

Predicting Academic Achievement of Male College Students

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### Abstract

Post-secondary academic achievement in the United States has shifted dramatically over the past 30 years in terms of gender; men are underrepresented within the ivory tower (Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003 , 2005). When the intersection of race and gender is examined, enrollment gaps widen even further. Sixty-five percent of Black college enrollment is comprised of female students while Black men make up only 35%. In comparison, Asian college women outnumber Asian college men 54% to 46%, White women outnumber White men 56% to 44%, and Hispanic/Latina women outnumber Hispanic/Latino men 59% to 41% (*Chronicle of Higher Education Almanac*, 2009). College enrollment patterns are inextricably linked to academic success (i.e., GPA, degree attainment). Currently, more opportunities are available for African Americans and Hispanics to attend college than ever before; however, GPA and the rate of attainment of a Bachelor of Arts degree are significantly lower for African American and Hispanic men when compared to other ethnic/gender combinations (Carter, 2001; Perna, 2000; Porter, 2006; Strayhorn, 2006).

The purpose of this study was to determine what factors predict post-secondary education academic success of male students. Academic success was defined as college GPA and degree attainment. I employed a modified version of the Bandura, et al. (1996) theoretical model that identified four factors that influence self efficacy, hence academic success: SES, familial, peer, and self. In my study, I used SES as a control variable and also controlled for high school preparation, two factors that prior research has revealed influence college GPA and degree attainment (Clark, Lee, Goodman, & Yacco, 2008; Perna, 2000).

The findings suggest that race and select parental and peer factors can have both negative and positive effects on the academic achievement and persistence of male students in college. One parental and one peer factor were significantly positively associated with success. The remaining factors were significantly, but negatively associated with academic success.

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## Chapter One

### Introduction

Post-secondary academic achievement in the United States has shifted dramatically during the past 30 years in terms of gender. In 1974, the National Center for Education Statistics (NCES) reported that 38% of traditional aged (18-24 year old) men participated in higher education compared to 33% of traditional age women. By 2003, 51% of traditional age (18-24 year old) women were enrolled in college while only 41% traditional age men were pursuing a college degree (Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003, 2005). Currently, 57.4% of the 17,487,500 students in college are women while 42.5% are men (*Chronicle of Higher Education Almanac*, 2009). The number of women is expected to swell to 58% of the total college enrollment by 2014 (Adebayo, 2008; Blackhurst & Auger, 2008).

Such a gap has left men underrepresented within the ivory tower (Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003, 2005). Men are not alone, however; students of color regardless of gender are also underserved. Whites are the majority population in the country (75.1%) as well as within the college ranks, representing 65.7% of all college students. While Hispanics/Latinos are the second most populous racial group in America (12.5%) they lag behind Blacks when considering college student enrollment. Hispanics/Latinos comprise 10.8% of college students while Blacks make up 12.3% of the national population and 12.7% of college enrollments. Indeed, the only racial group overrepresented in postsecondary education is Asians who account for 4.2% of the population and 6.5% of college student enrollment (*Chronicle of Higher Education Almanac*, 2009; U.S. Census Bureau, 2000).

When the intersection of race and gender is examined, enrollment gaps widen even further. The gender split in the enrollment of Black students is higher than gender differences within all other races/ethnicities. Sixty-five percent of Black college enrollment is comprised of female students while Black men make up only 35%. In comparison, Asian college women outnumber Asian college men 54% to 46%, White women outnumber White men 56% to 44%, and Hispanic/Latina women outnumber Hispanic/Latino men 59% to 41%. Hispanic/Latino men are the only group not to experience increased enrollment growth between 1974 and 2003 (*Chronicle of Higher Education Almanac*, 2009; Clark, et al., 2008; Cuyjet, 2006; Ehrmann, 2007; Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003, 2005). While

numerically there are more Whites enrolled in college than any other racial group, the gender gap between White students is not measurably different than the gender gap between Black and Hispanic students. That is, White women outpace White men in college by more than a 10% (*Chronicle of Higher Education Almanac*, 2009; Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003, 2005).

College enrollment patterns are inextricably linked to academic success. For purposes of this study, academic success was defined as academic achievement (college GPA) and persistence (time to degree). Currently, more opportunities are available for Blacks and Hispanics to attend college than ever before. However, the rate of attainment of a Bachelor of Arts (BA) degree is significantly lower for Black and Hispanic men when compared to other racial/gender combinations (Carter, 2001; Perna, 2000; Porter, 2006; Strayhorn, 2006).

#### Academic Success Among College Men

College degree attainment is affected by many factors. Three of these – race, SES, and academic preparation in high school (i.e., SAT/ACT score, high school GPA) have been widely studied (Blackhurst & Auger, 2008; Clark, et al., 2008; Goldstein, 2007; Jacob, 2002; Noguera, 2008; Porter, 2006; Smith & Fleming, 2006; Tracey & Sedlacek, 1987; Weil, 2008). For instance, there is a significant negative link between a student's racial background and cumulative GPA (Ehrmann, 2007; Strayhorn, 2006). Societal restraints, institutionalized prejudice and racism have led to a situation where Blacks and Latinos are more likely to live in poverty and receive substandard education opportunities (Smith & Fleming, 2006). Such situations can result in underachievement in the classroom and lead to higher education being devalued in the eyes of ethnic minorities (Slater, 1994; Smith & Fleming, 2006). Ironically, with all the issues that deter students of color, they report caring about schooling and aspire to succeed academically (Noguera, 2008; Valdez, 2008).

Aspirations aside, Latino/Hispanic students face problems with academic achievement for different reasons than Black and White students. Issues such as difficulty with the English language, or immigrant parents who may not be familiar with the educational system can set Hispanic males back in school (Cabrera & Padilla, 2004). These challenges are exacerbated by a lack of resources to combat them (Valdez, 2008). A difference in values also helps explain the achievement gap among Hispanic men. While the values of Americans tend to revolve around

individualism, competitiveness, and self reliance, first generation or immigrant Latino students tend to have values that align with a familial or communal perspective (Valdez, 2008). This can cause conflict when a Latino student is torn between expectations at school and advancing through higher education versus taking a job and maintaining a connection to or providing for his family (Valdez, 2008).

Similar social issues affect Black males. Forty percent of Black students attend K-12 schools that boast Black enrollments ranging between 90% and 100%. Spending one's formative years in a racially isolated community can leave students of color at a social and psychological disadvantage. Such a situation can leave them unprepared to adjust to a diverse university campus, which can negatively affect academic motivation and as a result academic success (Ehrmann, 2007; Goldstein, 2007; Whitaker, 1991).

Historical and social factors specific to Black male students provide other insights into gaps in academic achievement. Black men, who achieve at lower rates than all other racial groups, encounter more incidents of discrimination and stereotyping than other ethnic men (Noguera, 2008; Strayhorn, 2006). They also report lower self confidence and earn lower grades than Black women while in high school (Allen, 1992). Learning under such circumstances can lead to a greater number of incidents of inappropriate classroom behavior as well as academic underachievement. This directly influences the dearth of Black men on the college track in high school (Noguera, 2008; Smith & Fleming, 2006). Even coming from a family with a high SES does not improve the academic achievement chances of Black men (Noguera, 2008).

When it comes to college, Black students earn lower grades at predominantly White institutions (PWIs) of higher education than they earned in high school (Allen, 1992). First semester college grades for White students can be predicted by SAT score and positive self concept, and persistence toward degree is in turn predicted by grades earned during the first semester. However, that is not the case for Black students. SAT score proves to be the best predictor of first semester grades for Blacks, but first semester grades do not correlate with persistence toward degree. This suggests that Black students and men specifically, are not leaving school because of an inability to be successful intellectually (Tracey & Sedlacek, 1987). In fact, only 15% of attrition for Black students is a result of being dismissed by the university because of academic failure (Fries-Britt & Turner, 2002).

There are, however, factors beyond SES and academic preparation in high school that influence success in college. Some of these are non-cognitive in nature, including setting long-term goals and leadership experience (Sedlacek & Brooks, 1976; Tracey & Sedlacek, 1987). Three non-cognitive factors that influence success in college are most pertinent to my study: parental factors, self-efficacy, and peers.

#### *Parental (Familial) Factors*

Parents influence student academic success (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). They are considered to be the most important predictors of their child's educational aspirations (Conklin & Dailey, 1981; Hossler, Schmit, & Vesper, 1999; Hossler & Stage, 1992; McCarron & Inkelas, 2006; Stage & Hossler, 1989; Tierney & Auerbach, 2005). Parental efficacy refers to actions and involvement by parents that affect the self efficacy and aspirations of the child. When parental efficacy and engagement is low, students do not aspire to attend college (Bandura, et al., 1996; Hossler, et al., 1999; Sewell & Shah, 1968). Parental efficacy and engagement improves student academic efficacy and is essential to student academic achievement (Bandura, et al., 1996; Okagaki & Frensch, 1998; Stewart, 2008; Tierney & Auerbach, 2005). Higher levels of parental efficacy encourage higher levels of academic achievement for students as well as promote self-efficacy within students. Students who are reared in families with high levels of parental efficacy tend to be more disciplined, less likely to succumb to peer pressure, and less likely to become involved in delinquency (Bandura, et al., 1996).

Parental efficacy is closely related to parental encouragement, parental involvement, and parental support (Cabrera & La Nasa, 2001; Hossler, et al., 1999; Stewart, 2008). Parental encouragement is the amount of time parent and student discuss parental expectations and hopes. It includes, but is not limited to, such activities as parents saving for their child's education, taking the child on college tours, and enhancing personal knowledge regarding the college application process (Cabrera & La Nasa, 2001; Hossler, et al., 1999). Parental involvement consists of attending teacher conferences and school open houses. Interpersonal contact with both the teacher and the student provides parents with a measure of the child's progress and further allows parents to stress the importance they place on academic achievement (Hossler, et al., 1999; McCarron & Inkelas, 2006; Smith & Fleming, 2006; Stewart, 2008; Tierney &

Auerbach, 2005). Parental support can be exhibited in a myriad of ways. Although one way is to attend school events, work situations sometimes prevent parents of low SES (oftentimes people of color) from doing so (Hossler, et al., 1999; McCarron & Inkelas, 2006; Smith & Fleming, 2006; Tierney & Auerbach, 2005). Exacerbating the problem is schools' tendency to devalue the parental resources provided by families with low SES. The defining standard of parental engagement and involvement has been set by privileged families and that stereotype has been perpetuated by the school system (Auerbach, 2007).

Parents within racial minority groups and of low SES are less likely to form a relationship with their children's school than White parents. Three reasons tend to preclude parents of color from forging a strong relationship; a historical distrust of majority institutions, prior experience with discrimination, and/or potential language barriers (Tierney & Auerbach, 2005). Parental involvement and relationships with school officials increase the probability of enrollment in college for White students, but not Black or Hispanic/Latino students. While parents of color may harbor distrust toward the school and may not be able to offer conventional support for their child, some parents offer alternative parental support to their children verbally and through financial sacrifice (Cabrera & Padilla, 2004; Tierney & Auerbach, 2005). More attention needs to be paid to racial differences among parents (Perna, 2000).

For male students, parental involvement is positively related to academic achievement in elementary school and grades in high school. This leaves students from racial minority groups and low SES at a disadvantage because their parents are less likely to be involved with the school (Astin, 1982; Fehrmann, Keith, & Reimers, 1987; Okagaki & Frensch, 1998; Tierney & Auerbach, 2005). Parental efficacy has an indirect influence on a student's success because when parents reveal high expectations for their child to teachers it can have a positive effect on the teacher's expectations of the student as well as prevent the child from being placed in academic tracks that do not reflect his/her abilities (Bandura et al., 1996).

Parents also influence educational aspirations. Ninth grade students who engage in conversations with parents about educational aspirations are more likely to plan to enroll in college upon high school graduation (Hossler et al., 1999). High parental efficacy has been proven to be beneficial regardless of ethnic background, SES or familial structures. (Bandura et

al., 1996; McCarron & Inkelas, 2006; Tierney & Auerbach, 2005). In particular, parental encouragement is a key factor in predicting college enrollment (Hossler, et al., 1999).

Another parental factor that has a direct impact on student's academic achievement and aspirations is the educational level attained by the parent. The higher the parental educational level, the more likely a student is to attend college (Hossler, et al., 1999; Hossler & Stage, 1992; Smith & Fleming, 2006).

Parental influence leads to action. Ninth graders who often talk with parents about college aspirations enroll in college at a rate higher than their counterparts who do not have such discussions. Conversing with a child about college promotes parental encouragement that aligns the child's aspirations with those of the parents. Parental messages, both verbal and nonverbal, communicate to the child the parents' expectations and values regarding the importance of education (Hossler, et al., 1999; McCarron & Inkelas, 2006; Smith & Fleming, 2006).

Parents should be considered instrumental in any academic achievement attained by a student (Bandura et al., 1996; Stewart, 2008). Parental engagement assists with the transmittal to children of educational goals and values about quality of education, and can also positively affect academic success (Bandura et al., 1996; Hossler et al., 1999; Smith & Fleming, 2006). Although parental engagement and efficacy can never take the place of academic achievement and solid college counseling for a child, parental engagement and efficacy have the power to increase the potential for students' academic success (Bandura et al., 1996; Hossler et al., 1999; Smith & Fleming, 2006; Tierney & Auerbach, 2005)

### *Self-Efficacy*

Parental efficacy is not the only form of efficacy that can affect academic success. A student's self-efficacy is also important. People believe they have the ability and power to exert a great deal of control on the events that influence their lives (Bandura, 1986; 1997; Mills, Pajares, & Herron, 2007; Pajares, 1996; Schunk & Zimmerman, 2007). This attempt to assert self control leads to the concept of self-efficacy. Self-efficacy, for purposes of this study, is a term that describes the level of belief and confidence students hold in their ability to effectively complete a task or accomplish a goal (Bandura, 1986; 1997; DeWitz & Walsh, 2002; Mills, et al., 2007; Pajares, 1996; Salomone, 2003; Schunk & Zimmerman, 2007). Efficacy reflects how a person feels, thinks, and behaves (Bandura, 1986; 1993; Schunk & Zimmerman, 2007).

Perceived self-efficacy is an important concept to consider in the realm of education because it provides clues into the sense students have regarding their academic abilities. Students' well being is improved when they have a method to calculate the skill and ability guiding their actions. This is especially important since actions generally decide life outcomes (Bandura, 1986; 1997). Perceived self-efficacy differs depending on whether the task is simple or complex, whether the task makes use of isolated skills or an array of them, and finally how much perseverance will be required to master the difficulties presented by the task (Bandura, 1986; 1997).

Judging perceived efficacy is difficult when a task is ambiguous because students cannot self-assess their performance and are forced to rely on peers and outsiders to determine their success or failure (Bandura, 1986; 1997). Routinely performing tasks to the level where thought is not given to the task at hand can lead to complacency and students who complete tasks without considering their personal abilities that can lead to distortions in their self-efficacy (Bandura, 1986; 1997). Work is needed to improve the accuracy of students' perceived self-efficacy. Students need to accurately rate their abilities and skills so that they can be more effective when attempting to complete tasks and accomplish goals. The catch is that this has to be accomplished without sacrificing the confidence or optimism of the student in the process (Bandura, 1986; Pajares, 1996).

Students set higher goals and are more committed to achieving those goals when they exhibit high levels of self-efficacy (Bandura, 1993). When presented with tasks or goals, students' self-efficacy level depends upon their personal feelings about completing the task, their persistence level and how well they have performed on similar tasks in the past (DeWitz & Walsh, 2002). A student with high self-efficacy envisions success while low self-efficacy provides a vision of failure and possible roadblocks besetting success. Such an outlook causes difficulty in achieving success because students are wasting energy battling self doubt (Bandura, 1997). Ability and skill are not static characteristics or qualities bestowed upon a select few at birth. While both are necessary to succeed, it is more important that students possess a healthy sense of self-efficacy and belief in their abilities and skills to feel confident in using them in the classroom (Bandura, 1986; 1993). While skills can enhance self efficacy they should not be misconstrued as a reflection of a student's self-efficacy (Bandura, 1986; 1993; Pajares, 2003).

Students cannot achieve beyond their realm of capabilities simply through believing they can (Pajares, 1996).

In general, if students believe their abilities and skills are inferior to what will be needed to successfully complete a task or thrive within a situation, they will avoid the challenge. However people who have an inflated sense of their abilities and skills tend to take on cumbersome tasks and eventually suffer from unnecessary failure and lower credibility among peers (Bandura, 1986; 1997; Mills, et al., 2007; Schunk & Zimmerman, 2007). Underestimation of abilities comes at a price of missing opportunities and constantly being steeped in self-doubt (Bandura, 1986; Pajares, 1996). Possessing a healthy perception of one's abilities fosters self development of skills and opens the mind to opportunities and choices that are within the realm of accomplishment with regard to actions and future goals (Bandura, 1986). Inaccurately assessing one's efficacy can stunt development of key skills that are used as building blocks for future development, which undoubtedly lessens future chances at success (Bandura, 1986). Indeed, self-efficacy is believed to be a better predictor of academic achievement than actual ability (Bandura, 1997; Mills, et al., 2007)

A main objective of education should be to provide students with tools, self-beliefs and self-regulatory abilities to self educate throughout the course of their lives. Schools should provide the knowledge while allowing students to independently develop necessary skills. Research has shown a significant positive link between self-efficacy, students' choice, achievement, and the academic aspirations of students (Bandura, 1997; Bandura, et al., 1996; DeWitz & Walsh, 2002). Students with high self-efficacy in particular disciplines or subjects tend to have higher expectations for achievement and meet those goals better than students with low self-efficacy (DeWitz & Walsh, 2002). Students glean information about their academic abilities through grading, teacher evaluations, and comparisons to their classmates' achievement (Bandura, 1993). Furthermore, students with a positive academic self-efficacy are more social and more accepted by peers than those with low levels of academic efficacy. Students with low functioning social and academic efficacy are more likely to seek out friends that are not in tune with academic success (Bandura, 1993).

Students at times find themselves in environments or situations where failing can drastically affect life chances. In those instances, it is imperative that they possess a strong sense



of self-efficacy in order to succeed (Bandura, 1993). The control within an environment generally stems from the students' beliefs about what can be accomplished under the current environmental state. External factors such as financial resources and physical and social restraints can inhibit skills of students as well (Bandura, 1986). The control that students have over their environment can heavily affect their belief in their efficacy. Students feel they have control of their environment when the strength of their self-efficacy can cause change within the environment through effort, perseverance, and intelligent use of resources. Students also feel more in control when the environment can be modified to supply options and assist in strengthening self-efficacy (Bandura, 1986; 1993). The environment most effective at building positive self-efficacy that will influence academic achievement is one that does not focus on competitive comparisons but emphasizes a personal assessment of progress throughout the year (Bandura, 1993).

### *Peers*

Peers are a significant factor in students' academic achievement and persistence (Astin, 1993; Pascarella & Terenzini, 2005). Astin (1993) argued that the peers provide the greatest influence on the development of an undergraduate student. When studied in concert with parental influence, peer influence has been shown to have more impact than faculty influence on persistence of a student (Bank, Slavings, & Biddle, 1990; Pascarella & Terenzini, 2005). Positive self-efficacy contributes to the academic success of a student, but also affects peer acceptance and interaction which can in turn affect academic achievement. Students with low levels of confidence in their intellect tend to socialize with students that place a low value on academics. Feeling accepted by peers, social efficacy, directly affects the level of comfort a student feels within the school environment. A high comfort level with school allows students the luxury of focusing on learning rather than distractions caused by peer conflict and rejection (Bandura, 1993; Bandura, et al., 1996).

Rejection by peers can lead students toward unproductive behaviors in the classroom that negatively affect academic achievement. Students must navigate through situations where some peers reject all things academic and other peers value the importance of education. This can have an unsteady effect on social efficacy (Bandura, et al., 1996). Socializing with peers who have college plans is a strong predictor of college enrollment. Even high risk students, such as racial

minorities and students from low SES who socialize with peers who plan to attend college are four times more likely to attend college than students in the same situation but whose friends are not planning to attend college (Choy, Horn, Nunez, & Chen, 2000).

Peer influence can be both psychological (individual) and sociological (group). The psychological influence refers to a student seeking to form an identity through affiliation with those who share similar beliefs. A sociological peer influence suggests that the group has the power to determine who attains membership, and once within that group personal decisions can be influenced by a need to conform to group norms and values rather than those of the individual that may conflict (Astin, 1993; Pascarella & Terenzini, 2005). Peer groups tend to promote homogeneity and discourage heterogeneity (Astin & Panos, 1969).

Peer influence also expands beyond the walls of the classroom. The influence exerted by peers can positively affect the development of academic skills (Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999; Whit, Edison, Pascarella, Nora, & Terenzini, 1999). All interactions and influences by peers do not have positive outcomes, however. As mentioned previously, peers not focused on academic success can prove to be a detriment to the achievement and persistence of a student (Pascarella & Terenzini, 2005).

#### Theoretical Framework

My study employs a model of self-efficacy developed by Bandura et al. (1996). That model addresses academic success and points to efficacy of parents (family), students (self), peers (social), and SES as predictors of academic achievement. Efficacy for both parents, students positively affects students' persistence, career goals, and academic achievement. The positive effects of efficacy cannot solely push a student to succeed; rather efficacy beliefs must operate in conjunction with social variables such as peer interactions and SES of the family (Bandura, 1993; Bandura, et al., 1996).

The variables within the model all influence one another. A family's SES affects a student's achievement and attainment through the negative effect that low SES has on parental efficacy and ability to promote academic achievement to their child (Bandura, et al., 1996). Low SES can shake the confidence parents have in protecting their children from societal hazards that can stunt their students' academic development. The higher the SES of a family the higher the academic aspirations parents have for the child (Bandura, et al., 1996). High levels of parental

efficacy assist with the construction of a strong sense of efficacy and academic aspiration within the child (Bandura, et al., 1996).

#### Statement of the Problem

There is a discrepancy between the enrollment of men and women in college. Men enroll at much lower rates than women (*Chronicle of Higher Education Almanac*, 2009; Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003, 2005). The gender gap in enrollment is widened when race is taken into account. Black and Hispanic men enroll in higher education at lower rates than their female counterparts (*Chronicle of Higher Education Almanac*, 2009; Clark, et al., 2008; Cuyjet, 2006; Ehrmann, 2007; Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003, 2005). Academic achievement is also much lower for male college students of color when compared to their White counterparts (Carter, 2001; Perna, 2000; Porter, 2006; Strayhorn, 2006).

Many factors that influence academic achievement have been widely cited in research, including race/ethnicity, SES, and high school academic preparation. However three factors that have not been widely researched include parental (familial) factors, student (self) aspiration factors, and social (peer) efficacy (Bandura, et al., 1996; Clark, et al., 2008; Perna, 2000). Parental influence can positively affect academic achievement of students. Indeed, parents are the most important predictor of a child's academic aspirations (Bandura, et al., 1996; Conklin & Dailey, 1981; Hossler, et al., 1999; Hossler & Stage, 1992; McCarron & Inkelas, 2006; Stage & Hossler, 1989; Tierney & Auerbach, 2005). Parental efficacy can promote academic achievement as well as self-efficacy of students (Bandura, et al., 1996). Self-efficacy describes the amount of confidence students have in their ability (Bandura, 1986; 1997; DeWitz & Walsh, 2002; Mills, et al., 2007; Pajares, 1996; Salomone, 2003; Schunk & Zimmerman, 2007). When students possess high levels of efficacy they tend to set higher goals and are more committed to achieve those goals (Bandura, 1993). Peers play a vital role in the academic achievement and persistence of students (Astin, 1993; Pascarella & Terenzini, 2005). Research suggests that peer and parental influence can have more impact on persistence than faculty influence (Bank, et al., 1990). Peer influence affects students both psychologically (individual) and sociologically (group) (Astin, 1993; Pascarella & Terenzini, 2005). When able to focus on academics rather

than peer rejection and conflict, students have a higher probability of succeeding academically (Bandura, 1993; Bandura, et al., 1996).

Bandura et al. (1996) developed a model that addresses academic achievement and points to efficacy of parents, the student, peers, and SES as predictors of academic achievement. Research has studied the effect of SES (Noguera, 2008; Smith & Fleming, 2006), academic ability (Blackhurst & Auger, 2008; Clark, et al., 2008; Goldstein, 2007; Jacob, 2002; Porter, 2006; Tracey & Sedlacek, 1987; Weil, 2008), parent (familial) factors (Conklin & Dailey, 1981; Hossler, et al., 1999; Hossler & Stage, 1992; McCarron & Inkelas, 2006; Stage & Hossler, 1989; Tierney & Auerbach, 2005), student (self) aspiration factors (Bandura, 1986; DeWitz & Walsh, 2002; Pajares, 2003; Schunk & Zimmerman, 2007), social (peer) efficacy (Astin, 1993; Bank, et al., 1990; Pascarella & Terenzini, 2005), and race (Blackhurst & Auger, 2008; Carter, 2001; Fleming, 1984; Gewertz, 2007; Perna, 2000; Porter, 2006; Stinson, 2008; Strayhorn, 2006) on academic achievement in isolation. Research on the intersection of these factors in regards to academic achievement is more limited, however. My study addresses this gap in the literature by examining whether parental involvement, self efficacy, and social efficacies predict academic achievement of male college students after controlling for SES and high school preparation.

#### Purpose Statement

The purpose of this study was to determine what factors predict academic success of male college students. Academic success was defined as academic achievement (GPA) and persistence (time to degree). This study also aimed to examine whether there is a relationship between race and the factors used to predict academic achievement and persistence.

I employed the Bandura, et al. (1996) theoretical model. The authors used four variables that influence self efficacy: SES, familial, peer, and self. For purposes of this study I controlled for SES since that is known to influence both GPA and persistence (1996). I also controlled for academic ability (high school preparation), another factor that prior research has revealed influences college GPA and persistence (Clark, et al., 2008; Perna, 2000). Family, peer, self, and race were the independent variables in the study.

The sample included Black, White, and Hispanic/Latino males who self identified on the National Longitudinal Survey of Freshmen (NLSF) (NLSF, 2008). The NLSF sample contained

3,924 participants who were first year resident alien freshmen at highly selective institutions of higher education (NLSF, 2008). Respondents were surveyed in a succession of waves.

Regression analysis was employed to determine which factors best predict academic achievement and persistence to degree.

### Research Questions

The study was guided by the following research questions:

1. After controlling for SES and academic ability, do parental, student, peer, and/or race factors predict academic achievement (final GPA) of male college students?
2. After controlling for SES and academic ability, do parental, student, peer, and/or race factors influence persistence (time to degree) of male college students?

### Significance of the Study

This study was significant for future practice, research, and policy. For future practice, program evaluators and high-school counselors may be well served by the results of the study. For instance, the results could be used to assess current high school programs geared toward male academic achievement. By better understanding the role of parents, self, and peers in academic achievement and persistence, high school staff could assess whether current programs and services are relevant.

Parents of male students might also benefit from the results of the study. The data might reveal how certain parental activities either positively or negatively affect academic achievement and persistence. The results might be used to inform parents of particular parenting strategies that could be practiced or eliminated to improve a son's academic success.

Lastly, the results of this study could inform programs and services offered to males in institutions of post-secondary education as well as high schools. There has been a steady decline in enrollment of male students in college and programs have attempted to address this situation. The results of my study could be used to create new programs, or strengthen, or alter the focus of existing programs designed to promote college success among men.

The current study also laid the groundwork for future research. I conducted an analysis of three races. In the future a researcher could focus on one ethnicity to determine potential differences and commonalities within a single racial group. For example, a researcher could study whether there is a difference in achievement among Hispanic/Latino males based on first

generation college student status, SES, English as a second language status, or number of generations the family has resided in the U.S.

A quantitative study using a national dataset was used for this study. A qualitative study on male academic achievement could be useful to study college persistence and achievement among men. A qualitative study could produce more in-depth and personal accounts and offer a glimpse into perspectives of men regarding their own academic success within the college setting. While such results may not be transferable across the population of college men, they would provide richer insight unattainable through quantitative study.

Finally, this study did not focus on institution type. A future study could explore the effect that institutional type (e.g. community, liberal arts, research) has on the academic success of men. A quantitative study that explored the influence of institutional type on academic success might identify more potential factors that could have an influence on the outcomes male college students achieve.

Lastly, the study was significant for future policy. The information provided through the study could inform the debate over single-sex education. Data about the factors that influence GPA and persistence to degree for college men might enable policy makers to determine whether single sex education at the K-12 level is merited and/or worthwhile.

This study could be significant for those developing secondary education policies regarding parental efficacy and involvement. The data from the study could provide state departments of education with information pertaining to how parental efficacy and involvement affects academic success of male students. Policymakers might use the results to assess policies that aim to promote parental efficacy strategies and/or incentives that reward parental involvement.

Finally, this study may be pertinent for postsecondary institutional academic support and advising policies. The results could provide information about factors that influence GPA and persistence among college men and inform policies designed to promote success for male students.

### Delimitations

There were three initial delimitations identified in regards to the present study. The first involved the data. The data in the study were self reported. It is possible that participants may not have been candid when answering questions. This could have skewed the results.

The second delimitation also dealt with the data. Since I employed an existing data set, I had no influence regarding the questions asked in the NLSF. I was limited to analyzing data contained in the dataset.

The final delimitation is that the variables may not have fully measured parental and self efficacy. Since I was limited to an existing dataset, I could not be sure whether the response options provided were sufficient enough to capture the sentiments of the participants.

Despite these delimitations, this study was important because considering factors that influence academic achievement among male students of differing ethnic backgrounds has not been thoroughly investigated in the literature. I also examined the effects of parental, self, and peer efficacy on GPA and persistence by ethnic background, another area unexplored by prior researchers.

### Organization of the Study

This study is organized around in six chapters. Chapter One included a statement of the problem, the purpose, and the significance of the study. Chapter Two contains a review of the literature regarding post-secondary academic achievement among male students. Chapter Three presents the methodology of the study. Chapter Four provides a brief overview of the full results of the study. The most compelling results were used to generate two manuscripts for refereed publications. These two manuscripts comprise the final two chapters of the study.

## Chapter Two

### Literature

I have elected to adopt an alternative approach in my dissertation. In lieu of writing a traditional fourth chapter on Results and fifth chapter on Discussion and Implications, I plan to use the results of my data analysis to craft two manuscripts suitable for submission to refereed journals. Each manuscript involves a relevant literature review. Consequently, I am not including a traditional review of the literature in this chapter. Rather, this chapter consists of an annotated bibliography organized around the bodies of work associated with the variables in my study.

In the first section, I describe literature associated with my control variables; SES and previous academic ability. The second section contains a listing of literature pertaining to my independent variables; parental (familial) factors, student (self) factors, social (peer) gender, and race. The final section of the annotated bibliography provides literature with my dependent variables; academic achievement (GPA) and academic persistence (time to degree).

### Control Variables

There is ample evidence that SES and high school academic performance influence academic achievement and attainment in college for men (Bandura, et al., 1996; Clark, et al. 2008; Perna, 2000). It was important, then, to control for these factors in my study. I reviewed the literature extensively and have described below an array of studies that I might use in the literature I review in my manuscripts.

#### *Socioeconomic Status (SES)*

Adams, C. R., & Singh, K. (1999). Direct and indirect effects of school learning variables on the academic achievement of African American 10th graders. *Journal of Negro Education*, 67(1), 48 - 66.

The authors use the NELS dataset to study prior academic achievement, gender, parental influence, self motivation, and SES on the current academic achievement of 10<sup>th</sup> graders.

Astin, A. (1982). *Minorities in American Higher Education*. San Francisco: Jossey-Bass Publishers.



Astin argues that the lower the SES the less opportunity minority students have at attaining a bachelor's degree. The author also suggests that parental income can be a predictor of persistence and achievement for minority students.

Auerbach, S. (2007). From moral supporters to struggling advocates: Reconceptualizing parent roles in education through the experience of working-class families of color. *Urban Education*, 42(3), 250-283.

Auerbach argues that the misperception of low SES families causes some to be mislabeled as uninvolved minority parents. Author also describes parental involvement as a socially constructed and political concept that must be viewed through various lenses, including: race, class, culture and gender. Auerbach describes high SES families as more proactive and low SES families as providing behind the scene support.

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, 67(3), 1206-1222.

Authors offer evidence suggesting that the SES of a family impacts parental academic efficacy and parental aspirations of children. The effect of SES of student development is also explored.

Beattie, I. R. (2002). Are all "adolescent econometricians" created equal? Racial, class, and gender differences in college enrollment. *Sociology of Education*, 75, 19 - 43.

Suggests that the SES of a student dictates the choices made regarding major, career ambitions, school, and social activities. Depending on SES, students see different factors as important when making such decisions. The author cautions against placing students in a box corresponding to SES, because SES is not a blanket assumption, but can be a guide. Statistics regarding African Americans and Latino high school students and pursuit of higher education are discussed.

Clark, M. A., Lee, S. M., Goodman, W., & Yacco, S. (2008). Examining male underachievement in public education. *National Association of Secondary School Principals Bulletin*, 92(2), 111-132.

Provides information regarding the important role played by SES on the academic achievement of students. Also offers research and statistics suggesting that male

students appear more affected than female students by living in low SES conditions.

Jacob, B. A. (2002). Where the boys aren't: Non-cognitive skills, returns to school and the gender gap in higher education. *Economics of Education Review*, 21, 589-590.

The author provides statistics showing that among low income/minority students women are 25% more likely to enroll in postsecondary education, and informs the reader that there are no empirical studies that specifically address this phenomenon.

Noguera, P. (2008). *The Trouble with Black Boys: ...and Other Reflections on Race, Equity, and the Future of Public Education*. San Francisco, CA: Jossey Bass.

Noguera argues that class privilege and SES level does not have an effect on the academic achievement of African American males.

Perna, L. W. (2005). The benefits of higher education: Sex, racial/ethnic, and socioeconomic group differences. *The Review of Higher Education*, 29(1), 23 - 52.

Perna explores SES group differences among students in higher education. She argues the benefits garnered from higher education generally do not vary across SES lines.

Sewell, W. H., & Shah, V. P. (1967). Socioeconomic status, intelligence, and the attainment of higher education. *Sociology of Education*, 40(1), 1 - 23.

Sewell & Shah suggest that SES and academic ability directly affect academic persistence and indirectly affect the level of education attainment. The authors argue that academic ability is more important than SES to determine who graduates, but SES does influence who graduates. The authors also point out that SES is most important prior to enrolling in college and the effects of SES are lessened once in college.

Strayhorn, T. L. (2009). Different folks, different hopes: The educational aspirations of Black males in urban, suburban, and rural high schools. *Urban Education*, 44(6), 710 - 731.

Strayhorn suggests that SES is the most influential factor affecting the college aspirations of African American males.

Thomas, G. E., Alexander, K. L., & Eckland, B. K. (1979). Access to higher education: The importance of race, sex, social class, and academic credentials. *The School Review*, 87(2), 133 - 156.

The authors argue that students' academic ability is far more important in determining access to college than SES.

Tierney, W. G. (1992). An anthropological analysis of student participation in college. *The Journal of Higher Education*, 63(6), 603 -618

Tierney found that students from high SES families are more likely to attend college than those from low SES backgrounds.

Walpole, M. (2003). Socioeconomic status and college: How SES affects college experiences and outcomes. *The Review of Higher Education*, 27(1), 45 - 73.

Walpole argues that the population of low SES students has been underrepresented in higher education and neglected by researchers. The author suggests that a lack of group identification and political mobilization prevents issues facing this community from being resolved. Students from low SES backgrounds have lower educational aspirations, persistence rates, and graduation rates. Walpole also suggests that parents of low SES are more likely to view a high school diploma as the normal educational achievement for their child. Differences in cultural capital and habitus among low and high SES families/students are also discussed.

#### *Academic Ability (High School)*

Adams, C. R., & Singh, K. (1999). Direct and indirect effects of school learning variables on the academic achievement of African American 10th graders. *Journal of Negro Education*, 67(1), 48 - 66.

The authors use the NELS dataset to study prior academic achievement, gender, parental influence, self motivation, and SES on the academic achievement of 10<sup>th</sup> graders.

Beattie, I. R. (2002). Are all "adolescent econometricians" created equal? Racial, class, and gender differences in college enrollment. *Sociology of Education*, 75, 19 - 43.

Statistics regarding African Americans and Latino high school students' pursuit of higher education are discussed.

Davis, J. E. (2003). Early schooling and academic achievement of African American males. *Urban Education*, 38(5), 515 - 537.

Davis suggests that African American male students are in need of special policy programs to close the achievement gap that exists. He also suggests that low academic achievement stymies social identity, cognitive ability, emotional state, and social competence.

Sewell, W. H., & Shah, V. P. (1967). Socioeconomic status, intelligence, and the attainment of higher education. *Sociology of Education*, 40(1), 1 - 23.

Sewell & Shah suggest that SES and academic ability directly affect academic persistence and indirectly affect the level of education attainment. The authors argue that academic ability is more important than SES to determine who graduates, but SES does influence who graduates. The authors also point out that SES is most important prior to enrolling in college and the effects of SES are lessened once in college.

Strayhorn, T. L. (2009). Different folks, different hopes: The educational aspirations of Black males in urban, suburban, and rural high schools. *Urban Education*, 44(6), 710 - 731.

Strayhorn suggests that academic achievement has a large affect on educational aspirations of African American males.

Thomas, G. E., Alexander, K. L., & Eckland, B. K. (1979). Access to higher education: The importance of race, sex, social class, and academic credentials. *The School Review*, 87(2), 133 - 156.

The authors argue that student's academic ability is far more important in determining access to college than SES.

#### Independent Variables

My study followed the modified theoretical model of Bandura et al. (1996) that suggests that the efficacy of parents, student, influence of peers, and SES can predict college academic achievement. I reviewed the literature extensively and have described below studies that are relevant to my study.

### *Parental (Familial) Factors*

Adams, C. R., & Singh, K. (1999). Direct and indirect effects of school learning variables on the academic achievement of African American 10th graders. *Journal of Negro Education*, 67(1), 48 - 66.

The authors use the NELS dataset to study prior academic achievement, gender, parental influence, self motivation, and SES on the current academic achievement of 10<sup>th</sup> graders.

Auerbach, S. (2007). From moral supporters to struggling advocates: Reconceptualizing parent roles in education through the experience of working-class families of color. *Urban Education*, 42(3), 250-283.

Auerbach argues that the misperception of low SES families causes some to be mislabeled as uninvolved minority parents. Author also describes parental involvement as a socially constructed and political concept that must be viewed through various lenses, including: race, class, culture and gender. Auerbach describes high SES families as more proactive, and low SES families as providing behind the scene support.

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, 67(3), 1206-1222.

The authors suggest that parents who doubt parental abilities are hesitant to proactively promote positivity with their children when difficulties arise, and instead depend upon negative sanctions to manage problems with children. The ramifications of believing in a child's efficacy regarding education are also explored.

Conklin, M. E., & Dailey, A. R. (1981). Does consistency of parental educational encouragement matter for secondary school students? *Sociology of Education*, 54(4), 254-262.

The authors suggest that parents are the most important predictors of their child's educational aspirations. Parental involvement and influence positively affects a child's academic achievement, and is the most important predictor of a child's academic achievement. The authors also suggest that consistency of the parent's message is important.

Freeman, K. (2005). *African Americans and college choice: The influence of family and school*. Albany, NY: State University of New York Press.

Freeman argues that African American and Latino parents encourage their children's pursuit of higher education in hopes that the child is able to take advantage of opportunities not afforded to them. Psychological barriers such as intimidation by higher education and hopelessness are discussed. Links are also made between parental expectations and student aspirations to attend college.

Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why do parents become involved in their children's education? *Review of Educational Research*, 67(1), 3 - 42.

The authors provide information regarding the role of minority parents on the college preparations of their children. Hoover-Dempsey & Sandler argue that parents' belief about how they should be involved with their children's educational aspirations predicts their level of actual involvement.

Hossler, D., Schmit, I., & Vesper, N. (1999). *Going to college: How social economic, and educational factors influence the decisions students make*. Baltimore: Johns Hopkins University Press.

Provides definition of the term parental involvement. The authors define parental involvement as setting aspirations of the child, and providing encouragement and active support.

Lareau, A. (2002). Invisible inequality: Social class and childrearing in Black families and White families *American Sociological Review*, 67(5), 747 – 776.

Lareau suggests that because parents of low SES view educators as social superiors, higher SES parents are more comfortable navigating the school system, criticizing teachers/administrators, and intervening in school matters on their child's behalf. The author also provides insight into how parents' conception of adulthood and childhood is more closely connected to lived experiences for low SES parents than it is for high SES parents and the effects the differing views have on children.

Levine, A., & Nidiffer, J. (1996). *Beating the odds: How the poor get to college*. San Francisco: Jossey-Bass.

Provides information regarding the encouragement provided by African American and Latino parents of low SES to children regarding higher education and career pursuits.

McCarron, G. P., & Inkelas, K. K. (2006). The gap between educational aspirations and attainment for first-generation college students and the role of parental involvement. *Journal of College Student Development*, 47(5), 534-549.

McCarron & Inkelas argue that parental support is more important than level of SES in regards to child attending college.

Okagaki, L., & Frensch, P. A. (1998). Parenting and children's school achievement: A multiethnic perspective. *American Educational Research Journal*, 35(1), 123-144.

The article examines effects of parenting on children's academic achievement among Latino and White families. The authors suggest that parental efficacy cannot be a sole predictor of the level of academic achievement for Mexican American students.

Tierney, W. G., & Auerbach, S. (2005). Toward developing an untapped resource: The role of families in college preparation. In W. G. Tierney, Z. B. Corwin & J. E. Colyar (Eds.), *Preparing for College: Nine Elements of Effective Outreach* (pp. 29-48). Albany, NY: State University of New York Press.

Tierney & Auerbach suggest that minority parents of low SES are less likely to be involved with child's school because of historical distrust and historical discrimination. The authors suggest that family engagement increases opportunities for children. Parent education, parent aspirations, and parent encouragement are the main predictors of whether a child enrolls in college.

Walpole, M. (2003). Socioeconomic status and college: How SES affects college experiences and outcomes. *The Review of Higher Education*, 27(1), 45 - 73.

Walpole suggests that parents of low SES are more likely to view a high school diploma as the normal level of educational achievement for their child. Differences in cultural capital and habitus among low and high SES families/students are also discussed.

*Student (Self) Aspiration Factors*

Adams, C. R., & Singh, K. (1999). Direct and indirect effects of school learning variables on the academic achievement of African American 10th graders. *Journal of Negro Education*, 67(1), 48 - 66.

The authors use the NELS dataset to study prior academic achievement, gender, parental influence, self motivation, and SES on the academic achievement of 10<sup>th</sup> graders.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall Inc.

Bandura provides background into the origin of the concept of self-efficacy. The author also offers definitions of self-efficacy as well as information regarding an individual's knowledge regarding self-efficacy.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117-148.

Bandura discusses the impact self-influences have on the selection and construction of one's environment. Bandura suggests that the stronger the self-efficacy a person has, the more challenging goals are set. Examples are given regarding what can build or deteriorate students' beliefs in their self-efficacy.

Bandura, A. (1997). *Self-Efficacy: The exercise of control*. New York: W.H. Freeman Company.

Bandura explores the human phenomenon of striving to control one's life circumstances. He also explores the positive and negative effects of people believing in their own self-efficacy. Research supports the idea that academic choices and behaviors are influenced by self-efficacy beliefs.

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, 67(3), 1206-1222.

Bandura, et al. argue that children's beliefs and aspirations lead to academic achievement and also initiate peer acceptance and reduce depression and problematic behavior that can derail academic achievement.



Dennis, J. M., Phinney, J. S., & Chuateco, L. I. (2005). The role of motivation, parental support, and peer support in academic success of ethnic minority first-generation college students. *Journal of College Student Development, 46*(3), 223-236.

The article focuses on reasons why students choose to attend college. The authors suggest that students who attend college because of personal motivation rather than to meet expectations of family earn higher grades.

DeWitz, S. J., & Walsh, W. B. (2002). Self-efficacy and college student satisfaction. *Journal of Career Assessment, 10*(3), 315-326.

The authors point out that research about academic behavior has found a positive relationship between students' self-efficacy beliefs and their performance and persistence in school. The authors also suggest that a student's self-efficacy can be raised or lowered through positive or negative performance, observing others, suggestions from others, and stress/anxiety.

Mills, N., Pajares, F., & Herron, C. (2007). Self-efficacy of college intermediate French students: Relation to achievement and motivation. *Language Learning, 57*(3), 417-442.

The authors provide definitions for self-efficacy as well as insight into how a student's self-efficacy beliefs can influence academic achievement. Various methods in which academic performance and achievement can be affected are discussed at length.

Okagaki, L., & Frensch, P. A. (1998). Parenting and children's school achievement: A multiethnic perspective. *American Educational Research Journal, 35*(1), 123-144.

The authors provide differing values and beliefs regarding how students of different races view parents and school.

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research, 66*(4), 543-578.

The author suggests that the way people interpret the results gained from previous performance and attainment shapes their perception of self-beliefs and can alter how they perform when undertaking similar tasks in the future. Examples of how efficacy influences choices and future decisions are explored as well.

Pajares, F. (2003). Self-efficacy beliefs, motivation, and achievement in writing: A review of the literature. *Reading & Writing Quarterly*, 19, 139-158.

Pajares suggests four sources that help to shape people's self-efficacy perceptions.

The author also provides a review of the literature regarding self-efficacy.

Strayhorn, T. L. (2009). Different folks, different hopes: The educational aspirations of Black males in urban, suburban, and rural high schools. *Urban Education*, 44(6), 710 - 731.

Strayhorn suggests that high achieving African American male students have higher levels of self-efficacy/concept but admits that more research is needed on the topic.

Usher, E. L., & Pajares, F. (2008). Self-efficacy for self-regulated learning: A validation study. *Educational and Psychological Measurement*, 68(3), 443-463.

The authors explore gender differences in self-efficacy. The concept of self regulated learning is also broached. The positive and negative aspects of self regulated behavior on students are discussed.

### *Peers*

Astin, A. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass.

Astin suggest that peers provide the most influence on development of undergraduates. The author also argues that peer interaction can have a positive effect on knowledge acquisition and academic skill of students.

Astin, A., & Panos, R. J. (1969). *The educational and vocational development of college students* Washington, DC: American Council on Education.

Astin and Panos suggest that peer groups promote sameness rather than differences.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117-148.

Bandura discusses how low or negative self efficacy can affect a student's interactions and relationships built with peers. The author argues that students with negative beliefs regarding their intellect tend to socialize with peers who do not value education.

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, 67(3), 1206-1222.

Bandura et. al., explore the influence that peers can exert on the decisions students make regarding their academics. The authors suggest that peer acceptance can fortify emotional well being of the student and reduce some of the problem behaviors that can distract a student from thriving academically.

Bank, B. J., Slavings, R. L., & Biddle, B. J. (1990). Effects of peer, faculty, and parental influences on students' persistence. *Sociology of Education*, 63, 208-225.

The authors found evidence supporting the idea that faculty had less influence than parents and peers in regards to student persistence. However, Bank et.al., argued that all three (faculty, peers, and parents) can affect whether a student decides leave school.

Cabrera, A., Nora, A., Terenzini, P. T., Pascarella, E. T., & Hagedorn, L. S. (1999). Campus racial climate and the adjustment of students to college: A comparison between White students and African-American students. *The Journal of Higher Education*, 70(2), 134-160.

Cabrera et. al., argue that peers have the ability to exert influence outside of the class. They also discuss how that influence is not always negative, but can have a positive impact on the academic development of students.

Choy, S. P., Horn, L. J., Nunez, A.-M., & Chen, X. (2000). Transition to college: What helps at-risk students and students whose parents did not attend college. In A. Cabrera & S. M. La Nasa (Eds.), *Understanding the college choice of disadvantaged students*. San Francisco: Jossey Bass Publishers.

Choy et. al., speak to the strength of peer group effects. The authors also argue that having friends with college plans are the strongest predictor of college enrollment for a student.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: Volume 2 a third decade of research*. San Francisco: Jossey Bass.

Pascarella and Terenzini frame peers as powerful influences in shaping persistence and degree completion. The authors suggest that peer influence can

affect a student psychologically (individual) and sociologically (group). The article also provides evidence that peer influence is statistically significant and a positive force in terms of student persistence.

Whit, E. J., Edison, M. I., Pascarella, E. T., Nora, A., & Terenzini, P. T. (1999). Interactions with peers and objective and self-reported cognitive outcomes across 3 years of college. *Journal of College Student Development*, 40(1), 61-78.

The authors suggest that peer interaction outside of the classroom positively affects student improvement in writing and thinking skills. Whit et. al., also argue that positive peer influences can improve scores on standardized tests of learning that focus on reading, math and critical thinking.

### *Gender*

Adams, C. R., & Singh, K. (1999). Direct and indirect effects of school learning variables on the academic achievement of African American 10th graders. *Journal of Negro Education*, 67(1), 48 - 66.

The authors use the NELS dataset to study prior academic achievement, gender, parental influence, self motivation, and SES on the academic achievement of 10<sup>th</sup> graders.

Adebayo, B. (2008). Gender gaps in college enrollment and degree attainment: An exploratory analysis. *College Student Journal*, 42(1), 232-237.

Adebayo provides statistics regarding degrees conferred by gender.

Anfara Jr., V., & Mertens, S. B. (2008). Do single-sex classes and schools make a difference? *Middle School Journal*, 40(2), 52-59.

The authors argue that the *Spellings Report* provides opportunities for communities to develop single-sex schools and classes if the mission is to offer diverse learning experiences and provide alternate methods of meeting needs of students.

Beattie, I. R. (2002). Are all "adolescent econometricians" created equal? Racial, class, and gender differences in college enrollment. *Sociology of Education*, 75, 19 - 43.

Beattie argues that men and women differ in responses to and knowledge of income and how it shapes their opinion of education.

Blackhurst, A. E., & Auger, R. W. (2008). Precursors to the gender gap in college enrollment: Children's aspirations and expectations for their futures. *Professional School Counseling, 11*(3), 149-158.

The authors argue that although America is a sexist society, men are an underprivileged group within education. The career aspirations of men and how those aspirations are formed are explored.

Chee, K. H., Pino, N. W., & Smith, W. L. (2005). Gender differences in the academic ethic and academic achievement. *College Student Journal, 39*(3), 604-618.

The authors argue that there is a lack of research focusing on gender issues in higher education. They offer several theories for the enrollment gap between men and women. The authors also suggest that gender is related to educational attainment.

*Chronicle of Higher Education Almanac*. (2009) Retrieved November 15, 2009, from <http://chronicle.com/section/Almanac-of-Higher-Education/141/>.

Provides nationwide college enrollment statistics based on gender.

Clark, M. A., Lee, S. M., Goodman, W., & Yacco, S. (2008). Examining male underachievement in public education. *National Association of Secondary School Principals Bulletin, 92*(2), 111-132.

The authors argue that the K-12 public school systems are not meeting the needs of boys and are catering to the needs of female style of learning. Various statistics are offered by the authors to support their hypothesis including rate of placement in special education, rate of ADHD diagnosis, and drop-out rate.

College enrollment gender gap widens for White and Hispanic students, but race and income disparities still most significant (2006) *Gender Equity in Higher Education*.

The report provides statistics regarding the gender gap between White and Hispanic students in higher education.

Ehrmann, N. (2007). From the ghetto to the ivory tower: Gendered effects of segregation on elite-college completion. *Social Science Quarterly, 88*(5), 1392-1414.

Ehrmann suggests that men and women respond to environments differently, which can have an impact on achievement in college.

Facts in brief: Women more likely than men to earn bachelor's degrees. (1999) *ACE Fact Sheet on Higher Education* (Vol. 48).

This report offers statistics showing that women have earned more degrees than men regardless of race.

Gender equity in higher education: Are male students at a disadvantage? (2003) *American Council on Education Center for Policy Analysis*.

Report provides commentary regarding positive gains men are making in enrollment in higher education. The report also explains that while males have made recent gains, they have not been made fast enough to close the gap between men and women. This report provides data and charts tracking differences in high school graduation and college enrollment rates of men and women. The report also highlights a widening gender gap among Latino/students, and a decline in White males of middle/upper SES.

Gewertz, C. (2007). Black boys' educational plight spurs single-gender schools: New federal rules seen as chance for innovation. *Education Week*, 26(42), 24-25.

The author highlights statistics that offer insight into why there is a gender gap within education.

Goldstein, D. (2007). Left behind? Ossining, New York, was at the forefront of school integration. But as American law and public opinion turn against race-based programs, can the town continue to use racial targeting to close the achievement gap? *The American Prospect*. Retrieved from [http://www.accessmylibrary.com/coms2/summary\\_0286-34117134\\_ITM](http://www.accessmylibrary.com/coms2/summary_0286-34117134_ITM).

Goldstein highlights statistics that can help explain the gender discrepancy in the rate of attainment of high school diplomas and admission into institutions of higher education.

Hossler, D., Schmit, I., & Vesper, N. (1999). *Going to college: How social economic, and educational factors influence the decisions students make*. Baltimore: Johns Hopkins University Press.

Hossler et. al. explores factors that influence educational aspirations across gender lines.

Hu, W., & Palmer, G. (2007, April 9). To close gaps, schools focus on Black boys, *The New York Times*. Retrieved from <http://query.nytimes.com/gst/fullpage.html?res=9C04E6DF153FF93AA35757C0A9619C8B63>.

The reporters argue that K-12 public school systems use strategies more beneficial to a female style of learning. The reporters argue that this discrepancy can help explain the gender gap in education.

Jacob, B. A. (2002). Where the boys aren't: Non-cognitive skills, returns to school and the gender gap in higher education. *Economics of Education Review*, 21, 589-590.

Jacob focuses on the difference in how men and women view particular careers while growing up. The author suggests that women connect education and career aspirations more closely than men. Jacob believes that such a connection affects high school graduation and college admission rates.

Perna, L. W. (2000). Differences in the decision to attend college among African Americans, Hispanics, and Whites. *The Journal of Higher Education*, 71(2), 117-141.

Perna describes differences in the factors that impact academic aspirations by gender in contrast to race for the three racial groups examined in the study.

Perna, L. W. (2005). The benefits of higher education: Sex, racial/ethnic, and socioeconomic group differences. *The Review of Higher Education*, 29(1), 23 - 52.

Perna explores gender differences between students. She argues that there are gender differences in the benefits of higher education, but that those differences may be a result of the gap in enrollment and degree attainment rates.

Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003 (2005) *National Center for Education Statistics*.

Provides nationwide college enrollment statistics based on gender, and also offers commentary regarding national enrollment trends between 1974 and 2003.

Smith, M. J., & Fleming, M. K. (2006). African American parents in the search stage of college choice: Unintentional contributions to the female to male college enrollment gap. *Urban Education*, 41(1), 71-100.

The authors suggest that the gender gap in degree attainment leads men to seek blue collar and gender conforming jobs more frequently than women.

St. John, E. P. (1991). What really influences minority attendance? Sequential analyses of high school and beyond sophomore cohort. *Research in Higher Education*, 32(2), 141 - 158.

St. John finds that being a male is significantly negatively associated with college attendance.

Usher, E. L., & Pajares, F. (2008). Self-efficacy for self-regulated learning: A validation study. *Educational and Psychological Measurement*, 68(3), 443-463.

The authors suggest that there are gender differences in how students' self-efficacy regulates their learning. This difference usually favors women.

Valdez, J. R. (2008). Shaping the educational decisions of Mexican immigrant high school students. *American Educational Research Journal*, 45(4), 834-860.

Valdez explores the reasons men look to blue collar careers more often than women.

Weil, E. (2008). Teaching boys and girls separately, *The New York Times*. Retrieved from [http://www.nytimes.com/2008/03/02/magazine/02sex3-t.html?\\_r=1&ref=education](http://www.nytimes.com/2008/03/02/magazine/02sex3-t.html?_r=1&ref=education).

Weil reports on theorists who suggest that boys and girls have inherent biological differences that suggest they should be educated differently. The reporter also provides statistics supporting the gender gap in attainment of high school diploma and admission into institutions of higher education.

Whitaker, C. (1991). Do Black males need special schools? *Ebony*. Retrieved from [http://findarticles.com/p/articles/mi\\_m1077/is\\_n5\\_v46/ai\\_10405322](http://findarticles.com/p/articles/mi_m1077/is_n5_v46/ai_10405322).

Whitaker argues that the K-12 public school system does not meet the needs of boys and caters toward girls' style of learning.

### *Race*

Allen, W. R. (2005). A forward glance in a mirror: Diversity challenged: Access, equity, and success in higher education. *Educational Researcher*, 34(7), 18 - 23.

Allen argues that the cause for the decline in African American and Latino enrollment is the downfall of affirmative action. The article focuses on higher education in California.



Beattie, I. R. (2002). Are all "adolescent econometricians" created equal? Racial, class, and gender differences in college enrollment. *Sociology of Education*, 75, 19 - 43.

Beattie argues that minorities have different educational trajectories than White students. She also offers statistics explaining the gap between minorities and White students.

Blackhurst, A. E., & Auger, R. W. (2008). Precursors to the gender gap in college enrollment: Children's aspirations and expectations for their futures. *Professional School Counseling*, 11(3), 149-158.

Blackhurst & Auger discuss how the gender gap in enrollment is evident in within all racial groups. The authors point out that the gender gap is the widest among minority students with low SES.

Brower, A. M., & Ketterhagen, A. (2004). Is there an inherent mismatch between how African American and White students expect to succeed in college and what their colleges expect from them? *Journal of Social Issues*, 60(1), 95-116.

The authors argue that Black students receive more academic and social support at HBCUs than Black students attending PWIs. Brower and Ketterhagen also argue that a long history of being denied equal education by the government plays a role in the academic underachievement of Black men.

*Chronicle of Higher Education Almanac*. (2009), from <http://chronicle.com/section/Almanac-of-Higher-Education/141/>

Provides nationwide college enrollment statistics based on race.

College enrollment gender gap widens for White and Hispanic students, but race and income disparities still most significant (2006) *Gender Equity in Higher Education*.

The report provides statistics regarding racial disparities between White and Hispanic students in higher education.

Cross, T., & Slater, R. B. (2000). The Alarming Decline in the Academic Performance of African-American Men. *Journal of African Americans in Higher Education* (27), 82-87.

Cross and Slater argue that the gender gap of the 21<sup>st</sup> century in higher education is a byproduct of racial segregation during the 20<sup>th</sup> century. The authors suggest

that a weak job market for men of color caused them to devalue higher education and the importance of a bachelor's degree.

Davis, J. E. (2003). Early schooling and academic achievement of African American males. *Urban Education*, 38(5), 515 - 537.

Davis suggests that African American male students are in need of special policy programs to close the achievement gap that exists. He also suggests that low academic achievement stymies social identity, cognitive ability, emotional state, and social competence.

Dennis, J. M., Phinney, J. S., & Chuateco, L. I. (2005). The role of motivation, parental support, and peer support in academic success of ethnic minority first-generation college students. *Journal of College Student Development*, 46(3), 223-236.

The authors suggest that closeness with family members is imperative for the good psychological health of minority students. However, closeness with parents is on the decline among White students.

Ehrmann, N. (2007). From the ghetto to the ivory tower: Gendered effects of segregation on elite-college completion. *Social Science Quarterly*, 88(5), 1392-1414.

Ehrmann argues that racial segregation of students during childhood negatively affects the academic performances of African American and Latino students at elite predominately White colleges and universities.

Freeman, K. (2005). *African Americans and college choice: The influence of family and school*. Albany, NY: State University of New York Press.

Freeman argues that African American students sometimes are faced with psychological barriers to attending college. Freeman also links parental expectations and student aspirations to attending college.

Fry, R. (2002). Latinos in higher education: Many enroll, too few graduate *Pew Hispanic Center*.

The author suggests that significant gains in Latino enrollment can be made through targeted policy focusing on Latinos already enrolled in higher education. The author believes too much attention is focused on high school drop outs and attendance rates. Fry also provides educational achievement statistics for White, African American and Latino students.

Gewertz, C. (2007). Black boys' educational plight spurs single-gender schools: New federal rules seen as chance for innovation. *Education Week*, 26(42), 24-25.

The author suggests that labeling school programs to assist black boys are intellectually dishonest, because of the institutionalized racism that occurs within the school system. Gewertz also provides statistics that show Black males graduating from high school at a lower rate than White and Latino males. She also provides statistics that show a disproportionate number of Black male students being disciplined and labeled within the schools system nationwide despite Black males only making up 8.7% of the total enrollment nationwide.

Harper, S. R., Patton, L. D., & Wooden, O. S. (2009). Access and equity for African American students in higher education: A critical race historical analysis of policy efforts. *The Journal of Higher Education*, 80(4), 389 - 414.

The authors argue that historical roadblocks have prevented African Americans from seeking higher education in the past and that history has led to a decline in access and equity over the last 40 years. The authors also suggest that the African American community is not offered access to advantages enjoyed by those at high SES levels because of the gap in degree attainment between Whites and African Americans.

Hossler, D., Schmit, I., & Vesper, N. (1999). *Going to college: How social economic, and educational factors influence the decisions students make*. Baltimore: Johns Hopkins University Press.

Hossler et. al. explored factors that influence educational aspirations across racial lines.

Jacob, B. A. (2002). Where the boys aren't: Non-cognitive skills, returns to school and the gender gap in higher education. *Economics of Education Review*, 21, 589-590.

Jacob provides statistics showing that minority women are more likely to enroll in some form of school post high school. The author discusses how Black women are being educated at a higher rate than Black men, but men still have a better likelihood of gaining a high level blue collar job. Jacob discounts the notion that

the gender gap in enrollment is present because of more men in prison and the military.

Kershaw, T. (1992). The effects of educational tracking on the social mobility of African Americans. *Journal of African American Studies*, 23(1), 152 - 169.

Kershaw suggests that education is seen by minorities as the best means of becoming accepted in American society and a way to achieve upward social mobility. He also discusses the impact of institutional racism on minority students.

Levine, A., & Nidiffer, J. (1996). *Beating the odds: How the poor get to college*. San Francisco: Jossey-Bass.

The authors suggest that African American students are not motivated to attend college because of encouragement by family members, but because of an urge to achieve more than family had.

Noguera, P. (2008). *The Trouble with Black Boys: ...and Other Reflections on Race, Equity, and the Future of Public Education*. San Francisco, CA: Jossey Bass.

Noguera provides statistics such as suspension rates, rates of emotionally/learning disabled students, and academic statistics that show a difference in treatment and achievement between African American boys and White boys at the K-12 level. The author also suggests that while African Americans view education as a noble ideal, they do not believe it will always lead to a better life. Noguera argues that African American men can be agents in their own failure.

Oliva, M. (2004). Reluctant partners, problem definition, and legislative intent: K-16 policy for Latino college success. *Journal of Hispanic Higher Education*, 3(2), 209 – 230.

Oliva outlines obstacles faced by Latinos in higher education. The author focuses on the difficult transition from K-12 to college. Oliva suggests that policy focus on K-16 rather than K-12 in order to address the problems of Latinos in higher education.

Perna, L. W. (2000). Differences in the decision to attend college among African Americans, Hispanics, and Whites. *The Journal of Higher Education*, 71(2), 117-141.

Perna discovers that aspiring to an advanced degree has a positive influence on enrollment of White and Latino students but not African American students. The

author emphasizes the importance of understanding and studying the differences among racial groups and how those difference influence enrollment decisions of students.

Perna, L. W. (2005). The benefits of higher education: Sex, racial/ethnic, and socioeconomic group differences. *The Review of Higher Education*, 29(1), 23 - 52.

Perna explores racial group differences and discovers that government programs that aim to reduce racial gaps in enrollment and degree attainment are useful.

Perna, L. W., Milem, J. F., Gerald, D., Baum, E., Rowan, H., & Hutchens, N. (2006). The status of equity for Black undergraduates in public higher education in the south: Still separate and unequal *Research in Higher Education*, 47(2), 197 - 228.

The authors argue that where a college is geographically located may affect the enrollment of African Americans and Latinos. The authors suggest that the Office of Civil Rights is not credibly monitoring southern states, and that because of this African American and Latino enrollment numbers suffer. They conclude that public higher education in a majority of southern states is highly inequitable for African American and Latino students.

Ryu, M. (2009). Minorities in Higher Education *American Council on Education* (Vol. 23).

Ryu points out that the current generation of students does not achieve higher levels of education than its predecessors. The author also discusses the fact that despite social progress regarding race relations in America, men in all racial categories except for Asian American have fallen behind in terms of academic achievement.

Slater, R. B. (1994). The growing gender gap in Black higher education. *The Journal of Blacks in Higher Education*, 3, 52-59.

Slater suggests that some African American men are not likely to view attainment of higher education as a symbol of success.

Smith, M. J., & Fleming, M. K. (2006). African American parents in the search stage of college choice: Unintentional contributions to the female to male college enrollment gap. *Urban Education*, 41(1), 71-100.

The authors argue that African American and Latino students are more likely to experience poverty and poor schooling than White students. The authors also suggest that some African American men are not likely to view attainment of higher education as a symbol of success. Smith & Fleming also suggest that the absence of acknowledgment by society of the academic achievement of men of color can negatively impact the gender gap.

St. John, E. P. (1991). What really influences minority attendance? Sequential analyses of high school and beyond sophomore cohort. *Research in Higher Education*, 32(2), 141 - 158.

St. John suggests that improving academic preparation and raising students' educational attainment aspirations can improve college enrollment of minority students. The author also suggests that being from northeast and north central states is positively correlated with attending college. St. John argues that programs that promote minority student enrollment should be instituted in middle schools.

Strayhorn, T. L. (2006). Factors influencing the academic achievement of first-generation college students. *NASPA Journal*, 43(4), 82-111.

Strayhorn explores the causes of the negative relationship observed between academic achievement and minority students. The author also argues that race, gender and first generation status matter in higher education.

Strayhorn, T. L. (2009). Different folks, different hopes: The educational aspirations of Black males in urban, suburban, and rural high schools. *Urban Education*, 44(6), 710 - 731.

Strayhorn points out ways in which African American male students differ from African American women and male students of other races in regards to education.

Swail, W. S., Cabrera, A. F., Lee, C., & Williams, A. (2005). Pathways to the bachelor's degree for Latino students *Latino students and the educational pipeline: A three-part series*.

The authors argue that higher education planning for Latino students should begin in the 8<sup>th</sup> grade.

Thomas, G. E., Alexander, K. L., & Eckland, B. K. (1979). Access to higher education: The importance of race, sex, social class, and academic credentials. *The School Review*, 87(2), 133 - 156.

The authors question the equality of educational opportunities across racial lines. They also suggest that motivation levels among minority students to attend institutions of higher education may surpass rates of motivation among majority students.

Tierney, W. G. (1992). An anthropological analysis of student participation in college. *The Journal of Higher Education*, 63(6), 603 -618

Tierney found that Whites are more likely to attend college than African American students. He argues that minorities experience disruptive cultural rites of passage because many predominately White institutions differ from the environments in which they were raised.

Valdez, J. R. (2008). Shaping the educational decisions of Mexican immigrant high school students. *American Educational Research Journal*, 45(4), 834-860.

Valdez argues that students of color rely on existing rules of society to inform decisions.

Venezia, A., Kirst, M. W., & Antonio, A. L. (2003). Betraying the college dream: How disconnected K-12 and the postsecondary education systems undermine student aspirations *Stanford University's Bridge Project*.

The authors suggest that the message sent to African American and Latino families concerning what students need to do to attend college is often confusing and inaccurate. They argue that part of the problem centers around the assumption that earning a high school degree will qualify one for college or community college. The authors point out that many states offer high school diplomas that do not meet the minimum entry requirements for some community colleges.

#### Dependent Variables

I am interested in determining if the aforementioned independent variables affect the following dependent variables: academic achievement and academic persistence. Research regarding the independent variables' concerted effect on the dependent variables is limited.

However, the literature is extensive with an array of the studies that I might employ in the literature review of my manuscripts described below.

#### *Academic Achievement*

Adebayo, B. (2008). Gender gaps in college enrollment and degree attainment: An exploratory analysis. *College Student Journal*, 42(1), 232-237.

Adebayo provides statistics regarding degrees conferred by gender.

Astin, A. (1982). *Minorities in American Higher Education*. San Francisco: Jossey-Bass Publishers.

Astin argues that the lower the SES the less opportunity minority students have at attaining a bachelor's degree. The author also suggests that parental income can be a predictor for persistence and achievement for minority students.

Ehrmann, N. (2007). From the ghetto to the ivory tower: Gendered effects of segregation on elite-college completion. *Social Science Quarterly*, 88(5), 1392-1414.

Ehrmann suggests that men and women respond to environments differently, which can have an impact on achievement in college. Ehrmann also argues that racial segregation of students during childhood negatively affects the academic performance of African American and Latino students at elite predominately White colleges and universities.

Gender equity in higher education: Are male students at a disadvantage? (2003) *American Council on Education Center for Policy Analysis*.

Report provides commentary regarding positive gains men are making in higher education enrollment. The report also explains that while males have made recent gains, those gains have not been made fast enough to close the gaps between men and women. This report provides data tracking differences in high school graduation and college enrollment rates of men and women. The report also highlights a widening gender gap among Latino/students, and a decline in White males at middle/upper SES levels.

Ryu, M. (2009). Minorities in Higher Education *American Council on Education* (Vol. 23).

Ryu points out that the current generation of students does not achieve higher levels of education than its predecessors. The author also discusses the fact that



despite social progress regarding race relations in America, men in all racial categories except for Asian American have fallen behind in terms of academic achievement.

Strayhorn, T. L. (2006). Factors influencing the academic achievement of first-generation college students. *NASPA Journal*, 43(4), 82-111.

Strayhorn explores the causes of the negative relationship observed between academic achievement and minority students. The author argues that race, gender and first generation status matter in higher education.

#### *Academic Persistence*

Adebayo, B. (2008). Gender gaps in college enrollment and degree attainment: An exploratory analysis. *College Student Journal*, 42(1), 232-237.

Adebayo provides statistics regarding degrees conferred and gender.

Astin, A. (1982). *Minorities in American Higher Education*. San Francisco: Jossey-Bass Publishers.

Astin argues that the lower the SES the less opportunity minority students have at attaining a bachelor's degree. The author also suggests that parental income can be a predictor of persistence and achievement for minority students.

Perna, L. W. (2005). The benefits of higher education: Sex, racial/ethnic, and socioeconomic group differences. *The Review of Higher Education*, 29(1), 23 - 52.

Perna explores gender differences among students. She argues that there are gender differences in the benefits of higher education, but those differences may be a result of the gap in enrollment and degree attainment.

Sewell, W. H., & Shah, V. P. (1967). Socioeconomic status, intelligence, and the attainment of higher education. *Sociology of Education*, 40(1), 1 - 23.

Sewell & Shah suggest that SES and academic ability directly affect academic persistence and indirectly affect the level of education attainment. The authors argue that academic ability is more important than SES in determining who graduates, but SES does influence who graduates. The authors also point out that SES is most important prior to enrolling in college and the effects of SES are lessened once in college.

## Chapter Three

### Methodology

The purpose of this study was to determine what factors predict academic success of male college students. Academic success was defined as academic achievement (GPA) and persistence (time to degree). This study also aimed to examine whether there is a relationship between race and the factors used to predict academic achievement and persistence.

I employed the Bandura, et al. (1996) theoretical model. The authors used four variables that influence self efficacy: SES, familial, peer, and self. For purposes of this study I controlled for SES since that is known to influence both GPA and persistence (1996). I also controlled for academic ability (high school preparation), another factor that prior research has revealed influences college GPA and persistence (Clark, et al., 2008; Perna, 2000). Family, peer, self, and race were the independent variables in the study.

The sample included Black, White, and Hispanic/Latino males who self identified on the National Longitudinal Survey of Freshmen (NLSF) (NLSF, 2008). The NLSF sample contained 3,924 participants who were first year resident alien freshmen at highly selective institutions of higher education (NLSF, 2008). Respondents were surveyed in a succession of waves. Regression analysis was employed to determine which factors best predict academic achievement and persistence to degree.

#### Research Questions

The study was guided by the following research questions:

1. After controlling for SES and academic ability, do parental, student, peer, and/or race factors predict academic achievement (final GPA) of male college students?
2. After controlling for SES and academic ability, do parental, student, peer, and/or race factors influence persistence (time to degree) of male college students?

This chapter provides an explanation of the methods used in the study. Sampling, instrumentation, and the procedures used to collect and analyze data are discussed.

#### Sample Selection

The sample was derived from the National Longitudinal Survey of Freshmen (NLSF) (NLSF, 2008). The NLSF sample contained 3,924 cases that represented male and female first

year resident alien freshmen at institutions of higher education. Participants were initially surveyed in the fall of 1999 and were tracked as part of a longitudinal study through five waves of data collection that followed students every year until the 2002-2003 academic year. The first wave was conducted via face-to-face interviews during the students' freshman year of college, which limited the amount of missing data within the dataset. The interviews focused on the students' neighborhood, family and educational environment while in high school. Attitude and motivation of the student upon entering college was also measured. Subsequent waves were conducted during the spring of each following academic year via phone interviews. Interviews conducted as a part of waves two through five sought to determine the social, psychological and academic experiences of students while enrolled in college. Dropouts and transfer students were followed throughout the longitudinal study in order to avoid any potential bias in the data (NLSF, 2008).

The sample included African American, White, and Hispanic/Latino male students. Responses containing missing data were not included in the analyses, which reduced the total male sample to 1,245 respondents. More specifically the sample used for this study included: 441 (35.4%) African American, 419 (33.7%) White, and 385 (30.9%) Hispanic/Latino male students. The subjects were enrolled at 28 selective institutions of higher education in the United States. The data were collected through face-to-face interviews that lasted two hours in duration and follow-up phone interviews (NLSF, 2008).

#### Instrumentation

The NLSF provides data on equal size samples of African American (1,051 respondents), Asian American (959), White (998), and Hispanic/Latino (916) students at selective American colleges and universities. A total of 3,924 students completed the survey (86% response rate). Participants came from institutions used by Bowen and Bok (1998) in the College and Beyond Survey plus two additional universities. The University of California Berkeley was added because it was a large public selective institution and had recently discontinued affirmative action practices in regards to admission. Howard University was added to the list because of its distinction as a historically black college and university. Overall, a total of 28 institutions participated in the study overall (NLSF, 2008). A complete listing of institutions can be found in Appendix B.

The stated purpose of the study was to explore academic success in higher education and to discover relationships between pre-college behavior, race, and outcomes within higher education. Various topics are reported in the data set such as: information regarding childhood neighborhood, family and educational environments before entering college; attitudes and aspirations regarding higher education; and social, psychological and academic experiences while enrolled in college. Because the study was conducted using students who had the resources to earn admission to prestigious colleges and universities the sample cannot be considered representative of all students. However, because male students underachieve at all institutions regardless of prestige the sample is still capable of providing useful results through this study (*Chronicle of Higher Education Almanac*, 2009; Massey, 2006; NLSF, 2008; Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003, 2005).

The control variable of SES was created by calculating a composite score that was comprised of responses to five items reported in the first wave questionnaire. The first two items are, “What is the highest level of schooling achieved by your mother (father) or the woman (man) most responsible for raising you?” There were 10 options with which to respond to the item, ranging from, Grade School to Graduate or Professional Degree. No mother/ no woman (no father/ no man) responsible for raising R, Don’t Know and Refused are also options. The third and fourth items comprising the SES composite are, “What is/was her (his) occupation.” There were 905 responses within eight categories with which to respond. The options ranged from Managerial and Professional Specialty Occupations to Operators, Fabricators, and Laborers to Military Occupations. Other, Don’t Know and Refused are also options. The final item of the composite was, “Tell me your estimate of the annual income of the household in which you spent your senior year of high school?” There were 16 possible options that ranged from Under \$3,000 to \$75,000 or more. Don’t Know and Refused are also options (NLSF, 2008).

The control variable of academic ability was taken from information collected in the first wave of the NLSF. This wave provided information regarding the student’s high school academic information through an item that asked, “For each of the following subjects (English, History, Mathematics, Natural Sciences, Social Sciences, and Foreign Languages) did you get mostly A’s, B’s, C’s, D’s?” Not Graded, Don’t Know and Refused were also options. (NLSF, 2008).

The independent variable of parental (familial) factors was taken from one item found in the first wave questionnaire. The stem for this item was, “Last year (senior year of high school), how often did your parents or other adults in your household ..?” There were 17 sub-questions under the stem that had the response options of Never, Rarely, Sometimes, Often, Very Often, Don’t Know and Refused. The 17 sub-items asked about activities that parents engaged in such as, “Check if you’d done your homework”, “Punish you for bad grades”, and “Take you traveling within the U.S.” (NLSF, 2008).

The independent variable of student (self) aspiration factors was taken from two items on the first wave questionnaire. The first item was, “How much do you agree or disagree with each of the following statements?” There were 10 sub-items that had the response options of Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Don’t Know, and Refused. The 10 sub-items asked things such as, “I am able to do things as well as most people”, “I feel that I have a number of good qualities”, and “I feel useless at times” (NLSF, 2008).

The second question asked, “Thinking about your life at the moment, how much do you agree or disagree with the following statements?” There were six sub-items that had the response options of Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Strongly Disagree, Don’t Know, and Refused. The six sub-items asked things such as, “I don’t have control over the direction my life is taking”, “Every time I try to get ahead, something or somebody stops me”, and “If I work hard, I can do well” (NLSF, 2008).

The independent variable of social (peer) factors was taken from two items on the first wave questionnaire. The first item was, “In your high school, do you think your friends and acquaintances viewed the following behaviors as Very Uncool, Somewhat Uncool, Neither Cool nor Uncool, Somewhat Cool, or Very Cool, where “Cool” refers to behavior that is respected or admired by students?” Don’t Know and Refused were also options. The eight sub-items asked things like, “Studying hard outside of class”, “Answering teacher’s questions in class”, and “Planning to go to college” (NLSF, 2008).

The second question asked, “Among the friends you hung out with last year, was it Not at All Important, A Little Important, Somewhat Important, or Very Important?” Don’t Know and Refused were also options. The 12 sub-items asked things such as, “Attend class regularly”, “Be popular or well liked”, and “Hold a steady job” (NLSF, 2008).

The independent variable of race was taken from one demographic item in the instrument that was located in the wave one questionnaire. The question asked for the respondent's ethnicity, and provided the options of Asian, Hispanic or Latino, Black/African American, Caucasian/White. All selections were used for this study except the Asian choice. The decision not to study Asians was based on the fact that Asian students are not underrepresented within higher education and also possess the highest attainment of the bachelor degree of all ethnic groups (*Chronicle of Higher Education Almanac*, 2009; NLSF, 2008; Perna, 2000).

The dependent variable of academic achievement was taken from a question regarding cumulative grade point average at most recent college attended. There was no suggested range; the students just reported their grade point average. This question was found in the fifth wave of the NLSF study (2008). The dependent variable of academic persistence was taken from two questions located in the graduation data questionnaire. The two questions sought to determine if the student graduated from college within four years, six years, or at all (2008).

#### Data Collection Procedure

Data were collected through two phases. The first phase was to apply for and receive approval from the Institutional Review Board (IRB) at my institution. The IRB approval letter appears in Appendix B. Because all identifying information regarding participants was masked, expedited approval was sought. Once approval was received, the second phase of the process was initiated.

Data from the NLSF are stored with the Office of Population Research at Princeton University (OPR). An application was submitted and access to a license was granted, which allowed access to all aspects of the NSFL dataset. All datasets were stored in a secure safe when not being used by the researcher.

#### Data Analysis Procedure

The statistical software PASW (formerly known as SPSS) was used to run descriptive statistics and sequential multiple regression on the data. The raw data were examined to clean them by identifying and omitting outliers and inconsistencies. Next, the data were re-coded and composites were created for all relevant variables. Table 1 reports the items associated with each variable, the response options for those items, and how responses were re-coded. Lastly, the analyses were run using the recoded and composite variables.

**Table 1**  
**Re-Coded Variables**

Composite	Response Options	Re-code
<b>Academic Achievement</b>		
Grade point average (w5q20aa)	Student listed GPA	NA
<b>Academic Persistence</b>		
Graduation within 4 years (gradtime)		
Graduation within 6 years (overallg)	Not graduate from college w/in 4 yrs Graduate from college w/in 4 yrs Not graduated from college w/in 6 yrs Graduated from college w/in 6 yrs	0 – Not graduate 4/6 yrs 1 – Graduate in 6 yrs 2 – Graduate in 4 yrs
<b>Parental Involvement (ParentInv)</b>		
Last year how often did your parents or other adults in your household? (w1q38a)		
Check if you'd done your homework?	Never	1 – Never
Meet personally with your teachers?	Rarely	2 – Rarely
Help you with your homework?	Sometimes	3 – Sometimes
Talk with your friends?	Often	4 – Often
Reward you for good grades?	Very Often	5 – Very Often
Punish you for bad grades?	No Homework	Missing – DK, Refused & No Homework
Punish you for disobedience?	Don't Know	
Limit your TV watching?	Refused	
Limit your playing of video games?		
Limit the time you spent with friends?		
Set an hour to return home at night?		
Ask you do household chores?		
Take you to museums?		
Take you to plays or concerts?		
Take you to sporting events?		
Take you traveling within the U.S.?		
Take you on trips to foreign countries?		

**Table 1 (ctd.)**  
**Re-Coded Variables**

Composite	Response Options	Re-code
<b>Self Factors (SelfFactors)</b>		
How much do you agree or disagree with each of the following statements? (w1q149a)		
I feel that I am a person of worth, equal to others.	Strongly Agree	1 – Strongly Disagree
I feel that I have a number of good qualities.	Agree	2 – Disagree
I am able to do things as well as most people.	Neither Agree/Disagree	3 – Neither A or D
I take a positive attitude toward myself.	Disagree	4 – Agree
On the whole, I am satisfied with myself.	Don't Know	5 – Strongly Agree
	Refused	Missing – DK & Refused
All in all, I am inclined to feel that I am a failure.	Strongly Agree	1 – Strongly Agree
I feel that I do not have much to be proud of.	Agree	2 – Agree
I wish I could have more respect for myself.	Neither Agree/Disagree	3 – Neither A or D
I feel useless at times.	Disagree	4 – Disagree
At times I think I'm no good at all.	Don't Know	5 – Strongly Disagree
	Refused	Missing – DK & Refused
Thinking about your life at the moment, how much do you agree or disagree with the following statement? (w1q150a)		
I don't have control over the direction my life is taking.	Strongly Agree	1 – Strongly Agree
In life, good luck is more important than hard work for success.	Agree	2 – Agree
Every time I try to get ahead, something or somebody stops me.	Neither Agree or Disagree	3 – Neither A or D
I feel left out of things going on around me.	Disagree	4 – Disagree
	Strongly Disagree	5 – Strongly Disagree
	Don't Know	Missing – DK & Refused
	Refused	



**Table 1 (ctd.)**  
**Re-Coded Variables**

Composite	Response Options	Re-code
<b>Self Factors (SelfFactors) (ctd.)</b>		
Thinking about your life at the moment, how much do you agree or disagree with the following statement? (w1q150a)		
When I make plans, I am almost certain I can make them work.	Strongly Agree	1 – Strongly Disagree
If I work hard, I can do well.	Agree	2 – Disagree
Every time I try to get ahead, something or somebody stops me.	Neither Agree or Disagree	3 – Neither A or D
	Disagree	4 – Agree
	Strongly Disagree	5 – Strongly Agree
	Don't Know	Missing – DK &
	Refused	Refused
<b>Peer Factors (PeerFactors)</b>		
In your high school, do you think your friends and acquaintances viewed the following behaviors as...?(w1q65a)		
Studying hard outside of class?	Very Uncool	1 – Very Uncool
Asking challenging questions in class?	Somewhat Uncool	2 – Somewhat Uncool
Volunteering information in class?	Neither Cool nor Uncool	3 – Neither C nor UnC
Answering teachers' questions in class?	Somewhat Cool	4 – Somewhat Cool
Solving problems using new and original ideas?	Very Cool	5 – Very Cool
Helping other students with their homework?	Don't Know	Missing – Don't Know
Getting good grades in difficult subjects?	Refused	& Refused
Planning to go to college?		

**Table 1 (ctd.)**  
**Re-Coded Variables**

Composite	Response Options	Re-code
<b>Peer Factors (PeerFactors) (ctd.)</b>		
Among the friends you hung out with last year ...? (w1q66a)		
Attend classes regularly??	Not At All	1 – Not at All
Study hard?	A Little Important	2 – A Little Important
Play sports?	Somewhat Important	3 – Somewhat Important
Get good grades?	Very Important	4 – Very Important
Be popular or well liked?	Don't Know	Missing – Don't Know & Refused
Finish high school?	Refused	
Go to college?		
Have a steady boyfriend or girlfriend?		
Participate in religious activities?		
Do community or volunteer work?		
Hold a steady job?		
<b>Socio-Economic Status (SES)</b>		
What is the highest level of schooling achieved by your mother or the woman most responsible for raising you? (w1q151)		
What is the highest level of schooling achieved by your father or the man most responsible for raising you? (w1q152)		
	Grade school	
	Some High School	1 – Grade school, Some High School,
	High School Graduate	2 – HS Graduate, Some College
	Some College	3 – College Graduate
	College Graduate	4 – Some Post-Graduate or Prof Degree
	Some Post-Graduate	Missing – No M/F Resp., DK, Refused
	Graduate or Professional Degree	
	No Mother /No Woman Responsible for Raising R	
	No Father/No Man Responsible for Raising R	
	Don't Know	
	Refused	

**Table 1 (ctd.)**  
**Re-Coded Variables**

Composite	Response Options	Re-code
<b>Socio-Economic Status (SES) (ctd)</b>		
Mother's occupation? (w1q153o)		
Father's occupation? (w1q157o)		
	Farming, Forestry, & Fishing Occupations	
	Technical, Sales, & Administrative Support Occupations	
	Precision Production, Craft, & Repair Occupations	1 – Farming/Forestry/Fishing, Tech Sales/
	Service Occupations	Admin Support, Precision Production/Craft/
	Operators, Fabricators, & Laborers	Repair, Service Occupations, Operators/
	Experienced Unemployed Not Classified by Occupation	Fabricators/Laborers, Experienced Unemp
	Managerial & Professional Specialty Occupations	2 – Managerial/Prof Specialty, Military
	Military Occupations	Missing – Other, No M/F, No M/F in Home,
	Other	M/F not Working, Don't Know
	Don't Know	
	Refused	
	No Mother/Father/in Home	
	Mother/Father not Working	
Tell me your estimate of the annual income of the household in which you spent your senior year of high school? ( w1q179)		
	Under \$3,000	1 – Under \$3000 - \$19,9999
	\$3,000 - \$3,999	2 - \$20,000 - \$34,000
	\$4,000 - \$4,999	3 - \$35,000 - \$74,999
	\$5,000 - \$5,999	4 - \$75,000 or More
	\$6,000 - \$6,999	Missing – Don't Know & Refused
	\$7,000 - \$7,999	
	\$8,000 - \$8,999	
	\$9,000 - \$14,999	
	\$15,000 - \$19,999	
	\$20,000 - \$24,999	
	\$25,000 - \$34,999	

**Table 1 (ctd.)**  
**Re-Coded Variables**

Composite	Response Options	Re-code
<b>Socio-Economic Status (SES) (ctd)</b>		
Tell me your estimate of the annual income of the household in which you spent your senior year of high school? ( w1q179)		
	\$35,000 - \$49,999	
	\$50,000 - \$74,999	
	\$75,000 OR MORE	
	Don't Know	
	Refused	
<b>High School Academic Ability</b>		
For each of the following subjects, did you get: (w1q63a)		
English	Mostly A's	1 – Mostly D's
History	Mostly B's	2 – Mostly C's
Mathematics	Mostly C's	3 – Mostly B's
Natural Sciences	Mostly D's	4 – Mostly A's
Social Sciences	Not graded	Missing – Not Graded,
Foreign Languages	Don't Know	DK & Refused
	Refused	

A composite score was created to group variables that were applicable to the parental (familial) factor of the theoretical framework developed by Bandura, et al. (1996). Parental Involvement (ParentInv) was a composite of the sum of the scores from the prompt question “Last year (senior year of high school), how often did your parents or other adults in your household ..?” Never was re-coded as 1. The rest of the options were coded with scores up to 5, as noted in Table 1. Don’t Know, Refused and No Homework (a response that was only available for the question “How often did your parents check if you’d done your homework?”) were treated as missing items because those responses show neither a positive or negative attitude of the responder. There were 17 sub-items to the prompt. Therefore the maximum score that could be achieved in this composite was 85 and the minimum score was 17 (see Table 1) (NLSF, 2008).

The student (self) factor of the theoretical framework developed by Bandura, et al. (1996) was measured using one composite score and was given the name Self Factors (SelfFactors). Before creating the composite, the seven items that had a positive slant, such as “I feel that I am a person of worth, equal to others” were re-coded so that the response options would similarly be matched. The composite was then created from a sum of the scores from two prompted questions. The first question was, “How much do you agree or disagree with each of the following statements?” The responses to 5 of the 10 items were re-coded so that sequence of options flowed from negative to positive. Strongly Disagree was re-coded to 1, Disagree was re-coded 2, Neither Agree or Disagree 3, Agree 4, and Strongly Agree was re-coded as 5. The other five options remained coded in the original format which ranged from Strongly Agree 1 to Strongly Disagree 5. Finally, Don’t Know and Refused were treated as missing items (see Table 1) (NLSF, 2008).

The second question included in the composite was, “Thinking about your life at the moment, how much do you agree or disagree with the following statement?” The responses to the two of the six items were re-coded into the same negative to positive sequential options as noted for the other question in the composite. Overall, the highest composite score possible was 80 and the minimum score was 16 (see Table 1) (NLSF, 2008).

The social (peer) factor of the theoretical framework developed by Bandura, et al (1996) was measured using one composite score and was given the name Peer Factors (PeerFactors).

The composite was created from a sum of the scores from two prompted questions. The first question was, “In your high school do you think your friends and acquaintances viewed the following behaviors as Very Uncool, Somewhat Uncool, Neither Cool nor Uncool, Somewhat Cool, or Very Cool, where “Cool” refers to behavior that is respected or admired by students?” Finally, Don’t Know and Refused were treated as missing items. The responses to the eight items were not re-coded. The minimum score for this element of the Peer Factors composite was 8 and the maximum was 40 (see Table 1) (NLSF, 2008).

The second question included in the composite was, “Among the friends you hung out with last year, was it Not at All Important, A Little Important, Somewhat Important, or Very Important?” The responses to the 12 items were not re-coded. Don’t Know and Refused were treated as missing items. One item, “Be willing to party or get wild”, was removed from the composite in an effort to increase reliability (from Chronbach’s alpha ( $\alpha$ ) = .70 when the item was included to  $\alpha$  = .72 when the item was removed). The minimum score for this element of the Peer Factors composite was 11 and the maximum was 44. Overall, the highest composite score possible was 84 and the minimum score was 19 (see Table 1) (NLSF, 2008).

SES and high school academic ability were used as control variables in this study. SES is a composite comprised of five items which include father and mother levels of education, father and mother occupations, and family income. Each of the items was re-coded. The ten levels of education responses were collapsed into the following categories, Grade School and Some High School were reclassified as 1; High School Graduate and Some College were re-coded as 2; College Graduate was re-coded as 3; and Some Post-Graduate and Graduate or Professional Degree were re-coded as 4. Also, No Mother/No Woman (Father/Man) Responsible for raising R was re-coded as 0. Don’t know and Refused were treated as missing items. The minimum score for this element of the SES composite was 0 and the maximum was 8 (see Table 1) (NLSF, 2008).

Father and mother occupations were re-coded using the eight occupational categories provided. Occupations falling under the following categories; Farming, Forestry, and Fishing Occupations, Technical, Sales, and Administrative Support Occupations, Precision Production, Craft, and Repair Occupations, Service Occupations, Operators, Fabricators, and Laborers, and Experienced Unemployed Not Classified by Occupation were re-coded as 1. Occupations falling

under the headings of Managerial and Professional Specialty Occupations and Military Occupations were re-coded as 2. Occupations that were re-coded as 1 were considered occupations in which a college degree would generally not be required as a condition of employment. Occupations re-coded as 2 were occupations in which a college degree is more than likely required as a condition of employment. Military Occupations were re-coded as 2 because a majority of the options listed were officer positions which generally require a college degree. Responses of Other, No Mother/Father, No Mother/Father in Home, or Mother/Father not Working were coded as 0. Don't know and Refused were treated as missing items. Therefore, the score for this element of SES could range from 0 to 4 (see Table 1) (NLSF, 2008).

The final item comprising the SES composite was family income, which was re-coded in order to align with the general accepted classifications for lower, lower middle, middle and upper middle/upper economic classifications (Tse & Werschkul, 2005). The nine responses that ranged from Under \$3000 to \$15,000 - \$19,999 were re-coded as 1. The response \$20,000 - \$34,999 was re-coded as 2. The two responses that ranged from \$35,000 - \$49,999 to \$50,000 - \$74,999 were re-coded as 3. Responses of \$75,000 or More were re-coded as 4. Lastly, the responses Don't Know and Refused were treated as missing items. The minimum score achievable was 1 and the maximum 4. The maximum score that could be achieved in the final SES composite was 16 and the minimum score was 1 (see Table 1) (NLSF, 2008).

High school academic ability was measured by creating a composite based on high school grades in core classes (NLSF, 2008). The NLSF data do not provide a grade point average variable; therefore it was necessary to create a composite for high school grades using the reported grades for the six subjects (English, History, Mathematics, Natural Sciences, Social Sciences, and Foreign Languages) queried on the questionnaire. Re-coding was undertaken to convert the letter grades to numbers. A grade of D was re-coded to 1, C was re-coded to 2, B was re-coded to 3, and A was re-coded to 4. The response Not Graded was re-coded to missing. The response Don't Know was treated as a missing item. The maximum score that could be achieved in the final High School Academic Ability (HSAcAbility) composite was 24 and the minimum score was 6 (NLSF, 2008).

The dependent variable of Academic Persistence was measured by creating a composite combining the questions Graduation within Four Years and Graduation within Six Years. Not

Graduated from College within Four Years and Not Graduated from College within Six Years were re-coded as 0. Graduated from College within Six Years was re-coded as 1 and Graduated from College within Four Years was re-coded as 2. The maximum score that could be achieved in the Academic Persistence composite was 2 and the minimum score achievable was 0 (see Table 1) (NLSF, 2008).

Following composite creation and the re-coding of variables, I ran descriptive statistics and conducted reliability tests to ensure that the variables correlated with one another and maintained internal consistency. The Chronbach's alpha ( $\alpha$ ) for the composites ranged from 0.87 for Self (student) Factors to 0.70 for both SAT Score and High School Academic Ability. Full results appear in Table 2. Once the variables were re-coded, a correlation analysis was run to find significance among the variables in the study. All variables were correlated except for the variables that made up the three Self Factors composites (see Table 3).

Following the correlation analysis a rotated factors analysis was conducted to confirm that factor loadings were meaningful. The results from the rotated factor analysis guided the construction of the variables into five Parent Factor composites, three Self Factor composites and five Peer Factor composites. All composites had loading factors above 0.40 (see Table 4). Once the rotated factor analysis was complete, sequential multiple regression was used to predict the impact of student, parental, peer factors, and race on academic success of male students controlling for SES and academic ability. This method was used to determine which independent variables best predicted the dependent variables (academic achievement and persistence) for male students. This method was also chosen because the Bandura, et al. (1996) theoretical model identified a small set of independent variables (SES, familial, self, peer) that affect academic achievement (Keith, 2006).

The research questions were addressed using sequential multiple regression by entering variables into the model for each of the two questions in the following order: (1) SES, (2) academic ability, (3) race/ethnicity, (4) parental (familial) factors, (5) student (self) aspiration, (6) social (peer) factors. When using this form of regression it is suggested that controlled variables be entered first, hence SES and academic ability were the first two variables included in the model. Variables that entered the model but did not contribute significantly in prediction were omitted from the final model (Keith, 2006).



**Table 2**  
Descriptive Statistics and  $\alpha$  for Composite Variables (N=1224)

Scale and Item	M	SD	$\alpha$
<i>Grade point average</i>	3.06	0.52	--
<i>Academic Persistence</i>	1.55	0.72	--
Graduation within 4 years			
Graduation within 6 years			
<i>Parental (familial) Factors</i>			0.79
Check if you'd done your homework?	2.15	1.16	
Meet personally with your teachers?	2.31	1.01	
Help you with your homework?	1.83	0.93	
Talk with your friends?	3.22	1.05	
Reward you for good grades?	2.65	1.28	
Punish you for bad grades?	1.81	1.12	
Punish you for disobedience?	2.36	1.17	
Limit your TV watching?	1.63	0.94	
Limit your playing of video games?	1.54	0.94	
Limit the time you spent with friends?	1.85	0.96	
Set an hour to return home at night?	2.97	1.49	
Ask you do household chores?	3.56	1.07	
Take you to museums?	1.64	0.86	
Take you to plays or concerts?	2.05	1.11	
Take you to sporting events?	2.43	1.27	
Take you traveling within the U.S.?	2.80	1.24	
Take you on trips to foreign countries?	1.68	1.10	

**Table 2 (ctd.)**Descriptive Statistics and  $\alpha$  for Composite Variables (N=1224)

Scale and Item	M	SD	$\alpha$
<i>Self (student) Factors</i>			0.87
I feel that I am a person of worth, equal (Re-code)	4.67	0.62	
I feel that I have a number of good qualities (Re-code)	4.72	0.52	
All in all, I am inclined to feel that I am a failure	4.56	0.68	
I am able to do things as well as most people. (Re-code)	4.50	0.66	
I feel that I do not have much to be proud of.	4.50	0.76	
I take a positive attitude toward myself (Re-code)	4.37	0.76	
On the whole, I am satisfied with myself (Re-code)	4.27	0.83	
I wish I could have more respect for myself	3.76	1.12	
I feel useless at times	3.63	1.16	
At times I think I'm no good at all	4.04	1.04	
I don't have control over the direction my life	4.29	0.82	
Good luck is more important than hard work for success	4.20	0.81	
Every time I try to get ahead, something/body stops me	4.13	0.81	
When I make plans, I can make them work (Re-code)	4.07	0.79	
I feel left out of things going on around me	3.61	0.96	
If I work hard, I can do well (Re-code)	4.60	0.61	
<i>Social (peer) Factors</i>			0.80
Studying hard outside of class?	3.15	0.93	
Asking challenging questions in class?	3.26	0.93	
Volunteering information in class?	3.18	0.90	
Answering teachers' questions in class?	3.26	0.79	
Solving problems using new and original ideas?	3.69	0.87	
Helping other students with their homework?	3.83	0.84	
Getting good grades in difficult subjects?	4.09	0.89	
Planning to go to college?	4.48	0.76	
Attend classes regularly?	3.23	0.85	
Study hard?	2.92	0.88	
Play sports?	2.82	1.03	
Get good grades?	3.29	0.79	
Be popular or well-liked?	2.79	0.94	

**Table 2 (ctd.)**Descriptive Statistics and  $\alpha$  for Composite Variables (N=1224)

Scale and Item	M	SD	$\alpha$
<i>Social (peer) Factors (ctd.)</i>			
Finish high school?	3.90	0.39	
Go to college?	3.74	0.57	
Have a steady boyfriend or girlfriend?	2.07	0.83	
Participate in religious activities?	1.81	0.85	
Do community or volunteer work?	2.08	0.88	
Hold a steady job?	2.14	0.91	
<i>SES</i>			0.76
Highest level of schooling – mother	2.94	0.90	
Highest level of schooling - father	3.13	0.94	
Mother's occupation	1.63	0.48	
Father's occupation	1.71	0.46	
Annual household income	3.31	0.90	
<i>High School Academic Ability</i>			0.70
English	3.64	0.54	
History	3.70	0.53	
Mathematics	3.58	0.62	
Natural Sciences	3.68	0.59	
Social Sciences	3.80	0.65	
Foreign Languages	3.62	0.63	

**Table 3**  
Item Descriptives and Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. GPA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2. Graduation	0.29**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3. SES	0.25**	0.22**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4. Ac Ability	0.29**	0.25**	0.14**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5. White	0.25**	0.20**	0.34**	0.19**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6 Black	-0.22**	-0.21**	-0.19**	-0.26**	-0.52**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7. H/Latino	-0.05	0.00	-0.17**	0.05	-0.54**	-0.44**	---	---	---	---	---	---	---	---	---	---	---	---	---
8. Self 1	-0.06	-0.02	0.01	0.01	-0.03	0.35	0.00	---	---	---	---	---	---	---	---	---	---	---	---
9. Self 2	-0.04	-0.04	-0.01	0.00	-0.05	0.05	-0.00	0.59**	---	---	---	---	---	---	---	---	---	---	---
10. Self 3	-0.03	-0.03	-0.02	0.01	-0.05	0.05	0.01	0.57**	0.48**	---	---	---	---	---	---	---	---	---	---
11. Parent 1	-0.06	-0.05	0.01	-0.03	-0.09**	0.06*	0.03	-0.02	-0.05	-0.02	---	---	---	---	---	---	---	---	---
12. Parent 2	-0.10	-0.02	0.07*	-0.05	-0.06*	0.06*	0.01	-0.06*	-0.07*	-0.01	0.39**	---	---	---	---	---	---	---	---
13. Parent 3	0.14	0.14**	0.30**	0.11**	0.17**	-0.20**	0.02	-0.02	-0.03	-0.02	0.20**	0.31**	---	---	---	---	---	---	---
14. Parent 4	-0.04	0.01	0.10**	0.07**	-0.00	0.04	-0.04	0.01	-0.03	-0.03	0.32**	0.29**	0.25**	---	---	---	---	---	---
15. Parent 5	-0.16**	-0.18**	-0.02	-0.11**	-0.18**	0.16**	0.04	-0.02	-0.03	-0.02	0.48**	0.42**	0.19**	0.33**	---	---	---	---	---
16. Peer 1	-0.02	-0.02	0.01	-0.04	-0.01	0.08**	-0.07*	-0.04	-0.02	-0.05	0.05	0.09**	0.13**	0.03	0.03	---	---	---	---
17. Peer 2	0.04	0.08**	-0.00	-0.07*	-0.03	0.07*	-0.04	-0.03	-0.02	-0.01	0.06*	0.14**	0.12**	0.07*	0.06	0.33**	---	---	---
18. Peer 3	-0.13**	-0.09**	-0.05	-0.04	-0.09**	0.11**	-0.02	0.02	0.04	0.05	0.08**	0.11**	0.10**	0.05	0.18**	-0.10**	0.10**	---	---
19. Peer 4	0.05	0.03	0.02	0.08**	0.02	0.01	-0.04	0.02	0.02	0.00	0.01	0.04	0.11**	0.05	0.04	0.54**	0.39**	-0.01	---
20. Peer 5	-0.13**	-0.04	-0.12**	0.09**	-0.13**	0.15**	-0.02	-0.03	-0.03	0.01	0.06*	0.13**	0.09**	0.15**	0.12**	0.21**	0.31**	0.20**	0.25**

Notes: 1. \*p<0.05, \*\*p<0.01

2. Upper diagonal cells were intentionally left blank.

**Table 4**  
Rotated Factor Analysis on Parent, Self, Peer Factors (N=1,217)

Factor	Variable	Factor Loading Above .400
Parent Factor 1		
	Limited TV watching	0.803
	Limited video games	0.779
	Limited time spent with friends	0.622
Parent Factor 2		
	Help with homework	0.774
	Check if homework done	0.734
	Meet personally with teachers	0.608
Parent Factor 3		
	Taken on trips in the U.S.	0.699
	Taken on trips to foreign countries	0.678
	Taken to plays or concerts	0.650
	Taken to museum	0.607
	Taken to sporting events	0.521
Parent Factor 4		
	Asked to do household chores	0.686
	Set hour to return home at night	0.650
	Talked with child's friends	0.489
Parent Factor 5		
	Punished for bad grades	0.661
	Punished for disobedience	0.581
	Rewarded for good grades	0.478
Peer Factor 1		
Peers think it's cool to:		
	Volunteer info in class	0.822
	Ask hard questions	0.815
	Answer teachers questions	0.801
	Cool to study	0.673
	Use creative problem solving	0.629
Peer Factor 2		
Friends think it's important to:		
	Study hard	0.745
	Attend class regularly	0.729
	Get good grades	0.715
	Go to college	0.657
	Finish high school	0.581
Peer Factor 3		
Friends think it's important to:		
	Be popular	0.829
	Play sports	0.717
	Have steady relationships	0.560

**Table 4 (continued)**

Rotated Factor Analysis on Parent, Self, Peer Factors (N=1217)

Factor	Variable	Factor Loading Above .400
Peer Factor 4		
Peers think it's cool to:		
	Plan to go to college	0.724
	Do well in hard classes	0.591
	Help others with homework	0.560
Peer Factor 5		
Friends think it's important to:		
	Hold a steady job	0.682
	Participate in religion	0.634
	Do volunteer work	0.628
Self Factor 1		
	I feel useless at times	0.758
	Sometimes I feel I am no good at all	0.749
	I wish I had more self-respect	0.718
	I am satisfied with myself	0.629
	Positive attitude towards self	0.563
	Feel left out of things around me	0.561
	Do not have much to be proud of	0.421
Self Factor 2		
	I feel I have a number of good qualities	0.860
	I feel I am a person of worth	0.818
	I can do things as well as most people	0.551
	I feel that I am a failure	0.477
Self Factor 3		
	Good luck is more important than hard work	0.747
	Do not have control over the direction of my life	0.624
	I am always stopped from getting ahead	0.620
	I can do well if I work hard	0.562
	I can always make plans work	0.455

In summary, the purpose of this study was to examine the factors that predict academic achievement and persistence of male students enrolled in college. This study also examined the relationship between race/ethnicity and the parental factors, self factors, social factors, SES, and high school academic ability used to predict academic achievement and persistence of male students. The methodology outlined in this chapter was deemed sufficient to answer the research questions posed in the study.

## Chapter Four

### Summary of Results

As previously stated, an alternative approach will be used in this dissertation. Instead of writing traditional fourth (Results) and fifth (Discussion and Implications) chapters, I will use the data analysis to craft two manuscripts (Chapters Five and Six) suitable for submission to refereed journals. In order to set the context for those articles, this chapter presents a brief summary of the results of the data analysis. Tables that report the findings are included in the respective articles.

#### Demographic Characteristics

Demographic information was collected for variables used in analysis. The sample consisted of 38.7% White, 31.3% Latino/Hispanic and 30% Black male students. Nearly three-quarters (2.6%) of the students reported a college grade point average ranging between 3.00 and 3.99. The majority (62.2%) of the sample graduated within four years, 20.7% graduated within six years and 17.1% of the sample had not graduated by the time the study was concluded. Just over half (54.4% ) of the participants reported that their annual household income while in high school was over \$75,000 while 28.5% reported an annual household income ranging between \$35,000 and \$74,999. Further information regarding SES and high school academic ability is reported in Tables 5 and 10 respectively in each of the two the articles (Chapters Five and Six).

#### Descriptive Statistics and Alpha Correlations for Composite Variables

After identifying variables within the NLSF dataset which aligned with the theoretical model, a reliability test was conducted to ensure the proposed composite groupings reported a substantial Chronbach's alpha score (see Table 6 in Chapter Five and Table 11 in Chapter Six). All composites reported a  $\alpha$  of .70 or higher.

#### Rotated Factors Analysis

In an effort to ensure that factor loadings reached high enough levels to be considered meaningful, a rotated factor analysis was conducted. The rotated factor analysis provided a more statistically robust grouping of individual variables into the parent, self and peer composites. The



data yielded from the rotated factor analysis led to the formation of three Self Factor composites, and five composites for both Parent and Peer Factors (see Table 7 in Chapter Five and Table 12 in Chapter Six) all of which had loading factors over .40.

### Correlations

The first step in the analysis was to examine the relationships between variables. A correlations analysis was run to find significance among variables used in the study. Each variable was significantly correlated with at least one other variable. The only exception was the three Self Factors composites. (see Table 8 in Chapter Five and Table 13 in Chapter Six).

### Regression

Once significant factors were determined a four-step regression model was created for each dependent variable (Current College GPA and Time to Graduation). For the dependent variable of Current College GPA the control variables SES and High School Academic Ability were entered into model one and reported a  $R^2$  of 0.132. Model two included the control variables SES and High School Academic Ability and also included the independent race variables of Black and Latino/Hispanic which yielded a  $R^2$  of 0.156. Model three was constructed using the same control and independent variables as model two in addition to the independent variables Parent Factor 3 and Parent Factor 5 and reported a  $R^2$  value of 0.173. Model four included all the previous mentioned variables in addition to the independent variables Peer Factor 3 and Peer Factor 5 and reported a  $R^2$  value of 0.189 (see Table 9 in Chapter Five).

For the dependent variable Time to Graduation the control variables SES and High School Academic Ability were entered into Model one and reported a  $R^2$  of 0.098. Model two included the control variables SES and High School Academic Ability and also included the independent race variable, Black which reported a  $R^2$  0.111. Model three was constructed using the same control and independent variables as model two in addition to the independent variables Parent Factor 3 and Parent Factor 5 and reported a  $R^2$  value of 0.138. Model four included all the previous mentioned variables in addition to the independent variables Peer Factor 1, Peer Factor 2 and Peer Factor 3 and reported a  $R^2$  value of 0.150 (see Table 14 in Chapter Six).

The remainder of this dissertation consists of two articles. The first centers around the results concerning the prediction of college GPA among male students based on race, parent and peer factors. The second article addresses the prediction of persistence among male students based on race, parent and peer factors. Each article is self-standing. That is, each describes the topic of the study, the method used to collect and analyze the data, the results, a discussion of those results, the references cited in that article, and the tables relevant to that article. At the conclusion of the second article, a full listing of references cited in the dissertation is provided, followed by the appendices for the study.

## Chapter Five

### Predicting Academic Success of Male College Students

Over the last 40 years, the number of male students participating in higher education has dropped precipitously when compared to the number of women seeking postsecondary educational opportunities. Women's college enrollment increased by 20% between 1967 – 2000, while men's enrollment decreased by 4% (Adebayo, 2008). Women make up 57% of students enrolled in college today while male students represent just 42.5% of that population (*Chronicle of Higher Education Almanac*, 2009). Clearly, men are rapidly becoming an endangered species in the academy.

While the educational attainment gap between men and women is widening, the growing racial gap further exacerbates the issue for men. White students represent the majority of all undergraduates (67.5%) and Asian students are the only minority group that is overrepresented in postsecondary education (6.5%) in relation to its share of the national population (4.2%). Latino/Hispanics (12.5%) outnumber Blacks (12.3%) in the national population. However, both Latino/Hispanic (10.8%) and Black students (12.7%) are underrepresented in college enrollments (*Chronicle of Higher Education Almanac*, 2009; U.S. Census Bureau, 2000).

When gender and race are combined these differences are stark. There is, at minimum, a 10% gap in enrollment between male and female students within all racial groups except Asians where the gap is 8%. White women in the academy outnumber men by 56% to 44%. The gap is more pronounced among Latino/Hispanic and Black students. Latino/Hispanic men have not experienced a growth in enrollment since the early 1970s and the current enrollment gap finds Latino/Hispanic women outnumbering men 59% to 41%. Black students have the largest male to

female deficit; a 30% spread. (*Chronicle of Higher Education Almanac*, 2009; Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003, 2005).

While these numbers are alarming, they represent only the participation rates in higher education. Perhaps more critical are the academic success rates for men in college. Until academic leaders are able to improve the enrollment rate, it is essential that those male students who are enrolled in college thrive and succeed academically. For the purposes of this study, academic success was defined as final college GPA.

Research has consistently demonstrated that race, SES, and high school record affect college academic success (Blackhurst & Auger, 2008; Strayhorn, 2006). At times, these factors are conflated. For example, societal restraints, institutionalized prejudice and racism have led to a situation where Blacks and Latinos are more likely to live in poverty and receive substandard pre-college education opportunities. Such situations unsurprisingly lead to underachievement in the classroom and can ultimately result in ethnic minorities devaluing the positive benefits of higher education (Smith & Fleming, 2006). There are, however, variables beyond race, SES, and academic record in high school that influence college success. Three other non-cognitive factors are most pertinent to our study: parental factors, self-efficacy, and peers.

Bandura, Barbaranelli, Caprara, and Pastorelli (1996) created a model that addresses academic achievement and suggests that the efficacy of parents, students, and peers, when combined with SES, predict academic success. Each variable within the model can affect the others. Low SES is linked to low parental efficacy, low parental efficacy limits ability to promote academic achievement with a child which, in turn affects the student's ability to achieve and persist academically (Bandura, et al., 1996). Low SES also impacts parents' level of confidence in shielding their child from societal hazards that can negatively affect academic

performance. The higher the SES of a family the higher the academic aspirations parents have for the child (Bandura, et al., 1996). High parental efficacy positively correlates with high self efficacy of the student as well as high academic aspiration (Bandura, et al., 1996).

The parent – child relationship is an important factor to consider because academic success as well as educational aspirations are shaped by parents (McCarron & Inkelas, 2006). Parental efficacy, the interaction between a child and parent, affects the self-efficacy and aspirations of the child. High parental efficacy can positively affect a student's academic success and can lead to an improved sense of self-efficacy. Low parental efficacy and engagement can deter children from pursuing higher education. (Tierney & Auerbach, 2005).

Students of all races, SES, and familial structures benefit from high parental efficacy (McCarron & Inkelas, 2006). Parents are influential in the academic success attained by their children (Stewart, 2008). Parental engagement conveys educational goals and values, and can positively affect academic success (Smith & Fleming, 2006). To be most effective, parental engagement and efficacy must be simultaneously paired with a student's personal effort toward achieving academically and with proper college counseling (Tierney & Auerbach, 2005).

Peers have two types of influence on students. The first is psychological (individual) and involves the student looking to develop an identity based on affiliating with peers who utilize a similar belief system. Sociological (group) peer influence refers to a situation in which the group wields power over group member decisions. Once a student gains membership, future decisions are influenced by a desire to conform to the group norms and values even when those conflict with the individuals' preferred norms and values (Astin, 1993; Pascarella & Terenzini, 2005). Peer groups tend to promote homogeneity and discourage heterogeneity (Astin & Panos, 1969).

Peer influence reaches beyond the classroom and such influence can have positive effects on the development of student's academic skills (Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999). All forms of peer interaction and influence are not positive, however. Peers who choose not to focus on academic success can be a detriment to the academic achievement of students with whom they socialize (Pascarella & Terenzini, 2005).

Positive self-efficacy directly affects academic success and peer acceptance. Students with high academic self-efficacy are more likely to be accepted by peers because they tend to be more social than students with low levels of academic efficacy (Bandura, 1993). Conversely, those who do not have faith in their intellectual abilities are likely to socialize with other students who do not value education. Being accepted by peers helps students develop higher levels of self-efficacy, be more comfortable at school and allows students to focus on academics rather than being distracted by peer conflict and rejection (Bandura, 1993; Bandura, et al., 1996).

Self-efficacy is a concept that revolves around people's belief that they can control the events that influence their life. Similar to parental efficacy and peer involvement, self efficacy can also have a bearing on academic success. For the purposes of this study, self-efficacy was defined as the level of belief and confidence a student has in his/her ability to effectively complete a task or accomplish a goal. Efficacy reflects how a student feels, thinks, and behaves (Bandura, 1986; Schunk & Zimmerman, 2007).

Students who think they will succeed have higher levels of self-efficacy than students who focus on obstacles when completing a task. This negative outlook presents difficulties for students because instead of focusing on successfully accomplishing a task they waste time and energy with self doubt (Bandura, 1997). Ability and skill are important ingredients of academic success, but should not be viewed as characteristics that only the fortunate few possess. A

healthy sense of self-efficacy instills confidence in individuals and allows them to best utilize their abilities and skills in an academic setting (Bandura, 1993). Self-efficacy is believed to be a better predictor of academic success than ability. However, it is important to note, that a student's self-efficacy cannot supersede natural capability (Mills, Pajares, & Herron, 2007).

In summary, then, race, SES and high school academic success influence college academic success (Blackhurst & Auger, 2008; Clark, Lee, Goodman, & Yacco, 2008; Porter, 2006; Smith & Fleming, 2006). There is also research that examines parental efficacy, self-efficacy, and peer influence on academic success. However, these efficacy variables typically have been studied in isolation. Research on the intersection of these factors in regards to academic success of male students, particularly men of color is limited (Bandura, et al., 1996; Clark, et al., 2008; Strayhorn, 2006). This study aimed to address this gap in the literature.

The purpose of this study was to determine what factors predict academic success (defined as final college GPA) of male college students. We also sought to examine whether there is a relationship between race and the factors used to predict academic success. The study was guided by the following research question:

1. After controlling for SES and academic ability, do parental, student, peers, and/or race factors predict academic success (final GPA) of male college students?

We employed the Bandura, et al. (1996) theoretical model in the study and used three variables from that model that influence self-efficacy (parents, peer, and self) and added the variable of race. We controlled for the two factors that are known to influence college GPA, SES (1996) and high school record (Clark, et al., 2008; Perna, 2000).

## Method

Data from the National Longitudinal Survey of Freshmen (NLSF) were used to conduct the analysis. The NLSF provides data on equal size samples of African American, Asian, White, and Hispanic/Latino students at 28 highly selective institutions of higher education in the United States. The Survey aimed to examine academic success in higher education as well as explore relationships among pre-college behavior, race, and outcomes of higher education (NLSF, 2008).

The NLSF sample consisted of 3,924 participants who were first year resident alien freshmen at participating institutions of higher education (NLSF, 2008). Respondents were surveyed in a succession of waves starting in the fall of 1999 and continuing each academic year through five waves of data collection that concluded during the 2002-2003 academic year. The data were collected through face-to-face interviews that lasted two hours in duration and follow-up phone interviews (NLSF, 2008).

The participants in our study included Black, White, and Hispanic/Latino male students in the NLSF sample. Asian students were not included because Asians are not underrepresented in higher education (*Chronicle of Higher Education Almanac*, 2009; Perna, 2000) and we were interested in the success of those whose enrollment numbers are dwindling. Cases in which there were missing data were excluded in the analyses. These two factors reduced the total sample to 711 respondents. The final sample consisted of 301 (42.3%) White, 220 (30.9%) Hispanic/Latino, and 190 (26.7%) Black male students. Other demographic characteristics of participants are reported in Table 5.

### *Procedure*

The statistical software PASW was used to run descriptive analyses, correlations, a rotated factor analysis, and sequential multiple regression on the data. The raw data were



**Table 5**  
Demographic Characteristics of the Sample (N=711)

Demographic Characteristics	N	%
Race		
Black	190	26.7
Latino/Hispanic	220	30.9
White	301	42.3
Final College Grade Point Average		
0.00 – 0.99	0	0.0
1.00 – 1.99	3	0.4
2.00 – 2.99	185	26
3.00 – 3.99	516	72.6
4.00	7	1
Academic Persistence		
Graduation within 4 years	468	65.9
Graduation within 6 years	171	24.1
Not Graduated	71	10.0
SES		
Highest level of schooling – mother		
Grade school, Some High School	27	3.8
HS Graduate, Some College	210	29.7
College Graduate	211	29.9
Some Post-Graduate or Prof Degree	258	36.5
Highest level of schooling - father		
Grade school, Some High School	32	4.7
HS Graduate, Some College	148	21.8
College Graduate	184	27.1
Some Post-Graduate or Prof Degree	314	46.3
Mother's occupation		
Farming/Forestry/Fishing, Tech Sales/ Admin Support, Precision Production/Craft/ Repair, Service Occupations, Operators/ Fabricators/Laborers, Experienced Unemployed Managerial/Professional Specialty, Military	188	34.8
	352	65.2

**Table 5 (continued)**  
Demographic Characteristics of Male Students (N=711)

Demographic Characteristics	N	%
Father's occupation		
Farming/Forestry/Fishing, Tech Sales/ Admin Support, Precision Production/Craft/ Repair, Service Occupations, Operators/ Fabricators/Laborers, Experienced Unemployed Managerial/Professional Specialty, Military	148 356	29.4 70.6
Annual household income		
Under \$3000 - \$19,999	38	5.5
\$20,000 - \$34,000	74	10.7
\$35,000 - \$74,999	199	28.9
\$75,000 or More	378	54.9
High School Academic Ability		
English		
Mostly D's	0	0
Mostly C's	11	1.5
Mostly B's	203	28.6
Mostly A's	496	69.9
History		
Mostly D's	1	0.1
Mostly C's	12	1.7
Mostly B's	159	22.5
Mostly A's	536	75.7
Mathematics		
Mostly D's	2	0.3
Mostly C's	35	4.9
Mostly B's	201	28.3
Mostly A's	472	66.5
Natural Sciences		
Mostly D's	1	0.1
Mostly C's	17	2.4
Mostly B's	172	24.5
Mostly A's	513	73.0
Social Sciences		
Mostly D's	0	0.0
Mostly C's	8	1.2
Mostly B's	142	20.7
Mostly A's	537	78.2
Foreign Languages		
Mostly D's	2	0.3
Mostly C's	26	3.7
Mostly B's	181	25.6
Mostly A's	499	70.5

examined thoroughly and outliers and inconsistencies were removed. Next, the data were re-coded and composites were created to group the variables that aligned with the Bandura et. al. (1996) model. Finally, the analyses were run using the re-coded and composite variables.

The independent variable of Parental Factors was taken from the first wave questionnaire. The questionnaire consisted of stem questions followed by a series of sub-items. The stem for Parental Factors was, “Last year (senior year of high school), how often did your parents or other adults in your household ..?” There were 17 sub-items that asked about activities that parents engaged in such as, “Check if you’d done your homework”, “Punish you for bad grades”, and “Take you traveling within the U.S.” (NLSF, 2008). Participants responded to each sub-item from a menu of options that included: Never, Rarely, Sometimes, Often, Very Often, Don’t Know and Refused.

The independent variable of Peer Factors was taken from two items on the first wave of the Survey. The first item asked: “In your high school, do you think your friends and acquaintances viewed the following behaviors as Very Uncool, Somewhat Uncool, Neither Cool nor Uncool, Somewhat Cool, or Very Cool, where “Cool” refers to behavior that is respected or admired by students?” Don’t Know and Refused were also response options. The eight sub-items asked respondents to rate activities like, “Studying hard outside of class”, “Answering teacher’s questions in class”, and “Planning to go to college” (NLSF, 2008).

The second question asked “Among the friends you hung out with last year, was it Not at All Important, A Little Important, Somewhat Important, or Very Important to....? The 12 sub-items asked things such as “Attend class regularly”, “Be popular or well liked”, and “Hold a steady job” (NLSF, 2008). Don’t Know and Refused were also response options.

The independent variable of Self Factors was taken from two items in the first wave of the survey. The first item asked participants “How much do you agree or disagree with each of the following statements?” There were 10 sub-items that asked about self-perceptions such as “I am able to do things as well as most people”, “I feel that have a number of good qualities”, and “I feel useless at times” (NLSF, 2008). Response options included Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Don’t Know, and Refused.

Second, participants responded to six sub-items associated with the following stem: “Thinking about your life at the moment, how much do you agree or disagree with the following statements?” The six sub-items asked about perceptions such as “I don’t have control over the direction my life is taking”, “Every time I try to get ahead, something or somebody stops me”, and “If I work hard, I can do well” (NLSF, 2008). Respondents indicated the degree to which they agreed with each sub-item with options that ranged from Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Strongly Disagree to Don’t Know, and Refused.

Once we identified the variables within the dataset that correlated to the theoretical model we conducted a reliability test on the entire dataset to ensure that the proposed composite groupings reported a substantial Chronbach’s alpha score. All composites reported at .70 or higher (see Table 6). Next, a rotated factor analysis was conducted on the entire dataset to ensure that factor loadings would reach proper levels. The analysis provided a guide to how many composites should be created and which variables should make up those composites. Using the data, three Self Factor composites, and five Parent Factor and five Peer Factor composites were created (see Table 7). All composites had loading factors well over .40 suggesting that they were valid measures.

**Table 6**Descriptive Statistics and  $\alpha$  for Composite Variables (N=1,224)

Scale and Item	M	SD	$\alpha$
<i>Grade point average</i>	3.06	0.52	--
<i>Academic Persistence</i>	1.55	0.72	--
Graduation within 4 years			
Graduation within 6 years			
<i>Parental (familial) Factors</i>			0.79
Check if you'd done your homework?	2.15	1.16	
Meet personally with your teachers?	2.31	1.01	
Help you with your homework?	1.83	0.93	
Talk with your friends?	3.22	1.05	
Reward you for good grades?	2.65	1.28	
Punish you for bad grades?	1.81	1.12	
Punish you for disobedience?	2.36	1.17	
Limit your TV watching?	1.63	0.94	
Limit your playing of video games?	1.54	0.94	
Limit the time you spent with friends?	1.85	0.96	
Set an hour to return home at night?	2.97	1.49	
Ask you do household chores?	3.56	1.07	
Take you to museums?	1.64	0.86	
Take you to plays or concerts?	2.05	1.11	
Take you to sporting events?	2.43	1.27	
Take you traveling within the U.S.?	2.80	1.24	
Take you on trips to foreign countries?	1.68	1.10	

**Table 6 (continued)**Descriptive Statistics and  $\alpha$  for Composite Variables (N=1224)

Scale and Item	M	SD	$\alpha$
<i>Self (student) Factors</i>			0.87
I feel that I am a person of worth, equal (Re-code)	4.67	0.62	
I feel that I have a number of good qualities (Re-code)	4.72	0.52	
All in all, I am inclined to feel that I am a failure	4.56	0.68	
I am able to do things as well as most people. (Re-code)	4.50	0.66	
I feel that I do not have much to be proud of.	4.50	0.76	
I take a positive attitude toward myself (Re-code)	4.37	0.76	
On the whole, I am satisfied with myself (Re-code)	4.27	0.83	
I wish I could have more respect for myself	3.76	1.12	
I feel useless at times	3.63	1.16	
At times I think I'm no good at all	4.04	1.04	
I don't have control over the direction my life	4.29	0.82	
Good luck is more important than hard work for success	4.20	0.81	
Every time I try to get ahead, something/body stops me	4.13	0.81	
When I make plans, I can make them work (Re-code)	4.07	0.79	
I feel left out of things going on around me	3.61	0.96	
If I work hard, I can do well (Re-code)	4.60	0.61	
<i>Social (peer) Factors</i>			0.80
Studying hard outside of class?	3.15	0.93	
Asking challenging questions in class?	3.26	0.93	
Volunteering information in class?	3.18	0.90	
Answering teachers' questions in class?	3.26	0.79	
Solving problems using new and original ideas?	3.69	0.87	
Helping other students with their homework?	3.83	0.84	
Getting good grades in difficult subjects?	4.09	0.89	
Planning to go to college?	4.48	0.76	
Attend classes regularly?	3.23	0.85	
Study hard?	2.92	0.88	
Play sports?	2.82	1.03	
Get good grades?	3.29	0.79	

**Table 6 (continued)**Descriptive Statistics and  $\alpha$  for Composite Variables (N=1224)

Scale and Item	M	SD	$\alpha$
<i>Social (peer) Factors (ctd.)</i>			
Be popular or well-liked?	2.79	0.94	
Finish high school?	3.90	0.39	
Go to college?	3.74	0.57	
Have a steady boyfriend or girlfriend?	2.07	0.83	
Participate in religious activities?	1.81	0.85	
Do community or volunteer work?	2.08	0.88	
Hold a steady job?	2.14	0.91	
<i>SES</i>			0.76
Highest level of schooling – mother	2.94	0.90	
Highest level of schooling - father	3.13	0.94	
Mother's occupation	1.63	0.48	
Father's occupation	1.71	0.46	
Annual household income	3.31	0.90	
<i>High School Academic Ability</i>			0.70
English	3.64	0.54	
History	3.70	0.53	
Mathematics	3.58	0.62	
Natural Sciences	3.68	0.59	
Social Sciences	3.80	0.65	
Foreign Languages	3.62	0.63	

**Table 7**  
Rotated Factor Analysis on Parent, Self, Peer Factors (N=1,217)

Factor	Variable	Factor Loading Above .400
Parent Factor 1		
	Limited TV watching	0.803
	Limited video games	0.779
	Limited time spent with friends	0.622
Parent Factor 2		
	Help with homework	0.774
	Check if homework done	0.734
	Meet personally with teachers	0.608
Parent Factor 3		
	Taken on trips in the U.S.	0.699
	Taken on trips to foreign countries	0.678
	Taken to plays or concerts	0.650
	Taken to museum	0.607
	Taken to sporting events	0.521
Parent Factor 4		
	Asked to do household chores	0.686
	Set hour to return home at night	0.650
	Talked with child's friends	0.489
Parent Factor 5		
	Punished for bad grades	0.661
	Punished for disobedience	0.581
	Rewarded for good grades	0.478
Peer Factor 1		
Peers think it's cool to:		
	Volunteer info in class	0.822
	Ask hard questions	0.815
	Answer teachers questions	0.801
	Cool to study	0.673
	Use creative problem solving	0.629
Peer Factor 2		
Friends think it's important to:		
	Study hard	0.745
	Attend class regularly	0.729
	Get good grades	0.715
	Go to college	0.657
	Finish high school	0.581
Peer Factor 3		
Friends think it's important to:		
	Be popular	0.829
	Play sports	0.717
	Have steady relationships	0.560



**Table 7 (continued)**

Rotated Factor Analysis on Parent, Self, Peer Factors (N=1217)

Factor	Variable	Factor Loading Above .400
Peer Factor 4		
Peers think it's cool to:		
	Plan to go to college	0.724
	Do well in hard classes	0.591
	Help others with homework	0.560
Peer Factor 5		
Friends think it's important to:		
	Hold a steady job	0.682
	Participate in religion	0.634
	Do volunteer work	0.628
Self Factor 1		
	I feel useless at times	0.758
	Sometimes I feel I am no good at all	0.749
	I wish I had more self-respect	0.718
	I am satisfied with myself	0.629
	Positive attitude towards self	0.563
	Feel left out of things around me	0.561
	Do not have much to be proud of	0.421
Self Factor 2		
	I feel I have a number of good qualities	0.860
	I feel I am a person of worth	0.818
	I can do things as well as most people	0.551
	I feel that I am a failure	0.477
Self Factor 3		
	Good luck is more important than hard work	0.747
	Do not have control over the direction of my life	0.624
	I am always stopped from getting ahead	0.620
	I can do well if I work hard	0.562
	I can always make plans work	0.455

The independent variable of race was taken from one demographic item in the dataset found in the first Survey wave. The question asked for the respondent's ethnicity and provided options of Asian, Hispanic or Latino, Black/African American, and Caucasian/White (NLSF, 2008).

We created the SES control variable by calculating a composite score comprised of five items reported in the first wave of data collection. The first two items asked about the highest level of schooling achieved by the respondents' mother (father) or the woman (man) most responsible for raising them. There were 10 response options ranging from Grade School to Graduate or Professional Degree. No mother/ no woman (no father/ no man) responsible for raising me, Don't Know and Refused were also options. The education responses were re-coded into four categories; Grade School/Some High School, High School Graduate/Some College, College Graduate, and Some Post Graduate/Professional Degree. No mother/no woman (no father/no man) responsible for raising me, Don't Know, and Refused were treated as missing items.

The third and fourth items comprising the SES composite asked about mother's/father's occupation. There were 905 response options grouped into eight categories ranging from Managerial and Professional Specialty Occupations to Operators, Fabricators, and Laborers to Military Occupations. Other, Don't Know and Refused were also options. The occupation responses were re-coded into two categories; occupations that would generally require a college degree, and jobs that would not require a college degree as a condition of employment. Other, Don't Know and Refused were treated as missing items

The final item of the composite asked for an estimate of the annual income of the household in which the participant spent his senior year of high school. There were 16 options

that ranged from “Under \$3,000” to “\$75,000 or more.” Don’t Know and Refused were also options (NLSF, 2008). Family income was re-coded into four categories Under \$3000 - \$19,999, \$20,000 - \$34,999, \$35,000 - \$74,999, and \$75,000 or More. These categories were created to align with the generally accepted classifications for lower, lower middle, middle and upper middle/upper economic classifications (Tse & Werschkul, 2005). Don’t Know and Refused were treated as missing items. The maximum score that could be achieved in the final SES composite was 16 and the minimum score was 1 (NLSF, 2008).

The control variable of academic ability was taken from information collected in the first wave of the NLSF. The dataset provided information regarding the respondent’s high school record through an item from the first wave that asked, “For each of the following subjects (English, History, Mathematics, Natural Sciences, Social Sciences, and Foreign Languages) did you get mostly A’s, B’s, C’s, D’s?” Because the NLSF data do not provide a high school GPA variable a composite was created using the reported grades for the six subjects. The re-coding converted the letter grades to numbers (A-4, B-3, C-2, D-1). The responses Not Graded and Don’t Know were re-coded as missing. The highest score possible for the High School Academic Achievement composite was 24 and the minimum score was 6 (NLSF, 2008).

The dependent variable of academic achievement was taken from a question regarding cumulative grade point average at most recent college attended. There was no suggested range; the participants simply reported their grade point average. This item was found in the fifth wave of the NLSF study (2008).

After creating composites and re-coding variables (Table 6) correlations (see Table 8) were run to find significance among the variables. Each variable was significantly correlated with at least one other variable. The only exception was the three Self Factors composites.

**Table 8**  
Item Descriptives and Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. GPA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2. Graduation	0.29**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3. SES	0.25**	0.22**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4. Ac Ability	0.29**	0.25**	0.14**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5. White	0.25**	0.20**	0.34**	0.19**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6 Black	-0.22**	-0.21**	-0.19**	-0.26**	-0.52**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7. H/Latino	-0.05	0.00	-0.17**	0.05	-0.54**	-0.44**	---	---	---	---	---	---	---	---	---	---	---	---	---
8. Self 1	-0.06	-0.02	0.01	0.01	-0.03	0.35	0.00	---	---	---	---	---	---	---	---	---	---	---	---
9. Self 2	-0.04	-0.04	-0.01	0.00	-0.05	0.05	-0.00	0.59**	---	---	---	---	---	---	---	---	---	---	---
10. Self 3	-0.03	-0.03	-0.02	0.01	-0.05	0.05	0.01	0.57**	0.48**	---	---	---	---	---	---	---	---	---	---
11. Parent 1	-0.06	-0.05	0.01	-0.03	-0.09**	0.06*	0.03	-0.02	-0.05	-0.02	---	---	---	---	---	---	---	---	---
12. Parent 2	-0.10	-0.02	0.07*	-0.05	-0.06*	0.06*	0.01	-0.06*	-0.07*	-0.01	0.39**	---	---	---	---	---	---	---	---
13. Parent 3	0.14	0.14**	0.30**	0.11**	0.17**	-0.20**	0.02	-0.02	-0.03	-0.02	0.20**	0.31**	---	---	---	---	---	---	---
14. Parent 4	-0.04	0.01	0.10**	0.07**	-0.00	0.04	-0.04	0.01	-0.03	-0.03	0.32**	0.29**	0.25**	---	---	---	---	---	---
15. Parent 5	-0.16**	-0.18**	-0.02	-0.11**	-0.18**	0.16**	0.04	-0.02	-0.03	-0.02	0.48**	0.42**	0.19**	0.33**	---	---	---	---	---
16. Peer 1	-0.02	-0.02	0.01	-0.04	-0.01	0.08**	-0.07*	-0.04	-0.02	-0.05	0.05	0.09**	0.13**	0.03	0.03	---	---	---	---
17. Peer 2	0.04	0.08**	-0.00	-0.07*	-0.03	0.07*	-0.04	-0.03	-0.02	-0.01	0.06*	0.14**	0.12**	0.07*	0.06	0.33**	---	---	---
18. Peer 3	-0.13**	-0.09**	-0.05	-0.04	-0.09**	0.11**	-0.02	0.02	0.04	0.05	0.08**	0.11**	0.10**	0.05	0.18**	-0.10**	0.10**	---	---
19. Peer 4	0.05	0.03	0.02	0.08**	0.02	0.01	-0.04	0.02	0.02	0.00	0.01	0.04	0.11**	0.05	0.04	0.54**	0.39**	-0.01	---
20. Peer 5	-0.13**	-0.04	-0.12**	0.09**	-0.13**	0.15**	-0.02	-0.03	-0.03	0.01	0.06*	0.13**	0.09**	0.15**	0.12**	0.21**	0.31**	0.20**	0.25**

Notes: 1. \*p<0.05, \*\*p<0.01

2. Upper diagonal cells were intentionally left blank.

Finally, a sequential regression model was used to predict the impact of parental and peer factors, along with race on academic achievement of male students controlling for SES and high school academic ability. This method of regression was used to determine the independent variable that best predicted the dependent variable, academic achievement (GPA) in college.

### Results

The sequential regression analysis revealed six significant factors: Black, Hispanic/Latino, Parent Factor 3, Parent Factor 5, Peer Factor 3 and Peer Factor 5 (see Table 9). Once significant factors were determined a four-step regression model was created for the dependent variable of Current College GPA. The control variables, SES and High School Academic Ability, were entered into model one and reported a  $R^2$  of 0.132. Model two included the control variables and the independent race variables (Black and Hispanic/Latino) which yielded a  $R^2$  of 0.156. Model three was constructed using the same control and independent variables as model two in addition to the independent variables Parent Factor 3 and Parent Factor 5 and reported a  $R^2$  value of 0.173. Model four included all the previous mentioned variables in addition to the independent variables Peer Factor 3 and Peer Factor 5 and reported a  $R^2$  value of 0.189 (see Table 9). In general, the variables in the model explained close to 19% of variance in college GPA.

### Discussion and Implications

The results suggest four key findings. First, race does matter when it comes to academic achievement. Being Black and/or Hispanic/Latino, coupled with the control variables, predicted about 15% of the variance, but more important had a negative effect on GPA (Table 9). This finding is consistent with prior studies that revealed Black and Hispanic/Latino men not only lag

**Table 9**  
Overall Regression Coefficients  
Dependent Variable: Current College GPA (N=705)

GPA												
Model 1			Model 2			Model 3			Model 4			
	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$
Step 1												
SES	0.037**	0.006	0.215**	0.028**	0.006	0.165**	0.025**	0.006	0.148**	0.022**	0.006	0.127**
High School Academic Ability	0.066**	0.009	0.269**	0.058**	0.009	0.238**	0.058**	0.009	0.235**	0.061**	0.009	0.247**
Step 2												
Black				-0.219**	0.049	-0.180**	-0.178**	0.050	-0.146**	-0.146**	0.050	-0.120**
Hispanic/Latino				-0.122**	0.046	-0.104**	-0.103*	0.046	-0.089*	-0.106*	0.046	-0.091*
Step 3												
Parent Factor 3							0.060*	0.030	0.073*	0.082**	0.031	0.100**
Parent Factor 5							-0.089**	0.025	-0.126**	-0.075**	0.025	-0.107**
Step 4												
Peer Factor 3										-0.075**	0.028	-0.094**
Peer Factor 5										-0.072*	0.032	-0.082*
Total R <sup>2</sup>			0.132			0.156			0.173			0.189
R <sup>2</sup> Change			0.129			0.151			0.165			0.180

Notes: \*p<0.05, \*\*p<0.01

behind other groups in postsecondary enrollment but those who are enrolled in college earn lower GPAs than their peers especially when attending Predominately White institutions of higher education (PWIs) (Allen, 1992; Beattie, 2002; Blackhurst & Auger, 2008; College enrollment gender gap widens for White and Hispanic students, but race and income disparities still most significant, 2006). All but one of the institutions in the NLSF study are PWIs. This pattern of results suggests the need to find alternative methods of motivating and supporting Black and Hispanic/Latino college men (Ehrmann, 2007; Fry, 2002; Harper, Patton, & Wooden, 2009; Oliva, 2004; Perna, 2005).

The academic issues challenging Black and Hispanic/Latino men do not originate upon enrollment in college. These students are products of their childhood environments (Oliva, 2004; Tierney, 1992). Support for men of color could be fostered through collaboration between college admission officers and middle school and high school counselors. Such a partnership would create a pipeline to convey admissions standards and academic expectations between K-12 and post-secondary education. Admission officers would also have the opportunity to encourage Black and Hispanic/Latino male middle/high school students to consider the benefits of attending college. This interaction would occur during a time when Black and Hispanic/Latino male students are young enough to make corrective changes in their academic curriculum and selection of extracurricular activities that could make them more viable candidates for college admission. Currently, the K-12 system and universities have little formal interaction. However, connecting the two would provide an opportunity to effectively develop and prepare Black and Hispanic/Latino male students for college using university standards as a guide.

Students are typically unaware of college academic prerequisites and also erroneously believe earning admission to college is more difficult than earning a degree (Venezia, Kirst, &

Antonio, 2003). These misconceptions can result from being a first generation student and/or growing up in a low SES neighborhood devoid of many role models with college experience. A connection between K-12 and postsecondary education could enlighten Black and Hispanic/Latino students regarding the college academic standards. Such a connection could also ensure that high school academic curricula are sufficiently rigorous to prepare students to enter introductory courses at the collegiate level.

The finding related to race also lays the groundwork for future research or policy. More work is needed to determine potential differences and commonalities within a single racial group. For example, a study should be conducted to explore whether there is a difference in achievement among Hispanic/Latino males based on other demographic characteristics like first generation status, native language status, or geographic region of the country in which they live. It would also be enlightening to compare academic achievement within racial groups by gender (e.g., African American men v. African American women). Likewise, policies that could positively affect the academic achievement of Black and Hispanic/Latino men should be revisited and focus not simply on college enrollment but issues that specifically affect these groups such as improving SAT scores, improving academic confidence, eradicating inappropriate classroom behavior, and diminishing the language divide among men in these groups (Allen, 1992; Cabrera & Padilla, 2004; Noguera, 2008; Smith & Fleming, 2006).

The second key finding of the study related to parental efficacy. Spending time in select activities with parents positively affects male students' college GPA. Indeed, this was the only factor positively associated with academic achievement. Taking children on domestic and international trips, visiting fine arts venues, and attending sporting events with sons while they are in high school seem to positively influence college GPA. It is important to note that these are



types of activities that parents of high SES typically can afford to provide their children. Hence, this finding could be partially attributed to fact that the respondents were students enrolled in selective institutions where students disproportionately come from wealthier backgrounds (Astin & Oseguera, 2004). It is also feasible that parents with greater financial means are able to spend time participating in leisure activities with their children, in contrast to parents of low SES (Lareau, 2002). To level the playing field, parents of limited means might encourage their pre-college sons to enroll in summer programs offered at community centers and to participate in low cost high school extra-curricular activities such as drama club, chorus, or varsity athletics. This type of support from parents could provide low SES students with exposure to activities that they might not otherwise be privy to and make them more competitive when they get to college.

Not all forms of parental involvement have a positive effect on GPA, however. The findings also suggest that when parents focus on academics in high school, including punishing their children for bad grades or disobedience and rewarding them for good grades, those actions have a negative influence on GPA. A focus on the negative can sometimes indicate a lack of confidence by parents that can have adverse effects on academic achievement. The literature is clear that when parents make their educational values known to their children and participate in school events, the likelihood of student academic achievement increases (Bandura, et al., 1996). However, the findings of this study suggest that a carrot and stick approach to grades may not be the most effective way parents can convey educational values to their sons.

While the findings identified particular parental activities that influence academic achievement, none of those activities were directly related to the student's academic life (e.g., meeting with teachers, volunteering at the child's school, or assisting with and checking homework). More research is needed to provide insight about which academic activities parents

could be involved with to positively impact the academic achievement of their child. It would also seem prudent for educational leaders to design policies that incentivize parental involvement in those activities known to positively influence GPA.

Third, Peer factors were significantly, but negatively, associated with academic achievement. The variables that made up the two composites measured the degree to which participants had friends who thought it was important to: be popular, play sports, have relationships, hold a steady job, participate in religious activities, and do volunteer work. It could be that participating in these types of activities takes time away from studying. Alternatively, peers may think these activities are important because they themselves take part in them, leading to the homogenous culture prevalent in many peer relationships (Choy, Horn, Nunez, & Chen, 2000; Pascarella & Terenzini, 2005). If students in the sample focused on pleasing friends rather than achieving academic success, this might explain the negative influence of peers on GPA. The literature has consistently reported that peers heavily influence activities outside of the classroom hence and play a powerful role in shaping academic success (Cabrera, et al., 1999; Pascarella & Terenzini, 2005). Parents, teachers, as well as college administrators may want to challenge and/or debunk notions of peer cultures that have a negative association with academic achievement. This study focused on predicting GPA based on what peers considered to be important. Future studies could focus on the behaviors that participants and/or peers engaged in to determine whether there was an association with GPA.

The final key finding relates to the fact that no Self factors were significant in predicting GPA. This was surprising considering the abundance of literature that suggests otherwise. Research has consistently shown that self-efficacy beliefs influence academic choices and behaviors. Indeed, there is a positive relationship between high levels of self-efficacy and

academic achievement (Bandura, 1997; DeWitz & Walsh, 2002; Mills, et al., 2007). Perhaps our finding is a byproduct of the sample: students who enroll in selective institutions may already possess high levels of self-efficacy. In fact the mean scores of the variables making up the Self Factor composites hovered above 4.0. This was not the case for the other variables and is particularly high considering the maximum score was 5.0. The high mean scores on the Self composites might explain why there was not significant variance in the sample. That is, since the students in the sample exhibited uniformly high levels of self-efficacy it would be difficult to differentiate between which actions have a positive or negative impact on academic achievement.

Since our findings contradict prevailing evidence, more research is warranted. First, it would be interesting to use the same theoretical framework to study a group of male students enrolled at non-selective universities. This might address questions arising from the levels of self-efficacy among students at elite institutions. Additionally, future research should look at self-efficacy more deeply to determine if other forms of self-efficacy not captured in the NLSF dataset predict the academic achievement of male students.

Despite the implications for future practice, policy and research that emerged from the results there were several limitations to the study. The first revolves around the self-reported nature of the NLSF data. Participants' responses may not have been candid which could have skewed the results. Second, because a national dataset was employed, we had no influence over the questions asked in the NLSF and that limited the analysis.

Third, some of the variables used to construct the Self Factor composites contained questions that highlighted negative and positive aspects of self-efficacy. We re-coded the positive leaning questions so that they aligned with negative leaning questions. For example the

variables: I feel that I am a person of worth and I feel useless at times were re-coded so that a response of '1' meant that respondent exhibited low self-efficacy and a response of '5' meant the respondent exhibited high levels of self-efficacy. However, re-coding these variables could have affected the results so comparison to prior research should be considered in that context. Additionally, the sample included students enrolled at highly selective universities, thus decreasing generalizability of the results to students at other institutions.

Despite these delimitations, this study was important because factors that influence academic achievement among male students of color have not been thoroughly investigated in the literature. We also examined the effects of parental, self, and peer efficacy on men's GPA by racial background, another area unexplored by prior researchers. Lastly, statistics show that male students underachieve academically in comparison to female students at all institutions of higher education, even highly selective institutions. This fact suggests that the results are meaningful (*Chronicle of Higher Education Almanac*, 2009; Massey, 2006; NLSF, 2008; Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003, 2005).

This study was a first step in addressing the success of male students in higher education. The implications stemming from the results will not halt the spreading gender gap in enrollment within postsecondary education. However, it is important that male students who are enrolled achieve academic success. Our results provide insight into actions and strategies that practitioners as well as parents can employ to positively affect the academic success of male students. Only these kinds of renewed efforts will turn the tide for young men in the academy.

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## Chapter Six

### Predicting Persistence to Degree of Male College Students

The outcomes associated with completing a college degree have taken some interesting turns in recent years. Competition for employment among college graduates is fierce as a result of the current economic downturn. Yet even while graduates struggle to find jobs, President Obama has championed a goal of producing five million more community college and four-year college graduates by 2020 (Cook & Pullaro, 2010; Obama, 2009). Given enrollment patterns, however, women may be advantaged over men when it comes to earning a college degree. For the first time in history, male students are no longer earning college degrees at rates higher than the previous generation (Ryu, 2009).

In 1987, 22.3% of the American men and 21.7% of women had earned college degrees. Over the course of the next 20 years that pattern was reversed. In 2007 31.4% of American women had earned degrees while the ratio of men who had earned degrees remained fairly stagnant at 23.5% (Ryu, 2009). Currently one third of women have earned college degrees while only one quarter of males possess degrees (Ewert, 2010).

The graduation gap widens considerably when race is considered. Asian Americans have the highest proportion of population earning degrees (58%), followed by Whites (33%), Blacks (17%), Hispanic/Latino (11%) and American Indians (9%). Blacks and Latinos/Hispanics have more opportunity to attend college than at any point in American history. However, Black and Latino/Hispanic men still attain Bachelor of Arts (BA) degrees at significantly lower rates than their White, Asian, and female (within group) peers (Carter, 2001; Perna, 2000; Porter, 2006; Ryu, 2009; Strayhorn, 2006).

When both gender and race are considered, the gender gap in degree completion is exacerbated. Among Americans aged 25 to 29 in 1987, 23.3% of White men and 22.8% of White women had earned college degrees. Twenty years later, the number of White men aged 25-29 with a college degree increased modestly to 28.4% while among White females in the same age group the percentage of graduates increased dramatically (36.9%). In 1987, the percentages of Black male and Black female college graduates in this age bracket were relatively equal (11.6% and 11.1% respectively). In 2007 within the 25 to 29 year old age group, 13.8% of Black men had earned a college degree in comparison to 20.3% of Black women. When it comes to race, Hispanic men are the only group to show no increase over the last 20 years; currently 9.1% of 25-29 year old Hispanics have earned degrees and in 1987, 9.2% of men in this group had earned degrees. The ratio of Hispanic/Latina women earning college degrees has increased over this time span from 8.2% in 1987 to 13.8% in 2007 (Postsecondary participation rates by sex and race/ethnicity: 1974 - 2003, 2005; Ryu, 2009).

These numbers likely relate to the experiences that students of color associate with higher education. For example, although SES and academic ability can fluctuate depending upon circumstances, race and gender remain static characteristics, leaving students to deal with the residuals that come along with those characteristics regardless of their actions (Ewert, 2010; Kershaw, 1992). Two particular characteristics that manifest prior to matriculation in college offer insight into the gaps in degree completion rates. The first, background characteristics includes gender, race, parental and peer influence and self motivation. The second, precollege characteristic (i.e., high school performance) provides clues about whether a student was prepared to successfully complete a college curriculum (Ewert, 2010). Both of these

characteristics provide insight into the myriad of reasons why students in general and male students in particular do not persist to graduation.

Bandura, Barbaranelli, Caprara, and Pastorelli (1996) created a model addressing persistence that suggests that the efficacy of parents, students, and peers, when combined with SES predict academic success. Positive efficacy from all three sources can positively affect students' persistence and overall academic achievement. The positive effects of efficacy cannot solely push a student to succeed; rather efficacy beliefs must operate in conjunction with social variables such as peer interactions and SES of the family (Bandura, 1993; Bandura, et al., 1996).

All the variables included in the theoretical model have the ability to equally influence the others. A family's SES affects a student's achievement and attainment through the negative effect that low SES has on parental efficacy and ability to promote academic achievement to their child (Bandura, et al., 1996; Ewert, 2010). Low SES can shake the confidence parents have in protecting their children from societal hazards that can stunt their students' academic development. The higher the SES of a family the higher the academic aspirations parents have for the child (Bandura, et al., 1996; Ewert, 2010). High levels of parental efficacy promote the construction of a strong sense of efficacy and academic aspiration within the child (Bandura, et al., 1996; Ewert, 2010).

The presence of high parental efficacy is an asset to all students regardless of SES and familial structure. When parents invest in the academic achievement of their students, students stand a better chance of succeeding (McCarron & Inkelas, 2006). Positive parental efficacy can raise the level of self-efficacy of the student as well as heighten academic and career aspirations. Conversely, low parental efficacy can be detrimental to persistence because students are lacking the parental leadership that promotes the development of educational goals and values that are

vital to persistence (Smith & Fleming, 2006; Tierney & Auerbach, 2005). Parental efficacy cannot replace students' drive to graduate but can be used to spark and/or supplement that drive (Tierney & Auerbach, 2005).

Astin (1993) argued that peers have the greatest influence on the development of an undergraduate student. His supposition has been supported through other studies that confirm that peers can wield more influence on student persistence than parents and faculty (Bank, Slavings, & Biddle, 1990; Pascarella & Terenzini, 2005). The influence of peers is manifested through individual and group means. Students who are influenced by individual means seek involvement and identity based on socializing with peers with similar value systems. Students prone to the influence of the peer group are generally swayed by group think and base decisions on group norms and values, even when those norms and values conflict with personal beliefs (Astin, 1993; Pascarella & Terenzini, 2005). Like all forms of influence, peer influence can affect students negatively and positively, depending on both the values of the peers and the level of self-efficacy possessed by the individual student (Pascarella & Terenzini, 2005).

Self-efficacy is a notion that a person can control influential life events, including persistence to graduation (Bandura, 1986; Schunk & Zimmerman, 2007). High school academic preparation plays a key role in determining whether a student persists to graduation. Learners who operate in environments where failing academically can negatively alter their life chances need to exhibit high levels of self-efficacy in order to succeed (Bandura, 1993). Regardless of ability, the control students have over their environment, financial resources, and physical/social restraint all affect students' self-efficacy. Students feel a strong sense of control in their environment when their self-efficacy can make positive changes within their environment because of their effort, perseverance, and frugal use of resources (Bandura, 1986, 1993).

In addition to efficacy, however, other factors influence academic success in college. First semester college GPA combines with previous high school academic preparation to influence persistence to graduation of students once they enroll in college. However, students' level of self-efficacy determines whether they persist when facing poor academic preparation and low first semester grades. Students with low self efficacy will have a more difficult time rebounding from poor grades as well as believing they possess the intellectual capacity to succeed in college. Such thinking can lead students to take a semester off or transfer, which usually results in less likelihood of persistence for male students. However, students with high self-efficacy will not doubt their intellectual ability and be more apt to persist at their original institution without taking a break by improving their GPA and moving forward (Ewert, 2010).

Ability and skill are important ingredients in the recipe for academic success but should not be viewed as characteristics that only the fortunate few possess. A healthy sense of self-efficacy instills confidence in individuals and allows them to best utilize their abilities and skills in an academic setting (Bandura, 1986, 1993). In fact, self-efficacy is a better predictor of academic success than ability (Bandura, 1997; Mills, Pajares, & Herron, 2007). However, it is important to note that a student's self-efficacy cannot supersede natural capability (Bandura, 1997; Mills, Pajares, & Herron, 2007)

In summary, there are major gaps in rates of persistence to degree between men and women in general, and among men in particular (Ewert, 2010; Ryu, 2009). Research has demonstrated that demographic characteristics like gender, race, SES and high school academic ability influence whether a student persists toward college graduation (Ewert, 2010; Ryu, 2009; Strayhorn, 2006). There is also research on the influence of parental efficacy, self-efficacy and peer influence on persistence to degree. Missing from this body of work are studies that explore

the intersection of demographic characteristics and efficacy on persistence to degree (Bandura, et al., 1996; Strayhorn, 2006). We sought to address this gap studying the literature.

The purpose of this study was to determine what factors predict the persistence (defined as time to degree) of male college students. We also aimed to examine whether there is a relationship between race and the factors used to predict persistence. The study was guided by the following research question:

1. After controlling for SES and academic ability, do parental efficacy, student efficacy, peer influence, and/or race factors influence persistence (time to degree) of male college students?

We employed the Bandura, et al. (1996) theoretical model in the study. Specifically, we used three variables from that model related to efficacy (parents, peer, and self) and added the variable of race. We controlled for the two factors that are known to influence persistence to degree: high school record and SES (Clark, Lee, Goodman, & Yacco, 2008; Perna, 2000)

### Method

Data from the National Longitudinal Survey of Freshmen (NLSF) were used to conduct the analysis. The NLSF provides data on equal size samples of African American, Asian, White, and Hispanic/Latino students at 28 highly selective institutions of higher education in the United States. The Survey aimed to examine academic success in higher education as well as explore relationships among pre-college behavior, race, and outcomes of higher education (NLSF, 2008).

The NLSF sample consisted of 3,924 participants who were first year resident alien freshmen at participating institutions of higher education (NLSF, 2008). Respondents were surveyed in a succession of waves starting in the fall of 1999 and continuing each academic year through five waves of data collection that concluded during the 2002-2003 academic year. The

data were collected through face-to-face interviews that lasted two hours in duration and follow-up phone interviews (NLSF, 2008).

The participants in our study included Black, White, and Hispanic/Latino male students in the NLSF sample. Asian students were not included because Asians are not underrepresented in higher education (*Chronicle of Higher Education Almanac*, 2009; Perna, 2000) and we were interested in the success of those whose enrollment numbers are dwindling. Cases in which there were missing data were excluded in the analyses. These two factors reduced the total sample to 1,226 respondents. The final sample consisted of 474 (39%) White, 384 (31%) Hispanic/Latino, and 368 (30%) Black male students. Other demographic characteristics of participants are reported in Table 10.

### *Procedure*

The statistical software PASW was used to run descriptive analyses, correlations, a rotated factor analysis, and sequential multiple regression on the data. The raw data were thoroughly examined and outliers and inconsistencies were removed. Next, the data were re-coded and composites were created to group the variables that aligned with the Bandura et. al. (1996) model. Finally, the analyses were run using the re-coded and composite variables.

The independent variable of Parental Factors was taken from the first wave questionnaire. The questionnaire consisted of stem questions followed by a series of sub-items. The stem for Parental Factors was, “Last year (senior year of high school), how often did your parents or other adults in your household ..?” There were 17 sub-items that asked about activities that parents engaged in such as, “Meet personally with your teachers”, “Limit your TV watching”, and “Take you to sporting events” (NLSF, 2008). Participants responded to each sub-item from a menu of options that included: Never, Rarely, Sometimes, Often, Very Often, Don’t Know and Refused.



**Table 10**  
Demographic Characteristics of the Sample (N=1,227)

Demographic Characteristics	N	%
Race		
Black	368	30.0
Latino/Hispanic	384	31.3
White	475	38.7
Final College Grade Point Average		
0.00 – 0.99	0	0.0
1.00 – 1.99	3	0.4
2.00 – 2.99	185	26
3.00 – 3.99	516	72.6
4.00	7	1
Academic Persistence		
Graduated within 4 years	762	62.2
Graduated within 6 years	254	20.7
Not Graduated	210	17.1
SES		
Highest level of schooling – mother		
Grade school, Some High School	50	4.1
HS Graduate, Some College	378	31.1
College Graduate	382	31.4
Some Post-Graduate or Prof Degree	407	33.4
Highest level of schooling - father		
Grade school, Some High School	60	5.1
HS Graduate, Some College	274	23.4
College Graduate	297	25.3
Some Post-Graduate or Prof Degree	541	46.2
Mother's occupation		
Farming/Forestry/Fishing, Tech Sales/ Admin Support, Precision Production/Craft/ Repair, Service Occupations, Operators/ Fabricators/Laborers, Experienced Unemployed Managerial/Professional Specialty, Military	329	36.8
	565	63.2

**Table 10 (continued)**  
Demographic Characteristics of Male Students (N=1,227)

Demographic Characteristics	N	%
Father's occupation		
Farming/Forestry/Fishing, Tech Sales/ Admin Support, Precision Production/Craft/ Repair, Service Occupations, Operators/ Fabricators/Laborers, Experienced Unemployed Managerial/Professional Specialty, Military	248	29.4
Annual household income		
Under \$3000 - \$19,999	73	6.2
\$20,000 - \$34,000	128	10.9
\$35,000 - \$74,999	335	28.5
\$75,000 or More	639	54.4
High School Academic Ability		
English		
Mostly D's	0	0
Mostly C's	34	2.8
Mostly B's	379	30.9
Mostly A's	813	66.3
History		
Mostly D's	2	0.2
Mostly C's	29	2.4
Mostly B's	304	24.9
Mostly A's	888	72.6
Mathematics		
Mostly D's	4	0.3
Mostly C's	72	5.9
Mostly B's	361	29.5
Mostly A's	788	64.3
Natural Sciences		
Mostly D's	3	0.2
Mostly C's	38	3.1
Mostly B's	334	27.5
Mostly A's	838	69.1
Social Sciences		
Mostly D's	1	0.1
Mostly C's	28	2.4
Mostly B's	274	23.2
Mostly A's	878	74.3
Foreign Languages		
Mostly D's	7	0.6
Mostly C's	59	4.8
Mostly B's	334	27.4
Mostly A's	821	67.2

The independent variable of Peer Factors was taken from two items on the first wave of the Survey. The first item asked: “In your high school, do you think your friends and acquaintances viewed the following behaviors as Very Uncool, Somewhat Uncool, Neither Cool nor Uncool, Somewhat Cool, or Very Cool, where “Cool” refers to behavior that is respected or admired by students?” Don’t Know and Refused were also response options. The eight sub-items asked respondents to rate activities like “Asking challenging questions in class”, “Solving problems using new and original ideas”, and “Getting good grades in difficult subjects” (NLSF, 2008).

The second question asked “Among the friends you hung out with last year, was it Not at All Important, A Little Important, Somewhat Important, or Very Important to....? The 12 sub-items asked things such as “Study hard”, “Have a steady boyfriend or girlfriend”, and “Do community or volunteer work” (NLSF, 2008). Don’t Know and Refused were also response options.

The independent variable of Self Factors was taken from two items in the first wave of the survey. The first item asked participants “How much do you agree or disagree with each of the following statements?” There were 10 sub-items that asked about self-perceptions such as “I feel that I am a person of worth, equal to others”, “I wish I could have more respect for myself”, and “I take a positive attitude toward myself” (NLSF, 2008). Response options included Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Don’t Know, and Refused.

Second, participants responded to six sub-items associated with the following stem: “Thinking about your life at the moment, how much do you agree or disagree with the following statements?” The six sub-items asked about perceptions such as “In life good luck is more important than hard work”, “When I make plans I am almost certain I can make them work”, and

“I feel left out of things going on around me” (NLSF, 2008). Respondents indicated the degree to which they agreed with each sub-item with options that ranged from Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Strongly Disagree to Don’t Know, and Refused.

Once we identified the variables within the dataset that correlated to the theoretical model we conducted a reliability test on the entire dataset to ensure that the proposed composite groupings reported a substantial Chronbach’s alpha score. All composites reported at .70 or higher (see Table 11). Next, a rotated factor analysis was conducted on the entire dataset to ensure that factor loadings would reach proper levels. The analysis provided a guide to how many composites should be created and which variables should make up each composite. Using the data, three Self Factor composites, and five Parent Factor and five Peer Factor composites were created (see Table 12). All composites had loading factors well over .40 suggesting that they were valid measures.

The independent variable of race was taken from one demographic item in the dataset found in the first Survey wave. The question asked for the respondent’s ethnicity and provided options of Asian, Hispanic or Latino, Black/African American, and Caucasian/White (NLSF, 2008).

We created the SES control variable by calculating a composite score comprised of five items reported in the first wave of data collection. The first two items asked about the highest level of schooling achieved by the respondents’ mother (father) or the woman (man) most responsible for raising them. There were 10 response options ranging from Grade School to Graduate or Professional Degree. No mother/ no woman (no father/ no man) responsible for raising me, Don’t Know and Refused were also options. The education responses were

**Table 11**  
Descriptive Statistics and  $\alpha$  for Composite Variables (N=1,224)

Scale and Item	M	SD	$\alpha$
<i>Grade point average</i>	3.06	0.52	--
<i>Academic Persistence</i>	1.55	0.72	--
Graduation within 4 years			
Graduation within 6 years			
<i>Parental (familial) Factors</i>			0.79
Check if you'd done your homework?	2.15	1.16	
Meet personally with your teachers?	2.31	1.01	
Help you with your homework?	1.83	0.93	
Talk with your friends?	3.22	1.05	
Reward you for good grades?	2.65	1.28	
Punish you for bad grades?	1.81	1.12	
Punish you for disobedience?	2.36	1.17	
Limit your TV watching?	1.63	0.94	
Limit your playing of video games?	1.54	0.94	
Limit the time you spent with friends?	1.85	0.96	
Set an hour to return home at night?	2.97	1.49	
Ask you do household chores?	3.56	1.07	
Take you to museums?	1.64	0.86	
Take you to plays or concerts?	2.05	1.11	
Take you to sporting events?	2.43	1.27	
Take you traveling within the U.S.?	2.80	1.24	
Take you on trips to foreign countries?	1.68	1.10	

**Table 11 (continued)**Descriptive Statistics and  $\alpha$  for Composite Variables (N=1224)

Scale and Item	M	SD	$\alpha$
<i>Self (student) Factors</i>			0.87
I feel that I am a person of worth, equal (Re-code)	4.67	0.62	
I feel that I have a number of good qualities (Re-code)	4.72	0.52	
All in all, I am inclined to feel that I am a failure	4.56	0.68	
I am able to do things as well as most people. (Re-code)	4.50	0.66	
I feel that I do not have much to be proud of.	4.50	0.76	
I take a positive attitude toward myself (Re-code)	4.37	0.76	
On the whole, I am satisfied with myself (Re-code)	4.27	0.83	
I wish I could have more respect for myself	3.76	1.12	
I feel useless at times	3.63	1.16	
At times I think I'm no good at all	4.04	1.04	
I don't have control over the direction my life	4.29	0.82	
Good luck is more important than hard work for success	4.20	0.81	
Every time I try to get ahead, something/body stops me	4.13	0.81	
When I make plans, I can make them work (Re-code)	4.07	0.79	
I feel left out of things going on around me	3.61	0.96	
If I work hard, I can do well (Re-code)	4.60	0.61	
<i>Social (peer) Factors</i>			0.80
Studying hard outside of class?	3.15	0.93	
Asking challenging questions in class?	3.26	0.93	
Volunteering information in class?	3.18	0.90	
Answering teachers' questions in class?	3.26	0.79	
Solving problems using new and original ideas?	3.69	0.87	
Helping other students with their homework?	3.83	0.84	
Getting good grades in difficult subjects?	4.09	0.89	
Planning to go to college?	4.48	0.76	
Attend classes regularly?	3.23	0.85	
Study hard?	2.92	0.88	
Play sports?	2.82	1.03	
Get good grades?	3.29	0.79	
Be popular or well-liked?	2.79	0.94	

**Table 11 (continued)**Descriptive Statistics and  $\alpha$  for Composite Variables (N=1224)

Scale and Item	M	SD	$\alpha$
<i>Social (peer) Factors (ctd.)</i>			
Finish high school?	3.90	0.39	
Go to college?	3.74	0.57	
Have a steady boyfriend or girlfriend?	2.07	0.83	
Participate in religious activities?	1.81	0.85	
Do community or volunteer work?	2.08	0.88	
Hold a steady job?	2.14	0.91	
<i>SES</i>			0.76
Highest level of schooling – mother	2.94	0.90	
Highest level of schooling - father	3.13	0.94	
Mother's occupation	1.63	0.48	
Father's occupation	1.71	0.46	
Annual household income	3.31	0.90	
<i>High School Academic Ability</i>			0.70
English	3.64	0.54	
History	3.70	0.53	
Mathematics	3.58	0.62	
Natural Sciences	3.68	0.59	
Social Sciences	3.80	0.65	
Foreign Languages	3.62	0.63	

**Table 12**

Rotated Factor Analysis on Parent, Self, Peer Factors (N=1,217)

Factor	Variable	Factor Loading Above .400
Parent Factor 1		
	Limited TV watching	0.803
	Limited video games	0.779
	Limited time spent with friends	0.622
Parent Factor 2		
	Help with homework	0.774
	Check if homework done	0.734
	Meet personally with teachers	0.608
Parent Factor 3		
	Taken on trips in the U.S.	0.699
	Taken on trips to foreign countries	0.678
	Taken to plays or concerts	0.650
	Taken to museum	0.607
	Taken to sporting events	0.521
Parent Factor 4		
	Asked to do household chores	0.686
	Set hour to return home at night	0.650
	Talked with child's friends	0.489
Parent Factor 5		
	Punished for bad grades	0.661
	Punished for disobedience	0.581
	Rewarded for good grades	0.478
Peer Factor 1		
Peers think it's cool to:		
	Volunteer info in class	0.822
	Ask hard questions	0.815
	Answer teachers questions	0.801
	Cool to study	0.673
	Use creative problem solving	0.629
Peer Factor 2		
Friends think it's important to:		
	Study hard	0.745
	Attend class regularly	0.729
	Get good grades	0.715
	Go to college	0.657
	Finish high school	0.581
Peer Factor 3		
Friends think it's important to:		
	Be popular	0.829
	Play sports	0.717
	Have steady relationships	0.560



**Table 12 (continued)**

Rotated Factor Analysis on Parent, Self, Peer Factors (N=1217)

Factor	Variable	Factor Loading Above .400
Peer Factor 4		
Peers think it's cool to:		
	Plan to go to college	0.724
	Do well in hard classes	0.591
	Help others with homework	0.560
Peer Factor 5		
Friends think it's important to:		
	Hold a steady job	0.682
	Participate in religion	0.634
	Do volunteer work	0.628
Self Factor 1		
	I feel useless at times	0.758
	Sometimes I feel I am no good at all	0.749
	I wish I had more self-respect	0.718
	I am satisfied with myself	0.629
	Positive attitude towards self	0.563
	Feel left out of things around me	0.561
	Do not have much to be proud of	0.421
Self Factor 2		
	I feel I have a number of good qualities	0.860
	I feel I am a person of worth	0.818
	I can do things as well as most people	0.551
	I feel that I am a failure	0.477
Self Factor 3		
	Good luck is more important than hard work	0.747
	Do not have control over the direction of my life	0.624
	I am always stopped from getting ahead	0.620
	I can do well if I work hard	0.562
	I can always make plans work	0.455

re-coded into four categories; Grade School/Some High School, High School Graduate/Some College, College Graduate, and Some Post Graduate/Professional Degree. No mother/no woman (no father/no man) responsible for raising me, Don't Know, and Refused were treated as missing items.

The third and fourth items comprising the SES composite asked about mother's/father's occupation. There were 905 response options grouped into eight categories ranging from Managerial and Professional Specialty Occupations to Operators, Fabricators, and Laborers to Military Occupations. Other, Don't Know and Refused were also options. The occupation responses were re-coded into two categories; occupations that would generally require a college degree and jobs that would not require a college degree as a condition of employment. Other, Don't Know and Refused were treated as missing items.

The final item of the composite asked for an estimate of the annual income of the household in which the participant spent his senior year of high school. There were 16 options that ranged from "Under \$3,000" to "\$75,000 or more." Don't Know and Refused were also options (NLSF, 2008). Family income was re-coded into four categories; Under \$3000 - \$19,999, \$20,000 - \$34,999, \$35,000 - \$74,999, and \$75,000 or More. These categories were created to align with generally accepted classifications for lower, lower middle, middle and upper middle/upper economic classifications (Tse & Werschkul, 2005). Don't Know and Refused were treated as missing items. The maximum score that could be achieved in the final SES composite was 16 and the minimum score was 1 (NLSF, 2008).

The control variable of academic ability was taken from information collected in the first wave of the NLSF. The dataset provided information regarding the respondent's high school record through an item that asked, "For each of the following subjects (English, History,

Mathematics, Natural Sciences, Social Sciences, and Foreign Languages) did you get mostly A's, B's, C's, D's?." Because the NLSF data do not provide a high school GPA variable a composite was created using the reported grades for the six subjects. The re-coding converted the letter grades to numbers (A-4, B-3, C-2, D-1). The responses Not Graded and Don't Know were re-coded as missing. The highest score possible for the High School Academic Achievement composite was 24 and the minimum score was 6 (NLSF, 2008).

The dependent variable of persistence was taken from two items in the dataset. The items sought to determine if the student graduated from college within four years, six years, or at all (NLSF, 2008). A composite was created combining the two questions: Not Graduated from College within Four Years and Not Graduated from College within Six Years were re-coded as 0. Graduated from College within Six Years was re-coded as 1 and Graduated from College within Four Years was re-coded as 2. The maximum score that could be achieved in the Academic Persistence composite was 2 and the minimum score achievable was 0 (NLSF, 2008).

After creating composites and re-coding variables (Table 2) correlations (see Table 13) were run to find significance among the variables. Each variable was significantly correlated with at least one other variable. The only exception was the three Self Factors composites so these were dropped from consideration. Finally, a sequential regression model was used to predict the impact of parental and peer factors, along with race on academic persistence of male students controlling for SES and high school academic ability. This method of regression was used to determine the independent variables that best predicted the dependent variable, persistence to degree.

**Table 13**  
Item Descriptives and Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. GPA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2. Graduation	0.29**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3. SES	0.25**	0.22**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4. Ac Ability	0.29**	0.25**	0.14**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5. White	0.25**	0.20**	0.34**	0.19**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6 Black	-0.22**	-0.21**	-0.19**	-0.26**	-0.52**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7. H/Latino	-0.05	0.00	-0.17**	0.05	-0.54**	-0.44**	---	---	---	---	---	---	---	---	---	---	---	---	---
8. Self 1	-0.06	-0.02	0.01	0.01	-0.03	0.35	0.00	---	---	---	---	---	---	---	---	---	---	---	---
9. Self 2	-0.04	-0.04	-0.01	0.00	-0.05	0.05	-0.00	0.59**	---	---	---	---	---	---	---	---	---	---	---
10. Self 3	-0.03	-0.03	-0.02	0.01	-0.05	0.05	0.01	0.57**	0.48**	---	---	---	---	---	---	---	---	---	---
11. Parent 1	-0.06	-0.05	0.01	-0.03	-0.09**	0.06*	0.03	-0.02	-0.05	-0.02	---	---	---	---	---	---	---	---	---
12. Parent 2	-0.10	-0.02	0.07*	-0.05	-0.06*	0.06*	0.01	-0.06*	-0.07*	-0.01	0.39**	---	---	---	---	---	---	---	---
13. Parent 3	0.14	0.14**	0.30**	0.11**	0.17**	-0.20**	0.02	-0.02	-0.03	-0.02	0.20**	0.31**	---	---	---	---	---	---	---
14. Parent 4	-0.04	0.01	0.10**	0.07**	-0.00	0.04	-0.04	0.01	-0.03	-0.03	0.32**	0.29**	0.25**	---	---	---	---	---	---
15. Parent 5	-0.16**	-0.18**	-0.02	-0.11**	-0.18**	0.16**	0.04	-0.02	-0.03	-0.02	0.48**	0.42**	0.19**	0.33**	---	---	---	---	---
16. Peer 1	-0.02	-0.02	0.01	-0.04	-0.01	0.08**	-0.07*	-0.04	-0.02	-0.05	0.05	0.09**	0.13**	0.03	0.03	---	---	---	---
17. Peer 2	0.04	0.08**	-0.00	-0.07*	-0.03	0.07*	-0.04	-0.03	-0.02	-0.01	0.06*	0.14**	0.12**	0.07*	0.06	0.33**	---	---	---
18. Peer 3	-0.13**	-0.09**	-0.05	-0.04	-0.09**	0.11**	-0.02	0.02	0.04	0.05	0.08**	0.11**	0.10**	0.05	0.18**	-0.10**	0.10**	---	---
19. Peer 4	0.05	0.03	0.02	0.08**	0.02	0.01	-0.04	0.02	0.02	0.00	0.01	0.04	0.11**	0.05	0.04	0.54**	0.39**	-0.01	---
20. Peer 5	-0.13**	-0.04	-0.12**	0.09**	-0.13**	0.15**	-0.02	-0.03	-0.03	0.01	0.06*	0.13**	0.09**	0.15**	0.12**	0.21**	0.31**	0.20**	0.25**

Notes: 1. \*p<0.05, \*\*p<0.01

2. Upper diagonal cells were intentionally left blank.

## Results

The sequential regression analysis revealed seven significant factors: Black, Parent Factor 3, Parent Factor 5, Peer Factor 1, Peer Factor 2, and Peer Factor 3 (see Table 5). After determining significant factors, we created a four step regression model for the dependent variable of Time to Graduation. The control variables, SES and High School Academic Ability, were entered into model one and reported a  $R^2$  of 0.098. Model two consisted of the control variables and the independent race variable (Black) which yielded a  $R^2$  of 0.111. Model three included the same control and independent variables as model two in addition to the independent variables Parent Factor 3 and Parent Factor 5 and reported a  $R^2$  value of 0.138. Model four included all the above mentioned variables in addition to the independent variables Peer Factor 1, Peer Factor 2, and Peer Factor 3 and reported a  $R^2$  value of 0.150 (See Table 14). In general, the variables in the model explained 15% of variance in time to graduation.

## Discussion and Implications

The results suggest four key findings. First, race has a negative influence on the persistence of male undergraduate students. Being a Black student significantly, but negatively influenced persistence to degree. This finding supports the current body of literature that Black male undergraduates do not graduate from college at a rate comparable to their White peers (Blackhurst & Auger, 2008; Lynch & Engle, 2010a). More troubling is that Black students report caring about education and possess aspirations of academic success comparable to White students (Noguera, 2008; Valdez, 2008). However, the evidence in this study suggests that desire does not translate to comparable graduation rates for male students of color. Since all but one of the institutions surveyed by the NLSF are Predominately White Institutions (PWIs) of higher education, it is important to view the low graduation rates reported by Black men in that light.

**Table 14**  
Overall Regression Coefficients  
Dependent Variable: Time to Graduation (N=1,217)

Time to Graduation													
		Model 1			Model 2			Model 3			Model 4		
		B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$
Step 1													
	SES	0.047**	0.007	0.194**	0.042**	0.007	0.176**	0.037**	0.007	0.152**	0.036**	0.007	0.150**
	High School Academic Ability	0.069**	0.009	0.221**	0.060**	0.009	0.193**	0.055**	0.009	0.177**	0.052**	0.009	0.166**
Step 2													
	Black				-0.204**	0.054	-0.121**	-0.142**	0.055	-0.085**	-0.136**	0.056	-0.081**
Step 3													
	Parent Factor 3							0.103**	0.033	0.090**	0.108**	0.034	0.095**
	Parent Factor 5							-0.158**	0.027	-0.164**	-0.152**	0.027	-0.158**
Step 4													
	Peer Factor 1										-0.065*	0.032	-0.058*
	Peer Factor 2										0.145**	0.043	0.097**
	Peer Factor 3										-0.082**	0.032	-0.071**
Total R <sup>2</sup>			0.098			0.111			0.138			0.150	
R <sup>2</sup> Change						0.013**			0.027**			0.012**	

Notes: \*p<0.05, \*\*p<0.01

To start, many Blacks are raised and educated in racially homogeneous communities. When that fact is coupled with the omnipresent societal restraints and institutionalized racism embedded in American culture, it should come as no surprise that these students have a difficult time adjusting, feeling comfortable, and graduating from some PWIs (Ehrmann, 2007; Goldstein, 2007; Smith & Fleming, 2006). Prior to dealing with the rigors associated with earning a bachelor's degree, male students may battle academic and/or social isolation (e.g., being the only minority in a particular class or residence hall), stereotypes revolving around their intellectual worth, and skepticism regarding how they gained admittance (e.g., race based or athletics) (Fries-Britt, 2002). Any of these experiences might influence persistence.

It is important to acknowledge that the students in the study all attended universities classified as highly selective institutions so it is imperative to examine what effect institutional prestige has on the persistence gap. Research has suggested that students who attend selective institutions are at an advantage in regards to persistence to degree (Alon & Tienda, 2005; Ehrmann, 2007). While it is true that Black students graduate at a higher rate at selective institutions than non-selective institutions, they still lag behind the graduation rates of their White and Asian male peers at selective institutions. This fact is puzzling because Black men exhibit the requisite talent necessary to gain admission to these elite universities, they possess similar academic ability to their peers, but they do not persist to degree at the same rates as their white and Asian peers. Because of the positive financial and social advantages that accompany persistence to degree, it is vital to determine what is transpiring on the campuses of elite universities that prevent qualified male minority students from earning a degree (Alon & Tienda, 2005; Ehrmann, 2007; Kershaw, 1992).

There are programs and activities that higher education professionals can implement that might help close this gap in persistence rates. Research on this topic is fairly extensive (Arbona & Nora, 2007; Derby, 2007; Fries-Britt, 2002; Lynch & Engle, 2010a; 2010b; Murphy, Gaughan, Hume, & Moore Jr., 2010). Some studies describe programs that address academic issues. For example, providing students with access to social and academic resources as well as providing the opportunity to participate in a summer bridge program improves persistence to graduation for male students of color (Lynch & Engle, 2010a; 2010b; Murphy, et al., 2010). However, placing efforts to reduce the racial gap in persistence at the top of institutional priorities is the most important step campus leaders can take (Lynch & Engle, 2010a; 2010b; Murphy, et al., 2010).

The most successful programs are those that blend transition issues with first-year student issues, address social and academic matters, and incorporate parents. Summer transition programs that challenge students by providing them with the opportunity to attend classes and take exams allow for a tangible distinction to be made between a high school and college curriculum without impacting students' fall semester GPA (Lynch & Engle, 2010a; 2010b; Murphy, et al., 2010). During the academic year, programs that provide unlimited academic and social support services that address issues such as study habits and time management, as well as provide information regarding alcohol, drugs and romantic interactions with peers provide an additional level of support for Black male students (Arbona & Nora, 2007; Murphy, et al., 2010). Integrating the influence of parents into programs also could aid Black students since they tend to have closer connections to family. An intentional effort at increasing the levels of familial interaction and support while in college could reduce stress among these male students (Auerbach, 2007; Murphy, et al., 2010; Perna, 2000).



In addition to addressing the academic challenges that men of color face in college, it is equally important for campus administrators to deal with the social issues these students confront. Social networks are important for students (Derby, 2007; Murphy, et al., 2010). Putting Black male students in contact with students who have similar interests and aspirations and have successfully transitioned to college may break the ice, allowing men of color to feel a sense of belonging, as well as providing them with older students to serve as guides and mentors (Arbona & Nora, 2007; Murphy, et al., 2010; Strayhorn, 2008). This type of program would also provide male students with support throughout their first year at the institution (Derby, 2007). Such an opportunity can open a student's eyes to expectations that can raise comfort levels, lower stress, and improve persistence to graduation.

The finding concerning race also has implications for future research. The literature suggests that Hispanic/Latino and Black male students both fail to persist to degree at acceptable rates. However, this study found that being a Hispanic/Latino male is not a significant predictor in regards to persistence to degree. More research is needed to determine whether our finding is an anomaly or a result of some other factors. For example, the Hispanic participants in the study may have possessed other characteristics that qualified them for admission to an elite institution in the first place and those might have led to higher success rates. Another implication for future research revolves around the fact that a quantitative study using a national dataset was utilized for this study. A qualitative study regarding graduation rates among male students could be conducted to explore why Black and Hispanic/Latino men do not graduate from college at rates comparable to their white counterparts. Such a study might produce in-depth and personal accounts and offer a glimpse into the factors that influence degree completion.

Another avenue for future research is the impact that the decline in need-based aid and the increase in merit-based aid have had on persistence to graduation of male college students. The decline in need-based aid offered to students in recent times has been noted by researchers (Alon, 2007; Singell & Stater, 2006) who speculate that less aid could contribute to the gap in graduation rates of minority students. However, research needs to be done to determine whether there is a correlation between financial aid policy and the lower graduation rates among minority males (Alon, 2007; Perna, 2005; Singell & Stater, 2006).

The second key finding of the study related to parental efficacy; there were two issues of note. First, participating in certain activities with parents positively influences persistence to degree of Black male students. Taking children on domestic and international trips, visiting fine arts venues, and attending sporting events with sons while they are in high school seem to positively influence persistence to college degree. The SES of a family can dictate the type of social activities in which a student has the option to participate (Beattie, 2002). One possible explanation for this finding is the fact that the respondents of the NLSF were enrolled in selective institutions, which disproportionately enroll the wealthy (Astin & Oseguera, 2004). On a related note, wealthy parents are more likely to have the vacation time and the means to travel and attend cultural and sporting events with their sons (Lareau, 2002). Walpole (2003) found that the SES of a college student's family affects the overall college experience as well as persistence to graduation. In order for their sons to keep pace with the sons of high SES families, low SES parents should encourage their children to participate in low-cost activities that could replicate activities mentioned in the findings. If unable to travel internationally, for example, low SES parents might find a way for their son to leave their community and see other areas of the state, or neighboring states. Parents could seek out local plays, concerts, sporting events and

museums with low-cost or free entry fees. Universities and high schools both provide viable options for low cost cultural and social stimulation. Low SES parents should be encouraged to provide their sons with these types of non-academic experiences in order to give them the best opportunity to persist to graduation in college.

The second finding pertaining to parental efficacy was the negative relationship between how parents addressed grades in high school and persistence to college graduation. Specifically, a punishment vs. reward system for grades in high school may not be the most effective method for parents to impart educational values to their sons. Bandura et al., (1996) suggested that parents are least effective when focusing on negative academic performance and more effective if they clearly convey their educational values to their offspring as well as participate in school events with their sons. The findings of this study are in line with that suggestion and parents should be cognizant that the manner in which they choose to motivate their sons to achieve in high school can affect the probability of those sons earning a college degree.

The findings suggested certain parental activities that positively affect persistence to degree. However, due to the nature of questions asked on the NLSF survey, none of the activities queried related to parental involvement while the student is in college. Future research should be conducted to determine if any measures of parental involvement with a son in college are positively linked to improving the graduation rates. If a positive link can be found, it would behoove college administrators to create programs and policies that translate the findings into practice.

The third key finding related to peers. Three sets of peer factors were significantly associated with persistence to degree. One factor was positively associated, while the other two factors were negatively associated. The positively associated factor measured the degree to

which participants had friends who thought it was important to: study hard, attend class regularly, get good grades, go to college, and finish high school. The variables comprising this factor intuitively suggest a positive correlation with persistence. The literature shows that peers can positively influence a student to persist toward earning a bachelor's degree (Pascarella & Terenzini, 2005). Some studies even suggest that peers hold more sway over persistence to degree than faculty members once a student enrolls in college (Bank, et al., 1990). Given this finding, it would behoove parents to monitor their children's peer group while in middle and high school and to encourage their sons to associate with peers who value academics.

The other two peer factors were found to be significant, but negatively associated with persistence to degree. The first factor was made up of the variables that measured how cool peers thought it was to: volunteer information in class, ask hard questions, answer teachers questions, study, and use creative problem solving. The second factor was made up of the variables that measured how important peers thought it was to: be popular, play sports, and have relationships. Upon first glimpse, the first negative factor would seem to contradict the findings discussed above. However, it appears that two factors can be distinguished by the phrasing of the question. In the first factor, respondents were asked what peers find important while in the second they responded to what peers consider to be cool. This subtle difference suggests that what is important differs from what is cool. The negative association between academic behaviors and being cool could also be explained if the respondents placed priority on pleasing peers instead of persisting to degree. This would align with the literature about the powerful influence peers wield inside and outside of the classroom (Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999; Pascarella & Terenzini, 2005). It is important that parents as well as academic advisers take note about which forms of peer involvement positively influence male persistence and also

familiarize themselves with the actions that can have a negative influence on persistence. This knowledge may enable them to better advise and monitor male students in general, and male students of color in particular. It also must be noted that this study focused on high school peer influence; research examining the influence wielded by college peers on persistence to degree is needed.

The final key finding was essentially a non-finding: none of three Self factors were found to be significant in predicting time to degree for male college students. There is no denying that most prior studies have revealed a positive relationship between positive self-efficacy and persistence to degree (Bandura, 1997; DeWitz & Walsh, 2002; Mills, et al., 2007) so we were surprised that none of the self-efficacy factors proved significant in our analysis. One possible explanation is that the students who make up the NLSF sample were enrolled in selective institutions, hence might already have had high levels of self-efficacy. The means of the variables dealing with self-efficacy hovered above 4.0, which was not common among the other variables and particularly high considering the maximum score was 5.0. Because the male students in the sample had high levels of self-efficacy, it is difficult to determine if self-efficacy had a positive or negative impact on persistence to degree.

Since our findings contradict prior studies, more research should be conducted with regards to self-efficacy and persistence. It may be beneficial to apply the Bandura et, al. (1996) theoretical framework to a sample of male students enrolled in non-selective institutions to see if the selectivity of the NLSF institutions skewed our findings. Additionally, future research should investigate self-efficacy using variables that differ from those captured in the NLSF dataset.

Despite the implications for future practice, policy and research that emerged from this study, there were several limitations that should be noted. The first involves the fact that the

NLSF data were self-reported. If participants were not candid in their responses, the results could have been skewed. Second, we were limited by the items in the NLSF; we could only analyze data collected by the survey. Additionally, Third, some of the variables used to construct the Self Factor composites contained questions that highlighted negative and positive aspects of self-efficacy. We re-coded the positive leaning questions so that they aligned with negative leaning questions. For example, the variables I feel that I am a person of worth and I feel useless at times were re-coded so that a response of '1' meant that respondent exhibited low self-efficacy and a response of '5' meant the respondent exhibited high levels of self-efficacy. However, re-coding these variables could have affected the results so this finding should be considered in that context. Lastly, the sample included students enrolled at highly selective universities, thus decreasing generalizability of the results to students at other institutions.

Regardless of these limitations, this study was important because factors that influence degree completion among male students of color have not been investigated in conjunction with the effects of parental, self, and peer efficacy and by racial background. Statistics reveal a gender gap in graduation rates at all colleges, highly selective institutions included. Coupling the statistics that show a gap between male and female persistence with the unique variables examined in this study suggest that the results from this study are meaningful regardless of limitations (Lynch & Engle, 2010a; 2010b; Massey, 2006; Murphy, et al., 2010; NLSF, 2008).

We have offered a number of suggestions about how to improve persistence rates for men. However, the fact remains that the model that emerged from the study was only marginally helpful. Race, parental and peer factors when coupled with SES and high school ability explained only 15% of the variance in regards to persistence. More research is needed to fully understand the gap in degree completion among minority men.

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## Appendices

## Appendix A

## National Longitudinal Survey of Freshmen List of Colleges

1. Barnard College - New York City, NY
2. Bryn Mawr College - Bryn Mawr, PA
3. Columbia University - New York City, NY
4. Denison College - Granville, OH
5. Emory University - Atlanta, GA
6. Georgetown University - Washington, DC
7. Howard University - Washington, DC
8. Kenyon College - Gambier, OH
9. Miami University - Oxford, OH
10. Northwestern University - Evanston, IL
11. Oberlin College - Oberlin, OH
12. Penn State University - State College, PA
13. Princeton University - Princeton, NJ
14. Rice University - Houston, TX
15. Smith College - Northampton, MA
16. Stanford University - Palo Alto, CA
17. Swarthmore College - Swarthmore, PA
18. Tufts University - Somerville, MA
19. Tulane University - New Orleans, LA
20. University of California, Berkeley - Berkeley, CA
21. University of Michigan, Ann Arbor - Ann Arbor, MI
22. University of North Carolina, Chapel Hill - Chapel Hill, NC
23. University of Notre Dame - South Bend, IN
24. University of Pennsylvania - Philadelphia, PA
25. Washington University - St. Louis, MO
26. Wesleyan University - Middletown, CT
27. Williams College - Williamstown, MA

28. Yale University - New Haven, CT

## Appendix B

### IRB Approval Letter



**VirginiaTech**

**Office of Research Compliance**  
 Institutional Review Board  
 2000 Kraft Drive, Suite 2000 (0497)  
 Blacksburg, Virginia 24060  
 540/231-4606 Fax 540/231-0959  
 e-mail [irb@vt.edu](mailto:irb@vt.edu)  
 Website: [www.irb.vt.edu](http://www.irb.vt.edu)

**MEMORANDUM**

**DATE:** March 11, 2010

**TO:** Joan B. Hirt, Nicklaus Spruill

**FROM:** Virginia Tech Institutional Review Board (FWA00000572, expires June 13, 2011)

**PROTOCOL TITLE:** Predicting Academic Achievement of Male College Students

**IRB NUMBER:** 10-248

As of March 11, 2010, the Virginia Tech IRB Administrator, Carmen T. Green, approved the new protocol for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at <http://www.irb.vt.edu/pages/responsibilities.htm> (please review before the commencement of your research).

**PROTOCOL INFORMATION:**

Approved as: **Exempt, under 45 CFR 46.101(b) category(ies) 4**

Protocol Approval Date: **3/11/2010**

Protocol Expiration Date: **NA**

Continuing Review Due Date\*: **NA**

\*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

**FEDERALLY FUNDED RESEARCH REQUIREMENTS:**

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals / work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

*Invent the Future*

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

*An equal opportunity, affirmative action institution*

IRB Number 10-248

page 2 of 2

Virginia Tech Institutional Review Board

Date*	OSP Number	Sponsor	Grant Comparison Conducted?

\*Date this proposal number was compared, assessed as not requiring comparison, or comparison information was revised.

If this IRB protocol is to cover any other grant proposals, please contact the IRB office ([irbadmin@vt.edu](mailto:irbadmin@vt.edu)) immediately.

cc: File