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# The Effect of a Student Support Services Program on Academic Success at an Appalachian Comprehensive University

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THE EFFECT OF A STUDENT SUPPORT SERVICES PROGRAM ON ACADEMIC  
SUCCESS AT AN APPALACHIAN COMPREHENSIVE UNIVERSITY

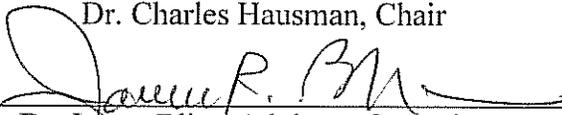
By

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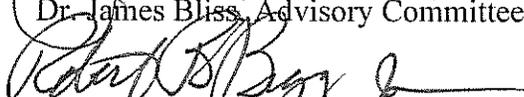
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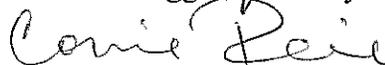
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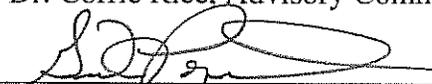
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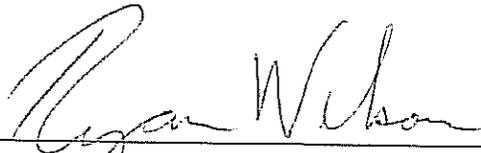


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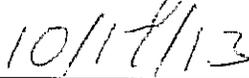
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Date

A handwritten date "10/17/13" in cursive script, written in black ink and positioned above a horizontal line.

THE EFFECT OF A STUDENT SUPPORT SERVICES PROGRAM ON ACADEMIC  
SUCCESS AT AN APPALACHIAN COMPREHENSIVE UNIVERSITY

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December, 2013

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## DEDICATION

This dissertation is dedicated to my wife, Stephanie, my parents, Terry and Carolyn Wilson, and my daughter Scarlett. I look forward to spending more time with each of you.

## ACKNOWLEDGMENTS

First and foremost I would like to thank God and my savior Jesus Christ. I would like to thank my wife, Stephanie, for her everlasting love and support through this process. Thank you for the encouragement and positivity throughout this process. To my father, thank you for your commitment to being the best father a son could have and all of the trips to the library. To my mother, thank you for your unconditional love and support. Thank you for setting the bar high and never allowing me to settle for nothing other than the best. To Kara, Tim, and Thomas, thanks for supporting me as I progressed through my educational pilgrimage. Thank you to all of my teachers from pre-school through graduate school. I must thank my daughter, Scarlett. You gave me the added strength and determination to complete this dissertation so I can enjoy as many moments with you as possible.

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## **ABSTRACT**

This study examined the effect of the NOVA program, a Students Support Services program at Eastern Kentucky University, on academic success for first-generation and low-income college students. An archival database was used to identify differences in the level of academic success among first-year students in the NOVA program from fall-to-fall of their freshmen year compared to non-NOVA students of comparable backgrounds. Additionally, a survey was administered to identify which services provided by NOVA as rated by participating students predict academic success. Results showed that NOVA students have higher cumulative GPAs, retention rates, and percentage of credits earned. Analyses of the survey data show that fall-to-fall retention can be predicted based on NOVA people and services. Several recommendations were made based on the results of the study.

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## **CHAPTER 1: INTRODUCTION**

### **Overview**

Eastern Kentucky University (EKU) is a public, regional comprehensive higher education institution in Kentucky's Central Appalachian region. It is located in Richmond, Kentucky, and serves nearly 16,000 students. A variety of programs are offered at the associate's, bachelor's, master's, and doctoral levels. EKU has five colleges which consist of the College of Arts and Sciences, College of Business and Technology, College of Education, College of Health Sciences, and College of Justice and Safety. (Eastern Kentucky University, 2012). Eastern Kentucky University was founded in 1906 and was known as the Eastern Kentucky State Normal School. Central University was located in Richmond, Kentucky and was chosen as the site for the Eastern Kentucky State Normal School with Rural Roark being the first president (Eastern Kentucky University, 2012).

EKU has seen an increase in the size of the campus and enrollment over the past 50 years. EKU's student body consists of Kentuckians, out-of-state and international students. As a regional higher education institution, EKU serves a 22-county service region. The counties include Bell, Boyle, Casey, Clay, Estill, Garrard, Harlan, Jackson, Knox, Laurel, Lee, Leslie, Lincoln, Madison, McCreary, Owsley, Perry, Powell, Pulaski, Rockcastle, Wayne and Whitley County. These counties are geographically located in south central and southeastern Kentucky (Eastern Kentucky University, 2012). Fourteen of the 22 counties in EKU's service region are categorized as having a distressed economic status by the Appalachian Regional Commission (ARC) (Appalachian Regional Commission, 2013). Five of the 22 counties are categorized as at-risk, and

Madison County is categorized as transitional. Boyle County, one of ECU's service region counties, was not included in these categories because it is not classified as being in the Appalachian region. The ARC defines distressed counties as the most economically depressed counties in the region, and they are ranked in the bottom 10% of the nation's counties. At-risk counties are defined as those at risk of becoming economically distressed, and they rank between the lowest 10% and 25% of the nation's counties. Transitional counties are defined as those transitioning between strong and weak economies and that rank between the worst 25% and the best 25% of the nation's counties (Appalachian Regional Commission, 2013).

#### *First-Generation and Low-Income College Students*

According to data from the United States Census Bureau (2013a), 13 out of the 22 counties in ECU's service region are in the top 100 poorest counties per median household income in the United States, with Owsley County being ranked the poorest in the United States. Earning a college degree offers significant benefits for children from low-income families (Haskins & Rouse, 2013). Of the Fall 2012 new, first-time freshmen at ECU, 35% were first-generation college students (C. Adkins, personal communication, April 25, 2013). A first-generation college student is defined as a student whose parent(s) did not complete a four-year college degree (TRIO, 2012).

First-generation college students face a variety of barriers that often prevent them from being successful when pursuing a college degree. Most of the 4.5 million first-generation, low-income college students who are currently enrolled at a higher-education institution, which is 24% of the undergraduate population, face a path to a bachelor's degree that is often full of obstacles (Engle & Tinto, 2008). For example, research shows

that first-generation students encounter a higher level of difficulty transitioning from high school to college (Pascarella, Pierson, & Wolniak, 2004). Furthermore, first-generation college students obtain less assistance in preparing for college and support for attending college. In addition, they face lower levels of belonging to the college they attend compared to non-first-generation college students (Longwell-Grice & Longwell-Grice, 2008).

Not surprisingly given these obstacles, research also has shown that first-generation college students are at a higher risk for attrition, which results in lower student retention at higher education institutions (Dennis, Phinney, & Chuateco, 2005; Longwell-Grice & Longwell-Grice, 2008; Strayhorn, 2009; Ting, 2003). Ting (2003) found that first-generation college students achieve lower than average first-semester GPAs and are more than twice as likely to leave college compared to non-first generation college students. Collier and Morgan (2008) discovered that low-income and first-generation students are the most likely to not be retained or complete a four-year degree.

### *NOVA Program*

Colleges and universities have implemented programs for first-generation college students to help these students achieve academic success and transition to college (Inkelas, Daver, & Vogt, 2007). A particular program at ECU with the goal of helping first-generation college students succeed is the NOVA program. The NOVA program was founded in 1975 and is part of the Student Support Services/TRIO program funded by the U.S. Department of Education. Student Support Services programs provide counseling, tutoring, and instruction to low-income, first-generation college students and students with disabilities. The goals of Student Support Services programs are to help

participants be successful and persist in college. There are currently 947 Student Support Services programs nationwide serving more than 200,000 students (Council for Opportunity in Education, 2013). Students who participate in Student Support Services programs are more than three times as likely to earn a bachelor's degree when compared to students who do not participate, but meet the same qualifications (Jean, 2011).

NOVA professionals and student leaders provide structure and support to students throughout their college educations. NOVA offers instruction, peer mentoring, and personal, academic, financial, graduate school, and career consulting services to its students. The mission of the program is to increase the retention and graduation rates of low-income and first-generation college students (Eastern Kentucky University, 2013b).

Participants in the NOVA program must be low-income individuals and/or first-generation college students to be eligible for the program. The term "low-income individual" is defined as an individual whose family's taxable income for the preceding year did not exceed 150 percent of the poverty level amount. NOVA participants also must meet academic requirements. The participants must have no more than one developmental course placement and/or ACT scores that meet the ECU average scores. In addition and be a first-year, full-time student enrolling in a minimum of 13 credit hours at the ECU Richmond campus (Eastern Kentucky University, 2013b).

### **Rationale for Student Support Services Programs for First-Generation and Low-Income Students**

Presently, there is a need to find solutions to help increase first-generation and low-income college students' level of academic success. For the purposes of this study,

academic success is measured by grade point average (GPA), credits earned and retention. Researchers have projected that the number of first-generation college students will increase in the future (Giancola, Munz, & Trares, 2008; Strayhorn, 2006). Furthermore, a number of studies have found a need for support programs that aid first-generation and low-income students during their pursuit of a four-year college degree (Collier & Morgan, 2008; Inkelas, Daver, Vogt, & Leonard, 2007; Padgett, Johnson, & Pascarella, 2012; Woosley & Shepler, 2011). Consistent with this need, Bui (2002) found that first-generation college students did not feel they had the same level of preparedness for college and were more concerned about financial aid compared to other students. The first-generation college students in the study also perceived their knowledge level of the university's social environment to be lower than other students (Bui, 2002). Other studies show that first-generation college students face a higher level of impediments in college compared to other students (Ramos-Sanchez & Nichols, 2007). Some challenges more common for first-generation students to face are inability to meet university academic standards; inability to adapt to new social and academic environments; changes in personal goals; lack of motivation; lack of clearly defined goals, priority of other commitments such as work or family; financial difficulty; and incongruence between an institution's orientation and approach and that desired by the individual (Salinitri, 2005).

On top of these additional challenges, first-generation college students also face many of the issues that traditional college students deal with, but the majority of first-generation students lack the support system that traditional students often have. Collier and Morgan (2008) found that first-generation college students arrive at universities with

limited awareness of student roles and less capability to transform their current knowledge into actual proficiency. Unlike students whose parents attended college, first-generation college students do not have the access to parental advice that could aid them in understanding the university's expectations (Collier & Morgan, 2008).

The uncertainty of today's economy coupled with decreasing amounts in federal tuition assistance has resulted in many higher education institutions facing decreases in enrollment and increases in student attrition (Alexander, 2011). Burd (2013) reported that colleges and universities in the United States are going back on promises made over 50 years ago to remove financial obstacles that keep working-class and low-income college students from gaining access and finishing college. There is a need for programs at colleges and universities to support first-generation college students with their academic and social adjustment to college. The hopeful result of such programs is higher levels of academic success for first-generation college students.

### **Rationale for the Study**

This study focuses on one program with the objective of increasing the level of student success of low-income and first-generation college students. Presently, there is a lack of studies examining the effects of Student Support Services programs on first-generation college and low-income students at higher education institutions in rural areas. This study provides for a deeper understanding of the impact of the NOVA program at ECU on first-generation and low-income college students and helps address the void in research on such programs in rural contexts.

## **Research Questions**

The research questions guiding this study are:

- 1) Are there differences in the level of academic success among first-year students in the NOVA program from fall-to-fall of their freshmen year compared to non-NOVA, first-time students of comparable backgrounds?
- 2) What services provided by NOVA as rated by participating students predict academic success?

## CHAPTER 2: LITERATURE REVIEW

### Chapter Overview

The purpose of this chapter is to explore and assess the scholarly literature pertaining to the success of first-generation and low-income college students. There are many areas that are connected to the success of first-generation and low-income college students. Student Support Services programs will be researched to describe the level of impact these programs have on students. A review of the literature on retention will be examined to develop a better understanding of past and current retention information as it pertains to first-generation and low-income college students. Academic and social integration are subtopics of retention that will be reviewed. Furthermore, research on peer mentoring will be reviewed in this chapter. Peer mentoring has shown to increase academic success among first-generation college and low-income students, and it is a key component of the ECU NOVA program (Santos & Reigadas, 2004; Thayer, 2000).

#### *Student Support Services*

Student Support Services programs are known to help students succeed in college (Chaney, 2010; Fike & Fike, 2008; Jehangir, 2009). However, one limitation of the scholarly work performed to date is that the number of high-quality studies examining Student Support Services programs is minimal. The majority of studies and reports that do exist were conducted before 2007 and focus primarily on Student Support Services at community colleges (Carey, Cahalan, Cunningham, & Agufa, 2004; Chaney, Muraskin, Cahalan, & Goodwin, 1998; Jenkins, 2006; Mahoney, 1998; Pettitt, 2006; Thomas, Farrow, & Martinez, 1998; Walsh, 2000; Zhang & Chan, 2005). Despite the age of the bulk of the research that has been performed, a few recent studies and reports have been

released (Chaney, 2010; Fike & Fike, 2008; Jehangir, 2009). For example, a recent qualitative study by Jehangir (2009) explored a learning community in a TRIO program at a large, public, midwestern research university. The Multicultural Learning Voices Community (MLVC) was created to offer TRIO participants a rigorous academic coursework that would initiate social and academic integration through connecting their lived experiences during the first year of college. All participants in the study were first-year students that received academic support from the TRIO program at the university in the study. The three academic courses offered from the MLVC were: a freshman composition course, a humanities course, and a social science course. Case-study methods were used to obtain students' perceptions of their learning experience by responding to weekly writing prompts that inquired about the students' learning experience in the MLVC. The sample consisted of 128 students in seven cohorts that participated in the MLVC between the fall of 2001 and the fall of 2007 (Jehangir, 2009).

The case studies were coded, and five themes emerged from the students' responses. The five themes that emerged from the study were: finding place, finding voice, transformational learning, bridge building, and conflict as a catalyst. Through these findings, Jehangir suggests that practitioners should: cooperatively create defined expectations, direct attention to cognitive and affective ways of knowing, establish opportunities for process-based learning, allow the students to be teachers, and discuss the use of constructive conflict. This study provides TRIO program staff an insight into the learning process of their students, who often face stigmatization and isolation due to their backgrounds and characteristics (Jehangir, 2009).

Students served by Student Support Services programs at a community college were not the only focus of a quantitative study at a community college in West Texas, but were one group of the sample. Fike and Fike's (2008) study examined data collected from 9,200 first-year students over a four-year period. The number of Student Support Services students in the study was 359, or 3.9% of the sample. Correlations between predictor variables indicated that successful completion of a developmental reading course was the strongest positive correlate with retention. A multivariate analysis revealed that one of the strongest predictors of fall to spring and fall to fall student retention was participation in Student Support Services. Despite the small sample of Student Support Services participants in the study, the results showed the positive effects that Student Support Services have on student retention (Fike & Fike, 2008).

Researchers at California State University-Hayward examined the EXCEL program, a TRIO Student Support Services program, to evaluate the level of academic success of the program's participants (Mahoney, 1998). The study tracked EXCEL program participants from the fall of 1991 through the fall semester of 1995. The study included an experimental group consisting of 209 EXCEL program participants, one control group of all 9,778 undergraduate students, and another control group of 1,550 students with similar socioeconomic backgrounds who did not receive EXCEL services but were eligible for the program. The results demonstrated that students served by the EXCEL program had a higher retention rate compared to the control groups. Findings showed that EXCEL participants were retained at a rate of 72%, non-EXCEL but program-eligible students were retained at a rate of 58.6%, and the total undergraduate population was retained at a rate of 67%. EXCEL participants also graduated at a higher

rate in a four-year period compared to the control groups. EXCEL participants' four year graduation rate was 61% compared to the 56% of the undergraduate population and the 54.9% of the non-EXCEL but program eligible participants. The total population of undergraduates at California State University-Hayward had a higher overall mean GPA (M=2.77) compared to the 2.70 of the EXCEL participants. EXCEL participants did have a higher overall mean GPA than non-EXCEL but program-eligible students (M=2.58).

A survey was administered in the second part of the EXCEL study to allow participants to rate the effectiveness of program services and suggest ways to improve program services (Mahoney, 1998). The sample consisted of 155 students who participated in EXCEL in the academic year of 1995-96. Based on frequency of use, academic planning and personal counseling were used by 97% of the students, tutorial services were utilized by 55%, career development was used by 34%, scholarship advising was used by 21%, and graduate school counseling was received by 18% of the students. All respondents gave positive ratings on the quality of EXCEL services. Respondents' overall positive evaluation of EXCEL program included the program's staff, advisors, and tutors. Participants rated financial assistance as the least helpful program service. The author cites that this program weakness was the result of a lack of funding and resources for targeted needs.

A study by Chaney, Muraskin, Cahalan, and Goodwin (1998) supported Tinto's (1993) research on academic and social integration's effects on retention. Chaney et al. (1998) performed a three-year longitudinal study to examine the effectiveness of multiple Student Support Services programs' effects on retention. The sample consisted of approximately 2,800 full-time freshmen participating in 30 Student Support Services

programs at multiple higher education institutions with a control group of the same number of students who did not participate in a Student Support Services program. The researchers examined three types of retention, first-to-second year at the original institution, second-to-third year at the original institution, and retention to the third year at any institution (Chaney et al., 1998). Demographic information from the study revealed that 80% of students who started college before the age of 20 and did not have children were more likely to stay at their college or university. Fifty-six percent of students reported financial concerns as reasons for not returning to their institution, and 55% of students still enrolled at their institution reported that financial issues may cause them to leave. Students who left college were less likely to have attended an orientation or summer bridge program prior to arriving at their institution, reported lower levels of confidence in their academic skills, and were less likely to seek academic help from faculty, tutors, or advisors (Chaney et al., 1998).

Chaney et al. (1998) found that when Student Support Services programs are linked to specific student services at the same institution the retention rate of students was seven percentage points higher compared to other Student Support Services programs. A finding that was consistent with other studies examining academic support programs was the positive effect peer tutoring had on retention and college GPAs. Student Support Services participants had 7% higher GPAs in the first year, 5% in the second year, and 4% over three years compared to similar non-participating Student Support Services students. Students also earned 6% more credits in their first year, 4% more in the second year, and 4% more in the third year compared to similar students who did not participate in Student Support Services (Chaney et al., 1998).

Students who participated in Student Support Services instructional courses and workshops were retained at a higher rate than students who did not participate in these services. The findings indicate that Student Support Services programs provide skills to participants that help them integrate during their first year at college, as well as remain successful until degree completion. The researchers suggested a need for studies of Student Support Services at individual institutions (Chaney et al., 1998).

Graduation rates were the focus of a study by Thomas, Farrow, and Martinez (1998) investigating first-time, full-time freshmen participating in a Student Support Services program at Rutgers University's Livingston campus. The researchers examined archival data collected from 1980 to 1992 to determine the graduation rates of 979 Student Support Services participants compared to the overall population of the Livingston campus. The Rutgers Student Support Services program's (RSSSP) goal is to graduate at least 50 % of its first-time, full-time freshmen cohorts. The average graduation rate for the entire sample of participants was 56.2%, with the mean freshman cohort of the Livingston campus having a graduation rate 4.4 percentage points higher at 60.6% (Thomas et al., 1998).

#### *Low-Income, First-Generation College Students*

The odds of succeeding in college are worse for low-income, first-generation college students. Only 34% of low-income, first-generation students earned four-year degrees in six years compared to 66% of non-first-generation college students (Engle & Tinto, 2008). The gap increased when low-income, first-generation college students attended private institutions. Only 43% complete a bachelor's degree compared to 80% of non-first-generation college students. Low-income, first-generation college students

come from a wide variety of backgrounds. They excessively come from racial and ethnic minority backgrounds (Engle & Tinto, 2008). Compared to non-first-generation students, first-generation students are likely to be older, female, have dependents, and have a lower socioeconomic status (Bui, 2002; McCarron & Inkelas, 2006; Engle & Tinto, 2008, as cited by Forbus, Newbold, & Mehta, 2011). It is likely that a low-income, first-generation college student will be older than the average student attending college (Choy, 2001).

First-generation college students tend to work more hours per week, study fewer hours, and attempt less credit hours compared to non-first-generation college students. They tend to have lower high-school GPAs and lower scores on standardized tests (Pascarella, Pierson, Wolniak, & Terenzini, 2004). First-generation college students are more likely not to be retained (Ishitani, 2006). They also encounter more anxiety from dealing with the culture of university life compared to non-first-generation college students (Lohfink & Paulsen, 2005). Furthermore, first-generation college students tend to have fewer peer supports, less commitment to learning, and lower connections to campus life (Lundberg, Schreiner, Hovaguimian, & Miller, 2007).

First-generation college students may feel less prepared for the academic rigor of college courses due to their parents' lack of college experience (Padgett et al., 2012). Many first-generation college students face barriers due to a lack of family support and taking less than rigorous courses in high school. First-generation college students often have parents who lack the understanding of the required commitment for success in college, such as the cost of tuition, the amount of time a student should study, and the level of bureaucracy that students encounter in college (Fike & Fike, 2008). Engle, Bermeo, and O'Brien (2006) discovered that the low level of rigor of high-school

coursework taken by first-generation students often prevents them from meeting the academic expectations of colleges and universities. Studies also have proposed that first-generation students may be less self-motivated to be successful in college compared to non-first-generation college students (Naumann et al., 2003, Pintrich, 1995; Prospero & Vohra-Gupta, 2007, as cited in Woosley & Shepler, 2011).

A study that examined first-generation college sophomore students analyzed the effects of self-efficacy on academic success (Vuong, Brown-Welty, & Tracz, 2010). A survey was administered to students at five California State University institutions, and 1,291 students responded. There were 441 first-generation college sophomore students that responded to the survey. Various analyses were conducted to determine the effects of self-efficacy on academic success. Self-efficacy in academic coursework was a significant predictor of academic success for first-generation students. Specifically, results showed that first-generation students had lower GPAs from their previous term and lower overall GPAs when compared to non-first-generation sophomore students. The researchers suggested that administrators at colleges and universities must be knowledgeable of significant predictors of academic persistence and degree completion in regards to first-generation college sophomore students to inform programs and services that are needed by these students (Vuong et al., 2010).

Traditional university support services often do not meet the needs of first-generation college students transitioning to college (Folger, Carter, & Chase, 2004). Stebleton and Soria (2012) studied the obstacles first-generation college students encounter when arriving at a postsecondary institution compared to non-first-generation students. They analyzed survey data from 58,000 first-generation college students from

six research universities. The results of their study indicated that first-generation students reported high occurrences of obstacles that prevent academic success such as poor English and math skills, poor study skills, emotional issues, family issues, and a large number of work hours. The researchers suggested that added support programs for first-generation college students at the initial adjustment phase to college helps these students transition to college. Furthermore, they recommended that administrators initiate discussions with first-generation college students about their college experience and be knowledgeable about academic and social opportunities for first-generation college students to help with their integration to the institution. They also encourage administrators not to assume first-generation college students are knowledgeable about services offered at their institution (Stebleton & Soria, 2012).

Survey results from four universities in the United States focusing on students' college experiences indicated that first-generation college students have higher levels of stress compared to non-first-generation college students (Barry, Hudley, Kelly, & Cho, 2009). The researchers recommended that first-generation college students need greater social supports to help ease the stresses related to college. A study by Martinez, Bilges, Shabazz, Miller, and Morote (2012) examined the employment status of first-generation college students participating in a Student Support Services program at a four-year private institution in New York. The goal of their research was to determine if the levels of institutional engagement and resiliency were different among first-generation college students working off campus compared to first-generation college students working on campus (Martinez et al., 2012). They defined resiliency as the ability to overcome challenges and stressors that first-generation college students encounter. Institutional

engagement was defined as the ability for a student to develop relationships on campus and participate in campus organizations and activities. A survey was completed by 52 first-generation college students. Results from descriptive statistics and an ANOVA indicated that students who work at locations off-campus showed more resiliency compared to students working on-campus jobs.

*Rural Context: Central Appalachian Region of Kentucky*

A study exploring the impact of family involvement on college success implemented qualitative methods to examine the lived experiences of 10 first-generation college students from the Appalachian region of Kentucky (Bryan & Simmons, 2009). The themes that emerged which represented participants' experiences in college were close-knit families and communities, knowledge of college procedures, separate identities, returning home, pressure to succeed, poverty, and the importance of early intervention programs. The researchers used Bronfenbrenner's (1989) ecological model as a framework for the study since the model accentuates how the family structure and additional layers of influence affect individual development (Bryan & Simmons, 2009). Bryan and Simmons (2009) discovered that several participants mentioned academic preparation during high school as a supportive element of the early intervention program, specifically the ACT preparation. The early intervention program provided the students in the study workshops strategies on study skills and time management, but the students noted the ACT preparation was one of the most valuable features of the program. Students identified the most helpful part of the early intervention program as the campus visits, which impacted their comfort level with being on a college campus. The campus visits proved to be helpful to parents as well by easing their stress from the forthcoming

move to college. The findings identified several strategies that help first-generation college students get to college and succeed.

Hand and Payne (2009) performed a qualitative study of first-generation students from Appalachia that explored the factors contributing to their academic persistence in college. Participants in the study were students participating in a Student Support Services program at a major Appalachian university. The results of this study were different from most studies examining first-generation college students. Specifically, despite the findings of previous studies, the researchers found no indication of the participants in the study being at an academic disadvantage compared to non-first generation college students. Students did identify the importance of knowing the right information for both getting into college and persisting. Hand and Payne's (2009) findings were connected with the concepts of cultural and social capital (Pascarella, Pierson & Wolniak, 2004, as cited in Hand & Payne, 2009). Pascarella et al. (2004) describe how students whose parents are college-educated have an advantage over first-generation students in regards to a higher level of understanding the culture of higher education and having access to vital information. Significant findings revealed hypotheses of what helps first-generation college students persist in college but did not reveal any suggestions on what helped them get to college.

### *Retention*

Student retention has been a referenced variable in higher education in the United States since the late 1800s (Thelin, 2004, as cited by Boston, Ice, & Gibson, 2011). First-generation college students are at a higher risk of leaving college prior to completing a degree program (Martinez, Sher, Krull, & Wood, 2009). Tinto (1993) found that the first-

year college experience is a crucial component for student retention. The number of first-year experience programs at colleges and universities has increased greatly in the past two decades with more than 95% of U.S. four-year higher education institutions offering a first-year program (Jamelske, 2009). The common goals of all first-year programs at colleges and universities are to achieve greater persistence, high graduation rates by academically and socially integrating the students in the university community, and increased student performance (Goodman & Pascarella, 2006; Pascarella & Terenzini, 2005; Tobolowsky, Mamrick, & Cox, 2005, as cited by Jamelske, 2009).

Ishitani (2006) investigated the effects of precollege attributes of students on behaviors associated with completing a degree and retention. He used history modeling to analyze the retention behavior of first-generation college students. By examining a National Forum on Education Statistics (NFES) longitudinal data set, he found that first-generation college students were at a higher risk for leaving college compared to students whose parents held college degrees. First-generation students were nearly nine times as likely to leave college in the second year of college compared to non-first-generation college students. First-generation students whose parents received some college education displayed a better chance of being retained and graduating sooner compared to first-generation college students whose parents had no college experience (Ishitani, 2006).

### *Social Integration*

Studies of first-generation college students have shown these students often lack social supports, which may prevent them from being successful in college (Dennis, Phinney, & Chuateco, 2005). A key component of Tinto's (1975) Student Integration

Model is social integration. The model emphasizes the importance of students feeling they are part of their institution and connecting with other students, faculty, and the campus community (DeCiccio, Gross, & Gross, 2009). Clark (2005) found that social integration is a serious challenge to first-generation college students' transition to university life. Fischer (2007) found if students have higher levels of satisfaction with their college or university they will become connected to their institution.

Jacobs' and Archie's (2008) exploratory study examined the level of impact that sense of community had on first-year college students' intent to return to college. The population of the study consisted of 4,000 first-year students at an undergraduate university in the western United States. The sample of their study included 305 participants who were enrolled in general education courses. Data were collected using a valid measure of sense of community, and multiple linear regression was used to analyze the data. The researchers found that sense of community had a significant positive influence on intent to return. The study provided evidence that support needs to be given to areas where students can obtain a sense of communities (e.g., campus clubs, fraternities and sororities, and employment) (Jacobs & Archie, 2008).

Cushman (2007) found that first-generation students may feel that they are outsiders at a college or university compared to non-first-generation college students. First-generation students also felt other students had different outlooks about appearance, dress, leisure activities, and faculty interactions (Cushman 2007, as cited by Woosley & Schepler, 2011). Other studies have found that the social setting of a college campus may affect a first-generation student's ability to seek support, socially integrate to campus, and succeed academically (Fischer, 2007; Inkelas, Daver, Vogt, & Leonard, 2007). In their

study, Saenz and Barrera (2007) found that first-generation college students who live off-campus rather than in a residence hall during their first year of college reported lower levels of social integration.

Woosley and Shepler (2011) conducted a study to examine early integration experiences of first-generation college students at a medium-sized Midwest public university. The sample of their study consisted of 804 first-generation students with 36% being male and 64% being female. Using Tinto's (1993) longitudinal model, the researchers identified three levels of predictor variables: gender and admission test scores, commitment to higher education, and on-campus environment. Four criterion variables were created to operationalize Tinto's model. The four criterion variables were social integration, academic integration, institutional satisfaction, and homesick-related distress. All three levels of predictor variables explained variance and significantly predicted the criterion or dependent variables. Regression models showed that each of the criterion variables were important in understanding the other criterion variables. Overall, the findings of the study revealed how first-generation college students integrate into life at a college or university. The findings also identified how first-generation students adjust to university life socially (Woosley & Shepler, 2011).

### *Academic Integration*

Research has shown that better academic preparation for college can result in greater academic success in college (Giancola, Munz, & Trares, 2008). First-generation college students earn lower GPAs compared to non-first-generation college students (Pascarella et al., 2004). College GPA has proven to be an accepted measure for student

retention among male and female students (Astin, 1975; Herzog, 2005; Leppel, 2002, Liu, 2010; Murtaugh, Burns, & Schuster, 1999; Stratton, O'Toole, & Wetzel, 2007).

Jamelske (2009) investigated a first-year experience program at a Midwestern public university in the United States in 2006 to determine if the program had any impact on GPA and retention after one year for the cohort of freshmen students. The sample contained 1,997 students with 15.7% low income and 42.3% first-generation college students. Survey data were collected from faculty and students who participated in the first-year experience program. The researcher found that the program had no positive effect on first-year retention, but students who participated in the program earned higher GPAs when compared to students who did not participate in the program.

First-generation college students are less prepared for college courses due to a lack of college-preparation courses and lower critical thinking skills in high school (Dennis, Phinney, & Chuateco, 2005, as cited by Forbus, Newbold, & Mehta, 2011). Forbus et al. (2011) conducted a study to examine the variation in motivation, academic success, and satisfaction levels between first-generation and non-first-generation college students at a mid-sized southwestern four-year university. The results of their study showed first-generation college students are more likely than non-first-generation college students to self-report lower GPAs.

### *Peer Mentoring*

Mentoring programs have been implemented as a strategy to enhance college adjustment and retention at higher education institutions over the past two decades (Clark, Davis & Leeds, 1995; Campbell & Campbell, 1997). Most programs pair an at-

risk, racial/ethnic, and/or first-generation college student with a faculty member, staff member, or fellow student and have shown to exert positive effects on the academic success of students (Crisp & Cruz, 2009; Strayhorn & DeVita, 2010; Wilson & Arendale, 2011; as cited by Stebleton & Soria, 2012). The majority of the mentoring programs at universities and colleges show positive results on retention, GPA, and college adjustment (Santos & Regadas, 2004; Scott & Homant, 2007; Wallace & Abel, 1997). Reddy and Hill (2007) claim that the “aim of peer mentoring is to ease the transition to college by reducing stress through informal supportive relationships” (p. 98). Reddy and Hill go on to say “the role of the mentor is not to take place of formal university support services, but to guide them about other aspects of university life” (Reddy & Hill, 2007, p. 98).

One particularly successful peer-mentoring program for first-generation college students is the Bridges Scholar Program at Colorado State University (Thayer, 2000). First-generation college students in the program are paired with a peer mentor with whom they live in a residence hall. In addition to the live-in peer mentor, the mentees are in a cohort with other Bridges Scholar participants. The mentees attend workshops and activities, and are connected to faculty, advisors, and resources. A five-year longitudinal study of the program revealed that first-generation college students participating in the program had higher rates of persistence, higher GPA's, and greater connection to the university compared to similar non-participants (Thayer, 2000).

Mentoring programs that pair a first-year student with a faculty member have been shown to be an effective tool for college adjustment. Santos and Reigadas (2004) studied a program that paired faculty mentors with first-year students in an attempt to positively impact the students' level of college adjustment. The researchers mailed a

survey to 200 student mentees. Their sample consisted of students of various ethnicities and backgrounds. First-generation college students made up 70% of the sample. The survey measured variables such as: ethnic homogeneity, social embeddedness, students' attitudinal adjustment, college self-efficacy, college goal definition, and career expectation. The results indicated that frequency of student-mentor contact had a positive direct effect on program satisfaction and students' GPA. The researchers' findings indicated that it is the quality of the student-mentor relationship that matters most in establishing student success, rather than matching students and faculty based on race or ethnicity (Santos & Regadas, 2004).

Peer-mentoring programs have shown to help mentees with academic challenges when academic staff proved not to be helpful. Peer mentors providing advice and reassurance to mentees that academic staff could not was the common theme among a qualitative study by Reddy and Hill (2007). The study examined first-year student mentees and their mentors at a university in the United Kingdom. The mentees in the peer-mentoring program felt there was a value in the areas of student support and personal and academic development. Another theme that emerged from the study was the opportunity for social relationships to develop between peers (Reddy & Hill, 2007).

A qualitative study by Wallace and Abel (1997) tested the effectiveness of formal mentoring programs for 20 at-risk undergraduate students at a southern, comprehensive four-year regional university. Based on interviews with the sample of students, the researchers found that formal mentoring has a positive effect upon student participation, retention, and level of success in colleges and universities. Some of the students in the study reported they felt a higher sense of obligation to stay in school due to their views of

the strong commitment of their mentors. Although not conclusive, Wallace and Abel's study suggested that while the majority of mentoring programs were typically one-on-one programs, students believed they received help from a "network of mentors" (Wallace & Abel, 1997, p. 100).

Along the theme of quality, a qualitative study at a large western university in the United States identified the need for recognizing and identifying the roles and risks involved with peer mentoring programs (Colvin & Ashman, 2010). The researchers observed and interviewed instructors, mentors and mentees participating in the peer mentoring program. The results showed that peer mentors "need to clarify roles, understand the expectation of all parties, and receive training on developing, maintaining, and managing relationships" (p. 132). Congruently, Sanchez, Baros, and Paronto (2006) recommended from their quantitative study that mentoring program administrators should consider training of mentors to increase the probability of a high-quality mentoring relationship. The longitudinal study compared students in a peer-mentoring program to students who were not involved in a peer-mentoring program. The researchers found that peer mentors have the ability to positively influence students' satisfaction with the university or college, but program administrators must provide quality training to mentors to heighten the chances of high-quality mentoring relationships (Sanchez, Bauer, & Paronto, 2006).

Peer-mentoring programs at colleges and universities have shown signs of improving student retention rates (Hall & Jaugietis, 2011; Holt & Berwise, 2011; Ward, Thomas, & Disch, 2012). For example, personnel at Curtin University in Australia administered surveys to students who were assigned a mentor, and the results showed that

students who contemplated dropping out referenced their mentors as a key connection in their decision to stay (Wheeler, 2012). Salintri (2005) found in her two-year study at a university in Canada that students who participated in a mentoring program experienced increased GPA's and failed fewer courses in their first semester (Salintri, 2005).

Collectively, the findings from this literature were utilized to identify the variables used in this study to assess the effect of a NOVA program on indicators of student success at a rural comprehensive university. The methods of the study are described in the following chapter.

## **CHAPTER 3: METHODOLOGY**

### **Purpose of the Study**

The purpose of this study was to determine the level of impact a Student Support Services program has on academic success at a regional, comprehensive university in the southern United States. Academic success was assessed by GPA, credits earned, and retention.

The following questions were explored:

- 1) Are there differences in the level of academic success among first-year students in the NOVA program from fall-to-fall of their freshmen year compared to non-NOVA, first-time students of comparable backgrounds?
- 2) What services provided by NOVA as rated by participating students predict academic success?

A detailed examination of the level of academic success of first-year students in the NOVA program compared to first-year non-NOVA students yielded a more comprehensive understanding of the effects the NOVA program has on first-generation and low-income college students.

### **Context of the Study**

#### *EKU NOVA: Program Description*

The NOVA program was founded in 1975 and is part of the Student Services Support/TRIO program funded by the U.S. Department of Education. NOVA professionals and student leaders provide structure and support to students throughout their college education. NOVA offers instruction, peer mentoring, and personal,

academic, financial, graduate school, and career consulting services to its students. The mission of the program is to increase the retention and graduation rates of first-generation and low income college students (Eastern Kentucky University, 2013b).

Participants in the NOVA program must be low-income individuals and/or first-generation college students to be eligible for the program. The term “low-income individual” is defined as an individual whose family's taxable income for the preceding year did not exceed 150% of the poverty level amount. NOVA participants also must meet academic requirements. The participants must have no more than one developmental course placement and/or ACT test scores that meet the ECU average scores. In addition, NOVA students must be first-year, full-time students enrolling in a minimum of 13 credit hours at the ECU Richmond campus (Eastern Kentucky University, 2013b).

### *Sample*

This study consisted of two different samples. For research question one, a random sample of 98 new, first-time freshmen students who received NOVA services between Fall 2005 and Fall 2011 was generated from the archival NOVA database. NOVA administrators also shared a control group of students who did not receive NOVA services while attending ECU but were eligible for the program. The random sample of NOVA students was pair-matched to the sample of new, first-time freshmen students of comparable backgrounds that did not receive NOVA services. The sample for research question two consisted of 45 students that were new, first-time freshmen in the Fall of 2012 at ECU that received NOVA services.

### *Variables*

The first research question included three dependent variables. The three dependent variables were fall-to-fall retention (0=No, 1=Yes), cumulative GPA on a 4.0 scale, and percentage of credits earned. The independent variables were: NOVA participation (0=No, 1=Yes), gender (1=Female, 2=Male), and ACT Composite scale score. ACT Composite score was used as an indicator of college readiness. The three dependent variables for the first research question also were used as dependent variables in the second research question. Two predictor variables, NOVA People and NOVA Services, were created from the NOVA First-Year Survey

### *Data Collection*

Archival data from the NOVA database were used for to examine research question one. The NOVA database was accessed through ECU's Banner database system. The researcher obtained approval from the NOVA director, appropriate ECU administrators and the Institutional Review Board (Appendix C) to gain access to the database. NOVA administrators had access to a control group of first-generation/low-income college students with similar ACT scores who did not receive NOVA services. Fall-to-fall retention rates, percentage of credits earned, and GPAs for students in the experimental and control groups were compared.

To assess research question two, this researcher created the NOVA First-Year Survey (Appendix A). This survey was administered in the Spring of 2013 to students who were new, first-time freshmen in the NOVA Fall 2012 cohort and received NOVA services during that term. The first portion of the survey was divided into three subheadings and consisted of a total of 18 items. The first subheading was "Retention."

The participants were asked to respond to six items under the retention subheading. Specifically, the participants rated the extent to which three NOVA services and three NOVA staff positively impacted their decision to return or not to ECU the following semester. The NOVA services were financial aid counseling, leadership development, and career counseling. The NOVA staff included the peer leader, NOVA advisor, and NOVA Living Learning Community. This section utilized a 6-point Likert scale with the following anchors: strongly disagree=1, disagree=2, moderately disagree=3, moderately agree=4, agree=5, and strongly agree=6. These anchors and the 3 NOVA services and roles were the same for the remaining two subheadings under section one, which were “GPA” and “Credits Earned.” Under these subheaders, respondents were asked to rate their level of agreement with statements about how the various NOVA services positively affected their GPA and percentage of credits earned at ECU.

The next section of the survey was comprised of four questions which prompted students to self-report their Fall 2012 GPA, number of classes taken in Fall 2012, number of classes passed in Fall 2012, and whether or not they planned to enroll at ECU in Fall 2013.

On the final section of the survey, students were asked to rank order the six NOVA services and staff based on the magnitude of their impact on fall-to-fall retention, GPA, and credits earned with “1” being the most positive impact and “6” being the least positive impact.

The survey was administered in the GSD 225S “Service-Learning/Leadership” class taught by the assistant director of NOVA. Requirements for the course were

working as a team, developing leadership skills, providing community service, and presenting at a poster showcase of NOVA students. Participants were notified of the voluntary nature of the study and signed Informed Consent Forms (Appendix B) if they opted to participate. NOVA students who chose not to take this course, but did receive NOVA services in Fall 2012, were contacted via email or Blackboard to solicit participation in the study. Several students that were not enrolled in GSD 225S participated in the survey. A total of 59 students were contacted, and 45 students participated in the survey for a 76.2% response rate.

### *Data Analyses*

For research question one, descriptive statistics of the sample were generated using SPSS 19, a statistical analysis program. This study included descriptive statistics, independent samples t-tests, crosstabulations, bi-variate correlations, and analyses of covariance (ANCOVA). Covariates are identified as the control variables. ANCOVA was used to test the interaction effects of categorical variables on a continuous dependent variable while controlling for the effects of additional variables that co-vary with the independent variable.

Data from the survey for the second research question also were analyzed using SPSS 19. Descriptive statistics and correlations were reported. In addition, simple linear regressions were conducted to determine if NOVA services (leadership development, financial aid counseling, career counseling) and NOVA people (peer leader, advisor, and living learning community) predicted fall-to-fall retention, GPA and credits earned.

### *Limitations*

There are several limitations of this study that need to be acknowledged. This study examined one Student Support Services program at one public, comprehensive university in the Central Appalachian region of Kentucky, which limits generalizability. Findings may be of more value if multiple Student Support Services programs from multiple colleges and universities in the Central Appalachian region of Kentucky were included in the study.

Students who participated in the NOVA First-Year Survey volunteered their time and effort for this study. No incentives, compensation, or rewards were offered for completing the survey. Therefore, it is possible that participants responded to the survey with inaccurate information and provided socially desirable responses. The researcher made every effort to encourage participants to answer truthfully on all sections of the survey.

Finally, the first research question was answered using archival data from the NOVA database and a control group data set. Data go back to 1985 in the NOVA database. Data entry requirements changed over the years which resulted in some missing data. Subjects with missing data were not used in this study. Missing data resulted in using a lower sample (N = 98, N = 97) from the NOVA archival database and control group. These lower sample sizes, as well as the relatively small sample size of survey respondents, may have limited the power to find differences and relationships that actually exists among the variable studied.

## CHAPTER 4: RESULTS

This chapter reports the findings of this study. The first section presents the results using the NOVA archival database to compare the academic success of NOVA students to the academics success of a control group of non-NOVA students who were similar in terms of being first generation and/or low-income and were enrolled during the same academic years. Findings include descriptive statistics and ANCOVAs. The second section of this chapter presents the results from the NOVA First-Year Survey. Findings emerge from descriptive statistics and simple linear regressions.

### **Differences in Academic Success between NOVA and Non-NOVA Students**

#### *ACT Composite Scores of NOVA and Non-NOVA Students*

The mean ACT Composite scores of NOVA and Non-NOVA students were compared to determine if differences in college readiness levels existed between the NOVA and Non-NOVA students in the study. An independent samples t-test revealed a significant difference between the ACT composite scores of NOVA students and the control group as shown in Table 4.1, ( $t = -3.36, p < .001$ ). Specifically, the Mean ACT Composite scores of NOVA students ( $M = 21.4, SD = 2.45$ ) were higher than the control group ( $M = 19.9, SD = 3.48$ ) as displayed in Tables 4.1 and 4.2. Given this significant difference, ACT Composite scores will be utilized as a covariate when the three indicators of academic success in college are compared between NOVA and Non-NOVA students.

Table 4.1

*Mean ACT Composite Score: NOVA vs. Control*

	Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SEM</i>
ACT Composite Score	Control	97	19.99	3.48	.35
	NOVA	98	21.44	2.45	.24

Table 4.2

*Independent Samples T-test: ACT Composite Scores*

		Sig.	t	df	Sig. (2- tailed)	MD
ACT Composite Score	Equal variances assumed	.001	-3.36	193	.001	-1.44
	Equal variances not assumed		-3.35	172.40	.001	-1.44

*Gender by NOVA Participation*

To examine the gender of the NOVA group and control group, a crosstabulation was created. The crosstabulation in Table 4.3 shows that the number of females in both the NOVA group (77.6%) and control group (63.3%) are significantly greater than the number of males in the NOVA group (22.4%) and control group (36.7%),  $\chi^2(1, N = 196) = 4.80, p < .05$ .

Table 4.3

*Crosstabulation: Gender and Group*

			Control	NOVA	Total
Gender	Male	Count	36	22	58
		% within group	36.7%	22.4%	29.6%
	Female	Count	62	76	138
		% within group	63.3%	77.6%	70.4%
	Total	Count	98	98	196
		% within Gender	100%	100%	100%

*ACT Scores of Retained and Non-Retained Students*

Group statistics of the ACT composite score of students not retained compared to the ACT scores of students that were retained fall-to-fall of their freshmen year were not significantly different ( $t=-1.61$ ,  $p=.70$ ). The students who were retained had an ACT composite score of 20.9 compared to those not retained ( $M = 20.2$ ) as shown in Table 4.4. Thus, ACT score does not need to serve as a covariate when retention rates are compared between NOVA and Non-NOVA students.

Table 4.4

*Group Statistics: ACT Composite Score vs. Fall-to-Fall Retention*

Group		<i>N</i>	<i>M</i>	<i>SD</i>	<i>SEM</i>
ACT Composite Score	Not Retained	65	20.22	2.79	.34
	Retained	130	20.97	3.20	.28

*Retention Rates of NOVA and Non-NOVA Students*

Therefore, an independent samples t-Test was run to compare the retention rates of NOVA students to the retention rates of their Non-Nova counterparts. Group statistics of the NOVA group and control group compared on fall-to-fall retention indicate that NOVA students were retained at a higher rate, (72%) compared to the control group (61%), as shown in Table 4.5. However, inferential statistical tests were insignificant significant ( $t = -1.67$ ,  $p = .09$ ).

Table 4.5

*Group Statistics: Fall-to-Fall Retention of Groups*

Group		<i>N</i>	<i>M</i>	<i>SD</i>	<i>SEM</i>
Fall to Fall Retention	Control	98	.61	.49	.04
	NOVA	98	.72	.44	.04

### *GPA of NOVA and Non-NOVA Students*

An Analysis of Covariance compared the group's overall college mean GPAs after controlling for ACT Composite Score. The ANCOVA determines if there are differences between the GPA of the two groups after controlling for variables that may covary with the groups and the dependent variable. Since GPA was correlated with ACT Score, and ACT Scores differed between NOVA and Non-NOVA students, ACT scores were used as a covariate. Descriptive statistics in Table 4.6 show that the NOVA group has a higher non-adjusted mean GPA (2.60) compared to the control group (2.25).

Table 4.6

#### *Descriptive Statistics of NOVA and Non-NOVA GPA*

Group	<i>N</i>	<i>M</i>	<i>SD</i>
Control	97	2.25	1.03
NOVA	98	2.60	.77
Total	195	2.42	.93

Levene's Test for Equality of Variance indicates that homogeneity of variance between the two groups cannot be assumed as shown in Table 4.7 [ $F = 9.47$ , ( $df = 1, 193$ ),  $p = .002$ ]. It is important that homogeneity of variance not be violated when conducting an ANCOVA, but due to the equal sample sizes of the groups, the violation is insignificant.

Table 4.7

*Levine's Test of Equality of Error Variances<sup>a</sup>: Overall College GPA*

<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
9.42	1	193	.002

*Note.* Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design Intercept + ACT Composite + Group

ACT composite scores and the groups account for 10% of the variance in overall college GPA [ $F = 10.62, (2, 192), p = .000, \eta^2 = .100$ ]. After controlling for ACT scores, NOVA students earned higher GPAs than the control group. ACT composite scores displayed the largest effect (Partial  $\eta^2 = .065$ ) on GPA, and explained over three times the variance explained by participation in the NOVA group (See Table 4.8).

Table 4.8

*Tests of Between-Subjects Effects: Overall College GPA*

Source	Type III SS	df	MS	F	Sig.	Partial Eta Squared
Corrected Model	16.72 <sup>a</sup>	2	8.36	10.62	.000	.100
Intercept	2.63	1	2.63	3.35	.069	.017
ACTCOM	10.57	1	10.57	13.43	.000	.065
GROUP	2.70	1	2.70	3.43	.065	.018
Error	151.15	192	.78			
Total	1315.59	195				
Corrected Total	167.87	194				

a. *R* Squared = .100 (Adjusted *R* Squared = .090)

The above significant test is a comparison of the estimated marginal or adjusted means. The estimated marginal means shown in Table 4.9 reveal that NOVA students had the highest adjusted mean overall college GPA (M=2.54) compared to the adjusted mean overall GPA of the control group (M=2.30).

Table 4.9

*Estimated Marginal Means: Overall College GPA*

Group	<i>M</i>	<i>SE</i>	95% CI	
			Lower Bound	Upper Bound
Control	2.30 <sup>a</sup>	.091	2.12	2.48
NOVA	2.54 <sup>a</sup>	2.34	2.36	2.72

a. Covariates appearing in the model are evaluated at the following values: ACT Composite Score = 20.72.

*Percentage of Credits Earned of NOVA and NON-NOVA Students*

The third indicator of postsecondary academic success compared in this study is percentage of credits earned. Estimated marginal means are presented in Table 4.10. NOVA students earned a higher percentage of credits attempted (M=83.19) than the control group (M=78.81). However, an ANCOVA with ACT Composite scores revealed that the model was not significant and no significant differences existed in percentage of credits earned between the NOVA and Control group students (F=1.25, df (1,196) p=.263.)

Table 4.10

*Estimated Marginal Means: Percentage of Credits Earned*

Group	<i>M</i>	<i>SE</i>	95% CI	
			Lower Bound	Upper Bound
Control	78.81 <sup>a</sup>	2.73	73.42	84.20
NOVA	83.19 <sup>a</sup>	2.71	77.83	88.55

b. Covariates appearing in the model are evaluated at the following values: ACT Composite Score = 20.72.

**People and Services Predicting NOVA Student Success**

The survey was administered to new, first-time freshmen who received NOVA services in the Fall of 2012. Forty-five of the 59 students who were contacted completed the survey for a response for a response rate of 76%. The five-page survey was divided into three sections. The students were asked to read the responses in the first section and rate each NOVA person or service as to the level of impact the person or service had on their fall-to-fall retention, GPA, and credits earned. Students had the choice of responding to the statement with a “1” being strongly disagree, “2” being disagree, “3” being moderately disagree, “4” being moderately agree, “5” being agree, and “6” being strongly agree. The next section asked students to self-report their Fall 2012 GPA, number of hours attempted, number of hours passed, and their plans on enrolling at ECU in Fall 2013. Students were asked in the final section of the survey to rank in order the

NOVA services that had a positive impact on their GPA, credits earned, and decision to enroll at ECU in Fall 2013. A “1” was considered the most positive impact and a “6” being the least positive impact. The students were asked to rank the NOVA peer leader, NOVA advisor, NOVA living learning community, NOVA financial aid counseling, NOVA leadership development opportunities, and NOVA career counseling.

### *Influence on Retention*

Frequencies of the first section of the survey were generated using SPSS version 19. Students self-reported their opinion of the level of impact NOVA people and services had on their decision to enroll or not at ECU in Fall 2013 in the first set of statements on the survey as shown in Tables 4.11 through 4.16. The students rated the NOVA advisor as having the most positive impact on their decision to enroll at ECU in Fall 2013, with 82.2% of respondents agreeing or strongly agreeing that the NOVA Advisor impacted their decision to return to ECU. The second highest rated service was the NOVA leadership development opportunities, which 68.9% agreed or strongly agreed influenced their decision to return to ECU. The least impact on student’s decision to return to ECU were influenced by the Living Learning Community (40.9% A or SA) and Financial Counseling (44.4%).

Table 4.11

*NOVA Students Rating Peer Leaders' Impact on Retention*

Scale	Frequency	Valid Percent
Strongly Disagree	2	4.4
Disagree	1	2.2
Moderately Disagree	3	6.7
Moderately Agree	14	31.1
Agree	13	28.9
Strongly Agree	12	26.7

Table 4.12

*NOVA Students Rating NOVA Advisors' Impact on Retention*

Scale	Frequency	Valid Percent
Strongly Disagree	1	2.2
Disagree	1	2.2
Moderately Disagree	2	4.4
Moderately Agree	4	8.9
Agree	17	37.7
Strongly Agree	20	44.4

Table 4.13

*NOVA Students Rating the NOVA Living Learning Community's Impact on Retention*

Scale	Frequency	Valid Percent
Strongly Disagree	2	9.1
Disagree	1	4.5
Moderately Disagree	3	13.6
Moderately Agree	7	31.8
Agree	4	18.2
Strongly Agree	5	22.7

Table 4.14

*NOVA Students Rating NOVA Financial Aid Counseling's Impact on Retention*

Scale	Frequency	Valid Percent
Strongly Disagree	4	8.9
Disagree	2	4.4
Moderately Disagree	3	6.7
Moderately Agree	16	35.6
Agree	10	22.2
Strongly Agree	10	22.2

Table 4.15

*NOVA Students Rating NOVA Leadership Development's Impact on Retention*

Scale	Frequency	Valid Percent
Strongly Disagree	2	4.4
Disagree	2	4.4
Moderately Disagree	2	4.4
Moderately Agree	8	17.8
Agree	14	31.1
Strongly Agree	17	37.8

Table 4.16

*NOVA Students Rating NOVA Career Counseling's Impact on Retention*

Scale	Frequency	Valid Percent
Strongly Disagree	1	2.2
Disagree	2	4.4
Moderately Disagree	5	11.1
Moderately Agree	13	28.9
Agree	12	26.7
Strongly Agree	12	26.7

### *Influence on GPA*

The second set of statements required students to self-report the level of impact NOVA services and people had on their GPA as shown in Tables 4.17 through 4.22. The NOVA advisor was rated the highest-rated again by students as having the most positive impact on their GPA (60.0% A or SA) with the NOVA leadership development ranked the second-highest at 56.7%. The NOVA peer leaders were rated third most important with a 42.2% Agree or Strongly Agree Rating.

Table 4.17

### *NOVA Students Rating Peer Leaders' Impact on GPA*

Scale	Frequency	Valid Percent
Strongly Disagree	4	8.9
Disagree	7	15.6
Moderately Disagree	3	6.7
Moderately Agree	12	26.7
Agree	10	22.2
Strongly Agree	9	20

Table 4.18

*NOVA Students Rating NOVA Advisors' Impact on GPA*

Scale	Frequency	Valid Percent
Disagree	2	4.4
Moderately Disagree	2	4.4
Moderately Agree	14	31.1
Agree	15	33.3
Strongly Agree	12	26.7

Table 4.19

*NOVA Students Rating the NOVA Living Learning Community's Impact on GPA*

Scale	Frequency	Valid Percent
Strongly Disagree	1	4.5
Disagree	1	4.5
Moderately Disagree	5	22.7
Moderately Agree	7	31.8
Agree	7	31.8
Strongly Agree	1	4.5

Table 4.20

*NOVA Students Rating NOVA Financial Aid Counseling's Impact on GPA*

Scale	Frequency	Valid Percent
Strongly Disagree	5	11.4
Disagree	6	13.6
Moderately Disagree	9	20.5
Moderately Agree	9	20.5
Agree	11	25.0
Strongly Agree	4	9.1

Table 4.21

*NOVA Students Rating NOVA Leadership Development's Impact on GPA*

Scale	Frequency	Valid Percent
Strongly Disagree	2	4.4
Disagree	1	2.2
Moderately Disagree	6	13.3
Moderately Agree	15	33.3
Agree	13	28.9
Strongly Agree	8	17.8

Table 4.22

*NOVA Students Rating NOVA Career Counseling's Impact on GPA*

Scale	Frequency	Valid Percent
Strongly Disagree	4	8.9
Disagree	3	6.7
Moderately Disagree	8	17.8
Moderately Agree	13	28.9
Agree	12	26.7
Strongly Agree	5	11.1

*Influence on Credits Earned*

The third set of statements required students to self-report the level of impact NOVA services and roles had on the percentage of credits earned as shown in Tables 4.23 through 4.28. Once again, the NOVA advisor was the person or service rated as having the most positive impact on students' credits earned (53.3% Agreed or Strongly Agreed). NOVA leadership development was rated second with 40.0% of students agreeing or strongly agreeing these activities influenced their credits earned. Somewhat surprising, NOVA participants gave fewer Agree and Strongly Agree ratings to Career Counseling (31.1%) and Financial Aid Counseling (38.7%) in terms of their influence on credits earned.

Table 4.23

*NOVA Students Rating Peer Leaders' Impact on Credits Earned*

Scale	Frequency	Valid Percent
Strongly Disagree	4	8.9
Disagree	8	17.8
Moderately Disagree	6	13.3
Moderately Agree	12	26.7
Agree	11	24.4
Strongly Agree	4	8.9

Table 4.24

*NOVA Students Rating NOVA Advisors' Impact on Credits Earned*

Scale	Frequency	Valid Percent
Strongly Disagree	1	2.2
Disagree	2	4.4
Moderately Disagree	1	2.2
Moderately Agree	17	37.8
Agree	13	28.9
Strongly Agree	11	24.4

Table 4.25

*NOVA Students Rating the NOVA Living Learning Community's Impact on Credits Earned*

Scale	Frequency	Valid Percent
Strongly Disagree	4	18.2
Disagree	2	9.1
Moderately Disagree	5	22.7
Moderately Agree	8	36.4
Agree	2	9.1
Strongly Agree	1	4.5

Table 4.26

*NOVA Students Rating NOVA Financial Aid Counseling's Impact on Credits Earned*

Scale	Frequency	Valid Percent
Strongly Disagree	5	11.4
Disagree	4	9.1
Moderately Disagree	5	11.4
Moderately Agree	13	29.5
Agree	12	27.3
Strongly Agree	5	11.4

Table 4.27

*NOVA Students Rating NOVA Leadership Development's Impact on Credits Earned*

Scale	Frequency	Valid Percent
Strongly Disagree	1	2.2
Disagree	3	6.7
Moderately Disagree	5	11.1
Moderately Agree	18	40.0
Agree	11	24.4
Strongly Agree	7	15.6

Table 4.28

*NOVA Students Rating NOVA Career Counseling's Impact on Credits Earned*

Scale	Frequency	Valid Percent
Strongly Disagree	3	6.7
Disagree	5	11.1
Moderately Disagree	6	13.3
Moderately Agree	17	37.8
Agree	10	22.2
Strongly Agree	4	8.9

Descriptive statistics are reported in descending order in Tables 4.29 through 4.31, and reveal that the NOVA advisor received the highest mean response for positively impacting retention ( $M = 5.11$ ,  $SD = 1.13$ ), GPA ( $M = 4.73$ ,  $SD = 1.05$ ), and credits earned ( $M = 4.60$ ,  $SD = 1.16$ ). NOVA leadership development received the next highest mean for positively impacting retention ( $M = 4.80$ ,  $SD = 1.35$ ), GPA ( $M = 4.33$ ,  $SD = 1.24$ ), and credits earned ( $M = 4.24$ ,  $SD = 1.19$ ). Living Learning Community was rated the least influential on all three indicators of academic success.

Table 4.29

*Descriptive Statistics of NOVA Students Rating NOVA Services and People on Retention*

	<i>N</i>	<i>M</i>	<i>SD</i>
NOVA Advisor	45	5.11	1.13
NOVA Leadership Development	45	4.80	1.35
NOVA Peer Leader	45	4.58	1.27
NOVA Career Counseling	45	4.53	1.25
NOVA Financial Aid Counseling	45	4.24	1.46
NOVA Living Learning Community	22	4.14	1.52

Table 4.30

*Descriptive Statistics of NOVA Students Rating NOVA Services and People on GPA*

	<i>N</i>	<i>M</i>	<i>SD</i>
NOVA Advisor	45	4.73	1.05
NOVA Leadership Development	45	4.33	1.24
NOVA Peer Leader	45	3.98	1.60
NOVA Career Counseling	45	3.91	1.41
NOVA Financial Aid Counseling	44	3.61	1.51
NOVA Living Learning Community	22	3.95	1.17

Table 4.31

*Descriptive Statistics of NOVA Students Rating NOVA Services and People on Credits Earned*

	<i>N</i>	<i>M</i>	<i>SD</i>
NOVA Advisor	45	4.60	1.15
NOVA Leadership Development	45	4.24	1.19
NOVA Peer Leader	45	3.67	1.47
NOVA Career Counseling	45	3.84	1.33
NOVA Financial Aid Counseling	44	3.86	1.50
NOVA Living Learning Community	22	3.23	1.41

## **Relationships between NOVA Service and People with Academic Success**

### *Bivariate Correlations*

Pearson's  $r$  correlations were computed to assess the relationship between retention and NOVA variables as shown in Tables 4.32 through 4.34. There were significant positive correlations between retention and the NOVA peer leader ( $r = .36$ ,  $n = 45$ ,  $p = .014$ ), NOVA advisor ( $r = .43$ ,  $n = 45$ ,  $p = .003$ ), NOVA leadership development ( $r = .38$ ,  $n = 45$ ,  $p = .010$ ), and NOVA career counseling ( $r = .40$ ,  $n = 45$ ,  $p = .006$ ). No significant correlations were found between GPA and NOVA services. A significant, but negative correlation was found when comparing credits earned to the NOVA living learning community ( $r = -.50$ ,  $n = 22$ ,  $p = .015$ ).

Table 4.32

*Correlation – NOVA People and Services Impact on Retention to NOVA Students’*

*Decision to Enroll at ECU Fall 2013*

		Returning to ECU Fall 2013
NOVA Peer Leader	Pearson	.63
	Correlation	
	Sig. (2-Tailed)	.422
	N	45
NOVA Advisor	Pearson	.43
	Correlation	
	Sig. (2-Tailed)	.003
	N	45
NOVA Living Learning Community	Pearson	-.11
	Correlation	
	Sig. (2-Tailed)	.637
	N	22
NOVA Financial Aid Counseling	Pearson	.18
	Correlation	
	Sig. (2-Tailed)	.224
	N	45
NOVA Leadership Development	Pearson	.38
	Correlation	
	Sig. (2-Tailed)	.010
	N	45
NOVA Career Counseling	Pearson	.400
	Correlation	
	Sig. (2-tailed)	.006
	N	45

Table 4.33

*Correlation – NOVA People and Services Impact on NOVA Students' GPAs*

		Fall 2012 GPA
NOVA Peer Leader	Pearson	.06
	Correlation	
	Sig. (2-Tailed)	.692
	N	45
NOVA Advisor	Pearson	.19
	Correlation	
	Sig. (2-Tailed)	.218
	N	45
NOVA Living Learning Community	Pearson	-.18
	Correlation	
	Sig. (2-Tailed)	.412
	N	22
NOVA Financial Aid Counseling	Pearson	-.10
	Correlation	
	Sig. (2-Tailed)	.517
	N	44
NOVA Leadership Development	Pearson	.13
	Correlation	
	Sig. (2-Tailed)	.413
	N	45
NOVA Career Counseling	Pearson	.01
	Correlation	
	Sig. (2-tailed)	.965
	N	45

Table 4.34

*Correlation – NOVA People and Services Impact on NOVA Students' Credit Hours Passed*

		Percent of Credit Hours Passed
NOVA Peer Leader	Pearson	-.12
	Correlation	
	Sig. (2-Tailed)	.422
	N	45
NOVA Advisor	Pearson	-.02
	Correlation	
	Sig. (2-Tailed)	.888
	N	45
NOVA Living Learning Community	Pearson	-.51
	Correlation	
	Sig. (2-Tailed)	.015
	N	22
NOVA Financial Aid Counseling	Pearson	.09
	Correlation	
	Sig. (2-Tailed)	.559
	N	44
NOVA Leadership Development	Pearson	-.25
	Correlation	
	Sig. (2-Tailed)	.091
	N	45
NOVA Career Counseling	Pearson	-.21
	Correlation	
	Sig. (2-tailed)	.153
	N	45

### *Simple Linear Regressions*

Simple linear regression analyses were conducted to determine if retention, GPA and credits earned could be predicted from NOVA people (peer leader, advisor, and living learning community) and NOVA services (financial aid counseling, leadership development, and career counseling). Cronbach alphas for NOVA people and services were .78 and .74 for retention, .79 and .81 for GPA, and .84 and .88 for credit hours earned, indicating that the scales had acceptable internal consistency as shown in Tables 4.35 through 4.37. It is important to note that the variables NOVA people and NOVA services may overlap. An example of this is the NOVA advisor, which is classified as NOVA people for this study, teaches the leadership development opportunities that are classified as NOVA services.

Table 4.35

### *Reliability of Variables for Retention*

Scale	Cronbach's Alpha	N of Items
People (Retention)	.78	3
Services (Retention)	.74	3

Table 4.36

### *Reliability of Variables for GPA*

Scale	Cronbach's Alpha	N of Items
People (Retention)	.79	3
Services (Retention)	.81	3

Table 4.37

*Reliability of Variables for Percentage of Credit Hours Earned*

Scale	Cronbach's Alpha	N of Items
People (Retention)	.84	3
Services (Retention)	.88	3

Three simple linear regressions were conducted on the ratings of how NOVA people and NOVA services affect NOVA participant's decision to enroll at ECU in Fall 2013, GPA, and credits earned. As shown in Table 4.38, the model was significant ( $F=4.75$ ,  $p=.014$ ). In other words, students' rankings of NOVA people and services predict retention better than chance alone. Collectively, the predictors explain 14.6% of retention. Somewhat surprisingly given the significance assigned to people in the bivariate correlations, when all three NOVA roles were combined, it is not a significant predictor of retention. On the contrary, after combining the three NOVA services into a single variable, it becomes a significant predictor of retention ( $\beta=.48$ ) (see Table 4.38).

Table 4.38

*Regression: Retention*

Variables Entered/Removed <sup>a</sup>			
Model	Variables Entered	Variables Removed	Method
1	Services Affecting Retention, People Affecting Retention <sup>b</sup>	.	Enter

a. Dependent Variable: Returning to ECU Fall 2013

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.43 <sup>a</sup>	.18	.14	.40

a. Predictors: (Constant), Services Affecting Retention, People Affecting Retention

ANOVA <sup>a</sup>						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.55	2	.77	4.75	.014 <sup>b</sup>
	Residual	6.88	42	.16		
	Total	8.44	44			

a. Dependent Variable: Returning to ECU Fall 2013

b. Predictors: (Constant), Services Affecting Retention, People Affecting Retention

Coefficients						
	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.56	.38		6.63	.000
	People Affecting Retention	-.12	.09	-.20	-1.29	.202
	Services Affecting Retention	.19	.06	.48	3.07	.004

a. Dependent Variable: Returning to ECU Fall 2013

The results of the other two linear regressions revealed that the models were insignificant. In other words, NOVA People and NOVA Services were unable to predict GPA or Credits Earned better than chance alone.

Chapter Five contains an overview of the significant findings from the multiple analyses from this study. Implications of findings are discussed in relation to suggestions of how to improve the rates of academic success among first-generation and low-income college students.

## **CHAPTER 5: DISCUSSION**

### **Overview**

This chapter presents the findings of the two research questions guiding this study. A summary of the study is provided along with a discussion of the results in the order of the academic success variables assessed: retention, GPA, and credits earned. Implications for policy and practice are addressed, and questions for future research are provided. Finally, this chapter ends with a conclusion stating the key points of the study and how this study may resolve problems in the literature.

### **Summary of the study**

The purpose of this study was to determine the level of effect the NOVA program at Eastern Kentucky University has on its participants' academic success. Academic success is defined as fall-to-fall retention, cumulative GPA, and percentage of credits earned. Eastern Kentucky University has historically served a large population of first-generation college students with 35% of the new, first-time freshmen in Fall 2012 being first-generation students.

First-generation and low-income college students have faced barriers that prevent success in college for many years. The barriers include working more hours per week, studying fewer hours, attempting a small amount of credit hours, social issues, and a lack of family support (Choy, 2001; Fike & Fike, 2008; Lohfink & Paulsen, 2005; Pascarella, Pierson, Wolniak, & Terenzini, 2004).

## Interpretation of Results

### *Retention*

NOVA students rated the NOVA advisor as having the most positive impact on their decision to enroll at ECU in Fall 2013. Specifically, 82.1% of students responded strongly agree or agree that the NOVA advisor significantly influenced their decision to return to ECU. Consistent with these responses, the NOVA advisor also received the highest mean response for impacting retention ( $M = 5.11$ ,  $SD = 1.13$ ). NOVA leadership opportunities ( $M = 4.80$ ,  $SD = 1.13$ ) ranked second highest for impacting retention, followed by the NOVA peer leader ( $M=4.58$ ,  $SD 1.27$ ). Furthermore, the NOVA advisor was the predictor most positively correlated with retention ( $r = .438$ ,  $n = 45$ ,  $p = .003$ ) followed by NOVA career counseling ( $r = .40$ ,  $n = 45$ ,  $p = .006$ ), NOVA leadership development ( $r = .38$ ,  $n = 45$ ,  $p = .010$ ), and the NOVA peer leader ( $r = .36$ ,  $n = 45$ ,  $p = .014$ ). Finally, a simple linear regression showed that NOVA services (career counseling, leadership development, and financial aid counseling) predict retention ( $\beta=.48$ ,  $p<.05$ ).

Despite the self-reported positive effects on retention that participants attributed to the NOVA advisor, career counseling, leadership development, and peer leader, no significant differences in retention were found. NOVA students planned on returning to ECU at a 72% rate, while the control planned on returning at a 61% rate ( $p =.096$ ). Although this difference is not statistically significant, it may be considered practically significant. In other words, if an additional 11% of ECU's freshman class returned the following year that would be a large number of students and generate significant FTE and resources.

While testing ACT Composite score for possible use as a covariate, it was revealed the mean ACT score does not differ significantly between retained and non-retained students in this study. This finding deserves future research given the emphasis placed on the ACT in determining college readiness.

Collectively, the results show that the students perceived the NOVA advisor to have the highest impact on their decision to enroll in the Fall 2013 semester. There are several reasons to support these results. First-generation college students often have parents who lack the understanding of the required commitment for success in college, such as tuition, the number of study hours required, and knowing how to navigate the level of bureaucracy students encounter in college (Fike & Fike, 2008). It may be that the NOVA advisor serves as a surrogate parent to the students who are unaware of the characteristics of a successful college student. Furthermore, it is important for a new college student to make a social connection once they arrive on a college campus. Dennis, Phinney, and Chuateco (2005) found that first-generation students often lack social supports that may prevent them from being successful in college. If this is the situation with NOVA students, the NOVA advisor may be one of their only and most important social supports on campus. The NOVA advisor may help NOVA students feel connected rather than feeling like outsiders at college like many first-generation college students experience (Cushman, 2007).

Several studies in the literature support the finding of NOVA students being retained at a higher rate compared to the control group. Fike and Fike (2008) found that one of the strongest predictors of fall-to-fall student retention was participation in Student Support Services. Similarly, Mahoney (1998) found that participants in a Student Support

Services program at California State University-Hayward were retained at a higher rate (72%) compared to a control group (58.6%). Students Support Services programs seem to produce higher retention rates compared to control groups of students who are eligible for services, but do not participate. If a participant in a Student Support Services program receives various services to help enhance their level of academic success compared to a student who is eligible but does not receive such services, it makes sense that a Student Support Services participant will be more likely to be retained. In this study, NOVA students reported higher retention rates (72%) compared to their Non-NOVA peers (61%), but this difference was not statistically significant (.096), a finding which may be in part due to the relatively small sample size of this study.

#### *GPA*

As was the case with retention, the NOVA advisor was rated as having the most positive impact on participants' GPAs (60.0% agree or strongly agree) followed by the NOVA leadership development (56.7%). Consistent with these percentages, descending means show that the NOVA advisor had the highest mean response for positively impacting retention ( $M = 4.73$ ,  $SD = 1.05$ ) followed by NOVA leadership development ( $M=4.33$ ,  $SD=1.24$ ) and the NOVA peer leader ( $M=3.98$ ,  $SD=1.60$ .) No significant correlations were found between GPA and NOVA services. There were no significant correlations between NOVA people or services and GPA.

Descriptive statistics revealed that the NOVA group had a higher mean GPA ( $M=2.60$ ) compared to the control group ( $M=2.25$ ). After controlling for ACT scores, an ANCOVA showed that the estimated marginal mean GPA of NOVA students ( $M=2.55$ ) was significantly higher than the adjusted mean GPA (2.30) of the control group

( $p=.000$ ). This finding is consistent with previous research. For example, Jamelske's (2009) study showed that first-generation college students participating in a first-year experience program earned higher GPAs compared to non-participating students. Findings of higher GPAs also were consistent with a study by Chaney et al. (1998) that showed Student Support Services participants had 7% higher GPAs in the first year, 5% in the second year, and 4% over three years compared to similar non-participating students. Results from Mahoney's (1998) study also support the findings of this study. His study found Student Support Services students had a higher mean GPA (2.70) compared to non-participants (2.58).

A common component of the studies above is that the control group includes students that were eligible for Student Support Services programs but did not participate. A number of studies have found that first-generation college students are more likely to have lower GPAs when compared to traditional college students (Engle & Tinto, 2008; Forbus et al. 2011; Pascarella et al., 2004; Ting, 2003). Research shows that students who participate in Student Support Services programs have higher GPAs compared to non-participating students of comparable backgrounds but not compared to all students. NOVA students possibly have higher GPAs compared to the control group due to the relationship with the NOVA advisor and the time management and study skills they learn from the NOVA leadership development.

### *Credits Earned*

Frequencies show that the NOVA advisor had the most positive impact on students' credits earned. Specifically, 53.3% of NOVA participants agreed or strongly agreed that the NOVA advisor influenced the percentage of credits they earned. The next

most influential services were NOVA leadership development and NOVA financial aid counseling. Descending means showed that the NOVA advisor again had the highest mean response for positively impacting credits earned ( $M = 4.60$ ,  $SD = 1.16$ ) followed by NOVA leadership development ( $M=4.24$ ,  $SD=1.19$ ) and the NOVA peer leader ( $M=4.24$ ,  $SD=1.19$ ). The only significant correlation with Credits earned was the NOVA Living Learning Community, which correlated negatively ( $r=-.50$ ,  $p=.015$ ). This finding is concerning due to the fact that the NOVA living learning community should help in students' quest to earn credits. It is possible that the low number of respondents ( $N = 22$ ) could have affected the results. Staff who oversee the living learning community might need additional training to help them become knowledgeable about the issues that first-generation and low-income students face. It is also possible that the NOVA living learning community may be a distraction to the students. Students may not be participating in the living learning community programs that are designed to enhance academic success and may be socializing in ways that reduce academic learning time.

Collectively, credits earned appeared to be less influenced by NOVA people and services than the other two indicators of academic success. Specifically, NOVA people and services did not predict percentage of credits earned better than chance. Additionally, no significant difference in percentage of credits earned was found between NOVA and NON-NOVA students. This is an alarming finding and warrants further study since credential are awarded based on the number of credits earned.

Despite the above findings, there is limited research showing that Student Support Services participants earn credits at a higher rate when compared to non-participants of comparable backgrounds. Chaney et al. (1998) found that Student Support participants

earned 6% more credits in their first year, 4% more in the second year, and 4% more in the third year compared to similar student who did not participate in Student Support Services. The differences between Chaney's results and the results of this study warrant further analysis. Regardless, researchers suggest that first-generation college students attempt less credit hours (Pascarella et al., 2004). Collectively, the small amount of research indicates that first-generation college students should attempt more credit hours, and those participating in a Student Support Services program may be more likely to earn the attempted credits. First-generation college students may attempt less credit hours due to working more hours and financial difficulties, however, and institutions must help remove these barriers (Forbus, Newbold, & Mehta, 2011).

### **Implications for Policy and Practice**

Results from this study show that the NOVA program at ECU is effective at positively impacting participants' level of academic success. Specifically, NOVA students earn higher GPAs than non-participating peers of comparable backgrounds. While not statistically significant, in a relative sense, NOVA students report earning an additional 5% of credits attempted and being retained have implications for policy and practice, for both the NOVA program and ECU.

The NOVA program served 75 new, first-time freshmen who were first-generation and/or low-income students. Of the 75 students, 38 were from ECU's 22-county service region, and 47 were from counties located in the Central Appalachian region. NOVA does commendable work for serving a number of students from ECU's service region and Central Appalachia. The NOVA program cannot take on more students due to a low number of staff and the uncertainty of relying on federal funding. It

is recommended that ECU budget institutional funds for NOVA, even if it is a small amount. NOVA is the program on campus with the most support services dedicated to low-income and first-generation college students. This study suggests that ECU would likely see a return on the investment with higher retention and graduation rates.

The NOVA advisor, NOVA leadership development, and NOVA peer leaders were shown to positively impact NOVA participants' level of academic success. NOVA administrators should consider professional development opportunities for NOVA advisors and peer leaders in an effort to build upon existing knowledge. The NOVA leadership development opportunities should be evaluated on a continuous basis to confirm training and information are effective in helping increase levels of NOVA participants' academic success. The NOVA program has been at ECU since 1975. It is possible that alumni of the NOVA program still live in a close proximity to ECU or possibly work on campus. It may be helpful to build upon the success of the peer leader program to assign NOVA participants a NOVA alumni mentor. NOVA administrators could locate and contact NOVA alumni to recruit them to serve as mentors to NOVA participants. If NOVA alumni are too far away from campus or have scheduling conflicts, the possibility of mentoring via email, phone or video conferencing could be explored.

The literature suggests having a connection with a faculty member on campus helps first-generation college students with college adjustment and academic success (Santos & Reigadas, 2004). NOVA administrators could explore pairing first-year NOVA students with a faculty mentor. The faculty mentor could meet with the NOVA participant in a social setting outside of a classroom such as going for a cup of coffee on campus or to lunch in the student cafeteria to help with the students' social integration.

Furthermore, faculty at ECU should be trained on the backgrounds of first-generation and low-income college students and their specific needs. Many faculty may be aware of the challenges first-generation and low-income college students face. However those who may be unaware of the student population that ECU serves would benefit from training. ECU must recognize the needs of this population to better serve them and put the supports in place to help them succeed.

### **Future Research**

This study indicated that Eastern Kentucky University's NOVA program positively impacts participants' level of academic success. However, research in related areas and different types of research are still needed. First, the researcher proposes that future studies incorporate mixed methods. The archival database and survey data collected for this study yielded a multitude of useful information for examining the effect the NOVA program has on participants' level of academic success. To accompany these quantitative data, focus groups or personal interviews of NOVA participants may reveal the lived experiences of how NOVA affects participants on a personal level. Transcripts of interviews and focus groups could be analyzed to identify emerging themes of what NOVA participants believe positively or negatively impacts their level of academic success. Qualitative measures would possibly explain why the NOVA advisor and leadership development opportunities are so important, and why the NOVA living learning community lowers participants' GPA. Qualitative research may also reveal strong areas to be built upon and areas in need of improvement based on NOVA participants' comments.

There is a lack of empirical research on Student Support Services programs. More studies must be performed to not only inform practice, but to inform resource allocations in this era of accountability and declining resources for many postsecondary institutions. In addition, several states have moved to outcome-based budgeting and it is likely that other states will also move in this direction. Retention will be one of the indicators which is rewarded by additional resources. In summary, retention is not only a moral imperative for institutions, it is increasingly critical to their bottom line.

This study examined one Student Support Services program at one regional comprehensive university in the Central Appalachian region of Kentucky. A study examining multiple Student Support Services programs at institutions of similar size in the Central Appalachian region with a larger sample size would add a broader perspective of how Student Support Services impact their participants' level of academic success. Furthermore, it is hopeful that a study examining multiple Student Support Services programs would reveal significant positive results that these programs could in turn use for annual performance reports. Studies that follow students over long periods of time including to the workforce would prove fruitful and provide cost-benefit information that would support policymakers' decisions in this context of declining resources for postsecondary institutions.

### **Conclusion**

The creators of the NOVA program and past and current staff members should be commended for the outstanding commitment they have to helping increase the academic and overall student success of NOVA participants. NOVA cannot accept all first-generation and low-income college students that enroll at ECU, however. What happens

to the other 700 new, first-time freshmen who are first-generation college students at EKV and do not receive NOVA services? Many first-generation and low income students arrive on EKV's campus college ready. What about the first-generation and low income students who are not college ready? There are very few, if any, programs like NOVA that provide services to first-generation students. Administrators must consider creating additional programs and services that help first-generation and low-income students succeed in college. Retention and graduation rates would likely rise if effective programs were in place to help this population of students. The future of Central Appalachia is in the hands of students from this region. Every effort must be made to help first-generation and low-income students succeed or cycles of poverty will continue and intensify.

One of EKV's institutional goals is to promote academic achievement, economic development, and quality of life for the region it serves (EKV, 2013). The economic and educational outlook for Central Appalachia is grim. Employment rates have not risen to the numbers to which residents of the region hoped. Due to the economic issues that the Central Appalachian region of Kentucky faces, it is crucial that as many residents obtain a bachelor's degree as possible. A better educated population can create conditions that may help the economic future of the Central Appalachian region of Kentucky. The average resident in Kentucky with a bachelor's degree earns \$43,829 per year compared to a high-school graduate in Kentucky who earns \$26,730 per year (Zaback, Carlson, & Crellin, 2012). Results from the American Community Survey administered by the United States Census Bureau show that individuals who obtain a bachelor's degree earn \$1.05 million more over a lifetime than individuals who only have a high-school diploma (Julian, 2012). If the number of residents with bachelor's degrees increases, it is likely

more companies would consider doing business in Kentucky due to a more educated and trained workforce. The number of Kentucky residents completing bachelor's degrees is on the rise. Specifically, there was a 14.7% percentage change in Kentucky residents earning a bachelor's degree over a five-year period from 2005 to 2010. The report from the State Higher Education Executive Officers Association did not specify the number of residents earning bachelor's degree by regions in Kentucky, however (Zaback et al., 2012), and it is unlikely that the Central Appalachia region had comparable increases.

Data from the United States Census Bureau's American Community Survey show Kentucky's poverty rate was 18.3% for ages 18 to 64 in 2012, a 2.6% increase since 2008. Data also indicate in 2012 that 22% of the population in Kentucky received benefits from the Supplemental Nutrition Assistance Program, previously known as Food Stamps (United States Census Bureau, 2013a). Moreover, only 20.6% of Kentuckians hold a bachelor's degree or higher compared to the United States' average rate of 28.2% (United States Census Bureau, 2013b). Many Kentuckians are suffering, even more so in Central Appalachia. It is critical that ECU and other universities across the state strive to do everything possible to help residents access higher education, provide the support to help all students be successful, and enable students to earn a bachelor's degree. Programs such as NOVA are helping some low-income, first-generation students achieve such goals, and their capacity to serve even more students should be expanded.

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**APPENDIX A:**  
**NOVA First-Year Survey**

## NOVA First-Year Survey

*Please note: You must be 18 years of age or older to participate in this study.*

**Instructions: Please circle one answer for each response.**

<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Moderately Disagree</b>	<b>Moderately Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>

### I. Retention

		<b>SD</b>	<b>D</b>	<b>MD</b>	<b>MA</b>	<b>A</b>	<b>SA</b>
1.	My peer leader has had a positive impact on my decision to enroll or not at ECU next Fall.	1	2	3	4	5	6
2.	My NOVA advisor has had a positive impact on my decision to enroll or not at ECU next Fall.	1	2	3	4	5	6
3.	The NOVA LLC is has had a positive impact on my decision to enroll or not at ECU next Fall.	1	2	3	4	5	6
4.	NOVA financial aid counseling has had positive impact on my decision to enroll or not at ECU next Fall.	1	2	3	4	5	6
5.	NOVA leadership development opportunities have had positive impact on my decision to enroll or not at ECU next Fall.	1	2	3	4	5	6
6.	NOVA career counseling services have had positive impact on my decision to enroll or not at ECU next Fall.	1	2	3	4	5	6

<b>Strongly Disagree</b> <b>1</b>	<b>Disagree</b> <b>2</b>	<b>Moderately Disagree</b> <b>3</b>	<b>Moderately Agree</b> <b>4</b>	<b>Agree</b> <b>5</b>	<b>Strongly Agree</b> <b>6</b>
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## II. GPA

	<b>SD</b>	<b>D</b>	<b>MD</b>	<b>MA</b>	<b>A</b>	<b>SA</b>
1. My peer leader has had a positive impact on my GPA last semester.	1	2	3	4	5	6
2. My NOVA advisor has had a positive impact on my GPA last semester.	1	2	3	4	5	6
3. The NOVA LLC is has had a positive impact on my GPA last semester.	1	2	3	4	5	6
4. NOVA financial aid counseling has had positive impact on my GPA last semester.	1	2	3	4	5	6
5. NOVA leadership development opportunities have had positive impact on my GPA last semester.	1	2	3	4	5	6
6. NOVA career counseling services have had positive impact on my GPA last semester.	1	2	3	4	5	6

<b>Strongly Disagree</b> <b>1</b>	<b>Disagree</b> <b>2</b>	<b>Moderately Disagree</b> <b>3</b>	<b>Moderately Agree</b> <b>4</b>	<b>Agree</b> <b>5</b>	<b>Strongly Agree</b> <b>6</b>
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**Credits Earned**

	<b>SD</b>	<b>D</b>	<b>MD</b>	<b>MA</b>	<b>A</b>	<b>SA</b>
1. My peer leader has had a positive impact on the number of credit hours I earned last semester.	1	2	3	4	5	6
2. My NOVA advisor has had a positive impact on the number of credit hours I earned last semester.	1	2	3	4	5	6
3. The NOVA LLC is has had a positive impact on the number of credit hours I earned last semester.	1	2	3	4	5	6
4. NOVA financial aid counseling has had positive impact on the number of credit hours I earned last semester.	1	2	3	4	5	6
5. NOVA leadership development opportunities have had positive impact on the number of credit hours I earned last semester.	1	2	3	4	5	6
6. NOVA career counseling services have had positive impact on the number of credit hours I earned last semester.	1	2	3	4	5	6

Please answer the following questions with the appropriate answer.

1. On a 4.0 scale, what was your G.P.A. last Fall? \_\_\_\_\_
  
2. How many classes did you take last Fall? \_\_\_\_\_
  
3. How many classes did you pass last Fall (passing is receiving a grade of A, B, C, or D)? \_\_\_\_\_
  
4. Do you plan on enrolling again at ECU next year? (Please circle one)  
No      Undecided      Yes

Rank in order the following NOVA services on their extent to which they have had a positive impact on your decision to enroll at ECU next Fall with “1” being the most positive impact and “6” being the least positive impact. Please do not repeat a number more than one time, so you should have one 1, one 2, one 3, one 4, one 5 and one 6.

- \_\_\_\_\_ Peer Leader
- \_\_\_\_\_ NOVA Advisor
- \_\_\_\_\_ NOVA Living Learning Community
- \_\_\_\_\_ NOVA Financial Aid Counseling
- \_\_\_\_\_ NOVA Leadership Development Opportunities
- \_\_\_\_\_ NOVA Career Counseling

Rank in order the following NOVA roles and services that had the most positive impact on your GPA last Fall with “1” being the most positive impact and “6” being the least positive impact. Please do not repeat a number more than one time, so you should have one 1, one 2, one 3, one 4, one 5 and one 6.

- \_\_\_\_\_ Peer Leader
- \_\_\_\_\_ NOVA Advisor
- \_\_\_\_\_ NOVA Living Learning Community
- \_\_\_\_\_ NOVA Financial Aid Counseling
- \_\_\_\_\_ NOVA Leadership Development Opportunities
- \_\_\_\_\_ NOVA Career Counseling

Rank in order the following NOVA roles and services that had the positive impact on the number of credit hours you earned last fall with “1” being the most positive impact and “6” being the least positive impact. Please do not repeat a number more than one time, so you should have one 1, one 2, one 3, one 4, one 5 and one 6.

- \_\_\_\_\_ Peer Leader
- \_\_\_\_\_ NOVA Advisor
- \_\_\_\_\_ NOVA Living Learning Community
- \_\_\_\_\_ NOVA Financial Aid Counseling
- \_\_\_\_\_ NOVA Leadership Development Opportunities
- \_\_\_\_\_ NOVA Career Counseling

**APPENDIX B:**

**Consent Form**

## **Consent to Participate in a Research Study**

### **The Effect of a Student Support Services Program on Academic Success at an Appalachian Comprehensive University**

#### **Why am I being asked to participate in this research?**

You are being invited to take part in a research study about the effectiveness of a student success program for first-generation and low-income college students. You are being invited to participate in this research study because you are currently participating in Eastern Kentucky University's NOVA program. If you take part in this study, you will be one of about 70 people to do so.

#### **Who is doing the study?**

The person in charge of this study is Ryan Wilson at Eastern Kentucky University. He is being guided in this study by Dr. Charles Hausman.

#### **What is the purpose of the study?**

By doing this study, we hope to learn if there are differences in the level of academic success among first-year students in the NOVA program from fall-to-fall of their freshmen year compared to non-NOVA, first-time freshmen students. Additionally, we hope to identify which, if any, services provided by NOVA as rated by participating students predict academic success variables (cumulative GPA, percentage of credits earned, and fall-to-fall retention).

#### **Where is the study going to take place and how long will it last?**

The research procedures will be conducted at Eastern Kentucky University's Richmond campus. You will need to come to the designated site one time during this study to complete the survey. The survey will take no longer than 20 minutes to complete. This 20 minute survey session will be the only time you will be asked to participate in this study.

#### **What will I be asked to do?**

You will be asked to complete the "Survey of First Year NOVA Participants." The survey is designed to help predict fall-to-fall retention, credits earned, and cumulative GPA of freshmen students participating in the NOVA program. The survey consists of 18 multiple-choice responses. You will also be asked to list your Fall 2012 overall GPA, the number of classes you took in Fall 2012, the number of classes you passed (classes in which you received an A, B, C, or D) in Fall 2012, and if you plan on enrolling at ECU in Fall 2013. The survey also includes three sections in which you will rank NOVA services on their extent to which they have had a positive impact on your Fall 2012 GPA, the number of credits earned in Fall 2012, and your decision to enroll at ECU in Fall 2013. The services that you will rank are NOVA Peer Leader, NOVA Advisor, NOVA Living Learning Community, NOVA Financial Aid Counseling, and NOVA Leadership Development Opportunities.

**Are there reasons why I should not take part in this study?**

You must be 18 years of age or older to participate in this study. There are no particular reasons to not participate in the study.

**What are the possible risks and discomforts?**

To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life.

**Will I benefit from taking part in this study?**

You will not get any personal benefit from taking part in this study.

**Do I have to take part in this study?**

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering.

**If I don't take part in this study, are there other choices?**

If you do not want to be in the study, there are no other choices except to not take part in the study.

**What will it cost me to participate?**

There are no costs associated with taking part in this study.

**Will I receive any payment or rewards for taking part in the study?**

You will not receive any payment or reward for taking part in this study.

**Who will see the information I give?**

Your information will be combined with information from other people taking part in the study. When we write up the study to share it with other researchers, we will write about this combined information. You will not be identified in these written materials.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. We may be required to show information that identifies you to people who need to be sure we have done the research correctly; these would be people from such organizations as Eastern Kentucky University.

**Can my taking part in the study end early?**

If you decide to take part in the study, you still have the right to decide at any time that you no longer want to participate. You will not be treated differently if you decide to stop taking part in the study.

The individuals conducting the study may need to end your participation in the study. They may do this if you are not able to follow the directions they give you, if they find



**APPENDIX C:**  
**Institutional Review Board Approval**



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Division of Sponsored Programs  
Institutional Review Board

Jones 414, Coates CPO 20  
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Richmond, Kentucky 40475-3102 (859)  
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### NOTICE OF IRB APPROVAL

**Protocol Number: 13-166**

Institutional Review Board IRB00002836, DHHS FWA00003332

Review Type:  Full  Expedited

Approval Type:  New  Extension of Time  Revision  Continuing Review

Principal Investigator: **Ryan Wilson** Faculty Advisor: **Dr. Charles Hausman**  
Project Title: **The Effectiveness of a Student Support Services Program on Academic Success at an Appalachian Comprehensive University**  
Approval Date: **04/01/2013** Expiration Date: **12/31/2014**  
Approved by: **Dr. Jim Gleason, IRB Member**

This document confirms that the Institutional Review Board (IRB) has approved the above referenced research project as outlined in the application submitted for IRB review with an immediate effective date.

**Principal Investigator Responsibilities:** It is the responsibility of the principal investigator to ensure that all investigators and staff associated with this study meet the training requirements for conducting research involving human subjects, follow the approved protocol, use only the approved forms, keep appropriate research records, and comply with applicable University policies and state and federal regulations.

**Consent Forms:** All subjects must receive a copy of the consent form as approved with the EKU IRB approval stamp. Copies of the signed consent forms must be kept on file unless a waiver has been granted by the IRB.

**Adverse Events:** Any adverse or unexpected events that occur in conjunction with this study must be reported to the IRB within ten calendar days of the occurrence.

**Research Records:** Accurate and detailed research records must be maintained for a minimum of three years following the completion of the research and are subject to audit.

**Changes to Approved Research Protocol:** If changes to the approved research protocol become necessary, a description of those changes must be submitted for IRB review and approval prior to implementation. Some changes may be approved by expedited review while others may require full IRB review. Changes include, but are not limited to, those involving study personnel, consent forms, subjects, and procedures.

**Annual IRB Continuing Review:** This approval is valid through the expiration date noted above and is subject to continuing IRB review on an annual basis for as long as the study is active. It is the responsibility of the principal investigator to submit the annual continuing review request and receive approval prior to the anniversary date of the approval. Continuing reviews may be used to continue a project for up to three years from the original approval date, after which time a new application must be filed for IRB review and approval.

**Final Report:** Within 30 days from the expiration of the project, a final report must be filed with the IRB. A copy of the research results or an abstract from a resulting publication or presentation must be attached. If copies of significant new findings are provided to the research subjects, a copy must be also be provided to the IRB with the final report.

**Other Provisions of Approval, if applicable:** None

Please contact Sponsored Programs at 859-622-3636 or send email to [tiffany.hamblin@eku.edu](mailto:tiffany.hamblin@eku.edu) or [lisa.royalty@eku.edu](mailto:lisa.royalty@eku.edu) with questions about this approval or reporting requirements.



Eastern Kentucky University is an Equal Opportunity/Affirmative Action Employer and Educational Institution

## **VITA**

Ryan Martin Wilson was born in Lexington, Kentucky on October 25, 1982. He graduated from Clay County High School in June, 2001. The following August he entered Eastern Kentucky University and received the degree of Bachelor of Arts in Public Relations in December 2005. He reentered Eastern Kentucky University in January 2006 and received a Master of Science in Exercise and Sports Science in December 2007.

He is currently employed at Eastern Kentucky University serving as Academic Advisor for the College of Education.