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7 September 2010

Online at <https://mpra.ub.uni-muenchen.de/26443/>
MPRA Paper No. 26443, posted 07 Nov 2010 05:57 UTC

The Faculty Flutie Factor: Does Football Performance Affect a University's US News and World Report Peer Assessment Score?*

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Abstract

Analyzing the peer assessment portion of the US News and World Report's college rankings, we find that administrators and faculty rate more highly universities whose football team receives a greater number of votes in either the final Associated Press or Coaches Poll. Controlling for unobserved heterogeneity, our estimates suggest that a one standard deviation increase in the number of votes received in either the Associated Press or USA Today Coaches' Football Poll is viewed as positively as a forty point increase in a school's SAT score at the 75th percentile.

Keywords: college football, football bowl subdivision, national universities, peer assessment

JEL Codes: I2, I23, L83

*****PRELIMINARY DRAFT, DO NOT CITE WITHOUT PERMISSION.**

* We thank seminar participants at the 2008 Academy of Economics and Finance Meetings as well as Craig A. Depken, II, Angela K. Dills, Reynaldo Hernandez-Julian, and Kurt W. Rotthoff for their comments and suggestions. Errors or deficiencies that have survived this counsel are most assuredly ours alone. Corresponding Author: Sean E. Mulholland, Associate Professor of Economics, Department of Economics, Stonehill College, 320 Washington Street, Easton, Massachusetts 02357, Office: 508.565.1257, Email: smulholland@stonehill.edu

I. Introduction

Lamentations about the large and growing role of intercollegiate athletics in academia is a favorite pastime of college faculty and administrators. Much of the discourse surrounds the salaries of football and basketball coaches, athletics budgets, and the spending per athlete (Wolverton, 2007; Lederman, 2009; and Athens Daily-Herald, 2010). That athletic competition amongst colleges and universities continues to be a thriving institution suggests a more positive complementary relationship.

Anecdotal evidence on the relationship between college football performance and student applications abound: after future Heisman Trophy winner, Doug Flutie led the Boston College Eagles seemingly impossible win over the highly ranked, defending national champions University of Miami, Boston College realized a thirty percent jump in applications over the next two years; Northwestern University witnessed a thirty percent increase in applications and a twenty point increase in the average SAT score of the freshman class after playing in the 1996 Rose Bowl (Ehrenberg, 2000); and the University of Florida witnessed an eight percent increase in applications following their winning national championships in both football and basketball in 2006 (Kipp, 2007).

Research results on the effects of football performance are mixed, though most point to a benefit from success on the field either through a greater number of applications (Zimbalist, 1999; Murphy and Trandel, 1994; and Goff, 2000), higher SAT scores (McCormick and Tinsley, 1987) greater retention (Mixon and Treviño, 2005 and Goff, 2000), and greater rates and levels of donations (McCormick and Tinsley, 1990; Rhoads and Gerking, 2000; and Stinson and

Howard, 2004).¹ And yet, listening to administrators one gets the impression that this century old tradition of intercollegiate athletics, especially football, now claims too large a share of the university's budget whether or not the teams are successful on the field (Athens Banner-Herald, 2010).

If faculty and administrators believe that athletic participation and success come at the expense of academic quality, administrators may associate participation or success in intercollegiate athletics with lower academic quality. Conversely, administrators may interpret on the field performance as a proxy for administrative effectiveness and thus raise their assessment of the athletically successful schools. And finally, administrators may not correlate athletics and academics or, more likely, ignore athletic performance all together.

This manuscript empirically scrutinizes the argument that participation or success in the Football Bowl Subdivision (FBS) lowers administrators' assessments of the institutional quality.² By using data from the U.S. News and World Report's (USNWR) annual guide entitled *America's Best Colleges* for the period of 2000-2007, and coupling it with various measures of football performance, we find that participation and successful seasons have a positive impact on opinions of faculty and administrators' at peer institutions. Using the peer assessment score and

¹ Looking at the effects of athletic success at the University of Oregon, Stinson and Howard (2004) find no significant change in the dollar amount going to academics, while they find a large increase in the amount going to athletics. Much of this increase in athletic donations comes from increased donations to athletics from non-alumni.

² The Football Bowl Subdivision (FBS), formerly known as Division 1A Football, is the top football division sponsored by the National Collegiate Athletic Association (NCAA). Unlike most other NCAA sports and other collegiate football divisions, the FBS does not use a tournament to determine its champion. As of 2010, the FBS consists of 120 schools from eleven conferences and three independents: Atlantic Coast Conference (ACC), Big East Conference, (Big East), Big Ten Conference (Big Ten), Big 12 Conference (Big 12), Conference USA (C-USA), Mid-American Conference (MAC), Mountain West Conference (MWC), Pacific-10 Conference (Pac-10), Southeastern Conference (SEC), Sun Belt Conference (Sun Belt), Western Athletic Conference (WAC), and Independents (Army, Navy, and the University of Notre Dame).

university characteristics; we find participants in the Football Bowl Subdivision (FBS) realize a higher peer score in the USNWR's annual guide than institutions that do not. Moreover, controlling for institutional heterogeneity, we discover that a one standard deviation increase in the votes received in the final Associated Press (AP) or USA Today Coaches' (Coaches) Poll, about 316 points and 282 points respectively, is associated with 0.009 unit increase in the peer assessment score. This effect has the same magnitude as a forty point increase of a university's SAT score at the 75th percentile. The relationship between the size or number of single game upset victories and a school's peer assessment score is positive though imprecisely estimated at times.

Each year over a million new college students enroll in four-year colleges and universities across the United States. Matriculates, especially high-ability students, appear to base their application and enrollment decisions on the (USNWR) rankings (Griffith and Rask, 2007; Monks, 2003; Ehrenberg, 1999). Because the peer assessment score represents twenty-five percent of a school's overall ranking, a small improvement in football performance can have beneficial long-run effects on the academic profile of an institution.

We are not the first to look at the relationship between intercollegiate athletics and the rankings of institutions. In fact, Cox and Roden (2010) look at the effects of winning a championship and poll rank on overall USNWR Rankings. They find that winning a championship in either basketball or football improves a schools overall ranking in the USNWR, but improved athletic performance, measured by the ordinal rank for any school in the top twenty, does not. Though they do not focus on the peer assessment score, they do report a cross-sectional mean of time-series Spearman correlations of 0.68 between football rank and the peer

assessment with a resulting t-value of 1.49. Our research continues where Cox and Roden leave off, and shows that the *cardinal* vote total of all National Universities in the final AP or Coaches' football polls witness higher peer assessment scores the following year. We discuss how administrators may respond to football performance in part II, specify our estimation equations in part III, define our data in section IV, discuss our results in part V, and conclude with part V.

II. Why Administrators May Care (Or Not)

Administrators' and faculties' views on intercollegiate athletics are quiet heterogeneous (Putler and Wolfe, 1999). Their opinions may come from any number of sources; however, intercollegiate athletic participation and success may serve as an important metric by which administrators and faculty measure a university's administrative quality, financial strength, and academic prestige.

a. Administrative Quality

Those faculty and administrators who hold negative views of athletics may not be interested in athletic success. Others may even view athletic success as a negative signal that resources are dedicated to athletics at the expense of academics. Believing administrators are wasting their efforts on athletics at the expense of academic initiatives, administrators may lower their assessment of an institution that participates or is successful on the athletic field. Faculty and administrators with more positive views of intercollegiate athletics may interpret athletic results differently. For instance, administrators and faculty may interpret on the field performance as a proxy for administrative effectiveness in academic matters and thus raise their academic assessment of the athletically well-performing schools. Noble (2004) finds that faculty on

campuses with better records have more favorable attitudes toward athletics compared with faculty from schools with less successful teams.

b. Financial Success

Faculty and administrators may focus on the direct financial impact of athletics. Books such as *College Sports, Inc.* (Sperber 1990) and *Keeping Score* (Sheehan, 1996) find that athletics, even for the likes of the University of Michigan and Notre Dame, are a net drain on universities budgets. Two detailed studies of Utah State University (Skousen and Condie, 1988) and Western Kentucky University (Borland, Goff, and Pulsinelli, 1992) athletic departments report overall losses from their athletic programs. If both large, national-recognized and small, less prestigious programs are losing money, then administrators may conclude that athletics must be a budgetary drain for all types and sizes of institutions. Consequently, as athletic department budgets become larger, administrators may point to either the size or the growth rate in the cost of running an athletic department as a financial failure.

Much of this, however, may come from the publicly related cash flow which can often understate the contribution of the athletic department, by including tuition costs at the retail price, not the discounted price, and not including merchandise sales and licensing fees (Goff, 2000). Similarly, Litan, Orszag and Orszag (2003), in a study commissioned by the NCAA, find that high visibility programs are revenue neutral and thus pay for themselves. Moreover, athletics may also serve as a way to keep alumni and non-alumni connected, thus increasing their willingness to donate to athletic and academic endeavors. McCormick and Tinsley (1990) find that giving to athletics had a positive impact on academic giving at Clemson University: a 10 percent increase in alumni giving to athletics is associated with a five percent increase in

academic giving. Baade and Sundberg (1996) look at 167 college football teams from 1973-1990 and find that a bowl appearance results in a forty to fifty-four percent increase in alumni giving after a bowl appearance. Goff (2000) summarizes much of the literature on the subject, and shows that athletic success, and sometimes even participation, in college athletics leads to increased financial contributions. Monks (2003) finds a number of extracurricular activities, including intercollegiate athletics, are correlated with alumni giving. However, Rhoads and Gerking's (2000) ten-year study of 87 NCAA (what was then Division IA and is now the FBS) schools finds that academic tradition and status had a far greater impact on alumni giving than the performance of the athletic team. In a study of the University of Oregon, however, Stinson and Howard (2004) show that much of this increase goes to athletics instead of academics.

c. Academic Success

Believing resources are being wasted on athletics at the expense of academic quality, administrators may lower their assessment of an institution that participates or is successful on the athletic field. Engstrand (1995) reports that faculty at the University of Minnesota believe that athletics is disconnected from the academic mission. The faculty at FBS schools are much less satisfied with intercollegiate athletics than their counterparts at Division II, Division III, and the NAIA (National Association of Intercollegiate Athletics) schools (Cockley and Roswal, 1994). This may be due to the view that the "*beer-and-circus — the party scene connected to big-time college sports events* — replaces meaningful undergraduate education" (Sperber 2000, p.xiii [italics in original]). This may also be due to the belief that the time commitment of intercollegiate athletics at the Division I level may reduce the student-athletes' welfare by retarding the student-athletes' academic progress. When asked to define what they believe the

goals of the intercollegiate athletics program should be, faculty members, from Division I schools, state that academic achievement by athletes is most important (Trail and Chelladurai, 2000). If athletes are performing poorly in the classroom then the athletic department would be viewed less favorably. This may reduce the likelihood of favorable views of athletics and athletic success.

On the other hand, overall student quality may increase. McCormick and Tinsley (1987) show average SAT scores of the entering freshmen are approximately a three percent higher for schools in major athletic conferences.³ In addition, they find that the trend in football winning percentages for major athletic conference participants is associated with increases in the school's SAT scores. Goff (2000) shows that athletic success, and sometimes simply participation in college athletics, leads to increased university exposure and increased student applications and enrollment. Lovaglia and Lucas (2005) suggest that college students place more prestige on degrees received from public institutions with high-visibility athletic programs. Mixon and Treviño (2005) further show that a school's football success increases its freshman retention and graduation rates, and attribute the results to football providing students "a respite from the psychic costs associated with college life."

III. Estimation

³McCormick and Tinsley (1987) classify "Big Time" athletics in 1971 as teams in the Atlantic Coast Conference (ACC), Southwestern Conference (SWC), Southeastern Conference (SEC), Big Ten, Big Eight, Pacific Athletic Conference (PAC Ten), or a major independents including- Florida State, Notre Dame, University of Pittsburgh, Penn State University, University of South Carolina, West Virginia, Virginia Tech, and the University of Miami. Except for the University of Notre Dame, all independents mentioned above are now part of Football Bowl Subdivision Conferences.

The administrators and faculty who fill out the USNWR peer assessment survey each spring have access to the academic profile of an institution as well as the school's football team participation and performance from the previous season. We seek to determine whether any of the following affect a school's peer score: participation in the FBS, last season's success, or single game upset wins. First, we look at whether the school has a FBS team. Although this measure does not address athletic success *per se*, it proxies for any long-term name recognition that results from FBS participation. Given such long-term recognition, it is quite possible that any effect of athletic success will be distinctly different for a FBS institution. Therefore we estimate the following equation for each year:

$$peer_{i,t} = \alpha_i + \beta_1(football_{i,t-1}) + \gamma(school\ data_{i,t-1}) + \varepsilon_{it} \quad \text{Eq. 1}$$

Where $peer_{i,t}$, is the peer assessment score for school i , at year t ; $football_{i,t-1}$ is a variable indicating whether the institution participates in the Football Bowl Subdivision in year $t-1$, and $school\ data_{i,t-1}$ is a vector containing the remaining information on school quality, such as SAT scores, class size, retention rates, graduation rates, and the like.

However, there are many unobserved factors that can influence the peer assessment score of any school. These unobservables can be either school-specific or year-specific. In order to control for such unobservables, we will also estimate another set of regressions with both year, μ_t , and school fixed effects, v_i .

$$peer_{i,t} = \alpha_i + \beta_1(football_{i,t-1}) + \gamma(school\ data_{i,t-1}) + v_i + \mu_t + \varepsilon_{it} \quad \text{Eq.2}$$

This estimation relies on those institutions that switch or moved to or from the FBS during the 1999-2006 seasons.

Simply participating in the FBS may not be enough, success may be the key. Therefore, administrators may respond to football performance. Thus we estimate:

$$peer_{i,t} = \alpha_i + \phi_1(performance_{i,t-1}) + \gamma(school\ data_{i,t-1}) + \nu_i + \mu_t + \varepsilon_{it} \quad \text{Eq.3}$$

where $performance_{i,t-1}$ takes many forms of football success by school i , at year $t-1$.

Because a season consists of anywhere from 11 to 14 games, there are many possible ways to construct our measures of football performance. One way is to simply look at the school's overall performance throughout the season. Thus, our measures, *ap* and *coaches*, are simply the number of votes received in either the final Associated Press or College Football Coaches' Poll, respectively. Moreover, as Campbell et al. (2007) point out, this variable is influenced by the TV exposure of the school. Hence, *ap* and *coaches* will also proxy for the TV exposure the school receives, that is the number of the games broadcast on the national TV. The higher a school's TV exposure, the more chances a school gets to showcase their athletic and, to a less extent, academic prowess.

Not all administrators watch football, even fewer pay attention to multiple teams throughout the season. Upset victories, however, tend to generate media attention beyond the televising of the game, and can propel schools into the national spotlight. In short, an upset victory can expose a school's name to the administrators filling out the *US News & World Report* surveys.

Hence, we introduce five ways of measuring single game football success and the corresponding media coverage during a season. The first, $upset_{it}$, is a dummy variable that is one

if a school overcomes the points spread for an upset victory during the season or zero if not.⁴ However, not all upset wins are created equal. The more surprising the victory; the greater the media coverage. Therefore, we construct four additional measures of upset victories. The first, max_{it} , represents the maximum point spread overcome for an upset victory for each team in each season. The second, $mean_{it}$, is an indicator variable representing whether a team earned an upset victory that overcame a spread greater than the mean spread overcome for all upset victories that season. The third, std_{it} , and fourth, $std2_{it}$, indicate whether a victorious team overcame a points spread one or two standard deviations greater than mean points spread overcome for that season. Such upsets proxy for a true David vs. Goliath story that is sure to peak national media's attention.

The coefficients on all three measures of athletic prominence and performance will answer to what effect intercollegiate football has on the administrators' opinions of a school's academics. Positive coefficients will indicate that athletic prominence/success enhances a school's academic reputation among its peers while negative coefficients will indicate the opposite. Insignificant coefficients will show that administrators' opinions of the academic quality are not influenced by the athletic successes of the school and the corresponding media attention.

Endogeneity is unlikely to be an issue. For it to affect the estimated coefficients, athletic success would have to be affected by how administrators and faculty at peer institutions view the

⁴ Unless an administrator is an avid football fan, they may have little incentive to know the point's spreads for each game. A victory by the favored team that is greater than the points spread and a "moral victory" or a loss that is less than the points spread is only meaningful for those interested in betting or football in general. Therefore we do not include the expected victories that are greater than the points spread or losses that aren't as large as those projected by the points spread.

academic quality of a school. This could happen if quality coaches or highly recruited athletes decisions one where to work or attend are affected by a school's peer assessment score. Though not impossible, it is highly unlikely that the opinion of academic quality would affect a prospective coach's decision to coach at a certain school, let alone a large number of student athletes' decision to attend.⁵

IV. Data

Each spring the USNWR collects academic data on each institution for its annual guide entitled *America's Best Colleges*.⁶ Data on each institution's peer assessment score, SAT/ACT scores at the 25th and 75th percentile, portion of enrolled students who graduated in the top ten percent of their high school class, acceptance rate, graduation rate, and alumni giving rate for National Universities come from the 2001 through 2007 editions of *America's Best Colleges*.⁷ The peer reputation score is based on the "mean response on a survey of top academics (university presidents, provosts, and deans of admissions) who were asked to rate each school's academic performance on a scale of 1 (marginal) to 5 (distinguished) (USNWR, 2008)." Thus we use the sports year that has most recently taken place when administrators are completing the USNWR

⁵ A few recruits each season report the importance of overall academic rankings in order to determine where they will enroll. Because 25% of the overall rankings are determined by the peer assessment score, there may be some small endogeneity associated with their choice. This is one reason why we chose to look at football and not basketball. Football teams, unlike basketball, have 24 or so starters and large number of substitutes, so one player is unlikely to make a large difference in the team's performance.

⁶ For schools reporting ACT scores, we use the College Board's suggested conversion metric found here: http://www.collegeboard.com/prod_downloads/highered/ra/sat/satACT_concordance.pdf (Viewed July, 2008)

⁷ The list of Universities included in the National Universities Category along with the number of years each school has team active in the Football Bowl Subdivision, is listed in Appendix A.

surveys. For instance, we use the final football performance data from the 1999 season, posted in January of 2000, which is available for administrators completing the survey in the spring of 2000. These survey results are then published in the fall of 2000, and labeled as the 2001 edition. The number of votes received in either the Associated Press or the Coaches' Poll is used to measure season long football success. Data on single game football upsets comes from *Darryl Marsee's Football Page*, available at: <http://www.marsee.net/fb.html>.

Table 1 shows the summary statistics.⁸ The mean peer assessment score is just over three for all national universities from 2001-2007. Just under half of these national universities participate in the FBS of the NCAA.⁹ The mean number of votes received in the AP poll is 96, while the standard deviation is 316. For the Coaches' Poll, the mean number of votes is 86, while the standard deviation is 282. The maximum margin overcome for an upset victory is about 2.4 points for all upset victories; though the maximum points spread overcome was 29 points when the University of Kansas beat Texas Tech 34-31 on October 6, 2001.

V. Results

⁸ Marshall, Boise State, Air Force, Fresno State, Navy, East Carolina, and Southern Mississippi are omitted because they are not included as national universities in the U.S. News & World Report rankings from 2001-2007 even though they received votes in either the final coaches or Associated Press poll. Fixed effects estimation requires two observations for each institution in order to estimate the effects, therefore the following schools are not included because these schools are listed as national universities for only one year over the time period investigated: Azusa Pacific University, George Fox University, Georgia Southern University, Immaculata University, Long Island University C.W. Post Campus, Oral Roberts University, Pacific University, Samford University, St. Mary's University of Minnesota, Trevecca Nazarene University, Trinity International University, University of North Carolina Charlotte, University of West Florida, and University of Detroit Mercy.

⁹ Figure 1 maps the National Universities that do and do not participate in the FBS of the NCAA.

Table 2 reports whether participation in the FBS of the NCAA during a season is associated with a higher peer score. The first eight columns look at the cross-sectional regressions for each year from 2000 – 2007 respectively and show that schools with FBS teams receive higher peer assessment scores. In the cross-section, an institution participating in the FBS receives a higher peer assessment score that is greater by anywhere from .17 to .31. The final two columns in Table 2 pool the sample and include year fixed effects. The next to last column reports the random effects estimates, while the last column, holds unobservables constant by using a fixed effects estimator. FBS schools, holding unobservables constant, also realize higher peer scores. Participating in the FBS raises a school's peer assessment score by .03, or just under half a standard deviation. This peer assessment response is similar in magnitude to administrators' response to a 150 point increase in an institution's SAT scores at the 75th Percentile. One should be cautious drawing too general of a conclusion from this result, however. The fixed effects estimator relies only on those schools that switched in or out of the FBS from 1999 to 2006. Only three schools, Florida Atlantic University in 2001, the University of South Florida in 2001, and Florida International University in 2005 switched during our study. So this could simply be a Florida effect or some change unique to these three institutions.

Football success may be important as well. Table 3 presents the relationship between a school's successful season and its peer assessment score. The four left-most columns show that a one standard deviation increase, about 316 points, in the number of votes received by a school in the final AP college football poll, is associated with 0.009 unit increase in the peer assessment score assigned by college administrators. This is significant at the one percent level. Though the result appears small in magnitude, the estimate suggests that 316 additional votes in the final AP poll has the same effect as a 42 point increase in a university's SAT score at the 75th percentile.

We believe, *ceteris paribus*, that the Coaches' Poll may more closely reflect the information and attitudes of administrators completing the USNWR forms. As a result of administrators and coaches having direct contact with one another, their estimate of quality may more closely align with one another. The estimate in the four right-most columns show that a one standard deviation increase, about 282 points, in the number votes received by a school in the final Coaches' Poll, is associated with 0.009 unit increase in the peer assessment score assigned by college administrators. The estimate suggests that 282 additional votes in the final AP poll have the same effect as a 42 point increase in a university's SAT score at the 75th percentile. This is quite similar to the result using the AP poll votes.¹⁰

Those completing the survey also appear to more heavily weight a university's SAT score at the 75th percentile and not at the 25th percentile. Not surprisingly, a one standard deviation increase in a school's SAT scores at the 75-percentile, or about 126 points, results in a higher peer assessment score by .02. However, our results suggest a negative relationship between the percent of alumni giving and an institutions peer assessment score. Though this may seem counterintuitive, there may be some underlying reasons for this result. First, the percent of alumni donating does not necessarily correlate with the level of alumni giving. Second, costs of contacting the alumni base may increase with size while the return due to the contact may actually decline. Also important is the increasing role of donor-advised funds and resources from

¹⁰ Administrators may also be concerned with the academic progress of student athletes or student football players. The NCAA began tracking student athletes progress rate (APR) using a measure semester-by-semester academic progress in 2003-04 school year. The first release was available in March of 2005. Including this measure of scholarship student-athlete progress, both for football and all student athletes, significantly reduces the years of observation from seven to three. However, student-athlete academic progress, measured in either form, does not qualitatively alter the Associated press or Coaches poll coefficient or t-value when compared with the restricted sample sans APR.

foundations that do not count as alumni gifts (Education-Portal.com, viewed Aug. 1, 2010). Thus seeing a greater percent of alumni donating to an institution may signal to other administrators that development resources are being used simply to increase this percentage at the expense of possibly large, non-alumni donations.

Table 4 shows the estimates used to determine whether a single surprising upset victory alone affects a school's peer assessment. The first two columns repeat the estimates from Table 3 for comparison. Simply earning an upset victory during the previous season does not appear to be associated with a higher peer assessment score. Furthermore, the effect of overcoming a large projected margin victoriously by itself is imprecisely estimated and does not appear to be related to a school's peer assessment score.

However, as shown in columns 1 and 5 of Table 5, conditional on the number of votes received in either the AP or Coaches' Poll, earning an upset victory is associated with a peer assessment score that is .007 higher. Thus at least one unexpected win conditional on overall *ex-post* quality of the football team is associated with a higher peer assessment score. Columns 2 and 6 in Table 5 show that, conditional on the number of votes, overcoming a projected margin greater than the mean margin overcome for that season is associated with a peer assessment score that is 0.01 points higher. Thus earning a win that overcomes a large margin is similar in magnitude as just over a one standard deviation increase in the number of votes received in the AP or Coaches Poll. However, our results suggest that conditional on the number of votes in either the AP or Coaches Poll, earning an even greater upset victory, overcoming a projected margin one or two standard deviations above the mean margin overcome, does not result in a higher peer assessment score.

Including the number of votes, whether a team earns an upset victory and whether the victory overcame a point spread greater than the mean, as in columns 3 and 7, results in only the number of vote being significant. Columns 4 and 8 include all measures. Including all measures still results in a positive relationship between peer assessment and the final number of votes in the polls as well as earning an upset greater than the mean point spread for the season. It also shows that the relationship between the maximum point spread and the peer assessment score is negative. A possible reason for this negative relationship may come from the lack of information on team quality at the beginning of a season. While *ex-ante* a point spread may appear reasonable, *ex-post* at the end of the season, such early point spreads may appear poorly assigned. Or it may speak to the press received for an exciting upset that resulted in a close final score rather than the importance of the expected points spread overcome. The results may also suggest the importance not of the points spread overcome, but of the difference between the expected points spread and the final points spread. Ultimately it appears that underdog wins alone, at least for administrators, appear to have little sway. On the other hand, season-long success appears to increase a schools' peer assessment score.

VI. Conclusion

Using the data on the U.S. News and World Report rankings, we find that athletic success tends to resonate with college administrators and faculty as it does with the potential students. Schools with a FBS team tend to fare better in administrators' surveys, even after controlling for widely available academic characteristics. A school's academic reputation also appears to increase as the number of votes a school receives in the AP poll or Coaches' football poll. We note that

these increases are marginal, and we cannot envision a school starting a FBS football program solely for the benefit of increased rankings. However, FBS teams can significantly increase a school's "academic visibility" if their on-field performance attracts enough attention from the AP or Coaches' Poll voters. In short, success on the gridiron does translate into higher peer assessment scores and thus a higher USNWR ranking.

Although we are unable to determine which change would require more resources, gaining 270 more votes in the AP poll has the same effect on the peer assessment as a 40 point increase of the SAT profile at the 75th percentile of an institution. This suggests that 270 more votes for Clemson University's Football team would raise its peer assessment score by the same magnitude as if Clemson was able to raise its SAT profile (1310) to that above the University of Wisconsin, Madison (1340); if the University of South Florida student SAT scores (1210) looked like Purdue University (1250); or if the University of Louisville student SAT scores (1220) looked like the University of Minnesota Twin Cities (1260). Institutions facing a set of heterogeneous funding and mission goals and constraints should determine which method would or would not be in their best interest.

Cost, however, is important. Increasing on the field performance is likely, though not always, associated with larger athletic budgets. Though our work can not directly address cost, Litan, Orszag and Orszag (2003) in a study commissioned by the NCAA find that high visibility programs are revenue neutral and thus pay for themselves. If this is the case, then the additional benefit of higher peer assessment scores through intercollegiate football participation and performance may be more efficient than merit scholarships, tuition discounts, or public subsidies that seek to improve the institution's peer assessment through its SAT profile.

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Table 1: Summary Statistics

Variable	Description	Mean	Standard Deviation	Maximum	Minimum
peer	Peer Assessment Score	3.09	0.7	5	2
ap	AP votes	96.23	316.22	1800	0
coaches	Coaches votes	86.03	282.18	1575	0
fbs	Football Bowl Subdivision	0.45	0.5	1	0
upset	Earned an Upset Win	0.31	0.46	1	0
upsets	Number of Upset Wins	0.47	0.83	4	0
max	Maximum Margin Overcome	2.37	4.79	29	0
mean	Points Margin Greater Than Mean (Yes=1)	0.16	0.37	1	0
std	Points Margin One Std Dev Above Mean (Yes=1)	0.07	0.25	1	0
std2	Points Margin Two Std Dev Above Mean (Yes=1)	0.02	0.15	1	0
sat75	SAT 75th percentile	1260.09	126.19	1590	610
sat25	SAT 25th percentile	1053.37	138.89	1470	110
topten	Top ten percent high school graduates	38.68	26.2	100	5
acceptance	Acceptance Rate	64.81	20.73	100	9
graduation	Graduation Rate	62.54	17.28	98	20
giving	Alumni Giving Rate	17.19	10.13	66	1
observations		1756			

Table 2: Peer Assessment Score and Division One Football: All National Universities

	2000	2001	2002	2003	2004	2005	2006	2007	2000-2007	2000-2007
fbs	0.313*** [0.0505]	0.293*** [0.0484]	0.270*** [0.0483]	0.251*** [0.0450]	0.270*** [0.0440]	0.237*** [0.0443]	0.235*** [0.0434]	0.251*** [0.0437]	0.174** [0.0703]	0.031*** [0.0047]
sat75	0.000 [0.0008]	0.003*** [0.0007]	0.002*** [0.0008]	0.001 [0.0008]	0.002*** [0.0008]	0.001*** [0.0004]	0.001* [0.0007]	0.001 [0.0008]	0.000*** [0.0002]	0.000* [0.0001]
sat25	0.001 [0.0008]	-0.001 [0.0007]	-0.000 [0.0007]	0.001* [0.0007]	-0.000 [0.0007]	0.000* [0.0001]	0.001 [0.0006]	0.001 [0.0007]	0.000 [0.0001]	-0.000 [0.0000]
topten	0.006*** [0.0014]	0.004*** [0.0016]	0.005*** [0.0016]	0.006*** [0.0013]	0.007*** [0.0014]	0.008*** [0.0014]	0.008*** [0.0014]	0.009*** [0.0015]	0.001** [0.0006]	-0.000 [0.0004]
acceptance	-0.006*** [0.0019]	-0.006*** [0.0017]	-0.005*** [0.0017]	-0.004** [0.0016]	-0.005*** [0.0015]	-0.004** [0.0016]	-0.002 [0.0017]	-0.002 [0.0017]	-0.001*** [0.0003]	-0.000 [0.0003]
graduation	0.012*** [0.0029]	0.010*** [0.0028]	0.010*** [0.0029]	0.007*** [0.0027]	0.007*** [0.0025]	0.009*** [0.0026]	0.008*** [0.0030]	0.007** [0.0029]	0.004*** [0.0008]	-0.000 [0.0007]
giving	0.000 [0.0037]	-0.002 [0.0036]	-0.002 [0.0037]	-0.001 [0.0036]	0.001 [0.0033]	0.000 [0.0036]	0.000 [0.0035]	0.002 [0.0033]	0.001 [0.0008]	-0.002** [0.0007]
Adjusted R-squared	0.750	0.765	0.762	0.778	0.791	0.791	0.788	0.784		0.088
N	196	217	221	222	225	230	223	236	1770	1770
Includes Year and School Dummies										Yes
Clustered Standard Errors Reported									Yes	Yes
Robust Standard Errors Reported	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Year Refers to Year Published (Sports year = Year -1)

* p<0.10, ** p<0.05, *** p<0.01"

Table 3: Peer Assessment Score and AP Polling Points: All National Universities

	AP Poll Votes				Coaches Poll Votes			
	Point Estimates	Standard Errors	Unit Change due to Standard Deviation Change in X	One Standard Deviation Change in X	Point Estimates	Standard Errors	Unit Change due to Standard Deviation Change in X	One Standard Deviation Change in X
ap	0.00002***	[0.0000]	0.0085	315.080				
coaches					0.00002***	[0.0000]	0.0088	281.165
sat75	0.00015*	[0.0001]	0.0261	126.004	0.00015*	[0.0001]	0.0259	126.004
sat25	-0.00003	[0.0000]	-0.0056	138.739	-0.00003	[0.0000]	-0.0054	138.739
topten	-0.00024	[0.0004]	-0.0088	26.141	-0.00025	[0.0004]	-0.0093	26.141
acceptance	-0.00029	[0.0003]	-0.0085	20.685	-0.00029	[0.0003]	-0.0085	20.685
graduation	-0.00023	[0.0007]	-0.0055	17.245	-0.00023	[0.0007]	-0.0055	17.245
giving	-0.00144**	[0.0007]	-0.0206	10.118	-0.00143**	[0.0007]	-0.0205	10.118
R-squared	0.101				0.101			
N	1756				1756			
Includes Year and School Dummies	Yes				Yes			

Robust and Clustered Standard Errors Reported

* p<0.10, ** p<0.05, *** p<0.01"

Table 4: Alternative College Football Performance Measures

	AP Polling Points	Coaches Polling Points	Upset Victory	Maximum Points Underdog	Projected Margin of at Least One Win Greater Than Mean Overcome	Projected Margin of at Least One Win Greater Than One Standard Dev Above the Mean Overcome	Projected Margin of at Least One Win Greater Than Two Standard Dev Above the Mean Overcome
ap	0.00002*** [0.00001]						
coaches		0.00002*** [0.00001]					
upset			0.00204 [0.00443]				
max				0.00011 [0.00037]			
mean					0.00630 [0.00483]		
std						-0.00096 [0.00558]	
std2							0.00417 [0.01060]
sat75	0.00015* [0.00008]	0.00015* [0.00008]	0.00014* [0.00008]	0.00014* [0.00008]	0.00014* [0.00008]	0.00014* [0.00008]	0.00014* [0.00008]
sat25	-0.00003 [0.00003]	-0.00003 [0.00003]	-0.00003 [0.00003]	-0.00003 [0.00003]	-0.00003 [0.00003]	-0.00003 [0.00003]	-0.00003 [0.00003]
topten	-0.00024 [0.00037]	-0.00025 [0.00036]	-0.00028 [0.00037]	-0.00028 [0.00037]	-0.00028 [0.00038]	-0.00028 [0.00037]	-0.00028 [0.00037]
acceptance	-0.00029 [0.00028]	-0.00029 [0.00028]	-0.00031 [0.00028]	-0.00032 [0.00028]	-0.00032 [0.00028]	-0.00031 [0.00028]	-0.00032 [0.00028]
graduation	-0.00023 [0.00070]	-0.00023 [0.00070]	-0.00027 [0.00071]	-0.00026 [0.00071]	-0.00026 [0.00071]	-0.00026 [0.00071]	-0.00027 [0.00071]
giving	-0.00144** [0.00069]	-0.00143** [0.00068]	0.00152** [0.00071]	0.00151** [0.00071]	0.00153** [0.00072]	0.00151** [0.00071]	0.00151** [0.00071]
BIC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
R-squared	0.101	0.101	0.095	0.095	0.096	0.095	0.095

Observations 1770

Robust and Clustered Standard Errors Reported

* p<0.10, ** p<0.05, *** p<0.01

Table 5: AP and Coaches Polling Votes with Alternative College Football Performance Measures

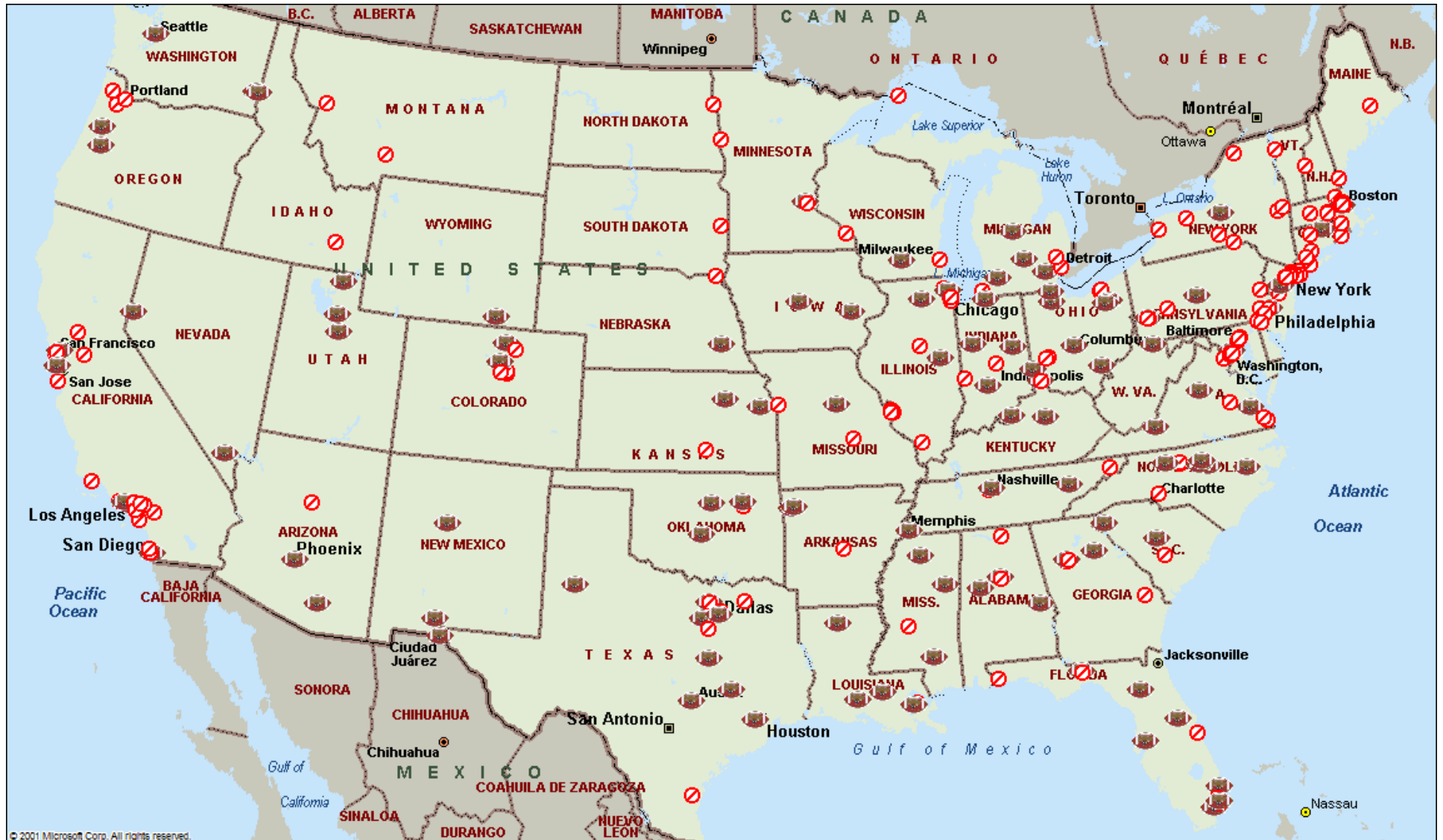
	AP Poll and Upset Victory	AP Poll and at Least One Win Greater Than Mean Overcome	AP Poll, Upset Victory, and at Least One Win Greater Than Mean Overcome	AP Poll and Alternatives	Coaches Poll and Upset Victory	Coaches Poll and at Least One Win Greater Than Mean Overcome	Coaches Poll, Upset Victory, and at Least One Win Greater Than Mean Overcome	Coaches Poll and Alternatives
ap	0.00002*** [0.00001]	0.00002*** [0.00001]	0.00002*** [0.00001]	0.00002*** [0.00001]				
coaches					0.00003*** [0.00001]	0.00003*** [0.00001]	0.00003*** [0.00001]	0.00003*** [0.00001]
upset	0.00700* [0.00422]		0.00256 [0.00485]	0.00840 [0.00553]	0.00714* [0.00420]		0.00258 [0.00487]	0.00834 [0.00554]
mean		0.01016** [0.00504]	0.00894 [0.00577]	0.02353** [0.00935]		0.01049** [0.00502]	0.00925 [0.00577]	0.02372** [0.00935]
max				-0.00204** [0.00103]				-0.00202* [0.00103]
std				0.00229 [0.00903]				0.00203 [0.00900]
std2				0.01881 [0.01359]				0.01866 [0.01357]
sat75	0.00015* [0.00008]	0.00014* [0.00008]	0.00015* [0.00008]	0.00015* [0.00008]	0.00015* [0.00008]	0.00014* [0.00008]	0.00014* [0.00008]	0.00014* [0.00008]
sat25	-0.00003 [0.00003]	-0.00003 [0.00003]	-0.00003 [0.00003]	-0.00003 [0.00003]	-0.00003 [0.00003]	-0.00003 [0.00003]	-0.00003 [0.00003]	-0.00003 [0.00003]
topten	-0.00023 [0.00036]	-0.00023 [0.00037]	-0.00023 [0.00037]	-0.00025 [0.00037]	-0.00025 [0.00036]	-0.00025 [0.00037]	-0.00025 [0.00037]	-0.00027 [0.00037]
acceptance	-0.00029 [0.00028]	-0.00030 [0.00028]	-0.00030 [0.00028]	-0.00030 [0.00028]	-0.00029 [0.00028]	-0.00030 [0.00028]	-0.00030 [0.00029]	-0.00029 [0.00029]
graduation	-0.00023 [0.00070]	-0.00022 [0.00070]	-0.00022 [0.00070]	-0.00022 [0.00070]	-0.00023 [0.00070]	-0.00022 [0.00070]	-0.00022 [0.00070]	-0.00023 [0.00070]
giving	-0.00145** [0.00069]	-0.00146** [0.00069]	-0.00146** [0.00069]	-0.00148** [0.00070]	-0.00145** [0.00068]	-0.00145** [0.00069]	-0.00146** [0.00069]	-0.00147** [0.00069]
R-squared	0.102	0.104	0.104	0.106	0.103	0.104	0.104	0.107
BIC	-5429.632	-5432.828	-5425.624	-5407.87	-5430.749	-5434.183	-5426.984	-5409.182
Observations	1770	1770	1770	1770	1770	1770	1770	1770

Includes Year and School Dummies

Robust and Clustered Standard Errors Reported

* p<0.10, ** p<0.05, *** p<0.01

Figure 1: Map of National Universities with and without Bowl Subdivision Football Teams



Appendix A: National Universities and Whether or Not They Participate in the Football Bowl Subdivision

Institutions	Bowl Subdivision	Not Bowl Subdivision	Total
Adelphi University	0	8	8
Alabama A&M University	0	6	6
Alliant International University	0	5	5
American University	0	8	8
Andrews University	0	8	8
Arizona State University	8	0	8
Auburn University	8	0	8
Azusa Pacific University	0	1	1
Ball State University	8	0	8
Barry University	0	1	1
Baylor University	8	0	8
Biola University	0	8	8
Boston College	8	0	8
Boston University	0	8	8
Bowling Green State University	8	0	8
Brandeis University	0	8	8
Brigham Young University Provo	8	0	8
Brown University	0	8	8
California Institute of Technology	0	8	8
Carnegie Mellon University	0	8	8
Case Western Reserve University	0	8	8
Catholic University of America	0	8	8
Central Michigan University	7	0	7
Clark Atlanta University	0	8	8
Clark University	0	8	8
Clarkson University	0	8	8
Clemson University	8	0	8
Cleveland State University	0	8	8
College of William and Mary	0	8	8
Colorado School of Mines	0	2	2
Colorado State University	8	0	8
Columbia University	0	8	8
Cornell University	0	8	8
Dartmouth College	0	8	8
DePaul University	0	8	8
Drexel University	0	8	8
Duke University	8	0	8
Duquesne University	0	8	8
East Carolina University	7	0	7
East Tennessee State University	0	7	7
Emory University	0	8	8
Florida A&M University	0	1	1
Florida Atlantic University	5	3	8
Florida Institute of Technology	0	8	8
Florida International University	2	6	8
Florida State University	8	0	8
Fordham University	0	8	8
George Fox University	0	1	1
George Mason University	0	8	8
George Washington University	0	8	8

Georgetown University	0	8	8
Georgia Institute of Technology	8	0	8
Georgia Southern University	0	1	1
Georgia State University	0	8	8
Golden Gate University	0	1	1
Harvard University	0	8	8
Hofstra University	0	8	8
Howard University	0	8	8
Idaho State University	0	8	8
Illinois Institute of Technology	0	8	8
Illinois State University	0	8	8
Immaculata University	0	1	1
Indiana State University	0	8	8
Indiana University Bloomington	8	0	8
Indiana University of Pennsylvania	0	8	8
Indiana University Purdue University Indianapolis	0	8	8
Iowa State University	8	0	8
Jackson State University	0	7	7
Johns Hopkins University	0	8	8
Kansas State University	8	0	8
Kent State University	8	0	8
Lehigh University	0	8	8
Long Island University C.W. Post Campus	0	1	1
Louisiana State University Baton Rouge	8	0	8
Louisiana Tech University	8	0	8
Loyola University Chicago	0	8	8
Marquette University	0	8	8
Massachusetts Institute of Technology	0	8	8
MCP Hahnemann University	0	3	3
Miami University Oxford	8	0	8
Michigan State University	8	0	8
Michigan Technological University	0	8	8
Middle Tennessee State University	0	7	7
Mississippi State University	8	0	8
Montana State University	0	8	8
Morgan State University	0	1	1
National Louis University	0	6	6
New Jersey Institute of Technology	0	8	8
New Mexico Institute of Mining and Technology	0	6	6
New Mexico State University	8	0	8
New School	0	8	8
New York University	0	8	8
North Carolina A&T State University	0	1	1
North Carolina State University Raleigh	8	0	8
North Dakota State University	0	8	8
Northeastern University	0	8	8
Northern Arizona University	0	8	8
Northern Illinois University	8	0	8
Northwestern University	8	0	8
Nova Southeastern University	0	8	8
Oakland University	0	7	7
Ohio State University Columbus	8	0	8
Ohio University	8	0	8
Oklahoma State University	8	0	8
Old Dominion University	0	8	8

Oral Roberts University	0	1	1
Oregon State University	8	0	8
Pace University	0	8	8
Pacific University	0	1	1
Pennsylvania State University University Park	8	0	8
Pepperdine University	0	8	8
Polytechnic University	0	8	8
Portland State University	0	8	8
Princeton University	0	8	8
Purdue University West Lafayette	8	0	8
Regent University	0	1	1
Rensselaer Polytechnic Institute	0	8	8
Rice University	8	0	8
Rutgers, the State University of New Jersey New Brunswick	8	0	8
Rutgers, the State University of New Jersey Newark	0	8	8
Samford University	0	1	1
San Diego State University	8	0	8
Seton Hall University	0	8	8
South Carolina State University	0	7	7
South Dakota State University	0	7	7
Southern Illinois University Carbondale	0	8	8
Southern Methodist University	8	0	8
Spalding University	0	1	1
St. John's University	0	8	8
St. Louis University	0	8	8
St. Mary's University of Minnesota	0	1	1
Stanford University	8	0	8
Stevens Institute of Technology	0	8	8
SUNY Albany	0	8	8
SUNY Binghamton	0	8	8
SUNY Buffalo	0	8	8
SUNY College of Environmental Science and Forestry	0	7	7
SUNY Stony Brook	0	8	8
Syracuse University	8	0	8
Temple University	8	0	8
Tennessee State University	0	8	8
Texas A&M University College Station	8	0	8
Texas A&M University Commerce	0	8	8
Texas A&M University Kingsville	0	7	7
Texas Christian University	8	0	8
Texas Southern University	0	7	7
Texas Tech University	8	0	8
Texas Woman's University	0	8	8
Trevecca Nazarene University	0	1	1
Trinity International University	0	1	1
Tufts University	0	8	8
Tulane University	8	0	8
Union Institute and University	0	8	8
United States International University	0	2	2
University of Akron	8	0	8
University of Alabama	8	0	8
University of Alabama Birmingham	8	0	8
University of Alabama Huntsville	0	8	8
University of Alaska Fairbanks	0	8	8
University of Arizona	8	0	8

University of Arkansas	8	0	8
University of Arkansas Little Rock	0	7	7
University of Bridgeport	0	7	7
University of California Berkeley	8	0	8
University of California Davis	0	8	8
University of California Irvine	0	8	8
University of California Los Angeles	8	0	8
University of California Riverside	0	8	8
University of California San Diego	0	8	8
University of California Santa Barbara	0	8	8
University of California Santa Cruz	0	8	8
University of Central Florida	8	0	8
University of Chicago	0	8	8
University of Cincinnati	8	0	8
University of Colorado Boulder	8	0	8
University of Colorado Denver and Health Sciences Center	0	8	8
University of Connecticut	8	0	8
University of Dayton	0	7	7
University of Delaware	0	8	8
University of Denver	0	8	8
University of Detroit Mercy	0	1	1
University of Florida	8	0	8
University of Georgia	8	0	8
University of Hartford	0	7	7
University of Hawaii Manoa	8	0	8
University of Houston	8	0	8
University of Idaho	8	0	8
University of Illinois Chicago	0	8	8
University of Illinois Urbana Champaign	8	0	8
University of Iowa	8	0	8
University of Kansas	8	0	8
University of Kentucky	8	0	8
University of La Verne	0	8	8
University of Louisiana Lafayette	8	0	8
University of Louisville	8	0	8
University of Maine Orono	0	8	8
University of Maryland Baltimore County	0	8	8
University of Maryland College Park	8	0	8
University of Massachusetts Amherst	0	8	8
University of Massachusetts Boston	0	7	7
University of Massachusetts Lowell	0	8	8
University of Memphis	8	0	8
University of Miami	8	0	8
University of Michigan Ann Arbor	8	0	8
University of Minnesota Twin Cities	8	0	8
University of Mississippi	8	0	8
University of Missouri Columbia	8	0	8
University of Missouri Kansas City	0	8	8
University of Missouri Rolla	0	8	8
University of Missouri St. Louis	0	8	8
University of Montana	0	8	8
University of Nebraska Lincoln	8	0	8
University of Nevada Las Vegas	7	0	7
University of Nevada Reno	8	0	8
University of New Hampshire	0	8	8

University of New Mexico	8	0	8
University of New Orleans	0	8	8
University of North Carolina Chapel Hill	8	0	8
University of North Carolina Charlotte	0	1	1
University of North Carolina Greensboro	0	8	8
University of North Dakota	0	8	8
University of North Texas	8	0	8
University of Northern Colorado	0	8	8
University of Notre Dame	8	0	8
University of Oklahoma	8	0	8
University of Oregon	8	0	8
University of Pennsylvania	0	8	8
University of Pittsburgh	8	0	8
University of Rhode Island	0	8	8
University of Rochester	0	8	8
University of San Diego	0	8	8
University of San Francisco	0	8	8
University of South Alabama	0	6	6
University of South Carolina Columbia	8	0	8
University of South Dakota	0	8	8
University of South Florida	6	2	8
University of Southern California	8	0	8
University Of Southern Mississippi	0	1	1
University of Southern Mississippi	7	0	7
University of St. Thomas	0	7	7
University of Tennessee	8	0	8
University of Texas Arlington	0	8	8
University of Texas Austin	8	0	8
University of Texas Dallas	0	8	8
University of Texas El Paso	7	0	7
University of the Pacific	0	8	8
University of Toledo	8	0	8
University of Tulsa	8	0	8
University of Utah	8	0	8
University of Vermont	0	8	8
University of Virginia	8	0	8
University of Washington	8	0	8
University of West Florida	0	1	1
University of Wisconsin Madison	8	0	8
University of Wisconsin Milwaukee	0	8	8
University of Wyoming	8	0	8
Utah State University	8	0	8
Vanderbilt University	8	0	8
Virginia Commonwealth University	0	8	8
Virginia Tech	8	0	8
Wake Forest University	8	0	8
Washington State University	8	0	8
Washington University in St. Louis	0	8	8
Wayne State University	0	8	8
West Virginia University	8	0	8
Western Michigan University	8	0	8
Wichita State University	0	8	8
Widener University	0	7	7
Wilmington College	0	7	7
Worcester Polytechnic Institute	0	8	8

Wright State University	0	8	8
Yale University	0	8	8
Yeshiva University	0	8	8
Total	832	1148	1980