped the concepts covered during the lecture, Kevin approached the faculty member requesting further explanation of the subject matter.

I went to one of my engineering professors and was like, "Could you go over this again for me, because I am still not understanding how to do it?" The professor deflated the question and told me to use my book. He was like, "If it's that difficult for you, then maybe you shouldn't be in engineering." He told me to find something easier to do.

[Kevin, civil engineering]

Here, we see the professor's rejection of Kevin's identity as a scholar capable of surviving in the engineering program. By advising Kevin to find something easier to do than engineering without so much as assessing the nature of his question, this professor reflects the attitudes of other educators, which have been recorded in the literature. According to this literature, African American males are unduly burdened in establishing their academic

identities and reinventing the expectations of some teachers (Harper et al, 2010; Whiting, 2006).

Another challenge presented by participants involves the lack of understanding that their communities have regarding the realities of engineering students. In some cases, this deficit of knowledge possessed by their friends and families creates stress for participants. Timothy exhibits society's exaggerated ideas about engineers and the inaccurate beliefs that his parents maintain about his capacities as a student in the college of engineering.

Aight, as an engineer, society is going to – it's going to think like a picture of the Hoover Dam. Something extremely extravagant, like one of the marvels of the world, like the Pyramids. That would be what people, not in engineering think I do. My parents really have no clue, haha. They would probably think that I'm like in an office, with like five computers, and a whole bunch of books and papers. I'm just like thick glasses and all. That's probably what the parents think of my experience.

But see, i'm really just going through and crunching numbers. Like society thinks I have some plan that I'm writing. But then if you saw the plan, it's probably just like blank. Just filling in blanks. Writing notes that probably don't make sense; and in the end, it may not make sense, but it comes out right.

[Timothy, civil engineering]

Along a similar vein, Matt highlights the misconceptions that his parents and friends hold of his work as an engineering student.

My parents think I probably build a plane. My friends think that I just make boo-koodles of money. But what I really do is just sit in front of a computer all day by myself. That's what I really do. That's real engineering—excel, power point and access. That's really it. Sometimes you go to a lab. Other than that, you teach a technician what to do. So he can go back to a computer.

[Matt, metallurgical engineering]

In this account, Matt explains the day-to-day activities of an engineering student, which he feels do not align with the ideas of his parents and peers about his school experiences.

These findings align with the literature regarding the lack of support suffered by some

students from communities of color where higher education is not commonplace (Bailey and Bradbury-Bailey, 2010; Bordieu and Passeron, 1977; Cuyjet, 1997; Delpit, 1995; Howe, 2004; Solorzano et al, 2000; Tatum, 2003; Yosso, 2005).

Similar to the narratives of Timothy and Matt, John shares his story about the general misconceptions about the realistic challenges in engineering.

I guess my parents think I'm pretty much on my p's and q's, like knocking out everything. Going at ninety percent all the time. I guess my friends would pretty much put it on sixty percent. Like every time I see them, I'm not really doing anything, that's when I seem to hang out with friends. They like ask, "What's going on?" I'm like, "I've got a project going on." But I kind of downplay it. I don't want to talk about my problems to somebody that wants to have fun. So I guess they don't really think I do anything. I'm always taking naps. Like two naps a day. And they're like all you do is sleep and sit there.

[John, mechanical engineering]

John's decision to withhold his "problems" from his peers who "want to have fun" communicates his realization that they may have no context for understanding the nature of his academic experiences. He believes that his friends regard him as lazy because they enjoy access to only his leisure time. His comments about withholding the real stress of his engineering experience also spotlight a phenomenon that has been identified among other African American men and boys. In some situations, African American males may hold back emotions, concerns, stress, or other issues that could indicate personal weakness (Ladson-Billings, 2011; Mahalik et al, 2006; Majors and Billson, 1992; Pierre and Mahalik, 2005). Several studies have associated this phenomenon with psychological distress in black men (Kimbrough et al, 1996; Mahalik et al, 2006; Pierre and Mahalik, 2005; Pierre et al, 2002; Weiner, 1985).

Faculty may create challenging conditions, which complicate the learning environment for students (Allen, 2010; Bali et al, 2004; Bianco et al, 2011; Bonner and

Bailey, 2006; Brown, 2009; Cuyjet, 2006; Delpit, 1995; Douglas, 1998; Engle and Conant, 2002; Fenning and Rose, 2007; Graham and Anderson, 2008; Harper and Wolley, 2002; Howard, 2001; Kayes and Singley, 2005; Kuh et al, 2005; Rovai et al, 2005; Smith et al, 2006; Strange and Banning, 2001). Participants describe discouraging interactions, negative encounters, and other obstacles presented by educators that have posed challenges for them over the course of their academic lives. Matt states, "Some teachers get a paycheck and go home. They don't care if you flunk, fail, or pass." Jordan confirms a similar nature among teachers he has encountered in the past. He reveals, "It is challenging. I've run into those teachers, that you're just going to have to pass the course on your own. Like you might can't understand them, but they're still going to get paid." In these accounts, Matt and Jordan reflect upon encounters with instructors who appear to be more interested in salaries than student success. Feelings of detachment from campus faculty are not uncommon perceptions among students of color at PWIs (Abraham and Jacobs, 1990; Douglas, 1998; Harper, 2009; Kimbrough et al, 1996; Love, 1993).

Kevin describes personal challenges he encountered with professors whom he finds unconcerned with his status, situation, or struggles as a student at Expansion University. He contends, "At EU there is a lack of connection with the professors. I asked some of my friends, 'Is it not just me?' to see if they had trouble connecting with teachers, too; and they were like, 'nah, it's just like that'." Fearing that the absence of close connections with his professors might be tied with targeted discrimination, Kevin inquires about the experiences of other students. In his account, his account indicates that he is not alone in his experience with professors who are unconcerned or unwilling to cultivate supportive relationships with students. In one specific instance, Kevin sought the assistance of his

professor at the end of one of the class meetings. His professor rejected Kevin's request for additional support and referred him to an outside source. "He said for me to hire a tutor. I mean – I don't have the money for all that. My grandmother is the only one providing money for my college, and she has recently lost her job. We barely make tuition. How's she gonna help me pay a tutor?" Here, Kevin reveals his frustration with the recommendation of his engineering professor. If a supportive relationship existed between Kevin and this faculty member, the faculty member might be aware of the financial challenges with which Kevin struggles and might be better able to offer more practical resources for him to pursue.

Timothy demonstrates the general disengagement of one of his professors in engineering.

He doesn't respond to you. He doesn't even respond to your e-mails. He's very inaccessible. Not helpful. If you have a question, don't go to him. It's not just me. I know several people that, like if you e-mail him, he's not going to e-mail you back. I gave him something, and he didn't respond. But he doesn't discriminate, he just doesn't respond to anyone.

[Timothy, civil engineering}

Timothy describes the significance of recognition in his description of this consistently unreliable faculty member. Lack of recognition and invisibility have been frequently cited as challenges for African American students at predominantly white campuses (Cuyjet, 2006; Harper and Wolley, 2002; Jenkins, 2006; Kayes and Singley, 2005; Sutton and Terrell, 1997; Taylor and Howard-Hamilton, 1995; Watson et al, 2002; Whiting, 2009; Wiggan, 2008). Jordan believes that the absence of personal relationships with faculty and advisors is a problem for both himself and other students at EU.

The engineering advisors don't really know your educational background. What they're trying to do, they're trying to set you up to get out of here in four years,

where you might need to take that extra semester to ensure that you get the best grades out of that course. I had to kind of make my own path around what worked for me. Like, I went to summer school, every summer, every term. But I always, like on my breakdown, would say seventeen hours this semester, along with cal I and physics and chemistry. I said I'm not going to take physics, I'm just going with cal and chemistry with humanities and take literature. Then in the summer, that's when I'll take chemistry by itself, focus on it by itself. It's a lot more fast-paced in the summer. It's the only class I can take, so you're focusing all your attention on it. You're reading the same material every day. So that's how I was able to get an A+ in a chemistry class. Someone was like, "You got an A+?" I was like, "Yeah, I took it in Summer I, by itself." And I did that every time, even if the advisor was saying to do something else. I'd take a course from my fall schedule and I'd push it to Summer I. I'd take a course from my spring schedule, and I'd push it to Summer II.

[Jordan, civil engineering]

In regards to managing his course load, Jordan describes an absence of sound navigation from the advising staff in engineering. He highlights the importance of tailoring an academic plan to the individual student, as opposed to proposing general paths for the majority. As cited as the predicament for other students of color at PWIs, Jordan has been relied on his own agencies, knowledge, and experiences to identify pathways to success in college (Bonner and Bailey, 2006; Cuyjet, 1997; Watson et al, 2002).

John demonstrates the difficulties he has faced in his efforts to build relationships with engineering faculty at EU.

I wasn't as involved as I needed to be with the engineering faculty I guess. It's just one of those things. Like I said, when I came in here, I didn't realize you were allowed to talk to the professor. It took me a while to realize that the professor is a real person, too. Like, uh, like, where I come from, adults are here and I'm here. Then I realize that I'm an adult. We're almost the same level, so for the longest, I would like raise my hand in class and say stuff, instead of blurting it out. I'm just now to the point where I'll walk out of class and use the bathroom. I was just sitting there. For the longest time, I kind of like had professors on a pedestal. I'm just now to the point where I can talk to them like real people. I still haven't completely formed that solid connection yet.

[John, mechanical engineering]



Here, John outlines an attitude familiar among college students. Though faculty members are available to assist and advise, many students fail to initially internalize this understanding of the role of their professors. In essence, students fail to realize that “the professor is a real person, too”, as he describes. John also highlights an important period in his undergraduate development. In this account, we see John’s acknowledgement and acceptance of his adulthood. The college experience tends to introduce students to new experiences, relationships, which support the progressions through various stages of development (Astin, 1999; Chickering, 1969; Evans, Forney, Guido, Patton, and Renn, 2010; Heath, 1968; Kuh et al, 2005; Pascarella and Terenzini, 1991; Tinto, 1993; Upcraft et al, 2004).

### **Securing Supports**

Mentors would pretty awesome. Like a mentor that cares. Like, alright I’m going to eat lunch with you. We’re going to do this once a week. You may not like it, but you’re getting a free lunch once a week. I’ll just give you some advice, and stuff like that. I think that’s pretty much the main thing. Like a lot of African-American males come into college and they don’t have the pool back home to tell them what to do. They don’t really know what to do. They’re just kind of like here. They just fooling around trying to figure it out. If they had like mandatory programs they had to do, and mentorship, they would at least have an idea where to go.

[John, mechanical engineering]

Support systems have been identified as essential structures for students of color at PWIs (Harper and Wolley, 2002; Tinto, 2008; Watson et al, 2002). Finding, establishing, and sustaining supportive relationships are among the themes presented by participants in relation to their success at EU. Students speak of the divisiveness across the African American network across campus, but quickly confirm the strength of community existing among black students in the college of engineering. The success of participants is entwined in their relationships with other students, staff, and faculty at EU. They identify the support

of peer groups and how these cooperative relationships have proven beneficial to their academic experiences. They also recognize the absence of these relationships and the resultant challenges associated, therewith. Supportive faculty members are a prominent power in participants' schemas for overcoming some of the challenges they face as engineering students at Expansion University.

Matt highlights the absence of support across the black community at the university.

Like the black community here, they don't support each other at all. It's pretty sad, but they like encourage these others to change their majors to something easy and what not, just to get out early – to get out of college faster. I know people who brag that they got out in three and a half years and they're waiters. They're waiters at Hooters and what not. And they think they're making it.

[Matt, metallurgical engineering]

In this account, Matt addresses three important issues: 1) the lack of support he sees across the African American community at EU, 2) defining the standard length of the college tenure, and 3) the occupational outcomes of higher education. He references peers who hurried through their undergraduate careers in the interest of expediting graduation, and he attests that their haste cost them some valuable experiences. He scoffs that, "They think they're making it" by working in the service industry while holding academic degrees. He indicates the value in expanding the undergraduate tenure in curriculums like engineering that boast greater job placement in the field. His beliefs about the high job placement rates for professional engineers are confirmed by data on national and international employment trends (Elliot et al, 1995; Green et al, 2009; Harper, 2009; Palmer et al, 2010; Hawkins, 2011; KewalRamani, 2007; NCES, 2011; Russell and Atwater, 2004; Washington, 2011).

John discloses a considerable challenge that he believes befalls high-achieving African American men in college. With so much energy exerted towards “making it here”, he reveals that very little instruction is offered for black male students on what to do to get “out of here”.

I also feel like you like don't have that much of a support system. It would seem like, because with engineering you're probably going to be only one of three blacks in a class of fifty...You're going to be okay, okay. Do you get what I'm saying? And then you don't really know where to go. Because the other people in the class came into college with a plan. And with you, it's pretty much I made it here! That's what my parents have been telling me to do. I made it here! And now how do I get out of here? I feel that the last thing, not knowing what to do, not being prepared, and pretty much like when you make a bad grade, it pretty much crushes your confidence. Like you come in, and when you get here, you make one bad grade, and you start believing what everybody says. 'Man, college is really hard. This is really hard.' Then that's how you get into it.

[John, mechanical engineering]

John depicts an interesting challenge that has been discussed by scholars in recent publications on African American men in education (Harper and Nichols, 2008; Harper et al, 2009; Tinto, 2008; Wiggan, 2008). The instructional messages directed towards African American men tend to plateau at the starting line, rather than the finish. As John so hauntingly demonstrates, “I made it here! And now how do I get out of here?” As an African American man, his influencers have supported him as a contender; no one has helped him learn the behaviors of a conqueror.

Group work and team collaborations are popular learning experiences among participants. Consistent in each of their narratives was the description of the collaborative culture in the college of engineering. According to participants, engineering faculty exercise a bias towards collaborative, activity-based learning as primary pedagogical practices in their undergraduate courses. Kevin expresses his appreciation for cooperative learning. He

tells, "I'm a group work guy. If I missed something in class, then we can help each other. Group is good for sharing ideas because we can build bigger ideas together." Matt believes that group collaboration is important in engineering. He imparts, "Engineering students pretty much the class go all together. Engineering is a team effort. Like, there's no "I" passed the test; it's "we" passed the test. We all help each other, one way or another." His comments reveal an intense interdependence among students in engineering. John confirms the importance of cooperative learning in his classes. He states, "I guess the most helpful was study groups, forming groups with the class to get the homework done." In the following passage, Jordan offers his opinion about academic group work:

I love working with groups. I love giving back, especially, in a group, seeing that was how my design class was set up. Because each of us had a specialty area that was different, there was so much that we could offer the group. But, see, there was also so much that we could take away, which was what we aimed to do.

[Jordan, civil engineering]

In this account, Jordan acknowledges the benefits of collaboration for engineering students. The variance in expertise areas and exchanging of ideas helps complete the puzzle for Jordan and his classmates. His recognition that there was "so much that we could take away" from the group design project reveals his appreciation of the educational outcomes associated with cooperative learning pedagogy. Aligned with Jordan's ideas, other studies have shown that African American males tend to show enhanced academic performance through group work (Bailey and Bradbury-Bailey, 2007; Bonner and Bailey, 2006; Strayhorn, 2008; Taylor and Howard-Hamilton, 1995).

The large size of Expansion University has been identified as a challenge for some participants.

It's just the fact that the University is so big – so many students. It's hard to give all of them practical stuff. Like you have labs, and it's put this together and put this together. So like at the end of the day it's pretty much in a lab, one person does the work and one person writes it up. The other ones are just kind of there. It's hard to have everyone to get the interaction in each of the things, because there are so many students. At the end of the day, it's just like I want to get out of here and go do the homework for my other classes.

[John, mechanical engineering]

John describes some of the challenges associated with the large number of students at EU.

Because there are so many students in his classes, he is not always able to experience every facet of the lab experiment. The size of the learning environment and the intimacy of the academic community have been cited as factors influencing the college choices of African American males (Cuyjet, 2006; Reid and Moore, 2008; Russell and Atwater, 2004; Watson and Kuh, 1996). John exhibits frustration near the end of his passage because he is crowded out of the full lab experience by other students. His decision to “get out of here and go do the homework for other classes” is indicative of the challenges associated with large class size at universities. If certain methods are not implemented in the instruction, large classroom environments may negatively impact the learning outcomes for some students (Bean, 2005; Campbell and Fleming, 2000; Douglas, 1998; Upcraft et al, 2004). Matt explains the importance of enjoying time with his professors in metallurgical engineering. He recalls, “I have had a lot of one-on-one time with the department, as well as with the engineering school. Not all people can say that cause it's a big school.”

Competition among students in engineering serves as a motivator for some participants in the study. Two participants speak directly about the rivalries they enjoyed with other students that propelled them towards greater success. Timothy credits his competitive nature as pushing him to strive for better in every situation. He asserts, “My

competitiveness is probably the one thing that lasted throughout all of the years. I just wouldn't want to fail at school." He continues on the concept of competition in his description of a long-standing rivalry between he and a white student from his hometown who also enrolled in engineering at EU.

If I'm ranked above the guy next to me, I am so competitive I am going to get above him. I'm pretty sure, like the area I'm from, Florence, is great, with a great school program. The only person I feel like was on a higher level when we came to college, was this guy, Peter, and he went to Muscle Shoals High School, which was right across the river. I always had a rivalry with him. He was always just a little bit better academic-wise. I didn't like him having the upper hand on me. So I stayed on my game and got better all the time.

[Timothy, civil engineering]

Matt shares a similar story of competitiveness. We learn from Matt's account that Timothy, another participant in the study, has been a necessary nemesis in motivating him to be the best that he can be as a student in engineering.

I would say the most instrumental thing to my success I guess was having friends that like, you know they did well, and me being a competitive person, I wanted to do better. So we kind of like went tit-for-tat. Me and my friend, Timothy, were talking the other day, and like he doing well. I'm like I want to do better than Timothy. I want to be like the best person from my home state. I want to be like that guy...I want people to say, "Matt, he's doing well. He went to Expansion University." EU contributed about providing that sense of competition, that competitiveness. Ultra-fueled me to want to be better.

[Matt, metallurgical engineering]

Matt explains how competing with another student in engineering pushed him and kept him from settling at less than his greatest effort. Matt's "tit-for-tat" rivalry with Timothy pushed him towards his goal of becoming the "best person from my home state" at EU. John also shares insight into the motivation he garnered from his friends.

Like I dunno, it's just something with two friends that came up with me from high school. Like one friend struggles in math, really bad. Like seeing him struggle in math, and excel in these other things, it's like alright, alright, there's going to be

some classes that are just tough. Another friend came here with the goal to get a 4.0, and he reached it. I made my own goal, and seeing them do well has made me want to keep doing well.

[John, mechanical engineering]

The stories of these three men indicate that support may come through seemingly unlikely sources. Competition has served as a crucial stimulant for their success.

Participants describe relationship building with their professors as a means of securing supports for themselves at EU. The bond between teachers and students has been recognized in research as an imperative relationship for students of color at PWIs (Bean, 2005; Bonner and Bailey, 2006; Cuyjet, 1997; Douglas, 1998; Elliott et al, 1995; Harper and Nichols, 2008; Howard, 2001; Kayes and Singley, 2005; Palmer et al, 2010; Roach, 2001; Smith et al, 2007; Watson et al, 2002). Kevin stresses the value in making sure the faculty know your name. He states, “Try to make sure the teachers know your name. They may not support you as much as the white students but they will know you are trying.” Kevin believes that in situations where a relationship exists, his professor will be more supportive of his challenges as a student. His analysis, here, indicates inherent value in the professor knowing that Kevin is trying and giving his best efforts in the class. John shares an example of an economics professor with whom he enjoyed a highly meaningful relationship of support.

There’s a teacher I had for economics who really supported us. Uh, he was a little more animated than some. He also really worked with the students. Like he’d say, “What’s up man? You haven’t been in class for a while.” You actually felt like you were connected. He’s like, “I’m going to make this easy because I know you have stuff to do in other classes”. His material was really easy to grasp, especially the days I went to class. Sometimes I’d miss a class, and I’d be like, “I don’t know this”. Like if I was in class all the time it made so much sense because he was so supportive.

[John, mechanical engineering]

John reveals the importance of his relationship with this professor. On days when he was absent, the teacher took notice and brought the absence to his attention. His professor showed supportive empathy for the students by recognizing the workload in other courses. The nature of this relationship taught John the value of class attendance. Not only would he miss the lecture and class notes, failing to attend a class meeting subtracted from his system of supports. Matt recounts his relationship with one of his mathematics faculty members at EU.

He was more engaged with the students. You know, he tried to learn the students' names and what not. He asked students questions to get people to talk during class, to see if they had learned anything. He was the only professor for real, that asked about my academic life. He was a good teacher. He taught by doing a lot of examples and having students come up to the board for examples, to see if you were learning. He helped me out on tests. He was just an easy person to talk to. I'd take him again, if I could.

[Matt, metallurgical engineering]

In the passage above, Matt describes the strong support that he received through his connection with his math professor. With his statement, "He was the only professor for real that asked about my academic life", Matt distinguishes this faculty member from the others with whom he engaged. His declaration that "I would take him again, if I could" confirms the meaning that this relationship held for Matt. As the scholarship suggests, African Male students enjoy greater psychological wellness when educators express individualized care and concern for their experiences (Bonner and Bailey, 2006; Brown, 2009; Campbell and Fleming, 2000; Kimbrough et al, 1996; Lewis, 2006; Picower, 2009; Rovai et al, 2005; Smith et al, 2007).

In another instance, Matt frames the student and teacher relationship through a different lens. Instead of direct support and encouragement resulting from his connection



with his professor, Matt is motivated through the reverse of a strong relationship. In the following passage, he demonstrates how he gains energy from the

Get to the point where some of the teachers hate seeing you in class. They hate to see me come into their class cause I'm better than their favorite student. Cause I'm not like the best person in the class, but I'm still prepared to run with the 2.8's. I'm still doing well for myself. I think he pretty much don't like that.

[Matt, metallurgical engineering]

Matt asserts that some of his teachers hate to see him in their courses because he defies the odds. Because he does not hold the best GPA in the class, he believes that his teachers do not believe he should be at the same competitive level with students who are at the top of the academic curve. This idea of persevering as the unlikely prospect in the academic classroom has been cited as commonplace among other African American male students in the literature (Harper et al, 2010; Jenkins, 2006; Whiting, 2006). At the base of his argument, the teacher still knows Matt's name. Being driven by outshining the students whom he believes to be the favorite pupils of his professors is an encourager for his persistence and a motivator for his performance.

### **Surviving the Stress**

A lot of people drop out of engineering. I know a girl that went from chemical engineering to speech pathology. It's people's choices. Some people just realize they can't hack it or they don't want to do it because it's too hard.

[Matt, metallurgical engineering]

Participants recount the considerable stress that they have experiences as engineering students at Expansion University. The literature describes the various emotional, social, and economic stressors that African American males face at PWIs (Bailey and Moore, 2004; Bonner and Bailey, 2006; Harper, 2010; Smith et al, 2006; Smith et al,

2007). The research specific to men of color in STEM academics outlines particular pressures encountered through the curricular and social experiences of African American students in mathematics and science disciplines (Elliot et al, 1995; Green et al, 2009; Harper, 2010; Palmer et al, 2010). Participants describe the unrelenting amounts of homework, the difficulty of advanced-level mathematics and science courses, and the difficulty of exams in the engineering curriculum. They also explain the personal pressures and challenges that each experience relative to their own unique realities.

The impeccable image that his family and community hold of him arouses feelings of stress and concern for Jordan.

Society in general, especially people back home, they just see me as a local star. Like really they are very proud of me. They can't see me doing any wrong. But as I know, I have flaws. I'm not perfect, I'm a human being. I do drink sometimes. I guess there are some people that couldn't see me drinking or having as much fun as I do at a party sometimes. It's just what side of me they get to see. If you only see me when I'm speaking at a graduation or see me when I'm being exposed in a newspaper for doing something, of course, that's all you're going to see.

[Jordan, civil engineering]

His story illustrates the larger-than-life or heroic persona that he believes he must uphold for his community. The pressure that he feels to perform a certain role for his community is consistent with the weight that other African American men bear in regards to burden of representing the race (Baszille, 2008; Connor, 2008; Jenkins, 2006; Love, 1993; Mahalik et al, 2006; Ladson-Billings, 2011; Majors and Billson, 1992; Neal, 2006). Jordan continues, "I'm under a lot of pressure, to be honest. I just know that so many people from my hometown expect so much of me. Even my parents – to the point where like my parents don't know I dropped a class before. I don't know; I just didn't tell them." Jordan is so concerned with protecting the image his family has constructed that he is unable to be

completely honest about his academic struggles. This withholding is not uncommon among African American students whose parents may not have attended college; students perceive a lack of understanding on behalf of the parents and tend to exclude them from certain parts of their experiences (Edwards et al, 1999; Reynolds, 2010; Tatum, 2000). Kevin is not exempt from the pressure that Jordan describes. He shares the obligation to achieve that he carries on behalf of his friends who are rooting for him at home.

Coming from what I came from and then going back home and seeing my friends – like drug dealers – and having them come up to me and say, “You’re doing this for us.” Doing this for the ones who didn’t have the opportunity or who couldn’t overcome the environment.

[Kevin, civil engineering]

Participants classify confidence in their abilities as a key to surviving the stress of the engineering curriculum. The attitude that one can overcome any challenges that arise is emanates from their stories. The power of their psyches is the primary force pushing participants to their academic goals. Matt discusses the mindset that he maintains on occasions when he heavy challenges invade from all directions. He contends, “Okay, I can do this engineering thing, if I put my mind to it.” Kevin boldly affirms, “It’s just a belief in me that I can complete this degree.” Jordan believes that he is capable of doing anything to which he applies his mind, and this swelling confidence has made the difference in determining his success.

When it comes to academics, the personal belief in within yourself that I can get this done. If you don’t believe that, then it’s not going to happen, you know. A lot of things in life start mentally. You have to make yourself capable of overcoming, period. Everyone does not have that thought in their mind that I can do anything I want to do.

[Jordan, civil engineering]

On the subject of engineering, Timothy holds, “I just feel like if I can be good at this; I can be good at a lot of things.” John concludes, “I’ve just got to keep doing well. Just keep grinding at it to get out of here.” As evidenced in the language of each participant, confidence in his abilities carries great weight in helping surpass the stresses associated with student life at Expansion University.

### **Conclusion**

In this chapter, I shared a summation of the challenges participants describe in their personal and academic narratives. The first section of The Story of Challenges includes participants’ testimonies regarding their willingness, drive, and commitment to overcome the obstacles presented before them. Among the most difficult academic challenges faced by participants are those, which are introduced by educators. Participants highlight specific instances where their high school teachers, guidance counselors, or college professors created complications that impacted their learning, emotional responses, and academic plans. In the next sections of the chapter, participants impart their insight for securing supports to assist in negotiating the challenges associated with their academic journeys. Lastly, in The Story of Challenges, participants demonstrate the mechanisms for survival, which have propelled them into their present positions of academic success as undergraduates of color in engineering.

In the next chapter, I demonstrate the importance of social networks, connection with the institution, and connection with their academic curriculums on each of their experiences. The Story of Connections is about the unmistakable benefits of interdependence in college, and the meaning that each participant gleans from his social

relationships with faculty, friends, and family. Also included in the Story of Connections is the strength of the relationship between participants and STEM.

## CHAPTER IX

### THE STORY OF CONNECTIONS

The story of connections rings robustly throughout the narratives of participants. Creating a strong connection with the campus community has been identified as a sound indicator of student retention in the literature on academic persistence (Astin, 1999; Bean, 2005; Dey and Hurtado, 1995; Evans et al, 2005; Kuh et al, 2005; Pascarella and Terenzini, 1991; Tinto, 1993; Upcraft, 2004; Watson et al, 2002). Through professional organizations, intramural sports, and fraternities, the students in the study have managed to fortify social foundations upon which they could build their college experiences. Developing relationships with professors has helped participants connect with STEM experts, engage in meaningful curricular activities, and enjoy support for their academic success. In contrast to connection, participants emphasize the challenges they experience when there is lack of guidance, instruction, and respect from the engineering faculty. Their stories also denote the essentiality of connecting with the curriculum in STEM. Applied concepts and active learning experiences materialize as highly meaningful to participants. In this chapter, I share the students' stories of connecting within the following three contexts: 1) connection with peers, 2) connection with faculty, and 3) connection with the curriculum.

#### **Connection with Peers**

Healthy peer relationships have been identified as contributors to the emotional health and academic persistence of African American males in college (Bonner and Bailey, 2008; Cuyjet, 1997; Kimbrough et al, 1996; Kuh et al, 2003; Tinto, 2008; Watson et al,

2002). Timothy declares, “I think black males need to network more. When I came to EU I learned that it’s not always what you know, it’s who you know.” His comments confirm the value of personal connections in his experience as an African American male college student. Kevin exuberantly exclaims, “Network times ten! I’ve got friends from all over. Networking is the best way to survive. Talk to everyone – not just black people.” Here, Kevin encourages networking across lines of race, gender, and academic discipline in order to achieve the optimal experience on campus. Matt identifies his peers as the key members of his support system. He reveals, “My main academic supports have been upper-classmen. People who already took the class I took. I’d get their tests, and their homework, and learn from that.” Matt demonstrates the academic value of social relationships with his peers in engineering.

John revisits the period in his college experience when he realized the need to develop stronger connections with his peers at EU.

I think when I got here, that was exactly me. It was pretty much get a degree. Get a job. And, uh, getting used to living by myself. Kind of being here made me realize that uh how much social connections—how important social connections are. Because being back home, you’re only going to interact with parents all the time. Then when you come here, it’s been like the first week in your dorm room bored, and there’s nobody around you. Then you’re like man, I really like being around people, so maybe you kind of realize how important social interaction is and how important doing enriching things are. Getting a degree and a job are awesome, but find something you enjoy doing.

[John, mechanical engineering]

Through this summation, we learn that John’s original expectations for his college experience involved only academic activities. At some point during his early years at EU, some stimuli triggered thoughts on the deeper meaning of his college experience. His final statement on this subject, “Getting a degree and a job are awesome, but find something you

enjoy doing” reveals an important truth about the benefits of diverse relationships. John concludes that social interactions may confirm one’s interest towards a profession. His assessment of the advantages of social connections in this manner is consistent with some of the findings in the literature (Astin, 1999; Harper and Wolley, 2002; Sutton and Terrell, 1997; Watson and Kuh, 1996; Watson et al, 2002).

Participants regard their peer relationships within the college of engineering as highly helpful to their experiences. Jordan recounts the value of his fellow students in advising his progression through the curriculum.

Honestly, my true, true advisors became older students, who were seniors when I was a sophomore. By the time I was a senior, I understood. What advisors do is, they’ll give you, they’ll tell you to take that Thesis 105, with that Calculus II class. And that chemistry, and such and such at the same time, they’ll say you’ll be able to do it, no problem. But someone from the count right beside mine, I talked to him. He’s an engineering major. He’s like, “You might want to take that physics class and push it to summer. You might want to take that humanities there, so that you’ll have two courses there that will take a lot of your attention. But then you’ll have DR 100 and Music 121 that will kind of lighten that load. Take physics in the summer by itself, when you can focus on that one course. That way, you can get a better grade and a better understanding of that course, which is one that I didn’t know much about, coming out of high school.”

[Jordan, civil engineering]

In this account, Jordan describes a conversation with a friend from a neighboring county who helped him negotiate the hidden complexities of the engineering curriculum. Unlike Jordan’s analysis of the practices of professional advisors at EU, his friend used lived experience to help design an academic plan for Jordan. This friend had previously completed the courses and shared his insight to help Jordan make wise decisions about when and in which sequence to take certain courses. Like Jordan, Matt also believes peers to be his most valuable source of support in engineering. He states, “My main academic supports have been upper-classmen. People who already took the class I took. I’d get their



tests, and their homework, and learn from that.” In agreement, John shares, “The people who usually do the [engineering] tutoring are students, and they’re usually in the classes you’re in, so once you get to the higher levels, it’s mainly just getting together with other students that helps.”

While relationships with peers have been identified as imperative to their experience, participants have learned to manage peer influences and limit connections with those who do not support their academic goals.

Know who your friends are. Know who’s there to like help you succeed. Know who will keep you behind. I know a guy and he had a friend. He got into the wrong hands. I’d be like, “Let’s study.” He’d be like, “I’m going to go out with such and such.” “Don’t do it, don’t do it.” He ended up flunking out. I think both of them flunked out. I hadn’t seen both in a while. Freshman year I had two groups of friends: Friends I went out with and friends I studied with. Friends I went out with, Gucci Mane got in their ear, and one day went to one of the dorms. Robbed like six rooms – hit about 18 people. Got greedy. They got back...went back. The guy in the room woke up and saw him. He was like, “Give my stuff back and I won’t snitch.” Well, he snitched. They all went to jail. They all went to jail that same night. It’s up to you to learn from your mistakes. One guy he’s now a manager for like Amtrak now. He’s from EU. He was a pre-med student. Had to change majors because of all of it. So he learned from his mistakes real fast. The rest of them, some went to jail, some went home. They didn’t make it.

Just know who your real friends are. That’s a big thing right there. Don’t have no friends that call every night, hey let’s go to the bar. Have those friends that call every night and say let’s go to the library. Library friends over the bar friends.

[Matt, metallurgical engineering]

Matt teaches an invaluable lesson about the choices, challenges, and potential consequences of social connections in college. He shares a story from his earlier years at EU about friends who allowed social opportunities to overshadow their academic commitments. In each of the cases he outlines above, the outcomes for the students are dismal. He warns other engineering students to “know who your real friends are”. Matt distinguishes between two categories of friends: those whom he studied with and those

with whom he partied. The phenomenon of negotiating social influences and academic demands is not uncommon among African American men in college (Bonner and Bailey, 2006; Campbell and Fleming, 2009; Connor, 2008; Cuyjet, 1997; Evans et al, 2010; Graham and Anderson, 2008; Harper, 2009; hooks, 2004; Majors and Billson, 1992; Steele, 1997).

Matt concludes his commentary about establishing connections with like-minded colleagues in the following passage:

I guess I learned freshman year to be around more people striving for. I guess one thing I learned that the ones that do make it are more surrounded by people like us. The engineer kind of graduates. We don't let our business friends or our mass communication friends, get in the way of what we are trying to do. I still hang with my business friends. We hang out when I can. Every weekend they call me and are like Matt, you want to drink this weekend? And I'm like I've got homework to do. I've got a project. I can't do it. Check me on Saturday afternoon, when I don't have anything to do.

[Matt, metallurgical engineering]

Along the same lines as Matt, John reveals his self-constraint in regards to social opportunities during his freshman year. He divulges, "Pretty much when I first got here, everybody's like, 'Don't party all the time. Go to class.' So I'm like, 'Alright, I'm going to do this.' And then when I got here I realized that not everybody did it that way. You sort of have to be different in order to make it." John contests that his decision to put his academic responsibilities before social activities makes him a peculiar prototype among his peers. Based on his experiences, he feels the plurality of university students choose to manage their time in different ways. Kevin states, "I mean I party, but you can't party too much and be an engineer major." His comments indicate an opportunity cost of electing an academic degree in engineering; if students decide to pursue an engineering major, they are choosing to forfeit a thriving social life. This idea about the unrelenting demands of the math and science curriculum have been commonly cited as obstacles to the enrollment of some

African American men in STEM degree programs (Green et al, 2009; Harper, 2010; KewalRamani et al, 2007; Palmer et al, 2010; Russell and Atwater, 2004).

Other participants describe a gradual withdrawal from social activities that they once enjoyed as underclassmen. Jordan revisits the difficult task of choosing between the rivaling demands of his fraternity and a group project for engineering. He recounts, “It’s kind of hard to look at your brothers and say, ‘I can’t be there with you because I have to complete this project by 8:00 in the morning.’ They don’t always understand that it’s not because I don’t want to be with them; it’s because I have to finish. It’s about my grades.” Timothy explains his decision to withdraw from some fraternity activities in order to make time for his engineering homework.

Like a lot of guys...like I probably don’t do as many frat stuff as I used to do, because I’m trying to transition and get outside the college life where I hit the ground running. I feel like they try to hold that against me. Like, we don’t see you as much anymore. But I feel like I’ve had my fun. Now I feel like I have to prepare for the next thirty, no next fifty years of my life.

[Timothy, civil engineering]

In this passage, Timothy describes the feelings of animosity that his fraternity brothers harbor against him because of his decision to devote more time to academics. His reference “I feel like I’ve had my fun,” indicates a change in his mentality about the college experience. As he has progressed through his early college years, enjoyed a variety of developmental experiences, and advanced into senior-level status, he has evolved in his thinking, behaving, and decision-making. These changes within Timothy are reflective of the outcomes associated with different theories of college student development (Astin, 1999; Evans et al, 2010; Harper and Nichols, 2008; Kuh et al, 2003; Taylor and Howard-Hamilton, 1995; Upcraft et al, 2004; Whiting, 2006).

The advantage of associating with students across lines of race and academic program emerged as important theme in the interviews. At different points throughout the data collection process with each participant, he emphasized the value of connecting with white students, in addition to the African American students on campus. Various reasons informed their perspectives; among the rationale to connect with white students included access to resources, broader social opportunities, engaging with different perspectives, fostering academic supports, and other less-tangible benefits of diversity. Timothy expresses the value in diversifying one's involvements to include white students, specifically.

There are black guys in engineering, who are not successful or not doing well, I'll say that. I know just off number-wise, there's more white guys doing well, just because there's a bigger number of them. But I also think the percentage of white guys doing better is bigger. It seems like a lot of black guys in college only hang out with black guys. I feel like you need to diversify yourself in college. College is a very diverse place – even EU. I can't imagine if you went up north how diverse it would be. When people think of EU, they don't think of diversity. They're probably right, if you're doing a comparison. EU is not that diverse, but it really is if you make it that way. Even if you went to a school that the majority's white, there's a lot of black people at the EU. The university is a diverse place. You've got whites as the majority. The majority of the minority is the blacks.

[Timothy, civil engineering]

Timothy connects academic success with white students in his engineering program. By associating with others whom he regards as successful, he believes that this will enhance his own success. He expands his thinking into a discussion of diversity at Expansion University and attests that if you broaden the borders of your associations, then you will come to appreciate the diversity that is found at EU. Timothy's back-and-forth attempts to rationalize the imbalance of white and African American students and still confirm EU as a "diverse place" points toward an internal conflict with the message he purports.

Predominantly white universities often promote institutional diversity to attract applicants of color; but once these students matriculate into the campus communities their findings fail to live-up to the experience portrayed in the institutions' marketing schemas (Cuyjet, 2004; Harper et al, 2009; Roach, 2001; Tinto, 2008).

Connecting with other students and groups on campus helped participants develop appreciation for different cultures, ideas, and experiences. Matt states, "I guess the best thing about being involved is getting culturally diverse. You know, seeing a variety of different cultures." John identifies a specific involvement experience that encouraged an introspective analysis of his preconceived biases about social differences among college students.

I ended up becoming the diversity director of the Honors College Assembly. It just opened me up to other stuff. I'd heard about organizations on campus like the organization for gay students, but I'm not gay, so why go? But being diversity director, I'm like, "What are all these other organizations about?" I go to their meetings, and I'm like, "Man this is really cool. And I realized that had been raised to – not to be homophobic – but one of those things in the black culture where being gay, well, you're pretty much isolated. Then I'm like, "Oh man, I've been a jerk a lot of my life without even knowing it. Let me not do that. Let me not use the "f" word in reference to gay folks. Let me not say 'tranny'; let me say 'transgender'." So little things like that. That was an eye-opening experience.

[John, mechanical engineering]

John's reflection on his leadership experience with the Honors College ignites a self-evaluation of his ideas about other cultures. In this powerful passage, he describes how sharing in the work of gay and lesbian students helped him achieve a greater understanding of their experiences. Though he retracts his use of the word 'homophobia' in describing the bias of his socialization, he affirms the existence of an anti-gay ideology within black culture; this finding supports the literature regarding the negative beliefs and

sentiments about homosexuality within African American families and communities (hooks, 2004; Majors and Billson, 1992; Neal, 2006).

### **Connection with Educators**

The teachers are important. The teachers are what makes the world. They don't know it yet, but they made the world. You can either hinder a child from a dream or give them a tool to make that dream happen.

[Matt, metallurgical engineering]

Each participant readily shared his testimony about high school teachers who helped bring meaning to his education. An interesting assessment about the characters most influential in the participant's education is the discipline in which the faculty member taught. Each participant's story involved a STEM teacher who they identify as exemplars among other teachers. Based on their descriptions of expectations of college professors, we may surmise that these high school teachers established a strong standard for instructors in the participants' future educational experiences. Matt credits his high school science teachers as igniting his passion for the discipline.

But my science teacher, Mrs. Fording, I remember her the most. I had her for physics and genetics. Mrs. Fording and Mr. Washburn. Mr. Washburn had a bunch of demos. He made science fun. He brought science to life. Like for astronomy we'd go outside. It'd be kind of a scale model of the universe. It was like so much fun. Mrs. Fording, she taught physics and genetics, and she made science come to life. We went outside and did physics projects and whatever: The egg drop; throwing a picture frame and seeing how far it would go. But they really got me to liking science.

[Matt, metallurgical engineering]

Matt's conclusion that his teachers "brought science to life" shows the importance of practical application in the learning process. The research on successful math and science teaching methods for students of color identifies activity-based learning as an important means of developing these skills (Bailey and Bradbury-Bailey, 2007; Frankenstein, 1990;

Ladson-Billings, 1997; Martin, 2009; Russell and Atwater, 2004; Smith and Hausfaus, 1998; Terry, 2010; Tyson et al, 2007).

Timothy's personal reflections about his math teacher in high school accentuate the magnitude of influence carried through this connection. In his account of her influence, he repeatedly refers to her love for mathematics and her strong knowledge of the subject matter.

I felt like she loved math. She was very energetic person. And she was like extremely old. I believe she was 72 when she was teaching me. She taught my parents. She taught everybody in my family. She loved math. She told us she would make more retired, than working. She knew everything there was to know about math. We had extremely smart people, and you could not stump her in math. You could tell she really enjoyed her job. She enjoyed teaching. She was a goofy old lady that knew everything there was to know about math. She didn't make you seem stupid, even though she was so smart. She was one of my favorite teachers. And even though math is not one of my favorite classes, even though I'm in engineering, I don't like math. I'm good at it. But she made it somewhat enjoyable. She was very nice, friendly. Like she was just a good teacher.

[Timothy, civil engineering]

His comments confirm his confidence in her abilities as an educator and a mathematician. The impact of teacher competency on the learning outcomes of students has been reiterated over and over again in the literature (Bianco et al, 2011; Castagno, 2009; Delpit, 1995; Howard, 2001; Keck-Staley, 2010; Ladson-Billings, 1997; Lipsitz, 2006; Lewis, 2006; Martin, 2009; Schellenberg and Grothaus, 2009; Solorzano, 1997). Jordan believes his high school math teacher was so pivotal in helping to advance his numeracy that he continues active communicate with her.

Yeah, I'm still great friends with one of my high school math teachers. We still e-mail. She was actually one of the teachers I took a graduation invitation to. She had a lot to do with my success in math, especially in engineering having to go through Cal 1, Cal 2, Cal 3.

[Jordan, civil engineering}

Jordan's enduring relationship with his math teacher beyond high school indicates the strength of the connection, as well as his continued need for mentors as a young adult. Again, this finding in Jordan's story supports the research about community and college supports for men of color (Cuyjet, 2004; Harper, 2009; Tatum, 2007; Tinto, 2008).

Connections with faculty have been shown as fundamental entities in the support networks of African American male undergraduates (Abraham and Jacobs, 1990; Bean, 2005; Bonner and Bailey, 2006; Cuyjet, 1997; Harper, 2009; Kimbrough et al, 1997; Love, 1993; Pascarella and Terenzini, 1991; Strayhorn, 2008; Tinto, 2008; Watson et al, 2002). Relationships with faculty members have also been identified as predictors of success for African American males in STEM disciplines (Elliot et al, 1995; Green et al, 2009; Harper, 2010; Palmer et al, 2010; Tyson et al, 2011). Participants' stories support the findings about the significance of connections with their faculty members. Jordan's revelation about his calculus teacher at EU demonstrates the motivational value of their relationship.

My favorite instructor has to be my calculus I teacher. He noticed very early on that I was rather bright. And he kind of, he just challenged me a lot. He always wanted me to be that last person to leave out of the classroom and have that conversation with. Even if I made an 89 on the test, which is good, he would always say that I know you can do better. He'd go through my test, and say you shouldn't have missed this problem here.

[Jordan, civil engineering]

Jordan's belief that his calculus teacher recognized his intellectual capacities in mathematics was meaningful to him. The dynamic of challenging Jordan was also a welcomed and effective tool in teaching. Even in instances where Jordan passed an exam, his professor would take time to encourage him to work harder. John shares a similar story about the investment of an engineering instructor in his success.



Because of him, I feel engaged in every assignment. Before I was like, “Let me get what I can out of this and move on.” So there was like one time I got back my test, and it was like a really low A-. He knew I’d been making A’s, and he was like you’re slipping a little bit. It wasn’t like he was seriously getting on me, it was kind of like a joke. It was just the fact that he noticed. Next test I came up a little bit. That’s what I really enjoyed.

[John, mechanical engineering]

Here, John expresses his satisfaction with the recognition of his professor. By distinguishing that his professor noticed his performance on the exam, John conveys the value of this connection in his experience. When students of color feel that educators are invested in their learning experiences academic outcomes are often improved (Lewis, 2006; Love, 1993; Noguera, 2003; Solorzano et al, 2000; Strayhorn, 2008; Whiting, 2009; Wiggan, 2008; Yosso, 2005].

Matt gives an account of one engineering professor who took a special interest in his abilities and introduced him to opportunities beyond the borders of the classroom.

He got me research. He was like, “Hey, Matt, I’ve got a grant for a research project over the summer, if you want it.” I was like, “Yeah.” He was like strict on deadlines. Which made me better with deadlines. So I’ll get them in. He like put me in different showcases and what not. I like won third place in the state competition for the engineering showcase. Like first place in the NSBE competition in Montgomery, too. He supported me in the research and my research career. As well as cared about what I was going to do after graduation. Told me to come back and talk to the freshmen, if I wanted to after I was done.

[Matt, metallurgical engineering]

This professor opened the door for Matt to participate with him in research, and his invitation for collaboration was very meaningful for Matt. The confidence that this professor displayed in his capacities gave Matt the critical push he needed in taking new academic risks. Through this working relationship, Matt also developed better time management and experienced phenomena that he would have not likely enjoyed without

his professor's influence. Jordan duplicates Matt's sentiments about the importance of earning the confidence of faculty in his own story.

He believed in me so much. I actually took two courses with him. I came back and took a second math class with him, just because of that. I guess because he believed in me so much, and him not even knowing me prior to it. I guess I was his little student that used to always ask the questions, and make the other students, like you know. Even after class, when everyone was trying to walk out, I was still trying to get that extra question in.

[Jordan, civil engineering]

Both of these accounts confirm the value that these students place on the opinions of faculty and involvement of faculty in their college learning experiences.

In contrast to the narrative of connections that existed in some scenarios, participants shared stories about the absence of support from faculty members. They describe the lack of guidance, support, and recognition from some professors as stifling learning opportunities and negatively impacting their academic potential. Timothy believes that his academic performance would have been hindered if the entire engineering faculty conducted their work in the manner of his professor.

College would be completely different if all the teachers were like him. My GPA would have been lower. There would have been some classes that I wouldn't have been able to be in... I feel it would have been like riding a bike uphill. Like the hill would have been steeper. You could still get up it; it's just going to take a whole lot more work.

[Timothy, civil engineering]

His analogy of riding a bicycle uphill provides a powerful picture of the struggle that Timothy experienced in this professor's class. He acknowledges that his GPA would have been lower if all teachers in engineering practiced behaviors like this particular instructor. Timothy's remarks indicate the invaluable importance of college professors on his learning experiences as a college student of color. This finding is consistent with the majority of the

literature on African American men in the academy (Bonner and Bailey, 2006; Brown, 2009; Cuyjet, 2006; Douglas, 1998; Kayes and Singley, 2005; Lewis, 2006; Strayhorn, 2008; Watson et al, 2002). Kevin describes the absence of support afforded him by his professors in the college of engineering. The lack of connection that Kevin experienced with one particular instructor stirred him to the point of emotional aggravation. He feels as though the absence of a helping relationship in this instance was an intentional, discriminatory measure on behalf of the teaching assistant for his engineering lab course.

In engineering, the white students get more help from the teaching assistants. A while back I had heard that some white students in our class were meeting with the TA outside of class for extra help, so I asked the TA to help me after class, and she was like, "Sorry, I can't do that. The department won't let us work with students outside of class." But then she turned around and led a tutoring session for my white friend and her group. One time, I joined a white friend for the special tutoring session. I didn't let anybody know I was gonna come - I just showed up. You should've seen that TA's face when she walked in and saw me sitting in the room, ha ha! She cut it short because she said she really wasn't supposed to be doing this for students.

[Kevin, civil engineering]

In this account, Kevin draws distinction in the level of support offered to white students and black students in engineering. According to his account, he was denied access to the out-of-class enrichment exercises that were provided for other white students in his class.

Participants emphasize their general dissatisfaction with academic advising in the college of engineering at Expansion University.

My advisor, he's the one that kept me here so long. I had two academic advisors. The first one got fired. I don't know why. He was pretty mean. I was kind of scared talking to him. Yeah, I was scared to talk to my first one. And the new one, he's a new professor, so I guess he really didn't know what I was supposed to take. He had me take a bunch of wrong classes for a while, till we got it corrected.

[Matt, metallurgical engineering]

Matt reveals issues with his academic advisors in engineering. He admits that he was afraid to talk to his first engineering advisor. His apprehension about approaching or engaging with white faculty advisors is consistent with the documented experiences of other African American men at PWIs (Douglas, 1998; Harper, 2009; Kayes and Singley, 2005; Strayhorn, 2008). Jordan discloses his displeasure with his advisor in engineering.

If I could change anything about the university... I guess I would have to say the advising. To really create that connection between the advisor and the student. To where we're not just making sure you have enough hours for the semester, but really going in-depth into your educational background, and what we feel is the best course for you to take, and not just, you're in college, and this is how your flowchart is set up. I don't know, I guess that would be a lot to ask, but that in-depth analysis of the student and what courses you need to take would greatly help a lot.

[Jordan, civil engineering]

In this narrative, Jordan beckons for better relationships among advisors and students at the university. He defines the responsibilities of the academic advisor in a much broader manner than counseling for course registration. The enriched advising experience that he describes supports the research about holistic advising as a significant contributor to college student success (Astin, 1993; Hawkins, 2011; Kuh et al, 2005; Tinto, 2008; Upcraft et al, 2005). John shares a similar story about his relationship with his academic advisor in engineering.

Well, with my advisor it's like – I mean it's pretty much I show up. Decide what I'm going to do. I take the classes. My relationship with the academic advisor is not strong at all. I go to my advisor twice a year...I took eighteen hours in my senior year, senior level courses. An advisor who I guess is paying attention would be like, "no, you don't want to do that". I was fortunate enough to have one my senior year, who is actually head of the engineering department. He was like, "You don't want to take all these classes with that. Save your science for later." I followed his advice, and I realize in hindsight that he was right. It would have been too much. Like in the fall when my academic advisor was like, "You're on track to graduate". It would have been nice if I had someone to help me break up my classes along the way and keep me on track. You have a flowchart, and it says take classes in this order. That's just so you can get out in four years. That's not the best way to do it. The pre-recs and

everything – it's ridiculous! You need someone that kind of knows what you plan on doing, and can get you there.

[John, mechanical engineering]

John addresses the lack of connection that he has enjoyed with his academic advisor. His comments indicate a need for the advisor offer helpful insight, as well as personalized scheduling assistance. His summation about advising and engineering illustrates his belief that one size, style or solution does not fit all needs of African American men in college. As highlighted earlier in this dissertation, some scholars believe that the heterogeneity among men of color is too frequently overlooked in the literature (Brown, 2009; Bynum et al, 2008; Cuyjet, 2006; Douglas, 1998; Harper, 2009; Tatum, 1997; Watson et al, 2002). John also addresses the popular proposal that engineering students should finish their academic programs in four years. As each of the participants and the literature suggests, a robust engineering curriculum includes rigorous academic requirements, considerable time, and experiential learning activities that may expand the length of enrollment beyond a standard four-year cycle (Green et al, 2009; KewelRamani et al, 2007; Palmer et al, 2010; Tyson et al, 2011).

### **Connection with the Curriculum**

Students perform at greater levels of academic achievement when they develop a purposeful connection with their academic programs of study (Astin, 1993; Kuh et al, 2005; Rovai, Gallien, and Wighting, 2005; Upcraft et al, 2004). Participants introduced a variety of phenomena that involve a close connection and appreciation for the engineering curriculum. Among the most prominent findings was the considerable amount of homework associated with an engineering curriculum. John outlines the burdensome load of homework in the following manner:

I think that's what usually gets a lot of engineers. Engineering homework will usually take you three hours. There's no way around it. Like one homework assignment if you do it will take you three hours. The first hour is spent figuring what you're going to do. The second hour is spent getting through the first two problems. Then the last hour is just completing it. So three hours of homework for four of your classes, and you've got a project on the side. And it's football season! That's pretty much the hardest part of engineering—the time.

[John, mechanical engineering]

John's daunting description of the time involved in completing his homework assignments provides a vivid image of the dedication that is required of engineering students. Matt continues the commentary about the difficulty of the engineering curriculum and the laborious loads of homework assigned in the courses.

The challenge is to get the fundamental idea of what's really going on. And then some teachers they teach by doing a bunch of derivations. Some teach abstractly. And the book don't help, either. Nothing but words, nothing but words. They think you know what's going on. It's real hard sometimes and all the homework don't help make it no easier at all.

[Matt, metallurgical engineering]

Matt's analysis addresses variety in teaching styles among engineering faculty, a disconnect between practical course concepts and the textbook, and the extent of the out-of-class work required of engineering students. Jordan harmonizes with his classmate, "You can't expect the engineering experience to be easy. You can't expect every course to be a breeze. You're going to run into those courses throw that wall at you. Then the homework adds a pretty heavy load. So the whole experience did teach me to be humble, to work hard, to believe in myself." The fact that students persist despite the difficulties and demands of engineering confirms their keen commitment to the curriculum.

Participants expressed the value of hands-on and practical learning experiences in the engineering curriculum. John speaks of his favorite engineering professor who made it a priority to show the relevance of the lesson with real life application.

My favorite teacher tried to explain everything pretty much in real-life terms. Like he would teach you and tell you how it was in the book. "Now if you were really doing this in real life like it wouldn't actually work this way, because in real life you've got to deal with contractors, and putting in stuff. So you've got to go with this. You can't make something too big." He brought real-life into the school stuff. Thing about it is, I was able to remember the real life stuff a lot easier. He'd always kind of like have a story with the lesson. I'm better at remembering stories and random facts. You'd be on the test and he'd be like you don't want to do this because it could cause a leak in here, and you don't want to do that because it could cause mold. Alright, it's mold.

[John, mechanical engineering]

John explains how his professor's practice of incorporating stories into the curriculum and using "real life" scenarios as a means of teaching conceptual knowledge helped him learn and retain the information. Matt emphasizes his preference for learning through doing with an analysis of his learning style. "Like, like, don't just show me every time. Let me try and do it. My brain needs to catch what you're catching." In the following passage, Timothy illuminates the difficulty of mathematics in comparison to engineering courses because of the difference in constructing cognitive images of the concepts in math.

I mean getting through the math is tough. The math is a prerequisite for all your engineering classes. You've got cal I, cal II, cal III, then differential equations. That's the minimum. Then sometimes you've got to take, I believe, one more advanced math after the differential equations, according to what kind of engineer you are. Getting through those math classes is really difficult. It's just being able to crunch numbers. It's kind of hard to visualize it. When you're in your engineering classes, you can visualize the structure and what you're talking about. Kind of see what's going on. But in these advanced math classes, there's nothing to picture. You know how to get through the process or you don't.

[Timothy, civil engineering]

Along the lines of active learning, some participants did not feel that textbooks were useful tools towards informing their knowledge base. Timothy shares the following about a professor who teaches without the use of a book:

Dr. Tack teaches like – he doesn't teach us from the book; so he doesn't use a book, which is awesome. No book ever really benefits. But he teaches from his professional career. Like things you're going to experience. So it feels like it's more meaningful, besides just learning formulas out of books or a process out of books. He really uses like real-life experiences.

[Timothy, civil engineering]

Timothy expresses his appreciation for his professor's pedagogical practice of teaching through "real-life" examples. His bold claim that "No book ever really benefits" indicates his passionate preference for application-based learning. Timothy's partiality for practical application and experiential learning is a uniform preference across each of the participants in the study. Matt reveals his lack of fondness for reading textbooks and confirms his bias towards numeracy.

Numbers cannot lie. People can, but numbers certainly cannot lie. Science, you know you can build a hypothesis, a theory and check it out to see if it's true or not. So many words, so many words. Can I put it into charts? I need charts and graphs. I got six books, like this big, to read, and I'm like, "Nah, that's too much reading".

[Matt, metallurgical engineering]

In this passage, Matt enters an existential examination of honesty, humanity, and science. By asking, "Can I put in in charts?" he clearly illustrates his preference for graphical representations of the course material. Matt is able to make connections between concepts and construct his knowledge framework when presented with diagrams, grids, tables, and other visual representations. In contrast to these sentiments, Jordan expresses his belief in the utility of textbooks in the engineering curriculum. He confesses, "I didn't know anything



about physics when I came here – nothing at all. I didn't even have a physics class in my high school. So I just found a way, most of the time reading the book. See, if you give me a book, I'll figure it out." Unlike Matt and Timothy, Jordan respects textbooks as helpful tools in building his STEM aptitude and abilities.

### **Connections within the College of Engineering**

Engineering is a team effort. Like, there's no "I" passed the test. It's "we" passed the test. We all help each other, one way or another.

[Matt, metallurgical engineering]

Each of the participants was an active member of the EU Chapter of the National Society of Black Engineers (NSBE) at the time the study was conducted. NSBE has been discussed as an important social involvement in chapter 5: The Story of Community. NSBE is also included in The Story of Connections, as participants believe the organization provides them with a stronger linkage to the college of engineering. The emphasis that the organization places on networking is significant to these scholars. Kevin believes that NSBE unites the African Americans within the college. He shares, "I feel like as African Americans in engineering we have to network together; because like basically, we have to figure it out on our own." Kevin feels that through the organization, black students are able to share knowledge and help each other along the way.

Research on student involvement in college indicates superior educational outcomes for those students who exhibit greater participation and stronger commitment in their extracurricular organizations (Cuyjet, 2004; Kuh et al, 2003; Pascarella and Terenzini, 1991; Tinto, 2008). Timothy supports this finding in his reflections about NSBE membership. He advises, "When you join NSBE be involved with it. Don't just pay your money and never go to a meeting or talk to anybody." His comments insinuate the value of

active participation in this professional organization. Per this logic, in order to “get your money’s worth” in NSBE you must attend scheduled events and socialize with other members of the organization. Timothy further contends that creating connections within the college of engineering are important for a range of reasons.

I think peer relationships are important, because you can see somebody that’s older than you, and they’re making it through. You can kind of compare yourself, and it helps. I know when I was in NSBE, like really like if somebody passed out some notes or something, it would help me out.

[Timothy, civil engineering]

NSBE offers students of color the opportunity to witness the success of others, and Timothy acknowledges the importance of seeing students of color “make it through”.

Other participants recognize the value of NSBE in helping them visualize and achieve their own success in the engineering program.

NSBE lets you get to see a bunch of people like me succeeding. It gives me hope. Yeah, like this is a hard major, but they’re making it, they made it, I can make it. And like you know, to have their support throughout the country. To network with a bunch of different people made me a better person. Made me learn how to network. How to talk to different people from different parts of the country. Made a bunch of lifelong friends. Kept me grounded. Kept me in engineering. Cause I might have been some business major somewhere, and I would not have found my calling.

[Matt, metallurgical engineering]

Matt expounds upon the significance of seeing the success of other students who he identifies as being like him. Though engineering is a difficult major, the realization that other African American men have succeeded is meaningful for him. John joins in this appreciation for the networking opportunities and occasions to engage with upper-classmen in NSBE. He values the insight, assistance, and examples of other African American scholars who have conquered their curriculums in the college of engineering.

I feel that NSBE does a really got job of like helping students network. It's just a matter of like, just getting students to show up at meetings and stuff. And like, also, just keep working at it. It's like, yeah, you're going to get some bad grades, but keep in mind, as long as you're doing as well as everyone else, and going to the professors. Like figuring out what you need to do. Asking them questions. Like keep showing up and asking fresh questions, and eventually they're going to help. That's the main thing.

[John, mechanical engineering]

Participants affirm the influence of seeing the success of other African American students on their experiences; the inspiring power of this connection with other successful students is consistent with the literature on motivators towards the academic persistence of African American males (Cuyjet, 1997; Harper, 2009; Jenkins, 2006; Love, 1993).

Participants describe how personal relationships with staff and administrators have helped them throughout their experiences at Expansion University.

Dr. Pritchett, he was instrumental in my development here. He was actually the person who helped connect me with my work-study job. That's how I got introduced to folks through his support. Early on, I reported my grades to him every semester. Just to let him know, "I appreciate the scholarships. I'm not going to let you down. Here's my grades. I made a 3.8 this semester." I used to have occasional meetings set up with him. I'd go sit down in his office and let him know how everything was going.

[Jordan, civil engineering]

Jordan refers to Dr. Pritchett, an African American administrator at EU, as "instrumental" in his development. This word choice confirms the strength of Jordan's feelings about the impact this administrator has had on his college tenure. Jordan identifies how Dr. Pritchett introduced him to other people and helped him network on campus. At the beginning of his enrollment at EU, Jordan would report his grades to Dr. Pritchett. This disclosure was not a requirement of his scholarship, nor was it at the request of Dr. Pritchett. Jordan's actions in this self-initiated grade reporting reveal his need to be accountable to someone who

understands his experiences. Kevin shares the story of his close connection with an African American advising administrator in the college of engineering.

Mr. Singleford has been a motivator. He's like a father figure to me. My elderly grandfather taught me a lot, but Mr. Singleford has been there through the ups and downs at EU. He knew me before I knew him. He reached out and made an early connection. My grandmother always told me to talk to Mr. Singleford if you need help. He's my "turn-to guy".

[Kevin, civil engineering]

Kevin's vivid description of the relationship he enjoys with the advisor in engineering demonstrates the power of this connection. He later described Mr. Singleford as an African American who "knows what we deal with" at the institution. Identifying this staff member as his "turn-to guy" indicates Kevin's trust for Mr. Singleford's need for personal support as he navigates the environment at his university. Jordan and Kevin describe realities that are consistent with the literature on African American men and support systems at PWIs. According to research, African American men perform better academically, show stronger social engagement, and persist at higher rates when they connect with faculty and staff of color (Bianco et al, 2011; Bonner and Bailey, 2006; Brown, 2009; Cuyjet, 2006; Harper, 2009; Howard, 2001; Kayes and Singley, 2005; Kimbrough et al, 1996; Love, 1993; Russell and Atwater, 2004; Smith et al, 2007; Solorzano et al, 2000; Strayhorn, 2008; Watson et al, 2002).

Matt explains how his connection with a white, female career counselor introduced him to new professional networking opportunities.

I talked to Ms. House, she's like the career consultant for engineering. She's like "I watched you grow up over the years from being shy Matt to doing all this stuff now: Travelling, meeting with Deans, and what not." I had a like a guy from South Carolina - her boss - come and met me during my internship. Took me to eat at some fancy restaurant. They didn't even sell like regular soft drinks. I didn't pay. She was like, "My boss really liked you. Jerry liked the way you presented yourself

when he met you. I had bragged about you when you went up there.” I even like, I was the first UA student, first African-American, and first person from EU that had that job. Bausch, the company made auto parts and what not. She bragged about that – that I was the first person to do something like that.

[Matt, metallurgical engineering}

Through this story, Matt expresses his intense pride in himself and his accomplishments as an African American engineering student. Ms. House was proud of him for his accomplishments during his internship, and she publically recognized his talents and achievements. By sharing his success with her supervisor, she confirmed Matt’s confidence in his own abilities. Ms. House’s praise of Matt as the benchmark in this endeavor inspired a deep sense of dignity within him. Recognition and emotional connection by educators have been identified as meaningful experiences for students of color (Campbell and Fleming, 2000; Connor, 2008; Cuyjet, 1997; Degaldo Bernal, 2002; Solorzano et al, 2000; Yosso, 2005).

### **Conclusion**

In this chapter, I shared an anthology of participants’ perspectives around the concept of connection that emerged through their extrapolations of personal experiences. Connections with other students, with educators, and their engineering curriculums are esteemed as vital to participants’ achievement in college. Relationships with African American peers on campus provide valuable connections for participants. Bonding with white students in the campus community, and particularly in the college of engineering, also proves beneficial for the students in this study. Participants identify collaborative partnerships inside and outside of the classroom as necessary to sustaining their success in engineering. Forming strong relationships with faculty members at the institution is vitally important to the academic confidence, emotional wellness, and professional growth of

participants. Participants describe the advantages and outcomes of healthy connections with professors, which include opportunities for undergraduate research, out-of-class academic support, as well as the affective benefits students enjoy when they feel that teachers genuinely care about their educational experiences. In the final section of this chapter, participants explain and their connection with the engineering curriculum and expound upon the magnitude of this curricular linkage.

In the next chapter, the Story of Conqueror, I will conclude the series of participants' stories by sharing their personal strategies for success.

## CHAPTER X

### THE STORY OF CONQUEROR

You have to find a way. There were some tough times. But you just have to overcome. You just have to overcome. I mean, I've overcome the curriculum. I've graduated college. I've grown mentally. I've experienced things that I would never have experienced without attending Expansion University or college in general. It encourages me to go farther... That's what I feel it is—that first step to a staircase of infinite possibilities.

[Jordan, civil engineering]

At the intersection of strength and savvy broods a determined drive burning vehemently within each of these men. The culmination of their life experiences brings them to this precipice of achievement – college graduation. Though shared among the men in the study, graduation is not altogether common among African American males. The data on college graduation rates rank African American males as the least likely to persevere through the academy when compared to other groups (KewelRamani et al, 2007; NCES, 2011; Therman and Therman, 2003). Throughout the courses of their lives, participants have demonstrated the capacity to overcome challenges, the will to work harder than one might believe he ought, and the belief in his own ability to succeed. The Story of Conqueror is the finale in the series of narratives collected through this study. Among the central tenets of this tale are hard work, drive and motivation, and success.

Prevailing stereotypes situate African American men for lower levels of achievement than other racialized groups (Callan, 2006; Connor, 2008; Jenkins, 2006; Majors and Billson, 1992; McWhorter, 2001; Noguera, 2003; Ogbu, 1990; Whiting, 2006; Wiggan, 2008). Participants are aware of the damaging social messages about the success capacities of black men and have used this phenomenon of failure as a motivator for their

own achievement. Timothy recalls, “My parents always thought it was easier to keep black girls from going the wrong path, than it is to keep black boys, so they really kept me on my toes.” This statement confirms the influence of ideology on the thought processes of Timothy’s parents. In order to help their son beat the odds and be successful, Timothy’s parents kept a watchful eye over his involvements, activities, and affairs throughout his childhood and adolescence. Kevin discloses, “Grandmother explained to me that young African Americans are not expected to do much with their lives, but if God puts it in your mind, then you can have it.” From his earliest memories, his grandmother has acknowledged the low expectations society has established for African American males. She encouraged Kevin to develop dreams, to work hard towards his goals, and to hold fast to his faith in order to achieve. As evidenced in the cases of Timothy and Kevin, parents often provide the push that helps men of color survive the strains of racist messages and micro-aggressions (Delpit, 1995; Mandara, 2006; Reynolds, 2010; Tatum, 2000; Yan, 2006; Yosso, 2005).

### **Hard Work**

Hard work is an incredibly familiar concept to these men. Participants portray their parents as hardworking individuals, and their examples have helped participants establish an eager work ethos in their own lives. John shares that his parents, “both worked really hard and all that stuff, and looking back, I guess it taught me a lot about how I should be”. Here, he acknowledges the value of his parents’ diligence and how his character has been shaped by their influence. Kevin realizes that his grandmother’s work habits gave him opportunities to be successful. He verbalizes, “I always remember her working to keep us floating and teaching me to work. Without her, I don’t know where I’d be.” Timothy’s



feelings indicate that he believes her sacrifice is responsible, at least in part, for his present stability. Timothy states, “My parents are like machines – hard work is the only way they know! I mean – I feel like I’ve always seen successful people around me.” Matt praises his parents for presenting examples of a strong work ethic and for teaching him the importance of work.

My mom, she had two jobs when I was a kid. My dad had two jobs. My mom, she was a nanny for a family. And she also worked at like a shelter with kids. My dad, he owned his own business. A lawn, agricultural, lawn mower business, and he worked at a place called Brigham. They build like rigs and stuff. And from them, I guess what they really taught me was hard work. That’s one thing. I’ve been working since I was eight years old—outside mowing yards, stuff like that. But I got a real job when I was sixteen. They tell me, like, it’s not good to complain. What good can complaining do? Just make you waste time. I learned my hard-work value from them.

[Matt, metallurgical engineering]

Matt recognizes the power of the influence that his parents’ work culture had on his perspective. They taught him not to complain, as this was seen as a futile waste of time. The narratives that parents of color communicate to their children often include stories of responsibility, as well as a respect for culture and family (Reynolds, 2010; Solorzano et al, 2000; Tatum, 2000; Yosso, 2005).

Participants define the rewards of work to include resources, wages, and in some cases, positive feelings of altruism. Four of the five participants recall holding jobs at some point throughout their life stories. Three of five participants hold part-time jobs in addition to their enrollment in engineering. Timothy shares, “I like being able to have nice things. A job allows me to have those kinds of things, like cars, clothes, watches, glasses, and stuff.” Timothy draws the correlation between employment and resources. Working allows him to have access to the possessions he desires. Jordan shares, “I work a lot so I can make it. And I don’t know, I just want to make a great living for myself, my son, and my family one day.

So this is always something pushing me to work harder and further my education.” In this string of statements, Jordan emphasizes the motivation to work that he derives through setting goals around the interests of his family.

For some participants, part-time jobs have been essential towards the continuation of their education; in the case of other participants, parents and scholarships provided adequate funding to sustain their needs. Kevin states, “If I didn’t work, I wouldn’t be here.” Jordan recounts his undergraduate experience as a working student and father. For Jordan, a job has not been an option but rather an essential part of his subsistence. He reveals, “It hasn’t been easy these past few semesters. I’ve been focused on graduation, but with a part-time job, and a five-year-old son it’s kind of hard to focus on anything else. I just want to get this degree.” Through his brief commentary, we see the burden that Jordan faced in order to support himself and his son while in college. Just as Jordan has depicted, college students of color often hold jobs outside of their academic commitments in order to make financial ends meet (Cuyjet, 2006; Dey and Hurtado, 1995; Harper, 2009). The literature identifies the demands associated with employment as one of the challenges affecting the persistence of African American male students in college (Bailey and Bradbury-Bailey, 2010; Bean, 2005; Hughes, 2011; Jackson et al, 2010).

Scholarships help students maintain their enrollment in engineering at Expansion University. All five participants acknowledge the receipt of scholarships during college; the types of these scholarships and amounts of financial awards differ from participant-to-participant. John concedes, “The main reason I’m at EU is because of the scholarship. I did well on the PSAT, so I got the National Achievement Scholarship. Like that’s how I can afford to stay here and stuff.” Timothy shares, “I was a Merit Scholar. I had a STEM

Scholarship. I had a Dean's Scholarship. I had a Florence Scholarship. I had an Elk's Scholarship. I had like five cumulative, which really helped pay for school. The parents help me out some, but I work a lot, too". Matt is also the beneficiary of scholarship funding for his education. Also, his parents support his schooling, as he describes in the following passage:

They help me out with bills and what not. I'm pretty fortunate that I didn't have to work two jobs to pay for all my schooling. I had scholarships. As well as my parents helping me out when they can. You know like these days, kids have everything handed to them. Like this white girl was hollering at her mama saying she got the wrong car. It was a BMW. Shut up! She's a freshman. She's like, "I got mad at my mom. She bought me this red BMW. I wanted a black BMW." Ugh...

[Matt, metallurgical engineering]

Matt shifts from a synopsis of his financial supports in college into a narrative on entitlement and privilege. He heatedly recounts an interaction with a white female student about the automobile her mother bought for her. The student was upset because the luxury vehicle was red, instead of black. Matt exclaims, "Shut up!" in frustration at this freshman student's response to receiving a car from her mother. His disgust for the attitude of entitlement exhibited by this student is easily distinguishable in his language, particularly with the inclusion of "ugh" at the end of his summation. Based on my understanding of his socio-economic background, Matt's personal history has likely been more modest than the white female student he describes in this example. As reported in the literature, the number of students of color hailing from low-income communities is disproportionately high in comparison to white students from low-income areas (Anderson, 1998; Baldwin, 2012; Bell, 1988; Buras, 2011; Carter, 2003; Colclough and Beck, 1986; Fenning and Rose, 2007; Harvey et al, 2004; Jalata, 2002; Jenkins, 2006; Kozol, 1992; Lipsitz, 2006;

Litchenstein and Kroll, 1996; Lopez, 2003; McClaren, 2003; Ogbu, 1990; Palmer et al, 2010; Reid and Moore, 2008; Rich, 2010).

Some participants reveal an enterprising temperament that empowered them to optimize occasions for financial gain. Timothy never wasted time or money during his youth. He describes his entrepreneurial and enterprising characteristics that emerged as early as elementary school.

I always enjoyed making money. When I was real little, my parents would give me, lunch cost \$1.25 a day, so they would give me \$1.25. They'd give me \$6.25 for the week. I would never use it. I would scrounge up change. It's not hard getting \$1.25. I would ask different girls for a quarter every day. I would pocket my lunch money every day. I did that from sixth, seventh, eighth and ninth grade. And then when I turned sixteen, I bought some rims for my car. My parents weren't going to get it for me. My sister thought I was crazy when she saw I had \$1,200 all stacked up in \$1.00 bills in my drawer in my room.

[Timothy, civil engineering]

In this account, Timothy unveils his economic motivation as a young person. His story reflects a desire for possessions. The profits from his entrepreneurial moneymaking schema were applied towards the purchase of automobile accessories, rather than items that may be considered essential towards his survival or wellbeing. Jordan explains the burning desire for an automobile that encouraged him to work diligently.

That's how I am a lot of times, with just anything. With visualizing, and seeing myself with that thing that I want so bad – that car. I wanted a car so bad. I had no idea. But I started visualizing. I started focusing. I want a car. I got a part-time job. I was working. I started saving money, and I'm able to pay my car note each month.

[Jordan, civil engineering]

Jordan's desire for wheels pushed him to find part-time employment. His conclusion about being able to pay his car payment each month indicates his understanding and appreciation

for the returns of hard work. Jordan envisioned his objective, and set out on the path towards achieving his goal of buying the Ford Mustang of his dreams.

Participants characterize hard work as an essential value associated with their success at EU. According to Matt, some students convince themselves that a degree in engineering is not worth the challenge, time, and the effort required. He states, “People just realize they can’t hack it or they don’t want to do it because it’s too hard”. His comments suggest that the axiom of engineering as hard work acts as a deterrent to less motivated students; this finding is reflected in some of the literature on African American students in STEM academic programs (Elliot et al, 1995; Green et al, 2009; Harper, 2010; Palmer et al, 2010; Tyson et al, 2011; Washington, 2011). John offers advice to students who may have feelings of doubt about their capacities for completing the engineering curriculum at Expansion University.

Like I mean it’s going to be difficult, but I mean, if you like break it up, if you don’t let people tell you that engineering’s difficult. You won’t be that bad off. And you just choose to learn how to like go through the steps like if you do that, then you’ll come through it. You’ll have a wealth of knowledge that a lot people need to gain.

[John, mechanical engineering]

In this account, John acknowledges the difficulty of the engineering curriculum and shares his strategies for solidifying success. He encourages students to reject the idea that engineering is “difficult” and be determined to succeed. His supposition that “you won’t be that bad off” indicates that the challenges intertwined in the experience will not prohibit a committed student from becoming an engineer; these comments lead one to believe that the academic obstacles engineering are not as insurmountable as the stereotypes suggest. John recommends that students break down the curriculum into steps in order to obtain

the “wealth of knowledge” that is necessary for success. Timothy also proposes succeeding through a step-by-step approach to engineering.

I do everything in steps. The steps have to be correct. Cause, like I won't start my homework, like I won't start it, if I don't know how to do it. That's the worst feeling ever. It's just like working through a problem. It's completely wrong, all wrong. Like one problem might be like two pages long. And you just went totally in the wrong direction.

[Timothy, civil engineering]

Here, Timothy confirms the systematic procedure that he applies towards his homework. His rich description of the substantial length of a single homework problem confirms the comprehensive weight of the out-of-class assignments for engineering students. Within his account lies the theme that accuracy matters in engineering and that a simple mistake may alter the outcome of the entire project. On the subject of making errors as a student in engineering, Matt discloses, “It's up to you to learn from your mistakes. Nobody's gonna be there to fix it for you in the real world.” Matt confirms his understanding of the impact that engineers have on the world and the pressure of the individualized responsibilities that accompany the profession.

Participants describe the grueling nature of their engineering endeavors and the work involved in accomplishing particular academic tasks. Jordan speaks about the hard work involved in a group project.

We worked so hard on our group project. We set early deadlines for ourselves. We practiced on the presentation. We met with all type of engineering consultants, just to make sure that. It was set up like we were actually pitching to engineering consultants, even though it was our teacher and advisory board. But we had to look at it like they were consultants, and we were trying to win the bid for the job.

Jordan explains the copious steps his group applied in their efforts on this engineering group project. John shares his perspective on the difficulty of cooperative engineering

projects. He states, “The project is usually not something well defined. Because usually an engineering project is just like this is what the project is going to be. You’d go and ask them if it can be this way. Then you’d be like let me tweak this problem a little bit.” The situation that John describes highlights the demand for deductive logic in problem solving in engineering. The ability to reason and apply mathematical logic that John outlines has been identified as an important skill set among students who are successful in STEM (Frankenstein, 1990; Keck-Staley, 2010; Ladson-Billings, 1997; Martin, 2009; Smith and Hausfaus, 1998).

Participants reflect upon the work involved in acquiring the mathematical logic and technical savvy necessary for success in engineering. Matt addresses the issue of the math curriculum, yet struggles to draw the correlations between the mathematics course load and practical work in the field.

The math is challenging. There’s a lot of real hard work in trying to learn it all. And you know what we learn, physics, math, and chemistry, we don’t use in industry. I have not used cal I, II, III, or differential equations in any of my internships, ever. So, it’s kind of like why am I in this class? If you do a co-op or internship you’ll realize what helps that I’m taking and using it in real life. So it makes you have like a bad attitude some of your classes. Like, I don’t really need to learn this. So you just want to get through with it, and get on with your life.

[Matt, metallurgical engineering]

In his account, Matt assesses the engineering math requirements as a means to an end. He states that the reality of engineering is realized when you leave the classroom and enter the industry. Matt’s analysis that professional practice helps students actualize the work of engineering is consistent with the literature about the value of experiential learning experiences in STEM (Elliot et al, 1995; Russell and Atwater, 2004; Strayhorn, 2009). John affirms the importance of technical expertise in engineering. In regards to employers he

shares, “They want engineers that think at higher levels. They know how the business works. They have those problem-solving skills. And the main barrier for most people is not soft skills, it’s the technical know-how. In engineering you get a huge technical know-how.”

Matt insists that the present generation of first-year students are less interested in exerting the efforts required for success than previous generations of engineering undergraduates. He contends, “Well, I can say that these days, everything is handed to the freshmen. Like these days, stuff handed to them left and right. I had to work for everything when I was a freshman and sophomore. Like these days, they get internships or get a grade they want. They get like everything.” Through his summation of the entitlement of new students, we glean a sense of resentment in Matt’s reflections. He emphasizes his own work ethic and his feelings that new students who have come along after him “get like everything”. Kevin believes that freshmen enjoy an advantage over those students who have moved through the engineering pipeline in previous semesters. He tells, “The freshmen have it made these days. They didn’t have the engineering commons for tutoring and all that stuff back in the day.”

“Getting it done” requires commitment beyond the establishment of ideas; it involves dedicated action to follow through from the first phase to the finale. Participants express their diligence in regards to their capacities to complete the projects to which they devote their time, talents, and minds. Kevin asserts, “I’m a great student, and I really don’t have a problem studying. I make sure I work hard, and I get everything done.” Regardless of the challenges that arise, Jordan holds fast to hard work as the strategy for success.

Uh, it’s like you have to take what your university is and take it head on.... You take your university for what it is. Take your curriculum for what it is. You take your program for what it is. And you take it head on. You work hard. You can’t make excuses. You get it done, you know. You have to change your thought process.



[Jordan, civil engineering]

In this passage, Jordan illustrates the “can-do” attitude and work ethic that has driven him throughout his time as an engineering student at EU. By taking his university, his engineering curriculum, and his departmental program for “what it is”, Jordan He contends that “you have to change your thought process” in order to commit to the depth required for success; his analysis may indicate that the typical thought process of a college student is less critical than that of a senior engineering student. This finding alludes to the enlightenment phenomenon outlined in various theories of college student development (Astin, 1993; Evans et al, 2010; Kuh et al, 2005; Pascarella and Terenzini, 1991). Along the lines of altering the thought process to “get it done”, Timothy demonstrates the change that he discerned in his own experience. He reflects, “I knew that college was where you proved yourself to be successful in life. You come about success in a lot of ways. I knew I wanted to be rich, so I had to take college seriously and work hard. I always believed that my grades determined the money I was going to make as an engineer. That’s how I approached college.”

Participants identify discipline as inherent to personal success in engineering. Timothy is confident that his diligence in the civil engineering program will determine his employment opportunities after graduation. He asserts, “I don’t think EU has given me an advantage over somebody else, like Georgia Tech. It’s just really dependent on if you’re better than the person applying – if you work harder than he does.” Here, Timothy confirms his belief in the concept of merit-based advantages in the engineering profession. He who works the hardest enjoys the greatest opportunities. He continues on the subject of self-discipline, which he believes is an essential characteristic among engineers.

I'm an amateur boxer. Boxing teaches you discipline. And even though I've always been disciplined all my life, that's kind of how I got into it. I always liked the sport. And it's a discipline sport, where you have to be disciplined. I've been disciplined my whole entire life. I guess somehow I'm attracted to that. I feel like boxing is the only thing I've done in my life more difficult than engineering. I started that right after my freshman year of college. By far the hardest thing I've done in my life.

[Timothy, civil engineering]

In this passage, Timothy qualifies his boxing as the only task he has tackled more difficult than his engineering program. He uses the analogy of boxing as a frame for depicting the discipline required of engineers. He concludes that discipline has been a prominent theme throughout his life story. Matt shares a compelling summary on the connection of discipline and student success. He states, "You can't just do it, halfway. I've got internships. I got research experience. I'm published. I've got leadership skills. So that's how I beat the odds. Companies these days they want work experience over the bookworm. You got to be disciplined in your life if you wanna be successful." Here, Matt clearly correlates self-control with success in engineering. His first statement in the series indicates a full commitment is necessary in order to achieve optimal success.

### **Drive and Motivation**

I have always wanted to be successful.

[Timothy, civil engineering]

Motivation derives from a broad range of sources. Within each of these men, there broods a burning drive that has fueled his will to succeed. Self-confidence, competitive spirit, financial sustainability, family support, and elevating others serve as sources of motivation for participants.

Each of the participants exhibits a distinguishable self-confidence in regards to his academic abilities and career potential. Their confidence has been a critical factor in conquering the challenges that have surfaced before them. Kevin asserts that his belief in his potential has helped him fortify a success identity in engineering. He states, “I think it was kind of my mind-set that set me apart. I just knew I could do it.” Matt recalls, “I knew I could do this engineering thing if I set my mind to it.” His comments confirm his faith in his abilities to overcome the engineering curriculum. On the subject of self-confidence, Timothy demonstrates his secure conviction in the soundness of his talents, his academic abilities, and his decision to become an engineer.

I just felt like I could do it. I feel like I manage my money well. I manage everything in my life well. When I think about it, I’m a very structured person. I feel like you’re not going to be great at something, unless you enjoy it. You can have all the talent in the world, but if you’re not going to enjoy it, you’re not going to be the best at it. I enjoy engineering. I feel like I’m where I am supposed to be.

[Timothy, civil engineering]

Here, Timothy illustrates confidence in multiple aspects of his life world. The boldness of his language indicates considerable confidence; for example, his statement, “I manage everything in my life well”, reflects a sincere certainty that he controls the events, interactions, and activities comprising the totality of his experiences. He expresses his pleasure for engineering and confidently contends, “I feel like I’m where I am supposed to be”.

“When it comes to academics, the personal belief in within yourself, that ‘I can get this done’ is what will take you through.” With this statement, Jordan renders self-confidence as the critical characteristic helping him achieve his academic goals. While academic resources, campus relationships, and commitment to the curriculum have been

significant in his experiences and in the experiences of other participants in engineering, he believes that self-confidence surpasses all other sources of support. He emphasizes the significance of self-assurance in the following passage:

Believe in yourself. There may be discouraging times, but when you're beat down, if you truly believe in yourself, I don't see how it can go wrong. Because, believing in yourself forces you to do those things that it calls for to overcome adversity. So when you make that low grade on that first test, if you believe in yourself, that should force you to study a little more for the second test. Uh, I, I, I don't think there's anything more powerful than believing in yourself. And manifesting to the world that this is what I'm going to do. And visualizing that. And when you do that you see it in your mind.

[Jordan, civil engineering]

Jordan extrapolates the benefits of believing in oneself. He highlights confidence as the instrument through which one may “overcome adversity”. One of the powerful points in his discourse involves “manifesting to the world” one’s intention to succeed. Not only does Jordan promote the adaptation of personal confidence, he embraces a public portrayal of poise. The literature on educational achievement suggests a lack of confidence among African American males, which may be resultant of historical oppression, racial discrimination, stereotype threat, and the prevalence of poor academic performance (Bailey and Moore, 2004; Campbell and Fleming, 2000; Harper, 2009; hooks, 2004; Kimbrough et al, 1996; Ladson-Billings, 1997; Majors and Billson, 1992; Neal, 2006; Ogbu, 1990; Osyerman et al, 1995; Pierre et al, 2002; Reid and Moore, 2008; Rovai et al, 2005; Smith et al, 2007; Solorzano, 1997; Tatum, 1997; Thernstrom and Thernstrom, 2003; Watson and Kuh, 1996; Weiner, 1985; Whiting, 2006; Wiggan, 2008; Yan, 2000). My findings on this issue do not support the supposition about a lack of confidence among African American men. Each of the scholars involved in this study illustrate confidence through his narrative, notwithstanding his background experiences.

John shares how he has gained confidence through his experiences in the college of engineering.

It's just a matter of developing that know-how, like that confidence. Sometimes I'll walk into a room and I'll be like, "I'm an engineering major". And they'll be like, "Oh man! You're like a genius or something." And I'm like, "Nah, not really". But that's their perception. So I show up and am like, "I do engineering", and people just kind of like go, "ahhhh".

[John, mechanical engineering]

In the passage above, John explains the general perception that engineering majors are intellectually gifted or a special class of college students. He believes that he has gained confidence through the "genius" engineer persona. By announcing, "I do engineering" when he enters conversations with other students, John indicates proud ownership of his academic and professional identities (Graham, 2008; Whiting, 2006). With a sheepish smile, he reenacts the response of his peers when they realize his status as an engineering student; the pride he gains from their respect and reaction indicates a rise in his personal esteem.

The career goals of participants reflect confidence in their leadership, professional capacities, and the overall quality of their skills. The identification and internalization of vibrant career goals among African American male students has been cited as an indicator of personal confidence (Bianco et al, 2011; Hawkins, 2011; Hughes, 2011; Wiggan, 2008). Kevin tells about his "dream job" and the path he plans to follow en route to his long-term goal.

My dream job would be with the state department of transportation. Work for like five-to-seven years, and then start an engineering firm of my own. The feeling of accomplishment that goes along with calling it my own is so great. There will be ups and downs and then to be able to say "I did this". That is just something I want.

[Kevin, civil engineering]

Kevin displays a confident hope in his ability to climb the corporate ladder within the engineering profession. He recognizes the “ups and downs” that may accompany his ascension to firm ownership, and cites the impending sense of accomplishment as motivation for his efforts. John reveals a tentative plan for his career development that reflects faith that the transferability of his skills will improve his mobility as a professional engineer.

Right now I would like to get in a fairly big company, so that way if I get put in a position where I'm sitting at a desk and I realize that I hate sitting at a desk, and I can apply within the company and they can promote me somewhere else. I'm looking for a company that has a pretty nice training plan, where I can like move my way up through the company and actually like get the good stuff, instead of feeling like I'm locked in where I am.

[John, mechanical engineering]

Matt describes a detailed design for his career advancement.

I want to become a manager. I want to be a full-time manager over an engineering department at the company. I know there's still something to get there. Probably like in three years I will be a lead engineer. Then from lead engineer, you can do what is called Management Development Program. And like you can join that after several years, it's best to be there several years to do that. I hope to get into that program to then become a manager. I'd like to be a manager over the engineering department. After that, once that happens, I want to get more on the business side of the company. I want to become like an engineering manager on the business side eventually.

[Matt, metallurgical engineering]

Each of these participants exudes confidence in his capacities to cultivate, climb, and conquer in the field of engineering. One impressive item is that each of their narratives includes a vision for administrative leadership within the profession. The cultivation of a strong leadership capacity has been coupled with improved educational outcomes among

African American male college students (Bailey and Bradbury-Bailey, 2010; Harper and Wolley, 2002; Lee, 1996; McClure, 2006; Watson et al, 2002).

While cognizant of the value of collaboration and group work, participants identify competitiveness as important towards their motivation. The research on the experiences of students of color at PWIs distinguishes competition as a common phenomenon among African American males (Brown et al, 2005; Cuyjet, 2006; Douglas, 1998; Harper and Wolley, 2002; Harper, 2010; Kimbrough, 2003; McClure, 2006). Greek life membership, pursuit of sexual relationships, and desire for resources and representation have been shown to ignite rivalries between men of color on campus; the competitive and individualistic ideology of whiteness has been identified as posing challenges for black men enrolled at PWIs (Douglas, 1998; Harper and Wolley, 2002; Kimbrough, 2003; McClure, 2006; Taylor and Howard-Hamilton, 1995; Watson et al, 2002). My findings do support the theory that competition for resources, relationships, and recognition among men of color exist at this PWI; however, I am unable to conclude that participants suffer because of the culture of competitive individualism at EU. To the contrary, these black male scholars exhibit preferences for noninterference and autonomy in their academic work. This tendency among participants may be the result of their personal histories, background experiences, or adaptations to the culture of engineering.

Participants share specific examples of competition with their peers that serve as motive force for their own achievement. John reveals, “Two friends came with me to EU. Seeing them do well, I was like I’ve got to keep doing well. Just keep grinding at it to get out of here.” The success of his high school friends in college pushed John to reach greater

heights as a student in engineering. Matt shares his story about how measuring up to the success of a friend served as motivation to achieve.

I would say the most instrumental thing to my success I guess was having friends that like, you know they did well, and me being a competitive person, I wanted to do better. So we kind of like went tit-for-tat. Me and my friend, Timothy, were talking the other day, and like he doing well. I'm like I want to do better than Timothy. I want to be like the best person from my home state. I want to be like that guy...I want people to say, "Matt, he's doing well. He went to Expansion University." EU contributed by providing that sense of competition, that competitiveness – ultra-fueled me to want to be better.

[Matt, metallurgical engineering]

In this scenario, Matt establishes his own competitive nature and credits EU as fueling his competitive spirit. Timothy provides his own testimony about competition. He confidently reveals his disgust for finishing second.

And then, like my competitiveness is probably the one that lasted throughout all of school. I just wouldn't want to fail at it. I'm an extremely competitive person in everything. I don't like losing. I'm not a sore loser. You probably wouldn't even know that I'm upset that you beat me at something. But the next time you see me, I'll challenge you to something, and I'll win.

[Timothy, civil engineering]

Participants describe finances as motivation to complete their engineering degrees. The salaries associated with positions in the profession served as catalysts for conquering the rigorous science and mathematics curriculum. John explains, "Once I graduate and get a job, there's no need for me to take money from my parents anymore." Kevin's commitment to supporting his grandmother has motivated him to work assiduously in the engineering program. He tells, "She's done so much for me all my life. I want to help her not have to struggle. You know, with finances and bills and such." Jordan speaks about how his desire to enhance opportunities for his son impelled his most diligent efforts to succeed.



I mean I have to save my son, you know. It wasn't planned, of course. I was seventeen when he was born, but it's taken an effect on who I've become, like for the better. It pushed me to want better for myself. To make better friends, you know. That's always a thought. All the way down to me studying now. But there have been times when I think about him. I need to get better grades. You know, graduation. Better job opportunities. Yeah, yeah, because, I haven't really been able to do as much as I would like to do for him over my college years here – especially, financially.

[Jordan, civil engineering]

In this account, Jordan discloses deeply personal thoughts about his aspirations for his son. The driving desire to support his son's needs has pushed Jordan "to want better" for himself, "make better friends", "get better grades", and graduate. These findings are consistent with the motivating forces expressed by students of color in other research studies (Bonner and Bailey, 2006; Campbell and Fleming, 2000; Cuyjet, 2006; Harper, 2009; Harper and Wolley, 2002; Palmer et al, 2010). Matt shares his transition from financial motivation to study engineering to an intrinsic impetus to succeed.

At my first NSBE conference in Orlando, we had a speaker and he spoke. He was very inspirational. He made me realize, okay, I can do this, if I put my mind to it. At first, I was all about the money. He was like don't let it be for the money. You've got to find another, better reason to want to stay in this. It's not going to get any easier on you, just harder. I found my other reason. I stuck with it. Now I love it.

[Matt, metallurgical engineering]

### **Success**

I'd define success as being able to wake up and enjoy doing what you do. That's success to me. I wake up, and I love doing engineering. I succeeded in engineering. I beat the odds. And that's successful to me.

[Matt, metallurgical engineering]

Success may embody a variety of forms depending on the person or population supplying its definition. For the purposes of this dissertation, the definition of success has been predetermined as each participant's academic success in his undergraduate

engineering curriculum at EU. The ultimate measure of success is graduation from the college of engineering. Kevin describes his feelings about graduating from Expansion University. With a growing smile he shares, “To graduate from EU, that is the crème de la crème. You seen those stories on TV about how the lottery changed my life? That’s it. That’s the excitement I envision about graduating from EU.” John describes his feelings about completing his degree at EU. He imparts, “I feel like I completed a goal – like a long-term goal. Like when I first got here, four years was a long way off, and now it’s like—I did that! It’s over, like done. I’ve completed a goal, and now it’s go into that next phase of life.”

Participants summarize the depth of meaning that graduating from Expansion University holds for them. Matt states, “It means a lot. First graduate from my family. In engineering. First graduate, overall. Proud moment. Engineering: a thousand enter, and only a few survive. I’m glad I’m one of the few. It’s a proud feeling to be able to tell my kids how I finished college at EU.” Jordan reveals the tremendous satisfaction he enjoys about graduating from EU.

I mean, once upon a time there weren’t African-American students at the Expansion University, and I had someone tell me that I shouldn’t attend the EU – that I may not be able to excel at the EU. It is a predominately white institution. I don’t know. I take pride in being able to say that I did it at Expansion University. My family takes pride in me graduating from EU. It means a lot to me, and it means a lot to my family.

[Jordan, civil engineering]

In this account, Jordan illustrates pride as an African American man graduating from a historically white institution. He recalls that during one point in history, African American students were not allowed to enroll at his university, and now, he is accomplished his ultimate objective. Moving far beyond matriculation, Jordan has conquered the engineering

curriculum. Jordan continues in his narrative regarding the value of his college education at Expansion University.

It's a quality education. And seeing Expansion University on a resume, versus a lot of other schools, would stand out, even with a lower GPA. That's actually come from interviews, with people who liked the fact that I attended the Expansion University. A lot of the people that I have met went to Expansion University. I personally feel that potential jobs will notice that I went to a great school. They will look at it and be like, "Oh, Expansion University." So, yeah, I mean, it was a great decision.

[Jordan, civil engineering]

Beyond the personal pride he feels about his achievements, Jordan confirms the competitive advantage that his degree will offer him in the industry. He believes that graduating from EU will provide an immediate advantage over others in the field of engineering that may not have attended a comparable institution. He exhibits confidence that he will "stand out" as a candidate, "even with a lower GPA" than applicants who hold degrees from other schools.

Timothy offers his perspective on African American male achievement and some of the factors that may inhibit success among some men of color.

You've always got your extremes, and there's a lot like that. But there's a lot the other way. But the key to success, I would say, is to have a goal. And prepare to be positive. Have a goal, and go about achieving it in a positive way. You might have a goal of being rich. You might go about it by selling drugs or something illegal to achieve that goal. But I feel like a lot of African-American guys come to college and they don't really know what they want to do in life. And what they want out of life. Don't know who they are. It's easy to get distracted when you're not focused on something. If you're just wandering around in the woods, and you see something, you're not going to follow the path, and you're not really going to know what you're doing out there.

[Timothy, civil engineering]

Timothy describes the predicament presented before some African American men. His fundamental theme in this passage is the lack of direction that he sees among African

American men in college and how the absence of well-defined goals impacts their success outcomes. He compares the bewildered experiences of some black male undergraduates to “wandering around in the woods”. Important to note, Timothy indicates a “path” that leads in the direction of achievement for African American students. Matt believes that he found and followed the pathway to success at EU. In his words, he “beat the odds” which were stacked against him as a black male college student. Though his GPA has hovered around the minimum standard required for good academic standing throughout his enrollment, he has persisted in his program, completed his curriculum in metallurgical engineering, and has received numerous offers for employment. He shares his story as an unlikely underdog in the following passage:

I beat the odds. And that’s successful to me. You know I have a 2.5 GPA. I had a professor tell me that I’m not supposed to have amount of success that I have now with that GPA. A professor said that to me. He found out I had seven offers this semester. He was like, “How?” He’s like, “With your GPA, you’re not supposed to have success. Like why my student doesn’t have that success that you got?” They got like a 3.4 and no job offers on the table.

[Matt, metallurgical engineering]

### **Strategies for Success**

Participants offer suggestions for their university to help generate greater success outcomes among students of color in engineering. Kevin encourages students to be intentional about networking and forming bonds with other students. He explains, “It helps a whole lot to have a support group. You’ve gotta get out there and meet people. Don’t just wait on them to come to you.” Matt believes that new students may learn significant lessons from the examples and experiences of upperclassmen in the college of engineering.

They can learn from our mistakes. As well as to see, “Yeah, I can make it. If they can make it, I can make it.” I have a mentee. He thought that cause he was in Math 100 he didn’t stand a chance of getting through. I was like, “I started with math

100, and look where I am. I've made it all the way through". It's definitely possible, but you have to stay away from the parties. Don't worry about the girls, cause the girls come later. Time management – learn how to balance your time.

[Matt, metallurgical engineering]

Matt emphasizes the magnitude of peer influence on the experiences of students in engineering. Bearing witness to the successes and failures of students who have experienced the same phenomena may help new students envision their own academic achievement. Matt warns against indulgence in parties or romantic relationships at the expense of academic objectives. The inability to balance social and academic activities has been associated with the failure of black men to persist in college (Bonner and Bailey, 2006; Brown, 2009; Cuyjet, 2006; Harper and Wolley, 2002; Kimbrough et al, 1996; Love, 1993; Roach, 2001). He concludes his commentary by connecting time management to success. The ability to balance the demands of one's schedule recurs frequently throughout the narratives of each of the participants in the study.

John reminisces about his early student experiences and offers an authoritative solution towards helping students engage in meaningful opportunities.

I think they need pretty much resources like forced down their throat. Like I know it's terrible, but some type of like mandatory, like you have to join this organization. You have to join some type of STEM organization. So at least you show up to the meetings, and you don't feel intimidated. You have to do blah, you have to do blah. That way, like they do it, and realize it's not that bad. A lot of them in college are like I need more time to do other stuff. I hate to say it, but sometimes you just have to force people to get exposed to stuff. And then, if they hate it after their first exposure, okay then they can go on. But I realize the reason I didn't do a lot of stuff, was because I felt intimidated by it, and given the option of going to this one thing, and I was like oh man I'm the weakest link in all that. I chose not to do it. Then slowly I was like, I've got to do these things, and I pushed past it. I feel like pretty much a department just told them what to do, maybe through a mentor.

[John, mechanical engineering]

In this passage, John describes the difficulty he experienced in trying to connect with different resources and organizations at Expansion University. He implies that African American students may not make the efforts to reach beyond their comfort zones, because they do not realize the value of the experiences associated with involvement. The literature suggests that black men affiliate with campus organizations less frequently than women or white males in college (Cuyjet, 2006; Harper and Wolley, 2002; Taylor and Howard-Hamilton, 1995; Watson et al, 2002). Specifically, he encourages membership in STEM organizations, as this would have been helpful to him during his freshman year.

Participants promote tutoring, academic resources, and other enrichment activities as imperatives for African American student success in engineering. John discloses, “You’re just going to have to realize that, yeah you’ve got to go to tutoring. You’ve got to form a study group. You’ve got to get those past tests.” Matt also believes that tutoring is a worthwhile measure for students. He shares, “I mean you’ve got the tutoring service on campus. I never used the tutoring service, but I should have. Would’ve been a whole lot easier for me if I had”. Jordan expresses the benefits he garnered through his relationship with the office student support services at EU. He identifies the examination prep resources available through this office on campus.

I got help from Student Support Services during my time, here. They have tutoring and all that, but they also have test-prep exercises and things like that. You can prepare for the exams you have to take for grad school. I am very interested in going to grad school. I would love to go to grad school. I really plan to sit down and discuss with some people those necessary steps to get into that next level. Hopefully, I’ll be able to start, maybe as soon as this fall.

[Jordan, civil engineering]

Timothy makes a case for the online degree auditing system, which is available to EU students. He describes the functionality of the software and demonstrates how technology has been instrumental for monitoring his progression through the engineering curriculum.

The advising software is good. Use it. It's like an electronic flowchart that updates on itself. It tells you where you are on progress to your degree. Like it shows all your classes, so you can see collectively. I was doing it on my own, but now it's all online for you to use or whatever. You can check off. It keeps you on track through your program. It really is helpful.

[Timothy, civil engineering]

In his analysis of this academic resource, Timothy describes the empowerment that he has achieved through this academic software program. With the electronic advising tool he describes, students are no longer inhibited by the instructions or interpretations of advisors; students are able to take the reins as navigators of their own education. His analysis insinuates his pleasure with the autonomy afforded through this capacity.

### **Conclusion**

In this chapter, I have shared the stories of success as presented by five African American male scholars in the college of engineering. The first section focuses on their interpretations of hard work as a characteristic endemic to a dedicated engineering student. Participants discuss the various motivators that inspire stronger a work ethic, fuel their diligence, and drive them to conquer the challenge that each of them face as undergraduates at EU. In the final section of The Story of Conqueror, participants share strategies for success that may be adapted for other students who are considering or completing curriculums in engineering. Though the uniqueness of their perspectives may not be overlooked, the commonalities among their experiences provide a fascinating glimpse into the lives of these students of color at this predominantly white university.

Their stories form an impressive framework for understanding the meaning of their experiences, which is the goal of research based around the phenomenological tradition (Merriam, 2006; Moustakas, 1994; Siedman, 2006).

In the eleventh and final chapter, I summarize the study, outline areas for future research, and specifically address the research questions that guided this qualitative study.



## CHAPTER XI

### SUMMARY

Honestly, when it comes to college, school in general, it's what's in here, and your dedication to it (points at heart). I didn't know anything about physics when I came here. Anything at all. I didn't even have a physics class in my high school. But I got the physics book and read it from introduction, and by the end of the course I had read the entire book. I knew who came up with the distance over time images. I read it. And I had to do that with a lot of my courses. A lot of people are just able to go through the PowerPoint, but I like to know everything about it, you know. I overworked myself in some of my classes, but, I mean, that's how I got my great results in my classes and grades. That's how I made it through.

[Jordan, civil engineering]

Through this qualitative investigation, I aimed to gain insight into the lived experiences of academically successful African American male undergraduates in engineering academic programs at a PWI. The knowledge acquired through this study may be helpful to university faculty and administrators in better understanding the institutional, interpersonal, and collective mechanisms engaged by African American men enrolled in STEM academic programs. Understanding the phenomenon experienced by these men may help universities innovate greater supports for the success of Black men in college. Increasing the number of African American men in STEM higher education programs will help stabilize the racial imbalance of college enrollments and may promote brighter economic futures for African American families over time. By regarding the voices of those living this particular experience, colleges and universities may attempt to establish and better sustain academic supports centered on a success culture for Black men in mathematics and science-based curriculums.

### Introduction

The rationale for this research is to expand the literature on the achievement and success outcomes of African American men in engineering programs. Presently, the literature on African American males in college largely focuses on their lack of preparedness, underperformance, and academic failure. My review of literature preceding this study revealed only a modest amount of existing research that evaluated the success of African American male students in the academy. Moreover, even fewer scholars have published in the specialized area of African American male achievement in STEM.

In line with the tradition of CRT in education, I have been faithful in featuring the voices of these African American male scholars as the authorities on the meaning of their personal experiences (Baszille, 2008; Degaldo, 1987; Harper, 2009; Howard, 2001; Love, 2004; Solorzano and Yosso, 2002; Yosso, 2005). My methodology for this project rests at the intersection of phenomenology and life story research, and therefore deviates from a pure phenomenological approach. Working from phenomenological tradition may seem juxtaposed with a CRT framework, however, two things must be considered in regards to this study. Firstly, my methodology drew from an adapted phenomenological framework and life story methods, hence the discord of CRT and pure phenomenology is evaded. Secondly, the purity of findings gained through an adapted phenomenological method achieves the goals of this study. In his analysis of Husserl on phenomenology, Debabrata Sinha (1963) identifies conceptual validation for connecting CRT with the phenomenological tradition. In phenomenology, the immediate observation (*sehen*) is regarded as the source of authority (Sinha, 1963). Through an integration of CRT's counter-storytelling in the research, I have utilized the personal stories of participants as one means of presenting tales of their lived realities (Solorzano and Yosso, 2002). Participants'

narratives synthesize the causal effects of individual as well as institutional and systemic racism on their experiences in the undergraduate engineering program, and thus, the conventional contradictions of the phenomenological method and the CRT framework are negotiated.

The purpose of the study was to investigate and analyze the experiences of African American men in undergraduate engineering programs at a predominantly White university, and therefore, I incorporated counter-storytelling as an effective means of framing the information presented in this dissertation. Each of the three approaches to counter-storytelling may be distinguished in the re-representation of participants' information. Harper (2009) and others identify personal stories, stories of other people, and composite stories involving both subjects and those who have been contributors to their life stories as the primary approaches within counter-storytelling (Baszille, 2008; Solorzano and Yosso, 2002; Yosso, 2005); I drew from each of these methodological variations to compose participants' narratives and as a means for soundly representing the data collected through this study. Findings were presented in earlier chapters through the format of stories. Each story featured the voices of participants regarding their life experiences leading to and during their engineering program at EU. As is characteristic of the life history tradition and common within counter-storytelling in CRT, long and rich chunks of participant data were incorporated to construct the narratives reported in chapters five through ten.

### **Relating Their Realities to the Research Questions**

Throughout each of the stories presented in the earlier chapters of this dissertation, I shared and discussed the principal findings from the series of interviews with

participants. In the following section, I summarize some of the key conclusions in relation to the research questions that guided the study.

### *Research Question 1*

How do the early educational experiences of African American males shape (their) success behaviors in math and science courses in college?

Participants emphasize the important leadership role that their families assumed in their early education and towards the establishment of their academic identities. Each of the five participants recounts vivid recollections about academic activities that helped them cultivate deeper interest, broader comprehension, and greater confidence in mathematics. Participants recall that their parents employed flash cards, basic books, conversational quizzes, activity-based lessons, and even disciplinary measures during their early lives. Parents and family members expressed care and concern for participants' education and invested faithfully in their academic and personal experiences. The affirmation that parents and family members expressed for participants held great magnitude of meaning for their experiences.

The involvement and support of teachers during K-12 has been a crucial component in the construction of participants' mathematical numeracy and skills in science. Participants describe their past experiences with elementary, middle, and high school teachers who were committed to their success in math and science. Inspiring passion, instilling confidence, removing distractions, and affirming achievement were identified by participants as effective measures utilized by their educators. In contrast to the exemplars, some participants recall teachers who were unsupportive of their intellectual growth and development. These teachers presented more obstacles than opportunities for participants.

Though participants do not feel that their negative experiences with educators in elementary and high school helped promote their success, these encounters did serve as impetus to work hard, commit to learning, and exceed the low expectations suggested for them.

### *Research Question 2*

What institutional factors contribute to the academic endurance (persistence) of African American males enrolled in undergraduate engineering programs?

Participants emphasize the value of their extracurricular involvement experiences at EU. Activities such as intramural sports, honor societies, living-learning communities, and Greek life present significant spaces for personal expression, social engagement, and group interaction. The association of participants with other students through organizational membership provides access to academic resources, support systems, campus culture, and useful capital for exchange within the university community.

Some participants indicate assimilation and acculturation as a standard phenomenon for their own experiences and the experiences of other students of color at their PWI. Adapting to the lifestyle, behaviors, and communication practices of white students at EU holds value for some African American students. For some students of color, the street to success at a PWI is paved with performative behavior (Cuyjet, 2006; Douglas, 1998; Harper, 2009; Kimbrough et al, 1996; Watson et al, 2002). The African American men in the study describe adapting their physical appearances, hairstyles, language, and leisure activities to more closely comply with the normative standard at Expansion University. Some participants also indicate modifying their behaviors in order to cohere with the African American community on campus.

Participants identify co-curricular activities as instrumental to their success at Expansion University. Among the various co-curricular experiences contributing to their persistence, participants most commonly named study groups, departmental tutoring, and NSBE as useful. These activities cultivate stronger connections within the college, deeper comprehension of course content, and closer relationships with peers in engineering. Some participants also engaged in internships and believe these pre-professional experiences are highly advantageous for students of color in engineering.

Participants outline activity-based and experiential learning projects as important pedagogical practices in their engineering courses. The faculty who utilize “real world” and practical applications of the course content help students grasp a greater understanding of the material. Participants report a preference for hands-on learning activities throughout the life span. From building blocks to building bridges, participants express their sense of engagement, which is aroused through active learning. In college STEM classes where their faculty members do not integrate application-based initiatives in the instruction, participants reveal difficulty in maintaining focus, finding motivation, and comprehending the subject matter. From this phenomenon, we may conclude that the active and dynamic nature of the engineering curriculum contributes positively to the persistence of the African American men in this study.

The effects of group work on the engineering experiences of participants are unmistakable. While each illustrates the capacity to work autonomously, participants emphasize the common frequency of cooperative work activities inside and outside of their classes. These collaborative experiences allow participants to contribute to a knowledge community among their peers, refine skills through interactions with their peers, and

discuss diverse perspectives with other engineering students. One of the benefits participants associate with group projects is the racial integration within the working teams assigned by the professor. Participants describe these cooperative experiences with their white classmates as significant to their learning. Group work with white engineering students offers opportunities for broadened perspectives, increased access to academic resources, professional networking, and support for critical thinking.

Participants identify caring faculty as helpmeets in their efforts to achieve at EU. Across the breadth of their life stories, participants distinguish the significance of connections and relationships with their schoolteachers. In college, these relationships remain an imperative piece of the puzzle for participants. Respect for their abilities as scholars, open dialogue with their instructors, and opportunities for scholarly activities are the prevailing positive outcomes that participants associate with strong relationships between faculty and students. Participants describe the motivating force of feelings that exist when professors express confidence in their capacities for the engineering curriculum. Conversely, participants disclose the stress, isolation, and other challenges related to weak connections with their faculty. These connections contribute to persistence by increasing visibility among these African American men and constructing systems of support for them within the college of engineering.

### *Research Question 3*

How do African American males in undergraduate engineering programs achieve academic success at a predominantly white university?

Each of the participants was an active member of the National Society of Black Engineers (NSBE) at the time the study was conducted. Unsurprisingly, participants

associated their experiences with NSBE as foundational to their success in the engineering program at EU. The relationships with like-minded peers of color, networking opportunities, and academic support resources introduced through NSBE paved the pathway to graduation for participants. Participants describe their association with upper-classmen at the earliest points in their undergraduate experiences as meaningful.

Witnessing the academic achievements of other African American men in NSBE inspired the success of participants in engineering. The activities of the NSBE organization introduce social outlets for participants, inspire critical connections across the college of engineering, and offer STEM scholars of color a safe space for personal and professional development at their predominantly white university.

Participants distinguish their competitive drives as fueling their academic success at EU. Each of the participants seems to compete with themselves in order to continually improve in their academic performance. Rivalries across peers also provide healthy competition for some students of color in engineering. Some participants are driven by a determination to overcome their backgrounds. They compete with their communities with the aim of escaping the economic and social struggles of their early lives. The desire to redefine the destructive stereotypes of African American acts as another means of motivation for participants. In this sense, they are competing with society and the images that ideology has established for black men. To these participants, succeeding in engineering is the strategy through which they introduce opinions about African American male attitudes, abilities, and outcomes.

Participants exhibit intense commitments to their respective engineering curriculums. Participants describe the criticality of resisting the pressure to party and engage in



activities that take their time and attention away from their studies. Their narratives suggest that “playing now” will result in “paying later” when their grades are reported. Their commitment to the engineering curriculum is also evidenced through the time spent in homework, studying, group work, undergraduate research, and internship and co-op experiences.

Developing connections with like-minded peers has served valuable utility for participants. Participants indicate the importance of surrounding themselves with friends who helped build them up as scholars, rather than bring them down to failure. Joining organizations like NSBE, the Honors College, and fraternities have opened doors of possibility for participants. Participants believe that the relationships forged through their involvement experiences have been colossal in fortifying their success as African American students at their PWI. The learning outcomes correlated with college involvement ring loudly in the reflections of participants about their extra-curricular activities at EU.

Participants believe that fortifying relationships with faculty and staff in engineering is a significant contributor to their success stories at EU. Recognition surfaces as an important issue for participants. When a professor knows a participant and respects him as a scholar, challenges that arise seem to be surmountable. In situations where strong connections with faculty do not exist, participants discuss the difficulties associated, therewith. Relationships with faculty lead to opportunities for academic enrichment, undergraduate research, supplemental instruction, and dialogue around concepts, content, and confusing subject matter within the curriculum. Participants draw distinction between the benefits of supportive faculty and unsupportive faculty on their experiences in engineering. Though their reactions to the stimuli differ person-to-person, participants

acknowledge racial identity as an issue with which they contend with faculty and other students in the college of engineering.

Participants accentuate the importance of an industrious work ethic in substantiating their success in engineering. They highlight the difficulty and load of the mathematics coursework, time demands accompanying the curriculum, and the deviation from a traditional four-year graduation plan as challenges for engineering undergraduates. Participants describe the difficulty of balancing the burdens of life with the stress of the engineering curriculum. Raising children, part-time employment, caring for their families, and constructing a social life while maintaining enrollment and academic standing requires hard work and a diligent commitment to succeeding. In each of their examples, participants credit their parents as setting the stage for the adaptation of their own effectual ethic concerning work.

### **Other Findings**

The study introduced some other findings that may have significant effects on the educational outcomes of African American male undergraduates in STEM-based academic programs. In the following segment, I share other findings that emerged through the conversations with the men in the study. Some of their insights were offered in addition to the questions that were asked in the interview; a number of meaningful morsels of information sprang from participants after audio recording for the interview had concluded.

A couple of the participants attribute their academic ethic and success with the strong and forceful parenting-style unique to their African American parents. Some scholars differentiate the parenting-styles of African Americans as a distinct phenomenon among

parents from other race groups (Edwards et al, 1999; Mandara, 2006; Reynolds, 2010; Tatum, 2000; Yan, 2000). Participants identify creative and forceful methods through which their parents encouraged their academic development and pushed them to work hard towards their goals. This interesting finding warrants a more lengthy discussion and further investigation in future research.

A common typecasting of engineers is that a love for mathematics is inherent with the profession. Some students from among the sample admit their aversion to mathematics. While the load and difficulty of mathematics courses presents a weighty burden for these students, they believe it presents a necessary means to an end for an engineer. Even participants who expressed an affinity for mathematics indicated that graduation would set them free from the burden of math courses. Participants contend that computer-based applications and other forms of technology will satisfy the required skills for the profession, much more than advanced-level mathematics. Another derivative from the data involves the stereotypes surrounding engineering careers. Participants share that their families, friends, and communities likely hold misunderstandings about the work that each will do as professional engineers. Instead of building bridges, designing infrastructures, and traveling the world, participants cite email, Microsoft Excel, and other at-the-desk activities as the primary responsibilities of engineers, based on their conceptions and pre-professional experiences.

Another interesting finding from the study is the impressive employability of these African American EU engineering graduates. Three of the five students in the sample graduated in December 2012. One graduate is a metallurgical engineer, and the other two graduates are civil engineers. Each of these three graduating seniors had been hired for

jobs in the field before the date of their graduation. The metallurgical received eight job offers and accepted a position with an international engineering firm in Seattle, WA. One of the civil engineers accepted a position with a company in Birmingham with which he had been employed as an intern. The other graduate was hired as the lead civil engineer for the city in his hometown.

I believe it important to note another thread tying the participants together. Each participant reports following a nonlinear path to graduation in his engineering program. One of the students shared that he had failed classes and never gave up. Another participant has taken semester breaks from school in order to save enough money to pay for tuition. Multiple participants speak to the value of their internships and off-campus, professional experiences, which helped confirm their commitment to engineering. The economic benefits of the engineering profession were identified as a factor in framing the decisions of the participants to pursue an engineering degree; however, in most cases, the participants stated that their motivations later changed as they progressed through their curricular and co-curricular experiences.

Students in the sample were critical of the media's representation of African American men and the lifestyle of Black America. Participants frequently critiqued Black Entertainment Television (BET) for contributing to negative stereotypes through the nature of the network's programming. Participants feel strongly that media exacerbates extreme caricatures of African American culture. Some participants acknowledge the entertainment value of exploiting cultural extremes and admit their own indulgences in popular television programs that may contribute to stigmatization of black culture. Participants fault the radical representations of African Americans through reality

television as the manufacturers of unrealistic models for young black males; the contemporary popularization of professional athletes, rap artists, and celebrity lifestyles paint quixotic portraits about opportunities, goals, and success. According to participants' analyses, the perceptions of white persons, as well as persons of color, are informed and misinformed by the misleading messages delivered by the media.

A participant with a GPA below a 3.0 indicated judgment and lack of caring by the institution. He felt that students who hold the highest grade point averages often receive the premier resources, attention from faculty, and opportunities for scholastic activity, such as research and professional conferences. This finding presents an interesting perspective, given the normative postulation that students with lower academic credentials need greater instructional and scholarly supports.

### **Critical Analysis**

In this section, I engage CRT as the framework for the study. I call upon the central tenets of CRT to challenge some of the participants' perspectives and to critically analyze the findings. Earlier in the review of the literature, I outline the six conceptual precepts upon which CRT stands. I revisit findings through the lens of CRT under each of the major tenets in the following section.

*Critical race theory recognizes that racism is endemic to American life (Matsuda et al, 1993).*

The stories suggest that participants operate at varying levels of consciousness of their racial identities. Though their conceptualizations of race manifest in different ways, racism is endemic to the experiences of these men. The theme of place resounds throughout the stories of the students in the study. In four of five cases, participants were raised in predominantly lower-income, African American communities. Timothy's

residential background presents the only exception to this place segregation by race; in his narrative, Timothy describes the racist mentality of his mother that prompted the family's relocation to a property that would allow him to be educated among predominantly white students. The violence in these low-income communities of color holds significant meaning for participants. Kevin outlines the drug trafficking and criminal activity in which some of his hometown friends are involved. Jordan identifies violence in his high school environment as highly disruptive to the teaching and learning process. Matt describes the severity of conditions related to poverty, crime and murder in his home community. While most of the participants wish to flee the areas in which they were born, Jordan is the sole student who plans to return and improve the environment for others. Rather than escaping the environment, CRT would address the systemic issues complicating and compounding the conditions within these communities; thusly, CRT would seek to change the structures that lend to de facto, racialized regionalism, which creates conflicts for the opportunities, advancement and economic development of persons of color.

Participants' beliefs about African American male identity are strongly influenced by the dominant discourse. Each of the participants exhibits specific ideas about black identity, which have been informed, impressed, or influenced by ideology. An example is John's insightful depiction of the three caricatures of African American men: 1) the athlete, 2) the intellectual, and 3) the thug. Another example of ideological influence on the ideas of these individuals is the call for professionalism among African American men posed by Matt and Timothy. Each of the participants defines a successful person as one who fits the socialized standard of the white male prototype. CRT challenges the belief that models for success are exclusively entwined with the capitalistic and meritocratic traits, which are characteristic

of whiteness (Crenshaw et al, 1995; Degaldo, 1989; Harris, 1993; Matsuda et al, 1993; Parker et al, 1999).

*Critical race theory expresses skepticism toward dominant legal claims of neutrality, objectivity, colorblindness and meritocracy (Matsuda et al, 1993).*

Among the common messages emerging from the stories of these students is the power of their personal abilities to help conquer obstacles in their lives. According to participants, they are responsible for their own decisions, defeats, and direction. Kevin is the only one of the participants who staunchly indicates that race and racism have affected his opportunities and life experiences in a negative manner. CRT speaks against the idea of American individualism as the vehicle to success and holds racial discrimination responsible for social inequality (Crenshaw et al, 1995; Degaldo and Stefancic, 2000; Ladson-Billings and Tate, 1995; Lynn and Parker, 2004; Matsuda et al, 1993; Parker et al, 1999; Solorzano et al, 2000). Per CRT, the investment of persons of color in the philosophy of aggressive individualism and meritocracy is a consequence of hegemony – the process through which persons come to accept ideology as truth and engage in the conscious or subconscious endorsement of their own oppression (Brookfield, 2005; Crenshaw et al, 1995; Lynn and Parker, 2004). Participants' narratives support the CRT critique of colorblindness as a means of ensuring equality among all persons. According to CRT, colorblind policies and practices do not compensate for the effects of historical oppression over communities of color. Attending to the contemporary problems outside of the appropriate context and without a holistic analysis of past and present circumstances is not an effective means of eliminating oppression.

*Critical race theory challenges ahistoricism and insists on both a contextual and historical analysis of society. Aligned with this principle is the belief that racism is at the base of all inequality existing between groups of people, and that through various processes, hegemony perpetuates an ideology of inequality (Matsuda et al, 1993).*

Participants regard Expansion University as a significant institution in the Civil Rights movement of the 1960s. Their acknowledgement of the racialized climate at EU, as well as the context whereby they are presently able to access the institution, indicates an understanding of the historical and contemporary framework in which their experiences are situated. Participants express considerable pride in their identities as African American students at Expansion University. Through the lens of CRT and the philosophy of Althusser's ideological state apparatuses, I may attribute some of the negative academic and extracurricular experiences described by participants to institutional racism (Bell, 1988; Crenshaw et al, 1995; Althusser, 1971). Their difficulty in connecting with white professors, the denial of equitable academic enrichment opportunities, and the lack of resources afforded to student organizations of color may all exhibit evidence of institutional racism, which has persisted throughout the fifty years following the formal integration of the university.

*Critical race theory insists on recognizing the experiential knowledge of people of color and using the voices of oppressed groups to analyze social conditions (Matsuda et al, 1993).*

This tenet of CRT provides the guiding impetus for this study. The plurality of the existing literature on African American males in higher education focuses on negative outcomes and failure. CRT contends that the hidden curriculum prohibits equitable educational opportunities for students of color (Crenshaw et al, 1995; Ladson-Billings and



Tate, 1995; McClaren and Munoz, 2000; McClaren and Kincheloe, 2007; Solorzano and Yosso, 2002; Tatum, 1997). Among the findings in this study is the strong commitment of participants to their particular engineering curriculum. CRT calls for the dismantling of the discourse disseminated through schools and for the recreation of programs that counter the master-narrative (Degaldo Bernal, 2002; Crenshaw et al, 1995). By applying the voices of participants as the narrators of their academic success experiences in engineering at EU, I have been able to empower the participants in the study as the individual architects of a new, socio-anthropological epistemology. Analyzing the social phenomena of participants through the scope their personal narratives is effective towards establishing a testament of their lived experiences (Baszille, 2008; Harper, 2009).

*Critical race theory is interdisciplinary in its approach to oppression analysis (Matsuda et al, 1993).*

CRT utilizes a variety of disciplines, methods, and approaches in analyzing oppression (Crenshaw et al, 1995; Parker et al, 1999; Yosso, 2005). Counter-storytelling is among the arms of inquiry for CRT scholarship (Degaldo Bernal, 2002; Harper, 2009). The retelling of stories of oppression is the process that deconstructs the power narrative. Given CRT's position on oppression, issues of inequality extend beyond the mere parameters of racial discrimination. Privilege and prejudice should be scrutinized through the scope of race and ethnicity, gender, ability, sexual orientation, and the like (Ladson-Billings and Tate, 1995; Solorzano et al, 2000). In analyzing the stories of the African American male participants in this study, I must be mindful of the compound variables of oppression involved in the structures influencing the experiences of these individuals.

Critical race theory is committed to social justice for all humankind and works toward the ultimate elimination of racial oppressions as part of the broader goal of ending all forms of oppression (Matsuda et al, 1993).

The overarching goal of this investigation of the experiences of African American male scholars in undergraduate engineering programs at this PWI has been centered upon bringing visibility to the academic success of men of color in STEM. The disproportionately low numbers of African American men in college preparatory programs, STEM curriculums, and STEM professions indicates academic oppression of this population (Elliot et al, 2005; Green et al, 2009; KewalRamani et al, 2007; Palmer et al, 2010; Washington, 2011). In order to expand STEM opportunities for men of color, CRT demands attention to the systemic factors complicating the progressions of students through the math and science pipeline in schools (Harper, 2009). A critical analysis and comprehensive reformation of present schooling practices is required in order to achieve equality in the STEM education of all students. The stories of success from the men of color in this study offer insights into the challenges that may obscure or obstruct the pathways to success for African American students in STEM.

### **Recommendations for Further Study**

The recommendations I present for future study are intended to inspire researchers interested in further expounding upon success literature on African American males in STEM education. This study illuminated important findings about the success of African American men in engineering academic programs at PWIs. Deeper investigation on the experiences of black men in STEM education is required in order to broaden the scope of understanding about this phenomenon. I believe future research is necessary in the

following areas: 1) Inspiring mathematics and science confidence in young African American males; 2) Connections between K-12 education and college preparedness; 3) How communities of color define success for their constituents; 4) How ideology influences the academic decisions and career choices of African American men; 5) The effects of black male stereotypes on the professionalism and employability of African American men.

### **Building STEM Confidence**

I don't know there's just something about math that makes so much sense to me because with math, these numbers will always equal these numbers. You can rearrange them. It seems like math is very rule based, like if you have this rule, then you can speculate on this rule. It kind of like filters into physics.

[John, mechanical engineering]

The literature confirms the impact of numeracy and mathematics confidence on the STEM performance of African American males (Frankenstein, 1990; Keck-Staley, 2010; Ladson-Billings, 1997; Martin, 2009; Smith and Hausfaus, 1998; Terry, 2010; Thernstrom and Thernstrom, 2004; Tyson et al, 2007). Each of the five participants expressed awareness of their strong capacities for science and math. In the Story of Constructs, I shared the findings about the development of mathematics identities among participants. Their narratives clearly designate the early identification of math competency as meaningful and significant to their subsequent educational experiences. By labeling these African American males as mathematically capable while they were in elementary school, their families, communities, and teachers gave them a credible chance to cultivate literacy in STEM (Ladson-Billings, 1997; Martin, 2009). Their early experiences inspired a confidence that encouraged participants to take risks, embrace challenges, and pursue enrichment opportunities in the fields of science, technology, and mathematics. Additional

research on the education of black children is required to help confirm the factors contributing to the development of math confidence.

### **Creating STEM Connections in K-12**

But then I came to a program called SITE. It was an introduction to engineering, and we went through every discipline of engineering here. And when we got to metallurgical engineering (MTE), I saw where they did a little more hands-on stuff. I'm a hands-on guy. I like to do stuff. And I liked the professors. It was a small group. It was a small major. I did research on it. There's was 100% job placement. It was more one-on-one time with professors. And I just stuck with it. I liked it.

[Matt, metallurgical engineering]

The early exposure of students of color to STEM activities has been identified as important towards refining their strong numeracy and science skills (Elliot et al, 1995; Frankenstein, 1990; Green et al, 2009; Harper, 2010; Ladson-Billings, 1997; Martin, 2009; Palmer et al, 2010; Russell and Atwater, 2004; Smith and Haufaus, 1998; Terry, 2010; Tyson et al, 2011). Participants describe various curricular and co-curricular experiences in high school as highly effective towards informing their science and math knowledge. During their middle and high school years, participants enjoyed different involvement experiences, including engineering magnet programs, math and science clubs, and pre-college STEM enrichment programming. In the passage above, Matt discloses his experience at a pre-college program at Expansion University that is offered for students of color who show solid mathematics capacities and success potential in STEM. Through this program, Matt learned about the various departments within the college of engineering at EU. He discerned the differences between the disciplines of civil, mechanical, chemical, and metallurgical engineering. He engaged with college faculty, support staff, as well as other high school students of color who shared in his interest for STEM. As a result of this

enrichment experience, he was able to localize his interests and identify his major in metallurgical engineering before he ever applied to college. Matt believes strongly that the SITE program set him on a course for success in engineering. Additional investigative efforts are necessary in order to learn the full value of these college enrichment programs for African American males. Longitudinal studies of the alumnae of these enrichment programs may offer substantial evidence of their effectiveness in connecting K-12 students with college engineering curriculums.

### **Messages from Communities of Color**

It's like everybody always tells us what NOT to do. Don't fail. Don't mess up. Don't get a girl pregnant. Don't do drugs. Ya know. But it's like nobody is there telling us what to do – like how to be successful.

[John, mechanical engineering]

As the research outlines, communities of color communicate particular messages to their children and exchange various forms of social capital that hold specific relevancy to their localized culture (Baszille, 2008; Degaldo-Bernal, 2002; Delpit, 1995; Graham and Anderson, 2008; hooks, 2004; McClaren and Munoz, 2000; Solorzano et al, 2000; Tatum, 2000; Wagner, 2006; Yosso, 2005; Yan, 2000). Children of color internalize these messages, and carry them into their schools, through adolescence, and into adulthood (McClaren, 2003; Yosso, 2005). The dominant discourse has fortified an image of failure so deeply within the African American community that black men may struggle to visualize success (Connor, 2008; Whiting, 2009; Wiggan, 2008). Participants talked at-length about the messages they had received and perceived from their communities, the media, and their university. John described his impending graduation as a happy time, but one that introduced challenges and stress. Being taught what African American men should not do

over the course of his life, he had grown comfortable existing against the deficit. John had learned to classify success as not messing up, falling short, or dropping out (Harper, 2010; Whiting, 2006). Unfortunately, he had not been taught how to build a scaffold for success beyond surviving; this inability to envision future goals may effectually stifle the social, political and economic advancement of some African American men. In light of this issue, I propose that further research be initiated on the establishment of success identities among students of color.

### **Effects of Ideology on Academic and Career Choices**

I guess being African American is just pretty much like being expected to mess up. I guess that's what I see. When I grew up, being expected to mess up or be this certain person I guess....I guess, uh, it seems like when you're a black male—I guess I'll go with three categories. The black intellectual. Pretty much the thug. And I guess the athlete. It goes in one of those categories.

[John, civil engineering]

Further research is necessary on the effects of ideology on the academic decisions and career choices of African American male college students. The literature indicates that discrimination awareness has effects on the occupational choices of African American men (Hughes, 2011). The research on men of color in STEM points to a variety of social factors that discourage the enrollment of African American males in science and mathematics academic programs (Elliot et al, 1995; Green et al, 2009; Harper, 2010; Hawkins, 2011; Palmer et al, 2010; Russell and Atwater, 2004; Tyson et al, 2011; Washington, 2011). Among these deterrents for black males is the fear that the STEM curriculum is too difficult (Palmer et al, 2010). This attitude of self-defeat may indicate the effects of the ideology of whiteness on the psyche, as well as the academic and occupational decisions, of some African American males (Harper, 2009; Harris, 1993; Lipsitz, 2006; Rich, 2010; Whiting,

2009). Engineering and other science-based fields have been widely regarded as the domains of white males (Palmer et al, 2010; Washington, 2011). I recommend further investigation into the processes of academic and career decision-making among African American males, so that we may glean greater insight into this phenomenon. Learning more about the process through which African American male students determine their college major and career orientation may help educators fashion programs that build stronger STEM identities among these men. Consequently, enriched supports for informing their potential may lead to increased numbers of African American men in STEM professions.

### **Factors Promoting Professionalism and Employability**

Black men need to be more focus-driven. More professionalism. I mean aren't you in college to get a job. That's why you're in college. So this is the in-between step, for you getting a job. So I don't know if EU needs to teach it or parents need to teach it, or I don't know. But you need to have it before you graduate.

[Timothy, civil engineering]

Further investigation into the effects of black male stereotypes on professionalism and the employability of African American men may be significant towards opening economic opportunities for communities and families of color. The data on the socio-economic statuses of Americans positions African American families near the bottom of gross incomes and earnings across all racial groups (KewelRamani, 2007; Lipsitz, 2006; Thernstrom and Thernstrom, 2003). Four of five participants in this study identify as children of low-income parents and from predominantly minority communities. Their economically modest beginnings exude profound influence on their realities about race and social class standing. Participants emphasize the importance of professionalism as a means to enhancing social status among African American men. According to participants, African

American men in college should work towards establishing a discernible professionalism in their demeanor, language, and life choices in order to achieve optimal success. Participants regard professionalism as a characteristic of one's success identity and believe it to be an important sword against racist stereotypes (Harper, 2009). Intelligence, hard work, business attire, and time management are among the attributes aligned with participants' interpretation of professionalism. Further research into this issue is required in order to avoid inaccurate or inappropriate generalizations and to determine whether this subject is significant in the success of a broader population of African American males.

Important to note is that many of the findings may not be exclusively reserved for African American men in engineering. For instance, hands-on and applied learning methodologies may be the instructional preference for the majority of engineering undergraduates, despite gender, racial identification, GPA, or student classification. Another example of the potential universality of findings is related to the importance of supportive faculty, academic enrichment opportunities, and the value of co-curricular and pre-professional experiences. Though the stories presented in this dissertation reflect the experiences of African American men, some findings may be common among any students enrolled in undergraduate engineering programs.

### **Conclusion: Summarizing Their Stories**

I saw the engineering salaries, and they make pretty good money. As a kid, my first thing was a doctor or a lawyer. I really didn't like to read that much, and I hated to write. So, as the years went by, I kind of found a reason to go into STEM, instead of just the money on a piece of paper. So I realized that I liked helping people. And I figure if I can't help people through the conventional way of being a doctor, I'd like to help people by science. So I stuck with engineering...To help people the math and science way, instead of medicine.

[Math, metallurgical engineering]



This aim of this study was to acquire greater insight into the lived experiences of a group of African American male scholars in engineering at a PWI. Through my investigative efforts, I have gained a healthier understanding of the realities of these black male engineering students at Expansion University. The narratives of these men confirm the totality of life experiences in determining one's interests, talents, and goals. These men relate a great deal of their present success in STEM to the characters comprising their early education. Parents and family members, teachers, and peers have all played important roles confirming confidence in their capacities for math and science.

It feels great to hear that my community is behind me and behind the fact that I am succeeding in my representation of them. This means more than words. For me, it's not even about getting a job.

[Kevin, civil engineering]

The academic achievement of participants is not for their exclusive benefit; graduating with a degree in engineering is the ultimate return on the investment that their families, friends, and communities have committed in their success throughout their lives. Against any circumstance, participants face their challenges with courageous confidence, dedicated determination, and hard work.

It's like you have to take what your university is and take it head on.... You take your university for what it is. Take your curriculum for what it is. You take your program for what it is. And you take it head on. You get it done, you know. It's kind of hard to say. To change your university, it's much easier to change your thought process.

[Jordan, civil engineering]

The strategies employed by the scholars in this study center largely upon networking with fellow students of color, white students, and the professoriate in the college of engineering. Participants illustrate impressive adaptability, as is characteristic of

African American students attending colleges and universities serving predominantly white undergraduates (Cuyjet, 2006; Douglas, 1998; Harper and Wolley, 2002; Kimbrough et al, 1996; Love, 1993; Rovai et al, 2005; Smith et al, 2007; Tinto, 2008). Race and racism have been endemic to their life experiences and have informed their identities as African Americans, men, and scholars. All participants acknowledges the existence of racism on campus; but as evidence of the heterogeneity among men of color, participants share distinctly different perspectives regarding the impact of racism on their personal experiences. Participants indicate that the racial lines dividing students at EU exists within the black community, as it does across the white population.

I do take pride in being an African-American man. It's just... It's just what I am. I don't know anything else. My fight to become all that I am is one to be an African-American man.

[Jordan, civil engineering]

These students are serious about their image, scholarship, and success. As the case with the majority of students, these men encounter challenges inside and outside of the classroom that complicate their experiences. They are successful in school because of their commitment to become successful in their social worlds. Obstacles are overcome through hard work, adaptive behavior, and faith in the powerful potential of the self to conquer any trial that arises. The participants demonstrate collaborative spirits, yet each holds fast to individual responsibility as the supreme determinant for his actions, outcomes, and achievements. Service to others is a strong seam stringing throughout their stories. Participants are proud to be African American men and proud to be academically successful African American students in a very challenging engineering curriculum.

It means a lot to me. People say, "If you could pick any other race, what would it be?" But I would probably still choose to be a black man. I know my

ancestry went through a lot to be able to put me in the position that I am now. I'm proud of that. I've had opportunities that weren't available, even my parents didn't have. They went through a lot more things than I probably even realized when I was younger. They dealt with a lot of things. I deal with a little bit, but it's not even comparable.

[Timothy, civil engineering]

Diversity among the experiences of African American males in the same engineering program further confirms the inability of academicians and scholars to develop blanket categorizations for men of color. Individuality afforded through counter-storytelling allows the distinctness of each participant's experience to be shared. Though commonalities exist, each story offers unique insights into a broader scope of student success in STEM education at a PWI.

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