

# RUNNING HEAD: A Freshman Seminar Course Evaluation: Short- and Long-Term Academic Outcomes

## A Freshman Seminar Course Evaluation: Short- and Long-Term Academic Outcomes

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Doctor of Education

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by

Matthew L. Kearney

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A Freshman Seminar Course Evaluation: Short- and Long-Term Academic Outcomes

The undersigned, appointed by the dean of the Graduate School, have examined the Dissertation entitled

A Freshman Seminar Course Evaluation: Short- and Long-Term Academic Outcomes

presented by Matthew Kearney,

a candidate for the degree of Doctor of Education,

and hereby certify that, in their opinion, it is worthy of acceptance.

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Professor Bradley Curs

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Professor Rajeev Darolia

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Professor Casandra Harper

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Professor Gabrielle Malfatti

### **Dedication**

I would like to dedicate this dissertation to the people who are most important to me. Mom and Dad, you showed me the importance of academics and where it can take you in life if you apply yourself. To Monica, for showing me what it takes to get a dissertation done and being the best wife a man could have. And finally, to my children, for grounding me and reminding me of what is most important in life, and for giving me the motivation to make as much change in the world as I can so you have it even better than I did (which was pretty amazing).

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## CHAPTER ONE – INTRODUCTION TO THE DISSERTATION-IN-PRACTICE

Students entering college academically underprepared is becoming a prevailing issue in higher education. Baum, Kurose, and McPherson (2013) found there has been an increase in the need for remedial education for poorly prepared high school students over the last several years. In 2005, about a third of entering college students needed some form of remedial education (Byrd & MacDonald, 2005). Bettinger, Boatman, and Long (2013) found that in 2013, only one-third of students who graduate high school are academically prepared for college work. This means about 66% of students entering college need some kind of remedial education in college.

A term often used to describe underprepared students is academically at-risk. Students who are deemed academically at-risk have a lesser chance to graduate than their academically prepared counterparts. The institution chosen for this study was the University of Missouri (MU). In the most recent *Enrollment Summary Publication* (University of Missouri, 2015), it was found students who have an ACT score at or below a 24, which is the minimum for automatic admission at MU had a six year graduation rate of 52.3% while the rest of the student population graduated in six years at a rate of 76.0%. Laskey and Hetzel (2011) explain at-risk students may not only lack a set of basic study skills, but also may have a lack of motivation to pursue a college degree. Hetzel continues, explaining in addition to motivation issues, they may not have soft skills needed to succeed academically such as attending class and asking questions of professors.

Research has shown academically underprepared students do not perform as well as their prepared counterparts in regard to retention, GPA, course completion, and graduation rates (Cholewa & Ramaswami, 2015; Rodgers, Blunt, & Tribble, 2014; Hughes, Gibbons, & Mynatt, 2013; McCormick, & Lucas, 2013;). As Brooks, Jones, and Burt (2013) state, “The lack of academic preparation, absence of other students with similar cultural backgrounds, and financial

need, coupled with the anxieties of being away from home, all contribute to freshman students leaving school” (p.207). One intervention being used by institutions to combat the issues students at risk face, is a freshman seminar course.

Freshman seminars are a course an institution provides generally in the first year of a student's academic career. They are designed to integrate students to campus, improve study skills, and make students aware of the resources available. Research conducted on freshman seminar courses have found varying results among different institutions studied. Many have found them to be successful in helping a student get acclimated to school and gain a better understanding of how to be academically successful. (Jordan, Parker, Li, & Onwuegbuzie, 2015; Potts & Schultz, 2008; Porter & Swing, 2006; Barefoot, 2000; Lee, 1999; Pascarella & Terenzini, 1991). Other studies though, have found there to be no effect from the course on student success. Freshman seminars are taught in many different ways and can have very different outcomes, which is why it is so important for an institution to study their own course effectiveness.

The majority of research on freshman seminar courses have looked more at the short-term impact of these programs. Meaning the studies looked at retention from year one to year two and GPA and/or credit hour completion after the first year (Potts & Schultz, 2008; Noble, et al., 2007; Porter & Swing, 2006; Barefoot, 2000; Stovall, 2000; Lee, 1999; Pascarella & Terenzini, 1991; Losak & Morris, 1985); however, little literature can be found on the longer-term outcomes of students who participate in one of these courses. Longer-term in this particular study is looking at GPA and credit hour accumulation over four years, and four- and six- year graduation rates. The studies that have looked at longer term (Jamelske, 2008; Schnell & Doetkott, 2003; Hoff, et. al, 1996; Behrman, et. al, 1984) focused more on retention rates than progress toward graduation and grade point average. This is an important distinction because

while a student staying enrolled at an institution is important, if they are not progressing toward finishing their degree or do not have the GPA needed to graduate from either the school or a particular program, the student is likely to take longer to graduate which could lead to greater student debt and lost income due to a delay in them being able to pursue some full-time positions.

### **Purpose of the Study**

The purpose of this study is to find if there are short-term and long-term academic impacts for students taking a freshman seminar course (credit hour completion, cumulative GPA, retention, and graduation rates). This evaluation looked at one particular course with multiple sections taught at the University of Missouri.

The seminar course being evaluated for this study is the SSC 1150 College Success course. The goals of this course are to develop a student's ability to succeed in college academically by connecting students to resources available on campus. This course also aims to provide introspection to students to determine what study habits and learning styles are best for them.

While administrators at the institution believe this course is helping students succeed, there is no documented evaluation to show to what extent this course is influencing student success. That is why this program evaluation will be crucial in the development of future strategies for improving student retention. This study will look to answer the following research questions.

### **Research Question**

“Is participation in the SSC 1150 College Success course associated with positive short- and long-term academic outcomes?” To answer this question, the researcher compared the academic outcomes between students who did and did not take the course. The outcomes

evaluated were cumulative GPA and credit hour completion over four years of a student's career. In addition, the retention rate from year one to year two were analyzed along with the four- and six-year graduation rates.

### **Conceptual/Theoretical Frameworks**

Many theorists have looked at college student retention and what aspects play a part in why a student decides to come back to a school after their first year. Each theorist has developed his or her own model or theory which in turn is used by institutions across the country to develop programs and curriculum designed to improve student retention and graduation. A number of the theories have a heavy focus on academic integration, including the Student Integration Model (Tinto, 1975), Model of Attrition (Bean & Metzner, 1985), Theory of Student Involvement (Astin, 1996), and Academic Momentum (Adleman, 2005;2006).

While all of these theories have merit and could be used to study the impact of a freshman seminar course, this study will center on Astin's (1993) Input-Environment-Outcome (IEO) model. The IEO model was chosen because it has a significant emphasis on the assessment of programs which is what a program evaluation is designed to do. Researchers have used the IEO model to evaluate student outcomes for many academic programs designed to help students succeed academically (Thurmond, Wamback, Connors, & Frey, 2002). This study will utilize the pieces of Astin's (1993) IEO model as the researcher controls for as many inputs as possible such as the demographics of students as well as measurable backgrounds of students such as academic preparedness and socioeconomic status. This study is evaluating freshman seminar courses which can be described as the student's educational environment. This environment is created to help students transition to college and find success academically. However, this study is looking to see if the program offered at MU is seeing the same results.

The outcomes of their course will be evaluated in not just the short term measures, but also longer term outcomes over the course of four years of a college education. This form of evaluation is even more critical for a study such as this as there is no control group, and selection bias can be a major limitation when evaluating the outcomes. By factoring in the inputs and environments of students, the correlations drawn can be made as accurate as possible in the setting of the study.

### **Design of the Study**

The goal of a dissertation in practice is to take the findings from the research and apply them to make changes within an organization to improve outcomes. Therefore, for this study, a quantitative program evaluation will be done on the freshman seminar course on the MU campus. Program evaluations give organizations a way to analyze and evaluate the effectiveness of programs and policies. McDavid, Huse, and Hawthorn (2013) shared that program evaluations provide “defensible information to decision makers and stakeholders as they assess whether and how a program accomplished intended outcomes” (p.3). McDavid et al. (2013) also discussed the importance of program evaluation and its intended purpose to serve as a “flexible and situation-specific means of answering questions, testing hypotheses, and understanding program processes and outcomes” (p. 412). The evaluation in this study will be looking at both the short and long-term effects the freshman seminar course has on students. The findings from this study will aid administrators at MU in developing strategies and guiding decision making to put into place a structure to improve retention rates at the institution.

### **Setting**

While anecdotal information from administrators on campus suggests the freshman seminar course is successful in improving the academic success of students on campus, there has not been a published formal analysis of the outcomes for students taking the course. This lack of

published information is even more apparent when looking at the long-term outcomes for students. And, Adelman (2005, 2006) found academic momentum at the beginning of a student's career led to better student outcomes long-term, this has not been determined on the MU Campus. If students are not succeeding academically long-term as they may be in the short-term, the university may want to look at requiring a second course during a student's career that could help to keep them on-track and ensure they have the best possible chance to be successful.

### Participants

The individuals being studied started at MU as first time undergraduate students. As can be seen from Table 1, the makeup of students entering the University of Missouri are 53% female, 14% Underrepresented Minority, 25% FGEN, 20% are Pell eligible, the high school core courses GPA is on average 3.307, and the average ACT score is just over a 25.

**Table 1** *Descriptive Statistics of All Students*

Covariate	All Students	
	Mean	SD
Female	.54	.499
Underrepresented Minority	.14	.350
First Generation	.26	.436
Pell Eligible	.20	.401
Institutional Aid	.42	.493
High School Grade Point Average	3.309	.500
ACT	25.64	3.557
Live On-Campus	.89	.308
Greek	.37	.482
Athlete	.02	.151
Athletic Aid	.02	.123
Freshman Interest Group	.29	.455

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

Table 2 shows that when splitting out the students between those who took the SSC 1150 course and those who did not, the demographics shift slightly. Underrepresented minorities make up 24% of the students taking the course, 30% are FGEN, 25% are Pell eligible, the high school core course GPA is 3.090, and the mean ACT score is 23.78. As would be expected in a

situation where the course is not required, we see the averages for students taking the course indicate more at-risk students enrolling.

**Table 2** *Differences Between Students Who Took SSC1150 Course and Who Did Not*

Covariate	Treatment		Comparison		t	P
	Mean	SD	Mean	SD		
Female	.45	.498	.55	.497	15.181	.000***
Underrepresented Minority	.24	.426	.13	.331	-24.832	.000***
First Generation	.30	.459	.25	.432	-9.430	.000***
Pell Eligible	.25	.434	.19	.394	-11.501	.000***
Institutional Aid	.28	.451	.44	.496	24.570	.000***
High School Grade Point Average	3.092	.505	3.348	.489	40.137	.000***
ACT	23.79	3.173	25.98	3.520	48.493	.000***
Live On-Campus	.84	.366	.90	.296	15.644	.000***
Greek	.44	.496	.35	.478	-13.960	.000***
Athlete	.07	.250	.02	.123	-26.451	.000***
Athletic Aid	.05	.228	.01	.091	-29.521	.000***
Freshman Interest Group	.15	.356	.32	.465	28.749	.000***

\*p < .05. \*\*p < .01. \*\*\*p < .001

### Data Collection

Data collected for this study was information the institution already collects, and no contact was made with students regarding the study. All identifying information including student numbers and names were removed before the researcher received the data. The information covered student demographics and academic outcomes over eight cohorts from fall 2007 to fall 2014. The data included demographic information which is self-reported by the students when they apply to MU. Because this course was not required and enrollment in the course was through self-selection, a second set of data was developed where the students were also matched on as many identifying characteristics, including demographic and academic information.

The independent variable being studied was if the student enrolled in the SSC 1150 College Success course. Other covariates were First Generation (FGEN) status, Pell eligibility, ethnicity, ACT scores, high school core GPA, did they live on-campus as a freshman, and did



they participate in the Freshman Interest Group (FIG). The dependent variables in this study were the GPA's and credit hour accumulation through four years, year one to year two retention rates, and four- and six- year graduation rates. The researcher used the covariates to match using propensity score matching analysis, so that when the participation in the seminar course was analyzed, selection bias can be accounted for as much as possible.

### **Data Analysis**

The students were matched based on demographic data and academic preparedness (as determined by standardized test scores and high school GPA). Quantitative methods were used to analyze the data with IBM SPSS software. This study was quasi-experimental in nature as it did not have a random assignment of who enrolled in the freshman seminar course (Pedhazur & Schmelken, 1991). Because of the lack of random assignment, the researcher utilized propensity scores to match students. As Schneider, Carnoy, Kilpatrick, Schmidt, and Shavelson (2007) explain, propensity scores are a form of regression analysis which accounts for as many variables as possible which can play a part in producing outcomes of the study. This method allows researchers to focus more on the dependent variables being studied.

Descriptive statistics, t-tests, and regression analyses were run in this study to analyze the success of the course on student outcomes. The study evaluated cumulative GPA and credit hour accumulation over four years, as well as year one to year two retention, and finally four- and six-year graduation rates.

### **Limitations**

The reliability and validity of the demographic data was only as reliable as the students who report the information. Because no follow-up is done, ethnicity cannot be confirmed outside of self-report from students' MU admissions application. The validity of the course information is as reliable as the professors who teach the classes and give the grades. There is a

concern that grade inflation can take place, however, having a large sample size helps to offset many of those issues.

In research conducted on freshman seminar courses, one concern is that the results seen by students taking the courses in regard to academic success are not necessarily due to the class itself. Pascarella and Terenzini (1991) found that students who were motivated to perform well academically also were more likely to get in contact with faculty members as opposed to the interaction with faculty members leading to higher levels of academic success. This means student motivation plays a large part in students succeeding academically. While this does not mean freshman seminars are not beneficial, it is important for researchers who want to draw causality between freshman seminars and academic success to hold student motivation constant. However, this is difficult as motivation is usually determined by students completing surveys or questionnaires which ask about activities in which they participate or groups to which they belong (DeShields, et al., 2005). This information is then reviewed and students are given a score of their academic or social integration. One way to control as best as possible, the motivation effect of these studies is to match students in the test and control group on as many other factors as possible.

While the information collected was from just one institution, the findings could be transferred to multiple institutions across the country. Many schools work with academically underprepared students, so institutions across the country can relate to the issues at hand and any recommendations that can be made after analysis.

### **Definitions of Key Terms**

#### Dependent Variables

Year One to Year Two Retention - This was measured by looking at Students who were enrolled at MU as a first time full-time freshman in their first fall semester and whether or not

they enrolled at MU in their second fall semester. Students who transfer to another institution in the second Fall semester, regardless of reason, are not counted in this number, nor are student who transfer after their first year to MU.

**Four-year Graduation Rate** - The percentage of students who were enrolled as a first time full-time freshman in their first Fall semester at MU who graduated with the first bachelor's degree by the end of the Summer term of their fourth year.

**Six-Year Graduation Rate** - The percentage of students who were enrolled as a first time full-time freshman in their first Fall semester at MU who graduated with the first bachelor's degree by the end of the Summer term of their sixth year.

**Credit Hour Completion** - Student must earn at least a passing grade as determined by the university at the end of the course, these hours are then totaled to determine overall credit hour accumulation each year.

**Cumulative Grade Point Average (GPA)** - The overall GPA at the end of each academic year.

### Independent Variables

The primary independent variable being evaluated in this study was Enrollment in SSC 1150 College Success Course. Other independent variables play a role in the student's experience, and therefore, were factored into the analysis. These variables were gender, Pell eligibility status, ethnicity, athletic participation, high school core GPA, ACT score, and participation in Freshman Interest Groups.

### **Significance of the Study**

State and national higher education departments are using retention numbers as performance indicators in funding decisions (Volkwein & Strauss, 2004, Burke & Serban, 1998, Burke, 2000, Ewell, 1998). Therefore, more emphasis has been placed on increasing retention

numbers across the country. Many schools have begun implementing curriculum specifically designed to improve retention in the first year a student is enrolled in an institution (Engberg & Mayhew, 2007). In fact, Barefoot (2000) claims thousands of programs were designed in the late 20<sup>th</sup> century with specific goals of increasing first to second-year retention. This rise in first-year programs has led to greater interest in researching the outcomes of the programs in hopes of finding what works for schools in retaining the most students possible.

Pascarella and Terenzini (1991) state the design of the freshman seminar curriculum varies from place to place and the results vary depending on the makeup of the student body, the quality of teaching, and the curriculum put into practice. This is a limitation in the research because it is difficult to compare different school outcomes and why most of the research on this topic only uses one school or program. While many differences exist, most seminars are rooted in the retention theories of the leading scholars in the field (Tinto, 1975, 1993; Astin, 1982, 1996; Bean & Metzner, 1985, 1987).

The individual studies on freshman seminars are focused primarily on year one to year two retention, GPA, and credit hour completion. There is a gap in the existing literature on the lasting effects freshman seminar courses have on credit hour accumulation and cumulative GPA for academically underprepared students. The findings from previous research on freshman seminar courses does not give a clear answer as to whether or not freshman seminar courses are effective in improving academic success. Part of the reason for the inconsistency of the outcomes may come from the way the research is being conducted.

Most studies were correlational (Jordan, Parker, Li, & Onwuegbuzie, 2015; Jamelske, 2008; Friedman & Alexander, 2007; Lang, 2007; Noble, Flynn, Lee, & Hilton, 2007, Tobolowsky, Mamrick, & Cox, 2005; Wolf-Wendel, Tuttle, & Keller-Wolff, 1999) and did not account for the differences in students who do and do not take the seminar course. These studies

are not comparing apples to apples when looking at the outcomes, so the results may not show the true picture if just looking at the control and treatment groups just as they are.

The quasi-experimental studies (Clark & Cundiff, 2009; Potts & Schultz, 2008; Miller, Janz, & Chen, 2007) also varied in the student outcomes. However, in these studies, students were matched on different inputs and therefore the outcomes gave a more accurate picture of how effective the courses were for students. This is why this study will be conducted as a quasi-experimental study.

The present study seeks to answer the question, “Is participation in the SSC 1150 College Success course associated with positive short- and long-term academic outcomes?” To answer this question, the researcher analyzed students who did and did not take the course and evaluated the cumulative GPA and credit hour completion over four years of a student’s career. In addition, the retention rate from year one to year two were analyzed along with the four- and six-year graduation rates. This study will be a longitudinal quantitative study, researching the impact freshman seminar courses have on short- and long-term academic success. Results of the study will help determine if additional academic interventions are needed for students to improve academic success. The findings from this research will help the Vice Provost of Academic Affairs office in the long-term strategic plan for retention on the MU campus, and determining if anyone should be required to take this course, and if so, which students would see the most benefit. In addition to helping shape retention strategies at MU, this study will fill a gap in the literature of freshman seminar courses beyond studies looking at first year success and retention and thus may aid other institutions in more effectively serving their students.

### **Summary**

This quantitative study looked to find if there was a statistical difference in academic outcomes for students enrolled in a freshman seminar course at MU compared to students who

did not take the course. This study not only looked at the data from a student's first year and the year one to year two retention but also over a longer timespan to see if any academic momentum built from taking the course lasts over the duration of a student's academic career. The results from this study will be used to inform university leadership of possible options for improving the success of students who are already known to the institution as being academically at risk. MU has no published data or findings on the outcomes of the freshman seminar course (retention rates, GPA, credit hour completion, four- and six-year graduation rates). There is very little literature on the long-term effects of a freshman seminar course on students, especially targeted groups who are behind their peers academically. Having a better understanding of how effective the freshman seminar course is and if there is a need for any kind of follow up with students can help to shape retention strategies for the institution.

## CHAPTER TWO – PRACTITIONER SETTING FOR THE STUDY

One of the critical functions of a public land grant university is to provide education to its citizens. Land grant institutions were created by the Morrill Act of 1862 in response to the elitism of private universities (Bonnen, 1998). The land grant provides higher education for those with limited resources. Open access and low tuition were a general feature of the land-grant and other public universities and have provided opportunity for upward mobility in society no matter the background or wealth (Bonnen, 1998).

### History of the Organization

The University of Missouri (MU) is a public land grant institution established in 1839. Originally an open enrollment institution, the four system campus decided to move to a moderately selective institution in the 1960's (MU archives). Over the last two decades the campus has seen significant growth in the number of students enrolled. In addition to increased enrollment, MU's students are more diverse than ever before. This diversity brings many benefits to the campus as a whole but also brings with it its own set of challenges in regard to student achievement (Alon, 2007, Lee, 1999, Nunez & Cuccaro-Alamin, 1998).

The Fall 2015 enrollment at MU was over 35,000, and of this 27,812 was undergraduate enrollment. The *Enrollment Summary Publication* (University of Missouri, 2015) provides a breakdown of the student population on the MU campus. The student body is comprised of 17.2% underrepresented minority (African American, American Indian/Alaskan Native, Hispanic, and Native Hawaiian/Pacific Islander) and 21.0% of students who are Pell eligible. In addition, The Fall 2015 incoming class (6,191 students) had 23.40% of the students being FGEN. Like many institutions, as stated by Engberg and Mayhew (2007), MU has implemented specific curriculum to improve academic success for its students. This has come in the way of freshman seminar courses.

The freshman seminar course offered by MU and being evaluated by the researcher is entitled SSC 1150: College Success. The course description found on the SSC Courses website (University of Missouri Registrar, 2016) explains that the course is designed to assess a student's current learning strategies and devise a plan to help them better prepare for future coursework. Some of the goals of the course outlined by the SSC 1150 website are to build relationships with individuals across the campus, including faculty, staff, and other students, in addition to providing a smooth transition to college, and finding a balance between social and academic achievements.

The fall 2015 semester had 29 sections of this course across campus, and instructors for the course were comprised of faculty and staff from many areas of the institution. The sections are not restricted to first-time college (FTC) students; however, the population of the classes are approximately 95% FTC. Students are not required to take the course, though many of the students are recommended by their respective academic advisors to enroll. Currently there is no available published information on the academic outcomes of students taking the College Success course in regard to retention and graduation rates, cumulative grade point average (GPA), or credit hour completion for the first year and beyond. To understand the complexities of this program, the researcher has conducted an organizational analysis.

### **Organizational Analysis**

One of the assumptions made by Bolman and Deal (2008) is that organizations improve performance by assigning staff to appropriate areas of the institution based on their specialized strengths and ensuring that the staff groups have comparable amounts of work. Academic Affairs has recently done this by recently assigning an individual who has an expertise in working with at-risk student populations and who is in charge of regulating the curriculum for these courses so they are covering similar information across campus. Mintzberg (1979)



explains that as an institution increases enrollment, direct management is necessary to help coordinate the staff. When there were only a few sections available for this course, the need for direct supervision wasn't completely necessary. Now that there has been major growth in the number and types of these courses, there needs to be more of a team approach to developing the program. This team, as Northouse (2013) describes is a group of people who are interdependent upon one another who share a common goal and must work together by coordinating activities to achieve the goal. A team leadership style leader (Northouse, 2013) managing all of the courses and faculty is highly beneficial in helping the team reach their goal, which in this case is improving the academic success of students on the MU campus.

A second assumption made by Bolman and Deal (2008) within the Structural Frame is that organizations have clearly established goals and objectives that they have to meet. While this aspect is being improved upon across campus, there are still discrepancies in the information and quality of curriculum. SSC1150 courses which are taught through an academic department are more focused on curriculum pertaining to the major or careers down the road. For some on the campus, this is seen as an advantage and leads some administrators to think students in those courses are more successful. Because so many students who are academically underprepared come into the institution through Arts and Science, which is the most general of academic departments, the students who likely need the advantages in better curriculum are taking the SSC1150 courses open to everyone. Jenkins and Cho (2012) found students who enter college as an undecided major are the most likely to fail earning a postsecondary credential. If students are coming in academically underprepared and without a direction for an intended academic program, they are facing significant hurdles to reach academic success. While the coursework in a general SSC1150 course can still be helpful in leading to better academic outcomes, students could still not get the full benefits the course can offer.

### **Leadership Analysis**

There are a number of ways leaders on a college campus can determine if a program is successful. One which appear to be prevalent among campus administrators are program evaluations. Program evaluations give organizations a way to analyze and evaluate the effectiveness of programs and policies. McDavid, Huse, and Hawthorn, (2013) shared that program evaluations provide “defensible information to decision makers and stakeholders as they assess whether and how a program accomplished its intended outcomes” (p.3). McDavid et al. (2013) also discussed the importance of program evaluation and its intended purpose to serve as a “flexible and situation-specific means of answering questions, testing hypotheses, and understanding program processes and outcomes” (p. 412).

The individuals in charge of the SSC 1150 curriculum should coordinate a yearly, formative evaluation and needs assessment as part of the Simplified Performance Management Cycle (McDavid et al., 2013). McDavid shared that the formative evaluation is used to improve the “efficiency and/or the effectiveness of the program” (p. 412). It will allow the program to revisit key aspects of the program to ensure students are provided resources to succeed academically and socially. It will also allow the program coordinator to see the gaps in service and how to enhance the student experience.

### **Implications for Research in the Practitioner Setting**

Within the practitioner setting, this study can lead to better alignment of retention strategies for the institution and to ensure the team is meeting the established goals of the program (Northouse, 2013). If it is found that students who participate in the course perform better long-term compared to those who don't participate can aid in the Vice Provost securing funding to expand the program and allow more students to have access to the course. However, if the data suggests students are not better off taking the course, the program can be evaluated in further studies looking at more qualitative information to see where the courses could be

improved with additional studies looking at the changes made and the effect they had on student outcomes. This is in line with the goals of program evaluations as explained by McDavid, et al, (2013) as it can help to ensure the program is running as efficiently and effective as possible.

The studies that have looked longer term (Jamelske, 2008; Schnell & Doetkott, 2003; Hoff, et. al, 1996; Behrman, et. al, 1984) focused more on graduation rates than progress toward graduation and grade point average. This is an important distinction because while a student staying enrolled at an institution is important, if they are not progressing toward finishing their degree or do not have the GPA needed to graduate from either the school or a particular program, the student is likely to take longer to graduate which could lead to greater student debt and lost income due to a delay in them being able to pursue some full-time positions.

If students taking the course complete a higher number of credit hours each semester, this study can help to change the way students are advised and possibly lead to a reduction in years of attendance. This would lead to an increase in four year graduation rates which means students are entering the job market sooner (Attewell, Heil, & Reisel, 2012).

Within higher education as a whole, this study provides insight into how well a freshman seminar program works for a large institution and can help other institutions develop their own retention strategies. Seeing that this program can help in the short-term can aid institutions on their own development of a program while making adjustments to try and do more for the long-term outcomes.

### **Summary**

This study is looking at the relationship of students taking a freshman seminar course and their long-term academic success. The researcher has analyzed the history of the organization for which this program is housed. Additional work has been done to look at the leadership who are tasked with overseeing the program. Implications for this study were delved into and in

order to understand how to best proceed with the study, a thorough review of the research was conducted on first-year seminar programs, retention theories, and the theoretical framework for which this study is derived.

### **CHAPTER THREE – SCHOLARLY REVIEW FOR THE STUDY**

Research has been done on the importance of credit accumulation, course completion, and keeping GPAs high in regard to the relationship of persistence to degree and graduation rates. These studies have found correlations between students consistently completing and earning a high quantity of credit hours and maintaining a high quality GPA with higher graduation and persistence rates (Adelman, 1999, 2005; Altonji, 1996; Cabrera et al., 2005; DesJardins, 2002; McCormick & Carroll, 1999; Summers, 2000). Higher education leaders have begun to focus on not only recruiting new students but on retention as well, largely because state and national education departments are using retention numbers as performance indicators for funding decisions (Volkwein & Strauss, 2004, Burke & Serban, 1998, Burke, 2000, Ewell, 1998).

#### **Review of the Extant Scholarship**

Many schools have begun implementing curriculum specifically designed to improve retention in the first year a student is enrolled in college (Engberg & Mayhew, 2007). Barefoot (2000) states thousands of programs were designed in the late 20<sup>th</sup> century with specific goals of increasing year one to year two retention. This rise has led to greater interest in researching the outcomes of the programs in hopes of finding what works for schools in retaining the most students. Freshman seminar courses are the most ubiquitous of first-year programs.

Padgett, Keup, and Pascarella (2013) explained the design of the freshman seminar curriculum varies among institutions and the results vary depending on the makeup of the student body, the quality of teaching, and the curriculum put into practice. This is a limitation in the research because it is difficult to compare different school outcomes; thus much of the research on this topic only uses one school or program. While many differences exist, most seminars are

rooted in the retention theories of the leading scholars in the field (Tinto, 1975, 1993; Astin, 1982, 1996; Bean & Metzner, 1985, 1987).

For these reasons, the present study seeks to answer the question, “What are the short and long-term impacts of a freshman seminar course on academic success (credit hour completion and cumulative GPA) for academically underprepared college students?” This study will be a longitudinal quantitative design, examining the impact freshman seminar courses have on long-term academic success. Results of the study will help determine if additional academic interventions such as further coursework or targeted advising may be needed to improve academic outcomes for academically underprepared students.

### **Freshman Seminar Course Retention and Graduation Outcomes**

Research on freshman seminars are focused primarily on year one to year two retention, GPA, and credit hour completion. There is a gap in the existing literature looking at the lasting effects freshman seminar courses have on credit hour completion and cumulative GPA for academically underprepared students. Many studies examine retention from year one to year two or GPA after year one, and some look at graduation rates (Pascarella & Terenzini, 1991; Lee, 1999; Barefoot, 2000; Porter & Swing, 2006; Jordan, Parker, Li, & Onwuegbuzie, 2015); the outcomes are mixed within these studies. The majority of them would indicate the course has a positive effect on the academic outcomes for students. However, there are some studies which show either no difference or that the course has a negative effect on academic outcomes. Studies on the length of impact the freshman seminars have over the course of a student’s higher education academic career in regard to their credit hour completion and GPA have been limited.

### **Why Students Enroll In A Freshman Seminar Course**

There are some institutions across the country who require students to enroll in a freshman seminar course, while others do not have such a requirement. For the institutions who

do not require enrollment, the reasons for a student to enroll vary. Clark (2005) conducted a qualitative study to find how freshman navigate their first year at an institution and how they overcome challenges. What Clark (2005) found was that students who select certain academic interventions do so because they believe they have a weakness in a skill which needs development and programs such as a seminar could aid in that development.

Using Tinto's (1975, 1993) theories of student departure, students who choose to enroll in a freshman seminar course designed to help them academically may do so because they are heavily influenced by their institutional or goal commitments. These individuals are motivated either intrinsically or extrinsically to graduate. This motivation plays a role in the ability of a student to succeed and must be factored when analyzing data. While enrollment in a seminar course is not always required, Clark and Cundiff (2011) stated students could choose to enroll in the course based on recommendations from academic advisors. Clark and Cundiff (2011) explain recommendations are often made because students have below average test scores or GPA, or because they are a FGEN college student. .

Barefoot (2000) explains first-year success courses are developed to help integrate students into a college community. This is done in multiple ways with these courses. The first-year success course curriculum focuses on providing content related to the first-year experience, basic study skills, and resources provided by the institution to give support to students whether it be academically, socially, or personally.

As it is a critical transition period in their lives, it is important for students to have the experiences to help support them socially and academically during their freshman year. Pascarella and Terenzini (1991) explain how students' freshman year is the time at which they begin to move away from the innate culture they developed while growing up and begin to

entrench themselves in the culture of university. This is often very different from what students are accustomed, but it is crucial to ensuring they find success at the institution.

Study skills are often a part of the freshman seminar courses and studies have shown outcomes of the freshman seminar courses are not consistent. Some show an improvement in student outcomes (Jordan, Parker, Li, & Onwuegbuzie, 2015; Friedman & Alexander, 2007; Noble, Flynn, Lee, & Hilton, 2007, Tobolowsky, Mamrick, & Cox, 2005; Behrman, Dark & Paul, 1984; Robyak & Downey, 1979; Tarpey & Harris, 1979) while others show there is no difference between those who do and do not take the course (Jamelske, 2008; Potts & Schultz, 2008; Lang, 2007; Wolf-Wendel, Tuttle, & Keller-Wolff, 1999).

Part of the reason for the inconsistency in the outcomes may come from the way the research is being conducted (Padgett, Keup, & Pascarella, 2013). Some studies simply compare students in a correlational study format where the outcomes from students who do and do not take the course are analyzed. Other studies use a quasi-experimental design where students in the treatment and control groups are matched based on their characteristics and then the outcomes are analyzed. Studies are also inconsistent as to what they are analyzing. Most look at the short-term outcomes, while a smaller number look at the long-term outcomes of graduation rates.

### **Short-Term Effects of Freshman Seminar Courses**

**GPA.** The research conducted on year one grade point averages and credit hour completion have differing outcomes. Some found there was no significant difference or that students who enrolled in the freshman seminar course performed worse (Jamelske, 2008; Lang, 2007; Wolf-Wendel, Tuttle, & Keller-Wolff, 1999) while others found there was a statistical difference and that students performed better after taking the seminar course (Jordan, Parker, Li,



& Onwuegbuzie, 2015; Friedman & Alexander, 2007; Noble, Flynn, Lee, & Hilton, 2007, Tobolowsky, Mamrick, & Cox, 2005).

These studies were correlational and only compared students based on whether they took the freshman seminar course. This can be an issue because students who enroll in these often do so because of their own motivations to succeed. This motivation can be a major factor in student success, so to truly understand the impact these courses have on students, there needs to be some way to balance out the selection bias (Clark & Cundiff, 2009). When students were matched on multiple pieces of information (Clark & Cundiff 2009; Potts & Schultz, 2008; Miller, Janz, & Chen, 2007) these researchers found differences in the outcomes.

When all students were looked at, it appeared there was a negative impact of the course on student enrollment, but when students were matched, it was found students who took the course had higher GPA's and credit hour completion than those who did not enroll. This process of matching students gives a more accurate depiction of the role the course plays on a student's chances of success.

**Year one to year two retention.** Many studies analyzing freshman seminar courses were correlation in their design so they did not account for different factors that may lead to higher graduation rates. These correlational studies found students who enrolled in a freshman seminar course retained at a higher rate (Choo & Karp, 2012; Burgette & Magun-Jackson, 2009; Porter & Swing, 2006) and this could have a lot to do with the selection bias that is prevalent in quasi-experimental studies.

Other studies did match students either by academic preparedness or demographics (Cambridge-Williams, Winsler, Kitsantas, & Bernard, 2013; Clark & Cundiff, 2009; Potts & Schultz, 2008; Miller, Janz, & Chen, 2007) and they also found higher rates of retention from year one to year two. However, the difference in retention rates was smaller when students were

matched. There were some studies who found no difference in retention rates for students who took the freshman seminar course (Jordan, Parker, Li, & Onwuegbuzie, 2015; Wolf-Wendel et al., 1999).

### **Long-Term Effects of Freshman Seminar Courses**

There are few published studies on the long-term academic impacts of freshman seminar courses. The results of the studies vary widely in their outcomes. Older studies on this topic showed no significant difference in long-term academic outcomes (Bednar & Weinberg, 1970; Entwistle, 1960). More recent studies found there to be positive impacts on long-term academic outcomes.

**Year two to year three and beyond retention rates.** Behrman et. al. (1984) saw higher rates of retention for students who enrolled in a study-skills course compared to a matched group of students who did not enroll in the course. One of the only studies to both use long-term time frames for academic success measures and matching of students was conducted by Schnell and Doetkott (2003). The researchers looked at retention rates over four years and a significant difference in retention rates for those who participated in a freshman seminar course compared to matched students who did not take the course. In the first year, the retention rate for those taking the course was almost 5% higher. For the second year, the retention rate was nearly 12% higher. In the third year, the researchers saw a 9% higher rate for course takers, and the final year saw over a 7% difference, with course takers retaining at a higher rate (Schnell & Doetkott, 2003).

Cambridge-Williams et. Al (2013) saw similar results in their study. The researchers found after five years, 75% of students who took a freshman seminar course were either still enrolled in school or had graduated. Only 60% of non-course takers were either still enrolled or graduated.

**Graduation rates.** Predominately, the findings have shown the graduation rates for students who took the freshman seminar course were found to have been higher than for those who did not take the course (Cambridge-Williams, et al., 2013; Lang, 2007; Noble, Flynn, Lee, & Hilton, 2007). However, these studies did not match students on anything whereas Potts and Schultz (2008) matched on demographic information and found that there was not a difference in the graduation rates for students. Although they didn't match students, Jordan, et al., (2015) also found there was not a difference in the graduation rate of students who took the seminar course. The limited number of studies looking long-term would indicate additional studies are needed.

### **Theoretical Framework**

Many theorists have looked at college student retention and what aspects influence why students decide to come back to a school after their first year. Each theorist has developed their own model or theory, which in turn, is used by institutions across the country to develop programs and curriculum designed to improve student retention and graduation. A number of the theories involve students getting socially involved while enrolled at an institution. This study will focus on Astin's I-E-O Model of retention. The theory was developed by Astin after not only updating his original theory on student retention, but also uses aspects of other retention theories including the Student Integration Model (Tinto, 1975) and Model of Attrition (Bean & Metzner, 1985).

### **Inputs-Environment-Outcomes**

This study is most closely aligned with Astin's (1993) Inputs-Environment-Outcomes (IEO) model. The IEO model has a significant emphasis on the assessment of programs which is what a program evaluation is designed to do. Researchers have used the IEO model to evaluate student outcomes for many academic programs designed to help students succeed academically (Thurmond, Wamback, Connors, & Frey, 2002).

Astin (1993) understood there was a significant interaction between a students' inputs and their environment to get to the outcomes. This study analyzed which inputs the students had gone into making the decision to enroll in the SSC 1150 course. Inputs were then used to match students for the sake of reducing selection bias. The study then analyzed how effective the student environment, in this case the SSC 1150 course, was for outcomes. In this study, the outcomes were credit hour completion, GPA, retention, and graduation rates.

Attributes such as academic history, major declaration, and financial need can be indicators as to how a student will perform academically at an institution. These are often referred to as inputs in Astin's (1993) model. Research has shown academically underprepared students do not perform as well academically as their academically prepared counterparts in regard to retention, GPA, course completion, and graduation rates (Cholewa & Ramaswami, 2015; Rodgers, Blunt, & Tribble, 2014; Hughes, Gibbons, & Mynatt, 2013; McCormick, & Lucas, 2013).

Academic ability is certainly the driving force behind student success, but there are others which play a major role on a students' decision to retain, and those are centered more on ethnicity and socioeconomic status. As Brooks, Jones, and Burt (2013) state, "The lack of academic preparation, absence of other students with similar cultural backgrounds, and financial need, coupled with the anxieties of being away from home, all contribute to freshman students leaving school" (p.207).

The next step the freshman seminar course takes in improving student success is within the environment portion of the Astin (1993) model by integrating students into the campus. This integration also develops the students' institutional commitment, which Tinto (1993) points out, is essential to a student retaining. The environment for this study is the freshman seminar course. The course creates genuine interactions between students, faculty, and staff through assignments

where students visit different resources on-campus. Research conducted on freshman seminar courses have found them to overall be successful in helping a student get acclimated to school and gain a better understanding of how to be academically successful (Jordan, Parker, Li, & Onwuegbuzie, 2015; Potts & Schultz, 2008; Porter & Swing, 2006; Barefoot, 2000; Lee, 1999; Pascarella & Terenzini, 1991).

The impact of the freshman seminar, or outcomes in Astin's I-E-O model is seen in the retention and graduation rates, course completion rates and cumulative GPA of students. Astin's I-E-O model theorizes that student inputs and the quality of the environments in college will lead a student to their decision in whether they persist to the following year or not, or lead students to either earning higher credit hours or GPA or not. The outcomes for this study will look at both short- and long-term measures which is different from most of the literature which has been published. The freshman seminar course fits the mold of a successful retention initiative, but it can only be successful if the institutions look at the student outcomes and try to find who is benefitting and what could be done to improve the program.

### **Student Integration Model**

Tinto (1975) was one of the first to develop a theoretical model of retention. The model developed by Tinto says students enter college with backgrounds characteristics (e.g., academic ability, economic status, and ethnicity) and initial commitments which will influence how integrated they become in the institution. Specifically, Tinto (1975) looked at two main things influencing student retention: academic integration and social integration (Figure 1).

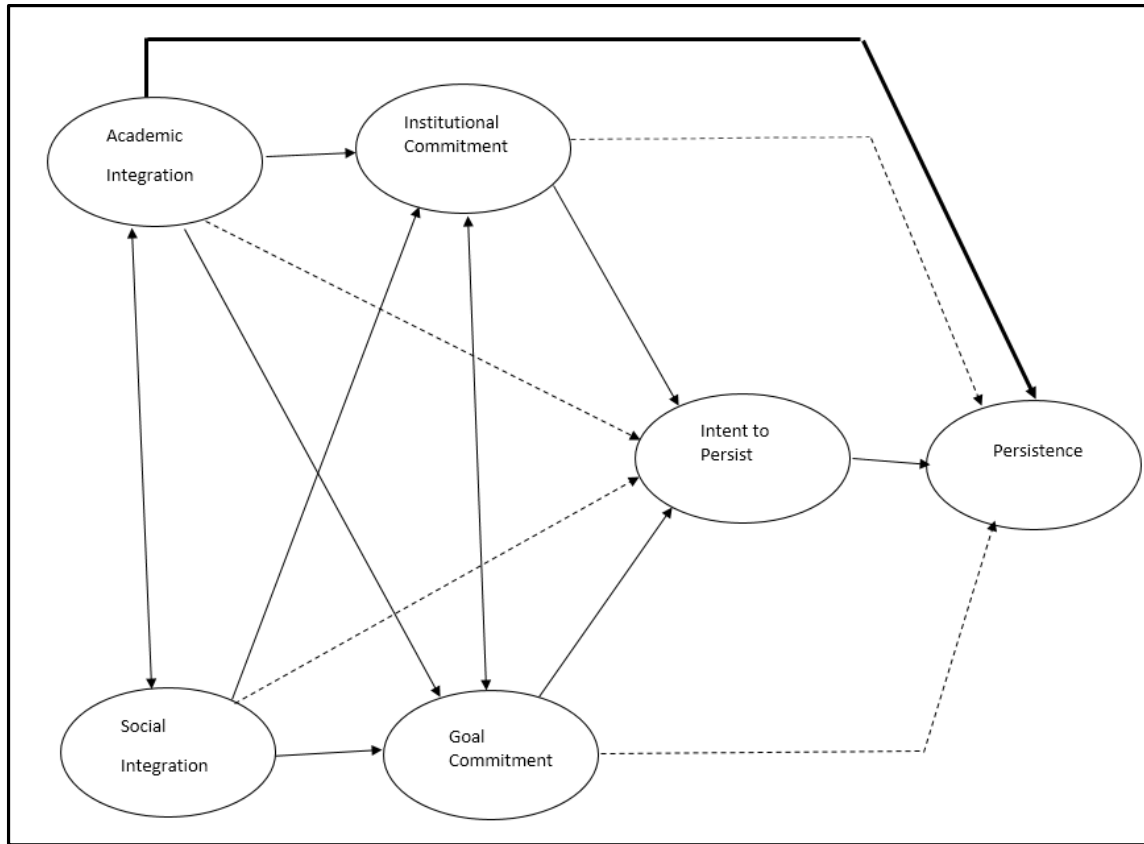


Figure 1. This figure illustrates Tinto's Student Integration Model. Adapted from Cabrera, et. al. (1992). The convergence between two theories of college persistence. *The Journal of Higher Education*, Vol. 63. No. 2 (Mar. – Apr., 1992) pp.143-164.

Tinto believed the more connected a student felt to the academic and social aspects of a college campus, the more likely the student was to return the next year. This foundational theory has been a catalyst for other studies to examine college student retention and ways in which schools can increase their retention rates (e.g., Astin, 1982; Pascarella & Chapman, 1983; Pascarella & Terenzini, 1979, 1983).

Astin (1982) built on the theory developed by Tinto and examined the institution's role in student retention. The background characteristics students had when entering college were controlled for in the study by Astin, and it was found that institutions do play a role in the rate at which students retain. Some of the areas in which the institutions contributed were faculty-

student ratio, admissions type (i.e. open-enrollment, moderately selective, highly selective), and quality of faculty. Other areas of the college environment which were found to impact retention were outside of the classroom. Astin found that living on campus and having grants or scholarships also positively influenced retention.

### **Bean and Metzner's Model of Attrition**

Bean and Metzner (1985) developed their own theory using the information from Tinto (1975) and Astin (1982), but their focus was more heavily weighted on academic integration rather than social integration. Part of the reason for this difference is that their model was developed for non-traditional students (Bailey, 2005). These individuals are much less likely to get involved in the social aspects of a college campus as they are often working full- or part-time and will also often have families. Therefore, the appeal of joining student organizations or attending school activities is less and thus the extracurriculars become a low priority. This is illustrated (Figure 2) by the conceptual model developed by Bean and Metzner (1987).

The first factor is that students who perform poorly academically in high school (low high school GPA) are more likely to dropout. Secondly, an intent to leave is affected by both academic and psychological factors. The third variable is that a student's background influences the likelihood he or she will withdraw. Finally, the fourth variable is the environmental influences which play a part on a student retaining at an institution.

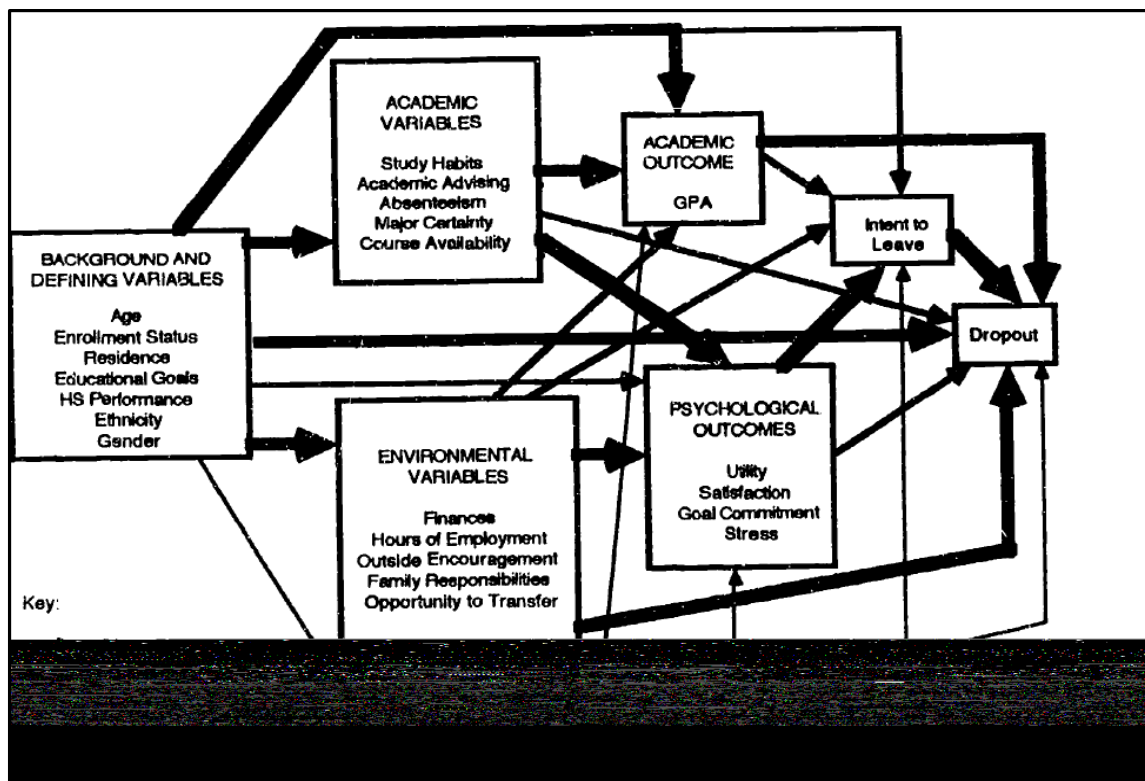


Figure 2. Figure Illustrates Bean and Metzner's Model of Attrition Conceptual Model. From Bean, J. P., & Metzner, B.S. (1987). "The estimation of a conceptual model of nontraditional undergraduate student attrition". *Review of Educational Research Journal*, 22. 35-64.

This model puts more pressure on the institutions to provide appropriate academic support to the students as there is less to keep them engaged outside of the classroom. Primarily, the areas institutions can control are academic advising, academic support, and course availability (Bailey, 2005). Thus, these are areas institutions can target for decreasing attrition.

### Summary

Studies on freshman seminar courses have had mixed results. Some of this can be attributed to the type of research being conducted. Many studies do a correlational model where they simply compare the outcomes between all individuals in the treatment and control group. Others will match students on their characteristics so that the groups being compared are more even in their makeup. The findings from previous research on freshman seminar courses does



not give a clear answer as to if freshman seminar courses are effective in improving academic success. However, there is a consistency among studies analyzing the year one to year two retention rates. These studies found that students who enroll in the seminar course retain from year one to year two at a statistically significant higher rate. Part of the reason for the inconsistency in many of the outcomes may come from the way the research is being conducted, but also because of the varying types of freshman seminars and the rules behind who enrolls in them (Padgett, Keup, & Pascarella, 2013).

## **CHAPTER FOUR – CONTRIBUTION TO PRACTICE**

### **Plan for Dissemination of Practitioner Contribution**

The results of this study and any recommendations made thereafter will be shared with multiple areas of the MU Campus. I plan to submit to the Vice Provost of Academic Affairs, and members of his staff, a program evaluation report along with a formal presentation providing time for questions and answers. These individuals were chosen because they are in charge of managing the SSC courses and ensuring the faculty who teach the course understand what is to be taught during the semester. Any changes which are made to the program go through this department, so they are the most important audience to pass along information. This information will also be shared through a presentation during the Enrollment Management Cluster meeting. This group was chosen because while they do not directly oversee the SSC course management, they do play a large role in student success on-campus. In many cases, the individuals in these offices have the first contact with a student, and the more they know about the resources available on-campus, the better they can advise students on what options they have to succeed. While certainly there are others who would benefit from this information and will likely be brought in should any final decisions need to be made, these groups will know who to bring in and how to best move forward once decisions are made.

### **Type of Documents**

The documents I will use when presenting information to the practitioners are an executive summary handout and a PowerPoint presentation. Both of these documents are more succinct than the dissertation or journal article, but they have the primary pieces needed to understand the study, the outcomes, and what I've suggested for moving forward. These documents were selected as they are the most common form of presentation styles practitioners see. They will be familiar with the layout and content which will help to not take away from the

information being provided. When presenting to practitioners, I believe it is important to take out any unnecessary distractions or content that is either not relevant or detracts from the point I am trying to get across. If I were to use another method individuals were not familiar with, some of what I say could get lost as they try to understand more about how I am presenting rather than the information I am providing.

### **Purpose of Practitioner Document**

The purpose of this document is to provide the information derived from this study into something that is easily and quickly comprehensible. Those who receive the practitioner piece should be able to take a quick review of the executive summary and PowerPoint presentation to get the outcomes and what steps are suggested for moving forward. The practitioner document is designed to be less academic than a formal paper. This is because it is intended to reach a large audience, some of which are not familiar with formal research studies, data analysis processes, or even how to read statistical output figures.

If I were to simply hand over the dissertation or the journal article, it would take significant time for the audience to read through the information, understand the outcomes, and make decisions. Because often times, individuals are not always present at every meeting, key individuals who wouldn't be present would need to be able to have this document sent to them and be able to understand the outcomes and have the majority of their questions answered just by reading through these documents.

The practitioner piece is designed to be more straightforward than the more detailed academic writing done in articles and dissertations. This is because practitioners have a number of things they are working on at one time and are not able to devote large chunks of time to read through several pages of literature reviews, history of the organization, etc. They should be able to open this up and know what the project is and the outcomes from it within a minute or two.

### **Outline of Proposed Contents**

The content of the practitioner document will start with an introduction of the study and the purpose for conducting the research. This will help those who are not familiar with the course understand who and what it was designed for. Not everyone in these groups I plan to present to understand what a freshman seminar is and certainly not everything about the SSC 1150 course. Once the basics of a freshman seminar course are covered, I will explain the research question for the study. This will help the audience understand what this specific study was looking to achieve and what outcomes are being evaluated. The study design, data collection, and data analysis will be covered next so that it can be made clear why propensity score matching was done and how it was done. This gives the audience the opportunity to understand what selection bias is and how it can affect the outcomes so greatly when they are not taken into consideration. Next, the findings will be laid out in a clear and concise manner with only the matched data set results being shown as it cuts down on confusion for the audience and has also already been addressed as to why it is so important to analyze the matched data set rather than just using the correlational method. Finally, conclusions, limitations, and recommended future studies will be addressed. This is so should any of the practitioners want to look more closely into the course, they have some general direction on where and what to look for which are not addressed in my study.

### Executive Summary Handout

#### Research Question

- Is participation in the SSC 1150 College Success course associated with positive short- and long-term academic outcomes?
  - Outcomes Analyzed
    - Short-Term
      - Year 1 Cumulative GPA
      - Year 1 Credit Hour Completion
      - Year 1 to Year 2 Retention Rate
    - Long-Term
      - Years 2-4 Cumulative GPA
      - Years 2-4 Credit Hour Completion
      - 4-Year Graduation Rate
      - 6-Year Graduation Rate

#### Freshman Seminar Course

- Designed to:
  - Integrate students to campus
  - Improve study skills
  - Make students aware of the resources available
- The course studied for this program evaluation is SSC 1150: College Success
  - 29 sections taught in Fall 2016
  - Approximately 95% of students are First Time College (FTC) students
  - Students are not required to take the course and it is open to anyone (some students may be encouraged by advisors to take the course)

#### Design of the Study

- Quantitative Program Evaluation
- Evaluation took place at the University of Missouri
- Participants were FTC undergraduates entering Fall 2007-Fall 2014

#### Propensity Score Matching

- Matching students can help to reduce selection bias and reduce the variance in makeup of treatment and control groups
- Propensity Score Matching was done using student inputs and environments

#### Data Collection

Input Data	Environment Data	Outcome Data
<ul style="list-style-type: none"> <li>• Race/Ethnicity</li> <li>• Sex</li> <li>• FGEN Status</li> <li>• Pell Eligibility Status</li> <li>• High School Core GPA</li> <li>• ACT/SAT Score On- or Off-Campus Housing First Year</li> <li>• Fraternity/Sorority</li> <li>• Athlete</li> <li>• Freshman Interest Group</li> </ul>	<ul style="list-style-type: none"> <li>• SSC 1150 Course Taken</li> </ul>	<ul style="list-style-type: none"> <li>• GPA (Over 4 years)</li> <li>• Course Completion Rates (Over 4 years)</li> <li>• Retention Rates (Year 1 to Year 2)</li> <li>• Graduation Rates (4- and 6-year)</li> </ul>

**Data Analysis**

- Descriptive statistics, t-tests, and regression analyses were done

**Findings**

- Takers
  - Higher Cumulative GPA (Year 1)
  - Higher Credit Hour Completion (Year 1)
  - Lower Cumulative GPA (Year 2-4)
  - Lower Credit Hour Completion (Years 1-4)
  - Higher Year 1 to Year 2 retention Rate
  - Lower 4-Year Graduation Rate
  - Higher 6-Year Graduation Rate

**Does The Course Work?**

- In the Short-term, yes, this course appears to help students perform better than those who did not take the course.
- This course seems to connect students to the institution in a positive way as can be seen by the Retention and 6-Year Graduation Rate
- Long-Term academic impacts as far as GPA and Credit Hour Completion do not seem to come from this course
- I would recommend having a follow-up course in a student's second year to continue the momentum of the SSC 1150 Course (Possibly SSC 2100)

**Limitations**

- Reliability and validity of the demographic data is only as reliable as the students who report the information
- Validity of the course information is as reliable as the professors who teach the classes and give the grades
- No way to adjust for individual student motivation

**Future Studies**

- Mixed methods study where not only their demographics and grades/test scores can be evaluated and factored, but also interviews or questionnaires to be able to a student's motivation, and experiences
- Analyze outcomes of students at different academic ability levels
- Analyze outcomes of students based on their academic programs
- Analyze outcomes of students based on the department who teaches the SSC 1150 course

**PowerPoint Presentation**

# A Freshman Seminar Course Evaluation: Short- and Long- Term Academic Outcomes

Matthew L. Kearney

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## Freshmen Seminar Course Goals

- Designed to:
  - Create a positive new student experience
  - Integrate students to campus
  - Improve study skills
  - Connect students with resources on campus

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## MU Freshman Seminar Course

- Course Studied for This Program Evaluation is SSC 1150: College Success
  - Curriculum focuses on
    - Determining a student's strengths and weaknesses in their academics
    - Developing a plan for a student to succeed academically
    - Navigating College Life
    - Connecting students to available resources on campus.
- Other SSC Courses Offered by MU
  - SSC 1020 – Adjusting to college life (focus more on balancing academics & personal life)
  - SSC 1155 – Mindfulness & Academic Recovery (For returning students who have struggled academically)
  - SSC 2100 – Career Exploration (Helps students determine a path for their future career)

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## SSC 1150: College Success

- 29 sections taught in Fall 2016
- Approximately 95% of students are First Time College (FTC) students
- Students are not required to take the course and it is open to anyone (some students may be encouraged by advisors to take the course)

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## Previous Research

- Most studies have focused on first year results
- Longer-term studies have focused primarily on graduation rates and not overall academic success measures such as GPA and Course Completion
- Researchers have used both correlational and quasi-experimental methods of testing
- Results in both types of research methods have been mixed
  - Most found Higher first-year GPA's and credit hour completion, though some found no statistical difference
  - Year one to year two retention rates were consistent though in findings with those taking the course doing better
  - Graduation rate results were mixed as well as some found no statistical difference while others found those taking the course did better

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## Research Question

- Is participation in the SSC 1150 College Success course associated with positive short- and long-term academic outcomes?
  - Outcomes Analyzed
    - Short-Term
      - Year 1 Cumulative GPA
      - Year 1 Credit Hour Completion
      - Year 1 to Year 2 Retention Rate
    - Long-Term
      - Years 2-4 Cumulative GPA
      - Years 2-4 Credit Hour Completion
      - 4-Year Graduation Rate
      - 6-Year Graduation Rate

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## Conceptual/Theoretical Framework Used For This Study

- Primarily Based on Astin's (1993) I-E-O Model
  - Inputs (academic history, demographics, financial need, etc.)  
+
  - Environment (Enrollment in SSC 1150 Course or Not)  
=
  - Output (GPA, Course Completion, Graduation/Retention Rates)

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## Design of the Study

- Quantitative Program Evaluation
- Evaluation took place at the University of Missouri
- Participants were FTC undergraduates entering Fall 2007 - Fall 2014
- Quasi Experimental (Used Propensity Score Matching to reduce selection bias)

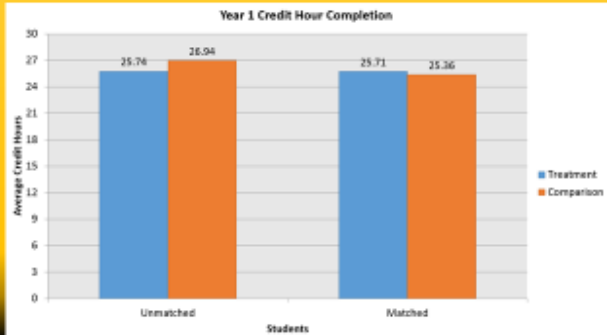
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## Why Matching Students Matters

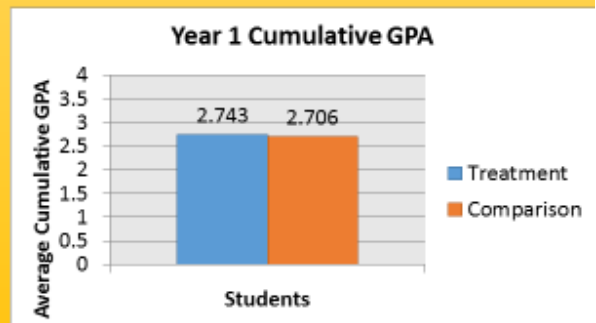
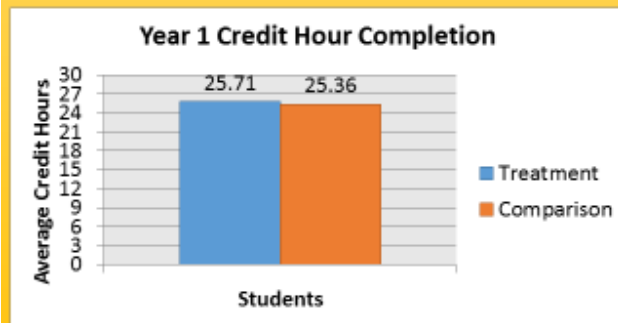
- Significant differences between groups before matching while very little difference after matching
- Outcomes are much different when looking at unmatched and matched students (Matching let's us compare apples to apples)

**Table 4** Pre- and Post-Propensity Score Matching Differences Between Students Who Took SSC1150 Course and Who Did Not

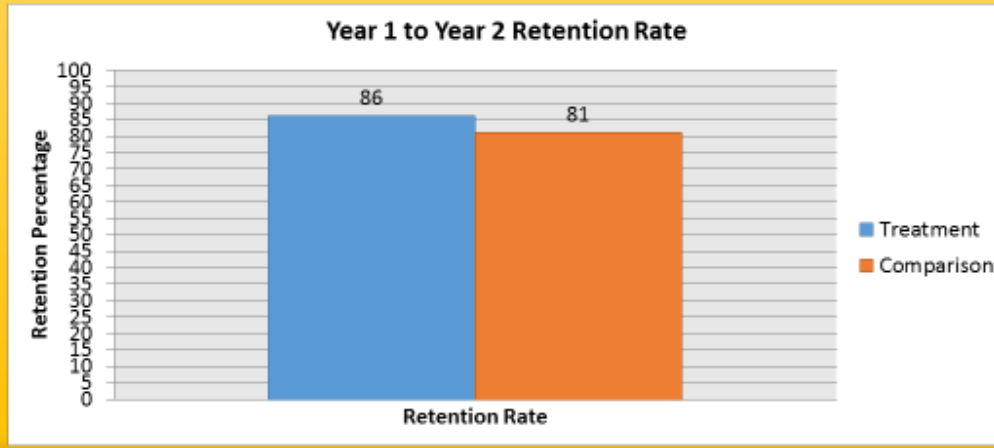
Covariate	Means		Mean Differences		Mean Differences	
	Treatment	Comparison	Treatment Post Matching	Comparison Post Matching	Before Matching	After Matching
Female	.45	.55	.46	.46	.098	.000
URM	.24	.13	.22	.22	-.112	-.002
FGEN	.30	.25	.30	.30	-.053	.001
Pell Elig.	.25	.19	.25	.25	-.060	.002
Inst. Aid	.28	.44	.29	.29	.156	-.003
HIS GPA	3.092	3.348	3.104	3.111	.256	.007
ACT	23.79	25.98	23.92	23.95	2.183	.031
Live On-Campus	.34	.90	.34	.34	.062	.002
Greek	.44	.35	.45	.45	-.087	.000
Athlete	.07	.02	.05	.04	-.051	-.006
Athletic Aid	.05	.01	.04	.03	-.047	-.006
Fig	.15	.32	.15	.16	.168	.005



## SSC 1150 Enrollees Outperformed Non-Takers After Year 1



## Retention Rates Higher For SSC 1150 Takers



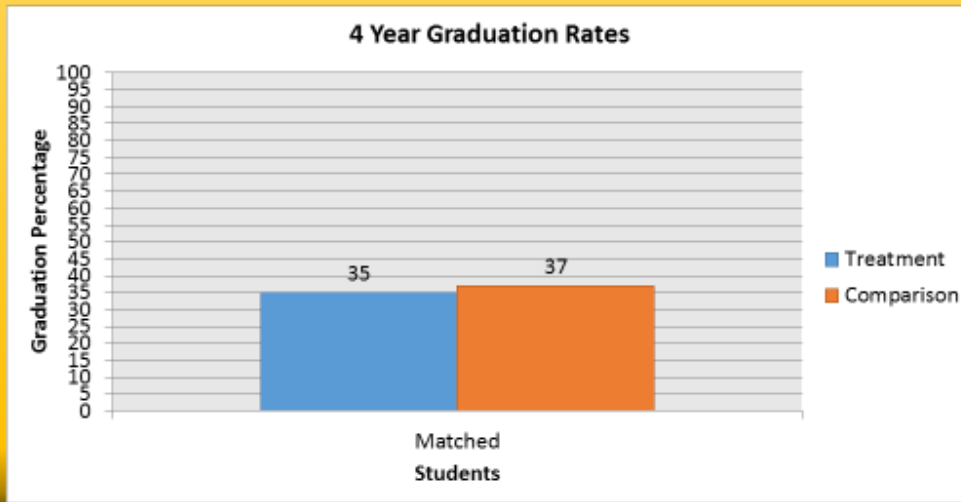
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## SSC 1150 Takers Did Not Continue to Outperform Non-Takers in Years 2-4



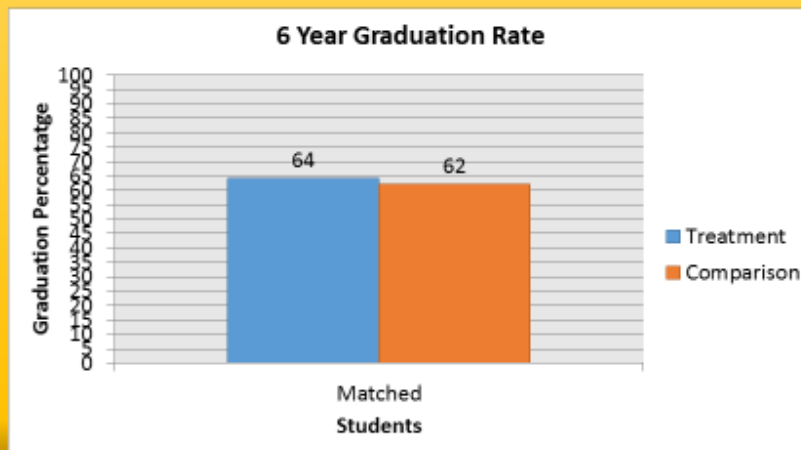
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## 4-Year Graduation Rate Higher For Non-Takers



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## SSC 1150 Enrollees Had Higher 6-Year Graduation Rate



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## Findings Summary

- Takers
  - Higher Cumulative GPA (Year 1)
  - Higher Credit Hour Completion (Year 1)
  - Lower Cumulative GPA (Year 2-4)
  - Lower Credit Hour Completion (Years 2-4)
  - Higher Year 1 to Year 2 retention Rate
  - Lower 4-Year Graduation Rate
  - Higher 6-Year Graduation Rate

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## Does The Course Work?

- In the Short-term, yes, this course appears to help students perform better than those who did not take the course.
- This course seems to connect students to the institution in a positive way as can be seen by the Retention and 6-Year Graduation Rate
- Long-Term academic impacts as far as GPA and Credit Hour Completion do not seem to come from this course
  - I would recommend having a follow-up course in a student's second year to continue the momentum of the SSC 1150 Course (Possibly SSC 2100)

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## Limitations

- Reliability and validity of the demographic data is only as reliable as the students who report the information
- Validity of the course information is as reliable as the professors who teach the classes and give the grades
- No way to fully adjust for individual student motivation

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## Future Studies

- Mixed methods study where not only their demographics and grades/test scores can be evaluated and factored, but also interviews or questionnaires to be able to a student's motivation, and experiences
- Analyze outcomes of students at different academic ability levels
- Analyze outcomes of students based on their academic programs
- Analyze outcomes of students based on the department who teaches the SSC 1150 course

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## **CHAPTER FIVE – A FRESHMAN SEMINAR COURSE EVALUATION: SHORT- AND LONG-TERM ACADEMIC OUTCOMES**

### **Abstract**

Freshman seminar courses are designed to enhance a student's first year experience and help students succeed academically. Review of the literature found studies on seminar courses focused on short-term outcomes such as first year GPA, credit hour completion, or year one to year two retention. Studies looking long-term used graduation rates. No literature was found looking at GPA or credit hour completion past year one. Using propensity score matching to reduce selection bias, t-tests, and regression analyses, this study attempted to find if enrolling in the SSC 1150 College Success course was associated with positive short- and long-term academic outcomes. Results from unmatched data found, students who took the course had lower cumulative GPA's and credit hour completion in all four years, a higher year one to year two retention rate, and lower four- and six-year graduation rates. For matched students, those who took the course had a higher first year cumulative GPA and credit hour completion, but lower numbers than course takers in other years. Seminar takers still had a higher year one to year two retention rate, and lower four-year graduation rate, but their six-year graduation rate was higher than those who did not enroll in the course.

*Keywords:* Freshman Seminar, Propensity Score Matching, Student Success, Retention, Graduation Rate, Course Completion, GPA

### **Introduction**

Higher education institutions around the country are focusing a great deal of attention on the retention and graduation rates of their students (Clark & Cundiff, 2009). Part of the reason for this attention is because state governments use retention and graduation rates as performance indicators. This has changed since originally being implemented as early as 1979 and more



commonly in the mid-90's, where schools would receive bonuses if they met certain student success measures, to the current structure, where the base funding schools receive are tied to the outcomes. There has also been a great increase in the number of states who have performance based funding aspects to their funding structures. It originated in Tennessee as the only state, to in 2014, there were more than 30 states with several more in line to use performance based funding (Dougherty, Jones, Lahr, Natow, Pheatt, & Reddy, 2014). The increase of performance funding use was exacerbated as leading governmental associations began to push performance measures as a measurement for school success, as well as the President's Race to the Top initiative (Dougherty & Natow, 2015).

If an institution has lower than average retention or graduation rates, they could see a decrease in state funding the following year (Dougherty & Reddy, 2013). So it is important for institutions to get the best results possible so that they can continue receiving the full amount of available funding from the state. In addition to the funding aspect, schools want their students to be successful as the success outcomes will be widely reported. If prospective students see a school is not graduating their students at an adequate rate, the institution could see a decline in new student enrollment as a result.

Retention and graduation rates can vary depending on the type of institution. The National Center for Education Statistics (National Center for Education Statistics, 2016) reported that in 2014, for students across the United States, the year one to year two retention rate was 73%. The retention rate statistic is measured by looking at students who were enrolled at one school in their first Fall semester and if they enrolled at the same institution the next Fall term. The statistics does not factor in students who transferred to another higher education institution, nor does it count students who transfer in from another institution.

For all four year public institutions, the year one to year two retention rate was 81%. Private four year colleges also had a year one to year two retention rate of 81%. The year one to year two retention rate for community college students was 61%. Students retaining after their first year can be a good sign that they are comfortable with where they are at and more likely to graduate from that institution.

The six-year graduation rate is most often used when comparing graduation rates among different campuses. Across all four-year institutions, the six-year graduation rate was 60%. Four-year public institutions had a 59% graduation rate and four-year private schools had a 65% rate. The three year graduation rate for community colleges, which is the equivalent timeframe for a degree as the six-year graduation rate for a four-year institutions was 28%.

One intervention being used by institutions to increase retention and graduation rates, are freshman seminars. These seminars have a myriad of names such as learning strategies, college success, University 101, just to name a few, are designed to integrate students to campus, improve study skills, and make students aware of the resources available, such as tutoring, counseling, writing centers, and math labs.

The majority of research on freshman seminar courses have looked predominately at the short-term impact of these programs. Meaning the studies looked at retention from year one to year 2 and GPA and/or credit hour completion after the first year (Potts & Schultz, 2008; Noble, et al., 2007; Porter & Swing, 2006; Barefoot, 2000; Stovall, 2000; Lee, 1999; Pascarella & Terenzini, 1991; Losak & Morris, 1985); however, little literature can be found on the longer-term outcomes of students who participate in one of these courses. This study plans to fill this gap in the literature by analyzing the credit hour completion rate and GPA's over multiple years for students.

The study will provide evidence to answer the research question, “Is participation in the SSC 1150 College Success course associated with positive short- and long-term academic outcomes?” Propensity score matching was utilized to reduce selection bias, and descriptive statistics, t-tests, and regression analyses were run to compare those who did and did not take the seminar course. The short-term outcomes studied were cumulative first year GPA, first year credit hour completion, and year one to year two retention rates. The longer-term outcomes for this study are years two through four GPA and credit hour accumulation, as well as four- and six-year graduation rates.

### **Literature Review**

The findings from previous research on freshman seminar courses does not give a clear answer as to if freshman seminar courses are effective in improving academic success. However, there is a consistency among studies analyzing the year one to year two retention rates. These studies found that students who enroll in the seminar course retain from year one to year two at a statistically significant higher rate. Part of the reason for the inconsistency in many of the outcomes may come from the way the research is being conducted, but also because of the varying types of freshman seminars and the rules behind who enrolls in them (Padgett, Keup, & Pascarella, 2013).

There are a number of studies which look at first-year outcomes. For those studies that did not match students and were simply correlational, some found no statistically significant difference in the group’s first year outcomes (Jamelske, 2008; Lang, 2007; Wolf-Wendel, Tuttle, & Keller-Wolff, 1999), while others found students who took the seminar course performed statistically significantly better academically than those who did not enroll in the course (Jordan, Parker, Li, & Onwuegbuzie, 2015; Friedman & Alexander, 2007; Noble, Flynn, Lee, & Hilton, 2007; Tobolowsky, Mamrick, & Cox, 2005). In studies that did match students, the findings

were also inconsistent as one found there was no statistical difference (Clark & Cundiff, 2009), while other studies found a statistical difference (Potts & Schultz, 2008; Miller, Janz, & Chen, 2007).

For year one to year two retention rates, the outcomes were consistent among studies. Correlational studies (Choo & Karp, 2012; Burgette & Magun-Jackson, 2009; Porter & Swing, 2006) and matched studies (Cambridge-Williams, Winsler, Kitsantas, & Bernard, 2013; Clark & Cundiff, 2009; Potts & Schultz, 2008; Miller, Janz, & Chen, 2007) found students who enrolled in a freshman seminar course retained at a statistically significantly higher rate.

The studies analyzing long-term outcomes only look at the graduation rates for students and not at how they progress through their academic career. The findings for the correlational studies predominately found there to be a statistically positive correlation between taking the seminar course and graduating in at least six years (Cambridge-Williams, et al., 2013; Lang, 2007; Noble, Flynn, Lee, & Hilton, 2007). The only study that matched students and looked at long-term outcomes found there was no statistically significant difference between those who took the course and those who did not (Potts & Schultz, 2008). Because the research is not consistent in the findings, it is important for institutions to do their own assessments to see what outcomes their individual seminar courses have rather than relying on the results from previous studies.

### **Conceptual/Theoretical Frameworks**

This study is most closely aligned with Astin's (1993) Input-Environment-Outcome (IEO) model. The IEO model has a significant emphasis on the assessment of programs which is what a program evaluation is designed to do. Researchers have used the IEO model to evaluate student outcomes for many academic programs designed to help students succeed academically (Thurmond, Wamback, Connors, & Frey, 2002).

Astin (1993) understood there was a significant interaction between a students' inputs and their environment to get to the outcomes. This study analyzed which inputs the students had went into making the decision to enroll in the SSC 1150 course. Inputs were then used to match students for the sake of reducing selection bias. The study then analyzed how effective the student environment, in this case the SSC 1150 course, was for outcomes. In this study, the outcomes were credit hour completion, GPA, retention, and graduation rates.

Attributes such as academic history, major declaration, and financial need can be indicators as to how a student will perform academically at an institution. These are often referred to as inputs in Astin's (1993) model. Research has shown academically underprepared students do not perform as well academically as their academically prepared counterparts in regard to retention, GPA, course completion, and graduation rates (Cholewa & Ramaswami, 2015; Rodgers, Blunt, & Tribble, 2014; Hughes, Gibbons, & Mynatt, 2013; McCormick, & Lucas, 2013).

Academic ability is certainly the driving force behind student success, but there are others which play a major role on a students' decision to retain, and those are centered more on ethnicity and socioeconomic status. As Brooks, Jones, and Burt (2013) state, "The lack of academic preparation, absence of other students with similar cultural backgrounds, and financial need, coupled with the anxieties of being away from home, all contribute to freshman students leaving school" (p.207).

The next step the freshman seminar course takes in improving student success is within the environment portion of the Astin (1993) model by integrating students into the campus. This integration also develops the students' institutional commitment, which Tinto (1993) points out, is essential to a student retaining. The environment for this study is the freshman seminar course. The course creates genuine interactions between students, faculty, and staff through assignments

where students visit different resources on-campus. Research conducted on freshman seminar courses have found them to overall be successful in helping a student get acclimated to school and gain a better understanding of how to be academically successful (Jordan, Parker, Li, & Onwuegbuzie, 2015; Potts & Schultz, 2008; Porter & Swing, 2006; Barefoot, 2000; Lee, 1999; Pascarella & Terenzini, 1991).

The impact of the freshman seminar, or outcomes in Astin's I-E-O model is seen in the retention and graduation rates, course completion rates and cumulative GPA of students. Astin's I-E-O model theorizes that student inputs and the quality of the environments in college will lead a student to their decision in whether they persist to the following year or not, or lead to students to either earning higher credit hours or GPA or not. The outcomes for this study will look at both short- and long-term measures which is different from most of the literature which has been published. The freshman seminar course fits the mold of a successful retention initiative, but it can only be successful if the institutions look at the student outcomes and try to find who is benefitting and what could be done to improve the program.

### **Methods**

A quantitative evaluation analyzed short- and long-term academic outcomes of the University of Missouri (MU) freshman seminar course, SSC 1150 College Success. Program evaluations give organizations a way to analyze and evaluate the effectiveness of programs and policies. McDavid, Huse, and Hawthorn (2013) shared that program evaluations provide “defensible information to decision makers and stakeholders as they assess whether and how a program accomplished intended outcomes” (p.3). MU continually assesses their academic programs and because there is little known about the outcomes of this course, a program evaluation is needed to truly understand the impact the course has on students. The findings

from this study will aid administrators at MU in developing strategies and guiding decision making to put into place a structure to improve retention rates at the institution.

### **Setting**

The University of Missouri (MU) is a public land grant institution established in 1839. MU was an open enrollment institution until the Civil Rights movement in the 1960's and then became a selective institution (University of Missouri, 2015). Selective institution means that students who achieve a 24 or better on the ACT or equivalent SAT score are automatically admitted to the institution, or a student attains a combined percentile score between high school class rank percentile and the ACT or SAT percentile that is greater than or equal to 120 points (Higher Education in Missouri, 2016). This means the average student at the University of Missouri has a higher class rank and standardized test score than the average student across the state and country.

“MU offers more than 300 degree programs through 19 colleges and schools and is one of only five universities nationwide with law, medicine, veterinary medicine and a nuclear research reactor on one campus” (University of Missouri, 2015). MU had a Fall 2015 enrollment of over 35,000 from every county in Missouri, every state in the nation and 120 countries. The undergraduate enrollment in Fall 2015 was 27,812. The demographic make-up of the undergraduate population on-campus are 78% white, 8.1% African American, and 3% Hispanic. In addition, 52% of undergraduate students are female and 68% of students are from the state of Missouri (University of Missouri, 2015).

In the most recent *Enrollment Summary Publication* (University of Missouri, 2015), the year one to year two retention rates for all students on campus was 87.2%. The six-year graduation rates for all students across campus was 68.7%.

## Data

The data were obtained by the MU Student Information Systems department. The data were created by multiple offices on campus including Admissions (all demographic information and high school academics) along with Financial Aid (Pell Eligibility status) and the Registrar (college GPA, credit hour completion, and graduation information). The information collected for this study consisted of eight cohorts from fall 2007 to fall 2014.

All students in the sample were first-time freshman and attended full-time in their first Fall semester of college at MU. Transfer students were not in the data set for several reasons. Transfer students do not generally need as much assistance in transitioning to college as they have already gone through process at another school, so they are more familiar with what schools have to offer. Transfer students are also generally an older population and often have different experiences than first-time college students, so to keep students on the same level, only first-time college students were used. In addition, when looking over a longer period of time, transfer students generally do not need to stay at their new school as long because they have already completed many credit hours toward their degree.

**Dependent variables.** For short-term outcomes, we will investigate year one to year two retention, credit hour completions, and GPA in the first year. Year one to year two retention is measured by looking at Students who were enrolled at MU as a first time full-time freshman in their first fall semester and whether or not they enrolled at MU in their second fall semester. Students who transfer to another institution in the second Fall semester, regardless of reason, are not counted in this number, nor are student who transfer after their first year to MU.

Credit Hour Completion is when a student the total of the numbers of hours a student earns at least a passing grade as determined by the university at the end of the semester. Cumulative Grade Point Average (GPA) is the overall GPA at the end of each academic year.



For long-term outcomes, we investigated the credit hour completion and GPA over four years as well as the four- and six year graduation rates. Four-year graduation rate is the percentage of students who were enrolled as a first time full-time freshman in their first Fall semester at MU who graduated with the first bachelor's degree by the end of the Summer term of their fourth year. Six-year graduation rate is the percentage of students who were enrolled as a first time full-time freshman in their first Fall semester at MU who graduated with the first bachelor's degree by the end of the Summer term of their sixth year.

**Independent variables.** The primary independent variable being evaluated in this study was Enrollment in SSC 1150 College Success Course during a student's first year at MU. Only students who enrolled in the SSC 1150 course during their first term were analyzed as measuring the retention rate needed to have them enroll in the course early so that it may have an effect on the student outcomes.

**Control variables.** Other independent variables play a role in the student's experience, and therefore, were factored into the analysis. These variables were gender, Pell eligibility status, ethnicity, athletic participation, high school core GPA, ACT score, and participation in Freshman Interest Groups. The additional independent variables are part of Astin's inputs and environments that lead to student outcomes so it is important to control for them in the analysis so that the comparison is looking at similar types of students.

Gender is measured by how a student self-reports on their admissions application as to whether they are male or female. Pell eligibility is determined if a student was deemed financial needy enough from the information they submitted on the FAFSA to receive the Pell grant. Ethnicity is another self-reported piece where a student chooses from a list of different ethnicities on the admissions application. Athletic participation is reported by the athletics department to the Registrar's Office indicating whether a student plays an NCAA Division 1 sport at the

University of Missouri. High school core GPA is the grade point average a student receives when only looking at the coursework the state of Missouri requires a student to take to graduate from high school. ACT score is the score a student receives on the standardized test or the equivalent score the received on the SAT. Freshman Interest Groups is a formal collection of students either within the same major or who have a similar interest in something outside of academics who take two classes together as freshmen and often times live with each other as well.

### **Empirical Strategy**

This study is quasi-experimental in nature as it does not have a random assignment of who enrolled in the freshman seminar course (Pedhazur & Schmelken, 1991). When analyzing the success of a freshman seminar course, internal validity is a concern because institutions do not randomly assign students to the course or not. This type of experiment can have a great deal of selection bias as students voluntarily enroll or have it recommended and choose to follow that recommendation. Because of this selection bias, students may be more likely to succeed anyway because they recognize their need for additional assistance with their academics (Clark & Cundiff, 2009; Shadish, Clark, & Steiner, 2008).

It is not possible to randomize the assignment of students who can take the college success course as it is not fair to students who need the course to not be able to take the course simply because they were not assigned to the treatment group. In addition, students have to pay the tuition for this course, so requiring a student who either doesn't need or doesn't want to take this course would not be fair. Because of the lack of random assignment, propensity scores were used to match students.

As Schneider, Carnoy, Kilpatrick, Schmidt, and Shavelson (2007) explain, propensity scores are a form of regression analysis which accounts for as many variables as possible that

can play a part in producing outcomes of the study. This method allows researchers to focus more on the outcomes being studied, which, in this is the academic outcomes of students who do and do not enroll in the SSC 1150 College Success course. As Clark and Cundiff (2011) explain, using propensity scores to match students should reduce selection bias by assuming all variables we know of a student are part of the propensity score model, therefore controlling for selection on observable inputs and environments, with hopes of mimicking unobservable inputs and environments.

To determine which covariates to use for matching, a regression analysis was run to determine which variables most closely associated with a student deciding to either enroll or not enroll in the SSC 1150 course. This regression used stepwise variable selection as this was the most common way of selecting input variables to control for (Brookhart, Schneeweiss, Rothman, Glynn, Avorn, & Sturmer, 2006).

For this study, students were matched on all but one of the independent variables made available as they all had a strong correlation to enrolling in the course. However, both the unmatched and matched data sets were analyzed in further tests. As Thommes & Kim (2011) suggest, it is important to test the data before and after Propensity Score Matching as a large sample size could influence the data, so understanding the outputs pre- and post-matching can aid the researcher in seeing the influence of the dependent variable being tested.

Nearest neighbor 1:1 matching was used to match students during the propensity score process. Thoemmes and Kim (2011) state this is the most common and straight-forward way to do propensity score matching. This type of matching gave the data set the same number of treatment and control groups to start the analysis with. Once the matching was complete, it was important to run an analysis to ensure the treatment and control groups no longer had statistically significant differences between them for the different inputs used to match (Thoemmes, 2012).

To test the differences in outcomes between the treatment and comparison groups, independent samples t-tests were run for all outcomes being measured. This test was chosen as it is used to analyze the statistical difference between two unrelated groups, in this case, course takers and non-course takers (Creswell, 2002). If the test shows a statistically significant difference between the two groups, then the treatment variable is considered to contribute significantly to predicting outcomes for future cases (Field, 2013).

In addition, regression analyses were run using the inputs as covariates. This statistical method was chosen as it is used to make predictions as to the effect of a treatment on future subjects (Allison, 1999). Field (2013) explains regression can be a versatile model in determining a relationship between multiple predictor variables and the outcomes. This is why the inputs were included in the regression, because while students were matched based on the inputs upfront during the Propensity Score matching, and the means were very close, there is still some difference and accounting for these inputs in the regression further helps determine what kind of effect the enrollment in the SSC 1150 course has on the outcomes.

## **Results**

### **Descriptive Statistics for All Students**

The samples contain only students who started at MU as first time undergraduate students. Table 1 provides descriptive statistics of the makeup of the students entering the University of Missouri. Within the sample, 54% were female, 14% Underrepresented Minority, 26% First Generation, 20% are Pell eligible, the high school core courses Grade Point Average was on average 3.309, and the average ACT score was at 25.64.

**Table 1** *Descriptive Statistics of All Students*

Covariate	All Students	
	Mean	SD
Female	.54	.499
Underrepresented Minority	.14	.350
First Generation	.26	.436
Pell Eligible	.20	.401
Institutional Aid	.42	.493
High School Grade Point Average	3.309	.500
ACT	25.64	3.557
Live On-Campus	.89	.308
Greek	.37	.482
Athlete	.02	.151
Athletic Aid	.02	.123
Freshman Interest Group	.29	.455

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

Table 2 presents descriptive statistics for the group who took the SSC 1150 course and the group who did not. Of those who took the course, 24% were of an Underrepresented Minority, 30% were FGEN, 25% were Pell eligible, the high school core course GPA was 3.092, and the mean ACT score was 23.79. Because the make-up of the course takers does not match the general student population, and because enrolling in the course is not required, it is important to reduce selection bias in the statistical results of the tests by using Propensity Scores.

**Table 2** *Differences Between Students Who Took SSC1150 Course and Who Did Not*

Covariate	Treatment		Comparison		t	P
	Mean	SD	Mean	SD		
Female	.45	.498	.55	.497	15.181	.000***
Underrepresented Minority	.24	.426	.13	.331	-24.832	.000***
First Generation	.30	.459	.25	.432	-9.430	.000***
Pell Eligible	.25	.434	.19	.394	-11.501	.000***
Institutional Aid	.28	.451	.44	.496	24.570	.000***
High School Grade Point Average	3.092	.505	3.348	.489	40.137	.000***
ACT	23.79	3.173	25.98	3.520	48.493	.000***
Live On-Campus	.84	.366	.90	.296	15.644	.000***
Greek	.44	.496	.35	.478	-13.960	.000***
Athlete	.07	.250	.02	.123	-26.451	.000***
Athletic Aid	.05	.228	.01	.091	-29.521	.000***
Freshman Interest Group	.15	.356	.32	.465	28.749	.000***

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

### Propensity Scores

A regression analysis was done to see which variables had the most probability of a student either enrolling or not enrolling in the SSC 1150 course. This test showed all covariates of the data that were pulled, with the exception of athletic aid and students being First Generation statistically significantly predicted the decision of whether a student enrolled in SSC 1150 (Table 3).

**Table 3** regression analysis for selection variables

Data Set	B	SE B	t	P
<b>Unmatched</b>				
ACT	-.018	.001	-28.857	.000***
High School	-.082	.004	-21.977	.000***
Cumulative GPA				
Athletic Aid	.298	.022	13.537	.000***
Freshman Interest	-.059	.004	-16.281	.000***
Group				
Greek	.060	.003	17.581	.000***
Is Student	.050	.006	9.002	.000***
Underrepresented				
Minority				
Is Student Female	-.040	.003	-11.580	.000***
Live On-Campus	-.046	.005	-8.473	.000***
Institutional Aid	.037	.005	7.556	.000***
Pell Eligible	.014	.004	3.454	.001*
Athlete	.042	.018	2.326	.020*
Adjusted R <sup>2</sup>		.100		
F		464.645		

\*p < .05. \*\*p < .01. \*\*\*p < .001

While First Generation status was not shown to be statistically significant as a predictor, this variable was used when matching students based on previous literature which explains how first generation college student are at a significant disadvantage for succeeding academically when compared to those who are not first generation (Covarrubias, & Fryberg, 2015; Stephens, Hamedani, & Destin, 2014; Padgett, Johnson, & Pascarella, 2012; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012). The variables used to match students fit with what has been found by previous researchers to most influence a student's college experience. Here, the first part of Astin's IEO model, inputs, will control for as many inputs as possible such as the

demographics of students as well as measurable backgrounds of students such as academic preparedness and socioeconomic status. In addition, variables focusing on academics such as high school core GPA and ACT scores (Jenkins, Zeidenbery, & Kienzl, 2009).

The Propensity Score matching created a subset of data with only matched students. The differences between those who took the course and did not take the course were no longer significantly different.

### Descriptive Statistics of Matched Students

As can be seen in Table 4 the mean differences after matching is very close to zero which means the matching process was effective (Thoemmes, 2012). Now that students were matched, we were able to continue the statistical analysis of academic outcomes. But first, an analysis of who was in the data set was conducted.

**Table 4** *Pre- and Post-Propensity Score Matching Differences Between Students Who Took SSC1150 Course and Who Did Not*

Covariate	Means				Mean Differences	
	Treatment	Comparison	Treatment Post Matching	Comparison Post Matching	Before Matching	After Matching
Female	.45	.55	.46	.46	.098	.000
URM	.24	.13	.22	.22	-.112	-.002
FGEN	.30	.25	.30	.30	-.053	.001
Pell Elig.	.25	.19	.25	.25	-.060	.002
Inst. Aid	.28	.44	.29	.29	.156	-.003
HS GPA	3.092	3.348	3.104	3.111	.256	.007
ACT	23.79	25.98	23.92	23.95	2.183	.031
Live On-Campus	.84	.90	.84	.84	.062	.002
Greek	.44	.35	.45	.45	-.087	.000
Athlete	.07	.02	.05	.04	-.051	-.006
Athletic Aid	.05	.01	.04	.03	-.047	-.006
Fig	.15	.32	.15	.16	.168	.005

A new set of descriptive statistics displays how similar the matched treatment and matched control groups are (Table 5). The means for the treatment group (Course Takers) and the comparison group (Non-Course Takers) have no statistical difference with the exception of percentage of students receiving athletic financial aid. For both groups, 46% were female, 22%

were first generation college students, and 25% of them were Pell eligible. The matched data set contained a lower percentage of female students than the general population. Before matching, the majority of the student population was female, while the matched sample has a majority of male students. The rest of the demographics are in line with the percentages being similar to the general student population. Before propensity score matching, there was a significant difference between the groups on every independent variable, whereas now it is only for those who are receiving athletic financial aid. This variable was not statistically significant as a predictor though, so it was not used in any further tests where the covariates were held constant.

**Table 5** *Differences Between Matched Students Who Took SSC1150 Course and Who Did Not*

Covariate	Treatment		Comparison		t	P
	Mean	SD	Mean	SD		
Female	.46	.498	.46	.498	.034	.973
URM	.22	.418	.22	.417	-.225	.822
FGEN	.30	.457	.30	.457	.168	.866
Pell Elig.	.25	.431	.25	.432	.218	.827
Inst. Aid	.29	.453	.29	.452	-.340	.734
HS GPA	3.104	.500	3.111	.507	.799	.424
ACT	23.92	3.081	23.95	3.037	.589	.556
Live On-Campus	.84	.369	.84	.367	.302	.763
Greek	.45	.497	.45	.497	.017	.986
Athlete	.05	.212	.04	.199	-1.622	.105
Athletic Aid	.04	.185	.03	.168	-2.132	.033*
Fig	.15	.360	.16	.365	.873	.383

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

### Data Analysis

The research question for this study is, “Is participation in the SSC 1150 College Success course associated with positive short- and long-term academic outcomes?” Independent samples t-tests and regression analyses were run to test GPA, credit hour completion, year one to year two retention, and four- and six- year graduation rates.



### Credit Hour Completion

**Year one credit hour completion rate.** For the unmatched set of data, t-tests showed a significant difference at  $P < .05$  in first year academic outcomes (Table 6) between students who took the course and those who did not enroll. Table 6 shows those who enrolled in the seminar course completed fewer credit hours in their first year ( $M = 25.74$ ,  $SD = 5.976$ ) than non-enrollees ( $M = 26.94$ ,  $SD = 6.384$ ).

When analyzing only students who were matched through the propensity score matching process, those who took the SSC 1150 course had the higher credit hour completion rates in their first year ( $M = 25.71$ ,  $SD = 5.963$ ) than non-takers ( $M = 25.36$ ,  $SD = 6.960$ ).

**Table 6** Year One Credit Hours Earned T-test

Data Set	Treatment		Comparison		t	P
	Mean	SD	Mean	SD		
Unmatched	25.74	5.976	26.94	6.384	14.703	.000***
Matched	25.71	5.963	25.36	6.960	-3.179	.001**

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

The difference in the unmatched set where non-takers performed better is in line with previous research. The make-up of the students who did not enroll in the course had more positive inputs such as higher cumulative GPA or ACT score. If students who are more academically prepared are more likely to succeed, and don't enroll in the course, it would seem the course doesn't have a significant relationship with student success. However, once the students were matched and inputs were equal, there is an indication the course does have a positive effect on student success.

This relationship between taking the course and academic success is further shown in the Regression Analysis (Table 7) on matched students. There is a statistically significant chance those who enroll in SSC 1150 will earn more credit hours in their first year than those who did

not ( $B=.378$ ,  $SE B =.101$ ). This indicates that once all variables are accounted for, the course does have an impact on credit hour completion in the first year.

**Table 7** Year 1 credit hours earned Regression Analysis

Data Set	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>P</i>
<b>Matched</b>				
Female	.395	.111	3.544	.000***
Underrepresented Minority	.442	.169	2.618	.000***
First Generation	-.835	.121	-6.894	.009**
Pell Eligible	-1.228	.135	-9.126	.000***
Institutional Aid	.344	.158	2.177	.030*
High School Cumulative GPA	4.077	.114	35.899	.000***
ACT	.126	.020	6.144	.000***
Live On-Campus	.813	.148	5.480	.000***
Greek	1.793	.111	16.200	.000***
Athlete	1.654	.467	3.544	.000***
Freshman Interest Group	1.054	.142	7.408	.000***
Enrolled in SSC1150 Course = 0	.378	.101	3.739	.000***
Adjusted R <sup>2</sup>		.169		
F		214.374		

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Years two through four credit hour completion rates.** There were significant differences in the unmatched sample at  $P < .05$  in the number of credit hours earned throughout years two, three, and four (Table 8). Those who did not enroll in SSC 1150 earned more hours in years two, three, and four ( $M = 28.03$ ,  $SD = 6.656$ ;  $M = 28.65$ ,  $SD = 6.874$ ;  $M = 26.18$ ,  $SD = 6.971$  respectively) than those who did enroll ( $M = 26.21$ ,  $SD = 6.922$ ;  $M = 27.73$ ,  $SD = 7.117$ ,  $M = 26.36$ ,  $SD = 7.324$  respectively). In the matched sample, there was only a significant positive difference for the second year with those who did not enroll earning more hours ( $M = 26.78$ ,  $SD = 7.054$ ) than those who did take the course ( $M = 26.21$ ,  $SD = 6.927$ ).

**Table 8** *Years Two Through Four Credit Hours Earned T-test*

Covariate	Treatment		Comparison		t	P
	Mean	SD	Mean	SD		
<b>Unmatched</b>						
Year 2 Credit Hours	26.21	6.922	28.03	6.656	16.410	.000***
Year 3 Credit Hours	27.73	7.117	28.65	6.874	7.617	.000***
Year 4 Credit Hours	26.36	7.324	26.18	6.971	-1.471	.141
<b>Matched</b>						
Year 2 Credit Hours	26.21	6.927	26.78	7.054	3.668	.000***
Year 3 Credit Hours	27.72	7.149	28.04	7.001	1.917	.055
Year 4 Credit Hours	26.40	7.315	26.52	7.128	.721	.471

\*p < .05. \*\*p < .01. \*\*\*p < .001

The results for long-term would indicate that even when the course could be beneficial for students in the matched sample for short-term academic success, the things students get out of the course in the first year do not appear to continue throughout their college experience. Whether they lose motivation over time or forget what they are taught, it is clear any positive influence the course has is only in the short-term.

## GPA

**Year one GPA.** In the unmatched student data, the first year GPA (Table 9) was significantly lower for students who took the course (M = 2.739, SD = .743) than non-takers (M = 2.977, SD = .786).

**Table 9** *Year One Cumulative GPA T-test*

Data Set	Treatment		Comparison		t	P
	Mean	SD	Mean	SD		
Unmatched	2.739	.743	2.977	.786	23.487	.000***
Matched	2.743	.748	2.706	.824	-2.803	.005**

\*p < .05. \*\*p < .01. \*\*\*p < .001

This means students who took the course were receiving lower grades in their entry level coursework. This lower grade likely means they have a lower level of understanding of the foundational information for which many of their future classes will build from. This can mean

that further down their educational path, they may struggle to a greater extent because they don't have the foundation necessary to move forward onto more complex subjects.

The statistical analysis done only on students who were matched through the propensity score process showed the GPA was statistically significantly higher at the end of year one for SSC 1150 takers ( $M = 2.743$ ,  $SD = .748$ ) than those who did not enroll ( $M = 2.706$ ,  $SD = .824$ ).

Much like the credit hour completion difference, the students in the unmatched sample who did not enroll started with higher inputs, making them more likely to succeed academically. Once students were on a level field for comparison, the course appears to have a positive impact on student success.

This impact was seen in the Regression Analysis (Table 10) on the matched data set as well. Students who enrolled in the SSC 1150 course had a statistically significant greater predictability of achieving a higher first year GPA ( $B = .042$ ,  $SE B = .011$ ). This, like the credit hour completion again, shows that when students are similar in their make-up, the course has a positive effect on the short-term academic outcomes.

**Table 10** Year 1 Cumulative Grade Point Average Regression Analysis

Data Set	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>P</i>
<b>Matched</b>				
Female	.107	.012	8.987	.000***
Underrepresented Minority	-.017	.018	-.925	.355
First Generation	-.126	.013	-9.695	.000***
Pell Eligible	-.136	.014	-9.429	.000***
Institutional Aid	.015	.017	.896	.370
High School	.733	.012	60.210	.000***
Cumulative GPA				
ACT	.035	.002	16.082	.000***
Live On-Campus	.005	.016	.296	.768
Greek	.258	.012	21.727	.000***
Athlete	.172	.050	3.438	.001**
Freshman Interest Group	.036	.015	2.336	.019*
Enrolled in SSC1150 Course = 0	.042	.011	3.833	.000***
Adjusted R <sup>2</sup>		.351		
F		570.397		

\*p < .05. \*\*p < .01. \*\*\*p < .001

**Years two through four GPA.** In both the unmatched and matched samples cumulative GPA (Table 11), students who did not enroll in the freshman seminar course performed better. The GPA in years two, three, and four was statistically significantly higher for non-takers (M = 2.881, SD = .586; M = 2.973, SD = .520; M = 3.030, SD = .497) than takers (M = 2.810, SD = .579; M = 2.901, SD = .509; M = 2.958, SD = .484).

**Table 11** *Years Two Through Four Cumulative GPA T-test*

Covariate	Treatment		Comparison		t	P
	Mean	SD	Mean	SD		
<b>Unmatched</b>						
Year 2 Cum GPA	2.802	.578	3.097	.581	30.733	.000***
Year 3 Cum GPA	2.892	.509	3.164	.520	30.001	.000***
Year 4 Cum GPA	2.948	.486	3.207	.485	29.507	.000***
<b>Matched</b>						
Year 2 Cum GPA	2.810	.579	2.881	.586	5.485	.000***
Year 3 Cum GPA	2.901	.509	2.973	.520	5.924	.000***
Year 4 Cum GPA	2.958	.484	3.030	.497	6.011	.000***

\*p < .05. \*\*p < .01. \*\*\*p < .001

This is in line with what was found in the credit hour completion as well; any short-term benefits seen by the course in the matched set are short-lived as students who take the course no longer continue outperforming their non-taker counterparts.

### **Year One to Year Two Retention**

In the unmatched data set, the retention rate from year one to year two (Table 12) was significantly higher at the P < .05 level for SSC 1150 course enrollees (M = .86 SD = .342) than non-enrollees (M = .85, SD = .354). The matched data set saw an even larger difference in the retention rates for students. Those who took the SSC 1150 course remained at the same retention rate as the unmatched sample (M = .86, SD = .343) while the non-enrolled students retained at a lower rate (M = .81, SD = .389).

**Table 12** *Year One to Year Two Retention Rate T-test*

Data Set	Treatment		Comparison		t	P
	Mean	SD	Mean	SD		
Unmatched	.86	.342	.85	.354	-2.448	.014*
Matched	.86	.343	.81	.389	-8.015	.000***

\*p < .05. \*\*p < .01. \*\*\*p < .001

The course is designed to acclimate students to campus and help them find the resources they need and get them connected. These goals are in line with what is assumed to lead a student to decide to come back to campus the following year. This is likely why higher retention is seen in both the unmatched and matched data sets. The courses' success in the area of retention can also be seen in the Regression Analysis (Table 13). This test shows there is a significant chance that matched students who enroll in SSC 1150 will retain from year one to year two (B=.051, SE B =.006).

**Table 13** *Year One to Year Two Retention Regression Analysis*

Data Set	B	SE B	t	P
<b>Matched</b>				
Female	-.001	.007	-.101	.919
Underrepresented Minority	.019	.010	1.899	.058
First Generation	-.045	.007	-6.258	.000***
Pell Eligible	-.045	.008	-5.671	.000***
Institutional Aid	.031	.009	3.371	.001**
High School Cumulative GPA	.135	.007	20.264	.000***
ACT	.001	.001	.570	.569
Live On-Campus	.007	.009	.782	.434
Greek	.152	.007	23.254	.000***
Athlete	.073	.027	2.660	.008**
Freshman Interest Group	.043	.008	5.172	.000***
Enrolled in SSC1150 Course = 1	.051	.006	8.501	.000***
Adjusted R <sup>2</sup>		.103		
F		121.839		

\*p < .05. \*\*p < .01. \*\*\*p < .001

### Four-Year Graduation Rate

The four-year graduation rate was tested by using a t-test (Table 14). For the unmatched sample of students, those who did not enroll in the SSC 1150 course graduated at a higher rate ( $M=.47$ ,  $SD=.499$ ) than non-takers ( $M=.35$ ,  $SD=.476$ ). In the matched student group, those who took the course still graduated at a lower rate in four years ( $M=.35$ ,  $SD=.477$ ) than those who did not enroll in SSC 1150 ( $M=.37$ ,  $SD=.483$ ).

**Table 14** *Four-Year Graduation Rate T-test*

Data Set	Treatment		Comparison		t	P
	Mean	SD	Mean	SD		
Unmatched	.35	.476	.47	.499	15.440	.000***
Matched	.35	.477	.37	.483	2.027	.043*

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

The four-year graduation rate being lower for SSC 1150 enrollees is in line with the other long-term findings as they are not earning as many credit hours or getting similar GPA's to the students who did not take the course. This would mean it would take them longer to graduate than their counterparts who did not enroll in the course and are earning more credit hours.

A Regression Analysis (Table 15) found that even though it wasn't statistically significant, students who enrolled in the SSC 1150 course had a lower prediction of graduating in four years ( $B = -.015$ ,  $SE B = .009$ ).

**Table 15** *Four-Year Graduation Rate Regression Analysis*

Data Set	B	SE B	t	P
<b>Matched</b>				
Female	.119	.010	11.944	.000***
Underrepresented Minority	-.014	.015	-.889	.374
First Generation	-.088	.011	-8.261	.000***
Pell Eligible	-.068	.012	-5.760	.000***
Institutional Aid	.006	.014	.388	.698
High School Cumulative GPA	.240	.010	24.056	.000***
ACT	.009	.002	5.111	.000***
Live On-Campus	-.005	.013	-.372	.710
Greek	.116	.010	11.756	.000***
Athlete	-.068	.043	-1.564	.118
Freshman Interest Group	.026	.012	2.090	.037*
Enrolled in SSC1150 Course = 1	-.015	.009	-1.712	.087
Adjusted R <sup>2</sup>		.144		
F		127.458		

\*p < .05. \*\*p < .01. \*\*\*p < .001

### Six-Year Graduation Rate

Another t-test (Table 16) was run to test for the six-year graduation rate. For the unmatched sample, those who enrolled in SSC 1150 had a statistically significantly lower graduation rate (M=.64, SD=.481) compared to non-takers (M=.70, SD=.457). For the matched data sample, the students who enrolled in SSC 1150 graduated at a slightly higher rate (M=.64, SD=.480) than those who did not take the course (M=.62, SD=.485).

**Table 16** *Six-Year Graduation Rate T-test*

Data Set	Treatment		Comparison		t	P
	Mean	SD	Mean	SD		
Unmatched	.64	.481	.70	.457	6.990	.000***
Matched	.64	.480	.62	.485	-1.392	.164

\*p < .05. \*\*p < .01. \*\*\*p < .001

The six-year graduation rate being higher for those in the matched data set who enrolled fits with many of the retention theories as they have a greater connection to the institution, so they stay until they finish. Students who did not enroll in the course do not retain at the same



rate as those who enroll after the first year, which may mean they don't have as much of a connection and might leave before six years or getting their degree.

The regression test (Table 17) measured the impact of taking the SSC 1150 course on six-year graduation rates. Those who enrolled in the course had a higher chance of graduating in six years, but not at a significance level of  $P < .05$  ( $B = .020$ ,  $SE B = .012$ ).

**Table 17** Six-Year Graduation Rate Regression Analysis

Data Set	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>P</i>
<b>Matched</b>				
Female	.011	.013	.821	.412
Underrepresented Minority	-.021	.021	-.975	.330
First Generation	-.075	.014	-5.553	.000***
Pell Eligible	-.073	.016	-4.700	.000***
Institutional Aid	.063	.020	3.157	.002**
High School Cumulative GPA	.258	.013	20.064	.000***
ACT	.004	.002	1.742	.082
Live On-Campus	.008	.018	.465	.642
Greek	.206	.013	15.999	.000***
Athlete	-.024	.058	-4.07	.684
Freshman Interest Group	.035	.016	2.232	.026*
Enrolled in SSC1150 Course = 1	.020	.012	1.727	.084
Adjusted R <sup>2</sup>		.161		
F		85.963		

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

## Discussion

### Short-Term Academic Outcomes

For the unmatched group, we saw students who did not enroll in the SSC 1150 course had higher credit hour completion rates and GPA's than those who did enroll in the course throughout their first year. However, students who enrolled in the course had higher retention rates. The findings for the credit hours and GPA are contradictory to many of the studies which have been done before, looking at the relationship taking a freshman seminar course has on first year academic outcomes; however the retention rates being higher fit with the research (Jordan,

Parker, Li, & Onwuegbuzie, 2015; Choo & Karp, 2012; Cambridge-Williams, Winsler, Kitsantas, & Bernard, 2013; Potts & Schultz, 2008; Porter & Swing, 2006; Barefoot, 2000; Lee, 1999; Pascarella & Terenzini, 1991).

In the matched data set analysis, students who enrolled in the SSC 1150 course performed across the board better academically than their non-enrollee counterparts. Students who took the course had higher cumulative GPA's, higher numbers of credit hours earned, and the year one to year two retention rate had a greater difference between those who enrolled in the seminar course and those who did not. These findings are consistent with the research already conducted on freshman seminar courses.

### **Long-Term Academic Outcomes**

For the matched data, students who did not enroll in SSC 1150 completed more hours in all three years. However, only year two had a statistically significant difference. So even though the matched samples showed higher year one academic outcomes and overall performance was better in their first year than non-takers, this academic momentum (Adleman, 2005) did not continue through the next four years in regard to cumulative GPA, credit hour accumulation, or four-year graduation rate. These findings are consistent with both the correlational and quasi-experimental research that has been done on the longer term academic outcomes for students as it relates to a freshman seminar course (Bednar & Weinberg, 1970; Entwistle, 1960; Potts & Schultz, 2008; Jordan, Parker, Li, & Onwuegbuzie, 2015).

The six-year graduation rate was higher at a statistically significant rate for those who did not take the SSC 1150 course, in the unmatched data sample. The matched sample showed a different outcome as those who took the course had a higher six-year graduation rate, though not at a statistically significant level. The regression analysis done on the six-year graduation rate showed a strong relationship between taking the SSC 1150 course and chances of graduating

within six years. This would be in line with Astin's I-E-O model of retention (1993) as students become more engrained with the institution and become more connected to the institution. This connection makes it less likely a student will leave the institution, and leads to higher retention and graduation rates. These findings are also consistent with both the correlation (Bednar & Weinberg, 1970; Entwistle, 1960; Jordan, Parker, Li, & Onwuegbuzie, 2015) and quasi-experimental (Potts & Schultz, 2008) research that has been done on the longer term academic outcomes for students as it relates to a freshman seminar course.

### **Limitations**

Quasi-experimental studies cannot remove all bias associated with self-selection into these courses. It is not possible to know what other outside factors that are not measured by students such as family concerns, personal wellness, mental well-being, or personal relationships that play a role in a student's decision to be retained or graduate.

In research conducted on freshman seminar courses, one concern is that the results seen by students taking the courses in regard to academic success are not necessarily due to the class itself. Pascarella and Terenzini (1991) found that students who were motivated to perform well academically also were more likely to get in contact with faculty members as opposed to the interaction with faculty members leading to higher levels of academic success. This means student motivation plays a large part in students succeeding academically. While this does not mean freshman seminars are not beneficial, it is important for researchers who want to draw causality between freshman seminars and academic success to hold student motivation constant. However, this is difficult as motivation is usually determined by students completing surveys or questionnaires which ask about activities in which they participate or groups to which they belong (DeShields, et al., 2005). This information is then reviewed and students are given a score of their academic or social integration. One way to control as best as possible, the motivation

effect of these studies is to match students in the test and control group on as many other factors as possible.

### **Implications for Research**

The findings from this study align with Astin's I-E-O (1993) model as the inputs and environment seemed to work in tandem to determine outputs for students. In the unmatched samples, the inputs appeared to have a larger role in the effect because students who did not enroll in the seminar course had more positive inputs and had better outputs even though they did not interact with the environment being studied (the SSC 1150 course). When the inputs were equal, the environment had a greater impact in the outputs of student success in the short-term as students who enrolled in SSC 1150 performed at a higher rate. However, in the long-term, students who enrolled in the course performed at a lower rate than their non-taker counterparts with the exception of the six-year graduation rate.

The higher performance on the six-year graduation rate could be attributed to the environment of the course integrating students to campus better and helping them develop a sense of belonging and institutional commitment. This commitment, as Tinto (1993) suggests, is paramount to having a student retain at an institution. So the student's inputs and environments interact to lead to the different outcomes that were studied. While knowing how these findings relate to previous research and theories is important, it is also important to understand what these findings can mean for practitioners.

### **Implications for Practice**

Within the practitioner setting, this study can lead to better alignment of retention strategies for the institution and to ensure the team is meeting the established goals of the program (Northouse, 2013). Because it was found that matched students who participated in the SSC 1150 course performed better compared to those who don't participate, the Vice Provost

can use this information to secure funding to expand the program and allow more students to have access to the course. However, it is important that the program continue to be evaluated in further studies looking at more qualitative information as well as different pieces not used in this study such as which departments are teaching the course and how do the outcomes differ depending on the majors of the students. This is in line with the goals of program evaluations as explained by McDavid, et al, (2013) as it can help to ensure the program is running as efficiently and effective as possible.

The studies that have looked longer term (Jamelske, 2008; Schnell & Doetkott, 2003; Hoff, et. al, 1996; Behrman, et. al, 1984) focused more on graduation rates than progress toward graduation and grade point average. This is an important distinction because while a student staying enrolled at an institution is important, if they are not progressing toward finishing their degree or do not have the GPA needed to graduate from either the school or a particular program, the student is likely to take longer to graduate which could lead to greater student debt and lost income due to a delay in them being able to pursue some full-time positions.

If students taking the course complete a higher number of credit hours each semester, this study can help to change the way students are advised and possibly lead to a reduction in years of attendance. This would lead to an increase in four year graduation rates which means students are entering the job market sooner (Attewell, Heil, & Reisel, 2012).

Within higher education as a whole, this study provides insight into how well a freshman seminar program works for a large institution and can help other institutions develop their own retention strategies. Seeing that this program can help in the short-term can aid institutions on their own development of a program while making adjustments to try and do more for the long-term outcomes.

### **Recommendations for Future Studies**

While this study was able to factor in a large number of variables which play a role in a student's experience in college, little was known about individual experiences shaping their academic career. Future studies would benefit from being able to do a mixed methods study where not only their demographics and grades/test scores can be evaluated and factored, but also interviews or questionnaires to be able to determine to a greater extent, a student's motivation, and the experiences they had which led to their eventual academic outcomes (Clark & Cundiff, 2009). This additional information would provide a better scope of the specific role the freshman seminar course played on students.

A deeper dive into the outcomes of students at different academic ability levels would be beneficial for gaining a better understanding of how well the freshman seminar course serves those who most need the course. Students entering college academically underprepared is becoming a prevailing issue in higher education. Byrd and MacDonald (2005) explained, about a third of entering college students need some form of remedial education. This means almost a third of students enter college academically underprepared for the rigors of college coursework. Having a better understanding of what works for these students could aid administrators in improving their retention rates.

Finally, it was not possible in this study, but looking at the differences in effects of the course when it is taught within a student's chosen academic department or an open course to any student in any major. As Ramsden (1991) found, teacher quality as determined by course experiment questionnaires shows a major difference in student experiences between different academic departments. It wasn't possible to look at different academic departments in this study as the classification of what departments were teaching the course started in 2013, so there wasn't enough data to get good information.

## CHAPTER SIX – SCHOLARLY PRACTITIONER REFLECTION

### **How Has The Dissertation Influenced Your Practice As An Educational Leader**

This dissertation has given me many skills needed to be successful as an educational leader. One way in which this is true, is my understanding of data collection and analysis. I have learned that the process of even obtaining the data can be a long and arduous process, and one that requires good attention to detail. When an individual is pulling data for you, they don't always understand the purpose, so it is important to know what you are wanting to find out to make sure you are asking for the correct information. Once the data is collected, the next step is analyzing it, and this is one area this dissertation has absolutely improved my abilities as a leader.

Having a better understanding of data analysis has already proven to be beneficial as an educational leader. In the world of higher education, data driven decision making is more present than ever. This is especially true in my position as Director of Financial Aid. Whether it is projecting enrollment with a change in scholarships, to updating daily processes, to making long-range plans for both the office and campus as a whole, high quality data analysis is key to success.

Another thing I've learned in this dissertation process is how to work with faculty to perform studies that can be used in a practitioner setting. An example of this is as I serve on a committee with both staff and faculty at my current institution, which is focusing on sophomore retention. As we began looking at the problem, it was clear that the students' inputs and environment, which are part of Astin's (1993) I-E-O Model, was not lending itself to students retaining from their sophomore to Junior Year.

For instance, as we looked at individual students, we began to see that lots of students who did not retain to the junior year were athletes. In their exit interviews they said they were leaving because of finances or because they didn't feel like they fit in. When we as a committee

did more digging, we found that the majority of those student-athletes were not playing much when they were attending our school. When we reviewed where they transferred, they were going to smaller schools and had joined the team at that other school. So from what we were seeing as we delved further into the students, was that even though they gave us a reason that appeared like there was maybe something the institution could have done to keep them, that in reality, it was because they wanted to play more in their respective sport. This was interesting to see as the exit interviews have gone on for years, and the responses to the questions have just been taken without follow-up questions being asked.

So now when the academic advisors who do these exit interviews ask questions, they are following up with additional questions after asking why the student is leaving. We hope this change will lead to better findings from the surveys and can help us to develop a better environment for students so that they can stay on-campus. Once the decisions are made, an educational leader must know how to disseminate the information.

This dissertation has allowed me the opportunity to understand to a greater extent, how to share information in both large and small settings. While I won't need a literature review or theoretical framework for every meeting and presentation I do, knowing that my decisions are grounded in established theories within student retention, leadership, and policy analysis, I can be more confident in what I'm sharing and the decisions that are made.

### **How Has The Dissertation Process Influenced You As A Scholar**

My goal in education has never been to be primarily a scholar. This was because I always thought this meant I would need to become a tenure track faculty member doing research and teaching classes. This is not something I have aspired to do, and while teaching a class here or there would be fun and interesting, I don't foresee it as a full-time role. This was a major factor in why I decided to pursue the EdD rather than a PhD. While the goals of an EdD are more in line with staying in a practitioner role, there are some takeaways from the program



which lend themselves to being a better scholar. The course work did require a significant amount of scholarly reading and to an extent writing, but overall, I didn't see my abilities as a scholar grow until the dissertation. Going through the dissertation process has given me some insight to what it takes to be a true scholar.

I have always been a bare bones thinker and writer. My work throughout this program would support that statement as in group papers, I always leaned more toward writing the data analysis piece and the results sections rather than taking the lead on the literature reviews and theoretical frameworks. I understood why they were important, but it wasn't interesting to me. While it still is not the most interesting part for me to write upon, this dissertation has given me a new respect for the need and value of the literature reviews and theoretical framework discussions. Seeing how my results, when intertwined with the retention theories already out there, can come together to at least give a slight glimpse into the possibility that my findings are in line with the theories became exciting.

I have also seen that there are ways of collaborating with individuals who are primarily a scholar to be able to add something to the literature while continuing to be a leader as an administrator. This can take on a number of different forms. One way is just in working with my advisor on this dissertation. While he is a faculty member, he understands the administration side and how to relate this to a more practitioner setting. I used to think that most journal articles were not useful for those working as administrators because they were so theory based. But as I did more research for my own study, I found so many research pieces which were designed specifically for practitioners.

Also, as I mentioned earlier, I am already working with those who are true scholars as I serve on a sophomore retention committee. This is a collaborative effort with both faculty and staff on the team. While the findings we will come away with in this study will be used to help

support our sophomore students, we are also looking into the options we might have of publishing the work so that other schools could benefit from what we find.

Other areas I could envision working with faculty to produce scholarly papers would be in the field of financial aid. This could be in conjunction with the state as they are looking to revamp their financial aid offerings or at the institutional level as we look to determine the impact different financial aid strategies can have on student decision making.

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### **Vita**

Matthew Lawrence Kearney was born in Carbondale, Illinois in March, 1983 to parents Brian and Roberta Kearney. He completed his undergraduate degree in 2005 at Southeast Missouri State University in Mass Communications with minors in Marketing and Political Science. After completing his degree he worked for two years as a Special Events Associate for the Y-ME National Breast Cancer Organization. Matthew then went back to Southeast Missouri State University, where in 2009, he completed his M.A. in Higher Education Administration with two emphasis areas, Athletic Administration and Counseling. After completing this degree, he moved to the University of Missouri to begin his professional career in higher education; first starting as a Financial Aid Advisor, then moving to work in recruitment and alumni relations for the Health Management & Informatics graduate program, before going back to Financial Aid as the Senior Assistant Director of Financial Aid. During his time at the University of Missouri, Matthew also completed an M.S. in Personal Financial Planning in 2012, and the majority of his doctoral work in Educational Leadership and Policy Analysis. In 2015, Matthew took on the role of Director of Financial Aid at Fontbonne University and completed his EdD from the University of Missouri in 2016. Matthew is married to Dr. Monica L. Kearney and they have one son, Donovan, age 3, and a second child on the way, due in March.