

2009-01-01

College Athletics, Undergraduate Recruitment, and Alumni Giving: A Review of the Evidence

Ebony Michelle Livingston

University of Miami, angel06um@yahoo.com

Follow this and additional works at: https://scholarlyrepository.miami.edu/oa_theses

Recommended Citation

Livingston, Ebony Michelle, "College Athletics, Undergraduate Recruitment, and Alumni Giving: A Review of the Evidence" (2009). *Open Access Theses*. 236.

https://scholarlyrepository.miami.edu/oa_theses/236

This Open access is brought to you for free and open access by the Electronic Theses and Dissertations at Scholarly Repository. It has been accepted for inclusion in Open Access Theses by an authorized administrator of Scholarly Repository. For more information, please contact repository.library@miami.edu.

UNIVERSITY OF MIAMI

COLLEGE ATHLETICS, UNDERGRADUATE RECRUITMENT, AND ALUMNI
GIVING:
A REVIEW OF THE EVIDENCE

By

Ebony M. Livingston

A THESIS

Submitted to the Faculty
of the University of Miami
in partial fulfillment of the requirements
for the degree of Master's of Arts

Coral Gables, Florida

December 2009

© 2009
Ebony M. Livingston
All Rights Reserved

UNIVERSITY OF MIAMI

A thesis submitted in partial fulfillment of
the requirements for the degree of
Master's of Arts

COLLEGE ATHLETICS, UNDERGRADUATE RECRUITMENT, AND ALUMNI
GIVING:
A REVIEW OF THE EVIDENCE

Ebony M. Livingston

Approved:

Jomills Henry Braddock II, Ph.D.
Professor of Sociology

Terri A. Scandura, Ph.D.
Dean of the Graduate School

Andrew Gillentine, Ph.D.
Associate Professor of Education

Marvin P. Dawkins, Ph.D.
Professor of Sociology

LIVINGSTON, EBONY M.
College Athletics, Undergraduate
Recruitment, and Alumni Giving:
A Review of the Evidence

(M.A., Sociology)
(December 2009)

Abstract of a thesis at the University of Miami.

Thesis supervised by Professor Jomills Henry Braddock, II.
No. of pages in text (36)

There has been a long-standing debate about the role and place of intercollegiate athletics (Schulman & Bowen, 2003). Often the focus is on whether successful athletic programs lead to “value-added” outcomes such as increased alumni giving (Turner, Meserve & Bowen, 2001; Sperber, 2000), or enhanced student applicant pools (Tucker & Amato, 1993; Toma & Cross, 1998; McCormick & Tinsley, 1987; Murphy & Trandel, 1994). The empirical evidence on these issues is both limited, and mixed. For example, the findings of a few methodologically rigorous studies suggest some value-added “applicant pool” benefits of successful athletic programs. In contrast, studies directly examining student college preferences have produced mixed results. This study offers a review of the extant empirical research on this topic in order to assess the impact of college athletic reputation on three key outcomes: size of applicant pool; quality of applicant pool; and university giving.

TABLE OF CONTENTS

I.	CHAPTER 1: INTRODUCTION	1
	Problem	1
	Purpose of the Study	1
	Background	3
II.	CHAPTER 2: METHODS	7
	Method of Review	7
	Description of Reviewed Studies	9
III.	CHAPTER 3: FINDINGS	16
	Athletic Success and Student Recruitment	16
	Athletic Success and Fundraising	27
IV.	CHAPTER 4: CONCLUSIONS	30
V.	References	33

CHAPTER 1 INTRODUCTION

The Problem

The place and value of “big-time” college sports continues to generate considerable controversy within the higher education community, despite its deep historical roots and contemporary popularity. For example, two recent empirically based, and widely read books—*Reclaiming the Game* (Bowen and Levin, 2003) and *The Game of Life* (Shulman and Bowen, 2001)—both acknowledge some potential virtues of college sports, but also emphasize what they consider the problematic consequence of *athletic intensification* -- diverting even prestigious institutions away from their academic missions.

Contemporary debates within the academy regarding the role and place of intercollegiate athletics often focuses on what may be considered “value-added” outcomes such as increased alumni giving (Turner, Meserve & Bowen, 2001; Sperber, 2000), or recruitment benefits thought to be associated with having successful high-profile sports teams (Tucker & Amato, 1993; Toma & Cross, 1998; McCormick & Tinsley, 1987; Murphy & Trandel, 1994). However, in many instances, these debates have often been based more on anecdote than on empirical evidence, and even those researchers who have brought empirical evidence to bear on the effects of college athletics have only examined a narrow subset of schools or a narrow subset of issues (Litan, Orszag & Orszag, 2003).

Purpose of the Study

The empirical evidence on the value-added benefits of intercollegiate athletics is both limited, and mixed. For example, with regard to undergraduate recruitment, some

studies document value-added “applicant pool” benefits of successful athletic programs (Toma and Cross, 1998; Murphy & Trandel, 1994; McCormick & Tinsley, 1987; Tucker & Amato, 1993), while other studies have produced mixed results (Suggs, 2001; Braddock, Sokol-Katz, Basinger-Fleischman & Hua; 2006). Similarly, mixed findings have been reported for alumni giving returns of successful athletic programs. Some studies show positive effects (Baade & Sundberg, 1996), while others find either no effect, or negative associations (Meer & Rosen, 2008) between successful athletic programs and fundraising.

This study focuses on whether successful athletic programs lead to “value-added” outcomes such as increased alumni giving, or enhanced student applicant pools which support the educational mission of institutions of higher education. To contribute to a clearer understanding of the impact of intercollegiate athletics on the educational mission in higher education, the study reviews extant empirical evidence on the association between successful college athletics programs and two key outcomes: undergraduate recruitment and alumni giving. Specifically, the study seeks to address two questions: (1) whether successful college athletic programs stimulate additional applications from prospective students, thereby allowing colleges to enroll more selective freshman classes; and, (2) whether successful college athletic programs stimulate greater contributions by alumni and other donors.

Thus, the reviewed studies fall into two categories. One subset of reviewed studies focuses on the impact of a college’s athletic success on student recruitment--the size and quality of prospective student applicant pools. Studies taking this approach examine what some have described as the “advertising effect” of college sports, especially high

profile sports (e.g., football and basketball). A second category of reviewed studies focuses on the impact of a college's athletic success on university fund-raising—alumni giving or legislative largesse.

Background

College athletics have a long history in American higher education. As Guy Lewis (1970) notes, collegiate sport revolutionized campus life, turned institutions of higher education into athletic agencies, and, in many ways, contributed to the destruction of a historically isolated academic world, by making the public more conscious of the nation's colleges and universities. Nevertheless, controversy regarding the impact of collegiate athletic programs impact on higher education has surrounded college sports since its inception. From jock majors, to differential graduation rates, and perceived preferential treatment of athletes, many critics have viewed college sports as a detriment to higher education.

Despite such controversy, college sports have continued to grow and thrive. More colleges sponsor football teams today than a decade ago. In 1983, only 507 colleges in the National Collegiate Athletic Association had football teams and by 2004, there were 617. This represents a 22 percent increase. Part of the reason for this sizable growth in football programs is that proponents of intercollegiate sports believe that sport attracts hefty sponsorship and television revenue, and other benefits associated with increased public attention (Blum, 1994).

Athletic teams represent their college; they bear its name, and their doings reflect credit or discredit on the institution (Dudley, 1903, p. 97). Toma & Cross (1998) have characterized intercollegiate athletics as “the *front door* or *front porch* to the university.

The “front porch” metaphor suggests that college sports are what outsiders see and what eventually gets them inside. From recruiting efforts to alumni giving, athletic success can make or break a university image. “If you’re successful in sports, then you get national prominence, and people start checking you out,” according to Robert G. Murphy (McCartney, 2007, p. 2). For many universities, prospective students represent one of the most important populations it attracts (Toma & Cross, 1998).

Prospective students represent one of the most important populations it attracts (Toma & Cross, 1998). This phenomenon has sometimes been called the “Flutie factor,” referring to a 25 percent increase in Boston College’s applications the year following quarterback Doug Flutie’s “Hail Mary” pass, which enabled Boston College to upset the University of Miami in the Orange Bowl. Similarly, North Carolina State University reportedly received a 40 percent increase in applications following its NCAA basketball championship in 1983 (McCormick & Tinsley, 1987). More recently, following the University of Florida’s national football championship and back-to-back basketball titles, early reports suggest the university will reap similar benefits. For example, undergraduate applications reached an all-time high (25,000 students applied for fewer than 7,000 slots), and average applicant SAT score is now 1400 (Garry, 2007).

A poll taken from *Beer and Circus* (Sperber, 2000) asked enrolled students at Division I schools, the following question: “When applying to college for admission, how well informed were you about the intercollegiate football and/ or men’s basketball teams of the school to which you applied?” The responses revealed that 88 percent of males and 51 percent of females answered positively (“very well informed” or “moderately well informed”). However, to the question –“When applying to colleges for admission, how

well informed were you about the undergraduate education programs of the schools to which you applied?” Among Division I respondents, only 39 percent of males and 42 percent of females answered affirmatively (Sperber, 2000). This is strong evidence that images and perceptions about an institution influence decisions to apply and eventually enroll in a particular college. “How important a factor in your decision to attend your university was the fame of the school’s intercollegiate athletic teams?” and “...the fame of the school’s party scene connected to its college sports events?” The results revealed that in NCAA Division I schools, 56 percent of males considered these factors “Very important” or “moderately important;” 31 percent “neither important or unimportant;” and 13 percent “moderately unimportant “ or “very unimportant.” Females at these schools responded much less enthusiastically: 26 percent positively, 38 percent neutrally, and 36 percent negatively. The questionnaire also included a P.S. section for respondent’s comments. One comment was, “I always dreamed of wearing purple and gold in college [Louisiana State’s colors], and majoring in tailgating. I’m glad I fulfilled my dream” (Sperber, 2000). Though many administrators might be appalled at this comment, it speaks volumes to their marketing department.

Institutional reputation is an important factor for many prospective students and their families in determining college choice. Research on the college choice process has demonstrated that students’ college selection is influenced by supply and demand considerations involving decision-making processes operating at both individual and institutional levels (Hossler & Gallagher, 1987). Individual decisions occur early as students identify colleges of interest. Institutional decisions occur later when college admissions officers accept or reject applicants according to their institutional needs.

While both the supply and demand sides of this process are important, most research has focused primarily on supply-side processes in the college choice process—student decision-making.

According to Leslie and Johnson (1974), prospective students chose their future institution on perception. Finding a rewarding and educational environment to gain knowledge and grow as an individual, in hopes to graduate and attain a career with economic and social rewards (Litten, 1980; Kotler, 1976) is what is expected by prospective students. Yet, many institutions focus on their athletic fame, campus architecture and accommodation, noted alumni, and the prestige of faculty rather than what many feel is the main focus of the institution, top programs, graduation rates and the variety of programs available for study (Hugstad, 1975).

Research over several decades, suggests that college choice decisions are significantly shaped by students' access to information about, and perceptions of, colleges' academic programs, tuition, costs, availability of financial aid, general academic reputation, proximity to home, size, and social life (Comfort, 1925; Rippinger, 1933; Keller & McKewon, 1984; Stewart, et al., 1987; Chapman & Jackson, 1987; Braxton, 1990; Kinzie, et al., 1998; Hossler, Schmit & Vesper, 1999). More recent studies have examined and affirmed the importance of these and other considerations including college athletic reputation (Braddock, Sokol-Katz, Basinger-Fleischman & Hua, 2006; Braddock & Hua, 2006).

CHAPTER 2 METHODS

Method of Review

This study provides a critical review and synthesis of the existing literature on the relationship between student recruitment, alumni giving, and athletic success. Because existing studies have focused almost exclusively on two high profile men's sports – football and basketball – this analysis is mainly limited to an examination of men's revenue generating sports. However, the studies we consider which examine student college choice are much broader, as they address the impact of perceived athletic reputation rather than success in specific sports.

The review examines all located studies bearing on the relationship between college athletic reputation (success) and student recruitment and fund raising. The specific topics covered in this review include multiple indicators of student recruitment (applicant pool size, quality of freshman classes, and high school seniors' college choices) and a single indicator of fund raising (alumni giving). These topics were not selected on an a priori basis, but represent almost completely, the full range of topics that have been empirically examined. The specific purpose of the review is to determine, to the extent possible using currently available research results, whether having a strong athletic program results in value-added recruitment and revenue benefits for colleges and universities.

The following indices were searched for appropriate references: Google; Google Scholar; Sport Discus; Sport Database; Sportsearch; Sociological Abstracts; Psychological Abstracts; and the Sports Documentation Monthly Bulletin. A total of 24 studies were located and all were included in the analysis. Table 1 provides a brief

description and summary of the results of the 24 located studies. Table 2 & 3 list a summary of each studies results significance level, with table 2 devoted to student recruitment studies (applicant pool size, applicant pool quality and student college choice), and table 3 devoted to alumni giving research.

Table 1 Synopsis of All Reviewed Studies

<i>Study</i>	<i>Data</i>	<i>Outcomes</i>	<i>Findings</i>
Tucker & Amato (2006)	-Data for 1993-2002 from 78 universities (from 9 major conferences)	-Applicant Pool Quality (SAT)	-Between 1980 and 1989, a highly ranked football team boosted SAT scores but a highly ranked basketball team did not have the same effect.
Meer & Rosen (2008)	-Administrative archives of Anon U's Development Office; (1983-2006)	-Alumni Giving	-Found no clear patterns among different types of teams. A successful football season has a negative effect and a successful basketball season has a positive effect on giving.
Grimes & Chressanthis (1994)	-Mississippi States University alumni contribution data from 1962-1991	-Alumni Giving	-Found a positive and significant correlation between university contributions and winning percentage but only for baseball. The effect for basketball was positive, but not significant, while the coefficient for football was negative, and insignificant.
Pope & Pope (2008)	Admissions data (332 schools participating in NCAA Division I basketball or Division I-A football between 1983-2002).	-Applicant Pool Size (Number of Freshman Applicants) -Applicant Pool Quality (SAT-average combined score)	-Football/ basketball success significantly increases the quantity of applications, with estimates ranging from 2-8% for the top 20 football schools and top 16 basketball schools yearly. -The extra applications received are composed of both low & high SAT scoring students thus providing potential for schools to improve their admission outcomes. -Schools appear to exploit these increases in applications by improving both the number and the quality of incoming students.

McCormick & Tinsley (1987)	-Admissions data from 150 schools for 1971, with 63 as big-time schools.	-Applicant Pool Quality (SAT-average combined score)	-A school that participates in major college athletics has a better undergraduate student body than one that does not, with the athletic dummy being positive and significant. -Trends of athletic success associated with academic quality are positive and marginally significant.
Brenner & Kesselring (1993)	-Revisiting McCormick & Tinsley (1987) study with new data on SAT scores.	-Applicant Pool Quality (SAT-average combined score)	-The variable that McCormick and Tinsley used to measure this effect has no relationship to athletic success. The improved specifications cast significant doubt on their evidence. -Variables which actually measure athletic success were tried in many forms and failed to reveal any significant impact on average freshman SAT scores.
Toma & Cross (1998)	-Admission data (1979 and 1992) was collected for the 5 years before they won a national championship as well as the 5 years after from the annual editions of Peterson's Guide to Four-Year Colleges and Universities.	-Applicant Pool Size (Number of Freshman Applicants) -College Choice	-The significant success in intercollegiate athletics and the positive attention has an influence in college student's choice, particularly at the search/ college application stage. -National championship results in one of the two marquee sports, translates into a sometimes dramatic increase in the number of admissions applications received both in absolute terms.
McEvoy	-Fundraising data	-Alumni Giving	-Assuming conference affiliation doesn't change, an athletic

(2005c)	<p>from 119 NCAA Division I-A athletic programs for each of the 5-year span from 1998-99 to 2002-03.</p> <p>-35 questionnaires were returned, representing 171 usable subjects, for a usable response rate of 28.7%.</p>		<p>fund raising practitioner should track home football attendance as an indicator of fund raising contributions.</p> <p>-Membership in one of the six automatic bid conferences in Football is worth more than \$2.5 million per year in athletic fund raising contributions to conference members.</p> <p>-Annual athletic fund raising contributions would increase by \$70 for each average attendee increase at home football games.</p>
Murphy & Trandel (1994)	- Admissions data from 55 schools out of the six major conferences.	-Applicant Pool Size (Number of Freshman Applicants)	-A university's within-conference football winning percentage yields a significant increase in the number of applications received. They estimate that a .25 increase in winning percentage can result in a 1.3 percent gain in the following year's applicant pool.
Litan, Orszag, & Orszag (2003)	-NCAA/EADA data from 1993, 1995, 1997, 1998, 1999, 2000 and 2001 from more than 100 school, but mainly Division I-A schools.	<p>-Applicant Pool Quality (SAT-average combined score).</p> <p>-Alumni giving</p>	<p>-Football winning percentage is positively, but not significantly, associated with average incoming SAT scores.</p> <p>-There's no statistical evidence to prove operating expenditures on sports affect alumni giving.</p>
McEvoy (2005a)	-Admissions data from schools with the top five finishing	- Applicant Pool Size (Number of Freshman	-Schools with a top five finisher for the Heisman Trophy have a relatively small, yet significant effect on undergraduate applications with nearly twice the increase the year following.

	student-athletes and Heisman Trophy nominees between the years 1988-2003.	Applicants)	
Baade & Sundberg (1996)	-Fundraising data from 125 public and private doctoral-granting research universities and over 250 liberal arts colleges from fiscal years 1989-1990.	-Alumni giving	-Institutions that invest more heavily in the instruction of their students receive a greater return from their alumni. -Enrollment does not have a significant impact on the average gift per alum. -Higher student wealth, better institutional quality, and greater development efforts result in larger gifts per alum.
Mixon (1995)	-Revisited McCormick & Tinsley's (1987) with new admissions data from 217 public and private 4-year colleges and universities for the years 1978-1992.	-Applicant Pool quality (SAT-average combined score).	-The evidence that athletics success may enhance the mission of a university is both positive and significant.
Tucker (2005)	-Data from academic years 1990, 1996, 2000, 2001, and 2002 from 78 members of nine major football conferences	-Applicant pool quality (SAT-average combined score)	-An increase of 10% in winning percentage for a 5 year period increase average SAT scores of roughly 14 points; and an additional appearance in the final AP top 20-ranking or extra bowl game would increase the average SAT scores by more than 12 points. -Consistent w/ previous findings, the evidence of an advertising effect for successful big-time football programs is

			<p>not supported.</p> <p>-Both the lower and higher SAT students are positively influenced by successful football.</p>
Braddock & Hua (2006)	<p>National Educational Longitudinal Survey (NELS).</p> <p>468 African American 4-yr college matriculants.</p>	-College Choice	<p>-One-third of African American respondents (58% of males & 23% of females) reported that college's athletic reputation is at least somewhat important in determining their college choice.</p> <p>-African American students that score higher on SAT tests give little consideration to athletic reputation.</p>
McEvoy (2005b)	-Data from College Handbook from 1995-2001 and six major NCAA Division I-A athletic conferences.	- Applicant Pool Size (Number of Freshman Applicants)	<p>-Of four sports studied, only football had a significant relationship with the number of applicants annually.</p> <p>-Football teams with a conference winning percentage increased by .250 or greater realized a 6.1% gain in undergraduate applicants the next year.</p>
Braddock, Hua & Dawkins (2007)	<p>Educational Longitudinal Survey (ELS)</p> <p>(2,027 college-bound African American H. S. seniors)</p>	-College Choice	<p>-Roughly one-half (56%) of African American high school seniors (69% of males and 45% of females) report that a school's athletic reputation is at least a somewhat important consideration in determining their college choice; students who score higher on standardized achievement tests give little consideration to college athletic reputation. Not surprisingly, among African American students, males, and varsity athletes (male and female) were found to give stronger consideration to college athletic reputation than females or non-athletes.</p>

Smith (2008)	-Division I basketball schools (1994-n=301) / (2005-n=335).	-Applicant pool quality (SAT)	-Major basketball conference membership is unrelated to student quality. No measure of student quality is significantly associated with athletic success.
Braddock, Sokol-Katz & Basinger-Fleischman (2006)	National Educational Longitudinal Survey (NELS) -(7,187 H.S. seniors)	-College choice	-College athletic reputation at least somewhat important to 1/3 of respondents. Discriminant analysis showed that student emphasis on college academic reputation is positively associated with student emphasis on strong athletic reputation.
Braddock, Sokol-Katz, Basinger-Fleischman & Hua (2006b)	National Educational Longitudinal Survey (NELS) -(8,990 H.S. seniors)	-College choice	-OLS regression analysis showed that emphasis on college academic reputation and strong athletic reputation are positively related. However, athletic reputation is unimportant among students with high test scores.
Braddock, Hua, Dawkins & Sokol-Katz (2007)	Educational Longitudinal Survey (ELS) -(8,263 college-bound H. S. seniors & their parents)	-College choice	-College athletic reputation is at least somewhat important among 45% of college-bound seniors (53% of males & 36% of females) and 40% of their parents (43% of fathers & 40% of mothers). Logistic regression analysis showed that emphasis on college academic reputation and strong athletic reputation are positively related. However, athletic reputation is unimportant among students with high test scores.
Braddock, Hua, Dawkins, Milner & Sokol-Katz (2008)	National Longitudinal Study of Freshman (2002) -(4,000 elite college freshmen)	-College choice	-College athletic reputation ranked 20 th among a list of 25 college choice factors (18 th among males and 21 st among females). However, factor analysis revealed that athletic considerations (sports opportunities, athletic scholarships, and college athletic reputation) had the second highest factor loading across analysis groups. Logistic regression analysis

			showed that emphasis on other factors, including college academic reputation and strong athletic reputation are positively related.
Siegelman & Carter (1979)	CFAE alumni giving data (1960-1975) Athletic data (138 colleges that maintained Division I programs from 1961-1977.	-Alumni giving	-Correlation was not only low, but negative. -There was a tendency for alumni giving to fall off at schools that had better athletic records. -None of the athletics success measures is closely related to changes in alumni giving. -Schools with winning football records in 1974 tended to attract proportionately fewer new alumni givers than did schools with losing records, and schools with football bowl appearances in 1970 were significantly less likely to receive larger average alumni donations.
Brooker & Klastorin (1981)	Athletic data from 1962-1971 and donation data from 1963-1971. (58 institutions from major conferences)	-Alumni giving	-No significant relationships among major independents schools emphasizing basketball programs and small public universities are examples of these. -Inconsistencies found when institutions were grouped together but separating public and private schools produced positive and significant results.

CHAPTER 3 FINDINGS

Athletic Success and Student Recruitment

Applicant Pool Size

In one of the most widely cited studies on this topic, Toma and Cross (1998), schools that won national championships in football or men's basketball between 1979 and 1992 and subsequent admissions were examined. For comparison, they created a control group of comparable peer institutions. Toma and Cross found that success in intercollegiate athletics (as indicated by national championships in one of the two marquee sports such as football and men's basketball) appears to translate into a sometimes dramatic increase in the number of admission applications received, both in absolute terms and relative to peer institutions. They note that football championships seem to have more profound impact on applications received than basketball, and point out that their finding of positive attention following a championship year (particularly for football), appears to be "somewhat lasting."

Murphy & Trandel (1994) examined the association between a university's football record and number of applications received. They examined data from 35 schools in six major football conferences (Atlantic Coast Conference, Big Eight, Big Ten, Pacific Athletic Conference, Southeastern Conference, and Southwest Conference) for the period 1978 to 1987. They found that after controlling for factors such as state population, income, and tuition costs, a university's within-conference football winning percentage yields a significant increase in the number of applications received. For example, they

estimated that a .25 increase in winning percentage can result in a 1.3 percent gain in the following year's applicant pool.

Pope and Pope (2008) use three data sets (Associated Press rankings; proprietary data from Peterson's Guide to Four Year colleges and data from the National Center for Education Statistics; along with the College Board's Test-Takers Database) to examine the relationship between athletic success and applicant pool size and quality. They find that football and basketball success increase the quantity of applications to a school after that school achieves sport success, the estimates ranging from 2-8% for the top 20 football schools and the top 16 basketball schools each year. Evidence also shows that the extra applications are composed of students with both low and high SAT scores. They suggest that colleges often use of the extra applications increase student quality, increase enrollment size and institutional diversity.

McEvoy (2005a) investigated the impact of elite individual athletic performance on university admission applications in NCAA Division I-A football between 1988 and 2002. Using a pretest – posttest control group design, a statistically significant time-by-group interaction effect was found, with universities realizing a 6.59 increase in undergraduate admissions applications in the year following having a football player finish among the top five Heisman Trophy vote recipients.

McEvoy (2005b) investigated the impact of dramatic changes in NCAA Division I-A intercollegiate athletics teams performance on university admission applications between 1994 and 1998. Using data from six major athletic conferences (Atlantic Coast Conference, Big Eight, Big Ten, Pacific Athletic Conference, Southeastern Conference, and Southwest Conference), McEvoy found that applicant pool size was positively

associated with changes in football winning percentage. No such significant associations were found for men's or women's basketball, or women's volleyball.

Quality of Applicants

McCormick & Tinsley (1987) examined “the argument that athletics boosts academics through advertising.” They studied 150 schools (including 63 from “major” conferences) and conclude that “a school that participates in major college athletics has a better undergraduate student body than one that does not.” The authors report evidence of a “symbiotic relation between athletics and academics on many college campuses.” McCormick & Tinsley (1987) argue that critics of athletic success are misguided “if their motive is academic improvement of the university” and that the elimination of large-scale athletic participation could have detrimental effects for any particular school.

Bremmer and Kesselring (1993) re-estimated the McCormick and Tinsley (1987) model using data covering a 10 year period prior to 1989 and found the sports success to be insignificant. Their analysis employed alternative measures of athletic success for football (number of major bowl invitations) and basketball (number of years that a team was invited to the NCAA basketball tournament) for 119 institutions. Controlling for factors such as enrollment, per/student endowment, acceptance rates, tuition, library volumes, and the like, they found that both indicators of athletic success were negatively related with SAT scores.

Mixon (1995) also replicated McCormick and Tinsley's (1987) study and took Bremmer and Kesselring's (1993) analysis a step further with more refined measures of athletic success (i.e., number or rounds played in the NCAA tournament rather than times entered). This improved specifications provided support for the original McCormick and

Tinsley-(1987) finding that athletic success positively and significantly impacts average freshman SAT scores.

Tucker & Amato (1993) examined the association between a school's athletic success and student quality (as measured by average SAT scores) using different measures than those employed by McCormick and Tinsley (1987). Football success was measured by assigning points based on final Associated Press top-20 rankings, and a similar measure was constructed to measure basketball success. With these measures, they found that, between 1980 and 1989, a highly ranked football team boosted SAT scores but a highly ranked basketball team did not have the same effect.

Tucker (2005) examined the association between a school's football success and student quality (as measured by average SAT scores) using different measures than those employed by McCormick and Tinsley (1987). Football success was measured by assigning points based on final Associated Press top-20 rankings, and a similar measure was constructed to measure basketball success. With these measures, he found that, between 1990 and 2002, a highly ranked football team boosted SAT scores.

Litan, Orszag, and Orszag (2003) examined the relationship between athletic success and various outcomes in a report commissioned by the National Collegiate Athletic Association. Their analyses are based on a comprehensive new database, covering 1993 to 2001, which includes information compiled from the Equity in Athletics Disclosure Act merged with other data sources including proprietary NCAA data and the authors' own survey of chief financial officers from 17 Division I schools. These authors estimate that football winning percentage is positively, but not significantly, associated with average incoming SAT scores.

Smith (2008) examined the association between a school's success in big-time (Division I) basketball and student quality (as measured by average SAT scores; proportion of freshmen ranked in top 10% of their high school class; GPA of B or better; and number of Merit Scholars). Basketball success for all Division I schools was measured, over a 12-year period, in four ways: season winning percentage; participated in NCAA tournament; made final-four appearance; or having a breakout season. With these measures, Smith found little evidence that success in big-time basketball boosts student quality.

Students' College Choice

Studies examining student college selection priorities have also produced somewhat mixed results. For example, one recent telephone survey of 500 college-bound seniors found that 73 percent of the respondents said their decision to attend a given college was not influenced by its position in the divisional hierarchy of the National Collegiate Athletic Association. More than a third (37%) said they did not know whether their college of choice belonged to Division I, II, or III (Suggs, 2001). These descriptive survey results are provocative but limited, methodologically. This is especially the case with regard to how this study conceptualized the quality of a college's sports teams. The size and representativeness of the sample are also of concern.

Recently, a series of studies by researchers at the University of Miami's Center for Research on Sport in Society, based on longitudinal, national data sets have provided more comprehensive analyses of the role of athletic reputation in student's college choice. These studies examine both the proportion of high school seniors reporting whether or not college athletic reputation influenced their choice of college, and whether

students' emphasis on college athletic reputation is incompatible with student emphasis on academic considerations.

The first in this series of studies (Braddock, Sokol-Katz, Basinger-Fleischman, 2006a) examined data from the National Education Longitudinal Study of 1988 (NELS) conducted by the U.S. Department of Education's National Center for Education Statistics (NCES) to assess the degree of influence reported for 14 different factors (including college's athletic reputation) on college choice. This study analyzes data from a multiethnic subsample consisting of 7,187 high school seniors who expected to enroll in *four-year* colleges and universities. Their descriptive results show that roughly one out of every three respondents in this nationally representative sample of "college-bound" high school seniors report that a school's athletic reputation is at least a somewhat important consideration in determining their college choice. This general pattern was found to hold across a variety of socio-demographic categories including gender, SES, and race-ethnicity. Their discriminant analysis indicated that the importance of college athletic reputation tended to be more strongly emphasized by males, students from higher SES backgrounds, students who participate in varsity intercollegiate athletics, students attending public colleges and universities, as well as by students who place strong emphasis on college academic reputation.

In a subsequent analysis of the NELS data, Braddock, Sokol-Katz, Basinger-Fleischman & Hua (2006b) used logistic regression to examine variables that were related to the degree of importance high school seniors attach to college's athletic reputation in deciding upon a school to attend. They found that students who score higher on standardized achievement tests give little consideration to college athletic reputation.

However, they also found that students who attach significance to a college's academic reputation, also attach value to a college's athletic reputation. Not surprisingly, males and varsity athletes were found to give stronger consideration to college athletic reputation than females and nonathletes. Additionally, they found that college athletic reputation received greater emphasis among students who had matriculated at public rather than private, four year institutions.

Braddock & Hua (2006) also used the NELS data to extend research on college choice by examining what a subsample of college-bound African American high school seniors say about the importance of college athletic reputation in choosing which school to attend. Their descriptive results show that roughly one out of every three African American respondents report that a school's athletic reputation is at least a somewhat important consideration in determining their college choice. Logistic regression analysis revealed that African American students who scored higher on standardized achievement tests gave little consideration to college athletic reputation. Among African American students, males and varsity athletes were found to give stronger consideration to college athletic reputation than females or non-athletes. They also found that African American high school seniors who matriculated at public, rather than private, four year institutions attach value to a college's athletic reputation.

Braddock, Hua, Dawkins & Sokol-Katz (2007) extend research on this topic by used more recent national data (Educational Longitudinal Study) to examine what students *and their parents* say about the importance of college athletic reputation in the college choice process. Their ELS analytic subsample consists of 8,990 high school seniors (and parents) who reported plans to enroll in a *four year* college or university

immediately following graduation. Consistent with prior studies, they found that high school seniors planning to attend college, and their parents, consider a very wide range of issues and college characteristics in their decision-making process. Like earlier studies, their findings suggest that while college athletic reputation is clearly not among the top factors considered, it does matter to a significant number of both college bound high school seniors, and their parents. Specifically, their descriptive results show that roughly one-half of respondents in this nationally representative sample of high school seniors (and their parents) report that a school's athletic reputation is at least a *somewhat important* consideration in determining their college choice. Regression analysis revealed that students who score higher on standardized achievement tests (and their parents) give little consideration to college athletic reputation in the college choice process. However, just as importantly, they found that students (and their parents), who attach significance to a college's academic reputation also attach value to a college's athletic reputation. Not surprisingly, male and female varsity athletes (and their parents) were found to give strong consideration to college athletic reputation.

Braddock, Hua & Dawkins (2008) also employ the ELS to further examine what African American high school senior's students say about the importance of college athletic reputation in choosing which school to attend. Consistent with prior studies (Braddock & Hua, 2006) they found that African American seniors planning to attend college consider a very wide range of issues and college characteristics in their decision-making process. Their descriptive results show that roughly one-half (56%) of African American high school seniors (69% of males and 45% of females) report that a school's athletic reputation is at least a somewhat important consideration in determining their

college choice. As with studies based on the full ELS sample (Braddock, Hua, Dawkins & Sokol-Katz, 2007), these authors observe a substantially stronger emphasis placed on athletic reputation among ELS college bound seniors compared to that reported for the earlier NELS college matriculated cohort (Braddock & Hua, 2006). Logistic regression analysis revealed that among African Americans, students who score higher on standardized achievement tests give little consideration to college athletic reputation. Not surprisingly, among African Americans, males, and varsity athletes (male and female), were found to give stronger consideration to college athletic reputation than females and non-athletes.

Braddock, Hua, Milner, Dawkins & Sokol-Katz (2008) extended recent research on college choice by examining what freshmen at elite institutions say about the importance of college athletic reputation in deciding which school to attend. This study employed the National Longitudinal Survey of Freshmen, a national probability sample of approximately 4,000 first-time students entering 28 selective colleges and universities in 1999. Consistent with prior studies, the authors found that elite college students consider a very wide range of issues and college characteristics in their decision-making process, and that college athletic reputation was clearly not among the top factors considered by elite college freshmen. Descriptive results show that among a list of twenty-five factors students might consider when choosing a college, athletic reputation ranked 20th for the full sample and 18th and 21st among males and females, respectively. Not surprisingly, they found that elite college freshmen placed substantially less emphasis on athletic reputation than what has been observed in recent studies based on both the NELS and ELS data (Braddock, Dawkins & Hua, 2006; Braddock & Hua, 2006; Braddock, Sokol-

Katz, Basinger-Fleischman & Hua, 2006; Braddock, Hua, Dawkins & Sokol-Katz, 2007). Nevertheless, their regression analysis revealed that elite college students who emphasize other factors, including academic-career mobility, social-academic prestige, socio-cultural networks, co-ethnic affinity, also seek colleges with good athletic reputations. As in prior studies, male elite college freshmen were found to give stronger consideration to college athletic reputation than their female counterparts. Interestingly, they also found that students from higher income families give stronger consideration to college athletic reputation than students from lower income families. In many respects, these patterns are quite similar to those reported for the earlier studies. However, it should be noted that among elite college freshmen, the current data suggests substantially less emphasis placed on athletic reputation among NLSF respondents compared to that reported for recent studies based on both the NELS and ELS data.

Overall, these findings suggest that college athletic reputation should be an important consideration not only for college choice researchers, but also for college administrators and others involved with student recruitment. While few would expect college athletic reputation to be among the most important considerations shaping college choice decisions, the overall findings of this study suggest that it is by no means a trivial matter.

Table 2 Summary of Results of Student Recruitment Studies

<i>Study</i>	<i>Applicant Pool Size</i>	<i>Applicant Pool Quality</i>	<i>Student Choice</i>
Tucker & Amato (2006)		0	
Mixon (1995)		++	
Pope & Pope (2008)	++	+	
McCormick & Tinsley (1987)		++	
Bremmer & Kesselring (1993)		0	
Toma & Cross (1998)	+	+	
McEvoy (2005a)	++		
Murphy & Trandel (1994)	++		
McEvoy (2005)	++		
Litan, Orszag & Orszag (2003)		+	
McEvoy (2005)	+		
Braddock & Hua (2006)			++
Braddock, Hua, Dawkins & Sokol-Katz (2007)			++
Braddock, Hua & Dawkins (2008)			++
Braddock, Sokol-Katz, Basinger-Fleischman & Hua (2006)			++
Braddock, Sokol-Katz & Basinger-Fleischman (2006)			++
Braddock, Hua, Dawkins, Milner & Sokol-Katz (2008)			++
Tucker (2005)		+	
Smith (2008)		0	

* *Some of the above studies examined other outcomes not considered here.*

* **Symbols within cells indicate the following:**

- (- -) significant negative results
- (-) non-significant negative results
- (0) no differences in results
- (+) non-significant positive results
- (+ +) significant positive results

Athletic Success and University Fund-Raising

Alumni Giving

In their early and influential study, Siegelman and Carter (1979) examined the relationship between athletic success and alumni annual fund contributions. Using regression analysis, they found that alumni donations were essentially independent of football winning percentage.

Brooker and Klastorin (1981) examined the relationship between athletic success and alumni contributions. Using 10 years of athletic data, they found that the percentage of football and basketball victories, ranking in the UPI International Polls, and football bowl appearances are all positively related to alumni contributions.

Grime and Chressanthis (1994), unlike most studies, examined three major sports (football, basketball, *and* baseball). They found a positive and significant correlation between university contributions and winning percentage (between 1962 and 1991 at Mississippi State University) but only for baseball. The effect for basketball was positive, but not significant, while the coefficient for football was negative, and insignificant. Post season play effects were not significant. However, television appearances do provide a positive contribution. This article concludes that major intercollegiate athletic programs are a huge part of higher education and need to be seen as a major source of revenue that would ultimately benefit academics.

Baade and Sundberg (1996) examined the impact of football and basketball success on alumni contributions (at public universities, private universities, and liberal arts colleges) between 1973 and 1990. They found that although won-lost percentages do not translate into higher gifts at public and private universities, bowl game appearances do

result in significantly higher gifts. The estimated average gift increment is \$40 per year per alumnus at private universities, and \$6.50 per year per alumnus at public universities. Although liberal arts colleges do not normally participate in postseason bowls, they found a small, statistically significant correlation between winning percentage and alumni giving at these schools.

McEvoy (2005c) investigated annual fund raising and found that as average attendee's increase at home football games, so does the annual fund raising contributions. Home football attendance is an important indicator for fund raising practitioners. It was ultimately concluded that membership in an automatic bid conference in football is worth more than \$2.5 million annually in athletic fund raising contributions.

Meer and Rosen (2008) discovered that there's no clear pattern among different teams and alumni giving but that a successful football season has a negative effect and a successful basketball team has a positive effect. When taking time into account, the success of a football and men's basketball team are less important than the success of the team at the time the donor was a student. The authors concluded that the phenomenon of general giving and athletic program giving is not significant.

Table 3 Summary of Results of Alumni Giving Research

<i>Study</i>	<i>Alumni Giving</i>
Meer & Rosen (2008)	0
Grimes & Chressanthis (1994)	++
McEvoy (2005c)	++
Litan, Orszag & Orszag (2003)	0
Baade & Sundberg (1996)	0
Brooker & Klastorin (1981)	+
Siegelman & Carter (1979)	-

* *Some of the above studies examined other outcomes not considered here*

* Symbols within cells indicate the following:

- (- -) significant negative results
- (-) non-significant negative results
- (0) no differences in results
- (+) non-significant positive results
- (+ +) significant positive results

CHAPTER 4 CONCLUSIONS

Conclusions and Discussion

This study has provided a critical review of extant empirical research examining the influence of strong athletic programs on two broad outcomes – student recruitment and university fund-raising. Specifically, the study sought to address two questions: (1) whether successful college athletic programs stimulate additional applications from prospective students, thereby allowing colleges to enroll more selective freshman classes; and, (2) whether successful college athletic programs stimulate greater contributions by alumni and other donors.

Overall, the findings regarding the impact of athletic success on recruitment outcomes are generally positive and fairly consistent. Each of the five reviewed studies examining applicant pool size revealed a positive association between athletic success and number of undergraduate applications received. Among the eight studies examining quality of freshman entrants, six found a positive association between athletic success and entrance exam scores of freshmen; and each of the six studies examining student college choice found that college athletic reputation was at least somewhat important to a significant fraction of prospective students, even though it may not have been the most deciding factor in their college selection decision. These results suggest that college athletic reputation should be an important consideration not only for college choice researchers, but also for college administrators and others involved with student recruitment. While few would expect college athletic reputation to be among the most

important considerations shaping college choice decisions, the overall findings of this review suggest that it is by no means a trivial matter.

In contrast, the findings regarding the impact of athletic success on fundraising outcomes are somewhat positive, but quite inconsistent. Among the seven reviewed studies examining fundraising, three revealed a positive association between athletic success and alumni giving, three found no effect of athletic success on alumni giving, and one study found an inverse relationship between athletic success and alumni giving. However, for this set of studies, wide variations in data quality and statistical methods likely affected the findings of the different studies. Thus, it is difficult to reach general conclusions regarding the relationship between athletic success and alumni giving.

Nevertheless, the findings of this review make an important contribution to the research literature. Specifically, the inclusion of an examination of relevant college choice research provides a clearer and more comprehensive understanding of how and why college athletic reputation influences undergraduate applicant pool size and quality. For example, while extant research on student college choice is quite extensive, very few studies (Braddock, Sokol-Katz, Basinger-Fleischman & Hua, 2006; Braddock & Hua, 2006), have examined the question of whether, and how, a college's athletic reputation may influence a high school student's decisions to attend particular colleges or universities. On the one hand, while we know a great deal about college choice, we have limited knowledge about the role of college athletics because college choice researchers, in general, have failed to incorporate sports into their theoretical and analytic models. However, it should be noted that inattention to this topic is due, in part, to the fact that most of the national data sets used to examine the college choice process have not

included measures of athletic reputation (or related indicators of intercollegiate athletics). For example, the major national college student surveys (e.g., Freshman Norm Surveys collected by HERI, and the Beginning Postsecondary Student Longitudinal Study collected by NCES) have not included athletic reputation or related information among the items in their college choice inventories. Nevertheless, even when they have been included, the independent influence of athletics has often not been explored. Rather, athletic reputation data, when available, have more typically been combined with other indicators to assess the relative effect of “social” influences on a student’s college choice (Hurtado, et al., 1997). On the other hand, researchers interested in the impact of athletic success have generally failed to consider student college choice directly. As a result, research on college choice and studies of athletic success and student applicant pool size and quality have generally not been linked. Because studies examining only the association between colleges’ athletic reputation and student applicant pools have provided limited, and somewhat mixed, results, this review highlights the importance of also considering college choice—the mechanism through which student applicant pools are created. Indeed, the evidence reviewed here consistently suggests that students’: 1) decision-making is important to examine directly; and, 2) college choices are influenced by college athletic reputation.

References

- Baade, R. A., & Sundberg, J. O. (1996). "Fourth Down and Gold To Go? Assessing the Link Between Athletics and Alumni Giving." *Social Science Quarterly*, 77(4), 789-803.
- Blum, D. E. (1994). "Football Tackles Critics." *The Chronicle of Higher Education*, September 14. <http://chronicle.com/che-data/articles...ticles-41.dir/issue-03.dir/03a00101.html>
- Bowen, W.G., & Levin, S.A. (2003). *Reclaiming the Game: College Sports and Educational Values*. Princeton, NJ: Princeton University Press.
- Braddock II, J.H., & Hua, L. (2006). "Determining the College Destination of African American High School Seniors: Does College Athletic Reputation Matter?" *The Journal of Negro Education*, 75 (3), 532-545.
- Braddock, J. H., Hua, L. & Dawkins, M.. (2008). "College Athletic Reputation and College Choice among African American High School Seniors: Evidence from the Educational Longitudinal Study." *Challenge: The Journal of African American Men*, 14(1), 14-38.
- Braddock, J. H., Hua, Lv, Dawkins, M. P. & Sokol-Katz, J. (2007). "Athletics and College Choice: National Evidence from High School Seniors and their Parents," Paper presented at the annual meetings of the American Educational Research Association, April, Chicago, IL.
- Braddock, J. H., Hua, Lv, Milner, A., Dawkins, M. P. & Sokol-Katz, J. (2008). "College Athletic Reputation and College Choice among Students at Elite Institutions," Paper presented at the annual meetings of the American Sociological Association, August, Boston, MA.
- Braddock, J. H., Sokol-Katz, J., Basinger Fleischman, L. & Hua, Lv. (2006). "Do Strong Intercollegiate Athletic Programs Attract Prospective Students? Evidence From the National Educational Longitudinal Study." Paper presented at the annual meeting of the American Educational Research Association. San Francisco, CA.
- Braddock, J. H., Sokol-Katz, J., Dawkins, M., & Hua, L. "College Choice: Is it Influenced by Strong Athletic Programs?" Paper presented at the annual meetings of the American Sociological Association, August, Montreal, Canada.
- Braxton, J. M. (1990). "How Students Choose Colleges." In D. Hossler, J. Bean, & Associates (Eds.), *The Strategic Management of College Enrollments*, 57-67. San Francisco: Jossey-Bass.

- Bremmer, D. S. & Kesselring, R. G. (1993). "The Advertising Effect of University Athletic Success: A Reappraisal of the Evidence." *Quarterly Review of Economics and Finance*, 33, 409-421 Carnegie Foundation for the Advancement of Teaching. 2007. Retrieved February 1, 2007, from <http://www.carnegiefoundation.org>
- Brooker, G. & Klastorin, T. D. (1981). "To the Victors Belong the Spoils? College Athletics and Alumni Giving." *Social Science Quarterly*, 62(4), 744-750.
- Chressanthis, G. A. & Grimes, P. W. (1993). "Intercollegiate Sports Success and First-Year Student Enrollment Demand." *Sociology of Sport Journal*, 10(3), 286-300.
- Comfort, W. W. (1925). *The Choice of a College*. New York: MacMillan.
- Dudley, W. L., (1903). "Athletic Control in School and College," *The School Review*, February, 11 (2), 95-105.
- Grimes, P. & Chressanthis, G. (1994). "Alumni Contributions to Academics: The Role of Intercollegiate Sports and NCAA Sanctions." *American Journal of Economics and Sociology*, 53, 27-40.
- Hossler, D. & Gallagher, K. S. (1987). "Studying Student College Choice: A Three-Phase Model and the Implications for Policymakers." *College and University*, 62, 207-221.
- Hossler, D., Schmidt, J. & Vesper, N. (1999). *Going to College: How Social, Economic and Educational Factors Influence the Decisions Students Make*. Baltimore, MD: The Johns Hopkins University Press.
- Hugstad, P.S. (1975). "The Marketing Concept in Higher Education: A Caveat." *Liberal Education*, December, 504-512.
- Hurtado, S., Inkelas, K., Briggs, C. & Byung-Shik, R. (1997). "Differences in College Access and Choice Among Racial/Ethnic Groups: Identifying Continuing Barriers." *Research in Higher Education*, 38, 43-75.
- Keller, M. J. & McKewon, M. P. (1984). "Factors Contributing to Postsecondary Enrollment Decisions of Maryland National Merit Scholarship Semifinalists." Paper presented at the annual meeting of the Association for the Study of Higher Education, Chicago, IL.
- Kinzie, J., Palmer, M., Hayek, J., Hossler, D., Jacob, S. & Cummings, H. (2004). "Fifty years of college choice: Social, political and institutional influences on the decision making process." Indianapolis, IN: LUMINA Foundation for Education.
- Lederman, D. (2008). "When Athletics May Influence Alumni Giving," Inside Higher Ed, www.insidehighered.com/news/2008/04/29/giving

- Leslie, L. L. & Johnson, G. P. (1974). "The Market Model and Higher Education." *The Journal of Higher Education*, 45 (1) (January), 1-20
- Lewis, G. (1970). "The Beginning of Organized Collegiate Sport." *American Quarterly*, 22, 222-229.
- Litan, R. E., Orszag, J. M. & Orszag, P. R.. (2003). "The Empirical Effects of Collegiate Athletics: An Interim Report," *The National Collegiate Athletic Association*; August.
- Litten, L.H. (1980). "Marketing Higher Education: Benefits and Risks for the American Academic System." *Journal of Higher Education*, 51(1), 40- 59.
- Machung, A. (1988). "Playing the Rankings Game." *Change*, 30(4), 12-16.
- McCartney, K. (2007). "Football Elevates Status," *The Height*.
www.bcheights.com/.../2007/.../Football.Elevates.Status-3136391.shtml
- McCormick, R. E. & Tinsley, M.. (1987). "Athletics Versus Academics? Evidence from SAT scores." *Journal of Political Economy*, 95(5), 1103-1116.
- McEvoy, C. D. (2005a). "The Relationship Between Dramatic Changes in Team Performance and Undergraduate Admissions Applications." *The SMART Journal*, 2, 17-24. www.thesmartjournal.com/admissions.pdf
- McEvoy, C. (2005b). "The Impact of Elite Individual Athletic Performance on University Applicants for Admission in NCAA Division I-A Football." *The Sport Journal*, 9 (1) winter <http://www.thesportjournal.org/>
- McEvoy, C. (2005c). "Predicting Fund Raising Revenues in NCAA Division I-A Intercollegiate Athletics." *The Sport Journal*, 8, 1 winter <http://www.thesportjournal.org/>
- Meer, J. & Rosen, H. S. (2008). "The Impact of Athletic Performance on Alumni Giving: An Analysis of Micro Data," NBER Working Papers 13937, National Bureau of Economic Research, Inc.
- Mixon, F. G. (1995). "Athletics versus Academics? Rejoining the Evidence from SAT Scores." *Education Economics*, 3, 227-283.
- Murphy, R. G. & Trandel, G. A. (1994). "The Relation Between a University's Football Record and the Size of Its Applicant Pool." *Economics of Education Review*, 13(3), 265-270.

- Pope, D. G. & Pope, J. C. (Jan 2008). "The Impact of College Sports Success on the Quantity and Quality of Student Applications." Working Paper No. 2008-05, Department of Agricultural and Applied Economics Virginia Polytechnic Institute and State University Blacksburg, VA <http://www.aaec.vt.edu/aaec/>
- Ripperger, H.S. (1933). "When You Choose Your Daughters College: Are You Practical or Sentimental?" *Good Housekeeping*, 97:44-45.
- Shulman, J. & Bowen, W. (2001). *The Game of Life: College Sports and Educational Values*. Princeton University Press: Princeton, New Jersey.
- Siegelman, L. & Carter, R. (1979). "Win One for the Giver? Alumni Giving and Big-Time College Sports." *Social Science Quarterly*, 60, 284-294.
- Smith, D. R. (2008). "Big-Time College Basketball and the Advertising Effect: Does Success Really Matter?" *Journal of Sports Economics*, 9, 387- 406. <http://jse.sagepub.com>
- Sperber, M. (2000). *Beer and Circus: How Big-time College Sports Is Crippling Undergraduate Education*, Henry Holt and Company, New York.
- Stewart, N.R., et. al. (1987). "Counselor Impact on College Choice." Paper presented at the annual meeting of the American Educational Research Association. Washington, DC.
- Suggs, W. (2001). "Sports as the University's 'Front Porch'? The Public is Skeptical." *Chronicle of Higher Education*, Retrieved March 14, 2001 from <http://chronicle.com/free/v49/i34/34a01701.htm>
- Toma, J. 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(6), 633-661.
- Tucker, I. B. (2005). "Big-time Pigskin Success: Is there an Advertising Effect?" *Journal of Sports Economics*, 6, 222-229. <http://jse.sagepub.com>.
- Tucker, I. B. & Amato, L. (1993). "Does Big-Time Success in Football or Basketball Affect SAT Scores," *Economics of Education Review*, 12, 177-181.
- Tucker, I. B., & Amato, L. T. (2006). "A Reinvestigation of the Relationship Between Big-Time Basketball Success and Average SAT Scores." *Journal of Sports Economics*, 7(4), 428-440.
- Turner, S., Meserve, L. & Bowen, W. (2001). "Winning and Giving A Study of the Responsiveness of Giving to Performance On the Field," *Social Science Quarterly*, 82, (4), 812-826.