Factors Influencing Undergraduate Women's Educational Aspirations

Sharrika D. Davis

Dissertation submitted to the faculty of Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
In
Educational Leadership and Policy Studies

Dr. Joan B. Hirt, Chair
Dr. Yasuo Miyazaki, Co-chair
Dr. Nikol G. Alexander-Floyd
Dr. Steven M. Janosik
Dr. Diana Ridgwell

April 2, 2009
Blacksburg, Virginia

Keywords:
Graduate school, Family, Faculty, Peers, Race/Ethnicity, Aspirations and Women

Factors Influencing Undergraduate Women's Educational Aspirations

By

Sharrika D. Davis

Abstract

Education is one key to economic prosperity and a predictor of overall life satisfaction. The further one progresses through the educational pipeline, the more likely it is that she may prosper. However, in a society bolstered by patriarchal systems, economic and educational inequalities exist among the genders.

Educational aspirations are influenced by students' socialization experiences. Faculty teach students about their discipline. Families influence educational pursuits. Peers serve as reinforcements or challenges to academic progress. All three groups are socialization agents to students pursuing higher education.

Research indicates that various socialization agents influence whether students pursue an undergraduate degree. However, there is little literature specifically focused on women and less on the relationship between women's undergraduate socialization experiences and their decision to enroll in graduate studies.

The purpose of this study was to determine whether certain collegiate experiences (with family, faculty and peers) predict undergraduate women's expectation to enroll in graduate study and to determine if the experiences influence expectation to enroll by race. The sample included women who completed the College Student Experiences Questionnaire (CSEQ) Fourth edition. The study employed logistic regression to explore the relationship between undergraduate women's educational aspirations and family, faculty and peer influences. In addition, I examined whether the associations between family, faculty and peers differed by race/ethnicity.

The results of the logistic regression revealed that academic ability (GPA) and peer experiences influenced advanced degree aspirations. In addition, race/ethnicity does matter, i.e., being of African-American or Latina decent is associated with a higher level of advanced degree aspiration. Also, as frequency of interactions between faculty and African-American women

increase – aspiration decreases. These findings suggest that it is important to consider the various factors that influence advanced degree aspiration. This is especially important since advanced degrees can be elemental to economic prosperity.

Acknowledgements

This journey to complete the Doctor of Philosophy degree was not made alone; therefore, there are many groups and individuals that I would like to thank. First, thank you to my teacher, assistantship supervisor, advisor and dissertation chair, Dr. Joan Hirt. Thank you for your years of listening, guiding and advising as I worked towards finishing this degree. Your support has been invaluable and is immeasurable.

I would also like to thank Drs. Steve Janosik and Don Creamer for their teaching, perspectives and support throughout this program. I extend special thanks to Dr. Nikol Alexander-Floyd for her interest and support as I made my way from student to scholar. Thank you to Drs. Yasuo Miyazaki and Diana Ridgwell for their time, effort and expertise while completing this dissertation project.

Throughout my tenure at Virginia Tech I have been surrounded by peers and colleagues who have encouraged my academic, personal and professional growth. Thank you to Dr. Gerry Kowalski who first recognized my interest in furthering my education and encouraged me to "go for it". Also, thanks to my friends in the Virginia Tech Women's Center, Residence Life, Judicial Affairs and the Dean of Students offices for their thoughts, insight and continual support since I first arrived in Blacksburg.

There were many who kept me "fed and watered" emotionally, personally, spiritually, physically and mentally as I pursued this degree. I am indebted to the following women who lent an ear and whose words and actions have mentored and bolstered me professionally and personally through the years: Drs. Bethany Flora, Pat Hyer, Kimberly LaBoone, Barbara Pendergrass, Ellen Plummer, Karen Sanders, Miya Simpson, Bevlee Watford, and the late Zenobia Lawrence Hikes. Special thanks also go to Julie Kamienski, Penny Cook, Christine Dennis-Smith and Dr. Anna LoMascolo.

This academic pursuit began with an admissions interview weekend many years ago and a cohort of budding scholars. Over the years the cohort has come and gone and new friends were made along the way. I've had the pleasure of sharing my journey with Drs. Terrell Strayhorn, Catherine Amelink, Belinda Bennett McFeeter, Jody Thompson and Melanie Hayden. Thanks also to Chris MacDonald, Yolanda Avent, Claude Steele, Frances Keene, Nick Spruill, Rev. Lisa Tabor, Rev. Glenn Orr and Trey Waller. Let's keep pressing on. To the Higher Ed dissertation El Rod group – Cara McFadden, Tracey Cameron, Rachael Stimpson and Martha Glass - always

save me a spot at the table! I owe special thanks to Dr. Joshua A. Joseph, Jr. Thank you for being academic big brother and helping me keep things in perspective. God bless you all.

I would not have made it in Blacksburg without my church family. God did a special thing when I was led to FBC. To the angel of First Church, Rev. Dr. P.L. Barrett – thank you for your unwavering encouragement, support and friendship...for welcoming me into an extended family and for being my pastor. I also am thankful for Rev. Ron and Monique Parker. As the oldest child in my family, I never had older siblings. However, God delivered a special big brother-sister pair in the two of you! Thank you for EVERYTHING. If I listed it all, I'd surely be writing for an additional decade! You both are angels and some of the best friends I have. God bless you both.

Thanks also to the First Church family. To my Voices of Expression choir family, Women's Ministry sisters and the congregation, when I leave here to unite with some other church as our church covenant instructs, I know I will be blessed; but I will never find a group like First Church. Thank you for keeping me grounded, prayed over and encouraged.

I want to acknowledge and thank my friends and family that have encouraged me along the way. I owe you all many visits and phone calls. Dr. Brian W. Paitsel, we said while we were yet in undergrad that we'd be doctors together. Now, we've done it!

Thank you to my family for their continued encouragement. Sydney, my "little" sister, I think I may have learned more from you over the years. I love you and am so proud of you! Mom (Linda) and Dad (Charles), who knew that this is what the journey would be like? Words cannot properly express what *we* have been through. Your perseverance, fortitude have been witnessed, and prayers have been received – felt by me and heard by God. Thank you for your encouragement from the absolute beginning through to the end. To my sister and parents, this is our degree.

Finally, I thank God for this experience. I thank Him for manifold blessings, praise Him for His goodness and mercy and worship Him in His awesomeness! When I prayed many years ago about earning my doctoral degree I never could have imagined all that I would have learned. I never would have guessed that so much of it would happen outside of the classroom. This was a lesson that needed to be learned about scholarship, life and faith. Educator Patrick Overton wrote:

> When you walk to the edge of all the light you have and take that first step into the darkness of the unknown, you must believe that one of two things will happen. There will be something solid for you to stand upon, or you will be taught how to fly.

I humbly acknowledge and thank God for both solid ground and wings.

Table of Contents

List of Tables and Figures

Tables

Figures

Chapter One

Introduction

One socio-economic indicator that the United States is facing turbulent times is the financial disparity between the rich and the poor and the gendered hegemony inherent in that disparity. In 2006, women earned $0.77 for every dollar that men earned (National Committee on Pay Equity, 2007). Differentiation in earning power not only creates financial disparities, but also illuminates other hidden differences by class, race/ethnicity and educational levels (Williams, 1995).

Education is one of the keys to economic prosperity and overall life satisfaction (Institute of Higher Education Policy, 2005; Perna, 2005). On average, a high school graduate earns $26,104 per year. In contrast, a doctoral degree recipient earns $71,196 per year. U.S. Census Bureau statistics indicate that the higher the educational degree earned, the higher the mean income within American households (U. S. Department of Education, 2004).

These statistics suggest that education is a crucial factor in achieving higher earning potential and socio-economic status. Higher socio-economic status and educational level yields additional private and public benefits including: better overall health, overall job satisfaction, greater civic participation, and lower unemployment rates (Educational Pipeline, 2004; Institute of Higher Education Policy, 2005; Perna, 2005). Arguably then, moving through the educational pipeline, from completing high school through earning a doctoral degree is one of the keys to personal and economic prosperity in the United States.

However, education is not the only key to success. Gender has an impact on earning power of men and women in society. For each educational level reported in the 2000 U.S. census, men consistently earned more than women (U.S. Census Bureau, Table P-18, 2000). Scholars suggest that feminism and Marxism may explain these gendered economic disparities– namely that capitalism is a patriarchal system (Hartmann, 1997; Nicholson, 1997). A patriarchal society is defined as "a set of social relations between men that have a material base, and which, through hierarchy, establish or create interdependence and solidarity among men that enable them to dominate women" (Hartmann, 1997, p. 101). Men's financial prosperity in an economically-based society serves as a means of oppression for women because money signifies power. Hite (1985) suggests that education is also associated with power; therefore, the more

professional, educational, and financial opportunity men have, the more power they accrue in society.

Patriarchy is established through exclusion and/or the obstruction of women from productive resources such as work, promotion, and education. It is reinforced through male bosses and professors. Feminist theorists further assert that men are collectively united in their domination over women and are dependent on each other to maintain this power struggle (Hartmann, 1997; Nicholson, 1997). This power struggle is perpetuated through hegemonic institutions such as the economy and educational systems.

Members of organizations are often led by various power systems including the management of members by gender. Morgan (1997) suggests that members are managed and led through gender relations that may favor one gender over the other. When men are favored over women, a patriarchal system is imposed. For example, when "sponsors, mentors and...informal networks for touching base, sounding out, or merely shooting the breeze" (p. 186) provide men opportunities for advancement over women, patriarchy is sustained. These alliances, networks, and control of informal organization are sources of power in a profession.

In higher education, the socialization process is one way of creating networks, mentors and sponsors, hence garnering professional prestige and power. Socialization in educational settings begins with students.

Socialization is "a process by which students acquire the attitudes, beliefs, values, and skills needed to participate effectively in the organized activities of their profession" (Nettles & Millett, 2006, p. 89). It is critical in each stage of professional growth. Socialization reinforces students' performance, satisfaction, and success, particularly in doctoral programs.

Students are trained and indoctrinated into professional roles for future work through the socialization process (Baird, 1992; Bowen & Rudenstine, 1992; Hite, 1985; Nettles & Millett, 2006). Socialization agents have major impacts in terms of preparing graduate students for their field. Specifically, socialization agents are people who help students progress through their academic program.

Faculty and peers serve as the main agents in the socialization model. They define the different roles that need to be mastered. As socialization occurs, students grow professionally and personally closer to faculty and peers in their respective field. Approximately 95% of Humanities graduate students have designated mentors, as do 64% in Education (Nettles &

Millett, 2006). Through these ongoing interactions, students learn the processes and best practices in their field. That is, faculty and peer agents socialize students to academic and professional values (Baird, 1992).

Positive faculty relationships with students lead to "interaction and mentoring of academic professionals in the making" (Baird, 1992, p. 6). Faculty members are the students' primary socialization agents and are the key people who define performance in the field. The experiences that students have with faculty often lead to increased mastery in the discipline and lack of relationships with faculty may lead to feelings of isolation and alienation (Baird, 1992; Nettles & Millett, 2006). So, as students progress through a program, relationships that are built with faculty models and leaders are critical. In fact, doctoral students acknowledge that peer interactions and faculty mentorship are critical to the graduate socialization process.

Academic peers are secondary socialization agents to students in an academic program. While the faculty sets the discipline's academic standards, peers set the collegial standards (Baird, 1992; Hite, 1985). Participating in study groups, attending social programs, making friends easily, spending time with students of a different racial background, and mingling informally with other graduate students are ways that students are socialized and have positive peer interactions (Nettles & Millett, 2006).

As students progress through their academic programs, faculty and peer interactions increase. These increased interactions may lead to improved views of the program, greater program satisfaction and feelings of departmental fit (Baird, 1992; Bowen & Rudenstine, 1992; Nettles & Millett, 2006). Clearly, the socialization process plays a major role in whether students progress through their graduate degree program and how smoothly they progress.

However, just as there are differences in the earning power between men and women, so are there differences in graduate educational experiences. Research indicates that men are better socialized than women (Baird, 1992; Nettles & Millett, 2006). Women often experience greater conflicting role demands in the graduate process then men (Hite, 1985). Women are also reported to receive less support from mentors and role models than men. This often leads to feelings of discouragement and lower persistence and retention in general among women (Hite, 1985; Nettles & Millett, 2006).

As these relationships develop between faculty, peers and students, interpersonal barriers can hinder academic and professional progress. In academe, interpersonal barriers occur

primarily within academic relationships. For women, feeling a lack of emotional and interpersonal support and exclusion from informal networks in graduate programs may occur (Indvik, 2005). Feelings of isolation and the lack of perceived support within a collegial environment makes it difficult for women to succeed (Bowen & Rudenstine, 1992).

Nettles and Millett (2006) report that faculty and peers are key agents in graduate education. In fact, more than half of the measures of doctoral student perceptions of socialization are based on peer and faculty interactions; specifically, (a) social interactions with faculty, (b) academic interactions with faculty and (c) peer relationships.

However, little research has been conducted on undergraduate student socialization. Since socialization is associated with a student's chosen career, choosing one's major is the first step in the socialization process. Within the undergraduate population, Alexander Astin has studied college experiences. The agents and experiences that Astin highlights as relevant to undergraduate socialization are similar to the graduate school experience. Namely, faculty, peer group and curriculum are the major agents in defining the undergraduate student experience (1993).

Statement of the Problem

Just as faculty and peers serve as socialization agents for graduate students, they also contribute to how undergraduate students perceive their college tenure. The College Student Experiences Questionnaire (CSEQ) (Pace & Kuh, 1998) measures undergraduate experiences at an institutional and national (aggregated) level. Perna (2004) has argued that there are "no direct measures of social networks that a bachelor's degree recipient developed as an undergraduate... that may promote graduate enrollment" (p. 523). My study serves to examine that gap in the literature. Specifically, I explore what experiences (measures) influence undergraduate women's expectation to enroll in graduate study.

This is a critical issue because education is one of the major predictors of overall life satisfaction. Studies have shown that those with higher degrees earn more than those earning lower degrees (Institute of Higher Education Policy, 2005; Perna, 2005). In addition, men on average earn more money than women. This financial and gendered disparity is created through hegemonic patriarchal institutions such as the educational and economic systems in the U.S. (Hartmann, 1997; Nicholson, 1997). Through power, networking, informal networks and other interpersonal interactions, men are often favored, promoted and guided towards greater

opportunities. Some of these hegemonies are perpetuated in academic environments (Hartmann, 1997; Morgan, 1997; Nicholson, 1997).

In academic environments, particularly in graduate education, gendered disparities are often noted. Several researchers (Baird, 1992; Bowen & Rudenstine, 1992; Hite, 1985; Indvik, 2005; Nettles & Millett, 2006) report that faculty and peers are the two major socialization agents in a successful graduate experience. Overall, men typically have more positive socialization experiences than women. Those students who have positive, nurturing and collegial relationships with faculty and peers are more likely to succeed; while those who do not have positive relationships often have trouble persisting.

However, study in one's field does not begin at the graduate level. It is undergraduate collegiate experiences that serve as an introduction to higher education and academe for students. Therefore, it is important to consider the link between undergraduate and graduate education. Just as faculty and peers impact graduate socialization, Astin (1993) suggests that faculty and peers are major influences in a student's undergraduate collegiate experience.

What is it that influences students' decision to make that the leap from undergraduate to graduate education? If graduate students need positive socialization, do undergraduates need similar positive college experiences? There is little research on what predicts an undergraduate's decision to enroll in graduate school (Perna, 2005). In a gendered society where education contributes to public and private lifetime benefits, it is critical to this researcher to consider ways to advance women towards a more prosperous educational and economic future.

Purpose of the Study

The purpose of this study was to determine whether certain collegiate experiences predict undergraduate women's expectation to enroll in graduate study. Collegiate experiences were defined as the relationships undergraduate women have with people in their personal and university communities including relationships with family, faculty, and peers.

The sample population was drawn from those who completed the 2005 administration of the College Student Experiences Questionnaire, 4th edition (CSEQ) (Pace & Kuh, 1998). The CSEQ is a nationally administered survey that measures various college experiences of undergraduate students. The sample included approximately 2000 undergraduate women enrolled in U.S. colleges and universities during the 2004-2005 academic year.

Research Questions

Analysis of the research questions will employ logistic regression. This analysis predicts the extent to which family, faculty, friends and peers influence an undergraduate woman's expectation to enroll in graduate study. The research questions that guide this study are:

1. Controlling for background variables (age, academic ability and parent's educational level), what and how are college experiences with family, faculty and peers associated with undergraduate women's expectation to enroll in graduate study?
2. Controlling for the background variables (age, academic ability and parent's educational level), do the potential associations (family, faculty and peers) differ by race/ethnicity?

Significance of the Study

This study had significance for future practice, research, and policy in higher education. Groups who may benefit from this study include undergraduate advisors, graduate student recruiters, and administrators who support underrepresented student groups. Undergraduate advisors include faculty, staff, and administrators who help undergraduate students plan their academic course of study. My study will provide insight into how relationships help predict plans to pursue post-graduate study. Advisors might use my findings to assess how their interactions influence the post-graduate plans their female students make.

Administrators who work in graduate recruitment and admissions may also benefit from the study. The results may help identify what factors influence women to pursue graduate study. Recruiters and admissions officers may use the findings to develop programs that encourage women to apply to and pursue graduate education.

Finally, student affairs professionals can also use the findings. The results may provide information that could help students build professional relationships. They may also provide data on social opportunities that allow students of diverse backgrounds to interact. Professionals may use the results to design programs and services that encourage graduate school exploration and may also supplement academic preparation for graduate school.

The current study also had significance for future research. My study focused on the roles that relationships and demographic characteristics play in predicting whether women will pursue a graduate degree. Future studies may focus on other college experiences that predict women's plans for graduate study. For example, the CSEQ data could be used to predict the expectation to

enroll in graduate study by considering the experiences students have with extracurricular activities and computer usage. Such a study would expand on what is known about predicting the expectation to enroll in graduate school.

A future study could examine the expectation to enroll in graduate school among women at historically Black colleges and universities (HBCUs), community colleges, women's colleges and Hispanic serving institutions (HSIs) versus those at predominantly White institutions (PWIs). This sort of study would expand what is known about women's advanced degree aspirations at colleges and universities in the country whose history and mission is to educate underrepresented populations.

An additional study could explore the impact of family, friends and peers on minority women and how those relationships influence the expectation to enroll in graduate study. Using only minority women in the sample might highlight differences in important relationships among women of color. This research could add to the knowledge base concerning the increasing population of women of color on college campuses, particularly in light of a diversified American society.

In addition, this research is significant for future policy development. University policymakers concerned with curricula may find the research helpful. The results may inform those policymakers about factors that predict women's post-graduate degree aspirations. The findings may inform curricular policies designed to encourage women to pursue graduate education.

The research may be useful for those state policymakers who make decisions regarding tuition and financial aid. Policymakers might suggest financial incentives such as scholarship and/or grant programs for women who continue academic study in graduate school to encourage those who may choose academe over employment in the private sector.

Finally, the research results may be helpful for policymakers concerned with gender equity in academe. The results may be used to influence policy in institutional and programmatic departments that support undergraduate and graduate women.

Delimitations

Although the study makes valuable contributions to the field, several delimitations exist. The first delimitation dealt with the instrument used in the study. The CSEQ measures relationships with faculty, family and peers through selected items. It is possible that these items

did not fully measure relationships. As in all studies that involve secondary analysis, the items on the instrument constrain what can be examined.

Another delimitation is that the information provided by the participants was self-reported and thus based upon perception. Significantly positive or negative experiences that occurred around the time participants completed the CSEQ may have been reflected in their responses, since the instrument asks about students' experiences. If the instrument was administered at a different time, responses might have differed.

A final delimitation is that the research was bounded by looking only at socialization agents and not the full breadth of the CSEQ survey. Full consideration of all college experiences may have included valuable data that was otherwise not considered in the analysis.

However, this study was important because there is limited research on how undergraduate women's relationships influence their expectations to pursue graduate study. To increase numbers of women in graduate school, it is important to consider the experiences of women at all levels of academe - including the undergraduate level. More research should be conducted to inform policymakers and constituencies who may mentor undergraduate women.

Organization of the Study

This study is presented in five chapters. This chapter contained an introduction to the overall problem under study and described why this was an important study to conduct. Chapter Two reviews the literature concerning women's experiences in college, specifically relationships with family, faculty and peers. Chapter Three presents the methodology of the study. Chapter Four describes the statistical results of the research. Finally, Chapter Five discusses those results and their implications for future practice, research, and policy.

Chapter Two

Review of the Literature

To more clearly understand women's educational aspirations, it is necessary to consider what variables potentially influence women's decisions. This chapter will explore three factors that influence women's educational aspirations (including college choice). First, the literature on family influences is examined. Next, the literature on faculty and educational aspiration is reviewed. Finally, the literature on peer influence is covered. Issues of race and gender are examined for each of these three bodies of work.

Family and Educational Aspirations

Relationships with family influence educational aspirations. For the purpose of this study, family was defined as parents, guardians, siblings and extended relatives (e.g., grandparents, aunts, cousins or other relatives). Several studies suggest that familial relationships, such as grandparent, single-parent and sibling relationships all influence educational aspirations (Hauser & Kuo, 1998; Kao & Tienda, 1998; Seyfrit, Hamilton, Duncan & Grimes, 1998). Family also influences college attendance by gender (Hubbard, 1999 & 2005; McDonough, 1991; Smith & Fleming, 2006). Finally, literature suggests that family's race and ethnicity influences educational aspirations (Buchmann & Dalton, 2002; Perna, 2000; Qian & Blair, 1999).

Parents and guardians have an effect on whether their child attends college and succeeds in her educational pursuits. Elders such as grandparents also positively influence the educational aspirations of children in the family (Seyfrit, Hamilton, Duncan & Grimes, 1998). Elders represent a tie to history, tradition and cultural pride. Grandparents in particular, give youth "cultural permission" (Seyfrit, et al., 1998, p. 360) to pursue higher education and achieve educational goals. This cultural permission serves as a catalyst for many youth and is particularly strong within ethnic groups. Therefore, senior family members seem to encourage children's educational aspirations (Seyfrit, et al., 1998).

In addition to grandparents and elders, living with a single parent positively affects women's educational aspirations. However, single parent families do not have an impact on men's educational aspirations (Kao & Tienda, 1998). In addition, limited research was found on the impact of having siblings (also called "sibships") on educational aspirations. Hauser and Kuo (1998) analyzed three national surveys involving 40,500 participants. The results revealed that

gender composition of sibships have no affect on women's schooling in the United States. Thus, it seems as if those who serve as household leaders, such as elders, parents and other guardians positively encourage children's educational aspirations, especially among women. However, other family members, such as siblings do not have much impact on educational aspirations (Hauser & Kuo, 1998; Kao & Tienda, 1998).

There are several studies that have explored gender and educational aspirations (Hubbard, 1999, 2005; Smith & Fleming, 2006; Teachman, 1987). One involved interviewing 30 high achieving African-American men and women who participated in the Advancement Via Individual Determination program (AVID) (Hubbard, 1999). During the program, Hubbard conducted interviews and observations to reveal why and where men and women chose to attend college. In addition, Hubbard inquired about whether gender differences shaped youth's attitudes about higher education. The parents of most AVID participants had not attended college and most encouraged their child to attend a historically Black college or university (HBCU) when making college choices (1999).

Overall, women are more academically successful than the men. The results revealed that family, parents in particular, encourage students to succeed. AVID women chose higher education as their means of growth and success and were encouraged by family to attend four-year colleges and universities. This support from friends and family encouraged them to attend college to prepare for a career and self-sufficiency (Hubbard, 1999).

Conversely, men are encouraged to attend college, but they are also encouraged to pursue other options. Athletics are strongly suggested as a means of success and development. For example, if athletics lead to opportunities in higher education, then this is a perceived success. AVID men often choose colleges and universities based on their opportunities to play sports (whether the institution was well known or not). If four-year college or university attendance is not a feasible educational, financial or personal option, then a two-year college is an acceptable alternative for men. Also, if men choose not to attend college at all, then parents accept this decision and encourage them to pursue military occupations (Hubbard, 1999).

Parenting practices, in addition to general family encouragement are also a motivator for educational aspirations. One study of 11 Black parents of students who were enrolled at high schools in the South Central Los Angeles yielded similar results on gender (Smith & Fleming, 2006). Nine mothers, one grandmother and one father participated in the study that asked

whether parenting practices of African-American families helped direct women towards and men away from four-year college trajectories. Women in the eleventh and twelfth grades are taught that attending a four-year college will ensure eventual success in life. On the other hand, men in the same grades are led to believe that college is but one option available to them. For men, college is seen as a means to stay out of prison, which was what many peers had faced. Therefore, attending college, leaving the neighborhood and gaining an education at a two-year college is a means to ensure survival outside of the penal system. Conversely, for women, college leads to self-sufficiency and decreases the potential dependency on a partner or anyone else. Therefore, a four-year degree at a college or university is strongly encouraged for women to ensure self-sufficiency (Hubbard, 1999; Smith & Fleming, 2006).

Some literature exists about the topic of educational aspirations, race and family. Overall, parental encouragement and involvement increases the likelihood of college and university enrollment for Caucasians (Perna, 2000). Indeed, family involvement, specifically parental involvement, yields higher educational aspirations for all races except Asian-Americans. Reasons for this difference in educational aspirations include differering parenting styles within Asian/Pacific Island families (Qian & Blair, 1999). Mothers and peers, especially in East Asian countries, have higher educational aspirations for their children when compared with parents in the United States (Buchmann & Dalton, 2002). Regarding race, family and educational aspirations, parental influence and family involvement are important for all races and ethnicities.

Whether through cultural traditions or verbalized expectations, positive encouragement by family leads to greater educational aspirations. Home support serves to motivate both male and female children but in different ways (Buchmann & Dalton, 2002; Hubbard, 1999; Kao & Tienda, 1998; Perna, 2000; Qian & Blair, 1999; Seyfrit, Hamilton, Duncan & Grimes, 1998; Smith & Fleming, 2006). Clearly, however, familial support is important in encouraging the educational aspirations of young women.

Faculty and Educational Aspirations

In addition to family support, faculty (including secondary school guidance counselors) serve as socialization agents and positive influences when it comes to educational aspirations (Arredondo, 1995; Leppel, 2002; McDonough, 1991; Pascarella, 1985). Faculty and student relationships are one way that students gain ideas about their future, including greater educational aspirations. Faculty – student relationships yield greater student satisfaction in the

classroom, greater academic growth, and higher educational aspirations (McKinney, Saxe & Cobb, 1998).

Several studies reveal that faculty interaction positively influences students to achieve success and to strive for higher educational aspirations. In fact, frequent interaction is a motivator that faculty employ to influence students towards higher educational aspirations (Anderson, Dey, Gray & Thomas, 1995; Hubbard, 2005; McKinney, Saxe & Cobb, 1998; Pascarella, Terenzini & Hibel, 1978; Weidman, 1982). Faculty members also positively influence students of color to formulate more ambitious educational aspirations (Hoffman & Oreopoulos, 2007).

It is often the amount and type of contact between faculty and students that serves as a motivator for student achievement. Anderson, Dey, Gray and Thomas (1995) conducted a study using the 1987 Student Information Form (SIF) from the Cooperative Institutional Research Program (CIRP) and the 1991 Follow-up Survey of 1987 Freshmen. A total of 209,627 participants substantiate the fact that faculty do positively influence students. Specifically, faculty who (a) take an interest in their students, (b) spend time with students and (c) work with students on a research project positively impacted a student's desire to obtain higher degree goals (Anderson, et al., 1995). One-on-one attention and time spent with a faculty role model seem to be important to student achievement.

In addition to spending time with and giving attention to students, faculty who serve as student advocates also motivate students to excel. In particular, a teacher who serves as an advocate or one who acts on behalf of students is a positive motivator (Hubbard, 2005). Teachers serve as advocates when they help students select classes or guide them through the undergraduate college application process. Teachers also serve as advocates when and if discrimination occurs at the school. Each of these actions reinforces to students that they are important to teachers and worth the extra investment outside the classroom (Hubbard, 2005).

As hours spent with faculty increase, so do students' degree aspirations (Arrendondo, 1995). Talking with faculty about coursework, working on assignments outside of class time and being welcomed in a faculty member's home as a guest are predictors of high degree attainment (Arrendondo, 1995). Students with the highest frequency of faculty interactions consistently have the highest degree aspirations, compared to students with fewer interactions (Arrendondo, 1995).

Faculty interaction can be both formal and informal. Informal interaction between faculty and students has a positive influence on student academic performance (Pascarella,Terenzini & Hibel,1978) and may compensate for or counteract negative peer influences. The importance of student-faculty interactions is also noted by Weidman who stated that "interpersonal relationships with faculty are related to attitudes and aspirations of undergraduates" (1982, p. 11). Specifically, "high levels of student:faculty interaction creates opportunities for mentorship, such as providing advice and encouragement, recommending for awards, internships or jobs, and involving students in research" (Kinzie, Thomas, Palmer, Umbach & Kuh, 2007, p. 160). These informal interactions outside of the classroom foster relationships between faculty and students and serve to positively influence students' educational aspirations. These same issues influence women and minority students.

Among students of color, faculty who take a personal interest in students serve as positive predictors of higher degree aspirations. These mentoring relationships seem most important for women and students of color because they help them navigate chilly or hostile academic environments (Anderson, Dey, Gray & Thomas, 1995). Therefore, as Pascarella (1985) noted, socialization agents such as peers and faculty aid such students in their academic development and undergraduate growth.

A faculty member's level of cultural awareness is also a positive predictor of academic success and higher educational aspirations. Students often feel supported by faculty who are aware of the cultural challenges that underrepresented students face, because it makes students feel individually supported (Buckley, 1997). For example, Alaskan Native and Native American graduate students report that some of their instructors are critical to their academic success. While peers offered networking support systems, the attention given by supportive faculty made these students feel as if they were part of a larger more inclusive community (Buckley, 1997). This was true for both women and students of color.

Data from five women's institutions reinforce the importance of faculty support on educational aspirations at the institutional level. Students at Bryn Mawr, Bennett College, Pamona College, Tougaloo College and Incarnate Word noted that faculty serve as positive role models and help to create a caring and supportive environment. In addition, faculty members offer advice and guidance on personal issues. Faculty from each institution noted that it should be the goal of faculty and administrators to actively assist students to succeed. If this means

spending time outside of the classroom or getting involved in students' lives outside of personal matters, then faculty members will do what is required (Kuh, 1999; Wolf-Wendel, 2000). These motivational efforts encourage students and create a comfortable environment to pursue additional educational aspirations.

In particular, faculty at these women's institutions emphasized the importance of having positive role models. Specifically, role models create a "visual correlation between image and possibility" (Wolf-Wendel, 2000, p. 330). It seemed within these women's colleges that faculty members viewed the concept of in loco parentis as the norm, often performing tasks such as waking students if they sleep through class or contacting parents to illicit assistance in helping a struggling student. These acts foster a sense of community and a supportive environment where women, in particular, seem to succeed.

This sort of attention from faculty members seemed to be lacking at larger, public institutions where student-faculty interaction is less likely and active learning occurs less often (Kuh, 1999; Pascarella, 1985). As Kuh (1999) noted "given the importance of faculty-student interaction to many desired outcomes of college, it stands to reason that student effort will decline if faculty effort also declines" (p. 115). This may lead to a decline in influence on students' educational aspirations and suggests that institutional culture is important to educational aspirations (Ridgwell & Creamer, 2003).

Faculty and student relationships are important and related to students' educational aspirations for women in particular (Anderson, Dey, Gray & Thomas, 1995; Hubbard, 1995; Kuh, 1999; McKinney, Saxe & Cobb, 1998). The more direct and individual contact that faculty have with women students, the more positive influence they have on students. Specifically, when female students are involved with faculty members through research, invited into a professor's home or are encouraged by letters of recommendation and award nominations, degree aspirations increase (Arrendondo, 1995).

Secondary teachers and college faculty members who serve as advocates for students through personal times of distress or help them navigate educational bureaucracy also positively influence educational aspirations for women students (Hoffman & Oreopoulos, 2007; Hubbard, 2005; Kinzie, Thomas, Palmer, Umbach & Kuh, 2007). Finally, when institutional culture allows for stronger relationships between faculty members and students, students succeed, particularly at all-women's institutions (Kuh, 1999; Wolf-Wendel, 2000). Female students have higher

aspirations when faculty members serve as supporters, cultural translators in chilly climates and academic role models, thus faculty involvement is critical when pushing women students to attain higher educational aspirations.

Peers and Educational Aspirations

In addition to family and faculty, peers are one of the three major factors in undergraduate socialization and thus peer support and interaction are critical in college development (Pascarella, 1985). In fact, sub-communities, often formed among peer groups, have been found to "influence both social and intellectual persistence" (Hammarth-Bonous, 2000, p. 94). This intellectual persistence may include educational aspirations. It is often peer relationships that successfully or unsuccessfully guide students throughout their college experiences. Through the peer socialization experience, students are influenced personally and intellectually. Literature points to the fact that social groups, networking, and special interest groups that affirm students all contribute to educational and degree aspirations (Antonio, 2004; Datnow & Cooper, 1997; Hubbard, 2005; Perna, 2000; Smith & Moore, 2000; Tsui, 1995; Wolf-Wendel, 2000).

It is through peer and social friendship groups that students receive positive reinforcement and share successes throughout their college tenure (Horvat & Lewis, 2003). Peer groups are important because students who are "socially distant" feel less a part of their specific community than those who are connected to such groups (Smith & Moore, 2000). "Socially distant" versus "socially integrated" students were interviewed by Smith and Moore in 2000. Findings revealed that Black students in particular create social groups to deal with college and university isolation (Smith & Moore, 2000).

Subgroups and small communities among peers are important because they help to reinforce ideals and common interests (Tsui, 1995; Wolf-Wendel, 2000). The importance of peer colleagueship resonated in studies of "gendered intellectual identity" (Wolf-Wendel, 2000, p. 338), suggesting that women in feminist studies groups excel academically and that impacts their degree ambitions (Tsui, 1995). For students who have taken special interest classes, their educational aspirations change over time. For Black women, student body diversity and taking Women's Studies courses leads to higher degree aspirations. For Caucasian women, a high degree of feminist awareness leads to higher degree aspirations (Wolf-Wendel, 2000).

Colleges and universities that offer courses in feminist and multicultural studies positively impact degree ambitions and garner more ambitious peer groups than institutions that do not offer such courses (Tsui, 1995). On an individual level, both Caucasian women and women of color have higher degree aspirations when they take classes in feminist studies and multicultural diversity (Tsui, 1995). This suggests that academic peer groups where students can positively identify and celebrate themselves yield groups with higher educational aspirations. Overall, focused academic subgroups and special interest colleges provide a safe place for students (especially women) to achieve goals, motivate each other, and foster a supportive and collegial peer achievement culture (Tsui, 1995; Wolf-Wendel, 2000).

This supportive peer culture is often more deeply enriched at women's institutions and historically Black colleges and universities (HBCUs) (Anderson, Dey, Gray & Thomas, 1995). In particular, Black students at HBCUs, which nurture an underrepresented population in higher education report higher degree aspirations than Black students at predominantly White institutions (PWIs). Both private postsecondary institutions and HBCUs attract well prepared students and often place less emphasis on grades and more emphasis on sustaining a larger, generalist learning environment (Anderson, et al., 1995). This focus on a larger learning community may help alleviate academic pressure for students and instead may contribute to greater educational aspirations.

Wolf-Wendel's (2000) study found that PWIs are less effective for overall growth and socialization than women's colleges and special focus colleges such as HBCUs and Hispanic Serving Institutions (HSIs). Formal interviews with faculty, administrators and students at select women's colleges and HBCUs revealed the positive, community-building impact that special interest colleges have on women in particular (Wolf-Wendel, 2000). At these kinds of institutions peer group development and high educational aspirations are encouraged and engrained in institutional culture.

Peer groups and educational aspirations are largely formed around the context of race and ethnicity, with groupings and relationships often defined along racial and ethnic lines. Social integration, community groups and peer mentoring programs are all important to supporting educational aspirations (Buckley, 1997; Pavel, 1992; Smith & Moore, 2000).

Social integration often occurs through programs that are designed to support students of color (Pavel, 1992). College and university support systems are especially important for Native

American and Alaskan Native youth who express ambivalence about attending four-year colleges and universities (Seyfrit, Hamilton, Duncan & Grimes, 1998). Specifically, students who identify as Alaskan Natives and Native Americans often note that they are less likely to leave rural Alaska for schools in other locales (Seyfrit, et al., 1998).

In a graduate community of American Indian graduate and professional students, many note that a surrogate community and one that reinforces cultural norms is important both on and off campus to promote success in achieving educational aspirations (Buckley, 1997). This confirms the literature suggesting that faculty and peers are necessary to help achieve educational success (Antonio, 2004; Datnow & Cooper, 1997; Hoffman & Oreopoulos, 2007; Hubbard, 2005; Kinzie, Thomas, Palmer, Umbach & Kuh, 2007; Kuh, 1999; Smith & Moore, 2000).

Educational aspirations are influenced by gendered peer mentoring networks among Hispanic youth (Barajas & Pierce, 2001). Hispanic women who participate in peer mentoring programs with college and university mentors have positive racial and ethnic identity affiliation and are encouraged to attend colleges and universities. This is despite the fact that minority students pursue graduation at lower rates than their Caucasian peers (Fry, 2003). Mentors aid women, in particular, in making the shift from high school to college, by aiding in their adjustment to a new academic lifestyle (Barajas & Pierce, 2001).

Sometimes racial groups – especially among Black students – are viewed as a socially defined clique in addition to being part of an ascribed racial group. This is equivalent to being "the jock", "artsy", or "preppy" (Datnow & Cooper, 1997). Respondents in one study referred to themselves as a clique, defined as a "normal gravitation" to peers similar to themselves. It is here where they often find a sense of identity and belonging. The role of peer group networks towards achieving educational aspirations is revealed in several scholarly studies – particularly where race is concerned (Antonio, 2004; Datnow & Cooper, 1997; Hubbard, 2005; Kuh, 1999; Smith & Moore, 2000).

Black students form networks and use formal spaces to affirm their racial identity, which increases feelings of belongingness (Datnow & Cooper, 1997). The Baltimore Educational Scholarship Trust (BEST) served as a formal organization within and across schools in the Baltimore, Maryland area. An ethnographic case study involved 42 minority participants in predominantly Caucasian independent Baltimore City schools. The findings revealed that close

bonds are formed intraracially (versus interracially). Moreover, formal clubs like Black Student Unions, Black Awareness Clubs, gospel choirs and multicultural alliances are ways that students network and encourage each other to succeed (Datnow & Cooper, 1997).

Similar to the BEST program, students who participated in the Advancement Via Individual Development (AVID) program also found support in peer community groups (Hubbard, 2005). The African-American women in the study attend four year colleges and universities at a higher rate than African-American men. The women participants also encourage each other to make wise choices regarding dating and sexual involvement. The focus of the AVID women's community peer group is to attend college and their peer relationships help participants realize that goal. While working towards their educational aspirations, the AVID women have become "active in the manipulation of their own academic success" (Hubbard, 2005, p. 378). Working collectively towards a common goal serves as a motivator for the group; both personal and academic choices are based upon peer group participation (Hubbard, 2005).

Formal and informal networking is important to influencing educational aspirations among students. Every day events such as dining together and attending student organization meetings are deemed important (Smith & Moore, 2000). Furthermore, support through friends and having various sets of friends, goal setting and discussing the future all occur in peer networking groups (Hovart & Lewis, 2003).

Students of color are part of both majority and minority cultures in the college and university system. That is, they assimilate socially into the majority culture, thus participating in events of the larger university community as well as engaging in events specifically targeted towards an underrepresented audience. This "bicultural socialization", or cultural assimilation into both cultures, is necessary in order to successfully navigate the terrain of the collegiate system (Barajas & Pierce, 2001). Typically, Caucasian students rank themselves higher than people of color regarding intellectual self-confidence. However, this seems to depend upon the secondary or collegiate institution that they attend. Caucasian students who attend schools with a higher level of diversity report having lower self-confidence and lower degree aspirations. Conversely, students of color at highly diverse schools report having higher self-confidence and a diverse group of peers (Antonio, 2004).

In a study by Horvat and Lewis (2003), one student noted that participating in peer groups reinforced that "being black and smart are not incongruent" (p. 276). This suggests that

warmth and friendship is found in a potentially isolating academic and social environment. Furthermore, networks serve to reaffirm a racial and academic identity, and lead to higher educational aspirations (Datnow & Cooper, 1997).

Much of the literature involving peer group networking examines the issue of race and ethnicity. A challenge that some literature raised was the issue of "acting black" or feeling a sense of culture shock when trying to manage academics, social and personal networking (Antonio, 2004; Datnow & Cooper, 1997; Jones & Shorter-Gooden, 2003; Kao & Tienda, 1998; Perna, 2000; Smith & Moore, 2000).

High achieving Black students are often admired by peers as role models and this reaffirms their academic identity. This motivation often encourages students in peer groups to achieve more than they might if working alone (Datnow & Cooper, 1997). In fact, students who do not participate in formal or informal peer groups are not ostracized, per se, but feel less connected to their peer community than those who participate in peer groups (Datnow & Cooper, 1997).

Many students, particularly in Black and Hispanic communities associate academic success with "acting White" (Jones & Shorter-Gooden, 2003; Kao & Tienda, 1998). This marginalization by race often keeps students trapped between cultures and marginalized between groups (Antonio, 2004; Datnow & Cooper, 1997). Some students even "camouflage" their achievements by downplaying them so that other students in similar groups do not feel uncomfortable. One example includes changing speech from "standard English" to "slang" when with peers (Horvat & Lewis, 2003). This need to switch identities in some settings indicates that not only is peer networking important to self-identity, but suggests the challenge of managing multiple identities to fit in. Therefore, if high educational aspirations are important, it may be critical to float among various peer networking groups to succeed, particularly when peer group culture influences educational success (Datnow & Cooper, 1997).

Biracial and multiracial students may face additional challenges, as they are often torn between fitting into multiple communities, which in turn influences their educational aspirations (Smith & Moore, 2000). A higher percentage of biracial students (27%) feel extreme alienation from other black students versus monoracial (18%) and other ethnically identified students (23%) (Smith & Moore, 2000). This distance could lead to social isolation and less of a connected feeling to a group, thus causing lower educational aspirations among biracial students.

The connection between educational aspiration and social isolation suggests that diversity is in fact an important peer group characteristic (Antonio, 2004).

Socialization, acceptance and fitting in are important to youth and peer group networking and do influence educational aspirations (Hammarth-Bonous, 2000; Pascarella, 1985). Peer groups positively reinforce student ideas and educational aspirations. Those who are well integrated into a peer group often find the necessary support to achieve whereas they may have had trouble making it alone (Anderson, Dey, Gray & Thomas, 1995; Datnow & Cooper, 1997; Tsui, 1995). Furthermore, peer groups serve as formal and informal networks that encourage students to set goals and achieve academic success (Datnow & Cooper, 1997; Hovart & Lewis, 2003; Smith & Moore, 2000). Special interest groups and colleges and universities also serve to encourage peers – women in particular – to succeed (Tsui, 1995; Wolf-Wendel, 2000).

Finally, although peer groups serve as strongholds for academic motivation, students in underrepresented communities, biracial and multiracial students still face challenges of fitting into an overall homogenous educational institution. This is so challenging that youth can feel compelled to switch between their identities that reflect high aspirations and other competing goals within their respective communities (Antonio, 2004; Datnow & Cooper, 1997; Horvat & Lewis, 2003; Kao & Tienda, 1998; Smith & Moore, 2000). Clearly, peer groups serve as motivators for educational aspirations and sometimes academic survival.

In conclusion, the literature surrounding influences on educational aspirations is paradoxically broad and narrow. There are numerous scholarly efforts on factors that influence educational aspirations (Antonio, 2004; Barajas & Pierce, 2001; Datnow & Cooper, 1997; Hubbard, 1999, 2005; Kao & Tienda, 1998; Kinzie, Thomas, Palmer, Umbach & Kuh, 2007; Mullen, Goyette & Soares, 2003; Perna, 2000; Teachman, 1987; Wolf-Wendel, 2000). This literature review has examined information regarding three factors which may minimally or greatly influence educational aspirations: specifically family influence, faculty influence and peer influence.

Family, faculty and peers serve as socialization agents for students who aspire to attend college (Pascarella, 1985). For each group, positive interactions yield higher educational aspirations (Anderson, Dey, Gray & Thomas, 1995; Arrendondo, 1995; Datnow & Cooper, 1997; Hubbard, 1999, 2005; Perna, 2000; Smith & Fleming, 2006; Teachman, 1987; Tsui, 1995; Wolf-Wendel, 2000). Families guide students and elders give cultural permission to succeed

(Seyfrit, Hamilton, Duncan & Grimes, 1998). Faculty individually support and encourage students throughout high school and college (Kinzie, Thomas, Palmer, Umbach & Kuh, 2007). Finally, peers serve as academic and social networks and support systems as students navigate academic terrain (Hovart & Lewis, 2003).

However, there are gaps in this body of knowledge. Scholarly literature omits research on educational aspirations based upon gender. Much of the literature considers ethnic groups or age cohorts, African-Americans in particular, but few focus specifically on women and their issues or concerns.

It is likely that various demographic factors influence whether an individual will intend to enroll in graduate study. Background demographics such as age, parent's educational level and academic ability may all influence the intent to enroll in graduate study. Demographic factors have been examined for students already pursuing graduate education particularly for those pursuing doctoral degrees (Bowen & Rudenstine, 1992; Nettles & Millett, 2006). Yet, the subject of intent to enroll and college experience has not been fully examined.

The research is even more limited on the postgraduate educational aspirations of undergraduate women as a whole. Therefore, the present study addresses the gap in the literature surrounding educational aspirations of undergraduate women. Specifically, socialization factors (family, faculty and peers) that influence the likelihood of undergraduate women's post-baccalaureate educational aspirations were studied. In addition, the influence of race on these factors was considered.

Chapter Three

Methodology

The purpose of this study was to determine whether certain collegiate relationships predict undergraduate women's expectation to enroll in graduate study. Specifically, the study examined the ability of relationships with family, faculty and friends (peers) to predict graduate study expectations. The research questions that guided this study were:

1. Controlling for background variables (age, academic ability and parent's educational level), what and how are college experiences with family, faculty and peers associated with undergraduate women's expectation to enroll in graduate study?
2. Controlling for the background variables (age, academic ability and parent's educational level), do the potential associations (family, faculty and peers) differ by race/ethnicity?

This chapter details the methodology that was used to conduct the study. I describe criteria for sample population selection and instrumentation. Next, the validity and reliability of both the original and sample datasets are described. Finally, the procedures for data collection and data analysis are explained.

Sample Selection

Data for this study were obtained from the 2005 administration of the College Student Experiences Questionnaire (CSEQ) Fourth edition (Pace & Kuh, 1998). The CSEQ was administered by college and university administrators to students at all academic classification levels (freshman, sophomore, junior, senior, graduate student, and unclassified). The results of the survey were available both at the institutional level and in aggregated form as a national data set. The 2005 CSEQ administration included 175 institutional participants and 87,780 of student participants.

I requested a data slice of the 2005 administration of the CSEQ (Fourth edition). The data slice contained only female participants. Because the research specifically focuses on undergraduate experiences and expectations to enroll in graduate study, only participants who responded as "freshman/first-year", "sophomore", "junior" and "senior" were selected for the data slice (Pace & Kuh, 1998).

The data slice was obtained by submitting a proposal to the College Student Experiences Questionnaire Research Program at the Indiana University Center for Postsecondary Research

and Planning in Bloomington, Indiana. There is an item on the CSEQ that asks respondents if it would be permissible to use their responses in research studies. Only those who responded positively to that item were included in the sample. The data were sent to me in SPSS format. All identifying information about participants was removed before the data were sent to me.

Instrumentation

The College Student Experiences Questionnaire (CSEQ), Fourth edition was designed to assess the collegiate experience (Pace & Kuh, 1998). It takes approximately 30 minutes to complete and is comprised of eight sections. The survey measures three broad areas of collegiate life: college activities, college environment, and estimate of gains (CSEQ Content, 2005). The eight sections of the CSEQ include (a) Background Information, (b) College Activities, (c) Conversations, (d) Reading/Writing, (e) Opinions About Your College or University, (f) The College Environment, (g) Estimate of Gains, and (h) Additional Questions. It is administered annually to students at participating campuses and is intended to assist university faculty and administrators with improving campus life and experiences for their students.

The first section of the questionnaire collects data about Background Information and requests demographic information about the participants. There are 18 items about age, sex, grade point averages, major, and race/ethnicity among others. Additional items ask about work habits inquiring about the amount of time spent at on- and off-campus jobs. Other items require participants to estimate how they met the majority of their college expenses. The outcome variable "Do you expect to enroll for an advanced degree when, or if, you complete your undergraduate degree?" is also contained in this section.

The second section includes questions about participants' College Activities. There are 11 subsections containing 93 items. Response options for each item are "never", "occasionally", "often" and "very often" *en toto.* The sub-items include questions about the campus library, faculty experiences, personal experiences, student acquaintances, campus facilities and other campus activities/experiences. Participants respond to questions about whether they used library staff for assistance, utilized electronic mail (e-mail) to communicate with instructors, or socialized with faculty. Additional items ask whether participants contributed to classroom discussions or sought help for personal problems.

The third section of the CSEQ is entitled Conversations. This section contains two sections with a total of 16 items. The first section is about topics of conversation. Respondents

answer questions about current events, lifestyles, customs and religion, and computers and other technologies. The second section is about information contained in those conversations. Participants respond to items about critical thinking, changing one's opinion as a result of conversations, and persuading others to consider alternate ways of thinking. Table 1 reflects the variables used from the CSEQ survey.

The fourth section of the CSEQ asks participants about Reading and Writing practices. This section contains two questions. The first asks participants to rank how many books they have read. The second item asks participants to rank how many essays, papers or reports they have written in the current academic year. The answer choices ranged from "none" to "more than 20."

The fifth section of the CSEQ asks participants their Opinion About [Their] College or University. The two items ask participants to rank whether they enjoyed college and if they would consider attending the same institution if they had the chance to begin their college experience again.

The College Environment is addressed in the sixth section of the instrument. The two subsections contain 10 items. The purpose of this section is to examine perceived student development. The first section asks about personal qualities and values. In this first section, participants rank their perceptions on a scale of one ("weak emphasis") to seven ("strong emphasis"). The second section contains items about relationships with administrative personnel, students and faculty. The responses for "relationships with other students" range from seven ("friendly, supportive, sense of belonging") to one ("competitive, uninvolved, sense of alienation"). The response option for relationships with administrative personnel and offices range from "helpful, considerate and flexible" (7) to "rigid, impersonal [and] bound by regulations" (1). Finally, participants respond to relationships with faculty members with response options ranging from "approachable, helpful, understanding [and] encouraging" (7) and "remote, discouraging [and] unsympathetic" (1).

The CSEQ's seventh section is entitled Estimate of Gains. Participants respond to 25 items with responses ranging from "very little" to "very much." This section asks participants about their knowledge and skills in the use of computer technology, effective writing, and growth in analytical and critical thinking. Additional items ask questions about career knowledge, presentation skills, and leadership skills. Other items ask about personal growth and

Table 1

Variables, Description, Variable Names and Codes

Variables	Description	Variable Name	Code
Dependent		ADVDEG	1=yes 2=no
Faculty Experiences (FAC)			
	Faculty information	FAC 1	1=Never 2=Occasionally 3=Often 4=Very Often
	Course selection	FAC2	1=Never 2=Occasionally 3=Often 4=Very Often
	Paper or project edits	FAC3	1=Never 2=Occasionally 3=Often 4=Very Often
	Career planning	FAC4	1=Never 2=Occasionally 3=Often 4=Very Often
	Received feedback	FAC5	1=Never 2=Occasionally 3=Often 4=Very Often
	Socialized with faculty	FAC6	1=Never 2=Occasionally 3=Often 4=Very Often
	Group/faculty discussions	FAC7	1=Never 2=Occasionally 3=Often 4=Very Often

Table 1 (continued)

Variables, Description, Variable Names and Codes

Variables	Description	Variable Name	Code
	Asked for feedback	FAC8	1=Never 2=Occasionally 3=Often 4=Very Often
	Conducted research	FAC10	1=Never 2=Occasionally 3=Often 4=Very Often
	Talked with faculty counselor or staff about personal concerns	PERS8	1=Never 2=Occasionally 3=Often 4=Very Often
Personal Experiences (PERS)			
	Talked with family or friends	PERS1	1=Never 2=Occasionally 3=Often 4=Very Often
	Had discussions with family or friends	PERS2	1=Never 2=Occasionally 3=Often 4=Very Often
Student Acquaintances (STACQ)			
	Interacted with peers with different interests	STACQ1	1=Never 2=Occasionally 3=Often 4=Very Often
	Interacted with peers of different family background	STACQ2	1=Never 2=Occasionally 3=Often 4=Very Often
	Interacted with peers of a different age	STACQ3	1=Never 2=Occasionally 3=Often 4=Very Often

Table 1 (continued)

Variables, Description, Variable Names and Codes

Variables	Description	Variable Name	Code
	Interacted with peers of a different race or ethnicity	STACQ4	1=Never 2=Occasionally 3=Often 4=Very Often
	Interacted with peers from a different country	STACQ5	1=Never 2=Occasionally 3=Often 4=Very Often
	Had discussions with peers with different values	STACQ6	1=Never 2=Occasionally 3=Often 4=Very Often
	Had discussions with peers with different political opinions	STACQ7	1=Never 2=Occasionally 3=Often 4=Very Often
	Had discussions with peers with different religious beliefs	STACQ8	1=Never 2=Occasionally 3=Often 4=Very Often
	Had discussions with peers of different race or ethnicity	STACQ9	1=Never 2=Occasionally 3=Often 4=Very Often
	Had discussions with peers from a different country	STACQ10	1=Never 2=Occasionally 3=Often 4=Very Often

development such as understanding oneself, development of good health habits, and understanding others.

Additional Questions make up the eighth and final section of the CSEQ. In this section, administrators at individual institutions may develop institution-specific items to analyze their students' specific experiences. Information about the CSEQ instrument is included in Appendix A.

The items for my study were drawn from various sections of the CSEQ. The demographic information about race/ethnicity and parent's education was taken from the "Background Information" of the questionnaire, as was information about intent to pursue graduate education. The remaining items for analysis were taken from the College Activities section including the subsections of: Experiences with Faculty; Personal Experiences and Student Acquaintances.

Reliability and Validity

Reliability and validity analyses were conducted at the Center for Postsecondary Research, Indiana University using a nationally representative sample of undergraduate students (freshmen, sophomores, juniors and seniors). The reliability of a survey instrument determines if an instrument elicits consistent responses over time (Suskie, 1996). Chronbach's alpha reliability coefficient is a reliability measure that determines the strength of items in relation to one another. The measurement ranges from 0.0 to 1.0 with stronger relationships ranging closer to 1.0 (George & Mallery, 2003; Gonyea, Kish, Kuh, Muthiah & Thomas, 2003; Howell, 2007).

The items for analysis in the present study were taken from the Quality of Effort (QE) section of the CSEQ, specifically from Experiences with Faculty, Personal Experiences and Student Acquaintances. The Quality of Effort alphas ranged between 0.74 and 0.92 which suggests a high reliability range. The CSEQ's reliability scores were 0.84, 0.88 and 0.91 for Personal (family) Experiences, Faculty Experiences and Student Acquaintances respectively (Gonyea, Kish, Kuh, Muthiah & Thomas, 2003).

Survey validity determines if an instrument accurately reflects what the researcher wants to measure (Suskie, 1996). Content and construct validity are two measurable forms of validity as related to the CSEQ. Content (or face) validity is established by factor analysis. The factor analysis on the CSEQ indicates that all scales met acceptable criterion (except Campus

Facilities) and in fact the survey is sufficiently coherent and interrelated (Gonyea, Kish, Kuh, Muthiah & Thomas, 2003).

Construct validity is established by determining if various CSEQ measures are consistent with prior related research. The Buros Mental Measurements Yearbook and additional research on the psychometric properties of the CSEQ sufficiently establish the survey's validity (Gonyea, Kish, Kuh, Muthiah & Thomas, 2003).

Data Collection

Approval to conduct the study was obtained through the Institutional Review Board for Research Involving Human Subjects (IRB) at my institution. I sought expedited approval because pre-existing data that masked all identifying information were used to conduct the study (see Appendix B for IRB approval letter).

I obtained the dataset by contacting the CSEQ Research Program, in Bloomington, Indiana. After initial correspondence, a brief research proposal was submitted explaining the purpose of the research and, presenting the research questions. Following approval of the proposal by the CSEQ Research Program staff, the dataset was sent to me electronically.

Data Analysis

Analysis of the data included two specific processes. First, the data were prepared for analysis. Second, data were analyzed using logistic regression. This process was necessary for rigorous statistical and substantive analysis.

Preparing the Data

To properly prepare the data for statistical analysis, several steps needed to be completed. First missing cases were eliminated. Next, data was recoded for SPSS analysis. Then, frequency distributions were run on the sample to review the demographics of the population. Then, composite variables were created for the main independent variable. All independent variables were then centered. Finally, interaction variables were created.

It is important to eliminate missing cases for logistic regression analysis. Having complete cases where each participant answered every CSEQ survey question was critical. The researcher eliminated cases where respondents did not answer questions regarding demographics and questions involving family, faculty and peer experiences which corresponded to the instrument items.

From the original sample population (N=2,000), 367 missing cases were deleted. Fifteen cases were missing about academic ability (GPA). Next, 4 responses about age were missing and therefore deleted. Thirty (30) cases were eliminated for omitting parent's educational level or entering a response of "don't know." Next, 15 missing cases were deleted because there was no response to the question about obtaining an advanced degree, which was the outcome variable. Because logistic analysis groups are best analyzed with groups of 50 or more, smaller racial groups were omitted from analysis. Specifically, women who did not identify with a racial group or classified themselves as biracial, multiracial or who were American Indian were eliminated from analysis. This led to deleting a total of 179 cases. Finally, 124 missing cases were deleted because they were missing responses to questions involving family, faculty and peer experiences). After cleaning the data, there were 1,633 participants in the final sample population.

Next, each variable was recoded for analysis. The average age was calculated for each age group. The variable on parent's educational level (dpcollege) was recoded for a 0 or 1 response. A response of "No" was coded as 0. A response of either parent or both parents attending college was coded as 1. Grade point average (academic ability) was not recoded and was left as a continuous variable.

Race/ethnic groups were collapsed into four major racial groups: Caucasian, Black/African-American, Latina and Asian/Pacific Islander. Additionally, a Latina group-defined as women who identified as Mexican-American, Hispanic or were of other Hispanic origin were grouped as Latina. All four racial groups were recoded as Caucasian = 0; Black/African-American = 1; Latina = 2 and Asian/Pacific Islander = 3.

When analyzing groups in logistic regression it is important to create target groups (Wright, 1998) for analysis. Since race/ethnicity is a major variable for analysis of one research question, dummy variables were also created for each group. For example, a dummy variable for Black/African-American (dBlack) was created. All respondents who identified as Black/African-American were coded 1 for a "yes" response and those who responded "no" were coded as 0. Dummy variables for Latina (dLatina) and Asian/Pacific Islander (dAsian) were similarly created.

The next step in data preparation is the creation of the main independent composite variables. First, each variable scale was recoded from a 1 through 4 scale ranging from "never"

to “very often” to a 0 through 3 scale. A composite family variable (famexp) was created by adding the survey variables of “pers1” and “pers2” since there were two variables used to measure family experiences. The response range from these two variables was 0 through 6. The composite faculty experiences (facexp) and composite peer experiences (friexp) were created similarly. Because faculty and peer variables were created from 10 items on the CSEQ, each new composite variable had a response range of 0 through 30. A complete list of survey variables are included in Table 1.

A new centered variable was created for each variable in the study. Details about this process are provided in Chapter Four. To address the statistical detail of the second research question, interaction variables were created. An explanation of how these variables were created is also offered in Chapter Four.

Each centered composite variable was multiplied by the dummy variables for race/ethnicity. A total of nine interaction variables were created for this study. Centered composites for family experiences (c_famexp_dBlack, c_famexp_dLatina and c_famexp_dAsian) were created. Also, centered composite faculty experiences (c_facexp_dBlack, c_facexp_dLatina and c_famexp_dAsian) and centered composite friends experiences (c_friexp_dBlack, c_friexp_dLatina and c_friexp_dAsian) were created.

Analyzing the Data

Data were analyzed using logistic regression analysis. Logistic regression predicts relationships between categorical independent variables and a dichotomous outcome variable (George & Mallery, 2003; Hosmer & Lemeshow, 2000). The purpose of logistic regression is “to find the best fitting and most parsimonious... model to determine the relationship between an outcome (dependent or response) variable and a set of independent (predictor or explanatory) variables” (Hosmer & Lemeshow, 2000, p.1). In this study, the dependent variable was excised from the question “do you expect to enroll for an advanced degree when, or if, you complete your undergraduate degree?” The response options were “yes” and “no” (Pace & Kuh, 1998).

Control variables (age, academic ability and parental educational level) were entered into the regression equation. These demographic variables likely contribute to a decision to enroll in graduate study, so it was important to control for them in the analysis.

The primary research question involved the influence of faculty, undergraduate peers and family on the expectation to enroll in graduate school. The secondary research question involved

the influence of race and ethnicity on faculty, peers and family on the expectation to enroll in graduate school. The equations that guided the logistic regression as well as the regression equations are explained more fully in Chapter Four.

In this chapter, methodology for conducting the research was discussed. Sample selection, instrumentation, reliability and validity, data collection and analyses procedures were outlined accordingly.

Chapter Four

Results

The purpose of this chapter is to report the findings from the analysis of the data. The first section describes characteristics of the sample population and compares the two groups (aspirants v. non-aspirants) to see if they differ in terms of demographic characteristics. Next, the associations between the dependent and independent variables are reported. Then, I report the results of the logistic regression analysis on the first research question. The final section of the chapter reveals the results of the logistic regression analysis used to answer the second research question.

Characteristics of the Sample Population

The sample consisted of 1,633 randomly selected female participants from four-year public and private colleges and universities across the United States. Demographic characteristics of the sample are presented in Table 2. Women were grouped as aspirant if they indicated that they had an expectation to enroll in graduate or professional study. Among 1,633 female undergraduate women, 1,235 (75.6%) were aspirants and 398 (24.4%) were non-aspirants. Most of the women in the sample were less than 23 years old (91.7%). The majority of the aspirants (65.9%) had a GPA of 3.5 (41.1%) or 4.0 (24.8%) and at least one parent had attended college (65.4%). Almost three-fourths (73.8% or n = 911) of the aspirant group was Caucasian, while 8.1% (n = 100) were Black/African-American, 7.4% (n = 91) were Latina and 10.8% (n = 133) were Asian/Pacific Islander.

The remainder of the sample population was comprised of non-aspirant women (n = 398, 24.4%). Women were grouped as non-aspirant if they indicated that they did not expect to enroll in a graduate or professional program. Similar to their aspirant counterparts, the majority (91.2%) of this group was less than 23 years old. Approximately one-half (51%, n = 203) of the non-aspirant women had a GPA of 3.5 (36.2%) or higher (14.8%) which is considerably lower than the aspirant group (65.9%). However, many non-aspirants (62.8%) had at least one parent who had attended college, which was comparable to the aspirants group (65.4%). Also, a higher percentage of the non-aspirant group was Caucasian (80.2% or n = 319), while 4.8% (n = 19) were Black/African-American, 4.5% (n = 18) were Latina and 10.6% (n = 42) were Asian/Pacific Islander.

Table 2

Demographic Characteristics of the Sample and Results of χ^2 Test for Association

Demographic Characteristic	Aspirant* (n = 1235, 75.6%) n (column %) [row%]	Non-Aspirant** (n=398, 24.4%) n (column %) [row%]	Total Sample (N=1,633) n (%)	df	χ^2	p-value
Age				4	2.730	0.604
< 19	494 (40.0) [77.8]	141 (35.4) [22.2]	635 (38.9)			
20-23	640 (51.8) [74.2]	222 (55.8) [25.8]	862 (52.8)			
24-29	58 (4.7) [73.4]	21 (5.3) [26.6]	79 (4.8)			
30-39	24 (1.9) [75.0]	8 (2.0) [25.0]	32 (2.0)			
40-55	19 (1.5) [76.0]	6 (1.5) [24.0]	25 (1.5)			

Table 2 (continued)

Demographic Characteristics of the Sample and Results of χ^2 Test for Association

Demographic Characteristic	Aspirant* (n = 1235, 75.6%) n (column %) [row%]	Non-Aspirant** (n=398, 24.4%) n (column %) [row%]	Total Sample (N=1,633) n (%)	df	χ^2	p-value
GPA				4	37.959	<0.001
2.0	27 (2.2) [69.2]	12 (3.0) [30.8]	39 (2.4)			
2.5	139 (11.3) [63.2]	81 (20.4) [36.8]	220 (13.5)			
3.0	255 (20.6) [71.4]	102 (25.6) [28.6]	357 (21.9)			
3.5	508 (41.1) [77.9]	144 (36.2) [22.1]	652 (39.9)			
4.0	306 (24.8) [83.8]	59 (14.8) [16.2]	365 (22.4)			

Table 2 (continued)

Demographic Characteristics of the Sample and Results of χ^2 Test for Association

Demographic Characteristic	Aspirant* (n = 1235, 75.6%) n (column %) [row%]	Non-Aspirant** (n=398, 24.4%) n (column %) [row%]	Total Sample (N=1,633) n (%)	df	χ^2	p-value
Parent's Educational Level				1	1.720	0.190
At least one parent attended college	808 (65.4) [76.7]	246 (61.8) [23.3]	1054 (64.5)			
Neither parent attended college	427 (34.6) [73.7]	152 (38.2) [26.3]	579 (35.5)			
Race				3	9.857	0.020
Caucasian	911 (73.8) [74.1]	319 (80.2) [25.9]	1230 (75.3)			
Black/African-American	100 (8.1) [84.0]	19 (4.8) [16.0]	119 (7.3)			
Latina	91 (7.4) [83.5]	18 (4.5) [16.5]	109 (6.7)			

Table 2 (continued)

Demographic Characteristics of the Sample and Results of χ^2 Test for Association

Demographic Characteristic	Aspirant* (n = 1235, 75.6%) n (column %) [row%]	Non-Aspirant** (n=398, 24.4%) n (column %) [row%]	Total Sample (N=1,633) n (%)	df	χ^2	p-value
Asian/Pacific Islander	133 (10.8) [76.0]	42 (10.6) [24.0]	175 (10.7)			

* Aspirant = those reporting plans for graduate or professional school
** Non-Aspirant = those not-reporting plans for graduate or professional school
Note: For all χ^2 tests for associations, all the cells had expected frequency of at least 5.

Chi-square Tests of Association between Outcome and Independent Variables

To understand the data more clearly, it was helpful to consider differences between the aspirant and non-aspirant group with respect to the demographic characteristics. Thus, chi-square tests of association were conducted between the demographic independent variables (age, GPA, parent's educational level, and race) and the dependent variable. The results of the analysis are also reported in Table 2.

There was no statistically significant association between the age of student and graduate school aspirations ($\chi^2 = 2.730, df = 4, p = 0.604$). All of the age groups had relatively high percentages of respondents who aspired to advanced degrees. However, higher degree aspirations were slightly more evident among traditional college age students (18-23) (79.8%). During their mid to late 20s (24-29) fewer aspirants held advanced degree aspirations (73.4%). There was a statistically significant association between academic ability (GPA) and graduate school aspiration ($\chi^2 = 37.959, df = 4, p < 0.001$) and the tendency of the association was that as GPA increases, aspiration increases.

The majority of the respondents had at least one parent who had attended college. Chi-square analysis indicated that there was no statistically significant association between parents' educational level and women's graduate school aspiration ($\chi^2 = 1.720, df = 1, p = 0.190$). Though it was not statistically significant, if at least one parent went to college, there was a slightly higher rate of graduate school aspiration (76.7% versus 73.7%, respectively).

Finally, each woman identified herself within one of four racial/ethnic groups: Caucasian, Black/African-American, Latina and Asian/Pacific Islander. Caucasian women represented three-fourths (75.3% or n = 1,230) of the sample population (N = 1,633). The remaining 24.7% (n = 403) were members of minority racial/ethnic groups. Overall, Black women most often reported an intent to attend graduate school (84%). This was followed by Latina women (83.5%), Asian/Pacific Island women (76%) and Caucasian women (74.1%). There was a statistically significant association between race and advanced degree aspiration. (χ^2 =9.857, df=3, p=0.020).

As noted in Chapter 3, the three main independent variables guiding the study were composite scores of variables that measured participants' experiences with family, with faculty and with peers. These composite scores had to be constructed to answer the two research

questions posed in the study. For a detailed list of CSEQ survey items comprising the composite variables, see Table 1 in Chapter 3.

I report the Cronbach's alpha coefficient, the possible score ranges, minimum and maximum, means and standard deviations for each composite score in Table 3. As shown in the table, the reliability coefficient for each derived variable was rather high. The Cronbach's alpha reliability coefficients for family, faculty and peer experiences were 0.843, 0.887, and 0.907 respectively. This indicates that these composite scores can be used as reliable measures that produce consistent scores.

As noted in Chapter 3, a participant's composite score was derived by adding the sum of the responses from each set of questions related to that score. For example, the composite family experiences score of a sample participant was derived by adding the score of items *pers1* and *pers2* (see Table 1 in Chapter 3) thus creating a composite score (c_famexp). Each item was scored on a scale of 0 to 3, where a response of 0 = "never", 1 = "occasionally", 2 = "often" and 3 = "very often." Since there were two items, total scores for family experiences could range from 0 to 6.

Composite scores for faculty and peer experiences were created in a similar fashion for each participant. Since composite scores for both faculty and peer experiences had a total of 10 items each, total scores could range from 0 to 30. The average score for family experiences was 4.26 with a standard deviation of 1.629. The average scores and the standard deviations (in parentheses) for faculty and peer experiences were 12.1 (*SD*=6.488) and 16.75 (*SD*=6.895) respectively.

Next, scores on family, faculty and peer experiences were compared across different groups by race. Recall that the second research question includes race as an independent variable; therefore, mean composite scores for each racial group were computed and then compared. Overall, Caucasian women had the highest family experiences average score (*M*=4.31) among racial/ethnic groups. This was followed by Black/African-American women (M=4.20), Latina women (M=4.03) and Asian/Pacific Island women (M=4.02).

In terms of faculty experiences, Black/African-American women scored higher than all other racial groups at 14.12 followed by Caucasian women at 12.14. The Latina women's faculty experiences score was 11.80 and Asian/Pacific Island women had the lowest mean score at 10.65.

Table 3

Reliability Coefficients and Descriptive Statistics of Composite Variables (N=1,633)

	N	Min	Max	Mean	SD
Composite Family Experiences (Cronbach's alpha=0.843, Possible score range = [0, 6])	1633	0	6	4.26	1.629
Caucasian	1230	0	6	4.31	1.602
Black/African American	119	0	6	4.20	1.629
Latina	109	0	6	4.03	1.691
Asian/Pacific Islander	175	0	6	4.02	1.755
Composite Faculty Experiences (Cronbach's alpha = 0.887, Possible score range = [0, 30])	1633	0	30	12.10	6.488
Caucasian	1230	0	30	12.14	6.349
Black/African American	119	0	30	14.12	7.257
Latina	109	0	28	11.80	6.458
Asian/Pacific Islander	175	1	30	10.65	6.598
Composite Peer Experiences (Cronbach's alpha = 0.907, Possible score range = [0, 30])	1633	0	30	16.75	6.895
Caucasian	1230	0	30	16.59	6.740
Black/African American	119	3	30	17.78	7.689
Latina	109	4	30	17.65	7.152
Asian/Pacific Islander	175	0	30	16.57	7.195

Finally as for peer experiences, Black/African American and Latina women scored higher than other two groups at 17.78 and 17.65 respectively. Caucasian women had the next highest score at 16.59 followed by Asian/Pacific Island women (16.57), who scored lowest of all groups for composite peer experiences. Once composite variables were created and scores were calculated, the data were analyzed using logistic regression.

Preparation of Variables for Logistic Regression Analysis and Correlation Matrix

To prepare the variables to use for logistic regression, I converted "age" and "GPA" variables that were initially coded as categorical variables into continuous variables for the sake of parsimony of the model. This conversion was justified because age and academic ability (GPA) can be considered as intrinsically continuous. Specifically, for age, the following values were assigned to each category: "<19" → 18, "20-23" → 21.5, "24-29" → 26.5, "30-39" → 34.5 and "40-55" → 47.5. The midpoint value was assigned as the value of the continuous variable "age" except for the "<19" category where the value of 18 was assigned. This assignment may be justified because the age of the typical, traditional first-year, first-time college freshman is 18 and the CSEQ survey was administered to college students. Regarding the variable "GPA", the value for each category was assigned as the value of the continuous variable "GPA". I also created a dummy variable that indicated whether at least one parent had attended college. This variable "dpcollege", takes the value of 1 if one parent had attended college and 0 if not. Further, I created a set of three dummy variables "dBlack", "dLatina", and "dAsian" from a "race" variable. The variable "dBlack" represents African American women, "dLatina" represents Latina women, and "dAsian" represents Asian/Pacific Island women respectively. Caucasian women served as the reference group in the study.

After these conversions, the new variables "age", "GPA" and "dpcollege" had the following means (*M*), standard deviations (*SD*), minimums (*Min*), and maximums (*Max*) for the sample (N=1633):

Age: $M = 21.03$, $SD = 4.41$, $Min = 18.0$, $Max = 47.5$

GPA: $M = 3.33$, $SD = 0.52$, $Min = 2.0$, $Max = 4.0$

dpcollege: $M = 0.65$, $SD = 0.48$, $Min = 0$, $Max = 1$.

Next, Pearson correlation coefficients among the dependent variable and the continuous independent variables (the three types of experiences, participant's age, and GPA) were obtained and they are presented in Table 4. This table (4) reveals that three kinds of experiences have

Table 4

Correlation Coefficients Among Graduate School Aspiration and Continuous Independent Variables for CSEQ Data (N=1,633)

	ADVDEG	FACEXP	FAMEXP	FRIEXP	AGE	GPA
ADVDEG (aspiration for graduate school)	1.000					
FACEXP (composite faculty experiences)	0.102**	1.000				
FAMEXP (composite family experiences)	0.061*	0.308**	1.000			
FRIEXP (composite peer experiences)	0.124**	0.451**	0.383**	1.000		
AGE (age of student)	-0.029	0.045	-0.070	0.067**	1.000	
GPA of student	0.147**	0.064*	0.067**	0.004	0.027	1.000

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

2. Upper diagonal cells were intentionally left blank.

certain degree of positive correlations among them and they are distinctively higher than others. Specifically, the highest correlation coefficient was found between friends and faculty experiences (r = .451), followed by friends and family experiences (r = .383) and family and faculty experiences (r = .308).

As for the associations with the dependent variable, i.e., aspiration for graduate study, none of them were noticeably highly correlated, though all of the independent variables except age were positively correlated to a small degree. Among them, GPA had the highest correlation with the graduate school aspiration (r = .147), followed by friends experiences (r = .124), faculty experiences (r = .102), and lastly with family experiences (r = .061). Note that all the correlation coefficients reported above were statistically significant .05 level at a minimum.

Finally, it should be noted that though race was not included in the correlation report, the chi-square test of association revealed that race is a variable that has a statistically significant association with graduate school aspiration (see Table 2).

Results of Logistic Regression Analysis

The logistic regression analysis was used to address both research questions in the study. The purpose of logistic regression is to "predict the probability that a case will be classified into one as opposed to the other of two categories of the dependent variable" (Menard, 1995, p.12). In logistic regression, the outcome variable is dichotomous. For purposes of this study, "expectation to enroll in graduate study" was the dependent variable or "target event" (Wright, 1998) being predicted. The two possible dichotomous response options were "yes" and "no." The variables were coded "1" for a "yes" response and "0" for a response of "no."

In logistic regression, the natural logarithm of the odds, called a "logit" is used as the outcome variable instead of the raw dichotomous response of "yes" or "no." The logit (η) is simply the natural logarithm of the odds of the target event, where the odds is defined as the ratio of the probability of success (*P*) to the probability of failure (1-*P*). That is, η = ln(*P/1-P*). Note that in the context of the present study, the probability of success (*P*) corresponds to the individual's likelihood of enrolling in graduate school and the probability of failure (*1-P*) corresponds to the individual's likelihood of not enrolling in a graduate school. The concept of odds-ratio is frequently used to interpret the regression coefficient and can be obtained by exponentiating the regression coefficient, i.e. Exp ($\hat{\beta}$). It estimates the "the change in the odds of membership in the target group for one unit increase in the predictor" (Wright, 1998, p. 223).

In other words, for every one unit increase in the independent variable, the odds-ratio is a change in the odds of the dependent variable.

Question 1: Family, faculty and peer experiences on expectation to enroll

The first research question examined whether women's experiences with family, faculty and peers predicted graduate school aspirations while controlling for age, academic ability and parents' educational level. Six independent variables were entered into the model to answer the first research question. All independent variables were centered around their mean. To center a variable around its mean, one must subtract the mean value from its original value. For example, to create the centered composite family experiences variable, c_famexp, the following formula was applied: c_famexp= famexp – $\overline{fam\exp}$, where $\overline{fam\exp}$ is the sample mean for the entire data population. Similarly, other independent variables were centered and were denoted as "c_facexp" for faculty experiences, "c_friexp" for peer experiences, "c_age" for age of participant, and "c_gpa" for academic ability measured by GPA, and "c_dpcollege" for parent's educational level. All the independent variables above were used to predict the expectation to enroll in graduate study. Thus, the predictive model for the first research question is:

$$\eta_i = \beta_0 + \beta_1(c\_fam\exp_i) + \beta_2(c\_fac\exp_i) + \beta_3(c\_fri\exp_i) + \beta_4(c\_age_i) + \beta_5(c\_gpa_i) + \beta_6(c\_dpcollege_i) \quad (1)$$

where η_i is the logit of expectation to enroll in graduate school for student i and $\eta_i = \ln\{P_i/(1-P_i)\}$, β_0 is the average aspiration in logit scale for students whose response values for the independent variable are all at the average in the sample, which thus can be interpreted as the expected aspiration for the typical students in this sample. β_1 is the change in the logit of graduate aspiration for one unit change in family experience controlling for all other independent variables in the model (i.e. faculty and peer experiences, age, academic ability and parent's educational level). Variables β_2 through β_6 can be interpreted in a similar way. It should be noted that the regression slope in logistic regression represents the partial effect of the

corresponding independent variable on the logit of aspiration controlling for all other variables in the model.

The analysis revealed that there is a statistically significant unique positive association between composite peer experiences (c_friexp) and graduate degree aspiration $(\hat{\beta}_3 = 0.034, p = 0.001)$. This suggests that, all other things being equal, for each one unit increase in experiences with peers (such as becoming acquainted with peers of differing ages, countries or personal values) graduate aspirations increase by 3.5% in odds (odds ratio, Exp ($\hat{\beta}$) = 1.035). There is also a statistically significant unique positive relationship between graduate degree aspiration and academic ability (c_gpa) $(\hat{\beta}_5 = 0.637, p < 0.001)$ controlling for the three types of experiences, age, and parent's educational level. Thus, all other things being equal, for every one unit increase in grade point average, graduate school aspirations increase by 89.2 % in odds (odds-ratio, Exp ($\hat{\beta}$) = 1.892). Results for the first model are reported in Table 5.

There were four variables that did not yield statistically significant unique relationships with graduate aspiration. The extremely small negative non-significant regression coefficient for composite family experiences (c_famexp) ($\hat{\beta}_1 = -0.008, p = 0.842$) suggests there is no association between family experiences and graduate degree aspirations in the population controlling for all other variables in the model. Composite faculty experiences $(\hat{\beta}_2 = 0.020, p = 0.063)$ showed a tendency of unique positive association with aspiration but was also statistically non-significant (although it was close to the 0.05 level of significance). Both age ($\hat{\beta}_4 = -0.008, p = 0.528$) and parent's educational level ($\hat{\beta}_6 = 0.084, p = 0.495$) exhibited no statistically significant unique association with advanced degree aspiration.

Question 2: Family, faculty and peer experiences on expectation to enroll considering race/ethnicity

The second research question explored whether relationships with family, faculty and peers were associated with an expectation to enroll in graduate school when race was a factor and age, parent's educational level and academic ability were controlled. This question required creating interaction variables between composite family, faculty and peer experiences and each racial/ethnic group indicator variables.

Table 5

Results of Logistic Regression for Main Effect of Three Types of Experiences on Graduate Degree Aspirations with Covariates

Variable	$\hat{\beta}$	S.E.	Wald Statistic (χ^2)	df	p-value	Exp($\hat{\beta}$) (Odds-Ratio)
Intercept (β_0)	1.186	0.060	386.957	1	<0.001	3.276
c_famexp (β_1)	-0.008	0.039	0.040	1	0.842	0.992
c_facexp (β_2)	0.020	0.011	3.452	1	0.063	1.020
c_friexp (β_3)	0.034**	0.010	11.133	1	0.001	1.035
c_age (β_4)	-0.008	0.013	0.398	1	0.528	0.992
c_gpa (β_5)	0.637**	0.111	32.909	1	<0.001	1.892
c_dpcollege (β_6)	0.084	0.123	0.465	1	0.495	1.088

** p<0.01

All variables mentioned above were entered into the logistic regression equation as independent variables, including interactions between each racial group and scores from the composite family, faculty and peer variables. Interaction variables are created by multiplying two relevant independent variables. For example, the variable "c_famexp_dBlack" represents the interaction between composite family experiences and Black women and was created by c_famexp_dB = c_famexp x dBlack. The exploratory model for this research question included 18 total independent variables and is represented in the following model:

$$\begin{aligned}\eta_i = {} & \beta_0 + \beta_1(c\_fam\exp)_i + \beta_2(c\_fac\exp)_i + \beta_3(c\_fri\exp)_i + \beta_4(dBlack)_i + \beta_5(dLatina)_i \\ & + \beta_6(dAsian)_i + \beta_7(c\_fam\exp\_dBlack)_i + \beta_8(c\_fam\exp\_dLatina)_i + \beta_9(c\_fam\exp\_dAsian)_i \\ & + \beta_{10}(c\_fac\exp\_dBlack)_i + \beta_{11}(c\_fac\exp\_dLatina)_i + \beta_{12}(c\_fac\exp\_dAsian)_i \\ & + \beta_{13}(c\_fri\exp\_dBlack)_i + \beta_{14}(c\_fri\exp\_dLatina)_i + \beta_{15}(c\_fri\exp\_dAsian)_i \\ & + \beta_{16}(c\_age)_i + \beta_{17}(c\_gpa)_i + \beta_{18}(c\_dpcollege)_i . \end{aligned} \quad (2)$$

The results for this model are presented in Table 6. As can be seen from the table, the interaction term between Black/African-American women and faculty experiences yielded statistical significance (c_facexp_dBlack) at the 0.05 level ($\hat{\beta}_{10} = -0.095, p = 0.032$) and the odds-ratio (Exp $\hat{\beta}$) was 0.910. This implies that holding all other terms constant, the impact of faculty experiences on graduate school aspiration for African-American students is 0.095 (in logit) smaller than the impact for the reference group, Caucasian women. Interactions with composite faculty experiences for Latina women ($\hat{\beta}_{11} = 0.003, p = 0.948$) and Asian/Pacific Island women ($\hat{\beta}_{12} = -0.007, p = 0.849$) were non-significant. None of the interactions with composite peer experiences and race or composite family experiences and race yielded statistical significance.

The main effect of faculty experiences (c_facexp) was statistically significant at the 0.05 level and showed a positive association with advanced degree aspiration ($\hat{\beta}_2 = 0.027, p = 0.032$). This indicates that for Caucasian women, the aspiration for graduate

Table 6

Results of Logistic Regression for Variables on Expectation to Enroll in Graduate Study Considering Race Variables and Interactions

Variable	$\hat{\beta}$	S.E.	Wald Statistic (χ^2)	df	p-value	Exp($\hat{\beta}$) (odds ratio)
Intercept (β_0)	1.080	0.068	250.466	1	<0.001	2.944
c_famexp (β_1)	0.005	0.045	0.011	1	0.916	1.005
c_facexp (β_2)	0.027*	0.012	4.598	1	0.032	1.027
c_friexp (β_3)	0.038**	0.012	10.310	1	0.001	1.039
dBlack (β_4)	1.069**	0.309	11.993	1	0.001	2.913
dLatina (β_5)	0.716*	0.295	5.906	1	0.015	2.046
dAsian (β_6)	0.243	0.027	1.378	1	0.240	1.275
c_famexp_dBlack (β_7)	-0.239	0.194	1.511	1	0.219	0.787
c_famexp_dLatina (β_8)	0.091	0.184	0.244	1	0.621	1.095
c_famexp_dAsian (β_9)	0.034	0.123	0.077	1	0.781	1.035
c_facexp_dBlack (β_{10})	-0.095*	0.044	4.593	1	0.032	0.910
c_facexp_dLatina (β_{11})	0.003	0.051	0.004	1	0.948	1.003
c_facexp_dAsian (β_{12})	-0.007	0.036	0.036	1	0.849	0.993
c_friexp_dBlack (β_{13})	0.009	0.044	0.038	1	0846	1.009
c_friexp_dLatina (β_{14})	-0.042	0.046	0.855	1	0.355	0.959
c_friexp_dAsian (β_{15})	-0.024	0.032	0.531	1	0.466	0.977
c_age (β_{16})	-0.011	0.014	0.701	1	0.403	0.989
c_gpa (β_{17})	0.738**	0.116	40.383	1	<0.001	2.091
c_dpcollege (β_{18})	0.056	0.125	0.202	1	0.653	1.058

*p< 0.05, ** p<0.01

school increases 0.027 units in logit for every one unit increase in faculty experiences. In odds, it translates to a 2.7% increase ($\text{Exp}(\hat{\beta}_2) = 1.027$).

Combining these results for the main effect of faculty experiences with the previously mentioned interaction effect, we find that the effect of faculty experiences on the aspiration for Black female students are negative when controlling for all other factors in the model ($\hat{\beta}_2 + \hat{\beta}_{10} = 0.027 - 0.095 = -0.068$).

As in the results for the first research question, there was also a statistically significant unique positive association between composite peer experiences (c_friexp) ($\hat{\beta}_3 = 0.038, p = 0.001$) and graduate degree aspiration. This suggests that when all other things are equal, for each one unit increase in experiences with peers (such as becoming acquainted with peers of differing ages, countries or personal values) graduate aspirations increase by almost 4% in odds (odds ratio, Exp ($\hat{\beta}$)=1.039).

There is also a statistically significant unique positive relationship between graduate degree aspiration and academic ability (c_gpa) ($\hat{\beta}_{17} = 0.738, p < 0.001$) controlling for the three types of experiences, race, age, academic ability and parent's educational level. Thus, for every one unit increase in grade point average, graduate school aspirations increase by 109.1% in odds (odds-ratio, Exp ($\hat{\beta}$) = 2.091), which was considered to be a large effect. See Table 6 for complete results.

Student's age and parent's educational level were also independent variables in the model. Both of these variables were non-significant. Therefore, there is no strong evidence that a participant's age or parents' educational level has a unique association with graduate degree aspiration.

Recall that there is a statistically significant interaction between faculty experience and Black/African-American women. Because interaction effects are difficult to interpret, a visual representation through graphs is helpful. In order to draw the graphs to reflect that visual representation, it is necessary to derive a prediction equation. The prediction equation can be obtained from Equation 2 by replacing the parameters with their respective estimates and by dropping the two non-significant covariates (c_age and c_dpcollege). It is important to keep all

other variables and interactions because they are of interest in the present study, regardless of statistical significance. Then, the general prediction model is as follows:

$$\begin{aligned}\hat{\eta}_i = {} & \hat{\beta}_0 + \hat{\beta}_1(c\_fam\exp)_i + \hat{\beta}_2(c\_fac\exp)_i + \hat{\beta}_3(c\_fri\exp)_i + \hat{\beta}_4(dBlack)_i + \hat{\beta}_5(dLatina)_i \\ & + \hat{\beta}_6(dAsian)_i + \hat{\beta}_7(c\_fam\exp\_dBlack)_i + \hat{\beta}_8(c\_fam\exp\_dLatina)_i + \hat{\beta}_9(c\_fam\exp\_dAsian)_i \\ & + \hat{\beta}_{10}(c\_fac\exp\_dBlack)_i + \hat{\beta}_{11}(c\_fac\exp\_dLatina)_i + \hat{\beta}_{12}(c\_fac\exp\_dAsian)_i \\ & + \hat{\beta}_{13}(c\_fri\exp\_dBlack)_i + \hat{\beta}_{14}(c\_fri\exp\_dLatina)_i + \hat{\beta}_{15}(c\_fri\exp\_dAsian)_i \\ & + \hat{\beta}_{17}(c\_gpa)_i. \end{aligned} \quad (3)$$

Replacing the regression coefficients with their respective estimates, we obtain the predicted log-odds equation:

$$\begin{aligned}\hat{\eta}_i = {} & 1.10 + 0.005(c\_fam\exp)_i + 0.027(c\_fac\exp)_i + 0.038(c\_fri\exp)_i + 1.069(dBlack)_i \\ & + 0.716(dLatina)_i + 0.243(dAsian)_i - 0.239(c\_fam\exp\_dBlack)_i + 0.091(c\_fam\exp\_dLatina)_i \\ & + 0.034(c\_fam\exp dAsian)_i - 0.095(c\_fac\exp\_dBlack)_i + 0.003(c\_fac\exp\_dLatina)_i \\ & - 0.007(c\_fac\exp\_dAsian)_i + 0.009(c\_fri\exp\_dBlack)_i - 0.042(c\_fri\exp\_dLatina)_i \\ & - 0.024(c\_fri\exp\_dAsian)_i + 0.738(c\_gpa)_i \end{aligned} \quad (4)$$

Based upon Equation 4, the prediction equations for each race were computed.

Caucasian women. Caucasian women represented the reference group in the model which implies that the prediction equation can be obtained for Caucasian women by dropping all races/ethnicity dummy variables and interactions that include race/ethnicity dummy variables from this general equation. Then, the prediction model for Caucasian women to describe the association between aspiration and three types of experiences with one significant covariate (academic ability) is:

$$\hat{\eta}_{Caucasian} = \hat{\beta}_0 + \hat{\beta}_1(c\_fam\exp)_i + \hat{\beta}_2(c\_fac\exp)_i + \hat{\beta}_3(c\_fri\exp)_i + \hat{\beta}_{17}(c\_gpa)_i \quad (5)$$

When the regression coefficients ($\hat{\beta}$) are replaced with their respective estimates, the predicted equation becomes:

$$\hat{\eta}_{Caucasian} = 1.08 + 0.005(c\_fam\exp)_i + 0.027(c\_fac\exp)_i + 0.038(c\_fri\exp)_i + 0.738(c\_gpa)_i \quad (6)$$

Note that among the four regression slopes, three of them (i.e. the regression coefficient for family, faculty experiences, and GPA) were statistically significant at the .05 level.

Black/African-American women. For Black/African-American women, there were five regression slopes that were statistically significant. Those were: composite faculty experiences ($\hat{\beta}_2 = 0.027,\ p = 0.032$), composite friends experiences ($\hat{\beta}_3 = 0.038,\ p = 0.001$), Black/African-American indicator ($\hat{\beta}_4 = 1.069,\ p = 0.001$), African-American student and faculty interaction ($\hat{\beta}_{10} = -0.095,\ p = 0.032$), and academic ability ($\hat{\beta}_{17} = 0.738,\ p < 0.001$). The prediction equation for African-American women's graduate school aspiration can be obtained from the general Equation 3 by considering that dBlack = 1 for this group and taking into account the interactions that involved the dBlack dummy variable.

$$\hat{\eta}_{Black} = (\hat{\beta}_0 + \hat{\beta}_4) + (\hat{\beta}_1 + \hat{\beta}_7)(c\_fam\exp)_i + (\hat{\beta}_2 + \hat{\beta}_{10})(c\_fac\exp)_i + (\hat{\beta}_3 + \hat{\beta}_{13})(c\_fri\exp)_i + \hat{\beta}_{17}(c\_gpa)_i. \quad (7)$$

When the regression coefficients ($\hat{\beta}$) are replaced with the actual estimates, African-American women's graduate school aspiration can be predicted by:

$$\hat{\eta}_{Black} = 2.149 - 0.234(c\_fam\exp)_i - 0.068(c\_fac\exp)_i + 0.047(c\_fri\exp)_i + 0.738(c\_gpa)_i \quad (8)$$

Latina women. For Latina women, there were four statistically significant regression coefficients. Those were: composite faculty experiences ($\hat{\beta}_2 = 0.027,\ p = 0.032$), composite friends experiences ($\hat{\beta}_3 = 0.038,\ p = 0.001$), being of Latina descent ($\hat{\beta}_5 = 0.716,\ p = 0.015$) and academic ability ($\hat{\beta}_{17} = 0.738,\ p < 0.001$). Similar to what was done for Black/African-American women, the prediction equation can be obtained from the general Equation 3 by considering that dLatina = 1 for this group, and that all the interactions that involved the Latina dummy variable were considered. Then, the prediction equation is:

$$\hat{\eta}_{Latina} = (\hat{\beta}_0 + \hat{\beta}_5) + (\hat{\beta}_1 + \hat{\beta}_8)(c\_fam\exp)_i + (\hat{\beta}_2 + \hat{\beta}_{11})(c\_fac\exp)_i + (\hat{\beta}_3 + \hat{\beta}_{14})(c\_fri\exp)_i + \hat{\beta}_{17}(c\_gpa)_i \quad (9)$$

When the regression coefficients ($\hat{\beta}$) are replaced with the actual estimates, Latina women's graduate school aspiration can be predicted by:

$$\hat{\eta}_{Latina} = 1.796 + 0.096(c\_fam\exp)_i + 0.03(c\_fac\exp)_i - 0.004(c\_fri\exp)_i + 0.738(c\_gpa)_i \quad (10)$$

Asian/Pacific Island women. The prediction equation for Asian/Pacific Island women was most similar to Caucasian women. That is, composite faculty experiences ($\hat{\beta}_2 = 0.027,\ p = 0.032$), composite friends experiences ($\hat{\beta}_3 = 0.038,\ p = 0.001$) and grades

($\hat{\beta}_{17} = 0.738, p < 0.001$) were the statistical significant variables for this group. The predicted log-odds model can again be obtained from the general Equation 3 by considering that dAsian =1 and the interactions that involved the dAsian dummy variable were considered. Then the prediction equation is:

$$\hat{\eta}_{Asian} = (\hat{\beta}_0 + \hat{\beta}_6) + (\hat{\beta}_1 + \hat{\beta}_9)(c\_fam\exp)_i + (\hat{\beta}_2 + \hat{\beta}_{12})(c\_fac\exp)_i + (\hat{\beta}_3 + \hat{\beta}_{15})(c\_fri\exp)_i + \hat{\beta}_{17}(c\_gpa)_i \quad (11)$$

When the regression coefficients ($\hat{\beta}$) are replaced with their respective estimates, Asian/Pacific Island women's graduate school aspiration can be predicted by:

$$\hat{\eta}_{Asian} = 1.323 + 0.039(c\_fam\exp)_i + 0.020(c\_fac\exp)_i + 0.014(c\_fri\exp)_i + 0.738(c\_gpa)_i \quad (12)$$

Using the prediction equations 6, 8, 10 and 12 that were obtained, we can create graphs can be generated that describe the relationship between graduate school aspirations and the types of experiences for each racial group. Four graphs were obtained by setting c_famexp, c_friexp, and c_gpa equal to zero in Equation 6, 8, 10, and 12 and by converting the logit back to the probability. Therefore, the four curves in Figure 1 represent the association between graduate aspirations and faculty experiences for the prototypical subjects in each racial group who are typical in the sample (i.e., at the sample means) in terms of family experiences, peer experiences, and GPA. Figure 1 reveals in general that as faculty interaction increases, the odds of graduate aspiration increases. This is true across all racial groups in general, except African-American women for whom graduate degree aspirations decrease as faculty interactions increase.

Figure 2 was created in a similar way. Thus, the four curves in Figure 2 compare the association between graduate aspirations and peer experiences for prototypical subjects who are typical in the sample in terms of family experiences, faculty experiences, and GPA. There is a

positive association between aspiration and peer experiences which indicates that as peer interaction increases, the odds of graduate aspiration also increase. This trend applies to all four racial groups in general, though Latina women seem to have an almost flat line or a minimal decrease in aspirations as the peer interaction increases.

In conclusion, these results provided statistical answers to the research questions posed in this study. Characteristics of the sample population and bivariate associations were described. Next, results from the logistic regression analysis were detailed for both research questions. Substantive interpretation of the data and the implications of the results are presented in the subsequent chapter.

Figure 1

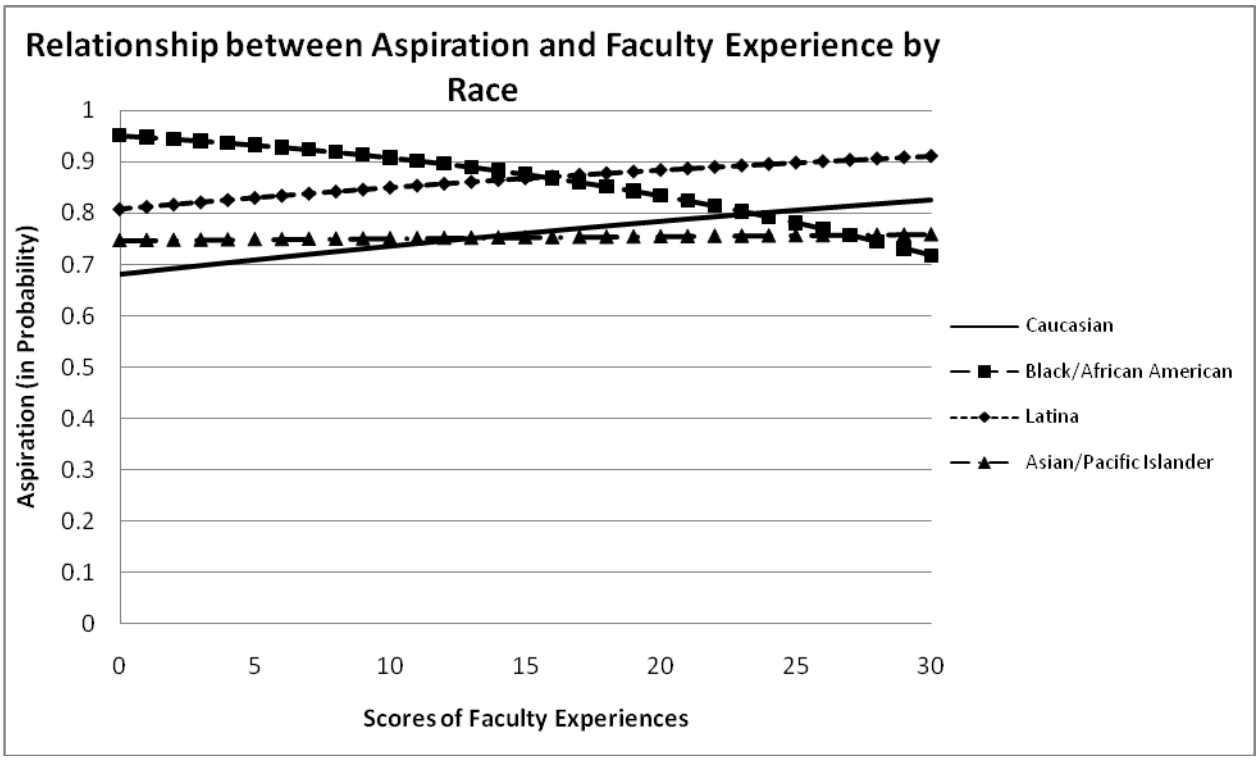
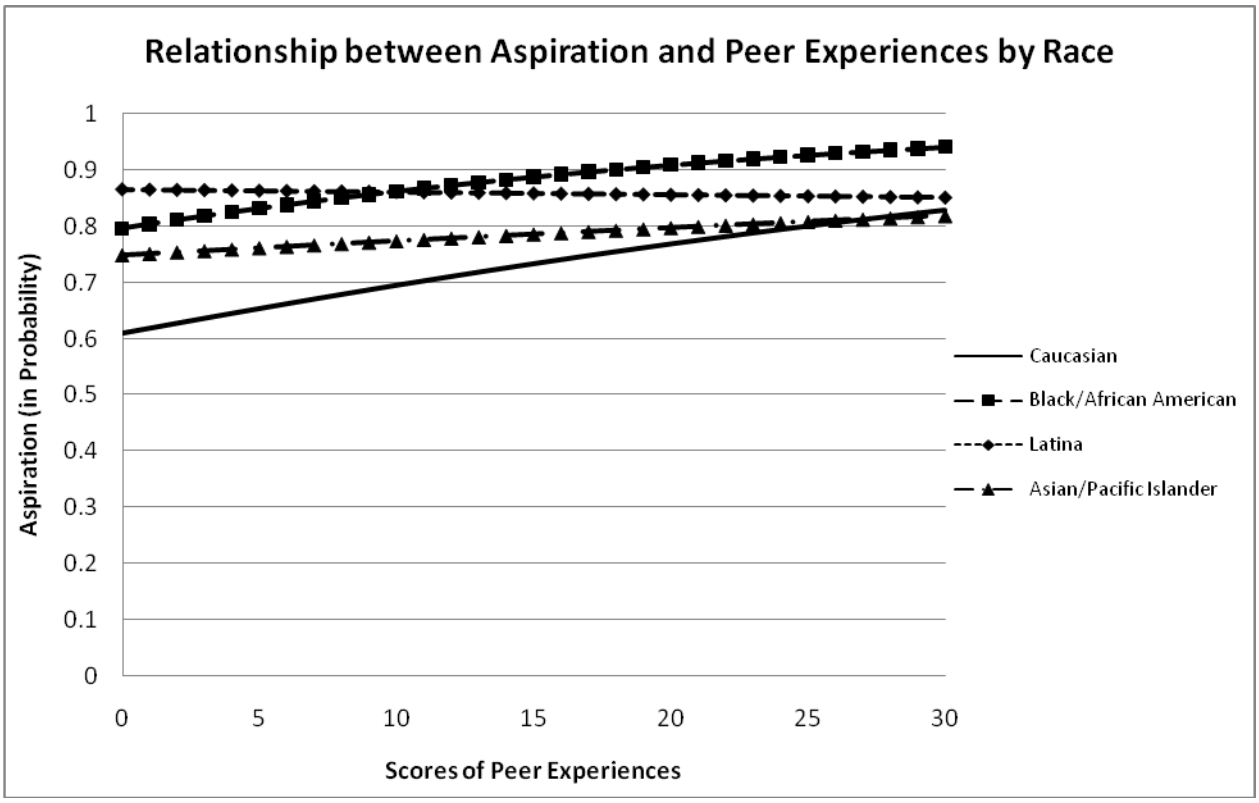

Relationship between Aspiration and Faculty Experience by Race
Aspiration (in Probability)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
5
10
15
20
25
30
Scores of Faculty Experiences
Caucasian
Black/African American
Latina
Asian/Pacific Islander

Figure 2


Relationship between Aspiration and Peer Experiences by Race
Aspiration (in Probability)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
5
10
15
20
25
30
Scores of Peer Experiences
Caucasian
Black/African American
Latina
Asian/Pacific Islander

Chapter Five

Discussion and Implications

This chapter includes a discussion of the research findings. I review what the findings revealed in comparison to prior research. Then, I suggest how the results might be used in future practice, research and policy. Finally, I present limitations to the study in addition to offering some concluding thoughts.

Discussion

The first research question in the study explored whether family, faculty and peer experiences predicted graduate degree aspirations among women when controlling for age, academic ability (GPA) and parents' educational level. An exploratory logistic regression model was proposed and a predicted model and equation were developed. The final predicted equation revealed that GPA and peer experiences significantly influence graduate degree aspirations among women.

Academic ability is one variable that positively influenced graduate degree aspiration. As GPA increased, so did graduate degree aspirations among the sample population. In fact, the odds for graduate school aspirations increased 89% in odds for each unit increase in GPA (see Table 5). The size of this impact can be seen in the descriptive data. For example, more than 83% of women with a 4.0 GPA aspired to earn a graduate degree, compared to 71.4 % with a 3.0 GPA (see Table 2).

There are several potential explanations for this result. To start, grades are a commonly accepted indicator of academic performance. It is assumed that higher grades indicate stronger academic potential and should serve as an indicator of graduate student potential. Since grades are often an evaluative measure used to make decisions about admission to graduate and professional schools, women who are interested in pursuing graduate school may have worked harder to earn higher grades. Grades may serve as an extrinsic motivator for women. Receiving higher grades may make them feel confident about school, thus encourage them to pursue advanced degrees.

Also, faculty members, family members and/or other mentors may influence women with higher grades to pursue graduate education. If an undergraduate woman had not considered a graduate degree before, perhaps someone in her life recognized academic promise based on her GPA and encouraged her to consider graduate school.

Peer experiences also increased the odds of graduate degree aspirations among undergraduate women. Specifically, for one unit increase in peer experiences, the odds for advanced degree aspirations increased by 3.5% (see Table 5). One reason peers may positively influence graduate degree aspirations is that they may encourage friendly academic competition. Becoming acquainted and engaging in discussion with people of different ages, backgrounds and races/ethnicities were the most frequent types of interactions respondents had with peers. Therefore, women who are at least acquainted with others who are different from themselves may strive for advanced degrees as a result of their peer relationships.

The second research question further explored the relationship between family, faculty and peer experiences by incorporating race as an independent variable and exploring the interaction between race and the family, faculty and peer variables. Another exploratory logistic regression model was proposed and a predicted model and equation were developed. The final prediction equation revealed that there were no interaction effects of race with peers and family experiences. The interaction of race and faculty experience, however, was statistically significant. Additionally, the main effect of race/ethnicity was significant in considering graduate degree aspirations. Women who were Black/African-American or Latina were more likely to aspire to graduate degrees than Caucasian and Asian-American/Pacific Island women. Finally, as was the case in the first model, grades were significant in the equation.

The findings showed that there is an inverse relationship between the frequency of interactions with faculty and African-American women's experiences. That is, the more frequently African-American women interact with faculty, the lower their aspirations for graduate degrees. In fact, the odds of advanced degree aspirations are 11% lower for African American women in the sample population. The direction of this association is just the opposite for the other three racial groups; the associations for Caucasian, Latina and Asian/Pacific Island women were positive, which makes more sense intuitively and is supported by the literature (Tsui, 1995; Wolf-Wendel, 2000).

Interestingly, African-American women reported that they interacted with faculty more frequently than any of the other racial groups (Caucasian, Latina or Asian/Pacific Island women) (see Table 3). Survey respondents reported the frequency of various types of interactions with faculty, ranging from "never"= 0 to "very often" = 3. Recall that composite scores were obtained by summing the scores in each variable group. Therefore, items that had high scores would

contribute more to the composite score of experiences. Examination of the relevant item scores for African-American women revealed that the following three items had the highest scores: "asking instructor for course information" (*M*=1.99), "discussing academic program with faculty" (*M*=1.81), and "working harder due to instructor feedback" (*M*=1.97). These mean levels imply that African-American women had these types of interactions with faculty with frequency levels of either "occasionally" (1) or "often" (2). Since these are the items that contributed more to the composite score of faculty experiences for African-American women, these interactions most likely negatively influenced their aspirations for advanced degrees more than other faculty experiences. This inverse relationship suggests that something occurs when African-Americans occasionally (or often) interact with faculty that adversely affects these women.

While women in the sample may seek feedback, work harder and visit faculty during office hours, there may be reasons for the adverse relationship between African-American women and faculty. Steele's theory of stereotype threat may help explain the inverse relationship between African-American women and faculty. Stereotype threat suggests that there is a "sense of being seen through the lens of a negative stereotype as unworthy [which] leads to a fear of doing something to confirm that stereotype (Davis, et al., 2004, p. 439; Steele, 1997). These potential feelings of unworthiness taken on by the student may negatively influence academic achievement (Taylor &Antony, 2000). In this instance, the negative impact of stereotype threat on African-American women may lead to a decreased aspiration towards an advanced degree.

Negative domain identification also may lead to feelings of being out of place or an outsider in the classroom. This out of place feeling or academic disembodiment may heighten stereotype threat as African-American women may feel as if they do not belong among men or the majority group in the classroom setting (Puwar, 2004). These potential feelings and internal assumptions may also lead to lower advanced degree aspirations.

In this study, African-American women may perceive that other students are more highly favored, which may lead to a negative classroom experience. For example, an African-American student may enjoy a class or faculty interactions, but may observe a faculty member having a positive conversation, offering additional educational opportunities or showing genuine interest in another student or other groups of students. That woman may interpret the faculty member's behavior to mean that she is not qualified for graduate school or she may not want to experience

similar academic rejection or "snubs" by faculty at the graduate school level. That is, African-American women need to feel a part of the classroom environment and believe that they possess the knowledge, skills and abilities to be educationally successful. Stereotype threat is influenced by domain identification.

Another explanation for the finding may be related to classroom climate and stereotype threat. Two additional effects of stereotype threat are the feelings of hypervisibility and invisibility (Davis, et al., 2004). Hypervisibility suggests that the underrepresented groups appear overly visible to the majority populations. For example, African-American women in male-dominated disciplines or at predominantly white institutions (PWIs) may have frequent interactions with faculty, but may feel singled out and/or unsupported during the classroom experience. Invisibility, on the other hand is the concept of being ignored in the classroom environment. Women of color may feel as if faculty interact with or call on other students, namely men or Caucasians, more frequently than themselves. They may internalize academic invisibility as their being academically inferior and therefore may feel silenced, neglected or less than capable. This pattern of internalization and inferiority is illustrative of stereotype threat. Conversely, positive domain identification leads to feelings of being valued and accepted in one's educational environment (Morgan & Mehta, 2004; Taylor & Antony, 2000).

The protective psychological act of disidentification is practiced by underrepresented students and women. A student may disidentify and lower her desire to achieve (i.e., have lower degree aspirations). Disidentification allows her to psychologically separate her self-worth from school performance. This practice helps to relieve the stress and pressure of the effects of stereotype threat, and feelings of marginalization, isolation and tokenism (Morgan & Mehta, 2004). Regardless of the reason, women in male-dominated fields and minority women at PWIs need both academic and personal fortitude to be successful and not feel overwhelmed by negative experiences (Davis, et al., 2004).

Finally, it is important note that some women's decreased degree aspirations may be a result of the direct effect of overt racism experienced at the institution. Puwar (2004) asserts that the presence of racial minorities are psychologically threatening to the normative majority, a reality that could potentially influence majority faculty-minority student interactions. However, recall that the dataset measured frequency, not quality of interactions. If interactions were

frequent but negative, whether overtly or covertly, these potential interactions may discourage advanced degree aspirations.

It is also possible that faculty members may mentor African-American women but they may not encourage these women to pursue graduate degree aspirations. If a faculty member has taught a woman in multiple classes and knows about her abilities and interests, that faculty member may positively encourage the woman to pursue a career in the public or private sector rather than a graduate or professional degree. Perhaps the faculty member believes the financial gains the woman could make by working outweigh the advantages of an advanced degree. Any of these eventualities may explain how increased frequency of interactions with faculty led to decreased aspirations among African-American women.

The results also revealed that being a woman of Black/African-American or Latina descent increased the odds of advanced degree aspirations, suggesting that race matters. Specifically, African-American women's odds of advanced degree aspirations were 191% higher and Latina women's odds were 105% higher than Caucasian women. African-American and Latina women, perhaps more than others, may realize the role of education in socio-economic advancement. These women may value higher education, particularly if they appreciate the significance of historically being denied educational opportunity and social promotion. African-American and Latina women may feel a socio-cultural responsibility to pursue advanced degrees.

Finally, in the more complex equation that considered racial interactions, peers also positively influenced graduate degree aspirations. For each unit increase in peer experiences, the odds of advanced degree aspiration increased by 3.9%. Women interacted with peers more frequently than the other socialization agent of faculty (refer to Table 3). Women in the study indicated that being acquainted with students of different backgrounds (M=2.03), differing ages (M=2.03), and varied races/ethnicities (M=1.94) were the three most frequent types of peer interactions, reporting that they had these kinds of peer interactions either "occasionally" (1) or "often" (2). In particular, African-American women reported the highest graduate degree aspirations suggesting that peer experience has the strongest positive influence among this group.

Another interesting finding about peer experiences is that respondents report becoming acquainted with different types of people (e.g. different ages, different races) as their most frequent experience in terms of peer interaction. That is, of the 10 measures of peer experiences,

one-half involved having discussions with people different from oneself while the rest involved getting to know people different from oneself. The latter "being acquainted" seems to happen more frequently to women than the former "discussing differences." This suggests that acquaintanceships may help create a more comfortable campus environment. In turn, a more comfortable environment among peers, at least for African-American and Latina women, may lead to advanced degree aspirations.

Becoming acquainted with students of different ages, backgrounds and race were experiences that were most frequent among African-American, Latina and Asian/Pacific Island women. However, for Caucasian women only becoming acquainted with students of different ages and backgrounds occurred frequently. This may suggest that for women of color, it is important to establish relationships with those who differ in a variety of ways to make the collegiate environment more comfortable. It also suggests the importance of being bi-culturally socialized (Barajas & Pierce, 2001); recognizing the importance of staying associated with one's own socio-historic culture while assimilating to the culture of the institution, particularly at PWIs.

Overall, the results suggest that women who share characteristics can encourage one another to pursue advanced degrees. This may be particularly true among women of multiple marginalities (such as race and gender) (King, 1988). As women have more in common (for example academic major, gender and racial group), the degree of encouragement may be stronger. This may potentially explain the higher frequency of peer experiences for African-American and Latina women, although the results for Asian/Pacific Island women are more difficult to interpret.

Degree aspiration among Asian/Pacific Island women was not influenced by faculty, family or peer scales (refer to Table 6). There is little literature on Asian women and aspiration and this study did not advance knowledge about this group. Asian/Pacific Island women had the lowest mean score on each experience scale (family, faculty and peers) in comparison to other racial groups (see Table 3). Finally, degree aspirations for Asian/Pacific Island women only marginally increased as the frequency of faculty experiences and peer experiences increased suggesting that there are other intrinsic or extrinsic motivators for these women when it comes to seeking advanced degrees.

Relationship of the Findings to Prior Research

Overall, there is a limited body of work on graduate degree aspirations and even less on women and advanced degree aspirations. However, results from this study confirm some prior studies while contradicting others. The current study in particular reinforces two significant findings in prior literature. First, peer group influence is important to advanced degree aspirations. Second, race matters and is an important factor when considering advanced degree aspirations.

My results support several prior studies related to educational aspirations and family, faculty and friends – including those that considered race as a factor. Several studies suggest that peers positively influence degree aspirations among college-bound men and women (Horvat & Lewis, 2003; Smith & Moore, 2000; Tsui, 1995; Wolf-Wendel, 2000). My findings advance these results suggesting that peer experiences and relationships influence not only undergraduate degree aspirations but advanced degree aspirations as well.

Forming gendered identities and communities such as learning about womanhood, feeling self-empowered and the using classrooms as safe spaces to explore different ideas encourage growth for female students. Formal and informal networking experiences, eating in the dining hall, and participating in student organization activities are all ways that students are exposed to new life perspectives in the undergraduate college community (Datnow & Cooper, 1997). That is, peer groups influence social and intellectual growth. My results extend what is known about peer experiences, suggesting that they not only promote growth among undergraduates, but also influence graduate degree aspirations, at least for women.

Findings from the current study indicate that frequent interactions with students of different interests, backgrounds, ages and races/ethnicities influence advanced degree aspirations. Perhaps more outgoing, socially integrated collegiate women have advanced degree aspirations due to their exposure to different groups of students. This is consistent with prior findings that positive peer experiences may influence ideals and common interests, including advanced degree aspirations (Antonio, 2004; Datnow & Cooper, 1997; Hammarth-Bonous, 2000; Hubbard, 2005; Perna, 2000; Smith & Moore, 2000; Tusi, 1995; Wolf-Wendel, 2000).

Literature also associates peer influence, educational aspirations and race (Buckley, 1997; Pavel, 1992; Smith & Moore, 2000). Several studies substantiate the relationship between peer influence and race and suggest that race and educational aspirations are associated at the

undergraduate level (Antonio, 2004; Buchmann & Dalton, 2002; Hubbard, 1999; Jones & Shorter-Gooden, 2003; Perna, 2000; Qian & Blair, 1999; Smith & Fleming, 2006). My results confirm that prior research: being African-American or Latina is associated with higher levels of advanced degree aspirations. Additionally, prior literature suggests that HBCUs and women's institutions foster a more supportive peer culture and may influence advanced degree aspirations. (Anderson, Dey, Gray & Thomas, 1995). While I did not study institutional type per se, my findings that African-American women are more likely to aspire to graduate degrees is consistent with these previous studies.

More specifically, among African-American women, formal and informal networking opportunities increase feelings of belongingness and this in turn may positively influence degree aspirations (Datnow & Cooper, 1997; Hubbard, 2005; Smith & Moore, 2000). Students who work in groups through peer networks often have academic successes as the collective group-think motivates them towards positive goals. Likewise personal and academic choices (particularly geared towards success) are based on peer group participation (Hubbard, 2005). Therefore, women of color who work together academically and associate with one another socially are often driven as a group to succeed and set higher goals than if they are more academically and socially isolated. My findings support this notion by revealing that frequency of peer relationships among African-American women is associated with increased postgraduate degree aspirations.

Among Hispanic youth, peer mentoring and networking aided students in adjusting to their new college culture and academic lifestyle (Barajas & Pierce, 2001); however, the results were not as clear. In the current study, frequent peer associations may help Latina women navigate the undergraduate terrain which may, in turn, influence their aspirations for advanced degrees. For example, participating in student organizations, women-focused professional organizations or academic societies or sororities may foster a collegial atmosphere that promotes collective group success and encourages advanced degree aspirations. Women of color may also find support navigating a chilly academic climate and find solace among collegiate sisters who help them with the socialization process that requires them to balance their new academic environment their familiar racial/ethnic culture (Jones & Shorter-Gooden, 2003; King, 1988).

While my results support prior studies for the most part, one of my findings contradicts prior work. Past research has suggested that faculty positively influence students to higher

educational aspirations (Anderson, Dey, Grey & Thomas, 1995; Arrendondo, 1995; Buckley, 1997; Hubbard, 2005; Weidman, 1982). My study did not confirm this for women students in general. On the contrary, for African-American women, the opposite was true. Though there was such a tendency with a p-value close to 0.05 (i.e., *p*-value = 0.063, see Table 5). For African-American women, frequent experiences with faculty led to decreased graduate aspirations. This is in stark contrast to the relations between faculty interactions and all other races/ethnic groups.

Some researchers have argued that faculty who take an interest in students, work with students on research and spend time with students positively motivate students academically (Anderson, Dey, Gray & Thomas, 1995). Other authors suggest that talking with faculty about coursework and spending time with faculty outside of class also positively influence students (Arrendondo, 1995; Weidman, 1982). Buckley (1997) suggests that a faculty member's cultural awareness is critical to student support. In the current study, African-American women had the highest average frequency of experiences among all women in terms of discussing career plans with faculty but interactions with faculty were negatively associated with advanced degree aspirations. More research is necessary to understand whether my findings hold true over time or are an anomaly. Regardless, these results have implications for the future.

Implications for Future Practice, Research and Policy

Several groups including student affairs administrators, academic advisors, graduate school representatives and Women's center staff may benefit from the results of the study in future practice, research or policy development. First, student affairs administrators and academic faculty who coordinate living-learning or theme housing communities may benefit from these findings. Specifically, programmatic efforts may be developed towards women to encourage advanced degree exploration. This is particularly important as peers in similar learning groups may positively influence each other towards academic excellence. Living-learning community faculty may develop programs or workshops to encourage career or professional development in specific disciplines. Career development is not just about attending professional conferences or organizational meetings; a program series inviting various graduate school representatives to meet with students may influence women to explore graduate school as a potential professional development option instead of graduating and going directly into the workforce.

Academic advisors could also benefit from the results of this study. Asking an instructor about course information was the most frequently reported interaction with faculty. This suggests that additional time discussing academic programs and disciplines in general may be of benefit to women. Academic advisors could hold special sessions for women and help them create career plans that deliberately incorporate advanced degree work. This specific and strategic experience with faculty advisors may boost graduate degree aspirations among academically strong women who may not have considered graduate school. In addition, if the academic advisor: student relationship spans the course of a woman's undergraduate career, discussions about building a strong academic record can be had early. This is particularly important if one is struggling in her discipline. The academic advisor may encourage different courses or help assess whether the discipline or career path is an appropriate fit. Sometimes, a student may be in the appropriate discipline but wrong sub-discipline/major. Advising, redirection and encouragement from a faculty member or advisor could help put the student on a more focused and appropriate academic path, which may include an advanced degree.

For those women who may not envision themselves in a graduate program, seeing other women or women of color, with similar life experiences, who are successfully pursuing advanced degrees, may encourage them to explore graduate programs. Faculty and graduate recruiters are often the first people that graduate aspirants contact, so specific exposure to positive potential role models from future institutions could serve as motivation for women. Women faculty who explain how they manage work-life balance, for example, may serve as realistic models for women to follow. In addition, recruiters can highlight social and academic support programs offered by graduate programs that may empower women. Recruiters may introduce prospective candidates to women currently in the program to which they may apply. These women may serve as role models and future peer mentors. This picture of successful women in graduate programs may encourage aspiring women to pursue advanced degrees by providing realistic and encouraging perspectives about graduate education.

In addition, staff at women's centers may also benefit from the results of the study. Women's Centers often serve as the hub for gender issues and equity concerns at a college or university. For example, women's center staff may sponsor support groups for women who are having academic troubles in male-dominated fields. These programs may help alleviate gender-based classroom climate issues, such as perceived favoritism, that may exist on the campus. In

addition, staff may sponsor events that encourage women to pursue advanced degrees such as a graduate faculty "meet and greet", graduate preparation programs, networking seminars or resume building workshops. Each of these potential programs, if sponsored solely for women, may create a comfortable environment or programmatic "safe space" where women can ask questions related to graduate school applications or graduate student lifestyles that they may be apprehensive about asking in a mixed gender setting.

Finally, offices that advocate for underrepresented groups such as women of color could benefit from the findings. They may develop programmatic initiatives to help mentor undergraduate women towards advanced degree aspirations. Specifically, staff in these offices could serve as the nexus for women of color and develop mentoring groups between graduate and undergraduate women in similar fields. Developing these supportive mentoring relationships throughout a woman's undergraduate career, may positively influence a woman's advanced degree aspirations. Such initiatives could guide women throughout their undergraduate tenure and continually encourage advanced degree aspirations.

There are also several research studies that may be spawned as a result of this study. The present study focused on the influence of relationships with socialization agents (family, faculty and peers) on graduate degree aspiration. The findings suggested that African-American and Latina women had higher graduate degree aspirations than Caucasian and Asian/Pacific Island women. A future study could explore this finding in more depth. What is it about race, specifically within the African-American and Latina communities that encourages advanced degree aspirations? A qualitative study employing individual interviews and focus groups could be conducted to better inform the findings about race and degree aspirations.

Another study might explore the relationship of other demographic variables and advanced degree aspirations. In my study, the focus was on gender, race and aspiration. However, further research could be conducted to see if other demographic factors such as socio-economic status, marital status or academic major influence advanced degree aspiration.

Researchers could use the results of the study to explore the relationships between work-life balance and graduate aspirations. There is increasing interest in quality of life for graduate students (Nettles & Millett, 2006). A study exploring undergraduate women's perceptions about work, faculty relationships, personal life, and academic balance in graduate school may reveal interesting findings. Research that continues to focus on experiences of graduate students,

including work-life balance may make the graduate lifestyle and pursing graduate degrees more appealing.

The present study also explored the relationship between peer experiences and advanced degree aspiration. Results showed that experiences with peers different from oneself acutely influenced graduate degree aspiration. A future study may explore in greater depth where women receive the greatest sense of peer encouragement during their collegiate experience. A mixed methods study exploring student organization involvement, academic involvement or living communities may reveal exactly where the positive influence towards degree aspirations may originate. Consequently, efforts may be geared towards greater program development in those areas to increase graduate recruitment and enrollment among women.

The current study could also inform policy development. One policy initiative could be implemented around measures of faculty productivity. In addition to traditional evaluative efforts surrounding teaching, research and service evaluating the ways in which faculty work with women may increase graduate degree aspiration among women. Offering grants or professional development funds for faculty who mentor women and in turn get them to apply to graduate school may be offered as a faculty development initiative. These kinds of policies would benefit faculty by providing additional funds for research and professional development. More importantly, women could increase the frequency of their interactions with faculty and perhaps be encouraged to pursue an advanced degree.

Colleges and universities may also implement policies requiring participation in living-learning communities to increase frequency of peer experiences among women. Since many colleges require living on campus for at least one academic year, Residential Life/Housing departments could require women to participate in a living-learning community during that time (typically the first year). During this year, women would participate in seminars focusing on advanced degree exploration. Participating in living-learning communities may increase the frequency of peer experiences which in turn may increase advanced degree aspirations as the results of the study revealed.

Financial Aid and Scholarship offices could also implement policies to offer “advanced degree vouchers” to women with certain grade point averages. For example, women with a “B” average or higher at the end of their junior year would receive financial aid award to supplement the cost of a graduate school application fee and one graduate admissions exam (such as the

Medical College Admissions Test or "MCAT"). For women with lower GPAs, the financial aid supplement may cover the cost of an application fee, an admissions exam plus a graduate test review class (such as those offered by Kaplan, Inc. or the Princeton Review). These financial aid policy initiatives may positively influence women who were not considering advanced degrees because of academic ability (GPA) or financial limitations to reconsider and at least explore the idea of continuing their education.

Limitations to the Study

Although the study makes contributions to future practice, research, and policy, limitations to the study do exist. The first is related to the instrument. The dependent variable, graduate degree aspirations could have been more clearly defined. For example, the CSEQ does not specify whether advanced degree pertains to professional degrees, masters' degrees or doctoral degrees. I assert that additional information or more detailed advanced degree choices could have influenced the results of the study.

Another limitation also pertains to the instrumentation used in the study. Since there is currently no measure for socio-economic status (SES) or other measure of class in the CSEQ, I tried to address SES impact through parent's educational level, but it clearly does not address all aspects of SES. Nettles and Millet (2006) suggest that finances are an important consideration for degree completion particularly at the doctoral level. Class or SES could have been an important demographic control variable that might have influenced the results of the study.

The study also did not contain a measure for institutional type. Studying the responses by institutional type (such as women's colleges, HBCUs, HSIs, public, private, research) would allow for richer analysis of the data in two ways. First, the women's responses could have been analyzed by institutional type. This would reveal whether women feel that experiences (such as faculty experiences) are more or less frequent at certain types of institutions. Additionally, the relationship between faculty and women of color could be examined more closely by institutional type.

Finally, the study revealed a major design limitation. The College Student Experiences Questionnaire (CSEQ) measures – just that – experiences of students. The survey responses are a quantitative measure of the frequency of women's experiences. Whether an experience was positive or negative is not measured. A respondent might have frequently interacted with peers, but it cannot be determined from the data whether those were positive or negative experiences.

For example, positive experiences with peers may have increased advanced degree aspirations among all women. Instead, the findings only suggest that a greater number of experiences influenced aspiration. Knowing the quality of experiences may have explained, for example why Latina women's odds for advanced degrees stayed at the same level or decreased slightly while Caucasian women's increased when peer experiences increased. Without more detailed measures of quality of experiences, one can only speculate.

Conclusion

Despite these limitations, this study contributed to the scholarly literature on graduate degree aspirations and what motivates women to attend graduate school. My findings help bridge the gap between the literature on undergraduate and graduate degree aspirations. It was clearly an exploratory study, seeking to fill a void about gender, race and advanced educational aspiration. While there is a great deal of information about high school women who enroll in college, there needs to be more specific information about women continuing their education past the baccalaureate. In addition to this study, future research may improve women's post-baccalaureate educational experiences, from admission to graduation.

Finally, this study is important on a larger scale because higher education is a major predictor of overall life satisfaction. Those who hold advanced degrees earn more money throughout a lifetime. Increased education can alleviate socio-economic barriers that block women as a group from economic prosperity and increased life satisfaction. In order to minimize the gendered financial disparity that exists in contemporary American society, it is important to encourage women to pursue advanced degrees. My findings offer some insights into how to accomplish this important goal.

References

Anderson, G. N., Dey, E. L., Gray, M., & Thomas, G., (1995, November). Mentors and protégés: The influence of faculty mentoring on undergraduate academic achievement. Paper presented at the Association for the Study of Higher Education, Orlando, FL. (ERIC Document Reproduction Service No. ED 400761).

Antonio, A. L. (2004). The influence of friendship groups in intellectual self-confidence and educational aspirations in college. The Journal of Higher Education,75(4), 446-471.

Arrendondo, M. (1995, November). Faculty-student interaction: Uncovering the types of interactions that raise undergraduate degree aspirations. Paper presented at the Association for the Study of Higher Education, Orlando, FL. (ERIC Document Reproduction Service No. ED 391423).

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

Baird, L. L. (1992). The stages of the doctoral career: Socialization and its consequences. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document Reproduction Service No. ED 348925).

Barajas, H. L., & Pierce, J. L. (2001). The significance of race and gender in school success among Latinas and Latinos in college. Gender and Society, 15(6), 859-878.

Bowen, W. G., & Rudenstine, N. L. (1992). In pursuit of the Ph.D. Princeton: Princeton University Press.

Buckley, A. (1997). Threads of nations: American Indian graduate and professional students. (ERIC Document Reproduction Service No. 444771).

Buchmann, C., & Dalton, B. (2002). Interpersonal influences and educational aspirations in 12 countries: The importance of institutional context. Sociology of Education, 75(2), 99-122.

CSEQ Content (2005). http://www.indiana.edu/~cseq/cseq_content.htm Retrieved, October 12, 2006.

Datnow, A., & Cooper, R. (1997). Peer networks of African-American students in independent schools: Affirming academic success and racial identity. The Journal of Negro Education, 66(1), 56-72.

Davis, M., Dias-Bowie, Y., Greenberg, K., Klukken, G., Pollio, H. R., Thomas, S. P., & Thompson, C. L. (2004). "A fly in the buttermilk: Descriptions of university life by

successful black undergraduate students at a predominantly white southeastern university. The Journal of Higher Education, 75(4), 420-445.

Educational Pipeline, The: Big investment, big returns. (April, 2004). The National Center for Public Policy and Higher Education. http://www.highereducation.org/reports/pipeline/. Retrieved. October 12, 2006.

Fry, R. (2003). Hispanics in college: Participation and degree attainment. (Report No. EDO-0D-03-6). Clearinghouse on Urban Education. New York. (ERIC Document Reproduction Service No. ED 480917).

George, D., & Mallery, P. (2003). SPSS for windows step by step: A simple guide and reference 11.0 (4th ed.). Boston: Allyn and Bacon.

Gonyea, R. M., Kish, K. A., Kuh, G. D., Muthiah, R. N., & Thomas, A. D. (2003). College Student Experiences Questionnaire: Norms for the fourth edition. Bloomington, IN: Indiana University Center for Postsecondary Research, Policy and Planning.

Hammarath-Bonous, M. (2000). Pathways to success: Affirming opportunities for science, mathematics and engineering majors. The Journal of Negro Education, 69(1/2), 92-111.

Hartmann, H. (1997). The unhappy marriage of Marxism and feminism: Towards a more progressive union. In L. Nicholson (ed.), The second wave: A reader in feminist theory. (pp. 97-122). New York: Routledge.

Hauser, R. M., & Kuo, H. D. (1998). Does the gender composition of sibships affect women's educational attainment? The Journal of Human Resources, 33(3), 644-657.

Hite, L. M. (1985). Female doctoral students:Their perceptions and concerns. Journal of College Student Personnel, 26(1), 18-22.

Hoffman, F. & Oreopoulos, P. (2007). A professor like me: The influence of instructor gender on college achievement. Working Paper 13182. National Bureau of Economic Research. Cambridge, MA. Retreved from http://www.nber.org/papers/w13182.

Horvat, E. M., & Lewis, K. S. (2003). Reassessing the burden of 'acting white'": The importance of peer groups in managing academic success. Sociology of Education, 76, 265-280.

Hosmer, D. W., Jr., & Lemeshow, S. (2000). Applied logistic regression. (2nd ed.). New York: John Wiley & Sons, Inc.

Howell, D. C. (2007). Statistical methods for psychology (6th ed). Belmont, CA: Thompson Wadsworth Publishers.

Hubbard, L. (1999). College aspirations among low-income African-American high school students: Gendered strategies for success. Anthropology & Education Quarterly, 30(2), 363-383.

Hubbard, L. (2005). The role of gender in academic achievement. International Journal of Qualitative Studies in Education, 18(5), 605-623.

Indvik, J. (2005). Women and leadership. In P. G. Northouse, Leadership: Theory and practice (3rd ed., pp. 265-299). Thousand Oaks, CA. Sage Publications, Inc.

Institute of Higher Education Policy (2005). Investment Payoff: A 50 state analysis of the public and private benefits of higher education. Institute of Higher Education Policy. Washington.

Jones, C., & Shorter-Gooden, K. (2003). Shifting: The double lives of black women in America. New York. Harper Collins Publishers, Inc.

Kao, G., & Tienda, M. (1998). Educational aspirations of minority youth. American Journal of Education, 106(3), 340-384.

King, D. K. (1988). Multiple jeopardy, multiple consciousness: The context of a black feminist ideology. Signs: Journal of Women in Culture and Society, (14)1, 42 – 72.

Kinzie, J., Thomas, A. D., Palmer, M. M., Umback, P. D., & Kuh, G. D. (2007). Women students at coeducational and women's colleges: How do their experiences compare? Journal of College Student Development, 48(2), 145-165.

Kuh, G. D. (1999). How are we doing? Tracking the quality of the undergraduate experience, 1960s to the present. The Review of Higher Education, 22(2), 99-119.

Leppel, K. (2002). Similarities and differences in college persistence of men and women. The Review of Higher Education, 25(4), 433-450.

Menard, S. (1995). Applied logistic regression analysis. (Sage University Paper series on Quantitative Applications in the Social Sciences, series no. 07-106). Thousand Oaks, CA: Sage.

McDonough, P. M. (1991, March). Who goes where to college: Social class and organizational context effects. Paper presented at the American Educational Research Association Annual meeting, Chicago, IL. (ERIC Document Reproduction Service No. ED 331432).

McKinney, K., Saxe, D., & Cobb, L. (1998). Are we really doing all we can for our undergraduates? Professional socialization via out-of-class experiences. 26(January). 1 –13.

Morgan, G. (1997). Images of organizations (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Morgan, S. L., & Mehta, J. D. (2004). Beyond the laboratory: Evaluating the survey evidence for the disidentification explanation of Black-White differences in achievement. Sociology of Education, 77, 82-101.

Mullen, A. L., Goyette, K. A.. & Soares, J. A. (2003). Who goes to graduate school? Social and academic correlates of educational continuation after college. Sociology of Education, 76(2), 143-169.

National Committee on Pay Equity (2007, September). The wage gap over time: In real dollars, women see a continuing gap. http://www.pay-equity.org/info-time.html. Retrieved, August 6, 2008.

Nettles, M. T., & Millett, C. M. (2006). Three magic letters: Getting to Ph.D. Baltimore: The Johns Hopkins University Press.

Nicholson, L. (1997). Feminism and Marx: Integrating kinship with the economic. In L. Nicholson (Ed.), The second wave: A reader in feminist theory. (pp. 97-122). New York: Routledge.

Pace, C. R., & Kuh, G. D. College Student Experiences Questionnaire. (1998). http://www.indiana.edu/~cseq/cseq. Retrieved, August 30, 2006.

Pascarella, E. T. (1985). Students' affective development within the college environment. The Journal of Higher Education, 56(6), 640-663.

Pascarella, E. T., Terenzini, P. T., & Hibel, J. (1978). Student-faculty interactional settings and their relationship to predicted academic performance. The Journal of Higher Education, 49(5), 450-463.

Pavel, D. M. (1992). American Indians and Alaska natives in higher education: Research on participation and graduation. (Report No. EDO-RC-92-2). Clearinghouse for rural education and small schools. Washington, D. C. (ERIC Document Reproduction Service No. ED 348197).

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, L. W. (2004). Understanding the decision to enroll in graduate school: Sex and racial/ethnic group differences. The Journal of Higher Education, 75(5), 487-527.

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.

Puwar, N. (2004). Space invaders: Race, gender and bodies out of place. New York: Berg.

Qian, Z., & Blair, S. L. (1999). Racial/ethnic differences in educational aspirations of high school seniors. Sociological Perspectives, 42(4), 605-625.

Ridgwell, D. M., & Creamer, E. G. (2003). Institutional culture and the advanced degree aspirations of students attending women's colleges. The College Student Affairs Journal 23(1), 77-90.

Seyfrit, C. L., Hamilton, L. C., Duncan, C. M., & Grimes, J. (1998). Ethnic identity and aspirations among rural Alaska youth. Sociological Perspectives, 41(2), 343-365.

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.

Smith, S. S., & Moore, M. R. (2000). Intraracial diversity and relations among African-Americans: Closeness among black students at a predominantly white university. The American Journal of Sociology, 106(1), 1-39.

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. American Psychologist, 52(6), 613-629.

Suskie, L. A. (1996). Questionnaire survey research: What works (2nd ed.). Tallahassee, FL. Association for Institutional Research.

Taylor, E., & Antony, J. S. (2000). Stereotype threat reduction and wise schooling: Towards the successful socialization of African-American doctoral students in education. Journal of Negro Education, 69(3), 184-198.

Teachman, J. D. (1987). Family background, educational resources and educational attainment. American Sociological Review,52, 548-557.

Tsui, L. (1995). Boosting female ambition: How college diversity impacts graduate degree aspirations of women. Paper presented at the Association for the Study of Higher Education, Orlando, FL. (ERIC Document Reproduction Service No. ED 391429).

U. S. Census Bureau. (2000). Educational attainment – People 25 years old and over by mean income and sex: 1991 to 2000. Table P-18. http://www.census.gov/hhes/www/income/histinc/p18x1.html

U.S. Department of Education (2004). Distribution of income and median income of persons 25 years old and over, by highest level of educational attainment and sex: 2004. Table 379. http://nces.ed.gov/programs/digest/d05/tables/dt05_379.asp

Weidman, J. C. (1982, March). Some conceptual concerns in the study of undergraduate socialization: Implications for assessing faculty impact. Paper presented at the Association for the Study of Higher Education, Washington, D. C. (ERIC Document Reproduction Service No. ED 219053).

Williams, C. L. (1995). Still a man's world: Men who do "women's work". Los Angeles. University of California Press.

Wolf-Wendel, L. E. (2000). Women friendly campuses: What five institutions are doing right. The Review of Higher Education, 23(3), 319-345.

Wright, R. E. (1998). Logistic Regression. In L.G.Grimm, & P. R. Yarnold, Reading and understanding multivariate statistics (pp. 217 – 244). American Psychological Association.

Appendix A

The College Student Experiences Questionnaire (CSEQ) is a copyrighted instrument and therefore it does not appear in this document. For further information on the CSEQ and a complete copy of the instrument, please visit http://cseq.iub.edu/pdf/cseq_whole.pdf

Appendix B

IRB Approval Letter

VirginiaTech

Office of Research Compliance
Carmen T. Green, IRB Administrator
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24061
540/231-4358 Fax 540/231-0959
e-mail ctgreen@vt.edu
www.irb.vt.edu
FWA00000572(expires 1/20/2010)
IRB # is IRB00000667

DATE: April 28, 2008

MEMORANDUM

TO: Joan B. Hirt
Sharrika Davis

FROM: Carmen Green

SUBJECT: **IRB Exempt Approval**: "Factors Influencing Undergraduate Women's Educational Aspirations" , IRB # 08-280

I have reviewed your request to the IRB for exemption for the above referenced project. The research falls within the exempt status. Approval is granted effective as of April 28, 2008.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in the research protocol. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.

2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

cc: File