

THE RELATIONSHIP BETWEEN A UNIVERSITY'S APPEARANCE  
IN A DIVISION I BASKETBALL OR FOOTBALL  
CHAMPIONSHIP GAME AND ENROLLMENT

by

DAVID N. PUGH

JAMES E. MCLEAN, COMMITTEE CHAIR

NATHANIEL BRAY  
DAVID HARDY  
PHILO HUTCHESON  
CLAIRE MAJOR

A DISSERTATION

Submitted in partial fulfillment of the requirements  
for the degree of Doctor of Education in the  
Department of Educational Leadership,  
Policy, and Technology Studies  
in the Graduate School of  
The University of Alabama

TUSCALOOSA, ALABAMA

2013

Copyright David N. Pugh 2013  
ALL RIGHTS RESERVED

## ABSTRACT

The purpose of this study was to determine the relationship between an appearance in an NCAA Division I football or basketball national championship game and enrollment. Specifically, the study looked at the relationship between an appearance in either championship game and the number applicants, number of National Merit Scholars, African-American/Black and Caucasian/White enrollment, average high school grade point average of the entering class, total undergraduate and graduate enrollment, and the percentage of out-of-state students enrolled at the institutions. An interrupted time-series design (Glass, 1997) was the primary design used in this study. The largest median percentage increase occurred in the size of the applicant pools at both the football and basketball institutions. Applications at the football institutions increased 15% over a three year period covering the fall before the championship appearance and the two subsequent academic years. Applications increased by 14.6% over the same time period for the basketball schools. The number of National Merit Scholars for the basketball schools increased 8.8 over the same period with all of the increase occurring in the second year following the championship. African American enrollment increased 8.2% (median) over that same period for institutions who appeared in the basketball national championship. Overall enrollment (both undergraduate and graduate) increased at similar rates with a median percentage increase for undergraduate enrollment of 4.6 for the football schools and 4.2 for the basketball schools. The median percentage increase for graduate enrollment was 4.8 at the football schools and 5.4 at the basketball schools. At the football schools, the median percentage increase for out of state students was 6.3% over the three-year period, with no increase at the basketball schools.

## LIST OF ABBREVIATIONS AND SYMBOLS

<i>a</i>	Cronbach's index of internal consistency
<i>df</i>	Degrees of freedom: number of values free to vary after certain restrictions have been placed on the data
<i>F</i>	Fisher's <i>F</i> ratio: A ration of two variances
<i>M</i>	Mean: the sum of a set of measurements divided by the number of measurements in the set
<i>p</i>	Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value
<i>r</i>	Pearson product-moment correlation
<i>t</i>	Computed value of <i>t</i> test
<	Less than
=	Equal to

## ACKNOWLEDGMENTS

I would like to sincerely thank all of my committee members, especially Dr. Jim McLean, for your support and guidance throughout this process. In addition, I would like to express my deepest gratitude to my family, friends, co-workers, and fellow Cohort V members. Your words of support and encouragement over the past three years truly inspired me to continue through completion.

## CONTENTS

ABSTRACT.....	iii
LIST OF ABBREVIATIONS AND SYMBOLS .....	iv
ACKNOWLEDGMENTS .....	v
LIST OF TABLES .....	ix
LIST OF FIGURES .....	xi
CHAPTER I: INTRODUCTION.....	1
Statement of the Problem.....	1
Significance of the Problem.....	3
Football vs. Basketball.....	5
Research Questions.....	9
Definition of Terms.....	10
Assumptions.....	11
Limitations .....	11
CHAPTER II: REVIEW OF THE LITERATURE .....	12
Introduction.....	12
Theoretical Framework.....	16
The Flutie Effect .....	16
Public Perceptions of Intercollegiate Athletics.....	18
College Selection of Student Athletes .....	21
Athletic Success and Academic Effects.....	23
Quality of New Applications .....	23

Graduation Rates.....	27
Athletics and Academic Performance.....	31
Advertising Effects .....	34
Academic Clustering Among Athletes .....	37
Student Athletes’ College Experiences.....	41
Stereotypes and Stigmatization.....	50
Athletic Teams and Fundraising .....	53
Intercollegiate Athletic Expenditures .....	60
Conclusion .....	62
CHAPTER III: METHODS.....	65
Introduction.....	65
Sample Selection.....	66
Data Collection .....	68
Data Analysis .....	68
CHAPTER IV: RESULTS.....	71
Football Results .....	71
Basketball Results.....	88
Summary.....	104
CHAPTER V: DISCUSSION.....	106
Introduction.....	106
Summary of the Findings.....	106
Conclusion .....	107
Implications for Leadership.....	111

Limitations and Recommendations for Further Research .....	112
Conclusion .....	113
REFERENCES .....	114

## LIST OF TABLES

1.	Competition for the National Championship by Year, Sport, and School.....	67
2.	Football Applicant Pool Data: Statistics For Applicant Pool and Annual] Pct Changes from Previous Year .....	72
3.	National Merit Scholar Football Data: Statistics For Merit Scholars and Annual Percentage Changes from Previous Year .....	74
4.	High School Grade Point Average for Football.....	76
5.	Undergraduate Enrollment Data at Football Institutions: Statistics For Undergraduate Enrollment and Annual Pct Changes from Previous Year .....	78
6.	Statistics For Graduate Enrollment and Annual Pct Changes from Previous Year .....	80
7.	African American Enrollment Data for Football Schools: Statistics For Black Enrollment and Annual Percentage Changes from Previous Year .....	82
8.	Caucasian/White Enrollment Data for Football Schools: Statistics for White Enrollment and Annual Percentage Changes from Previous Year .....	84
9.	Out of State Enrollment for Football Schools: Statistics for Out of State Enrollment and Annual Pct Changes from Previous Year.....	86
10.	Basketball Applicant Pool Data: Statistics for Applicant Pool and Annual Percentage Changes .....	88
11.	National Merit Scholar Basketball Data: Statistics for Merit Scholars and Annual Percentage Changes.....	90
12.	High School Grade Point Average for Basketball: Statistics for GPA and Annual Percentage Changes.....	92
13.	Undergraduate Enrollment Data at Basketball Schools.....	94
14.	Graduate Student Enrollment at Basketball Schools .....	96
15.	African American Enrollment Data for Basketball Schools.....	98
16.	Caucasian/White Enrollment Data for Basketball Schools: Statistics for White Enrollment and Annual Percentage Changes .....	100

17. Out of State Enrollment Data for Basketball Schools: Statistics for No.  
Out of State and Annual Percentage Changes .....102

## LIST OF FIGURES

1.	Applicant Pools for BCS Appearing Schools.....	73
2.	Number of National Merit Scholars at BSC Appearing Schools.....	75
3.	Average High School Grade Point Average of Entering Class at BCS Appearing Schools.....	77
4.	Undergraduate Enrollment at BCS Appearing Schools.....	78
5.	Graduate Enrollment at BCS Appearing Schools.....	81
6.	African-American/Black Enrollment at Universities whose Football Teams Appeared in BCS National Championship Game.....	83
7.	White/Caucasian Enrollment at BCS Appearing Schools.....	85
8.	Out-of-state Enrollment at BCS Appearing Universities.....	87
9.	Applicant Pools for Basketball Schools.....	89
10.	Number of National Merit Scholars for Basketball Schools.....	91
11.	Average High School GPA for Entering Class at Basketball Schools.....	93
12.	Undergraduate Enrollment at Basketball Schools.....	95
13.	Graduate Enrollment at Basketball Schools.....	97
14.	African-American/Black Enrollment at Basketball Schools.....	99
15.	White/Caucasian Enrollment at Basketball Schools.....	101
16.	Out-of-state Enrollment at Basketball Schools.....	103

## CHAPTER I:

### INTRODUCTION

#### **Statement of the Problem**

Intercollegiate athletics has long been a topic of intense debate among those within the realm of higher education. Many argue that the presence of athletic teams, especially high-profile sports such as football and men's basketball, weaken an institution's credibility, lower academic profiles and prestige, and create a distraction from academics. Tucker (2004) has asserted that students may suffer the consequences of this distraction through sub-par academic performance. In addition, there is ongoing debate surrounding the economic impact intercollegiate athletics may or may not have on college and university campuses. Several authors including Shulman and Bowen (2001) and Zimbalist (1999) have argued that intercollegiate sports at most colleges and universities cost more to operate than they generate in revenue. In addition, Duderstadt (2000) and Sperber (2000) have concluded that intercollegiate athletics negatively impact the overall profile of the student body and create a continuous financial strain at colleges and universities, leaving academic programs struggling to maintain quality.

Others have argued that intercollegiate teams offer indirect or intangible benefits justifying big time programs by asserting that it is not only success, but also the prestige and exposure that can be associated with athletic teams. It is the opinion of some that national exposure is a key factor in determining institutional prestige, a factor that is promoted through college and university athletic programs (Thelin, 1994). Goff (2000) concluded that athletic

success resulted in substantial increased exposure for the university, regardless of its academic reputation. Hart-Nibbrig (1984) found that intercollegiate athletics help advance the identity and brand of the university, especially when the institution is not already considered nationally distinguished academically.

Athletic success has been referred to by college presidents as “a platform from which to spread the good news about the rest of the university” (Suggs, 1999, p. A61). Thelin (1994) supported this notion by asserting that a university president can interact with and influence more people at an athletic event more than most any other campus event. Additionally, while university presidents have long been considered leaders in the efforts to promote reform in college sports, Billing (2000) found that presidents see athletic success as important to community building among faculty, staff, and students, efforts related to fund raising, and the overall reputation of the university.

These programs generate revenue (Slaughter & Leslie 1997) and offer students a respite from the everyday rigors of academic life (Mixon & Trevino 2002). Shulman and Bowen (2001) and Suggs (2003) all have referred to the “front porch” relationship between athletics and the university. This analogy assumes that some individuals’ first exposure to a particular college or university is through media coverage of the main spectator sports such as football and men’s basketball. Through this “front porch” colleges and universities have the opportunity to market themselves to prospective students, parents, and potential benefactors who might not have otherwise considered the college or university. Several researchers suggest that intercollegiate athletic programs create income. Fleischer, Goff, and Tollison (1992) and Sandy and Sloane (2004) have all posited that colleges and universities profit from the existence of their athletic programs.

The purpose of this study was to determine the relationship between intercollegiate national championships and enrollment. More specifically, this study examined the relationship between national championships in football and men's basketball and enrollment at NCAA Division I colleges and universities.

### **Significance of the Problem**

In reviewing the literature, the division among those in higher education related to intercollegiate athletics is palpable. Investigating this issue further should help clarify and enhance previous research. Specific areas covered in this research were the relationships between intercollegiate athletics and revenue, intercollegiate athletics and enrollment, intercollegiate athletics and student engagement, and intercollegiate athletics and marketing. Given the differing arguments on the relationship between intercollegiate athletics and the many facets of college and university life affected by the presence of these teams, this topic was of particular importance. All of the aforementioned relationships could have major implications on recruitment, retention, and budgeting at institutions of higher education across the country.

The issue of scandal and reform in intercollegiate athletics continues to be a significant matter of concern in intercollegiate sports, especially among faculty. As far back as the late 1920s, accusations reported by the Carnegie Foundation referred to professionalization, commercialization, and corruption in college football (Thelin 1994). The recent scandals involving football players at Auburn University, The Ohio State University, and The University of Southern California created a media frenzy which highlighted the shortcomings of intercollegiate athletics. While the actions by the players, coaches, and personnel at these universities raise questions regarding the role of intercollegiate athletics, the issues also create an opportunity to evaluate current practices and recommendations for change.

During the past ten years, three reports have been published encouraging faculty to play a greater role in intercollegiate athletics reform. The reports were published by the following organizations: American Association of University Professors (AAUP, 2002), Coalition on Intercollegiate Athletics (COIA, 2003), and the NCAA (2006). The findings of all three reports included recommendations based on data and feedback solicited from faculty members at various colleges and universities.

In the controversial AAUP report, “The Role of the Faculty in the Governance of College Athletics,” the organization highlighted various scandals within intercollegiate athletics and reform recommendations from incidents as far back as the mid-1980s. The report highlights increased prominence of intercollegiate athletics, the privileged lifestyle and perceived mistreatment of athletes, and unscrupulous conduct over the years among supporters, coaches and players at various institutions. The AAUP has recommended that faculty members should have more authority related to the academic experience of student athletes and promotes further faculty involvement and oversight in the governance of intercollegiate athletic programs.

Created in 2002, the COIA’s initial goal was to create dialogue and to make recommendations resulting in a unified system within faculty assemblies to “ensure that athletics enhances rather than undermines the academic mission” (COIA, 2003). In “A Framework for Comprehensive Athletics Reform,” a report released in 2003, the COIA promotes the involvement of faculty in several athletic-related activities including the academic culture among student athletes, overall well-being of student athletes, financial implications of intercollegiate athletics, the commercialization of intercollegiate athletics, and authority and governance in intercollegiate athletics (COIA, 2003). It is important to note that both the AAUP and COIA reports were based on faculty perceptions and opinions regarding previous athletic scandals.

Neither report used formal empirical data collection methods but rather anecdotal information based on the faculty comments.

In 2006, the NCAA released “The Second Century Imperatives: Presidential Leadership—Institutional Accountability.” This report implores faculty senates and assemblies to leverage their position within the governance structure of their respective universities to develop and implement athletic reform. Based on the recommendations of the Knight Commission in the early 1990s, college and university presidents were appointed by the NCAA to have complete oversight of intercollegiate athletics (1991; 2001). Nonetheless, a 2006 NCAA report recognized athletic reform is not necessarily a top objective for college and university leaders. The report, which was compiled by 50 top executives, addressed four main issues: fiduciary responsibility, control of external and internal stakeholders, academic principles and ideals, and the overall welfare of student athletes. As a basis for its recommendations, the report concluded that intercollegiate athletics needs to be more intertwined into the cultural and structural and organizational fabric at colleges and universities.

### **Football vs. Basketball**

In this section, the significance of both major football and basketball programs is discussed. The first college football game was played approximately 30 years before the first college basketball game. While both sports have played an important role in American higher education, football quickly rose in popularity and today remains a higher profile sport.

Since the first game in 1869 between Rutgers University and Princeton University, college football has played a distinctive, yet sometimes controversial role in higher education. In 1905, 18 students died during intercollegiate football play. These deaths prompted President Theodore Roosevelt to consider signing an executive order abolishing the sport due to its violent

nature (Thelin 1994). However, by that time, the sport was soaring in popularity. By the late 1920s, college football had become a legitimate spectator sport and revenue generator. According to Rudolph (1962), Yale University reported athletic revenue in excess of \$1 million in 1928, with profits of \$350,000 after expenses. Since that time, despite its critics and shortcomings, college football has become a significant business, affecting the bottom line at colleges and universities in both positive and negative terms.

Ingrassia (2012) has provided a unique perspective into the history and commercialization of intercollegiate athletics. He has posited that since the late 1880s, the academy embraced athletics and football in particular for two reasons: the sport was an avenue through which to better engage society in higher education and it also appealed to the lower and middle class by making the academy seem less elitist. As a result, the popularity of football created a commercialization of intercollegiate athletics and multi-million dollar athletic programs. Thus, football became integrated into the culture of the American college and university and as such, remains an integral component of college life in the United States.

For many years, enthusiastic college football fans were often unable to watch their favorite team compete on live television because games perceived to have a greater national significance were being broadcast by the major networks who procured the rights to air National Collegiate Athletic Association (NCAA) football. However, in 1984, college football fans across the country were rejoicing over the United States Supreme Court's decision in *NCAA v. Board of Regents of the University of Oklahoma*.

In the Board of Regents case, the Universities of Georgia and Oklahoma challenged the NCAA's limiting television policy which restricted the number of times an NCAA member institution's football team could appear on television each season. The policy also restricted the

number of games televised each week. The universities argued that the restrictive policy violated the Sherman Antitrust Act (Sherman Act) while the NCAA argued that the policy was in place to boost attendance for home football games. The NCAA television policy had been previously challenged, but this was the first time the United States Supreme Court analyzed the plan in detail. In addition to restricting the number times a team could be broadcast per season, the policy fundamentally prevented NCAA member institutions from negotiating their individual college football broadcasting rights.

Since this landmark ruling, there has been a surge in the number of games broadcast and the number of networks on which they are shown. All three major television networks combined with numerous cable television networks broadcast multiple football games every fall. Although the NCAA argued that the pre-1984 policy was in place to boost attendance at college football games, the final ruling by the Supreme Court did not negatively affect attendance.

Wojciechowski (2005) found that attendance at football games has increased every year since 1984. In addition, the NCAA recently released the following statement:

A record number of fans attended games at the 638 NCAA football-sponsoring schools this past year, including home games, neutral-site games and postseason contests. The total of 49,699,419 surpasses the previous high set last year. NCAA football has experienced record-breaking years in five of the last six seasons. (*NCAA.org*)

Although many other factors may have contributed to the surge in attendance at intercollegiate football games, one could argue that the increased television exposure generates a unique interest that entices fans to attend the games in person.

Although college basketball came along later than college football, its rise in popularity quickly positioned the game as a “big time” college sport. The first college basketball game aired in 1940, but the sport rose to prominence in 1979. That year, two future National Basketball Association (NBA) legends led their respective teams through the NCAA tournament

to the final game. Larry Bird of Indiana State University and Earvin "Magic" Johnson of Michigan State University met in the championship game which to date remains the highest rated televised college basketball game of all time.

In the wake of this game, college basketball's popularity reached unprecedented heights. As a result, television networks scrambled to become more involved in the broadcasting of the tournament. The CBS network was the initial winner, ultimately signing an exclusive deal to televise the tournament. Although other networks now televise some of the tournament games, CBS continues to exclusively broadcast the final four. The 2012 Final Four tournament was the most watched tournament since 2005 (*CBS.com*).

Exploring the topic of what the presence of intercollegiate sports does for a campus should prove to be beneficial for many areas within institutions of higher learning. From enrollment implications to strategic planning, the results of this review should be insightful and prove as a useful tool for others who are interested in conducting similar research. The ultimate goal is that other practitioners in higher education will be able to use this information as a foundation for making appropriate decisions on Division I college and university campuses across the nation. By specifically examining the relationship between athletic success and enrollment, this study will equip administrators in higher education, especially those in admission and enrollment management, with the knowledge needed to make appropriate decisions and strategically plan for changes in enrollment related to intercollegiate athletic success.

Similar to a study conducted by Toma and Cross (1998), this study reviewed enrollment data at institutions for years following an appearance in college football's BCS National Championship Game or the NCAA Basketball Final Four. In 1998, the same year that Toma and

Cross released their findings, the Bowl Championship Series (BCS) was formed. The creation of this selection system for post-season bowl appearances dramatically changed Division I football. Not only did this system create more exposure for intercollegiate athletics and individual college and university teams, but it also fostered a new era in financial rewards and incentives for the eight teams and their respective conferences represented in one of the four BCS games. For the institutions appearing in the BCS game, the two-year cycle will begin the academic year immediately following the appearance. Since the NCAA Final Four occurs in late March when many prospective students have already made their college choice, the two-year cycle for those teams will begin two academic years post appearance for the institutions being studied.

### **Research Questions**

Policy-makers at colleges and universities need to fully understand what factors are considered by prospective students when choosing a college. The recruitment and the retention of students forms the lifeblood that determines the ultimate success of colleges and universities. Understanding the distinctive characteristics influencing college choice is key for higher education administrators in today's competitive environment.

In conducting this study, the goal was to answer the following research questions:

1. What is the trend for a university regarding the size of the applicant pools over a four-year period (two years before and after winning or being a runner- up for a national championship in Division I football or basketball);
2. What is the trend for a university regarding the average ACT/SAT scores of the applicant pools over a four-year period (two years before and after winning or being a runner-up for a national championship in Division I football or basketball);

3. What is the trend for a university regarding race/ethnicity of the applicant pools over a four-year period (two years before and after winning or being a runner-up for a national championship in Division I football or basketball);
4. What is the trend for a university regarding residency status (in-state, out-of-state) of the applicant pools over a four-year period (two years before and after winning or being a runner-up for a national championship in Division I football or basketball);
5. What is the trend regarding the average ACT/SAT scores of the entering freshman class for a university over a four-year period (two years before and after winning or being a runner-up for a national championship in Division I football or basketball);
6. What is the trend regarding the number of National Merit Scholars in the entering freshman class for a university over a four-year period (two years before and after winning or being a runner-up for a national championship in Division I football or basketball); and
7. What is the trend regarding total undergraduate and graduate enrollment for a university over a four-year period (two years before and after winning or being a runner-up for a national championship in Division I football or basketball)?

### **Definition of Terms**

Throughout this study several terms and acronyms related to intercollegiate athletics will be used. An alphabetical listing of those terms is listed as follows:

1. Academic Profile-ACT/SAT percentile scores, high school GPA, high school graduation rank, and number of National Merit Scholars;

2. BCS-Bowl Championship Series;
3. FBS-Football Bowl Subdivision (formerly Division I);
4. FCS-Football Championship Subdivision (Formerly Division 1AA);
5. IPEDS-The Integrated Postsecondary Data System;
6. NAIA-National Association of Intercollegiate Athletics; and
7. NCAA-National Collegiate Athletic Association.

### **Assumptions**

Toma and Cross (1998) found that national championships in football and basketball at the NCAA Division I level experience considerable increases in enrollment applications. In conducting this study, the assumption is that there is a relationship between athletic success and enrollment. More specifically, the assumption is that athletic success creates a positive image and exposure for colleges and universities and that there is a positive correlation between national championships and the number of applicants.

### **Limitations**

The main limitation associated with this study was recognizing other factors related to enrollment and determining the relationship of those factors on enrollment as opposed to, or in conjunction with, national championship seasons. For example, during this time period, the University of Alabama's strategic plan focused on aggressively growing enrollment especially through out-of-state students. In addition, this study focused exclusively on NCAA Division I colleges and universities. As a result, the findings may not apply to NCAA Division II and III member schools or member schools of the NAIA. This study was also limited by the most recent ten years for which there are data available. Due to the lag time in data reporting, the years studied were 1998-2009.

CHAPTER II:  
REVIEW OF THE LITERATURE

**Introduction**

The literature presented in this review is drawn from the following EBSCO databases: Academic Search Premier, MasterFILE Premier, Business Source Premier, ERIC, PsycINFO, and PsycARTICLES. Keywords used either individually or in conjunction include athletics, intercollegiate athletics, sports, colleges, universities, higher education, students, enrollment, admission, academic, performance, success, programs, involvement, engagement, persistence, graduation, NCAA, Division I, football, basketball, revenue, and fundraising.

Intercollegiate athletics represent an extremely popular but controversial aspect of American higher education. More than a century ago, in 1906, college presidents created the NCAA with the support of President Theodore Roosevelt, a staunch advocate of sportsmanship (Suggs, 2009). The NCAA has since been entrusted with the dual responsibility of promoting and regulating intercollegiate sports. To critics of intercollegiate programs, there has been far more too much emphasis on “promotion” and too little attention to regulation. Proponents have argued that athletic programs have academic advantages, enabling colleges and universities to attract a larger pool of applicants with strong academic credentials (Mixon, Trevino, & Minto, 2004; Pope & Pope, 2009). Detractors have claimed that institutions compromise their academic credibility by admitting athletes who fail to meet their standard admission criteria (Fried, 2007;

Shulman & Bowen, 2001). The findings of studies examining the relationship between athletics and academics tend to be inconsistent and therefore unlikely to resolve the debate.

Studies on the influence of athletic teams on institutional fundraising are also unlikely to settle disputes. This line of research began in the late 1970s and after three decades, there is a sizable body of research with findings too inconsistent and contradictory to provide a clear or compelling picture of how college athletic programs affect institutional fundraising (Frank, 2004; Martinez, Stinson, King, & Jubenville, 2010; Stinson, Marquardt, & Chandley, 2012). What is clear is that expenditures on intercollegiate athletic programs have skyrocketed since the 1990s, raising the question of whether escalating athletic expenses are encroaching on the budgets of academic departments (Frank, 2003; Knight Commission, 2010; Likins, 2005). Between 1995 and 2001, the budgets of intercollegiate athletic departments in Division I schools grew more than twice as fast as the overall university budget (Frank, 2004). Among the universities in the major athletics conferences, the median spending per athlete ranges from 4 to almost 11 times more than the median spending on academic related activities per student (Knight Commission, 2010).

A popular argument in favor of intercollegiate athletic programs is that they generate revenues that benefit the school's athletic and academic programs. Once again, there is evidence for both sides of the argument (Frank, 2004; Fried, 2007; Knight Commission, 2004; Martinez et al., 2010). Sensationalized accounts of athletes attending prestigious universities but who could barely read, triggered outrage about the juxtaposition of athletics and academics and resulted in the implementation of stringent academic standards and monitoring procedures (Ferris, Finster, & McDonald, 2004). Still, when one scandal involving high profile athletic teams is quelled, others consistently take their place in the public consciousness. The result is that the question of

what impact intercollegiate athletic programs exert on higher education remains emotionally charged.

A decade ago, Shulman and Bowen (2001) published a scathing critique of athletic programs, charging they create an isolated and detrimental subculture and concluded that athletic teams are not profitable as a whole. Hayden White, a professor at Stanford University, decried the commercialism (or “sleaziness” to use his word) of athletics in American higher education, stating that college sports have “betrayed their educational purpose,” having turned into a business enterprise rather than an educational experience (White, 2006, p. B10). Fried (2007) was extremely critical of recruiting students on the basis of athletic talent to the exclusion of students with stronger academic credentials. Needless to say, college sports have numerous defenders and the recent empirical evidence suggests that many athletic programs do benefit their institutions academically. The major concern is striking an appropriate balance between the academics and athletics (King, Sexton, & Rhatigan, 2010; Knight Commission, 2010; Likins, 2005).

Weisbrod, Asch, and Ballou’s (2010) work explored the balance between mission and money at colleges and universities. In doing so, they provided an analysis of the profitability of intercollegiate athletics, concluding that men’s football and basketball are highly profitable sports at Division I institutions. The authors examined academic success through grade point averages and completion rates, discovering considerable discrepancies between athletes and non-athletes in sports that were profitable, but an insignificant gap between athletes and non-athletes in unprofitable sports. The researchers also analyzed the efficacy and outcomes of recent efforts to improve academic achievement among athletes. The authors posit that “whenever a

university's choice, in athletics or anywhere else, is between generating money, which is easily measured, and retreating 'a bit' from a vague academic mission, the money will prevail" (p. 239). The authors ultimately explain how both university mission and money are not mutually exclusive and are vital to institutional survival, even though there is often tension between the two.

Some institutions that may benefit most may not be the universities fielding high profile conference football and basketball teams. Many community colleges are actively involved in adding athletics programs to make their campuses more attractive to prospective students while others are in response to growing numbers of traditional age (18-24 students who desire a full college experience (Ashburn, 2007). Enthusiasm for athletic programs is especially strong at community colleges located in the Midwest, Virginia, and North Carolina, the homes of some of the most high profile sports teams. Athletic programs have been driving enrollments in rural community colleges, resulting in increased revenues for improving the overall quality of the institution (Bush, Castaneda, Hardy, & Katsinas, 2009).

Some smaller Historically Black Colleges and Universities have been resurrecting football programs that were abandoned because they were too expensive to maintain but they now hope to bring in a good return on investment, driving growth of the student enrollment (Greenlee, 2001). Addressing Fried's (2007) criticism of college athletic recruiting, the new football programs provide opportunities for student athletes who failed to earn scholarships to larger schools, and an additional benefit is that the teams promote student engagement by motivating more students to join the band or the cheerleading squad (Greenlee, 2001). Some small liberal arts colleges are countering declining enrollments by investing in football (Feezell, 2009; Sander, 2008). Parallel to the overall picture for the impact of athletic programs in higher

education, some colleges will enjoy substantial gains while for others the benefits will be negligible, and for still others the result will be a net loss. The relationship of intercollegiate athletics program to other aspects of the institution is highly complex and will be examined from several perspectives.

## **Theoretical Framework**

### **The College Choice Process**

While there are numerous criticisms of the aggressive recruitment of college athletes there is actually minimal research on college selection by student athletes (Letawsky, Schneider, Pedersen, & Palmer 2003). Models of college choice evolved over the last few decades as the percentage of students graduating from high school who plan to attend college continues to grow. Models of college choice can be classified into three types depending upon on the factors they emphasize (Bateman & Spruill, 1996). *Econometric models* are based on the premise that a cost-benefit analysis of sorts underlies the decision to choose a particular institution. The main criteria for evaluating a prospective college or university are geographic location, academic factors, and economic factors. These criteria are weighted in light of the student's family background, social environment, and academic experiences. With escalating tuition costs, the availability of scholarships and other forms of financial aid assume greater importance. For student athletes, especially those from economically disadvantaged backgrounds, an athletic scholarship may play a pivotal role in the decision to attend a particular institution (Potuto & O'Hanlon, 2007).

*Sociological models* outline an array of social and individual factors that influence students' educational aspirations (Bateman & Spruill, 1996). *Combined models* synthesize the elements of the econometric and sociological models that have the most compelling influence on

college selection decisions (Bateman & Spruill, 1996). Combined models conceptualize college choice as a process and analyze the factors that influence the decision-making process at each point of the process.

The most popular of the combined models is the three-stage model predicated on the three stages of *predisposition, search, and choice* (Cabrera & La Nasa, 2000). First developed by Hossler and Gallagher (1987), it presented an initial comprehensive model for traditional college-bound students. The first stage begins in middle school and the last stage, choice unfolds over the last two years of high school when educational and career aspirations come to the forefront. This stage marks the introduction of factors related to the quality and features of the institution and the family's perceived ability to pay for the college costs. High school students at this stage of the process are the focus of research into the influence of athletic programs, and in particular, of *winning* athletic programs.

Hossler, Braxton, and Coopersmith (1989) refined the original model developed by Hossler and Gallagher (1987), redefining the original three phases into three stages: decision on whether or not to participate in higher education; the investigation of institutions; and the process of applying and enrolling. The framework of predisposition, search, and choice are still evident in this refined model

### **Student Engagement**

Astin's (1993) model of student involvement serves as the framework for Gayles and Hu's (2009a, 2009b) work on the development and experiences of student athletes. Based on extensive research, Astin (1993) concluded that students' involvement in a variety of activities during their college years has a beneficial effect on their cognitive and affective development and works to build ties to the college community so the student is more likely to persist to

graduation. Interaction with peers has a powerful impact on development, which is one reason why the isolation of student athletes is an important issue (Gayles & Hu, 2009a, 2009b; Hyatt, 2003; Shulman & Bowen, 2001). Interactions with faculty members have the most pronounced impact on the student's intellectual development and indeed, student-faculty interactions are associated with almost every dimension of academic and personal growth (Astin, 1993). Notably, while extolling the benefits of involvement in extracurricular activities, Astin also cautioned that athletic involvement could detract from academic development.

### **The Flutie Effect**

The term "Flutie effect" was coined in 1984 when Doug Flutie's remarkable touchdown pass led Boston College to an unexpected victory over Miami with the apparent resulting effect of a 25% increase in applications the following year (Fisher, 2009; Frank, 2004). Toma and Cross (1998) conducted an extensive study documenting this effect in a number of colleges and universities. The term Flutie effect has also been applied to increases in donations enjoyed by schools after a winning season or an outstanding event like Flutie's touchdown pass. In both cases the phenomenon is real. However, whether its impact is enduring or transient is open to question.

### **Public Perceptions of Intercollegiate Athletics**

Goidel and Hamilton (2006) raised the question of whether the general public associates the athletic success of state colleges and universities with the quality of their academic programs and what are the factors that influence their perceptions. The study was based on several intriguing assumptions. The first is that much of the public is not well informed about the quality of state colleges and universities and consequently, most people base their opinions on easily available sources of information, notably the media and personal conversations about

college athletic programs. A second assumption that in the face of limited knowledge of academic quality, a university's athletic performance is likely to produce a halo effect, especially among people with less experience within the higher education system. The researchers also proposed that the assumed link between athletic success and academic quality would be stronger during a championship season. Connecting athletic success and academic quality was also proposed to be linked in the public mind with more favorable opinions of state colleges and universities and greater support for increased funding for higher education.

The data came from two surveys of voting age Louisiana residents, timed so that the first survey was conducted in early 2004 in the aftermath of the Louisiana State University's BCS National Championship (Goidel & Hamilton, 2006). The second survey was conducted from December 2004 through February 21, 2005. The two telephone surveys drew 1,022 and 964 respondents, respectively. For the 2004 survey, some respondents were queried specifically about the national championships while others (and all the 2005 respondents) were asked generic questions about athletic success. There were some additional differences in the questions used to elicit the respondents' evaluations of educational institutions and opinions regarding expenditures for higher education.

To the question of whether the public associates athletic success with academic quality, Goidel and Hamilton (2006) declared the answer to be "an unequivocal yes" (p. 855). Interestingly, the researchers had expected the affirmative response from more of the respondents who were asked if they agreed that "LSU's national championship makes for a better academic university, but the response was actually more positive from those asked the generic question about "success in athletics" (51.6% versus 64.5%). The proportion of respondents who expressed strong agreement was also higher among those presented with the

generic question (42% versus 32%). In 2005, roughly two-thirds of the respondents agreed or strongly agreed that athletic success was linked with higher academic quality, even after a season that, while still successful, was not the triumph of the previous year and ended with the LSU coach leaving the university.

The demographic analysis supported the assumption that respondents who did not attend college would be more inclined to equate athletic and academic success (Goidel & Hamilton, 2006). Ironically, the respondents who were asked the question about athletic success and who said they paid “some” attention to public affairs were more likely to associate athletic success and academic quality in 2005 when much of media coverage of LSU football centered on the problems of hiring a new coach than in 2004 when the championship was the focus of media attention. The association between athletic success and academic quality was so consistent that it influenced the way the respondents viewed Louisiana’s higher education institutions, resulting in high ratings in 2005 when the respondents were asked to assign a letter grade to the state colleges and universities and 2004 when they were asked to evaluate the Louisiana colleges and universities in relation to those in other states. According to one model, older, better-educated and more affluent respondents tended to have more negative appraisals of Louisiana’s colleges and universities, but this pattern was not consistent across the three models analyzed.

The final question, whether equating athletic success and academic quality would elicit greater support for increased funding for higher education produced mixed and inconsistent results. Specifically, the 2005 respondents who strongly disagreed with the connection between athletics and academics were significantly less disposed to endorse more funding for higher education but the same effect was not found for 2004 (Goidel & Hamilton, 2006). One possible reason, according to Goidel and Hamilton was that the questions were worded differently in the

two surveys. It is also possible that attitudes toward government spending on higher education could be related to sociopolitical or other factors beyond the scope of the survey. The overall findings suggest that whether or not there really is a relationship between athletic success and academic quality, a substantial proportion of the lesser-educated public feels that there is. The extent that this perception translates into support for higher education is less certain. In view of the finding that a perceived link between athletic success and academic quality was most common among respondents who had only a high school degree (or less), a question for future study would be how this perception might affect the college choice process of first-generation college students.

### **College Selection by Student Athletes**

Letawsky et al. (2003) approached their study of college selection by student athletes from the perspective that members of the Millennial generation may consider different factors in their decision than past generations. Students entering college in the 21<sup>st</sup> century have access to a vast wealth of information but at the same time they may place more value on input from family members and friends and have less experience with independent decision making. The researchers point that out that in choosing a campus, college athletes are selecting a coach and a team as well as an institution. The few studies exploring the college choice process of student athletes were either conducted in the 1980s and 1990s or else they focused on student athletes at the lower NCAA divisions. Letawsky et al. conducted their research at a large Research I university with a national reputation for being a “Big-Time College Sports” institution. More than 400 student athletes are engaged in 25 varsity sports. The participants were 126 first-year student athletes representing more than 93% of the 135 first-year student athletes. The participants completed the Intercollegiate Student Athlete Questionnaire, which was devised by

consulting with staff members from the athletic departments of a variety of institutions and adapted by Letawsky et al. (2003) for their study. More than half the students were male (57.1%) and most were White (79.4%), with African Americans representing the largest ethnic minority (14.3%). The overwhelming majority of the students had received a scholarship of some type, with 22.2% receiving a full athletic scholarship (tuition, room and board), 26.2% a partial athletic scholarship, and 23% a non-athletic scholarship. Revenue sports were defined as football and men's and women's basketball (though the researchers acknowledged that other sports could generate revenue for the institution) and 27.8% of the men and 5.6% of the women were involved in those sports (18.3% overall).

Despite the predominance of students who had either a full or a partial athletic scholarship, the degree programs offered by the university emerged as the number one factor in their decision to attend the university (Letawsky et al., 2003). The head coach, however, was second, followed by the academic support services available on campus, the community where the campus was located, and the institution's athletic tradition. Contrary to the assumption that peers would be influential, neither the opinions of high school athletic teammates nor the college choices of friends were important factors in the decision (Letawsky et al., 2003). Financial aid was also ranked low in importance. Of all the factors, Letawsky et al. were somewhat surprised at the minimal importance the students gave to factors related to being part of an institution with a strong reputation for intercollegiate sports such as television exposure, the prospect of playing immediately, and the potential for future professional sports opportunities. All these seemingly attractive features were among the lowest rated factors in the college choice process. At the same time, less than 20% of the respondents were involved in the revenue sports and their responses were not analyzed separately.

Additionally, it is important to note that the university offered more than 200 undergraduate degree programs as well as graduate and professional studies, thus offering a variety of options for the majority of the student athletes who would not be pursuing athletic careers (Letawsky et al., 2003). The athletic-related features given the highest importance were the head coach, the university's athletic traditions, the athletic facilities, the athletic training facilities, and the official on-campus visit.

An online study of students attending four-year public and private colleges and universities queried the respondents about the effect of facilities on their choice of a college (Reynolds & Cain, 2006). Academic facilities, particularly those related to the students' major was given the highest precedence. Less than 15% of the respondents cited varsity athletics and intramural sports facilities as important in choosing an institution. However, this figure probably reflected the proportion of athletes among the respondents. The overarching implication was that the condition of facilities related to the student's personal interest is an important concern. A substantial number of respondents said they rejected prospective colleges because important facilities were absent, inadequate, or shoddily maintained. In view of the high priority given to academically related facilities, colleges and universities that invest heavily in elaborate sports facilities while neglecting academic facilities, classrooms, libraries, technology, or residence halls may be likely to lose more prospective students with good academic credentials than they attract.

### **Athletic Success and Academic Effects**

#### **Quality of New Applications**

In a widely cited study, Toma and Cross (1998) explored the impact of championship seasons on the applications received by universities with high profile football and men's

basketball teams. The study covered the years 1979 to 1992, which allowed the researchers to examine whether any effect of winning was short-lived or endured over time. In addition, the study examined the changes in comparison to other schools that did not enjoy a winning season during the same time frame. Within the designated time period, 11 different universities won the NCAA Men's Basketball Tournament, with four institutions winning twice (Indiana, North Carolina, Louisville, and Duke). Thirteen different universities won or shared the national football title, with Miami winning four times and Alabama and Penn State winning twice. For each institution, admissions data were collected for the three years prior to winning the championship and the three years after the championship. Changes in admissions were carefully charted and analyzed. For the comparison, Toma and Cross (1998) consulted with admissions and institutional research personnel at four or five similar universities they deemed the school's primary competitors.

There was a definite upward trend in applications among the universities that won or shared football title, with 14 of the 16 schools documenting an increase in applications for the first incoming class after the championship (Toma & Cross, 1998). For two schools the increase was 10% or higher and for two others the increase reached 20% or more. Although the magnitude decreased, the positive impact of the championship extended over the next three years for 14 of the schools, with 13 schools enjoying an increase of at least 7%. The most impressive increases were observed for Miami after 1987 and Georgia Tech after 1990, reaching 34% for Miami and 21% for Georgia Tech, with Georgia Tech experiencing even a slight increase over time and the Miami gains remaining stable. In addition, the two schools substantially outperformed their peer institutions in attracting applicants; in particular, there were some marked declines in applications among Miami's competitors. Among the schools that won

NCAA basketball championships, 10 of the 13 schools had some increases in applicants the admission year after the championship though only two schools enjoyed an increase of more than 10% (Toma & Cross, 1998). The upward trend continued over three years, during which nine of the universities experienced an increase of 9% or higher. Only Michigan experienced a spike in applicants compared to its peer universities, netting a gain of 29% while the other schools had declining enrollments. In most cases, however, the increases experienced by the winning schools were neutralized by comparable increases in applicants by their peer institutions. On the whole, the figures showed persuasive evidence for the Flutie effect. However, noting the numerous variations in application patterns, Toma and Cross (1998) highlighted features of the championship years that imbued some of the winning seasons with elements that made them especially dramatic, interesting, sympathetic, compelling, or simply “good stories” (p. 652). The two most striking examples, Miami and Georgia Tech both had such narrative elements; in the case of Miami, an exciting new “outlaw” style of football highlighted by the media and for Georgia Tech, a “return to glory” after disappointing seasons. In the case of Duke, increases in applications coincided with positive media attention even before winning the championship. Notably, the coverage arose from the university’s “academic rigor and intelligent and disciplined play on the court” (p. 653). In that case, the school’s strong athletic performance drew attention to its academic quality.

It is not surprising that the work of Toma and Cross (1998) has remained important despite the fact that the last season covered by the analysis was 20 years ago. The case study method works to illuminate events beyond winning or losing that are likely to influence prospective students. It may be that within the last two decades, winning has taken on more importance (Fried, 2007; Knight Commission, 2010).

Pope and Pope (2009) investigated the relationship between athletic success and the academic credentials of applicants to the school. According to the researchers, a methodological flaw in many earlier studies was the use of a limited dataset. Thus Pope and Pope deliberately expanded the scope of their study to encompass the years 1983 to 2002, covering the 332 colleges and universities participating in Division I-A football or Division I basketball during that time frame. The analysis included the number of applicants, the students' SAT verbal and mathematics scores, the number of high school diplomas awarded in the state, the average professor's salary, the average state income, and the cost of tuition.

The results demonstrated that the presence of a successful football and/or basketball team boosted the quality of the applicants to that institution, with estimates ranging from 2% to 8% each year for the schools with the top 20 football teams and top 16 basketball teams (Pope & Pope, 2009). Athletic success expanded the pool of prospective students by increasing the number of applicants with high and low SAT scores. The results suggested that the institutions used the larger applicant pool to their advantage, increasing both the quality and the size of their campus enrollment. In addition, private institutions appeared to adjust their tuition in response to the additional interest in enrollment generated by success in basketball. Pope and Pope noted that a similar analysis they conducted disclosed that male students, African American students, and students who were athletes in high school were most influenced by a university's athletic success. The time period covered by the dataset allowed the researchers to discern long-term trends. In the long run, the athletically successful institutions actually had slower increases in applications and enrollments. However, the overall implication is that colleges and universities can leverage their athletic success to increase the size and academic credentials of their student body.

## **Graduation Rates**

In 1990, high profile stories of student athletes who were functionally illiterate played a pivotal role in the passage of the Student Right-to-Know and Campus Security Act, which mandated the reporting of college and university graduation statistics to the Secretary of Education (Ferris et al., 2004). In the wake of the Act and the scandal that prompted it, the NCAA began publishing annual graduation rates for its member institutions beginning in 1993. In the last two decades there has been a significant amount of scholarly interest in the association between intercollegiate athletics and graduation rates in higher education.

Drawing on Tinto's (1993) theory, Mangold, Bean, and Adams (2003) proposed that intercollegiate athletic programs should have a positive impact on college persistence and retention by forging a sense of community among the students and possibly to a lesser degree, faculty members. In doing so, the researchers raised the question of whether a social community built on sports might interfere with learning goals to the detriment of academic performance and persistence, with a negative impact on the school's graduation rates. Mangold et al. stressed that their intention was not to get into the debate over the relative weight colleges and universities attach to their academic and athletic programs. The aim of the study was to present a quantitative analysis of the association between the success of an institution's intercollegiate athletic program and its institutional performance in terms of the graduation rates for all undergraduate students. The data were drawn from the *US News Best Colleges in America* and the U.S. Department of Education's Integrated Postsecondary Educational Data System (IPEDS) for the years 1996-1999. In some cases, the records were drawn directly from the institution.

Other information about school athletic programs came from various websites. The analysis was restricted to 97 of the 112 universities that compete in both NCAA Division I-A football and basketball and based on variables that have been identified in prior research as the most powerful predictors of graduation rates.

The results provided more support for the theory that a successful intercollegiate sports program is not necessarily a vehicle for academic integration and in some cases, may actually detract from the institution's graduation rates (Mangold et al., 2003). The size of the institution could be a pivotal factor. At large universities with a diverse student body, a successful basketball team (or athletic program per se) seemed to create a sense of community that encouraged the students toward fulfilling their academic goals. However, on small, more homogenous campuses, the presence of a strong basketball program, in particular, appeared to detract from academic goals.

Athletic participation provides student athletes on many campuses with a unique opportunity to be immersed in a multicultural community (Hirko, 2009). Not unexpectedly, African American student athletes, and males in particular, are often acutely aware of issues of race (Hyatt, 2003). African American athletes can be doubly stereotyped based on race and athletic status. On the whole, however, athletic participation provides a vehicle for fostering high quality interracial interactions that could ultimately benefit the multicultural climate of the campus (Hirko, 2009).

Mangold et al. (2003) did not separate the graduation data of student athletes and non-athletes in their analysis. Rishe (2003) considers that approach a flaw of most studies examining the impact of intercollegiate athletics on graduation. In his own study, Rishe compared the graduation rates of student athletes with those of all other undergraduate students. The analysis

was based on 252 Division I institutions. According to the overall findings, colleges and universities with major athletic programs enjoyed higher graduation rates, though Rishe attributes this finding to the fact that the same schools also have abundant academic resources. A notable finding and one that contrasts with negative stereotypes of student athletes (Simons et al., 2007) is that the average graduation rates of the student athletes surpassed the graduation rates for non-athletes (Rishe, 2003). That finding is consistent with the idea that athletic participation promotes academic and social integration and engagement, resulting in stronger commitment to the institution and to one's academic goals (Astin, 1993; Tinto, 1993).

Further analyses revealed certain interesting and very specific trends. A greater degree of athletic success produced a greater disparity in the graduation rates of student athletes and other undergraduate students in all cases with the one exception of men's basketball (Rishe, 2003). In addition, there were sharper gender differences in academic persistence in colleges with major intercollegiate athletic programs; in general women have higher graduation rates than men and this effect is magnified in schools with high profile athletic programs.

Ferris et al. (2004) have argued that graduation rates are inaccurate gauges of institutional efforts to support the academic advancement of student athletes because they fail to consider factors such as institutional mission, admissions criteria and selectivity, and financial capital. Graduation rates vary tremendously based on factors extraneous to the presence of an athletic program and over time have gained more attention through reform and the addition of resources. Ferris et al. undertook an analysis of graduation rates among institutions with Division I-A athletic programs over ten years. The results showed that institutions with the most selective admissions criteria had the highest overall graduation rates, a consistent finding in higher education research. At the same time, the graduation rates of intercollegiate athletes were lower

than those of the general student population. As a group, student athletes enter higher education with lower academic credentials than the average for their respective institutions (Aries, McCarthy, Salovey, & Banaji, 2004; Ferris et al., 2004). Even more revealing, student athletes were underrepresented at the highest and lowest ends of the continuum of academic qualifications (Ferris et al., 2004). Their absence at the low end is due to the NCAA eligibility requirements and their absence at the high end suggests that selective institutions are willing to trade off academic credentials for athletic talent. Ferris et al. observed that to some extent, the disparity in admission criteria between athletes and non-athletes exists in all sports with the result that there is only a very small proportion of athletes in the highest ranks of academic qualifications in the entering freshman class.

Ferris et al. (2004) also attributed the predominance of student athletes in the middle ranks of academic qualifications to an “athletic culture” that many critics decry for “its parochialism or its anti-intellectual orientation,” but at the same time, there are features of that culture that work to promote student athletes’ academic progress (p. 569). According to the eligibility requirements, athletes are required to maintain a 2.0 GPA and athletic departments often operate elaborate academic support systems for their athletes with services such as tutoring, advising, mentorship, and assistance from learning specialists. In particular, these services work to boost the academic performance of student athletes who might otherwise risk failing or dropping out. An interesting irony of this situation, according to Ferris et al. (2004), is that while critics contend that athletes “do not belong” on college campuses because they are “different” from other students, they exemplify the notion of what is “average” in terms of their graduation rates from Division 1-A universities (p. 569).

Indeed, to Ferris et al. (2004), this “average” effect makes student athletes a better “academic fit” in universities with “average” or less selective admission criteria than the academically selective institutions where they are often admitted on the basis of their athleticism (p. 569). Tinto’s (1993) theory is based on the concept of person-environment fit. The better the fit between the student and the institution, academically and socially, the higher is the probability that the students will graduate. Ferris et al. (2004) noted that given the extra services and supports, student athletes enjoy a “graduation benefit” at both less selective and more selective institutions. However, in universities with more stringent academic admission criteria, this advantage is insufficient for overcoming the student athletes’ initial gap in academic credentials, thus their graduation rates still fall short of their peers who entered the institution more academically qualified. Ferris et al. (2004) have conceded that given the overall higher graduation rates of academically selective institutions, they are unquestionably an attractive option for athletes and non-athletes and their parents to contemplate as they navigate the college choice process. From the perspective of evaluating institutional effectiveness for promoting the academic success of athletes at Division I universities, however, they maintain their position that graduation rate data per se without cohort comparisons is not a valid indicator across all institutions.

### **Athletics and Academic Performance**

Mixon et al. (2004) used SAT scores as the basis for investigating the association between the success of a university’s football team and the academic status of incoming students. An earlier study by Mixon focused on basketball and found a positive relationship between the institutions’ basketball success and the SAT scores of first year students. The analysis was based on 68 conference-affiliated (plus Notre Dame) universities using their football records for the

years 1990 to 2000 and the SAT scores were drawn from *America's Best Colleges* as posted online for the 2000-2001 academic years. The findings disclosed a decisive positive relationship between the universities' football success and the SAT scores of their incoming freshman class, thus supporting the argument that a high profile football team can indirectly boost the academic quality of a university via its influence on the applicant pool.

Pierce (2007) explored academic success among 19 student athletes pursuing engineering degrees in the College of Engineering and Information Science at the University of South Carolina (USC), a member of the Division I Southeastern Conference. These student athletes represented men's and women's soccer, football, women's cross country, softball, and men's track and field. In contrast to the clustering of many student athletes into less specialized and rigorous academic majors (Fountain & Finley, 2009; Schreider, Ross, & Fisher, 2010), engineering is recognized as a very demanding major. Nevertheless, these select student athletes maintained a mean cumulative GPA of 3.24 (Pierce, 2007). The students' self-appraisals provided insight into how they balanced the challenge of being in a highly competitive athletic program *and* a highly competitive academic program, which can be unduly stressful for many student athletes (Emma, 2008).

Asked to rate their proficiency in six skills areas linked with academic success, time management, organization, classroom *listening*, note taking, problem solving, and study skills, the student athletes appraised their skills quite favorably (Pierce, 2007). Out of 72 self-assessments, 64 (89%) were good or very good. In fact, there were only two poor ratings surfaced, both in the area of study skills. Ironically, these came from students at opposite ends of the academic spectrum: one with a GPA of 3.86 and the other a GPA of 2.10. Time management skills were considered the top priority and the students felt their athletic training had a positive

impact on both time management and organization skills. Based on his own experience playing Division I college basketball, Emma (2008) cited time as the most challenging obstacle to academic success for Division I athletes. The student athletes judiciously allotted their time apart from sports to activities that would advance them academically (Pierce, 2007).

The engineering student athletes were also asked to rate the importance of eight skills that are transferable across athletic and academic performance and thus work to their advantage in completing their college coursework. The eight skills mentioned most often were teamwork, practice, concentration and focus, memorization, responsibility, drive to succeed or win, leadership, and dedication and devotion (Pierce, 2007). Concentration and desire to win were given precedence above the other skills. In descending order, the next most important skills were responsibility, dedication, and leadership. Pierce was surprised that teamwork was not rated higher, especially in a field like engineering that is built on teamwork. However, the student athletes did much of their studying in groups with other engineering students rather than with their athletic teammates.

It is noteworthy that the student athletes who received substantial support from their professors and met with them frequently had GPAs surpassing those of their peers who did not have the same type of faculty interactions (Pierce, 2007). This finding is consistent with Astin's (1993) findings for the powerful impact of positive interactions with faculty on students' academic development and performance. Two-thirds of the engineering students said they received abundant support and guidance from their faculty advisors on course planning and management, an important issue for all students and perhaps especially so for students in a professional discipline (Pierce, 2007).

As a group, the student athletes did not feel their athletic competition posed an obstacle to their academic success. Rather, 38% thought they would not do as well academically if they were not intercollegiate athletes (Pierce, 2007). This study highlighted the way that skills learned through athletics can be applied to academics to the advantage of student athletes. The supportive professors might have played a prominent role in helping the student athletes to realize the connection between the two. However, many collegiate athletes are confronted with faculty members who believe athletics and academics are antithetical and downgrade the academic abilities of student athletes (Simons et al., 2007).

### **Advertising Effects**

Trenkamp (2009) investigated the relationship of Division I men's basketball and football teams to the academic quality of research universities by augmenting SAT scores and 6-year graduation rates as the indicators of academic quality with the *US News & World Report* annual college rankings as a subjective measure of academic quality. The analysis was based on 173 universities that field basketball teams and 103 universities with both basketball and football teams. The graduation rates were derived from the percentage of incoming students from 1997 to 1998 who graduated by the spring semester 2003. The school's academic rank was drawn from the 2004 edition of *US News & World Report's America's Best Colleges* and football and basketball ratings assigned by Jeff Sagarin of *USA Today* were included in the analysis.

Trenkamp's (2009) results were consistent with those of Mixon et al. (2004) in supporting the positive impact of football success on the SAT scores of incoming freshmen (Trenkamp, 2009). However, in contrast to Mixon's earlier study, Trenkamp found a negligible impact of basketball success on the objective indicators of academic quality, new students' SAT scores and 6-year graduation rates. The addition of the *US News & World Report* rankings

showed that universities with successful football and/or basketball programs earned superior rankings. Therefore, the rankings may be a factor in attracting students to universities with strong intercollegiate athletic programs.

Smith (2009) has argued that one of the reasons that determining the relationship between an institution's athletic success and academic quality is so complicated is that there are numerous variations in how athletic "success" and "performance" are conceptualized. Some studies rely on annual win-loss percentages, some aggregate winning and losing over a designated time period, and others use end of season ratings. Given the myriad variations there is no consistency in the concepts of "athletic branding" and "advertising effects." Underlying both concepts is the idea that sports increase the school's visibility and potentially stimulate interest into what the school has to offer prospective students, donors, and other potential stakeholders. According to Smith, "having a brand and advertising it are distinct processes" and there is question of whether athletic success can produce either one for some schools (p. 557).

Going beyond the focus in sports economic literature on the advertising and branding benefits schools derive from successful sports programs, Smith (2009) has invoked a sociological perspective by proposing that real advantages some schools over others are sports "culture," "heritage," and "tradition" that have been established over time (p. 558). Alumni giving is an example of the perpetuating effect of athletic culture. By donating to their alma mater, college alumni maintain connections to the culture, and also make that culture available to a new generation of students. Smith investigated the relationship of college football and the academic quality of entering students with the aim of determining whether the impact of the football team derives from the branding effects of winning or the university's football culture and tradition.

The sophisticated analysis was based on data from the 119 Division I-A and 116 Division I-AA colleges and universities and included a number of variables that produced five models (Smith, 2009). The length of time the school fielded a football team was the simplest measure of athletic culture or tradition but the analysis also included the number of books written about the school's football program as well as Bowl Subdivision membership and Bowl Championship Series conference membership. Success was captured by employing several measures of winning commonly used in the literature. The results produced the conclusion that some proportion of high school students making their choice of a college are attracted to institutions with high profile college football teams in either the Bowl or Championship Subdivisions. Institutions with more entrenched football traditions and cultures boasted first-year students with stronger academic qualifications. Advertising and branding effects were also apparent as seasons that might have generated a greater amount of media coverage resulted in a higher percentage of incoming freshmen with strong SAT scores (75<sup>th</sup> percentile combined reading and math), a GPA of B or better, or graduation in the top 10<sup>th</sup> of their high school class.

According to Smith (2009) while it appears superficially that a successful football team has the power to boost the quality of the incoming class of students and by extension the university as a whole, there are some cautions. The first lies in basing results on a sample composed primarily of institutions in BCS conferences. The most detailed and inclusive model showed that the Division-I schools actually tended to enroll new students whose combined SAT scores were lower than those of institutions with less high profile teams. Second, while the evidence suggests that an institution's "brand awareness grows with the seasonal fortunes of its football team," the effects vary for the different measures of student quality, and most important, the most powerful impact comes from breakout football seasons, defined as triumph after 15

years of losing or no bowl appearances (p. 572). Describing massive financial investment in football with the aim of improving the institution's financial mission as "fool's gold," Smith has declared that the expenses "could not possibly outweigh the one-time benefit from the splashy success" and there was negligible support for the idea that schools could sustain the advantage by means of other athletic factors (p. 572).

In short, the positive impact of football tradition is enduring and stable, while the academic benefits gained from winning seasons is negligible (Smith, 2009). Toma and Cross (1998) found that the benefits of championship seasons were sustained over three years, but without a separate analysis of tradition and culture, one cannot rule out that those attributes played a role in the sustained effect. Additionally, the compelling narratives that drove some of the gains in enrollment enjoyed by some of the universities could be interpreted as stories of the university's athletic culture. Given the number of variables in his analyses, Smith (2009) emphasized that the institutions had features apart from their football programs that attracted academically high performing high school students. Certainly the schools' academic programs and resources played an important role in drawing students of high academic caliber. Rishe (2003), for example, has attributed the high graduation rates of Division I universities to their ample academic resources. Smith (2009) found empirical support for marketing and advertising effects, athletic tradition and culture, and non-athletic features of the institution all playing a role in drawing academically high performing students.

### **Academic Clustering Among Athletes**

According to Schneider et al. (2010), the issue of academic clustering among college athletes has provoked the interest of journalists but scant attention in scholarly research. Fountain and Finley (2009) have noted that claims of academic clustering are often based on

anecdotal evidence from college campuses that athletes tend to be concentrated in interdisciplinary studies programs which enable them to avoid taking rigorous, academically demanding courses that might compromise their academic eligibility. Both authors examined the issue, using data obtained from Division I-A Conference media guides, with Fountain and Finley (2009) analyzing the data to compare the majors of white and minority football players. The accepted definition of clustering is the situation where 25% or more members of an athletic team can be found in the same academic major.

Schneider et al. (2010) augmented the data from Division I-A football media guides with rosters from the Big 12 Conference posted online. The analysis was based on student athletes who were juniors and seniors during the 1996, 2001, and 2006 seasons. The sample produced from 30 to 50 players from each university for a total of 424 football players. For 2006, roughly 30% of the athletes were in majors within the social sciences and 21% were in business disciplines. For 2001, more than half the players (59.58%) were in communications fields or social sciences. In 1996, the social sciences and communication also predominated although not to the same extent (close to 37%). The data were further analyzed to assess the proportion of football players within individual subject majors.

Overall, the evidence supported the premise that football players from universities with high profile teams are clustered within certain majors (Schneider et al., 2010). In fact, the more prominent the school's football team, the more likely it was that more players would be concentrated in a particular major. In view of the athletic support services that athletes in revenue sports are often provided, the athletic and academic departments might have decided it would be easier to work with the athletes if they were in similar majors, or they might work together to schedule classes to make them more compatible with the demanding athletic

schedule. Alternately, student athletes may select majors based on recommendations from their teammates who were successful in those disciplines. An unduly high proportion of student athletes report having their academic abilities disparaged by professors who stereotype them as “dumb jocks” (Simons, Bosworth, Fujita, & Jenson, 2007). From that perspective, student athletes might be especially receptive to advice from others about majors where they might be likely to feel more welcome.

Schneider et al. (2010) concluded that there is evidence of academic clustering among Division-I football players. However, the precise patterns differ across institutions and without more detailed analysis the reasons for the phenomenon are speculative as is its impact, whether negative or positive. Fountain and Finley (2009) utilized data from the Atlantic Coast Conference, covering 394 football players from 11 of the 12 teams that played in the 2006 season. To simplify their analysis across institutions, the academic majors were divided into nine categories that best captured the nature of the discipline and the nine categories were analyzed to determine whether race played a role in academic clustering. The analysis was limited to upperclassmen.

Not only was clustering prevalent using the standard of 25% or more of the players, but some of the programs far surpassed that proportion (Fountain & Finley, 2009). At one university, nearly three-quarters (73%) of the football players were studying business management. In 6 of the 11 universities at least one-third of the players were concentrated within a single major. At two of the schools, the majors of choice were sport management (36%) and sport administration (25%), which seem obvious choices for athletes. In fact, Schneider et al. (2010) acknowledged that fields related to sport management might simply attract student athletes. However, the information gathered by Fountain and Finley (2009), which breaks down

the majors by individual institution revealed some unusual patterns. In addition to the unduly high proportion of football players in business management at one university, two other universities showed 46% and 45% of the players majoring in fields within the social sciences and liberal arts, respectively.

Furthermore, at nine of the universities, the proportion of minority students concentrated in one major was even higher than the proportion of white students (Fountain & Finley, 2009). In four schools, 62% or more of the minority players were concentrated in a single major. A comparable proportion of white students (69%) was found in only one school. At six institutions more than three-quarters of the minority players were represented in only two majors. In addition, the high concentration of upperclassmen, particularly athletes of color, in liberal arts or “general studies” raises the question of whether the student athletes are being prepared by their universities for any career other than football. At the university where business management was the overwhelming major of choice among both white and black athletes, Fountain and Finley observed a troubling disparity in the Graduation Success Rates (GSRs) of the two groups: 81% for the white athletes versus only 34% for the black athletes.

Among the student athletes surveyed by Potuto and O’Hanlon (2007), a higher proportion of African American than white students ascribed their choice of major to athletic reasons and athletes of both ethnicities said their involvement in sports compensated (or more than compensated) for not pursuing their first choice of major and were ultimately satisfied with their major. Four times the proportion of African American student athletes said it was probable they would become professional or Olympic athletes (25% versus 6%). These responses were not limited to athletes in revenue generating sports although all the students attended Division-A universities.

The racial differences in academic majors, compounded by the GSR data, make Fountain and Finley (2009) far more skeptical of the motives for academic clustering than Schneider et al. (2010). According to Fountain and Finley (2009), if the main reason for academic clustering was flexible scheduling, for example, it would seem probable that White and Black football players would be found in the same majors but that was only the case for 3 of the 11 universities. They also state that if the majors were chosen to make it easier to provide the student athletes with academic services and supports, there should be no reason for the low graduation rates at some of the institutions, especially among the Black athletes. Although they approach the issue of graduation from a different perspective, Fountain and Finley, like Ferris et al. (2004), view the university's graduation statistics as insufficient for evaluating whether the institution actually supports the academic success of its student athletes. Indeed, Fountain and Finley (2009) are highly cynical of the fairness and integrity of universities with high profile football teams in providing a good education for the revenue generating athletes they actively recruit, particularly athletes of color.

### **Student Athletes' College Experiences**

Researchers who conduct quantitative analyses of the association between intercollegiate athletics and institutional outcomes such as graduation rates routinely recognize that what is missing from the equation is the experience of the student athletes. Potuto and O'Hanlon (2007) surveyed intercollegiate athletes from 18 Division I-A institutions to gain insight into the nature of their college experience. They received responses from 921 athletes. More than 90% of the respondents viewed their experience favorably and virtually all said it was important to graduate; in fact, 93% deemed it "very important" they graduate and felt their families had the same opinion. While this perception seems highly positive, Potuto and O'Hanlon pointed out that the

importance the student athletes awarded to graduation contrasts sharply with the actual graduation rates of intercollegiate athletes. The survey disclosed potential reasons for the disparity. The student athletes clearly did not believe their coaches and professors attached the same value to their graduation as they did. Only 83% thought their professors considered it important they graduate, a figure reduced to 47% with the exclusion of “somewhat important” responses. On the surface the coaches overwhelmingly thought it important the student athletes graduate, with 94% expressing agreement but once again the number dropped, to 66% without the “somewhat important” responses.

Three-quarters of the respondents were adamant that they would have gone to college even if they had not been athletes and most said they would have been involved in sports without an athletic scholarship, providing that were financially feasible. To Potuto and O’Hanlon (2007), the overwhelming enthusiasm for attending college brought up questions about the argument that athletic programs are important for attracting students who might not otherwise attend college. At the same time, they recognized that some of the students did not have the means to attend college without an athletic scholarship or other form of financial assistance.

The majority of the respondents portrayed their college experience in very positive terms and felt they had a well-rounded experience (Potuto & O’Hanlon, 2007). However, detailed analysis revealed evidence of a trade-off. The student athletes conceded that they missed out on some academic and social experiences due to athletic competition but they prized their athletic involvement and felt it had a positive impact on their academic and psychosocial development. The respondents cited several sources of academic and psychosocial support. Favorite professors were an overarching source of academic support (90%), along with academic advisors within and outside of the athletic department (85%). Social and emotional support came from

family members (96%), teammates (80%), roommates (74%), other friends (66%), and classmates (41%). The overall portrait indicates that the student athletes enjoyed the type of experiences that promote college engagement.

There were certain differences based on sport, gender, and race. Among the African American students, athletics played a more prominent role in their college career and they were more likely than their White peers to say they identified as athletes first and students second (24% versus 16%). This might be explained by the comparable proportion of African American student athletes who aspired to be professional or Olympic athletes (Potuto & O'Hanlon, 2007). With respect to gender, a higher proportion of men than women said that athletic participation had a negative impact on their GPAs (72% versus 57%) and men were also more likely to choose to devote extra time to sports rather than academics and other campus activities.

Some of the most distinctive differences were found in comparisons between athletes in team sports and individual sports. Potuto and O'Hanlon (2007) noted that while the two groups were similar in many respects, they also expressed some responses that differed significantly. The athletes in team sports were more likely to identify as athletes rather than students, to feel that their GPA would be higher if they were not involved in sports, to feel they would become a professional or Olympic athlete, and to feel their professors discriminate against them because they are athletes. Regardless of sport, a substantial proportion of student athletes felt they experienced discrimination by professors, some of it very overt (Simons et al., 2007). Conversely, the athletes in individual sports were more likely to spend much of their summers at home and be involved with campus organizations (Potuto & O'Hanlon, 2007). The athletes in revenue sports (football and men's and women's basketball) devoted more of their effort and

concentration into their sport and less into other campus activities but were also more likely to say they would play a varsity sport without financial assistance if they could afford to.

Using data from the National Survey of Student Engagement (NSSE), Umbach et al. (2006) addressed the issue of whether the educational experience of student athletes was inordinately different from that of their non-athletes peers. The survey was based on 113,553 students enrolled in undergraduate programs during the spring semester 2003. Close to 10% of the respondents were intercollegiate athletes. Of the 395 four-year institutions represented, 107 were NCAA Division I programs, 93 were Division II, 145 were Division III, and 50 were members of the National Association of Intercollegiate Athletics (NAIA). A series of hierarchical linear models were utilized to capture and analyze the data. Student engagement is assessed in three key areas: (1) level of academic challenge, (2) student-faculty interactions, and (3) active and collaborative learning experiences. The study encompasses the students' social and intellectual development and the features of the campus environment.

The analysis clearly refuted the stereotypical assumption that athletes are disengaged from campus life apart from their athletic activities (Umbach et al., 2006). In some aspects, the student athletes were actually more engaged in campus academic and social life than the non-athletes. Additionally, the student athletes felt their campus environment offered a greater degree of academic and social support than the non-athletes and they reported experiencing more personal growth and development since they began their college careers. Umbach et al. attributed the more positive perceptions of the campus environment by the student athletes, as well as slightly higher six-year graduation rates, in part, to the tutoring and other support services that many institutions provide for their student athletes. They also noted that these positive advantages for student athletes have been reported by other studies. At the same time, while

there are many common features of the campus experience of student athletes, there are some differences in engagement among athletes in different sports (revenue and non-revenue) as well as differences based on gender and race (Potuto & O'Hanlon, 2007).

Indeed, some differences among athletes groups did arise in the NSSE data (Umbach et al., 2006). A notable finding was that Division III athletes tended to have a more stimulating academic experience. However, this difference can be attributed to the fact that small liberal arts colleges predominate in Division III. The Division III students on the whole were more satisfied with their college experience and reported enjoying more academic supports. One striking and unexpected finding was that male athletes tended to be less satisfied than other men on their respective campuses. A possible explanation is that student athletes are often stereotyped and stigmatized by their professors and non-athlete students and this effect may be more pronounced for male athletes (Simons et al., 2007). Overall, the college experiences of student athletes were similar to those of their non-athlete peers and the differences that did arise usually favored the athletes.

Aries et al. (2004) compared the college experiences of athletes and non-athletes at an Ivy League university and a highly selective Division III liberal arts college, focusing on their psychosocial development and integration into the campus activities beyond athletics. The analysis was based on five waves of data beginning with the students' arrival at orientation their first college semester. Almost half the student athletes from the liberal arts college and one-quarter from the Ivy League university were highly dedicated to their sport, devoting more than ten hours per week to their team. Academically, the highly committed athletes lacked the strong credentials of their non-athlete peers. On average, these student athletes had lower verbal SAT scores, lower math SAT scores to a lesser degree, and lower academic self-appraisals, especially

in relation to their writing and foreign language skills. As described by Aries et al., in view of their representation in the overall population on campus, the athletes “had an impact on the overall academic profile of the student body” at their institutions (p. 596).

Despite their lower academic qualifications upon entering college, lower confidence in their academic skills, and reports of facing academic challenges, Aries et al. (2004) noted that the highly committed student athletes were not significantly outperformed by other students with comparable demographic attributes and SAT scores. Non-recruited student athletes often perform academically at levels equal to or just short of non-athletes depending upon the selectivity of the institution (Emerson, Brooks, & McKenzie, 2009).

Compared to non-athletes, the athletes viewed themselves less favorably in terms of intellect and creativity but at the same time they had higher self-concepts as good leaders and saw themselves as more confident, outgoing, and socially adept (Aries et al., 2004). The highly committed athletes were also distinguished by being more conservative than other students on campus. Although they had lower self-concepts related to intellectual and artistic abilities, the fact that their academic performance was satisfactory and they had high social self-concepts suggests that college had a positive developmental influence on the student athletes (Astin, 1993). In fact, Aries et al. (2004) observed that the highly committed student athletes had a greater degree of social well-being. Most were involved in extracurricular activities apart from athletics and contrary to common assumptions, the athletes were not socially isolated from their non-athlete peers.

Gayles and Hu (2009b) explored the effects of engagement and athletic participation among Division I student athletes. Astin’s (1993) theory served as a framework for the study, particularly his classifications of cognitive and affective development. The cognitive domain

encompasses “higher order mental processes such as critical thinking, academic achievement, and logic and reasoning,” while affective development refers to values, attitudes, and beliefs (p. 318). Gayles and Hu noted that more attention is being paid to affective outcomes in higher education. In fact, Gayles, Rockenbach, and Davis (2012) recently developed a conceptual model of civic responsibility in the development of college students, and tested the model in a study examining the impact of athletic involvement on the association between social activism goals and charitable involvement. The impact of athletic participation was essentially neutral. In one respect, however, the findings are significant in countering stereotypical portrayals of student athletes as having a sense of privilege and entitlement (Simons et al., 2007).

Gayles and Hu (2009a) have emphasized that colleges and universities are entrusted with the responsibility of promoting the positive cognitive and affective development of student athletes, which could be neglected if their athletic training is exalted above all else. According to Hyatt (2003), noncognitive factors, specifically, commitment, integration, isolation, and discrimination, can outweigh academic factors in shaping the college experience of athletes, particularly African American males. Commitment and integration are drawn from the theories of Astin (1993) and Tinto (1993), respectively. Although these concepts are important for understanding the college experiences and subsequent outcomes of all students, discrimination and isolation have a documented impact on the persistence and graduation of student athletes and disproportionately for certain subgroups such as African American men (Hyatt, 2003).

Gayles and Hu (2009b) utilized the Basic Academic Skills Study (BASS), which was developed to help the NCAA assess student athletes’ interests, attitudes, and academic skills. The study was based on secondary analysis of the BASS subscales of Progress in College (PIC) and Social and Group Experiences (SAGE). The main areas captured by the subscales are:

participation in a variety of out-of-class experiences; perceptions of the campus environment such as the quality of relationships with faculty members and other students apart from athletic teammates; political and cultural attitudes and values; and athletic, personal, and social goals. Additionally, the students appraise their learning, growth, and development on certain dimensions.

Of the four engagement areas, the findings showed that the student athletes were most likely to be involved in interactions with other students besides their teammates (Gayles & Hu, 2009b). This finding is similar to the NSSE study (Umbach et al., 2006) and both studies refute the claim that student athletes are isolated in an unhealthy subculture (Shulman & Bowen, 2001). Gayles and Hu (2009b) found some evidence that male and high profile athletes engaged in fewer interactions with students other than their teammates, which mirrors some of the findings of Potuto and O'Hanlon (2007). The overarching conclusion was that the types of activities student athletes engage in during their college careers outweigh background characteristics such as gender, race or ethnicity, and major in shaping the quality of their self-concepts and learning and communication skills (Gayles & Hu, 2009b).

Hyatt's (2003) review of research documented the way non-cognitive factors can undermine the college success of African American male athletes. Ting (2009) found a similar effect for non-cognitive factors on the academic performance of Division I student athletes during their first college year. Although SAT scores played some role in the analysis, their impact was weak or negligible compared to the powerful role of non-cognitive factors, specifically *positive self-concepts, preference for long-term goals, demonstrated community service, and acquired knowledge in a field*. The role of community service supports the

relevance of civic involvement for student athletes (Gayles et al., 2012). Non-cognitive factors unequivocally play a powerful role in the college experience of student athletes.

Miller and Kerr (2002) conducted an in-depth study of the academic, athletic, and social experiences of four male and four female intercollegiate athletes attending a large Canadian university. The four athletes were selected to represent both team (basketball and volleyball) and individual (swimming and track and field) sports. All four student athletes had been very involved in high school sports and their athletic motivation was reinforced by the more competitive level of intercollegiate athletics. They arrived at the university expecting to gain a high quality college education. However, in contrast to their enthusiasm for the atmosphere of college athletics, adjusting to university life presented a “difficult transition” (p. 356). They had to adapt to the quantity and complexity of college level coursework and the type of studying needed for academic success in an academic milieu marked by didactic lecture style teaching, large class sizes, and limited interactions with faculty members. Learning to find their way around the university system entailed managing the selection of courses, fulfilling degree requirements, and completing administrative tasks such as registration.

The picture that emerges is that the student athletes lacked the type of institutional support that facilitates the integration and engagement. In fact, they were left almost entirely on their own to make academic decisions without support or assistance from coaches or advisors (Miller & Kerr, 2002). Following a decline in grades the first college year, the student athletes strived to improve their academic performance initially turning to strategies such as switching majors, dropping courses, and curtailing social activities as they struggled to balance competing academic and athletic demands. When they reached their junior and senior years the student athletes finally became very engaged in their studies and gave precedence to academics over

sports. Miller and Kerr ascribe this shift to two factors. First, the upper level courses were more specialized and intellectually stimulating. Second, the student athletes came to terms with the need to prepare for graduate school or careers.

The lack of support for the Canadian student athletes contrasts sharply with the NSSE findings (Umbach et al., 2006), which may be explained by the support programs and resources g available to many student athletes in the U.S. While some universities make it a point to provide their athletes with strong academic supports and guidance, the practice is not universal. Miller and Kerr's (2002) study is illustrative because it highlights the struggles of some student athletes in balancing the demands of the student and athlete roles. Even in the presence of institutional support, many student athletes find this endeavor stressful and difficult (Emma, 2008). Ideally, student athletes should have a comprehensive package of supports encompassing academic support, career counseling, and personal development (Carodine, Almond, & Gratto, 2001). From the perspective of relationship marketing, Judson, Aurand, and Karlovsky (2007) declare that universities must build the trust of their athletes and to accomplish this, "universities must recognize the sizable investment they have made in attracting and retaining student athletes and provide them with every opportunity to be successful during their college and professional careers" (p. 195).

### **Stereotypes and Stigmatization**

College athletes are both exalted and demonized by the popular media. From the perspective of stigma theory, a person's social identity can be valued in one situation but devalued in another (Simons et al., 2007). College athletes are highly prized for their athletic prowess, but off the playing field, student athletes are frequently stereotyped as "dumb jocks," thought by their non-athlete peers and faculty members to have limited academic qualifications

and motivation while receiving undeserved privileges and rewards. As preface to their study, exploring the way college athletes feel they are perceived and treated by other students and faculty members, Simons et al. cited incidents related by student athletes of how professors denigrated the intelligence of athletes in front of the class. For example, a female basketball player related how on the first day of class, a professor asked the athletes to stand and proclaimed to the class, “These are the people who will probably drop this class” (p. 251). A male swimmer related how a professor told a class of 400 students that the test they were about to take was so easy that “Even athletes can pass” (p. 251). Astin’s (1993) research detailed the powerful impact that interactions with faculty members have on students’ college experience including virtually all academic outcomes. The quality of interaction with other students also affects academic development. Thus, the way students are viewed by others around them works to shape the quality of their academic experience.

From a social cognitive perspective, stigmatization triggers coping mechanisms that can be either positive or negative (Simons et al., 2007). Internalization is an insidious negative response whereby the person may come to believe the negative perceptions of others. For student athletes, this can produce a decrease in academic self-concept resulting in behaviors that reinforce the dumb jock stereotype such as avoiding academically challenging situations or disengaging from academic activities. An alternative course is to implicitly accept the stigma and try to conceal one’s identity as an athlete. A third strategy, with positive implications, is to counter the stereotype by working hard, being an active participant in class, and striving to be an exemplary student. An additional, also positive strategy is to actively confront overt or covert stereotyping and discriminatory treatment.

The participants were 538 intercollegiate athletes from 27 sports attending a large, selective Division I-A university (Simons et al., 2007). Out of the total sample, only 15% thought they were viewed positively. One-third of the student athletes said they were viewed negatively by faculty members and 60% said they were seen negatively by other students. Almost 30% were subjected to derisive comments about athletes' intelligence by professors, who sometimes made the aforementioned jokes and comments in front of the class. A similar proportion had professors who denigrated the academic motivation of student athletes. Almost 62% of the student athletes had requests for accommodations for athletic competition refused by professors or were given a hard time when they asked. These negative experiences transcended race, gender, and sport. However, African American athletes in football and basketball reported the most negative experiences. More than 27% of the respondents said they received lower grades than they described, a figure escalating to nearly 40% for athletes in revenue sports and African American athletes (37.8%) regardless of sport.

The most common response to being intellectually stereotyped was investing more effort in academic work, a strategy employed by more than one-third of the group (35%). However, the proportion of student athletes who responded by disengaging from active involvement in class was only slightly lower (32%), and others dropped the class (15.8%), or just stopping attending the class (5%), all with potentially negative ramifications (Simons et al., 2007). Some students whose appearance did not immediately identify them as athletes or who were not known as athletes tried to make their athletic identity inconspicuous. An unduly high proportion of student athletes relied on counterproductive coping strategies to deal with negative stereotypes. To Simons et al., the issue of stigmatizing and stereotyping student athletes is something that must be addressed at all levels of the institution, with the top-down support of campus administration.

Student athletes are already under tremendous physical and emotional pressure (Emma, 2008). As described by Emma, “These young men and women are extremely talented and unequivocally prepared for the rigors of high level academia. They take their school work as seriously as athletes take their games” (p. 37). At the same time, Emma acknowledges that scholarship intercollegiate athletes typically do not begin college with the same academic credentials as their peers chosen by highly selective universities for their strong academic achievement. That more than a third of the student athletes surveyed by Simons et al. (2007) countered negative stereotypes by trying harder academically attests to the concentration and drive to win transferred from the field to the classroom (Pierce, 2007). The fact that the athlete engineering students who enjoyed the support of faculty members did better academically reinforces the assertion of Simons et al. (2007) that faculty members should collaborate with athletic departments in order to dispel misconceptions on both sides and support student athletes academically as well as athletically.

### **Athletic Teams and Fundraising**

To Getz and Siegfried (2010), the idea that winning athletic teams generate private donations to the school is surrounded by “a lot of anecdotes and marketing hype” (p. 25). Their own analysis of the existing evidence is that there is empirical support for this popular belief but the effects tend to be small and primarily restricted to football teams appearing in post-season bowl games. Getz and Siegfried are among the ranks of those who are cynical about the bigger picture of how athletic programs influence donations and applicants and whether potential negative effects such as inequities in financial allocations might ultimately outweigh the advantages. Similar questions about the long-range effects of winning seasons and above all, the academic impact of major investments in athletic programs drive much of the research.

Rhoads and Gerking (2000) investigated the effects of successful Division I football and basketball teams on the educational contributions of the school's alumni and non-alumni. The study included high profile teams from the Southeastern, Big Ten, Atlantic Coast, Pacific 10, Big 12, and Western Athletic conferences, as well as teams representing other conferences and a few major independents. The data came from 87 universities that sponsored both football and basketball teams during the period 1986-87 to 1995-96. Many of the universities have made long-term, major investments to teams that regularly appear in televised bowl games and basketball games. The results showed that changes from year to year had no impact on donations by non-alumni. However, alumni giving was sensitive to changes based on a winning or losing season. Winning football teams prompted positive responses from alumni while having a basketball team placed on NCAA probation exerted a negative impact.

The changes in alumni giving based on the events of the season are consistent with branding or advertising effects. However, somewhat analogous to Smith's (2009) finding that athletic culture and tradition have a stronger impact on the quality of new student admissions than winning seasons, Rhoads and Gerking (2000) observed that the impact of winning or losing on donations was overshadowed by the finding that "long-standing athletic traditions, measured by the extent of participation in football bowl games and NCAA basketball tournaments prior to the sample period, does appear to have a positive impact on voluntary support from both groups" (Rhoads & Gerking, 2000, p. 257). And even the effect of athletic tradition was fairly weak when contrasted with the impact of student and faculty quality on donations, thus supporting the need to balance investments in athletics and academics for a sound return on investment (Knight Foundation, 2010; Likins, 2005).

Rhoads and Gerking (2000) are actually less circumspect about the prospective return on investment from athletic programs. From their perspective, the cost of the resources needed to enrich academic programs may far exceed the costs of enhancing athletic programs, though more recent figures show the reverse, with the expenses associated upper division athletics programs surpassing all other institutional expenses (Knight Foundation, 2010). From the standpoint of appearing to prospective donors, Rhoads and Gerking (2000) have stated that improvements in the school's athletic performances are quickly and readily visible and may generate immediate results while academic improvements are less apparent to prospective donors and less likely to be accompanied by short-term changes to the institution's academic reputation or status. From that perspective it can be argued that investing in improving athletic programs may generate donations that benefit the institution as a whole under certain circumstances.

Turner, Meserve, and Bowen (2001) examined the relationship between football success and athletic giving by alumni at 15 academically selective private colleges and universities. Five of the 15 institutions fielded athletic programs competing in NCAA Division I-A, four were members of Division I-AA, and the six remaining institutions were liberal arts colleges competing in Division III. Academic gifts were not analyzed separately; rather the researchers categorized the gifts as "athletic giving" or "general giving." The giving data spanned a ten-year period from 1988-1989 to 1997-1998. The base of actual and potential donors was composed of all first-year students entering the schools in 1976.

In contrast to the popular argument that winning seasons translate into higher levels of general gift giving, there was no association between the won-lost records in football and general giving for the Division I-A or Ivy League institutions (Turner et al., 2001). Perhaps more unexpectedly, the association between winning seasons and athletic donations to the Division I-

A schools was negligible. The picture was dramatically different for the Division III schools, whereby there was a significant link between winning and general gift giving. Among the Division III schools, there tended to be a negative relationship between winning and losing and athletic donations. However, athletic gift giving accounted for a scant 1% of the annual donations to the Division III, colleges thus there is virtually no practical relevance of the relationship. When the analysis was based on amounts rather than giving rates, the only significant relationship was counterintuitive; that is, improved performance for the I-A football teams produced an average *decrease* of more than \$200 per donor in general gift giving and there was no counterbalancing effect of an increase in athletic donations.

Turner et al. (2001) added a unique feature in examining donor gift giving: they compared the giving patterns of alumni who had or had not been on an intercollegiate athletic team during their college career. That detail brings to light some of the seemingly contradictory findings. Former intercollegiate athletes (regardless of sport or gender) were more influenced by the performance of the school's football team. The former athletes at the Division III and Ivy League schools were more motivated to increase their general gift giving in the wake of a winning season while, not surprisingly, winning resulted in increases in athletic gifts from the former I-A and I-AA athletes. Among the non-athlete alumni donors there was no significant link between the football team's won-loss records and general giving at any type of institution. The most striking finding was that winning tended to have a *negative* impact on giving among the alumni donors to the highly competitive I-A schools, driven by the alumni donors who had not been varsity athletes. The reason for this effect is uncertain and might simply be a reflection of the small number of schools included in the analysis. Nonetheless, although the sample was

small, the inclusion of Ivy League and Division III schools provided the study with an added dimension as did the separate analyses of the athlete and non-athlete alumni donors.

Stinson and Howard (2004, 2008) presented two studies of intercollegiate athletic departments and charitable donations. In their study of contributions to the University of Oregon, Stinson and Howard (2004) discerned distinctly different patterns of giving by alumni and non-alumni. While both alumni and non-alumni gave to athletic and academic programs, the alumni donors made significantly greater contributions to academics than the non-alumni whereas the non-alumni were more likely to make athletic contributions. There was a notable increase in athletic contributions for the final year of the study. Indeed, data analyses at several levels confirmed that the high-profile athletic program is reaping gifts from alumni and non-alumni alike while “academic giving struggles to remain stable” (Stinson & Howard, 2004, p. 136). This “crowding out” effect occurs when donors who give a fixed amount each year allot all or increasingly larger amounts to athletic programs at the expense of academics (Stinson & Howard, 2008). This phenomenon counters the argument that athletic fundraising is mutually beneficial to a college or university’s athletic and academic programs.

In their more recent research, Stinson and Howard (2008) investigated patterns of giving among the 208 institutions competing in the NCAA Division I-AA and I-AAA (no football) for the years 1998 to 2003. Out of the total, 36 schools field football teams and the remaining schools do not sponsor football. The study focused on the size of the average gift and the giving data were analyzed in relation to the team’s performance. For Division I-AA basketball, an NCAA tournament appearance and the one-year lagged variable of an NCAA tournament appearance were both linked with an increase of more than \$400 in the average total gift. For football teams, a playoff appearance produced a marked increase in the number of donors;

specifically, more than 900 alumni donors for an increase surpassing 10%. There was no similar effect for the average gifts donated to the I-AAA teams. However, moving up in the end-of-season rankings produced an additional 85 donors contributing to the institution and each additional post-season appearance over the prior 30 years was linked with an additional 658 donors.

Not unexpectedly, the team's athletic performance exerted a significant impact on the amount of the total gift allocated to the school's athletic program Stinson and Howard (2008). The effect of athletic success was more apparent for the alumni donors than the non-alumni donors. Unexpectedly, the findings for academic gifts among the I-AA institutions refuted the "crowding out" effect observed in the Oregon study (Stinson & Howard, 2004). Parallel to the models for the average total gift, the current and one-year lagged effect of NCAA tournament appearances translated into over \$400 increase in the average academic gift, reflecting an increase of almost 100% in the average size of an academic donation (Stinson & Howard, 2008). Thus the classification of I-A or I-AA alters the pattern, whereby the crowding out effect is apparent for Division I-A, but not for I-AA institutions. With all the schools included in the model, athletic factors fail to exert a significant impact on the average academic gift size. However, based on their overall analysis, Stinson and Howard find it probable that athletic success translates into an increase in the number of donors bestowing academic gifts on the institution.

Stinson and Howard (2008) emphasized that the practical impact of athletic success on giving was marginal in some instances and far less influential than other institutional characteristics (such as academic ranking, private or public, religious affiliated), the evidence is clear and compelling that successful athletic programs frequently motivate donors to increase the

size of their gifts, and more important for practical purposes, work to attract new donors. At the risk of making overly broad generalizations, Stinson and Howard called attention to the different patterns between Division I-A and I-AA and I-AAA schools. Specifically, at I-AA and I-AAA institutions the academic programs reap the benefits of the school's athletic success. These institutions appear to avoid the pitfalls of athletic giving at Division I-A institutions and instead, the athletic success of I-AA and I-AAA has something of a halo effect that simultaneously benefits the school's athletic and academic programs.

Frank's (2004) conclusion based on a report by the Knight Commission, was that while a few high-profile athletics programs prosper from their investments in intercollegiate sports, most lose out in the cost-benefit analysis. Doug Flutie's spectacular touchdown pass that led Boston College to unexpected victory over the University of Miami was an outstanding incident that has since entrenched the term "Flutie effect" in the lexicon of the popular media and scholarly literature on intercollegiate athletics. The increase in applications the following year generated by Flutie's performance commanded a tremendous amount of media attention. However, Frank emphasized "Such vivid events notwithstanding," the existing evidence offers minimal support for the assumption that high profile athletic teams have any consistent effect on the quality of student enrollment or on alumni donations" (p. 25). Certainly, impressive successes stand out, but in reality, according to Frank:

All major college programs go through cycles of relative success and relative failure. And if success stimulates alumni giving, then failure must inhibit it. The empirical literature seems to say that if the overall net effect of athletic success on alumni giving is positive, it is likely to be small. (p. 26)

In Frank's (2004) perspective, athletic expenditures should be guided by sharp understanding of the economic forces that drive big-time athletic markets. He recommended that policy questions are addressed at two levels. The first is that individual institutions have to

determine how much they are willing to invest in the pursuit of high-profile athletic achievement. Secondly, private and public governing bodies have to decide whether or how to regulate the actions of individual athletic programs. In terms of regulation, there is a call among college presidents for much greater transparency in the expenditures and activities of athletic programs (Knight Commission, 2010; Likins, 2005).

Martinez et al. (2010) conducted a meta-analysis of studies exploring the relationship between intercollegiate athletics and individual, private donations to colleges and universities. Spanning the years 1976 to 2008, the searches produced 26 empirical studies, further narrowed to 14 studies from 1979 to 2008 that met the researchers' stringent criteria. The overall findings suggested that athletic team success has a small but nonetheless significant influence on institutional fundraising. The relatively small effect sizes resulted from the variations in the results individual studies. Four major factors exerted the strongest influence on the relationship between athletics and fundraising: the target of the donation (the university, the athletic program, or the academic program), the donor's alumni status, the institution's NCAA classification (Division I-A, I-AA, or combination), and the sport of interest (football, basketball, or other). Athletic success had a positive impact on academic as well as athletic fundraising and was more influential for alumni than non-alumni donors. Not unexpectedly, football was the dominant influence on fundraising for institutions among universities that had football teams. There was no difference in effects for public and private educational institutions, thus implying that institutions of both types can benefit from their athletic teams.

### **Intercollegiate Athletic Expenditures**

Amidst the controversy over the impact of intercollegiate athletics on outcomes such as student enrollments, academic quality, and institutional fundraising, perhaps the one

characteristic that is undeniable is that many colleges and universities make tremendous financial investments in their athletic programs. The point of dispute is the return on investment. Stinson et al. (2012) investigated the return on investment (ROI) for athletic program expenditures utilizing data drawn from IPEDS and from the Equity in Athletics dataset documenting the revenues and expenses of NCAA Division I-A/FBS athletic programs. Both datasets covered the years 2003 to 2008. Several models were constructed encompassing the various factors analyzed such as the characteristics of the institutions and their US News and World Report academic rankings.

A driving force in the study was the lack of empirical research and quantitatively developed models that place institutional investments in athletics within the broader context of institutional program investments (Stinson et al., 2012). Stinson et al. noted that their study encompasses numerous pathways that universities can create and increase value for current and potential customers as well as the spectrum of various stakeholder groups within and outside of the university. Investment in both academics and intercollegiate athletic programs emerged as significant channels for adding value. According to Stinson et al., one of the most significant findings is that students are drawn to a university based on factors directly affecting their educational experience. These include instructional expenses, technology and infrastructure, students support services, and other endeavors that enhance the quality of the students' academic experience. These academically related factors outweigh university investments in athletics in influencing prospective and current students. Additional support for the value students' award to investments affecting the quality of their academic experience is found in the online facilities study (Reynolds & Cain, 2006). The facilities the students cited as having the strongest

influence on their choice of a college correspond directly to the educational factors identified by the research of Stinson et al. (2012).

At the same time, the importance of investing in athletic programs should not be downgraded. A somewhat unexpected but illustrative finding was that university investments in athletics emerged as the only antecedent factor affecting the institutions' capacity to graduate students above and beyond the expected graduation rates (Stinson et al., 2012). Although the effect was small, Stinson et al. stated that it could ultimately have a profound impact on the institution. That is, while institutional investment in academics is the driving force in attracting students, investment in athletics is a primary mechanism for "keeping them" (p. 111). The retention of students has been a complex and persistent issue for decades yet graduation rates in higher education have changed minimally over the years. Given that situation, as well as the ongoing controversy over the merits of intercollegiate athletics programs the findings of Stinson et al. are especially striking.

According to Stinson et al. (2012) their findings provide a compelling counterpoint to Frank (2004) who concluded that institutions essentially break even on their investment in athletics. To Stinson et al. (2012), their analysis documents that intercollegiate athletics represent a sound ROI whereby an investment of \$1 in Athletic Expenses yields \$2.12 in Core Revenues. Their overarching conclusion is that investments in academics and athletics both bestow positive benefits on universities in ways that complement one another. It is ironic that much of the research exploring the impact of athletic programs on colleges and universities focuses on attracting students, while academics play a more important role in that endeavor and athletics exert a stronger impact on graduation.

## **Conclusion**

Throughout history, the debated value of intercollegiate athletic programs has elicited strong opinions from many, including former U.S. Presidents (Suggs, 2009), with a significant portion of the debate centering around the balance between athletics and academics (King, Sexton, & Rhatigan, 2010; Knight Commission 2010; Likins, 2005), and balancing the existence of these programs with academic missions and expenditures (Weisbrod, Asch, & Ballou, 2010). The impact of intercollegiate athletics, particularly the highly competitive conference football and men's basketball teams, on the academic profile of colleges and universities remains an unsettled and controversial issue. Three decades of research producing inconsistent and contradictory results has further complicated the issues.

The study conducted by Toma and Cross (1997) regarding athletic success and the number of applicants at an institution has inspired others to further explore the intercollegiate athletic culture, particularly in studying the college choice process. The most recent studies suggest that athletic programs actually do benefit the institutions in terms of an expanded and more academically qualified applicant pool and donor gifts supporting athletic and academic programs (Martinez et al., 2010; Pope & Pope, 2009; Stinson et al., 2012), contradicting previous studies (Frank, 2004; Fried, 2007; Knight Commission, 2004). Furthermore, as a group, student athletes enjoy healthy personal and intellectual growth and are involved in the activities on campus beyond their athletic teams (Gayles & Hu, 2009b; Potuto & O'Hanlon, 2007; Umbach et al., 2006). However, African-American males often feel isolated and discriminated against (Hyatt, 2003). The literature also suggests that the benefits in terms of new enrollments and donor gifts are not especially large and they vary considerably across individual schools.

Nonetheless, the evidence is largely favorable and refutes the harsher criticisms and warnings of ostensibly detrimental effects of intercollegiate sports.

## CHAPTER III:

### METHODS

#### **Introduction**

The purpose of this study was to examine the relationship between an appearance in a Division I intercollegiate football or basketball national championship game and enrollment.

This chapter describes the methods and design utilized to answer the following research questions:

1. What is the trend for a university regarding the size of the applicant pools over a four-year period (before and after an appearance in a national championship game in Division I football or basketball);
2. What is the trend regarding the number of national merit scholars in the entering freshman class for a university over a four-year period (before and after an appearance in a national championship game in Division I football or basketball);
3. What is the trend regarding the average high school grade point average of the entering freshman class for a university over a four-year period (before and after an appearance in a national championship game in Division I football or basketball);
4. What is the trend regarding total undergraduate and graduate enrollment for a university over a four-year period (before and after an appearance in a national championship game in Division I football or basketball);

5. What is the trend for a university regarding race/ethnicity of the total enrollment over a four-year period (before and after an appearance in a national championship game in Division I football or basketball); and
6. What is the trend for a university regarding residency status (in-state, out-of-state) of the total enrollment over a four-year period (before and after an appearance in a national championship game in Division I football or basketball)?

### **Sample Selection**

The total number of universities for this study is 26, which included all teams that appeared in either a BCS national championship football game or the NCAA Division I basketball national championship game from 1998-2009, some of which appeared either more than one time or in both football and basketball championship games during the specified period. This range of years was chosen to coincide with the inaugural season of college football's BCS national championship game. During that time period, 12 institutions appeared in the BCS football championship, with the University of Oklahoma appearing four times, Florida State University and Ohio State University each appearing three times, and the University of Florida, Louisiana State University, University of Miami, University of Texas, and University of Southern California each appearing twice. During those same years, 16 institutions appeared in the NCAA basketball championship, with the University of Florida and Duke University each appearing three times and the University of Kansas, Michigan State University, University of Connecticut, and University of North Carolina-Chapel Hill each appearing twice. The University of Florida won back-to-back basketball championships, one of which coincided with one of its BCS football championships during the defined period. Table 1 outlines each team and sport included in this study sport in which they competed for the national championship.

Table 1

*Competition for the National Championship by Year, Sport, and School*

Year	Sport	National Champion	Runner-Up
1998	Football	University of Tennessee	Florida State University
1998	Basketball	University of Kentucky	University of Utah
1999	Football	Florida State University	Virginia Tech
1999	Basketball	University of Connecticut	Duke University
2000	Football	University of Oklahoma	Florida State University
2000	Basketball	Ohio State University	University of Miami
2001	Football	Louisiana State University	University of Oklahoma
2001	Basketball	University of Southern California	University of Oklahoma
2002	Football	University of Texas	University of Southern California
2002	Basketball	University of Florida	University of Oklahoma
2003	Football	Louisiana State University	University of Oklahoma
2003	Basketball	Syracuse University	Kansas University
2004	Football	University of Southern California	University of Oklahoma
2004	Basketball	University of Connecticut	Georgia Tech
2005	Football	University of Texas	University of Southern California
2005	Basketball	University of North Carolina	University of Illinois
2006	Football	University of Florida	Ohio State University
2006	Basketball	University of Florida	UCLA
2007	Football	Louisiana State University	Ohio State University
2007	Basketball	University of Florida	Ohio State University
2008	Football	University of Florida	University of Oklahoma
2008	Basketball	Kansas University	University of Memphis
2009	Football	University of Alabama	University of Texas
2009	Basketball	University of North Carolina	Michigan State University

## **Data Collection**

To collect the data for this study, I purchased access to a licensed dataset from the NelNet Corporation, previously known as Thomson. NelNet Corporation is the parent company that publishes the widely used *Peterson's Guide to Four Year Colleges*. Many of the studies included in the literature review, including the widely cited Toma and Cross study, used data from the print versions of this guide. At least one study used data from the licensed dataset. The initial dataset included annual statistics on all 119 colleges and universities that participated in NCAA Division I football or Division I-A basketball between 1997 and 2011. The data for this study were restricted to the universities within the previously stated timeframe and limited to the following variables: applicant pool size, number of National Merit Scholars in the entering freshman class, high school grade point average of the entering freshman class, total undergraduate enrollment, total graduate enrollment, and the percentage of out-of-state residents enrolled at the institution.

As part of the requirement to receive federal financial aid, institutions are required to respond annually to IPEDS surveys related to enrollment, retention, graduation rates, and other critical factors that measure an institution's progress over time. For this study, I utilized the IPEDS dataset to obtain the following variables: total white/Caucasian enrollment and total black/African American enrollment.

## **Data Analysis**

To date, various methods have been developed and implemented to measure the impact of intercollegiate athletic success on higher education. Many of those methods involved the use of inferential statistics. The data for this research was analyzed through a quasi-experimental time-series design using descriptive statistics. Campbell and Stanley (1963) have suggested that

the foundation of the time-series design is the intermittent measurement of groups or individuals along with “the introduction of an experimental change into this time series of measurements, the results of which are indicated by a discontinuity in the measurements recorded in the time series” (p.37). For this study, the groups were the teams that appeared in the championship games, with the appearance in the games being the change or event introduced to determine the trends before and after the appearance.

Glass (1997) posited that a time-series design is appropriate when using archival data and in cases where the intervention is “made by someone other than the researcher and not normally made for experimental purposes, although the researcher makes use of it for causal analysis” (p. 4). In this study, the intervention was the appearance in the championship game, an event not controlled by the researcher, and the data were extracted from the Peterson’s and IPEDS archives.

Campbell and Stanley (1963) identified eight threats to internal validity within a time series design: history (the most significant threat), maturation, testing, instrumentation, regression, selection, mortality, and interaction of two or more of the above factors. In addressing these threats individually, none of them appears to affect the validity of this study. No significant events (other than the championship appearance) occurred between the years measured. In addition, the championship appearances occurred at the same time each year and the process by which teams were selected did not change. Therefore, neither history nor maturation was a threat to internal validity. As this study did not involve a test or instrument, those factors had no affect on this study. Statistical regression, or regression toward the mean, can be a threat to validity when participants are chosen on the basis of unusual or extreme characteristics. Selection is seen as a threat to validity when extreme differences exist between

the comparison groups. All of the teams for this study were selected based on the single criterion of championship game appearance. Finally, the loss of participants from a study, or mortality, was not applicable to this study as all participants were selected based on an event that had already occurred.

Witte and Witte (2005) have posited that descriptive statistics “provides us with tools- tables, graphs, averages, ranges, correlations-for organizing and summarizing the inevitable variability in collections of actual observations or scores” (p. 5). Inferential statistics are used when one takes a sample of a certain population and generalizes the findings to that population. Since the population for this study is also the sample, descriptive statistics were most appropriate. Using SPSS software, I calculated the mean and median changes over time.

Tables were used to demonstrate each variable related to the respective team and the mean and median changes in those variables, while graphs were used to demonstrate the time-series analysis utilizing the raw data. Through this descriptive and time-series study, data were analyzed to determine the relationship between a university’s appearance in a Division I football or basketball national championship and enrollment. Using data covering a 12-year span and the entire BCS era, the analysis is both in-depth and informative. As findings from previous studies have been somewhat inconsistent, the results from this study add to the current body of literature and the discourse regarding the role of intercollegiate athletics.

## CHAPTER IV:

### RESULTS

The relationship between an appearance in an NCAA Division I football or basketball national championship game and several variables related to enrollment were examined in this study. Using a time-series design with descriptive statistical measures, I evaluated both raw data and percentage changes over the years before and after the appearance in the national championship game. Data for universities with football championship appearances and basketball championship appearances were run separately to determine and evaluate differences. For each research question, I will first display and discuss the results for football, then follow with results and discussion for basketball. The raw data analysis will be demonstrated through line graphs while the percentage data will be demonstrated through tables.

#### **Football Results**

The first research question examines the number of applicants at the universities studied. What is the trend for a university regarding the size of the applicant pools over a four-year period (before and after an appearance in a national championship game in Division I football or basketball)?

Table 2 shows the trend for applicant pools at universities whose football team appeared in the BCS National Championship football game. Year two percentage change represents the applicant pool for the fall preceding the championship game in January. Year three percentage

change represents the fall applicant pool for the fall following the January game and year four percentage change represents the second fall post appearance. In examining the mean and median for the applicant pools, it is clear that the number of applications to the institution increased over the three-year period. The academic year following the championship game, the median percentage increase in applications was 5.78%. The second academic year following the championship game, the median increase was an additional 5.92%. From the academic year before the championship game through the second academic year following the appearance, the median percentage increase in applications was 15%.

Table 2

*Football Applicant Pool Data: Statistics For Applicant Pool and Annual Pct Changes from Previous Year*

	Two years before game	One year before game	One year after game	Two years after game	Year two percentage change	Year three percentage change	Year four percentage change
N	24	24	24	23	24	24	23
Mean	16116.9	16776.5	17916.7	18535.7	4.71	6.69	5.24
Std. Error of Mean	1470.4	1506.3	1631	1692.8	1.69	1.67	2.85
Minimum	6361	6384	6652	6943	-6.37	-3.83	-35.87
Median	16938	17926	18289	20112	3.41	5.78	5.92
Maximum	29278	29792	31634	33979	29.2	30.4	30.77

Note. Using the raw data from each university, figure one below shows the trend for applicant pools at universities whose football teams appeared in BCS National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

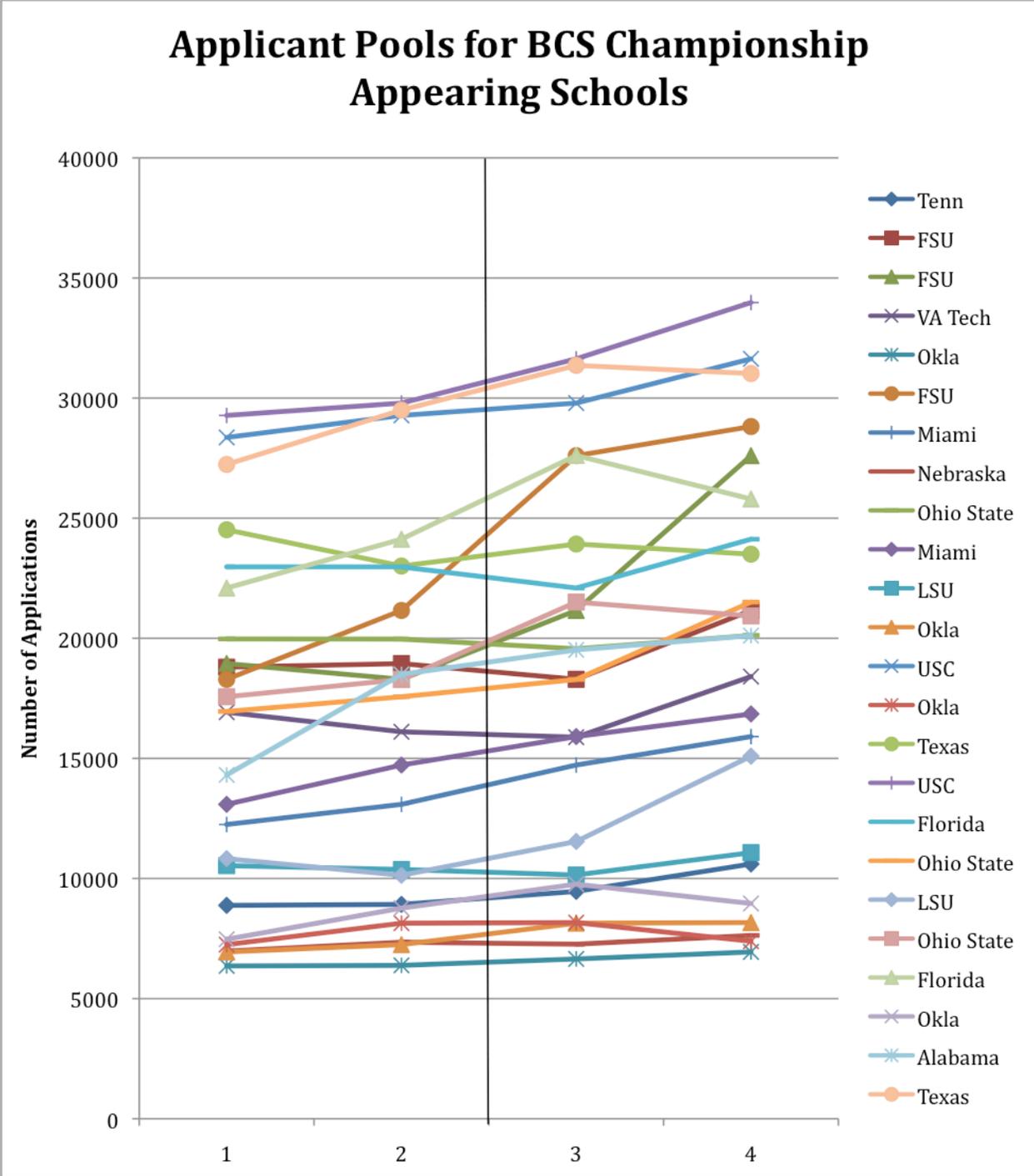


Figure 1. Applicant pools for BCS appearing schools.

The second research question examines the number of National Merit Scholars in the entering class. What is the trend regarding the number of national merit scholars in the entering

freshman class for a university over a four-year period (before and after an appearance in a national championship game in Division I football or basketball)?

Table 3 shows the trend for National Merit Scholars at universities whose football team appeared in the BCS National Championship football game. Year two percentage change represents the number of Merit scholars for the fall preceding the championship game in January. Year three percentage change represents the number of Merit scholars for the fall following the January game and year four percentage change represents the second fall post appearance. In examining the mean and median percentage changes for the number of merit scholars, virtually no change occurred over the three-year period. The academic year following the championship game, the median percentage increase in National Merit Scholars was 0.00%. The second academic year following the championship game, the median increase was .28%. From the academic year before the championship game through the second academic year following the appearance, the median percentage increase in National Merit Scholars was .28%.

Table 3

*National Merit Scholar Football Data: Statistics For Merit Scholars and Annual Percentage Changes from Previous Year*

	National Merit (2 years before game)	National Merit (1 year before game)	National Merit (1 year after game)	National Merit (2 years after game)	Year 2 percentage change	Year 3 percentage change	Year 4 percentage change
Mean	115.7	121.8	118.1	122.8	7.4097	3.9970	2.4399
Std. Error of Mean	14.2	14.1	13.4	14.46	3.12	4.57	6.66
Minimum	30	28	34	32	-11.84	-58.76	-58.76
Median	107.0	117.0	118.5	120.0	.0000	.2809	.0000
Maximum	277	281	242	242	46.36	35.71	70.00
N	22	22	20	18	22	20	17

Using the raw data from each university, figure two below shows the trend for National Merit Scholars at universities whose football teams appeared in BCS National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

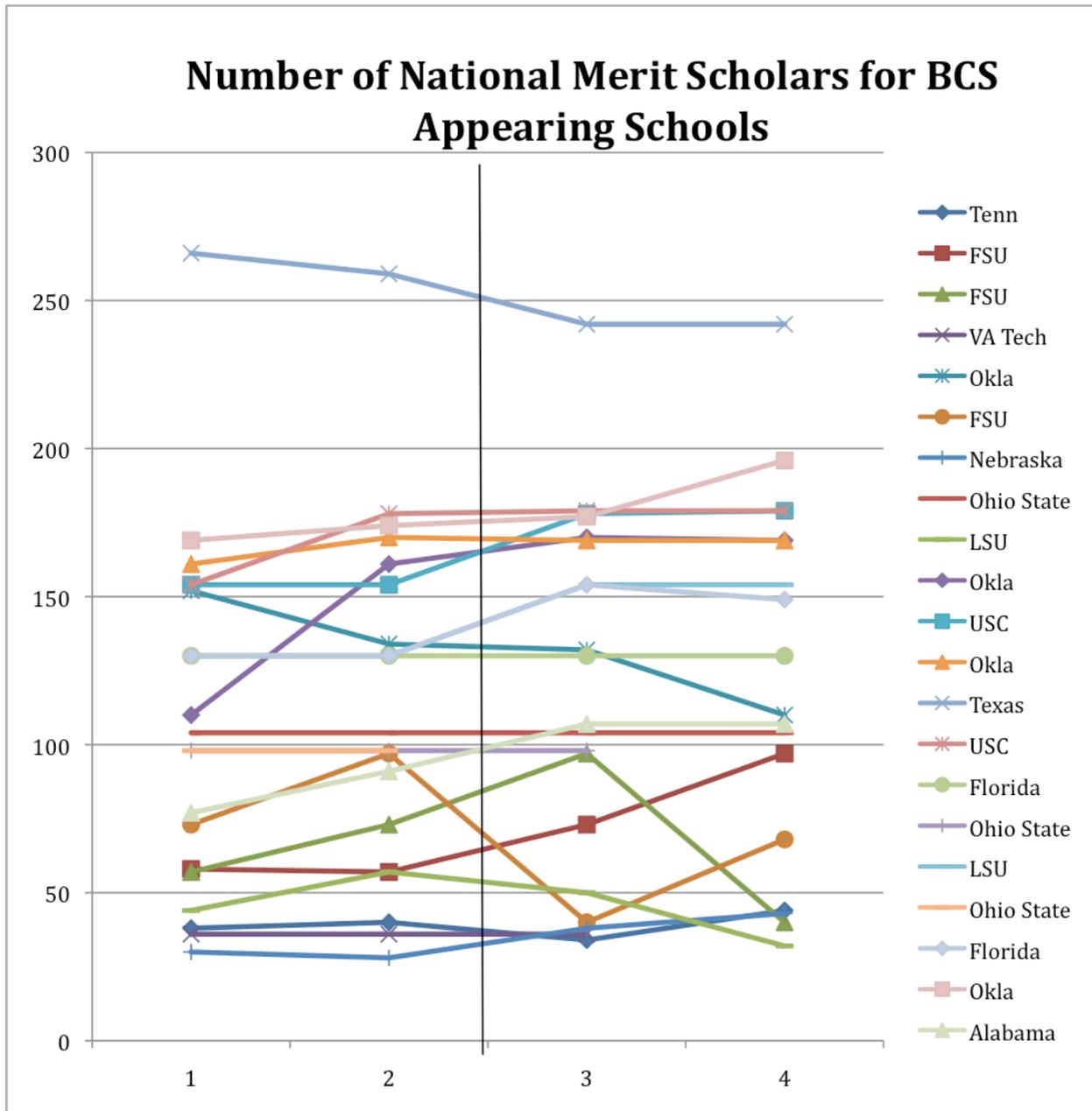


Figure 2. Number of National Merit Scholars at BCS appearing schools.

The third research question examines the high school grade point average of the entering class. What is the trend regarding the average high school grade point average of the entering freshman class for a university over a four-year period (before and after an appearance in a national championship game in Division I football or basketball)?

Table 4 shows the trend for high school grade point average of the entering class at universities whose football team appeared in the BCS National Championship football game. Year two percentage change represents the high school grade point average data for the fall preceding the championship game in January. Year three percentage change represents the high school grade point average data for the fall following the January game and year four percentage change represents the second fall post appearance. In examining the mean and median percentage changes for the high school grade point average, a slight increase in average high school GPA occurred over the three-year period. From the academic year before the championship game through the second academic year following the appearance, the median percentage increase in the high school grade point average of the entering class was 2.4%.

Table 4

*High School Grade Point Average for Football*

	HS GPA two years before game	HS GPA one year before game	HS GPA one year after game	HS GPA two years after game	Year two percentage change	Year three percentage change	Year four percentage change
Mean	3.59	3.62	3.63	3.56	.697	1.12	.552
Std. Error of Mean	.052	.049	.050	.030	.295	.395	.397
Minimum	3.28	3.32	3.29	3.34	-2.63	-2.78	-2.29
Median	3.53	3.57	3.58	3.57	.637	.845	.979
Maximum	3.99	4.00	4.00	3.80	2.94	2.95	2.59
N	18	18	17	14	18	17	12

Using the raw data from each university, figure three below shows the trend for the average high school grade point average for the entering class at universities whose football teams appeared in BCS National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

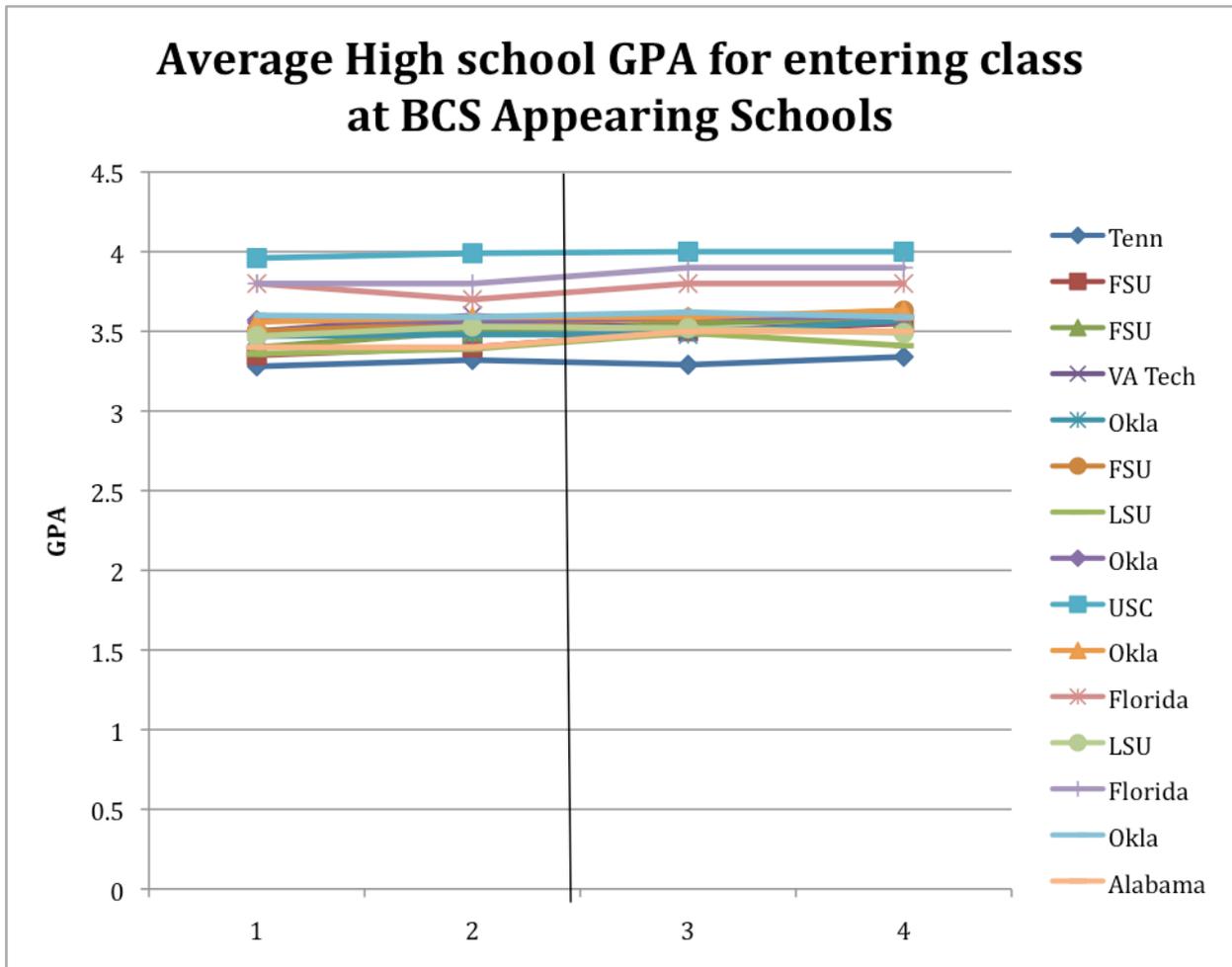


Figure 3. Average high school grade point average of entering class at BCS appearing schools.

The fourth research question examined total undergraduate and graduate enrollment at the universities studied. What is the trend regarding total undergraduate and graduate enrollment for a university over a four-year period (before and after an appearance in a national championship game in Division I football or basketball)?

Table 5 shows the trend for undergraduate enrollment at the universities whose football team appeared in the BCS National Championship football game. Year two percentage change represents undergraduate enrollment data for the fall preceding the championship game in January. Year three percentage change represents the undergraduate enrollment data for the fall following the January game and year four percentage change represents the second fall post appearance. In examining the mean and median percentage changes for undergraduate enrollment, a slight increase occurred with a 1.19 median percentage increase the fall before the appearance in the national championship game, a 2.15 median percentage increase the following year, and a median percentage increase of 1.25 the third year over the previous. Over the three-year period after the appearance in the BCS National Championship Game, the median percentage increase for undergraduate enrollment was 4.6%.

Table 5

*Undergraduate Enrollment Data at Football Institutions: Statistics For Undergraduate Enrollment and Annual Pct Changes from Previous Year*

	Two years before game	One year before game	One year after game	Two years after game	Year two percentage change	Year three percentage change	Year four percentage change
Mean	24364.8	24690.9	25015.7	25384.1	1.60	1.5658	-.0781
Std. Error of Mean	1837.32	1831.52	1840.60	1855.11	.4743	.61319	1.645
Minimum	8628	8955	9359	9794	-3.34	-8.20	-34.81
Median	22378.50	23103.00	23546.50	23947.00	1.19	2.15	1.25
Maximum	38383	38479	39209	40212	5.98	6.08	5.38
N	24	24	24	24	24	24	23

Using the raw data from each university, figure four below shows the trend for undergraduate enrollment at universities whose football teams appeared in BCS National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

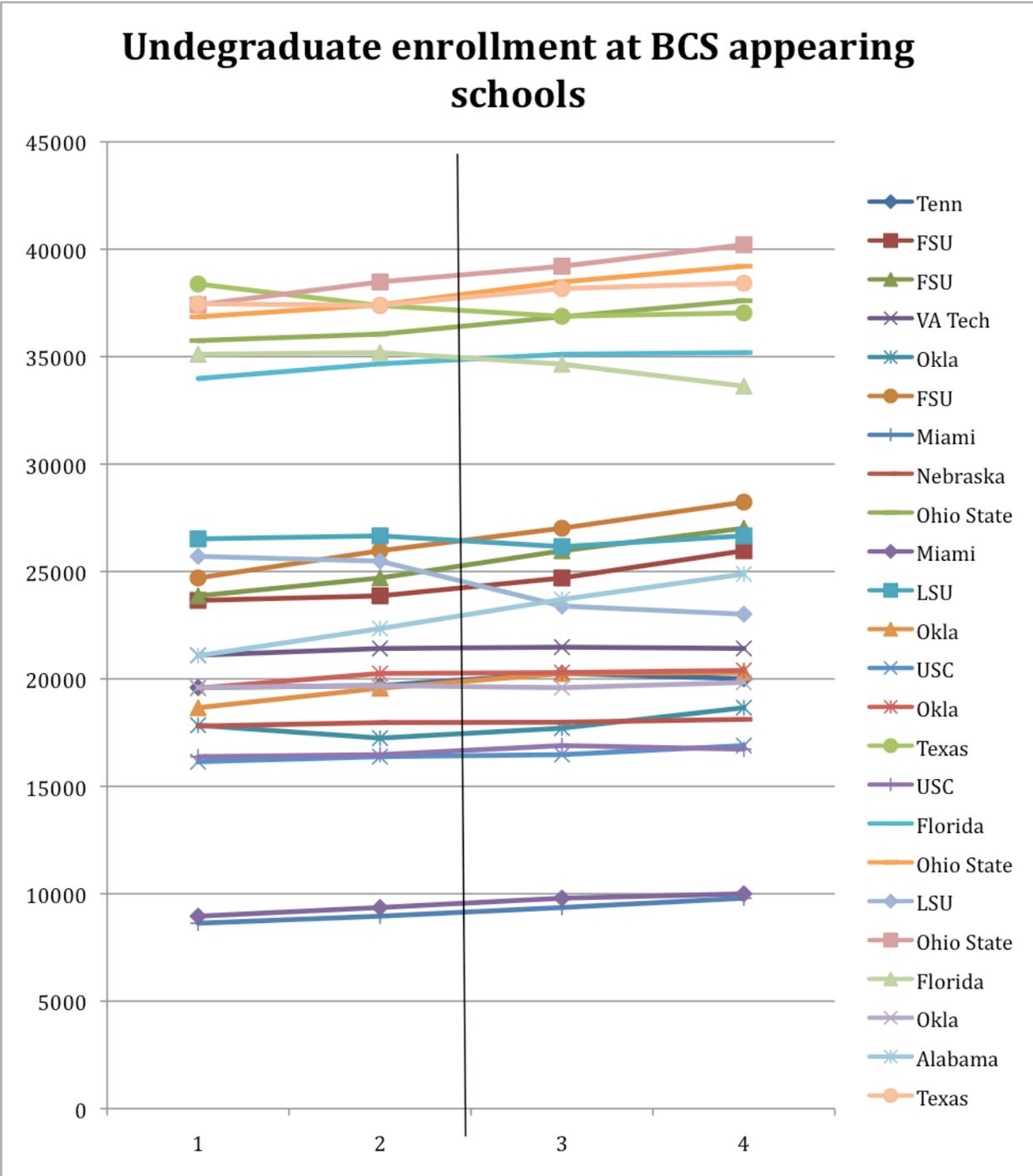


Figure 4. Undergraduate enrollment at BCS appearing schools.

Table 6 shows the trend for graduate enrollment at the universities whose football team appeared in the BCS National Championship football game. Year two percentage change represents

graduate enrollment data for the fall preceding the championship game in January. Year three percentage change represents the graduate enrollment data for the fall following the January game and year four percentage change represents the second fall post appearance. In examining the mean and median percentage changes for undergraduate enrollment, a slight increase occurred with a 1.78 median percentage increase the fall before the appearance in the national championship game, a 1.46 median percentage increase the following year, and a median percentage increase of 1.54 the third year over the previous. Over the three-year period after the appearance in the BCS National Championship Game, the median percentage increase for graduate enrollment was 4.78%.

Table 6

*Statistics For Graduate Enrollment and Annual Pct Changes from Previous Year*

	Two years before game	One year before game	One year after game	Two years after game	Year two percentage change	Year three percentage change	Year four percentage change
Mean	8534.54	8589.38	8696.33	8986.54	.151	1.55	1.82
Std. Error of Mean	864.15	926.171	938.2	951.691	2.60629	1.21435	3.66436
Minimum	3338	4075	3900	3986	-32.32	-12.88	-59.11
Median	6430.00	6524.00	6482.5	6775.50	1.78	1.46	1.54
Maximum	15712	16536	16820	17063	28.82	17.85	54.44
N	24	24	24	24	24	24	23

Using the raw data from each university, Figure 5 shows the trend for graduate enrollment at universities whose football teams appeared in BCS National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

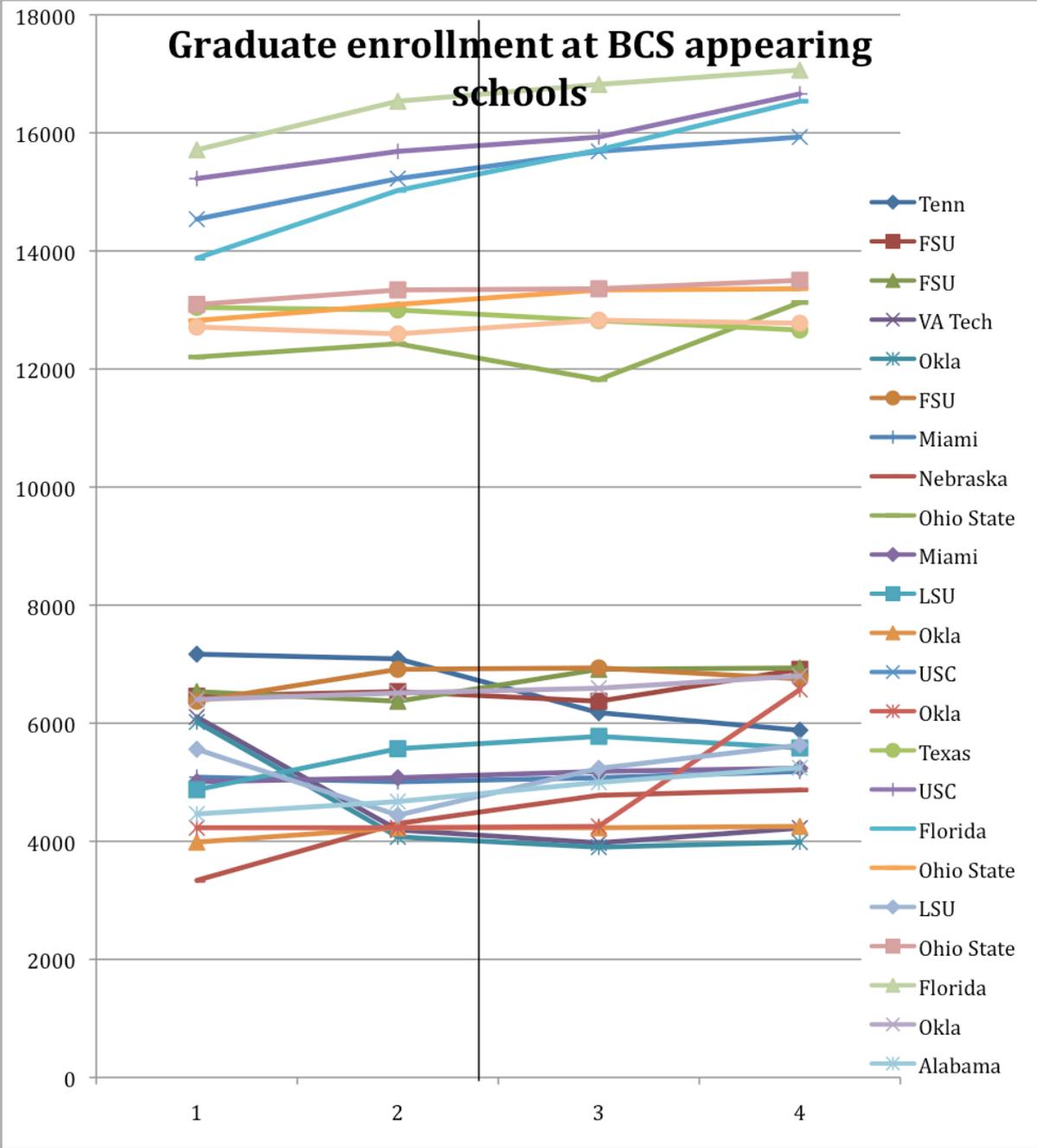


Figure 5. Graduate Enrollment at BCS appearing schools.

The fifth research question examined the race/ethnicity percentage. Specifically, the percentage of white and black students at the institutions studied. What is the trend for a university regarding race/ethnicity of the total enrollment over a four-year period (before and after an appearance in a national championship game in Division I football or basketball)?

Table 7 shows the trend for African American enrollment at the universities whose football team appeared in the BCS National Championship football game. Year two percentage change represents undergraduate enrollment data for the fall preceding the championship game in January. Year three percentage change represents the high school grade point average data for the fall following the January game and year four percentage change represents the second fall post appearance. In examining the mean and median percentage changes for African American enrollment, a slight decrease occurred with a no median percentage increase the fall before the appearance in the national championship game, a .50 median percentage increase the following year, and a median percentage decrease of – 1.56 the third year over the previous. Over the three-year period after the appearance in the BCS National Championship Game, the media percentage decrease for African American enrollment over the three-year period was – 1%.

Table 7

*African American Enrollment Data for Football Schools:  
Statistics For Black Enrollment and Annual Percentage Changes from Previous Year*

	Two years before game	One year before game	One year after game	Two years after game	Year two percentage change	Year three percentage change	Year four percentage change
N	24	24	24	23	24	24	23
Mean	1910.75	1952.46	1983.37	2018.48	1.66	1.31	4.35
Std. Error of Mean	198.01	206.68	213.87	228.78	1.113	1.044	3.96
Minimum	376	369	369	384	-5.64	-9.49	-11.38
Median	1604.00	1675.5	1682.50	1736.00	0.0	.50	-1.56
Maximum	3571	3513	3571	3585	12.37	9.68	81.17

Using the raw data from each university, Figure 6 shows the trend for African-American/Black enrollment at universities whose football teams appeared in BCS National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

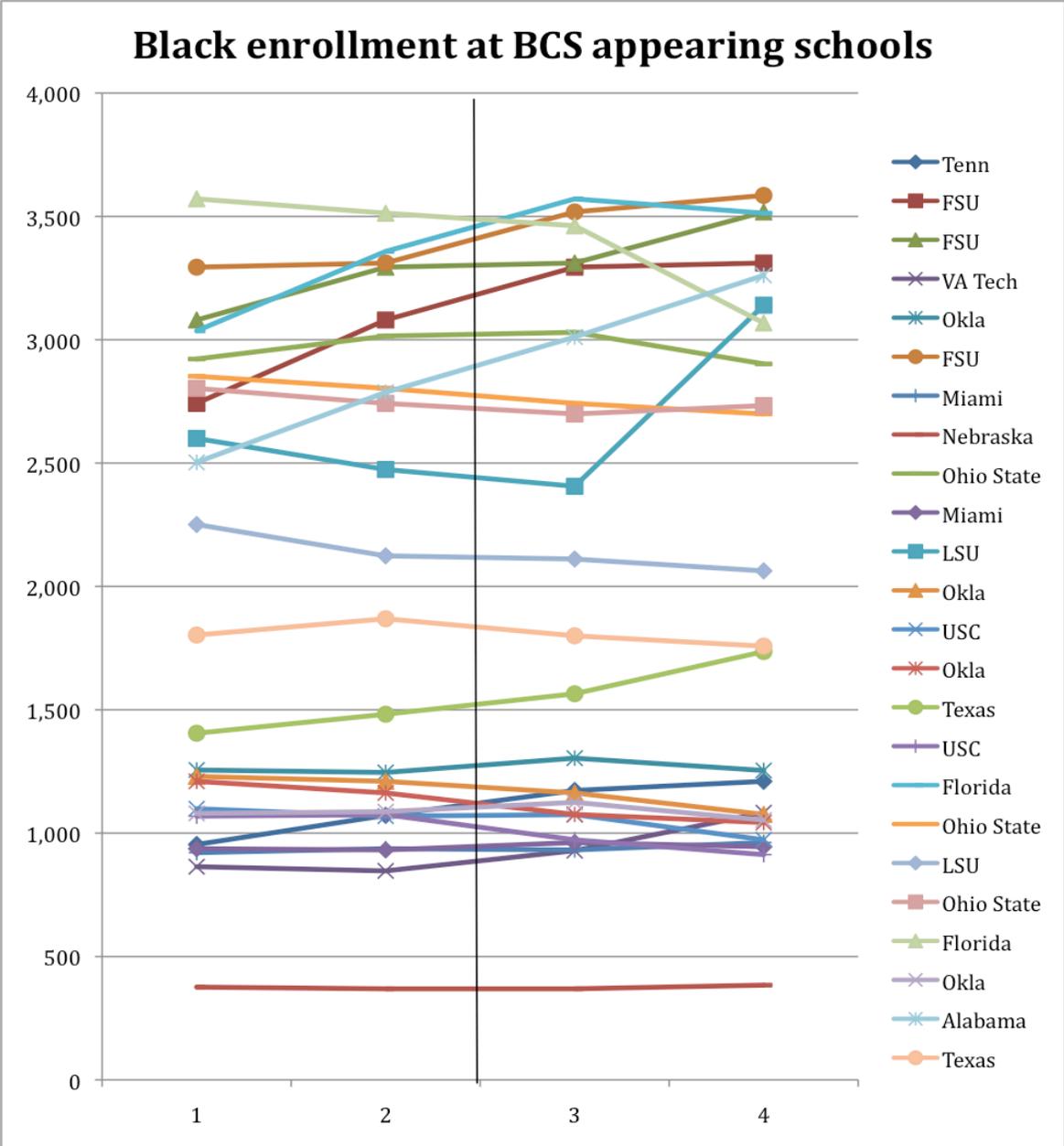


Figure 6. African-American/Black enrollment at universities whose football teams appeared in BCS National Championship game

Table 8 shows the trend for Caucasian/White enrollment at the universities whose football team appeared in the BCS National Championship football game. Year two percentage change represents undergraduate enrollment data for the fall preceding the championship game in January. Year three percentage change represents the high school grade point average data for the fall following the January game and year four represents the second fall post appearance. In

examining the mean and median percentage changes for Caucasian/White enrollment, a slight increase occurred with a 2.3 median percentage increase the fall before the appearance in the national championship game, a 2.2 median percentage increase the following year, and a median percentage increase of .22 the third year over the previous. Over the three-year period after the appearance in the BCS National Championship Game, the media percentage increase for White/Caucasian enrollment over the three-year period was 4.7 %.

Table 8

Caucasian/White Enrollment Data for Football Schools: Statistics for White Enrollment and Annual Percentage Changes from Previous Year

	Two years before game	One year before game	One year after game	Two years after game	Year two percentage change	Year three percentage change	Year four percentage change
N	24	24	24	23	24	24	23
Mean	17738.00	17919.29	18090.17	17997.65	1.56	1.22	.032
Std. Error of Mean	1437.24	1440.87	1454.92	1538.83	.726	.634	.721
Minimum	4177	4524	4820	4997	-5.06	-6.00	-6.39
Median	18523.50	18796.00	19151.50	18113.00	2.33	2.21	.224
Maximum	30592	31341	31841	32617	8.31	7.02	7.48

Using the raw data from each university, Figure 7 shows the trend for White/Caucasian enrollment at universities whose football teams appeared in BCS National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

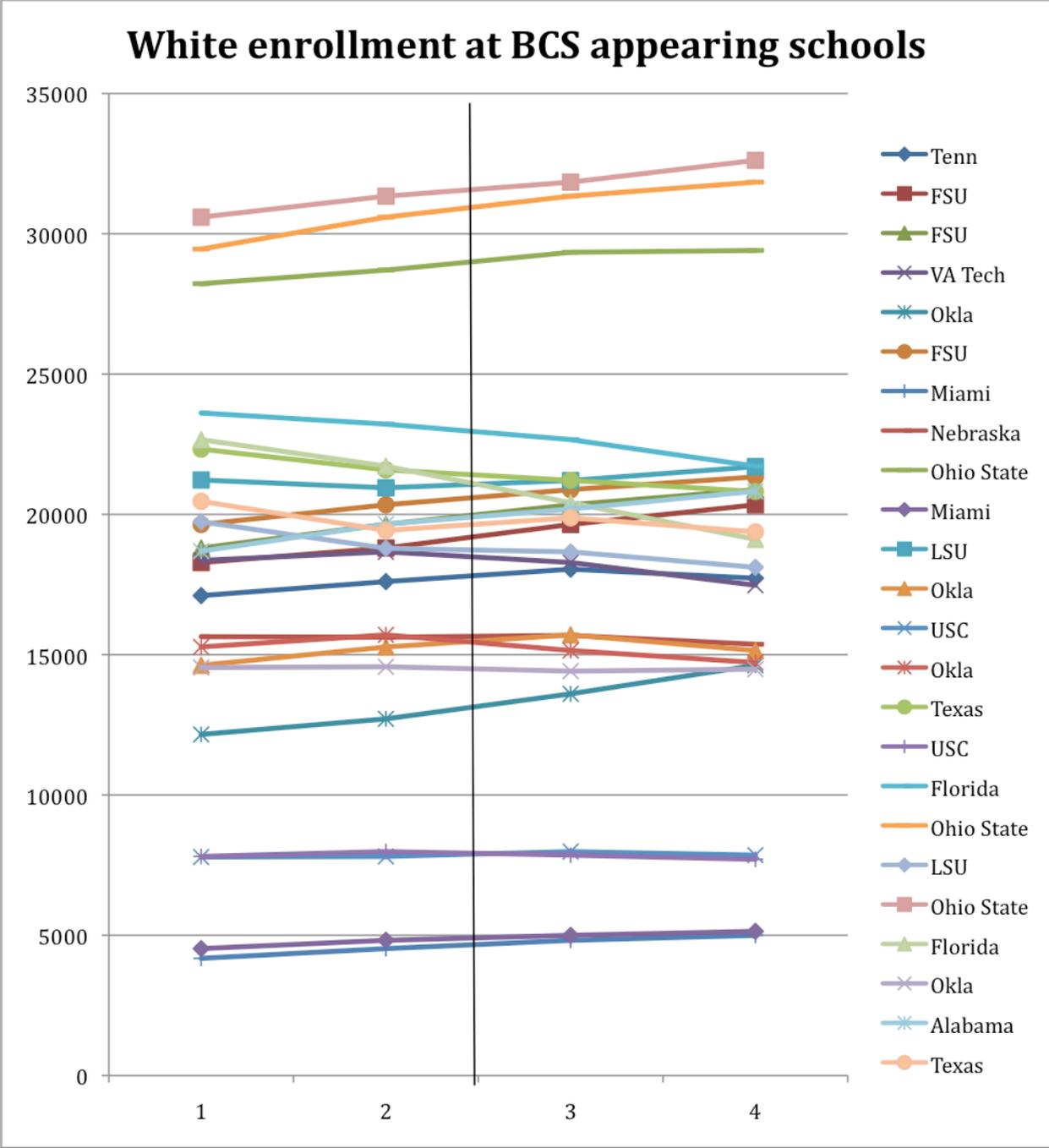


Figure 7. White/Caucasian enrollment at BCS appearing schools.

The sixth research question examined the residency status of student enrolled. What is the trend for a university regarding residency status (in-state, out-of-state) of the total enrollment

over a four-year period (before and after an appearance in a national championship game in Division I football or basketball)?

Table 9 shows the trend for out-of-state student enrollment at universities whose football team appeared in the BCS National Championship football game. Year two percentage change represents the number of out-of-state students for the fall preceding the championship game in January. Year three percentage change represents the percentage increase of out-of-state students for the fall following the January game and year four percentage change represents the second fall post appearance. In examining the mean and median percentage changes for the number of out-of-state students, an increase occurred with a 2.3 median percentage increase the fall before the appearance in the national championship game, a no increase the following year, and a median percentage increase of 4.0 the third year over the previous. Over the three-year period after the appearance in the BCS National Championship Game, the media percentage increase for out-of-state enrollment over the three-year period was 6.3%.

Table 9

*Out of State Enrollment for Football Schools: Statistics for Out of State Enrollment and Annual Pct Changes from Previous Year*

	Two years before game	One year before game	One year after game	Two years after game	Year two percentage change	Year three percentage change	Year four percentage change
Mean	17.40	18.11	18.47	19.59	4.73	1.16	33.40
Std. Error of Mean	2.31	2.32	2.42	2.52	2.20	2.62	27.73
Minimum	4.40	4.50	3.60	2.86	-11.11	-30.10	-30.10
Median	16.0000	16.3000	15.0000	16.5000	2.32	.0000	4.05
Maximum	43.00	44.00	44.00	45.00	37.50	25.00	639.86
N	23	24	24	24	23	24	23

Using the raw data from each university, Figure 8 shows the trend for White/Caucasian enrollment at universities whose football teams appeared in BCS National Championship game.

Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

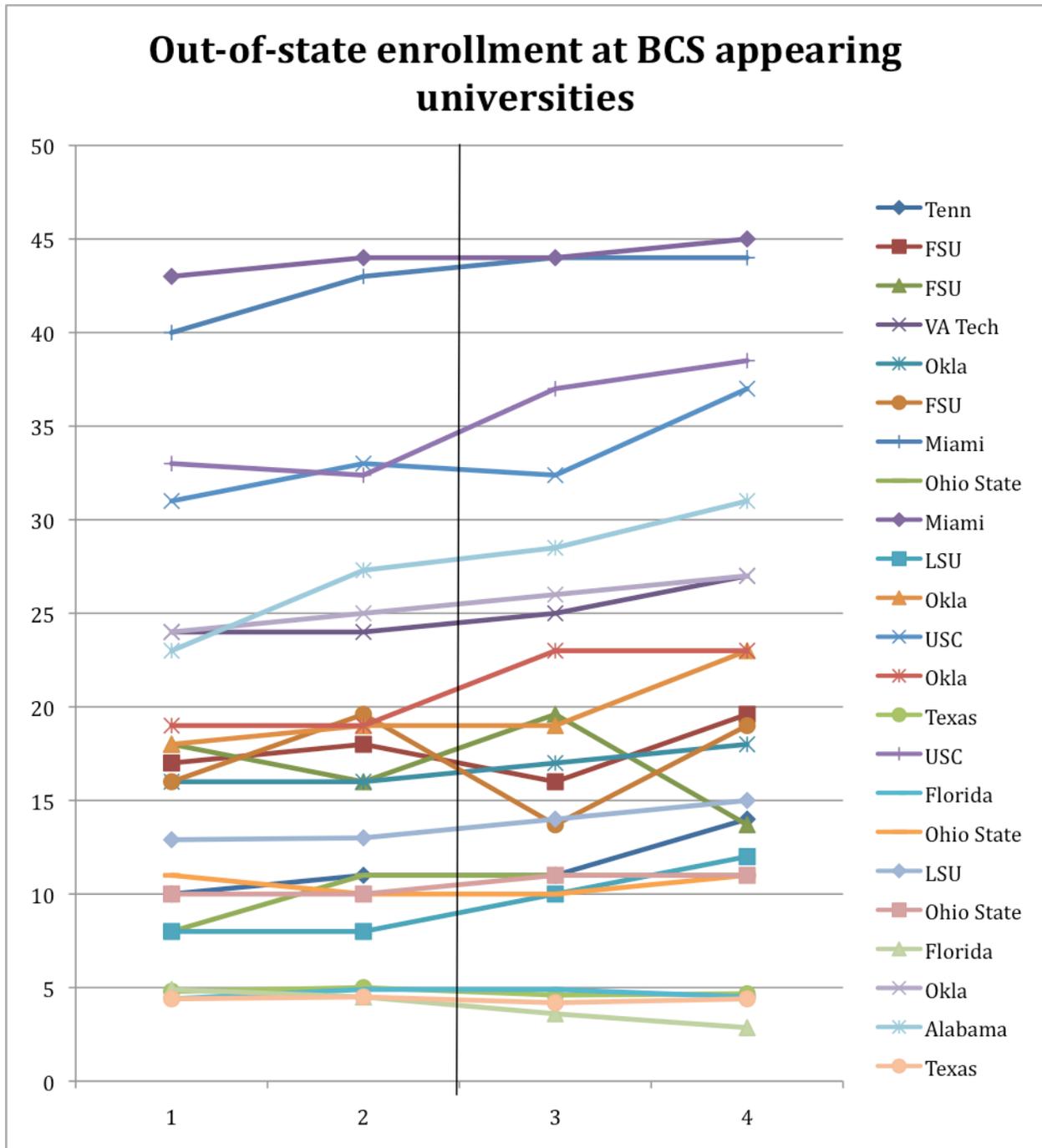


Figure 8. Out-of-state enrollment at BCS appearing universities.

## Basketball Results

Table 10 shows the trend for applicant pools at universities whose basketball team appeared in the NCAA National Championship basketball game. Year two percentage change represents the fall applicant pool following the championship game in March. Year three percentage change represents the fall applicant pool for the second academic year following the March championship game and year four percentage change represents the third fall applicant pool post championship game appearance. As with institutions that appeared in the BCS championship game, the number of applications clearly increased in the years following an appearance in the NCAA basketball championship game. The academic year following an appearance in the national championship game in March, the median percentage increase in applications was 4.38. The second academic year following the appearance, applications increased an additional 4.82%. From the academic year preceding the appearance in the national championship game through the third academic year following the championship game appearance, the median percentage increase of applications was 14.6.

Table 10

*Basketball Applicant Pool Data: Statistics for Applicant Pool and Annual Percentage Changes*

	Fall prior to game	Fall after game	Second fall after game	Third fall after game	Year two percentage change	Year three percentage change	Year four percentage change
N	24	24	24	24	24	24	24
Mean	16930.96	17556.96	18539.46	19559.17	4.8416	5.56	6.4587
Std. Error of Mean	1620.68	1582.93	1735.77	1844.57	1.60	2.42	1.98894
Minimum	5234	6025	5361	6156	-5.99	-13.68	-9.92
Median	17578.50	18500.50	19317.50	19780.00	4.38	4.82	5.4
Maximum	43199	42227	47317	50755	28.39	48.03	40.80
Percentage changes from previous year							

Using the raw data from each university, Figure 9 shows the trend for applicant pools at universities whose basketball teams appeared in NCAA National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

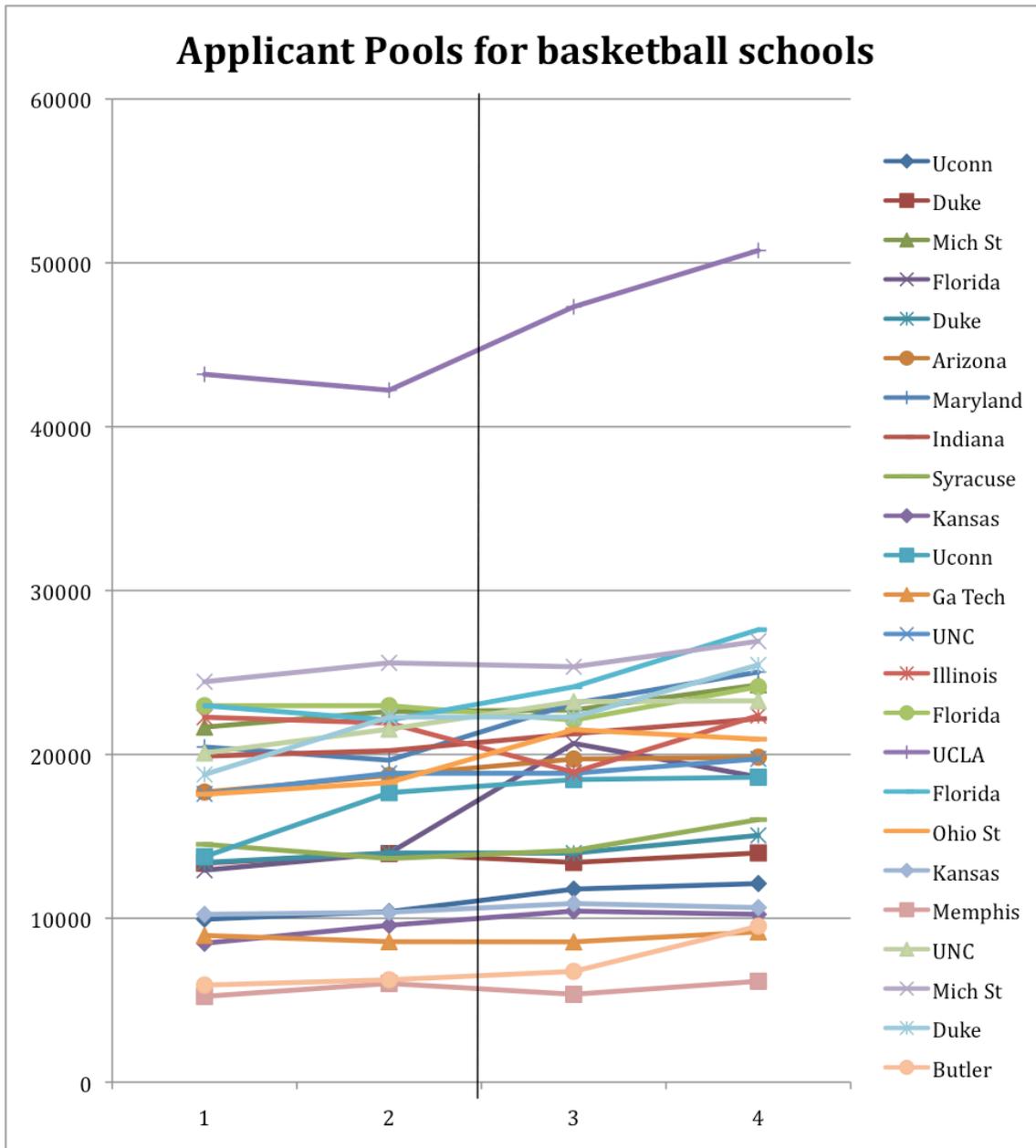


Figure 9. Applicant pools for basketball schools.

Table 11 shows the trend for National Merit Scholars in the entering class at universities whose basketball team appeared in the NCAA National Championship basketball game. Year one percentage change represents the fall National Merit Scholar numbers following the championship game in March. Year two percentage change represents the fall National Merit Scholar numbers for the second academic year following the March championship game and year three percentage change represents the third fall National Merit Scholar data post championship game appearance. As with institutions that appeared in the BCS championship game, the median number of National Merit Scholars did not increase in the years following an appearance in the NCAA basketball championship game. However, the third academic year following an appearance in the national championship game, the number increased 8.8% over the previous year. Therefore, from the academic year preceding the appearance in the national championship game through the third academic year following the championship game appearance, the median percentage increase of national merit scholar was 8.8%.

Table 11

*National Merit Scholar Basketball Data: Statistics for Merit Scholars and Annual Percentage Changes*

	Fall prior to game	Fall after game	Second fall after game	Third fall after game	Year one percentage change	Year two percentage change	Year three percentage change
N	14	15	14	13	14	14	13
Mean	90.86	91.20	84.21	88.46	18.026	-7.426	23.57
Std. Error of Mean	14.31	14.32	14.12	14.62	22.03	6.42	14.13
Minimum	2	8	4	7	-36.8	-53.5	-29.1
Median	101.00	99.00	80.00	105.00	.000	.000	8.88
Maximum	189	189	154	154	300.0	25.0	173.2

Using the raw data from each university, Figure 10 shows the trend for applicant pools at universities whose basketball teams appeared in NCAA National Championship game. Utilizing

a time-series analysis, the vertical black line represents the point at which the championship game occurred.

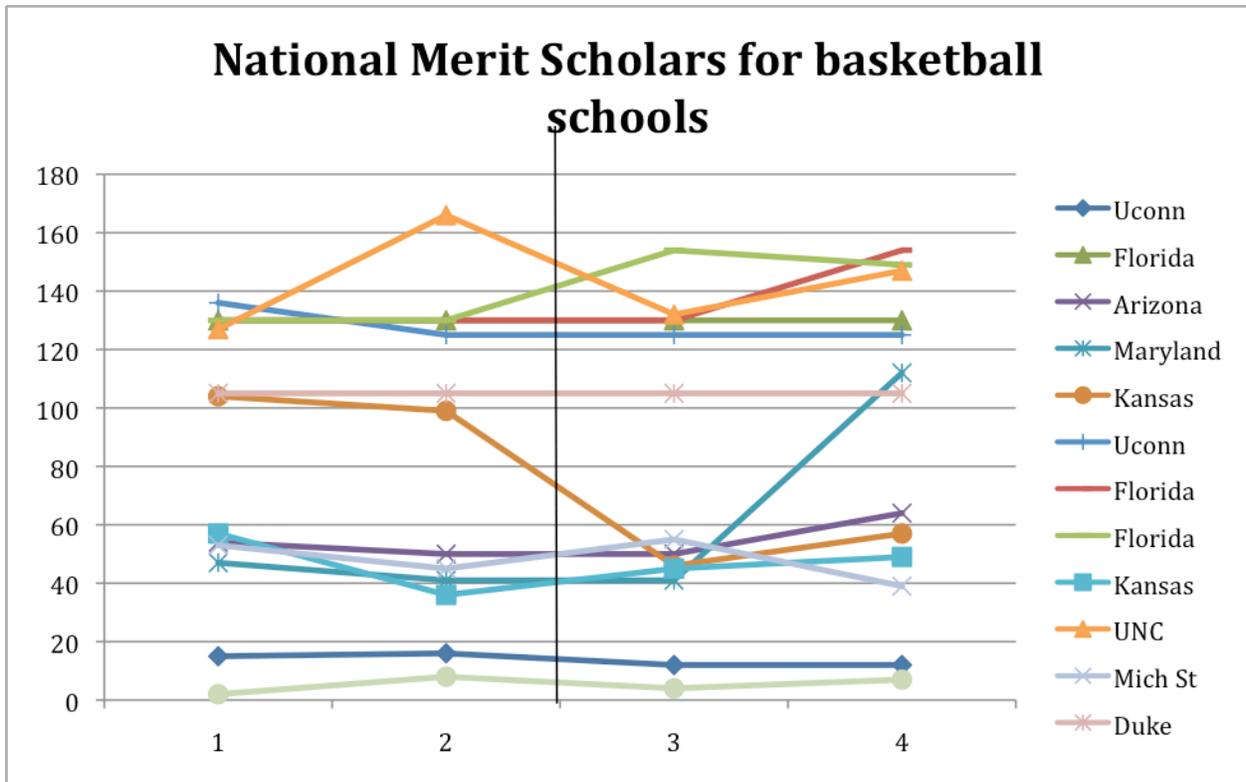


Figure 10. Number of National Merit Scholars for basketball schools.

Table 12 shows the trend for high school grade point average of the entering class at universities whose basketball team appeared in the NCAA National Championship basketball game. Year one percentage change represents the average high school GPA of the fall entering class following the championship game in March. Year two percentage change represents the average high school grade point average for the second academic year following the March championship game and year three percentage change represents the average high school grade point average the third fall post championship game appearance. In examining the median percentage increase of high school grade point average, no increase occurred in the average high school grade point average of the entering classes.

Table 12

*High School Grade Point Average for Basketball: Statistics for GPA and Annual Percentage Changes*

	Two Years before game	One year before game	One year after game	Two years after game	Year one percentage change	Year two percentage change	Year three percentage change
N	15	15	16	18	14	15	16
Mean	3.6340	3.6893	3.6731	3.6917	.225	.446	.557
Std. Error of Mean	.06770	.05789	.06251	.05847	.3096	.3433	.2483
Minimum	3.13	3.35	3.19	3.23	-2.6	-1.6	-.6
Median	3.7000	3.7400	3.6950	3.7400	.000	.000	.000
Maximum	4.00	4.00	4.00	4.00	2.7	2.9	2.6

Using the raw data from each university, Figure 11 shows the trend for high school grade point average of the entering class at universities whose basketball teams appeared in NCAA National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

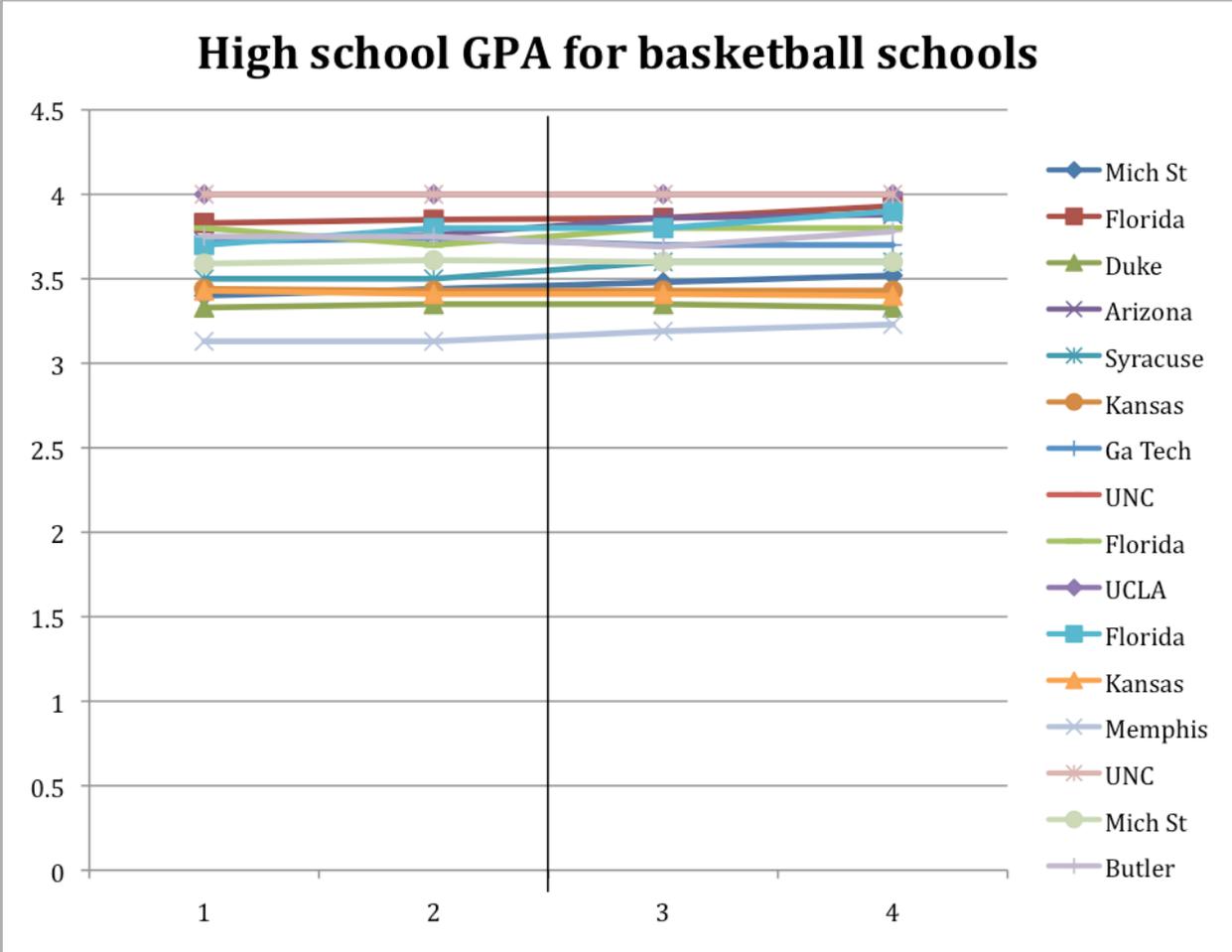


Figure 11. Average high school GPA for entering class at basketball schools

Table 13 shows data for undergraduate enrollment at the universities whose team appeared in the NCAA Basketball National championship game. Year one percentage change represents undergraduate enrollment numbers for the fall following the championship game in March. Year two percentage change represents undergraduate enrollment for the second academic year following the March championship game and year three percentage change represents undergraduate enrollment data for the third fall post championship game appearance. In examining the mean and median percentage changes for undergraduate enrollment, a slight increase occurred with a 1.26 median percentage increase the fall before the appearance in the

national championship game, a 1.27 median percentage increase the following year, and a median percentage increase of 1.68 the third year over the previous. Over the three-year period after the appearance in the NCAA Basketball National Championship Game, the median percentage increase for undergraduate enrollment was 4.2%.

Table 13

*Undergraduate Enrollment Data at Basketball Schools*

	Two years before game	One year before game	One year after game	Two years after game	Year one percentage change	Year two percentage change	Year three percentage change
N	24	24	24	24	24	24	24
Mean	21039.67	21251.92	21612.83	21867.75	.976	1.513	1.449
Std. Error of Mean	2196.92	2225.63	2268.31	2266.086	.3107	.4202	.4553
Minimum	3639	3726	3861	3889	-2.5	-4.0	-1.5
Median	20707.50	20716.50	21099.00	21204.50	1.26	1.27	1.68
Maximum	37411	38479	39209	40212	3.2	5.4	7.3

Using the raw data from each university, Figure 12 shows the trend for total undergraduate student enrollment at universities whose basketball teams appeared in NCAA National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

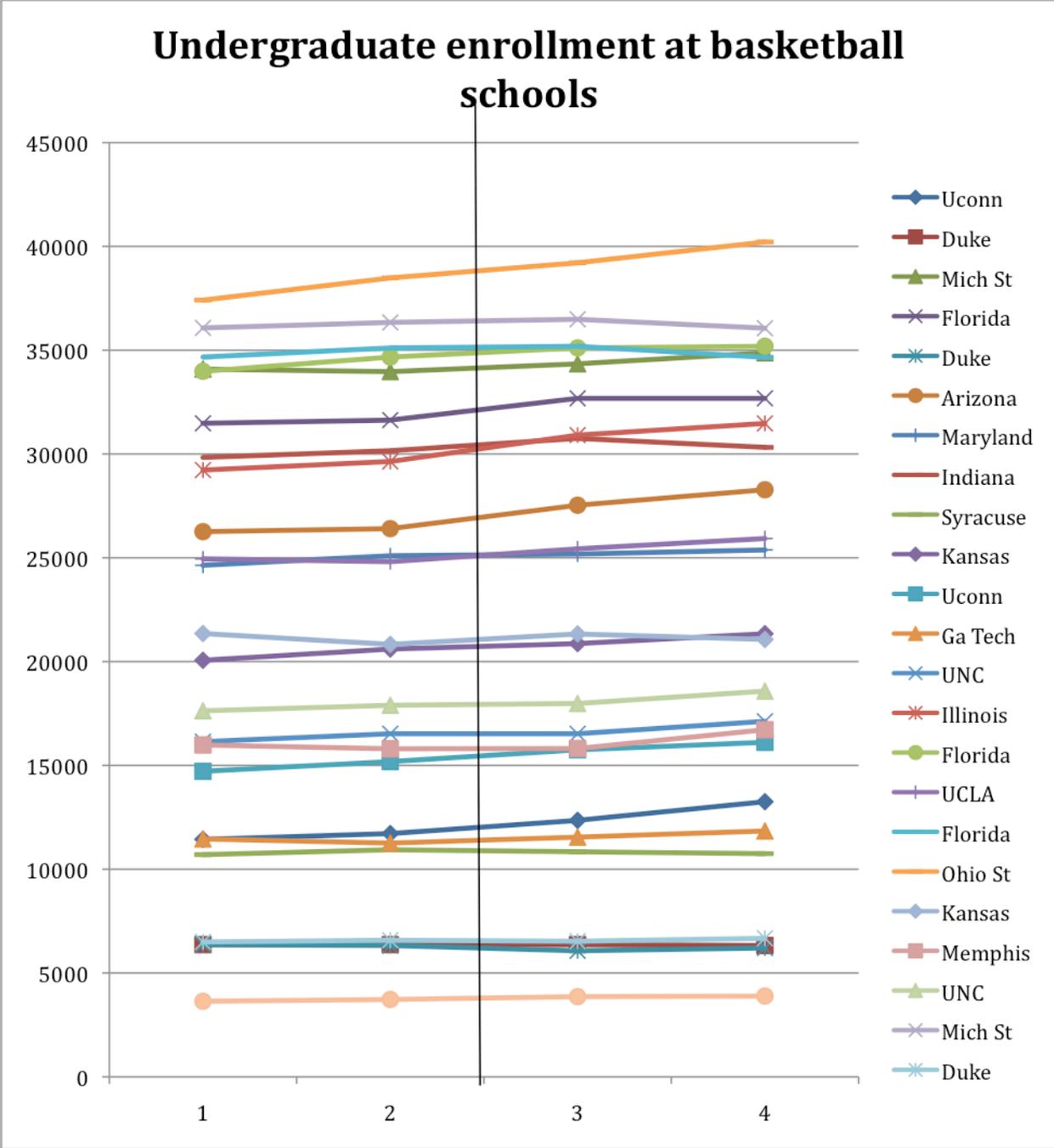


Figure 12. Undergraduate enrollment at basketball schools

Table 14 shows data for graduate enrollment at the universities whose basketball team appeared in the NCAA Basketball National championship game. Year one percentage change represents graduate enrollment numbers for the fall following the championship game in March.

Year two percentage change represents graduate enrollment for the second academic year following the March championship game and year three percentage change represents graduate enrollment data for the third fall post championship game appearance. In examining the mean and median percentage changes for graduate enrollment, an increase occurred with a 2.24 median percentage increase the fall before the appearance in the national championship game, a 1.39 median percentage increase the following year, and a median percentage increase of 1.82 the third year over the previous. Over the three-year period after the appearance in the NCAA Basketball National Championship Game, the media percentage increase for graduate student enrollment was 5.46%.

Table 14

*Graduate Student Enrollment at Basketball Schools*

	Fall prior to game	First fall after game	Second fall after game	Third fall after game	Year one percentage change	Year two percentage change	Year three percentage change
N	23	24	24	24	23	24	24
Mean	8228.83	8618.17	8843.54	9071.79	2.391	2.585	3.116
Std. Error of Mean	707.14	731.361	760.616	766.800	.8578	1.011	1.198
Minimum	799	779	779	778	-6.6	-3.8	-5.5
Median	8068.00	7981.00	8183.00	8419.50	2.24	1.39	1.82
Maximum	15025	15712	16536	16820	8.3	22.2	26.2

Using the raw data from each university, Figure 13 shows the trend for graduate student enrollment at universities whose basketball teams appeared in NCAA National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

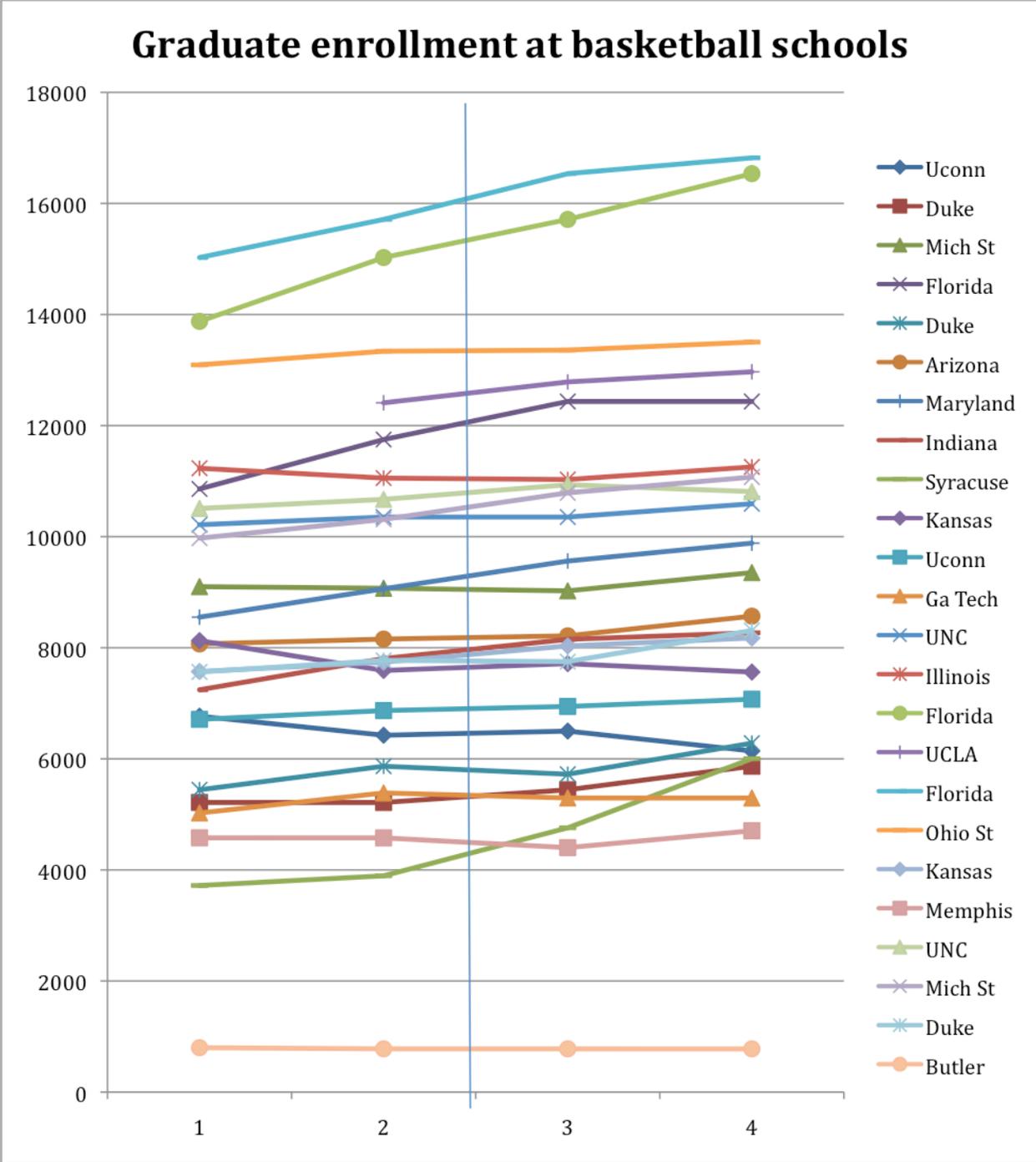


Figure 13. Graduate enrollment at basketball schools

Table 15 shows the data trend for African American enrollment at the universities whose team appeared in the NCAA Basketball National championship game. Year one percentage change represents African-American enrollment numbers for the fall following the championship

game in March. Year two percentage change represents African-American enrollment for the second academic year following the March championship game and year three percentage change represents African-American enrollment data for the third fall post championship game appearance. In examining the mean and median percentage changes for African American enrollment, an increase occurred with a 1.25 median percentage increase the fall before the appearance in the national championship game, a 2.13 median percentage increase the following year, and a median percentage increase of 1.2 the third year over the previous. Over the three year period after the appearance in the NCAA Basketball National Championship Game, the media percentage increase for African American enrollment was 4.5%.

Table 15

*African American Enrollment Data for Basketball Schools*

	Fall prior to game	First fall after game	Second fall after game	Third fall after game	Year one percentage change	Year two percentage change	Year three percentage change
N	22	22	22	22	22	22	22
Mean	1854.82	1892.32	1918.27	1956.23	1.78	2.32	1.93
Std. Error of Mean	296.18	303.15	310.98	328.45	1.486	1.34	1.14
Minimum	535	561	593	633	-15.93	-11.55	-13.30
Median	1499.00	1486.00	1436.50	1460.00	1.25	2.13	1.22
Maximum	6079	6129	6453	7068	15.85	14.42	10.12

Using the raw data from each university, Figure 14 shows the trend for Black/African American enrollment at universities whose basketball teams appeared in NCAA National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred

## Black/African American enrollment at basketball schools

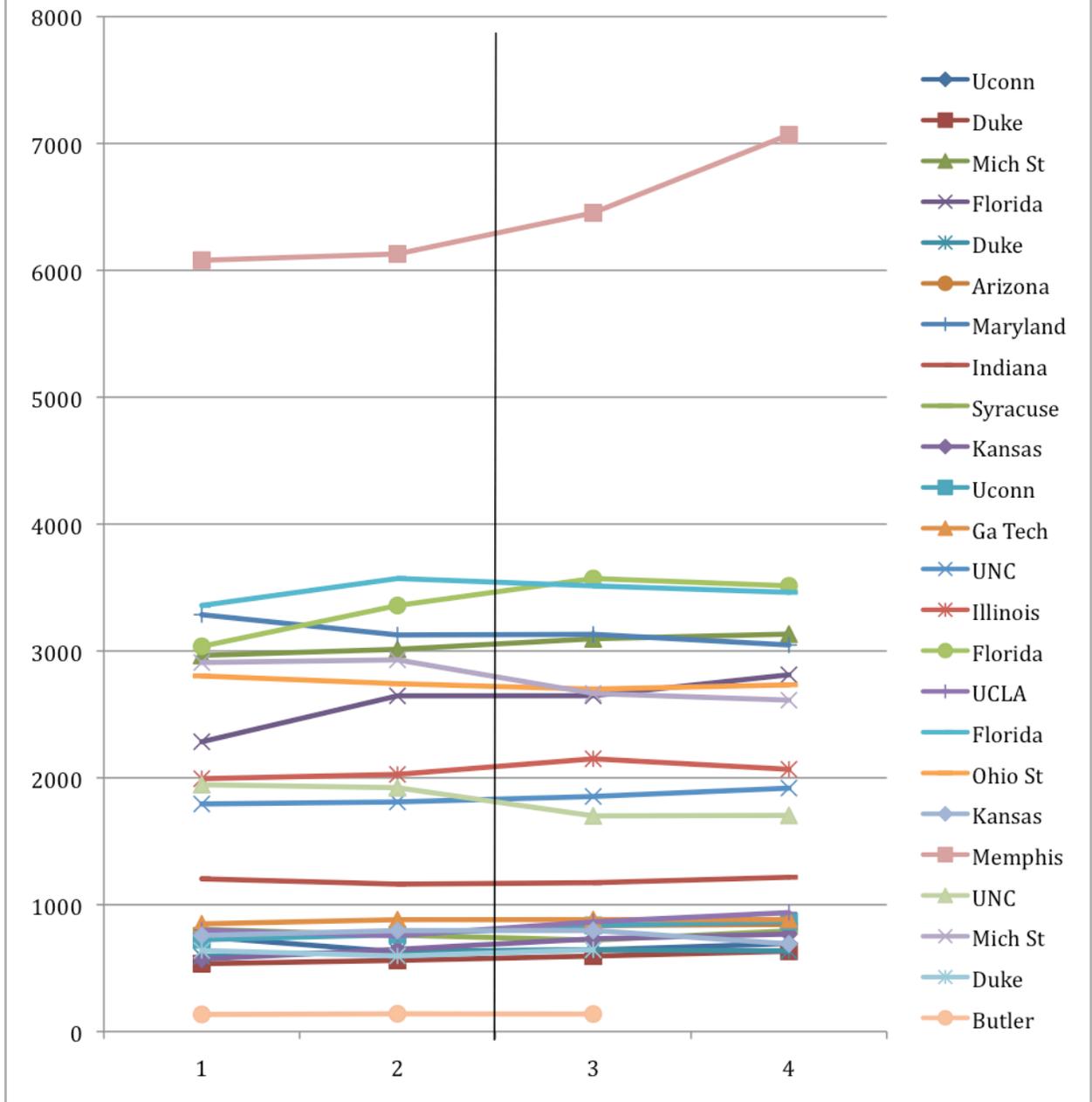


Figure 14. African-American/Black enrollment at basketball schools

Table 16 shows data for Caucasian/White enrollment at the universities whose team appeared in the NCAA Basketball National championship game. Year one percentage change represents White/Caucasian numbers for the fall following the championship game in March. Year two percentage change represents White/Caucasian enrollment for the second academic year following the March championship game and year three percentage change represents White/Caucasian data for the third fall post championship game appearance. In examining the mean and median percentage changes for white enrollment, a slight decrease occurred with a .31 median percentage increase the fall before the appearance in the national championship game, a -.48 median percentage decrease the following year, and a median percentage decrease of -.66 the third year below the previous. Over the three year period, the median percentage decrease for Caucasian/White enrollment was -0.8%.

Table 16

*Caucasian/White Enrollment Data for Basketball Schools: Statistics for White Enrollment and Annual Percentage Changes*

	Fall prior to game	First fall after game	Second fall after game	Third fall after game	Year one percentage change	Year two percentage change	Year three percentage change
N	22	22	22	22	22	22	22
Mean	16318.09	16424.77	16264.09	16124.41	.3725	-1.00	-.593
Std. Error of Mean	1703.90	1720.56	1714.69	1696.79	.556	.570	.651
Minimum	3969	3797	3755	3718	-4.33	-10.47	-6.00
Median	15894.50	16081.50	15876.50	15254.50	.311	-.480	-.664
Maximum	30592	31341	31841	32617	5.03	1.99	5.44

Using the raw data from each university, Figure 15 below shows the trend for White/Caucasian enrollment at universities whose basketball teams appeared in NCAA National Championship

game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

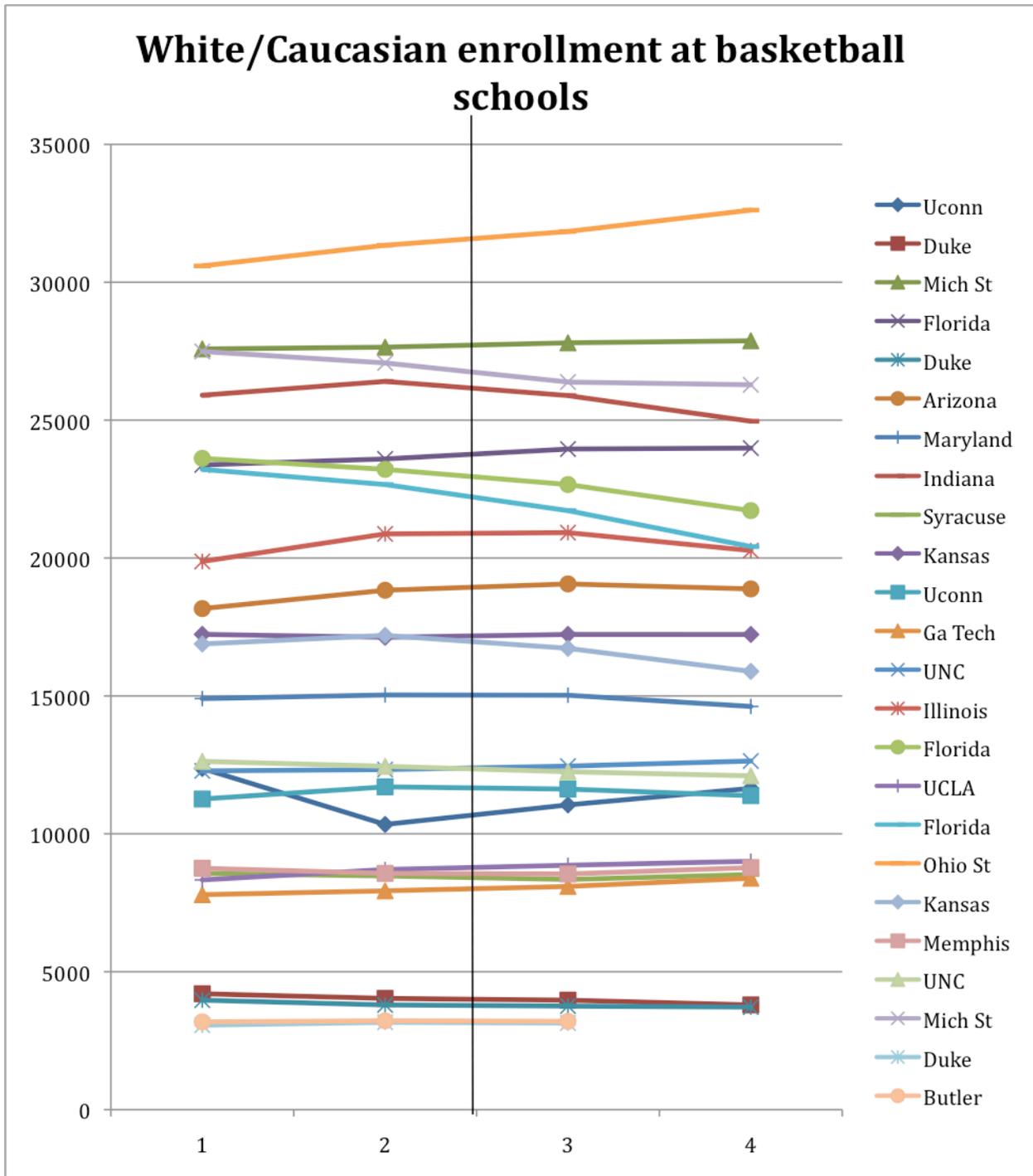


Figure 15. White/Caucasian enrollment at basketball schools

Table 17 below shows the data trend for out-of-state enrollment at the universities whose team appeared in the NCAA Basketball National championship game. Year one percentage change represents out-of-state enrollment numbers for the fall following the championship game in March. Year two percentage change represents out-of-state enrollment for the second academic year following the March championship game and year three percentage change represents out-of-state enrollment data for the third fall post championship game appearance. In examining the mean and median percentage changes for the number of out of state students, there was no increase in any of years studied.

Table 17

*Out of State Enrollment Data for Basketball Schools: Statistics for No. Out of State and Annual Percentage Changes*

	Fall prior to game	First fall after game	Second fall after game	Third fall after game	Year one percentage change	Year two percentage change	Year three percentage change
N	24	24	24	24	24	24	24
Mean	27.51	27.10	27.53	27.30	-4.353	5.261	-.512
Std. Error of Mean	5.301	5.373	5.310	5.370	2.61	4.52	4.54
Minimum	4	3	2	4	-40.0	-33.3	-45.3
Median	20.50	20.25	21.00	20.50	.000	.000	.000
Maximum	88	88	88	88	11.4	62.0	85.0

Percentage changes from previous year

Using the raw data from each university, Figure 16 shows the trend for out-of-state enrollment at universities whose basketball teams appeared in NCAA National Championship game. Utilizing a time-series analysis, the vertical black line represents the point at which the championship game occurred.

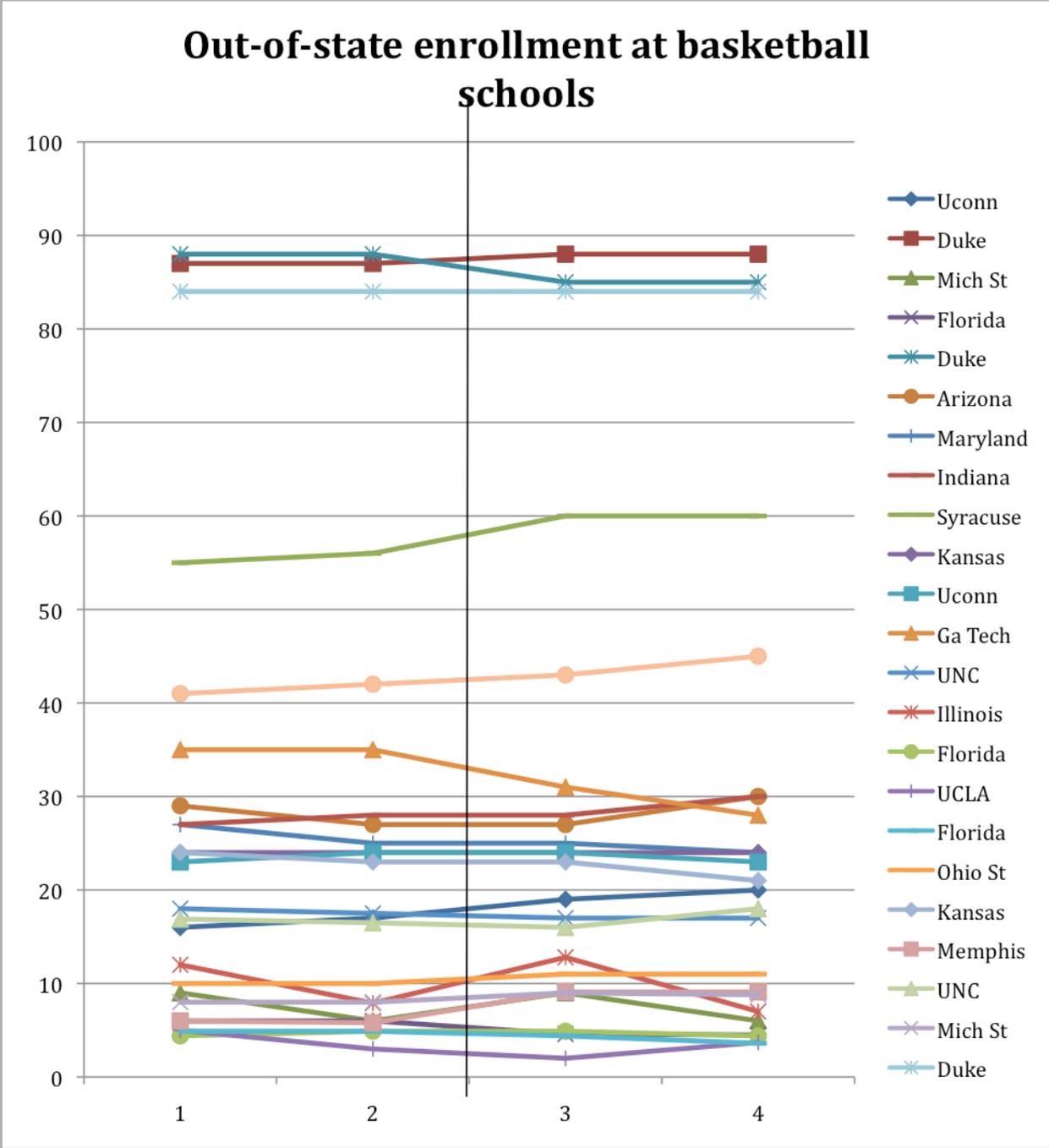


Figure 16. Out-of-state enrollment at basketball schools

## Summary

In examining enrollment trends and appearances in a BCS National Championship game or NCAA Basketball Championship Game, applicant pools, the number of National Merit Scholars, undergraduate enrollment, graduate enrollment, African American enrollment, and Caucasian/white enrollment all saw increases over the period studied after appearances in either game. The average high school GPA of the entering class increased for those universities who appeared in the BCS National Championship, while no change was seen in the average GPA of the entering class for universities that appeared in the NCAA Basketball National Championship. The number of out of state students enrolled at BCS appearing universities increased while no increase occurred in that category for the universities appearing in the basketball championship.

The largest median percentage increase occurred in the size of the applicant pools at both the football and basketball institutions. Applications at the football institutions increased 15% over a three year period covering the fall before the championship appearance and the two subsequent academic years. Applications increased by 14.6% over the same time period for the basketball schools. The number of National Merit Scholars for the basketball schools increased 8.8 over the same period with all of the increase occurring in the second year following the championship. African American enrollment increased 8.2% (median) over that same period for institutions who appeared in the basketball national championship. Overall enrollment (both undergraduate and graduate) increased at similar rates with a median percentage increase for undergraduate enrollment of 4.6 for the football schools and 4.2 for the basketball schools. The median percentage increase for graduate enrollment was 4.8 at the football schools and 5.4 at the basketball schools. At the football schools, the median percentage increase for out of state students was 6.3% over the three-year period, with no increase at the basketball schools.

In summary, this chapter described trends for several enrollment related variables at universities whose teams participated in either a BCS football or NCAA basketball national championship game. Most of the variables, with the exception of two, realized median percentage increases ranging from .28 to 15 %. Chapter V will further discuss these findings, their possible implications, and recommendations for future research related to this topic.

## CHAPTER V:

### DISCUSSION

#### **Introduction**

The overall purpose of this study was to determine the relationship between an appearance in an NCAA Division I football or basketball national championship game and enrollment. Specifically, the study looked at the relationship between an appearance in either championship game and the number applicants, number of National Merit Scholars, African-American/Black and Caucasian/White enrollment, average high school grade point average of the entering class, total undergraduate and graduate enrollment, and the percentage of out-of-state students enrolled at the institutions. The data used in this study were obtained from a licensed dataset purchased from NelNet, the company that publishes the annual Petersen's Guide and from IPEDS. An interrupted time-series design (Glass, 1997) was the primary design used in this study. The purpose of this chapter is to discuss the findings and their relationship to previous literature, study and discuss limitations of this research, and provide implications and recommendations for further research.

#### **Summary of the Findings**

In examining enrollment trends and appearances in a BSC National Championship game or NCAA Basketball Championship Game, applicant pools, the average number of National Merit Scholars, undergraduate enrollment, graduate enrollment, African American enrollment, and Caucasian/white enrollment all saw increases over the period studied after appearances in either game. The average high school GPA of the entering class increased for those universities

who appeared in the BCS National Championship, while no change was seen in the average GPA of the entering class for universities that appeared in the NCAA Basketball National Championship. The number of out of state students enrolled at BCS appearing universities increased while no increase occurred in that category for the universities appearing in the basketball championship.

The largest median percentage increase occurred in the size of the applicant pools at both the football and basketball institutions. Applications at the football institutions increased 15% over a three-year period covering the fall before the championship appearance and the two subsequent academic years. Applications increased by 14.6% over the same time period for the basketball schools. The average number of National Merit Scholars for the basketball schools increased 8.8 over the same period with all of the increase occurring in the second year following the championship. African American enrollment increased 8.2% (median) over that same period for institutions who appeared in the basketball national championship. Overall enrollment (both undergraduate and graduate) increased at similar rates with a median percentage increase for undergraduate enrollment of 4.6 for the football schools and 4.2 for the basketball schools. The median percentage increase for graduate enrollment was 4.8 at the football schools and 5.4 at the basketball schools. At the football schools, the median percentage increase for out of state students was 6.3% over the three-year period, with no increase at the basketball schools. Most of the variables, with the exception of two, realized median percentage increases ranging from .28 to 15%.

### **Conclusion**

Previous research conducted by Toma and Cross (1998) looked at only the winning participants in a championship game and determined there was a definite upward trend in

number of applications at the football national championship schools. While the increases at the basketball championship schools were more modest, the institutions realized a boost in applications. This study confirmed those findings showing a significant increase in applications after an appearance in an NCAA Division I national championship football or basketball game with the median percentage increase being virtually the same for both.

In attempting to confirm the validity of the “Flutie effect,” one university stood out in particular. Butler University, a small private university located in Indiana, is not known for its athletic tradition and prestige as described in Smith’s (2009) study. Therefore, many individuals’ first exposure to Butler University most likely occurred through the “front porch” relationship referred to by Suggs (2003) when the university’s basketball team appeared in the NCAA basketball championship game in March of 2010. From the fall preceding the championship appearance (2009) through the fall of 2012, the number of applications increased by 60%, moving from a total of 5923 to 9518.

Pope and Pope’s (2009) study examined the relationship between successful athletic programs and the academic credentials of applicants, again showing an increase in applications among institutions with top 20 football teams or top 16 basketball teams. In addition, the study showed that the increase in applications was accompanied by applicants with higher SAT scores allowing the institutions to leverage the larger applicant pools to their advantage by increasing the quality of the entering class and overall enrollment.

Both Trenkamp (2009) and Smith (2009) also investigated the relationship between athletic success and academic quality of applicants. Trenkamp looked at both successful football and basketball teams while Smith’s study focused only on successful football teams. Trenkamp found that football success had a positive impact on the SAT scores of the incoming freshman

class, while the impact on those scores from basketball success was negligible. Smith's study focused solely on football success and academic quality finding that universities whose media exposure was heightened due to successful seasons saw a higher percentage of freshmen with strong academic credentials.

Instead of examining SAT/ACT scores to determine the quality of the applicants, I chose to use high school GPA and the number of National Merit Scholars of the entering class as indicators of academic quality. Contrary to the findings from Pope and Pope (2009), Trenkamp (2009), and Smith (2009), this study found virtually no increase in the academic quality of the entering class at institutions appearing in the BCS national championship based on these indicators. An 8.8% median increase occurred in the number of National Merit Scholars for schools appearing in the NCAA basketball championship game. However, the majority of that increase occurred at the University of Maryland limiting the ability to determine if the increase was a result of the appearance. No increase occurred in the average high school GPA of the entering class at the basketball schools. Many of the basketball schools are considered elite academic schools and as such the average high school GPA previous to the appearance in the championship game for the majority of the institutions was between 3.5 and 4.0. In addition, with average high school GPAs in this range, a ceiling effect may occur making it increasingly difficult to significantly change these scores in the short term.

Pope and Pope (2009) posited that institutions with athletic success used larger applicant pools to their advantage by increasing both the quality and the size of their respective student bodies. For this study, I examined both undergraduate and graduate enrollment numbers at the universities studied. Interestingly, at both the universities appearing in the BCS national championship and those appearing in the NCAA basketball championship game, undergraduate

enrollment and graduate enrollment increased at generally the same rate with a 3% median increase in the years following the championship appearance.

During the years following the appearance, the number of African-American and Caucasian students enrolled at the universities studied changed at both the basketball and football schools in the years following the appearance in the championship game, while the number of out-of-state students changed at only the football schools. At those schools appearing in the BCS National Championship game, there was a slight median percentage decrease in the overall enrollment of African-American students and a modest median percentage increase of white students. Conversely, the universities that appeared in the NCAA basketball championship game saw a modest increase in African-American students and a slight decrease in overall white student enrollment.

Out-of-state enrollment increased by a median percentage of 4% at the football schools, while there was no median percentage change in the number of out-of-state students at the basketball schools. One possible explanation for this difference is that the majority of the basketball schools already had the academic reputation brand (Nibbirg 1984) and were already attracting a high percentage of out-of-state students. For the football schools, the increase in out-of-state students was possibly related to increased exposure created from the appearance (Goff 2000).

In an attempt to further validate the results, I calculated the percentage of institutions that realized a net increase in each variable studied in the two years following the championship appearance. Applicant pools increased at 96% of the BCS appearing schools and at 88% of the NCAA basketball championship appearing schools. White enrollment increased at 54% of the BCS appearing schools and at 50% of the NCAA basketball appearing schools. Black

enrollment increased at 50% of the BCS institutions and at 73% of the NCAA basketball appearing schools. The number of National Merit Scholars increased at 50% of the BCS appearing schools and at 35% of the NCAA basketball appearing schools. The average high school GPA of the entering class increased at 61% of the BCS appearing schools and at 44% of the NCAA basketball appearing schools. Undergraduate enrollment increased at 83% of the BCS appearing schools and at 75% of the NCAA basketball appearing schools. Graduate student enrollment increased at 83% of the BCS appearing schools and at 79% of the NCAA basketball appearing schools. Out-of-state enrollment increased at 67% of BCS appearing schools and at 46% of the NCAA basketball appearing schools.

### **Implications for Leadership**

Since the 1998 study by Toma and Cross, many studies have examined and questioned the relevance of intercollegiate athletics in higher education. The findings of this study may play a significant role for decision makers and leaders within the field of higher education. By supporting the findings of Toma and Cross 15 years later, the findings of this study related to the increase in applications will help college admission and marketing professionals further leverage the appearance of their team in a championship game.

This study will also be beneficial to those institutions attempting to diversify their enrollment. Institutions appearing in the BCS National Championship game will need to look more closely at the enrollment of African-American students and develop and implement strategies to better recruit those students. Conversely, based on these findings, those institutions appearing in the NCAA basketball national championship game should see an opportunity to increase African-American enrollment and develop strategies to better recruit white students if they so choose. In addition, these findings may guide universities that want to increase the

percentage of out-of-state students, particularly those appearing in the BCS National Championship game.

Finally, and perhaps most importantly, this study contributes to the literature in the field of higher education regarding the relevance of intercollegiate athletics. These findings demonstrate that successful intercollegiate programs have positive relationship with enrollment variables. As a result, universities will need to examine how and if intercollegiate athletics contribute to or deter from their missions. It is my hope that these findings will prompt offices of institutional research at colleges and universities to look more closely at the impact the presence of intercollegiate athletics, particularly successful programs, has on the university as a whole.

#### **Delimitations, Limitations, and Recommendations for Further Research**

Delimitations for this study include that only NCAA Division I schools whose teams appeared in the BCS National championship football or NCAA basketball national championship game were selected. In addition, an additional delimitation is that the time period studied was a 12-year time span beginning with the inaugural season of the BCS. During that time, several institutions appeared more than once in a championship game limiting the number of institutions studied. As a result, generalizing the results of the study should be done with caution.

The main limitation for this study was that all data included was self-reported by each institution. Data for this study was obtained from a purchased licensed dataset from NelNet corporation and from IPEDS. In using two separate datasets for this study, every possible attempt was made to triangulate when data appeared in both sets.

Recommendations for future research include:

1. Conducting a similar study focusing on other athletic divisions (Division II, Division III, and NAIA);

2. Further exploration of the racial demographic findings in this study;
3. Exploring the percentage of students who apply for financial aid at universities with successful athletic programs;
4. Conducting a qualitative case-study at a university that experiences sudden and unusual athletic success to determine its effect on enrollment;
5. Conducting a qualitative case-study focusing on the University of Alabama's athletic success and its surge in enrollment and number of National Merit Scholars;
6. The long term return on investment at institutions adding intercollegiate athletic programs; and
7. Conducting a meta-analysis using effect sizes to further explore this topic.

### **Conclusion**

In conclusion, intercollegiate athletics will continue to be a debated topic among those within the field of higher education. This study was an attempt to positively contribute to the body of literature that exists related to intercollegiate athletics. As increasing enrollment is a critical goal among higher education leaders, this study provided information of interest to leaders related to intercollegiate athletic success and enrollment statistics. Confirming findings from previous studies and presenting new findings for higher education, this study will hopefully inspire and guide others to dig deeper into the integral relationship between intercollegiate athletics and higher education.

## REFERENCES

- American Association for College and University Professors (AAUP) (2002). *The faculty role in the reform of intercollegiate athletics: Principles and recommended practices*.
- Aries, E., McCarthy, D., Salovey, P., & Banaji, M. R. (2004). A comparison of athletes and non-athletes at highly selective colleges: Academic performance and personal development. *Research in Higher Education, 45*, 577-601.
- Ashburn, E. (2007, July). To increase enrollment, community colleges add more sports. *Chronicle of Higher Education*, p. A31.
- Astin, A. W. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass.
- Bateman, M., & Spruill, D. (1996). Student decision-making: Insights from the college choice process. *College Student Journal, 30*, 182-187.
- Billing, J.E. (2000) Attitudes of college presidents toward intercollegiate athletics. *Research Quarterly for Exercise and Sport, 71*(1), A-115.
- Bush, V. B., Castaneda, C., Hardy, D. E., & Katsinas, S. G. (2009). What the numbers say about community colleges and athletics. *New Directions for Community Colleges, 147*, 5-14. doi:10.1002/cc.373
- Cabrera. A. E., & La Nasa, S. M. (2000). Understanding the college choice process. *New Directions for Institutional Research, 107*, 5-22.
- Campbell D. T., & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research on teaching. In N. L. Gage (Ed.), *Handbook of research on teaching* Chicago: Rand McNally.
- Carodine, K., Almond, K. F., & Gratto, K. K. (2001). College athlete success both in and out of the classroom. *New Directions for Student Services, 93*, 19-33.
- Coalition on Intercollegiate Athletics (COIA) (2003). "A Framework for Comprehensive Athletics Reform."
- Duderstadt, J.J. (2000). *Intercollegiate athletics and the American university*. Ann Arbor, MI: The University of Michigan Press.
- Emerson, J., Brooks, R. L., & McKenzie, E. C. (2009). College athletes and student achievement: The evidence at small colleges. *New Directions for Institutional Research, 144*, 65-76. doi:10.1002/ir.314

- Emma, T. (2008, March). A college perspective on academics and the student athlete. *Coach and Athletic Director*, vol (77), 29-37.
- Feezell, T. (2009). Adding football and the "uses" of athletics at NCAA Division II and Division III institutions. *New Directions for Higher Education*, 148, 65-72. doi:10.1002/he.369
- Ferris, E., Finster, M., & McDonald, D. (2004). Academic fit of student-athletes: An analysis of NCAA Division I-A graduation rates. *Research in Higher Education*, 45, 555-575.
- Fleisher III, A. A., Goff, B. L., & Tollison, R. D. (1992). *The National Collegiate Athletic Association: A study in cartel behavior*. Chicago: University of Chicago Press.
- Fountain, J. J., & Finley, P. S. (2009). Academic majors of upperclassman football players in the Atlantic Coast Conference: An analysis of academic clustering comparing White and minority players. *Journal of Issues in Intercollegiate Athletics*, 2, 1-13.
- Frank, R. H. (2004). *Challenging the myth: A review of the links among college athletic success, student quality, and donation*. Report prepared for the Knight Foundation Commission on Intercollegiate Athletics. Retrieved from [http://pages.uoregon.edu/harbaugh/Readings/Sports/KCIA\\_Frank\\_report\\_2004.pdf](http://pages.uoregon.edu/harbaugh/Readings/Sports/KCIA_Frank_report_2004.pdf)
- Fried, B. H. (2007/May/June). Punting our future: College athletics and admissions. *Change*, vol (39), 38-15.
- Gayles, J. G., & Hu, S. (2009a). Athletes as students: Ensuring positive cognitive and affective outcomes. *New Directions for Higher Education*, 148, 101-107. doi:10.1002/he.373
- Gayles, J. G., & Hu, S. (2009b). The influence of student engagement and sport participation on college outcomes among Division I student athletes. *Journal of Higher Education*, 80, 315-333.
- Gayles, J. G., Rockenbach, A.B., & Davis, H.A. (2012). Civic engagement and the student athlete: Validating a new conceptual model. *Journal of Higher Education*, 83, 535-557.
- Getz, M., & Siegfried, J. (2010). *What does intercollegiate athletics do to or for colleges and universities?* Working Paper No. 10-W05. Department of Economics, Vanderbilt University, Nashville, TN. Retrieved from <http://vanderbilt.edu/econ/wparchive/workpaper/vu10-w05.pdf>
- Glass, G.V. (1997). Interrupted Time-Series Quasi Experiments. Retrieved on July 1, 2013, from <http://www.gvglass.info/papers/tsx.pdf>
- Goff, B. (2000). The effects of university athletics outside the athletic department: A review and extension of empirical evidence. *Journal of Sport Management*, April 2000, 85-104.
- Goidel, R.K. & Hamilton, J.M. (2006). Strengthening higher education through gridiron success? Public perceptions of the national football championships on academic quality. *Social Science Quarterly*, 87, 851-862.

- Greenlee, C.T. (2001). There's a football revival goin' on. *Black Issues in Higher Education*, 18(12), 29-31.
- Hart-Nibbrig, N. (1984) Corporate athleticism: An inquiry into the political economy of college sports. *NAPEHE Proceedings*, 5.
- Hirko, S. (2009). Intercollegiate athletics and modeling multiculturalism. *New Directions for Higher Education*, 148, 91-100. doi:10.1002/he.372
- Hossler, D., & Gallagher, K. S. (1987). Studying student college choice: A three-phase model and the implications for policymakers. *College and University*, 62(3), 207-222.
- Hossler, D., Braxton, J., & Coopersmith, G. (1989). Understanding student college choice. In J. C. Smart (Ed.) *Higher education and research*. Volume V. (pp. 213-288) New York: Agathon Press.
- Hyatt, R. (2003). Barriers to persistence among African American intercollegiate athletes: A literature review of non-cognitive variables. *College Student Journal*, 37, 260-275.
- Ingrassia, B. (2012). *The Rise of Gridiron University: Higher education's uneasy alliance with big-time football*. Lawrence, KS: University Press of Kansas.
- Judson, K. M., Aurand, T. W., & Karlovsky, R. W. (2007). Applying relationship marketing principles in the university setting. *Marketing Management Journal*, 17, 184-197.
- King, E. H., Sexton, E. L., & Rhatigan, J. J. (2010). Balancing fundraising in academic programs and intercollegiate athletics. *New Directions for Higher Education*, 149, 65-71. doi:10.1002/he.382
- Knight Commission on Intercollegiate Athletics. (2010). *Restoring the balance: Dollars, values, and the future of college sports*. Miami, FL: Author. Retrieved from [http://www.knightcommissionmedia.org/images/restoring\\_the\\_balance\\_2010.pdf](http://www.knightcommissionmedia.org/images/restoring_the_balance_2010.pdf)
- Knight Foundation Commission on Intercollegiate Athletics. (1993). *Reports of the Knight Foundation Commission on Intercollegiate Athletics: March 1991-March 1993*. Charlotte, NC: Knight Foundation Commission on Intercollegiate Athletics.
- Letawsky, N. R., Schneider, R. G., Pedersen, P. M., & Palmer, C. J. (2003). Factors influencing the college selection process of student-athletes: Are their factors similar to non-athletes? *College Student Journal*, 37, 604-610.
- Likins. P. (2005, Fall). The future of Division I college sports. *The Presidency*, Vol (8), 28-32.
- Mangold, W. D., Bean, L., & Adams, D. (2003). The impact of intercollegiate athletics on graduation rates among major NCAA Division I universities. *Journal of Higher Education*, 74, 540-562.

- Martinez, J. M., Stinson, J. L., Kang, M., & Jubenville, C. B. (2010). Intercollegiate athletics and institutional fundraising: A meta-analysis. *Sport Marketing Quarterly*, 19, 36-47.
- Miller, P. S., & Kerr, G. (2002). The athletic, academic and social experiences of intercollegiate student-athletes. *Journal of Sport Behavior*, 25, 346-367.
- Mixon, F. G., Trevino, L. J., & Minto, T. C. (2004). Touchdowns and test scores: Exploring the relationship between athletics and academics. *Applied Economics Letters*, 11, 421-424. doi:10.1080/1350485042000201906
- Pierce, C. E. (2007). An academic survey of engineering student athletes at a Division I university. *College Student Journal*, 41, 801-812.
- Pope, D. G., & Pope, J. C. (2009). The impact of college sports success on the quantity and quality of student applications. *Southern Economics Journal*, 75, 750-780.
- Potuto, J. R., & O'Hanlon, J. (2007). National study of student-athletes regarding their experiences as college students. *College Student Journal*, 41, 947-966.
- Reynolds, G. L., & Cain, D. (2006). *Final report on the impact of facilities on the recruitment and retention of students*. Center for Facilities Research. Retrieved from <http://www.provost.ncsu.edu/governance/standing-committees/library/2006-2007/agendas/documents/FinalReportFacilitiesImpact.pdf>
- Rhoads, T. A., & Gerking, S. (2000). Educational contributions, academic quality, and athletic success. *Contemporary Economic Policy*, 18, 248-258.
- Rishe, P. J. (2003). A reexamination of how athletic success impacts graduation rates: Comparing student-athletics to all other undergraduates. *American Journal of Economics and Sociology*, 62, 407-427.
- Rudolph, F. (1962). *The American college and university: A history*. Georgia: The University of Georgia Press.
- Sander, L. (2008, September 18). Athletics raises a college from the ground up. *Chronicle of Higher Education*, p. A1.
- Schneider, R. G., Ross, S. R., & Fisher, M. (2010). Academic clustering and major selection of intercollegiate student-athletes. *College Student Journal*, 44, 64-70.
- Shulman, J., & Bowen, W. (2001). *The game of life: College sports and educational values*. Princeton, NJ: Princeton University Press.
- Simons, H. D., Bosworth, C., Fujita, S., & Jensen, M. (2007). The athlete stigma in higher education. *College Student Journal*, 41, 251-273.
- Slaughter, S., & Leslie, L. L. (1997). *Academic Capitalism: Politics, policies, and the entrepreneurial university*. Baltimore, MD: The John Hopkins University Press.

- Sandy, R., & Sloane, P. (2004). Why do U.S. colleges have sports programs? In Fazel, J. & Fort, R. (Eds.), *Economics of College Sports* (pp. 87-110). Westport, CT: Praeger Publishers.
- Smith, D. R. (2009). College football and student quality: An advertising effect or culture and tradition? *American Journal of Economics and Sociology*, *68*, 553-579.
- Sperber, M. (2000). *Beer and circus: How big-time college sports is crippling undergraduate education*. New York: Henry Holt and Company.
- Stinson, J. L., & Howard, D. R. (2004). Scoreboards vs. mortarboards: Major donor behavior and intercollegiate athletics. *Sport Marketing Quarterly*, *13*, 129-140.
- Stinson, J. L., & Howard, D. R. (2008). Winning does matter: Patterns in private giving to athletic and academic programs at NCAA Division I-AA and I-AAA institutions. *Sport Management Review*, *11*, 1-20.
- Stinson, J. L., Marquardt, A., & Chandley, J. (2012). An empirical examination of university intercollegiate athletic expenditures. *Sport Marketing Quarterly*, *21*, 104-114.
- Suggs, W. (1999, October 15) Wins, losses, and dollars. *The Chronicle of Higher Education*, A61. Retrieved from EBSCOhost.
- Suggs, W. (2003). Jock majors. *Chronicle of Higher Education*, *49*(19), A33-A34. Retrieved from EBSCOhost.
- Suggs, W. (2009). Old challenges and new opportunities for studying the financial aspects of intercollegiate athletics. *New Directions for Higher Education*, *148*, 11-22. doi:10.1002/he.364
- Thelin, J. R. (1994). *Games colleges play: Scandal and reform in intercollegiate athletics*. Baltimore: Johns Hopkins University Press.
- Ting, S-M. R. (2009). Impact of noncognitive factors on first-year academic performance and persistence of NCAA Division I student athletes. *Journal of Humanistic Counseling, Education and Development*, *48*, 215-228.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2<sup>nd</sup> ed.). Chicago: University of Chicago Press.
- Toma, L. D., & Cross, M. E. (1998). Intercollegiate athletics and student college choice: Exploring the impact of championship seasons on undergraduate applications. *Research in Higher Education*, *39*, 633-661.
- Trenkamp, B.A. (2009). Does the advertising effect of athletics impact academic rankings? *Applied Economics Letters*, *16*, 373-378. doi:10.1080/13504850601018585

- Tucker, I. (2004). A reexamination of the effect of big-time football and basketball success on graduation rates and alumni giving rates. *Economics of Education Review*, 23(6), 655-661. Retrieved from ERIC database.
- Turner, S. E., Meserve, L. A., & Bowen, W. G. (2001). Winning and giving: Football results and alumni giving at selective private colleges and universities. *Social Science Quarterly*, 82, 812-826.
- Umbach, P. D., Palmer, M. M., Kuh, G. D., & Hannah, S. J. (2006). Intercollegiate athletes and effective educational practices: Winning combination or losing effort? *Research in Higher Education*, 47, 709-733. doi:10.1007/s11162-006-9012-9.
- Weisbrod, B. A., Ballou, J. P., & Asch, E. D. (2008). *Mission and money*. New York: Cambridge University Press.
- White, H. (2006, June 23). They have betrayed their educational purpose. *Chronicle of Higher Education*, p. B10.
- Witte, J. S., & Witte R. S. (2007). *Statistics*. Hoboken, NJ: John Wiley & Sons.
- Wojciechowski, G. (2005). *Judgment call*. In M. MacCambridge (Ed.), *ESPN College Football Encyclopedia* (pp. 29-32). New York: Hyperion Publishers.
- Zimbalist, A. (1999). *Unpaid professionals: Commercialism and conflict in big-time college sports*. Princeton, NJ: Princeton University Press.