

# Compiling the *Forbes* / CCAP Rankings

By the Staff of the Center for College Affordability and Productivity<sup>1</sup>

## Overview

In the spring of 2008, a reporter from *Forbes*, Susan Adams, approached Richard Vedder, Director of the Center of College Affordability and Productivity (CCAP), about doing an opinion column for the magazine. Dr. Vedder said he believed that the leading college ranking, published by *U.S. News & World Report*, while very interesting and influential, were flawed in that they were based primarily on reputation and inputs, not on outcomes and results. Aside from potentially misleading consumers, this had the added problem of possibly accentuating what some term “the academic arms race,”— a tendency of schools to spend more to improve their national standing. He said he could devise a ranking that was outcomes-based and more neutral with respect to spending— where more spending does not mean a higher rank as a rule. The preliminary rankings were done and quickly released, which led other *Forbes* personnel (e.g., Michael Noer, David Ewalt, and Hana Alberts) to suggest that CCAP prepare a full blown ranking, which was released one year ago. We have been heartened by the attention given to it.

The methodology used in the original rankings has been modestly revised for 2009. As in 2008, we base 25 percent of the rankings on student satisfaction with their course instruction. Also, like last year, we base another 25 percent on indicators of post-graduate employment success, and one-sixth (16 2/3 percent) on the likelihood of graduation from college within four years. Last year, we weighted the estimated average four year student loan debt at one-sixth (16 2/3 percent) in the rankings. Given the rising costs, debt levels, and associated concerns with this issue, we have increased the weight to 20 percent this year. Last year, we gave a one-sixth weight to student and faculty success in winning national and international competitive academic and research awards, which we reduced the combined awards component this year to a 13 1/3 percent weighting in the index (student awards are still weighted 8 1/3 percent but faculty awards are weighted only 5 percent).

Right at the outset, we should point out that these rankings are relatively difficult to “game.” The press has been full of reports of schools trying to manipulate their *U.S. News & World Report* rankings. Some falsely report data, as the University of Southern California apparently did, on the number of fulltime faculty who are members of the National Academy of Engineering. Others try to manipulate things, as Baylor tried to do, for example, by artificially manufacturing applications in order to reduce the ratio of acceptances to applicants. Some of the *Forbes*/CCAP rankings are based on data provided to the U.S. Department of Education, and knowingly providing false data could have dire consequences. Some of the data are student generated, such as the *RateMyProfessor.com* data, or based on postgraduate real world experiences involving third parties like *Who’s Who in America* or *PayScale.com*. The academic world is replete with schools on the make trying to maximize spending to improve resource-intensive factors in the *U.S. News* rankings, something not possible with these rankings.

While our rankings last year on the whole were favorably received, they were also severely criticized by some, most notably schools ranking below what they believed they deserved. The largest single body of criticism, perhaps, revolved around the use of enrollment-adjusted entries in *Who's Who in America*, a compilation of about 100,000 famous Americans that has been widely used as a reference source for many generations, including in some of the earliest college rankings compiled in the first half of the last century. Critics argued individuals can simply buy their way into this compilation, a charge that is not accurate. We believe the bulk of those listed in *Who's Who* are indeed highly accomplished business leaders, attorneys, doctors, professors, congressmen, etc. It is no accident that most libraries keep up-to-date copies of *Who's Who* on their reference shelves. However, since it usually takes a long time after college to achieve career eminence, many of those listed in *Who's Who* graduated from college decades ago—when their alma mater might have been quite different than it is today. Given this fact and the other criticisms, we decided to significantly reduce the weight placed on this source (from 25 to 12 1/2 percent), filling in the gap using salary data for college graduates reported by *PayScale.com*. For the bulk of the schools assessed, we have enough salary data to allow a meaningful assessment of post-graduate occupational success. Shortly after we had completed these rankings in late July 2009, *PayScale.com* released some revised salary data by college of attendance. While in some respects the data are somewhat superior to those used in the compilation of these rankings, unfortunately information was not provided on nearly 200 schools in our list for which earlier *PayScale.com* data are available. We elected therefore to use the slightly earlier data, much of which came on-line only in the spring of 2009.

The second greatest amount of criticism last year came from our reliance on student evaluations of professors from *RateMyProfessor.com*. We consider this to be a legitimate assessment tool. We took into account literally millions of evaluations of professors provided on this popular web site. One objection, raised most forcefully and responsibly by Dartmouth College, was that some schools have their own evaluation systems and that hardly any students complete the *RateMyProfessor.com* evaluations. In particular, it was hypothesized that where few evaluations were done in relation to the size of the student body or faculty, the *RateMyProfessor.com* evaluations were biased downward because the evaluations were disproportionately done by disgruntled students with a score to settle. We have researched this later possibility extensively, observing no negative statistical relationship between the extent of student participation in *RateMyProfessor.com* and the average student assessment of courses. Hence, we have decided to keep this factor as in previous years, with one modification. Last year, all professors were treated equally, even though in some cases there were only one or two evaluations, while in others literally scores or even hundreds of students evaluated the professor. This year, we weighted the results, so each student evaluation (as opposed to each professor) was treated equally. For example, we put 10 times as much emphasis on a professor with 10 evaluations as on a professor with a single evaluation. The changes in school-wide rankings from such a change in most cases were small, although there were a few exceptions. We believe this approach dramatically reduces the possibility that a school's evaluation on this factor resulted from unfavorable evaluations of a few obscure faculty that teach few students and may have even departed the university in question.

As indicated above, this year we increased emphasis on the average student debt obtained after four years. Of all the factors used in 2008, this received the least criticism. It is true that a school could cater to affluent students, charge very high tuition and give few scholarships, and still have a low average debt per student— simply because wealthy parents covered the cost of college. On the whole, however, we suspect that those schools where average student debt load were the highest had those high debt loads mostly because of a combination of high tuition levels and/or low amounts of grant assistance to students.

We continue to give the four-year graduation factor 16 2/3 percent in our rankings, as we did in 2008. Students and their parents prefer, other things equal, schools where one can graduate in four years to ones where graduation takes five or six years, or, worse yet, schools where a large portion of students never complete a degree. The big controversy here, raised by several engineering schools, was whether we should use four, five, or six-year graduation rates. A few engineering schools, particularly ones emphasizing cooperative education, are designed to be five-year programs (the same is true of a few other programs, such as architecture). Yet most students want and expect to graduate in four years and do not want to pay a fifth year of tuition fees or forego significant postgraduate earnings for a year while finishing a degree advertised to be four years in length. We did statistical analysis using both four and five-year graduation rates and found that rankings based on five-year graduation rates (as opposed to four-year rates) are not dramatically different. Indeed, some engineering schools complaining about the four-year graduation rate criteria would have fared worse in the 2009 rankings had a five-year rate been used.

There are good arguments for using the raw (unadjusted) four year graduation rate as the variable to be included, as it measures the probability that a student will complete the degree in the expected four years. However, there are also equally compelling arguments in favor of offering the gap between the actual and a predicted rate. The predicted rate is obtained from a regression model that analyzes variations in graduation rates between schools. Students with high test scores and high school grades that dominate the selective admission schools *should* have high graduation rates, and it can be argued that a school's success should be measured by whether the school equals or exceeds the graduation rate that the quality of incoming students and other resource inputs would lead one to predict would exist.

We have modestly demoted nationally competitive academic awards as a feature in this year's index (from an overall weight of 16 2/3 to 13 1/3 percent). We have kept the portion of this variable related to student receipt of nationally competitive awards like the Rhodes and Marshall scholarships the same as in 2008 (8 /13 percent in the total ranking). We have reduced the component relating to faculty scholarly recognition (e.g., Nobel prizes) from 8 1/3 to 5 percent. We believe having eminent faculty add to a campus's luster, but in some respects this component has aspects of being an input into the process rather than an outcome (e.g., a university can buy Nobel laureates), something we are trying to avoid. Also, frankly in discussions with students and parents, often the other factors cited above (quality of instruction, postgraduate success, graduation rates, etc.) are mentioned, but rarely do they talk about the competitive award factor as a determinant of college decisions. For the typical student, it vastly more important that they feel rewarded by the classes that they actually take than that there are eminent scholars in their midst who are generally inaccessible to undergraduates.

Traditionally, institutions of higher education have been categorized by their “Carnegie classification.” *U.S. News & World Report* and some other rankings use, sometimes with a bit of modification, categories such as “National Research Universities,” or “Liberal Arts Colleges.” Often a distinction is also made between public and private schools. In its core rankings, we eschew that approach, preferring to list all schools in a single ranking. It is our belief that college students go to school to obtain a bachelor’s degree, and usually are open to receiving it from different types of institutions. Harvard, for example, competes not only with Yale and Princeton, but also Williams and Amherst for top students, and in California, Berkeley, Stanford, or UCLA applicants often also apply to Pomona or Claremont McKenna colleges. For those interested in rankings broken down for liberal arts colleges and universities, we offer those breakdowns on both the *Forbes* and CCAP web sites (<http://www.forbes.com>, <http://www.collegeaffordability.net> ).

There is also the issue of what schools to look at. Aside from the question of cost of compilation, the smaller or more obscure a school is, the greater the probability that we will have some data problems making the ranking somewhat problematic. This year, we expanded our list of schools slightly, from 568 to 600 schools. We included the schools listed in the Tier 1 and 2 lists for universities and liberal arts colleges by *U.S. News & World Report*, all relatively large universities, and some selected regional universities that are highly regarded but excluded by *U.S. News* from their national lists. We lacked some data for two new schools we added, Bob Jones University and Corban College, and their rankings should be taken with some caution owing to the estimated nature of some of the data used for these schools. We had lesser problems with some schools that do not accept federal assistance, most notably Hillsdale College, but were able in general to overcome this deficiency.

Both *Forbes* and CCAP are especially proud of two new features in the rankings this year. First, a brainchild of *Forbes*’ Executive Editor Michael Noer was the “Best Value Rankings.” We essentially computed a ranking that took account not only of quality (as indicated by the main ranking of 600 schools), but also costs. Where does a student get the most “bang for the buck?” It is interesting that the “100 Best Buy Colleges” is a markedly different list than the list of, say, the “100 Best Colleges.” Gone are all the Ivy League and other expensive, though good, private universities and liberal arts colleges. Over half of the list is populated with public schools.

We are even more proud of the do-it-yourself-rankings. It was an outgrowth of a discussion at *Forbes*’ New York office between several top college administrators, senior personnel from *Forbes*, and Richard Vedder and Jonathan Robe from CCAP. When Dr. Vedder mentioned the idea, the group, especially Harvey Mudd College president Maria Klawe, was enthusiastic. Do-it-yourself rankings enable prospective students and their parents to tailor rankings to meet their individual tastes and preferences. Some students and their parents might be fearful of a school because it is in a big city where crime and safety may be at issue. Others may want to go to a school where fellow students are very bright, as indicated by SAT scores. These are not factors that we at *Forbes* and CCAP believed were important enough to include in our overall rankings, but others may disagree. That opportunity is now available.

This is not the place to do a detailed analysis of our rankings and some of their characteristics. However, we would note that the correlation between this year's rankings and the rankings for the 568 schools included in the 2008 rankings is 0.91, which is quite high, but far enough away from a perfect correlation to mean that there are some meaningful changes this year, including a new number one school, the U.S. Military Academy at West Point. Preliminary regression analysis indicates, as a rule, weak or non-existent statistically significant relationships between spending per student and our rankings, a finding of which we are particularly pleased, suggesting spending more money per student (engaging in the academic arms race) will not likely have positive outcomes in terms of the *Forbes* rankings. CCAP plans to release further studies doing far more detailed analysis, including comparisons with other rankings, notably those of *U.S. News & World Report*. A far more detailed explanation of the procedures used in compiling the rankings follows.

## **Ranking Factors and Weights**

The Center for College Affordability and Productivity (CCAP) compiled its college rankings using seven components (the weightings are listed in parentheses):

1. Listings of Alumni in the 2008 edition of *Who's Who in America* (12.5%)
2. Salaries of Alumni from *PayScale.com* (12.5%)
3. Student Evaluations from *Ratemyprofessors.com* (25%)
4. Four-Year Graduation Rates (16 2/3%)
5. Students Receiving Nationally Competitive Awards (8 1/3%)
6. Faculty Receiving Awards for Scholarship and Creative Pursuits (5%)
7. Four-year Debt Load for Typical Student Borrowers (20%)

## **School Selection**

The 600 institutions of higher education in this ranking are schools which award undergraduate degrees or certificates requiring "4 or more years" of study, according to the U.S. Department of Education. Only those schools categorized by The Carnegie Foundation as Doctorate-granting Universities, Master's Colleges and Universities, or Baccalaureate Colleges are included in this sample of schools.<sup>2</sup> Of the 600 schools included in the sample, 568 were included in the 2008 college ranking. (A total of 569 schools were ranked in 2008, but Miami Dade College is excluded from this year's sample because it is classified as an Associate's College even though it does award some bachelor's degrees.) Name changes that have occurred over the past year are included in this year's list.

The other 32 schools in the sample were added based on school size. We added 22 schools with estimated full-time equivalent (FTE) undergraduate enrollments (for Fall 2007) greater than or equal to 10,000.<sup>3</sup> The remaining 9 additional schools are classified as either Master's Colleges and Universities or Baccalaureate Colleges with FTE undergraduate enrollments greater than 1000, are not affiliated with a large multi-campus university, and do not offer primarily on-line education.

### **Listings of Alumni in *Who's Who in America* (weighting: 12.5%)**

Alumni listings in *Who's Who in America* are part of our measure of career success for college graduates. We used exactly the same data set for alumni listings in *Who's Who in America* as used in 2008. The weight of this variable was reduced to 12.5 percent due to the addition of an alternative component for post-graduate success (salary data from *PayScale.com*).

*Why use Who's Who in America?*

Published by Marquis Who's Who, *Who's Who in America* has contained biographical sketches of influential and noteworthy men and women since its first appearance in 1899.<sup>4</sup> The *Who's Who* volumes are routinely purchased by libraries as a standard biographical reference. We used *Who's Who in America 2008* to generate a sample of successful Americans using an approach similar to that employed in multiple college rankings published in the first half of the 20<sup>th</sup> century.

Other college rankings rely typically on the inputs for college education: the reputation of institutions among education professionals (peer assessments), selectivity (acceptance rates, high school performance, and SAT scores), and variables related to institutional resources (faculty resources, instructional and research spending, and student-faculty ratio). Some rankings consider student attitudes towards schools almost exclusively while others take into account financial dimensions, such as the cost of attending college. The Forbes/CCAP college rankings stress the outputs of a college education rather than these inputs incorporated by the more pervasive ranking systems. *Who's Who in America*, while imperfect, is a sampling of America's successful citizens. By recording the college attendance of persons in *Who's Who*, the rankings account for their achievements once they leave college, allowing us to determine how many graduates of a particular college reach a significant level of accomplishment.

No fee is charged of those whose bibliographies are listed in *Who's Who*, and the purchase of the publication is not a factor in deciding which biographies are included. According to the Preface of the 62<sup>nd</sup> edition, neither a person's wealth, social position, nor desire to be listed are sufficient reasons for inclusion. Researchers employed by Marquis consult lists such as the Forbes Celebrity 100, the Fortune 500, general interest magazines, special interest magazines and lists specific to various industries and professions when deciding who to include.<sup>5</sup>

We are aware that this approach is not perfect. There are cases—relatively few in our judgment—of individuals with decidedly modest vocational achievement being included in the *Who's Who* volumes. And while Marquis's team of researchers completes biographies for the

most prominent members of society, there are other cases of accomplished individuals who simply refuse to fill out the forms and are thus not included. While these deficiencies exist, they apply to graduates of all universities and do not work to create any known bias in favor of a particular individual institution or class of institutions within our sample.

### *Developing the Data Set*

We focused on the recent success of colleges rather than recording people who have not attended the institution in the past 40 years. The year 1952 was chosen as the earliest birth date of those sampled because, using data obtained in a sample of slightly over 5,000 from an earlier study<sup>6</sup> and extrapolating to the full population of approximately 100,000 names, approximately 20% of the persons should have been born in 1952 or later. By restricting our sample only to those born in 1952 or later, we generated a data set of 20,900 names, allowing us to strike a fair balance between temporally relevant results and an adequate population size.

We recorded the page number, the birth date, whether or not the individual had attended college, and the college or university from which the person received an undergraduate degree. The data were recorded in such a fashion that we could later replicate the sample or revisit individual entries. Since the typical student born in 1952 graduated from college no earlier than 1974, our analysis focuses on graduates of the 1970s, 1980s, 1990s, and, in a few cases, this decade.

After compiling the data set, we eliminated from our sample all entries of persons who are not college graduates, all entries for graduates of foreign undergraduate institutions, and all entries with insubstantial or erroneous data. We standardized college names, especially for schools that have aliases, such as College of the Holy Cross(MA) (a.k.a. Holy Cross College, Holy Cross). In the case of different schools that have the same name but exist in different states (e.g., Augustana College, St. John's University, and Westminster College), when the state was not listed in the entry, every entry was re-examined to check for recording errors. If no further information was found, we used other clues to determine the exact institution. For example, if a student was employed in Norton, Massachusetts (the location of Wheaton College) during his or her undergraduate years, we assumed that the student attended Wheaton College of Massachusetts as opposed to Wheaton College of Illinois. If biographical clues given in *Who's Who* were not enough to determine which school the person attended, we looked for information online (employees' profiles, public officials' websites, educators' curriculum vitas, and so forth).

For entries which omitted the campus name (e.g., University of Michigan, University of Arkansas, and California State University) we also re-examined the entries for additional information and searched through online databases. Some of these schools belong to large university systems without a distinct flagship campus (such as California State University) and some belong to smaller university systems with a distinct flagship campus (for instance, the University of Michigan). Still others belong to a system without, historically, a strongly distinctive flagship campus (the University of Massachusetts is an example).<sup>7</sup> For schools without a distinct flagship campus, we apportioned the remaining undetermined entries to those campuses proportional to the enrollments at the campuses. For campuses with a distinct flagship campus with little regional competition (such as the University of Texas, Austin) we assigned all remaining entries to the flagship campus. Similarly, if the person had graduated from a

specifically known campus, we assigned the entry to that campus. This is especially true of entries labeled “University of California,” or “University of Michigan,” where the school designation minus a campus historically denotes “Berkeley,” and “Ann Arbor,” respectively. Some schools (e.g., Rhodes College and the College of Idaho) have changed their names significantly over time; these changes were accounted for while we developed the *Who’s Who* database.

We controlled for institutional size because introducing enrollment numbers allows us to compare schools as large as Ohio State University and as small as Thomas Aquinas College. The average college graduate in our sample attended school between 1980 and 1990, so we calculated the average FTE undergraduate enrollments for 1980 and 1990 and divide the absolute number of *Who’s Who* entries for each school by this historical average enrollment. Given the varying graduation dates of entries and given changing enrollments, this is not a precise method of adjusting for enrollment variation, but it combines the virtue of simplicity with relative accuracy.

The enrollment adjusted numbers were standardized using Z-scores; in the final computation to obtain the rankings, the raw data are weighted so that they constitute a 12.5 percent importance in determining the final ranking.

### **Salaries of Alumni from *PayScale.com* (12.5%)**

*PayScale.com* is a market leader in global online compensation data. The website is used to help employers as well as employees better gauge the current job market. The “*PayScale* Salary Survey,” which is updated daily, adds approximately 300,000 unique profiles to its database each month making it the largest online salary survey in the world. Persons complete the “*PayScale* Salary Survey” in exchange for a free salary report that anonymously compares them to other people with similar jobs in similar locations. The survey is designed to discourage salary inflation and is unique in that it probes users into revealing details such as position, level of work, location, industry, education, etc. In addition to individual surveys, *PayScale* receives data from employers administered on behalf of trade associations.

*PayScale*’s algorithm system applies stringent rules to ensure data validity prior to entering the database. Duplicate entries are eliminated and unusual results are reviewed by an in-house Compensation Analyst before being added to the database. Cost of living adjustments are not made and *PayScale* only reports data that has been collected and approved by its in-house compensation analysts.

#### *Why this measure?*

To most college students, the bottom line of higher education is whether it helps them get a good job after graduation. Of the many measures that qualify a job as ‘good,’ we believe that compensation is near the top in the mind of a student. Other things being equal, students will choose a school that provides them the opportunity to earn the highest possible salary upon

graduation.

The use of *PayScale.com* in formulating our rankings comes with some criticism. The sample size of some of the schools could create the potential for bias to large or small schools. As Al Lee, Director of Quantitative Analysis for *PayScale.com* noted, the database has a wide range of data by university. After running statistical analysis, we decided to discard institutions that had less than 5 surveys completed for both 1-4 and 10-19 years after graduation. This decision dropped our sample size from 600 to 561 but provides a more accurate reflection of salary data.

Another criticism is that schools with a higher sample size do better on this portion of the rankings. We analyzed this claim and found that there is a slight, but not significant, positive correlation between the number of surveys completed and the median salary of 1-4 years after graduation. Though the gap widens when we took into account 10-19 years after graduation salary, the positive correlation is still not significant.

Another criticism is that the website does not differentiate between bachelor's and graduate salaries. There is a statistical significant difference between baccalaureate (schools that do not have graduate programs) and the schools that do have graduate programs. We found that if a student went to a school that offered graduate studies, they were likely to earn a little over \$5,000 more than in a baccalaureate school. However, this difference is minimized because of the methodology used.

#### *How we measured the PayScale component*

We used salary data from 1-4 years after graduation 10-19 years after graduation rate. Average salary at 1-4 years after graduation is a good measure of what a student can expect to earn directly after graduation. It is a good measure of the value added to a job applicant by his or her alma mater. The 1-4 years after graduation rate made up 50% of the rating. The other 50% came from the growth rate between the 1-4 year and 10-19 year after graduation rate. Because someone from a larger and more prestigious school typically earns more directly after graduation, there is naturally a bias upwards in the 1-4 year after graduation rate. Taking the growth rate between 1-4 year and 10-19 year is a good indicator of value-added skills that were learned during school, both technical and soft skills. In other words, we believe that the acceleration of growth in salary is just as important starting salary throughout a career.

### **Student Evaluations from *Ratemyprofessors.com* (25%)**

*RateMyProfessors.com*, founded in 1999 as *TeacherRatings.com*, is a free online service that allows college students from American, Canadian, British, New Zealand, and Australian Institutions to assign ratings to professors anonymously.

The participation of students in this web site has been overwhelming: around 8 million evaluations have been posted to this site. Roughly 3.8 million of these evaluations were used in the formulation of these rankings. University administrations have no control over the process of evaluation, meaning schools would find it difficult to try to “game” the process by manipulating

student participation and that the method employed by *RateMyProfessors.com* is uniform for all schools in the country.

Any student can enter in ratings of professors via *RateMyProfessors.com*. All categories are based on a 5 point rating system, with 5 as the highest rating. The categories students evaluate classes on are Easiness, Helpfulness, and Clarity. Overall Quality is determined by averaging the Helpfulness and Clarity ratings given by students. There is also a chili (hotness) component that assesses the professor's physical appearance, which we ignored in the determination of this component of the rankings.

### *Why This Measure?*

Students are consumers who ostensibly attend college to learn and acquire knowledge and skills. The core dimension of the learning experience comes from attending classes taught by instructors. Asking students what they think about their courses is akin to what some agencies like Consumers Report or J.D. Powers and Associates do when they provide information on various goods or services. As Otto, Sanford and Ross note, students who post ratings on the website can be viewed as experts due to their significant experience with the professors they are evaluating. Considering the popularity of *RateMyProfessors.com* (RMP), with students themselves using the ratings to develop expectations about faculty members and set their schedules, we agree with these scholars when they argue that online ratings should be taken seriously.<sup>8</sup>

To be sure, the use of this instrument is not without criticism. Some would argue that only an unrepresentative sample of students complete the forms. In some cases, the results for a given instructor might be biased because only students unhappy with the course complete the evaluation, while in other instances perhaps an instructor urges students liking the course to complete the evaluation, biasing results in the opposite direction.

It is possible that this concern has some validity as it applies to individual instructors. But when the evaluations of dozens or even hundreds of instructors are added together, most examples of bias are washed out— or any systematic bias that remains is likely relatively similar from campus to campus. What is important to us is the average course evaluation for a large number of classes and instructors, and the aggregation of data should largely eliminate major inter-school biases in the data. In fact, on an institutional level, there is evidence that higher RMP scores are correlated with fewer evaluations; that is, the lower the number of RMP evaluations per enrollment, the higher the school's composite RMP score.

The other main objection to the RMP measure is that instructors can “buy” high rankings by making their course easy and giving high grades. Again, to some extent the huge variations in individual instructor rigor and easiness are reduced when the evaluations of all instructors are aggregated— nearly every school has some easy and some difficult professors. Nonetheless, we took this criticism seriously and did observe some inter-institutional variation in course easiness, as perceived by the students themselves. Other things equal, an institution's score on this factor should be enhanced if it has a relatively high proportion of “hard” instructors or courses, for two reasons. First, there is a negative correlation between student overall evaluation of a course and

its ease of difficulty, and we should control for this factor in order to get evaluations relatively unbiased by this factor. Second, there is a case that can be made that where difficulty is perceived to be high, there is likely more learning occurring— students on average are being challenged more. For these reasons, we gave special consideration to the difficulty factor in the measurement of this factor, as discussed below.

### *Scholarly Assessments of RateMyProfessors.com*

There have been a number of studies assessing the validity of the RMP evaluations. The general approach is to relate the results on this web site to the more established student evaluations of teaching (SET) that are routinely performed by most North American institutions of higher education. Since the schools themselves think their SET provides useful information in assessing the effectiveness of faculty and instruction, if these institutional evaluations correlate well with the RMP results, it enhances the likelihood that RMP is a valid instrument.

The research to date cautiously supports the view that RMP is relatively similar to the SET used by universities themselves. As one oft-cited study puts it, “The results of this study offer preliminary support for the validity of the evaluations on RateMyProfessors.com.”<sup>9</sup> Thomas Coladarci and Irv Kornfield, surveying instructors at the University of Maine, note that “...these RMP/SET correlations should give pause to those who are inclined to dismiss RMP indices as meaningless,” although they also expressed some concerns that the correlation between the two type of instruments was far from 1.00.<sup>10</sup> Finally, Otto, Sanford and Ross concluded that their analysis of ratings on RMP revealed what would be expected if the online ratings of professors were in fact valid measures of student learning.<sup>11</sup>

To be sure, the research is not all enthusiastically supportive of RMP. Felton, Koper, Mitchell, and Stinson suggest that the positive correlation between RMP quality ratings and ease of course assessments make this a questionable instrument.<sup>12</sup> But it precisely because of this potential bias that we adjusted the RMP score for course easiness.

In spite of some drawbacks of student evaluations of teaching, they have apparently have value for the 86% of schools that have some sort of internal evaluation system. RMP ratings give similar results to these systems. Moreover, they are a measure of consumer preferences, which is what is critically important in rational consumer choice. When combined with the significant advantages of being uniform across different schools, not being subject to easy manipulation by schools, and being publicly available, RMP data is a preferred data source for information on student evaluations of teaching – it is the largest single uniform data set we know of student perceptions of the quality of their instruction.

### *Calculating the Schools' Scores*

For all 600 institutions in the sample, we take the average overall quality rating for all instructors at each school based on the quality ratings of individual professors listed on the RMP website. We also examined course rigor from the RMP easiness variable. The RMP easiness variable, like the overall quality variable, is based on a scale from 1-5, with 5 being the easiest. To establish a

measure of course rigor, we invert the scale of the rating by subtracting the easiness score from 5.

The overall RMP score was generated by giving three times more weight to the overall course/instructor ranking and summing its number with the constructed rigor factor. This composite score was then updated using Bayesian methods that consider the number of votes submitted.<sup>13</sup> The data were then standardized and given a score between 0 and 100 commensurate with its location in a normal distribution. Put differently, 18.75% of the total ranking of each school was based on student perceptions of course/instructor quality, and 6.25% was based on student perception of course rigor, with greater points being given the less easy—more difficult—the course was perceived to be. Thus, *RateMyProfessors.com* evaluations account for 25% of the final score for each school in this ranking.

## **Four-Year Graduation Rates (16 2/3%)**

Graduation rates measure how effectively institutions of higher education deliver the education they provide to their students. The higher a college's four-year graduation rate, the higher the proportion of students who fulfill the requirements for their academic program of study within the normal time of study. The higher this proportion of students, other things equal, the lower the cost for students to obtain their college education. Our measure for graduation rates includes two components: the actual four-year graduation rate and the difference between the actual graduation rate and a predicted graduation rate.

### *Why Use Four-Year Graduation Rates?*

Traditionally, college education in America has been viewed, particularly by students and their parents, as a four-year educational investment. In recent times, the higher education sector has increasingly relied upon five or even six-year graduation rates as a measure for how successful students complete their program of study at American colleges and universities. Consistent with our approach in constructing the 2008 ranking, we have chosen to incorporate the four-year graduation rate rather than the five or six-year graduation rates used in other college rankings. Because all of the schools included in this sample are classified as offering instructional programs which are “4 years or more” by the U.S. Department of Education, it is perfectly legitimate for assessing these schools using a four-year graduation rate. After all, prospective students arguably view that “4 years or more” classification as an implication that they can graduate from any of these schools within four years.

Using the four-year graduation rate is not beyond criticism. Several schools included in this sample focus heavily on five-year academic programs (this is particularly true of some of the STEM intensive schools which require not only four years of academic study but also one year or so of co-op or internship experience). For these schools, many students take more than four years in order to satisfy the requirements for graduation. However, we believe that using a four-year graduation rate is valid, because these schools are included in the traditional four-year college classification and because some students even at these schools do in fact graduate within four years. Arguably, a four-year graduation rate is a more meaningful measure than either a five

or six-year rate, because according to the U.S. Department of Education, “normal time” for completion of a bachelor’s degree is four years.

After the publication of the 2008 college ranking, some in the higher education sector expressed concern over the use of the four-year graduation rate instead of a five-year graduation rate. While we ultimately decided to retain the use of the four-year rate, we did explore alternative measure for graduation rates. Interestingly enough, using a five-year graduation rate yielded mixed results, as far as the STEM intensive schools are concerned. While some of these schools fared better under a five-year graduation rate model, others fared much worse.

### *Summary of the Statistical Model*

We rely upon a statistical model to predict what a school’s four-year graduation rate is expected to be based on a number of input criteria which measure the academic quality of incoming students. In order to capture the quality of students, we use 25<sup>th</sup> percentile composite SAT scores, acceptance rates, full-time enrollment rates (how many admitted students actually matriculate), percentage of students receiving Pell Grants, a dummy variable for public or private institutional control, and regional dummy variables. We first transformed the four-year graduation rate data with the logistic transformation (occasionally referred to as the log of the odds ratio) to account for the particular bounded nature of that variable. We next regressed this transformed variable against the list of regressors mentioned above using the least squares method. Due to the nature of the logistic transformation, and the history of even respected academics misinterpreting the coefficient estimates,<sup>14</sup> we do not encourage interpretation of coefficient estimates on graduation rates and therefore suppress them in this methodology. The model has an Adjusted-R<sup>2</sup> of 0.7432. A joint significance test of the model yields an F-statistic of 145.5 on 12 and 587 Degrees of Freedom with a corresponding p-value of less than  $2.2 \times 10^{-16}$ .

Schools increased their final score by having actual graduation rates that exceeded those predicted by the regression model. They decreased their score if the actual graduation rate fell below the model’s predicted rate. The differences in the actual versus the predicted rate for all schools were standardized similar to other components of the index previously discussed.

### *A Note on the Data Sources*

The primary source for the data used was the U.S. Department of Education data source (IPEDS). The actual graduation rate, according to IPEDS, is computed by dividing “the total number of students completing a bachelor degree or equivalent within 4-years (100% of normal time)... by the revised bachelor subcohort minus any allowable exclusions.” The IPEDS database is also the source of the data for the variables used in the statistical model, with a few exceptions. There were several schools (notably Hillsdale College) where the data came from other sources, which are: *Collegedata.com*, the College Board, and *Hillsdale.edu*. In cases where current data was unavailable at any of these sources, we developed estimates based on the most recent publicly available data. The data we use for Fairleigh Dickinson University is derived from the combination of the data available for both the Florham and Metropolitan campuses.

The graduation rate component accounted for 16 2/3%, apportioned equally between the actual graduation rate (8 1/3%) and the graduation performance of a school relative to its predicted graduation rate (8 1/3%).

### **Student Nationally Competitive Awards (8 1/3%)**

Every year students from colleges and universities across the country compete with one another for highly prestigious student awards. Analyzing the number of award winners per school serves as an indicator of how well an institution is preparing its students to successfully compete for these awards. Winning a nationally competitive award assumes that the student is not only thoroughly academically prepared and qualified but also possesses other qualities such as a high level of motivation or initiative, leadership, etc. Those schools with a high number of award winners are better preparing their students.

The following eight nationally competitive student awards were considered with the years of awards considered included in parentheses:

The Rhodes Scholarship (2001-09)

The British Marshall Scholarship (2001-09)

The Gates Cambridge Scholarship (2001-09)

The Harry S. Truman Scholarship (2005-09)

The Barry M. Goldwater Scholarship (2009)

The Jack Kent Cooke Graduate Scholarship (2002-08)

The Boren (NSEP) Fellowship (2009)

National Science Foundation (NSF) Fellowships (2009)

The Rhodes, Marshall, and Gates-Cambridge Scholarships are included because they are widely recognized as three of the most selective and prestigious of all postgraduate awards to undergraduate students. The remaining five awards attempt to encompass a variety of different academic backgrounds. The Truman award is directed toward students interested in pursuing careers in public service while the Goldwater Scholarship targets students pursuing careers in the natural sciences, mathematics or engineering. The Jack Kent Cooke scholarships are not limited to specific areas of study; grants are awarded to deserving low-income students wishing to pursue graduate studies. The Boren (NSEP) Fellowship is an award funded by the National Security Education Program and given to support graduate studies in areas of the world critical to U.S. interests. Finally, National Science Foundation (NSF) Fellowships are awarded to students wishing to pursue graduate study in the sciences (including social sciences), mathematics and engineering.

Due to varying number of awards given in a single year among these eight awards, it is necessary to use multiple years of data to expand the sample size. However, several of these awards include a sufficient number of awards every year for the single most recent year's data to be sufficient for use in the study.

After calculating the raw number of each award students from an institution won over the examined period, each award is weighted to reflect the award's competitiveness and prestige. Because the Rhodes Scholarship is the most competitive and prestigious of undergraduate awards, we give it a higher weighting relative to the other awards. The same is true, to a lesser extent, of the Marshall and Gates-Cambridge Scholarships. Therefore, the Rhodes Scholarship is weighted five times, and the Marshall Scholarship and Gates-Cambridge three times, relative to the other five awards. If a school has one scholarship winner for each award we use, that institution's total number of awards would be recorded as sixteen. In the few rare cases where award winners studied for a significant amount of time (at least two years) at an institution before transferring to the institution at which they were current students upon winning the award, credit for the student's award was divided equally among the two institutions.

Enrollment size of an institution is accounted for as well. A school with a greater number of students, other things equal, has a better chance of winning an award. Thus, the number of award winners is adjusted by the school's full-time equivalent undergraduate enrollment during the fall of 2007. These enrollment adjusted numbers for student award recipients account for 8 1/3% of the final score for each school in the sample.

### **Faculty Awards for Scholarship and Creative Pursuits (5%)**

Faculty awards can also serve as indicators of a quality undergraduate institution. The awards observed were bestowed on faculty members in recognition of accomplishments in research, scholarship and creative pursuits that make significant contributions to society. All other things equal, a student would prefer an institution at which they may have interaction with distinguished and exceptionally accomplished faculty. Indeed, research and creative projects are important aspects of the academy—even at the undergraduate level. A case can be made that superior accomplishment in these two aspects of academia can enhance undergraduate instruction. Nonetheless, because this measure represents, strictly speaking, a faculty input rather than a student outcome, this year's ranking has reduced the weight of the faculty awards to 5% overall (down from 8 1/3% in the 2008 ranking). The following are the seven faculty awards and the years each award was observed in the sample:

The Nobel Prize (1997-2008)

The American Academy of Arts and Sciences Members (2005-2009)

The National Academy of Sciences Members (2005-2009)

The National Academy of Engineering Members (2004-2009)

The Guggenheim Fellowship (2007-2009)

The John D. and Katherine T. MacArthur Foundation Fellowship (1998-2008)

The National Humanities Center Fellowship (2003/2004-2008/2009)

These specific awards are included for reasons similar to those given for the student awards. All are highly distinguished and collectively represent a wide variety of academic areas. The Nobel Foundation annually awards its Nobel Prize in Chemistry, Economics, Literature, Peace, Physics and Physiology/Medicine. The American Academy of Arts and Sciences annually elects approximately 200 fellows from diverse academic backgrounds. The National Academy of Sciences annually elects 72 distinguished scholars of science and technology to its ranks. The National Academy of Engineering is a member of the same network of The National Academies and admits approximately 70 prominent members of the engineering profession every year. The Guggenheim Foundation grants around 200 awards each year to advanced professionals in the fields of the natural sciences, social sciences, humanities and creative arts. The John D. and Katherine T. MacArthur Foundation awards approximately 25 fellowships, popularly referred to as “Genius Grants,” each year to individuals “who have shown extraordinary originality and dedication in their creative pursuits and a marked capacity for self-direction.” Finally, the National Humanities Center annually admits forty fellows of distinguished accomplishments in all fields of the humanities. This award was added this year to better acknowledge schools’ contributions to the humanities disciplines.

These awards collectively provide a diverse sample of distinguished scholars and academics. In sum, a total of 1412.25— a decimal is shown here to reflect partial awards— award winning faculty members are counted in this sample. The sample used in the ranking includes only those award winners who are instructors at a college or university. Those faculty members who were affiliated only with a graduate program of an institution or were listed as less than a full time faculty member (such as adjuncts, emeritus professors, or lecturers) were given half credit. For those award winners who were associated solely with research institutes of a university— such as NASA’s Jet Propulsion Laboratory at the California Institute of Technology— no credit was given to the institution as these researches likely have no real meaningful benefit to undergraduate students. Individuals who have received the above awards were credited only to those institutions with which they are currently affiliated.

It is common for the Nobel Foundation to award the same Nobel Prize to multiple individuals. In these situations, the Nobel Foundation makes clear the percentage of the prize awarded to each. This same percentage was the percentage of credit awarded to an institution of a Nobel Laureate for the purposes of the ranking. Additionally, the Nobel Prize is a global award. Nobel Laureates with an affiliation as instructors at any higher education institution in the United States were included regardless of their country of residence or birth. The same is the case for Guggenheim, MacArthur Foundation, and National Humanities Center award winners. Furthermore, the American Academy of Arts and Sciences and the National Academies of Sciences and Engineering annually elect foreign honorary members. In the instance that any of these foreign

honorary members had an affiliation as an instructor at an American institution, they were included in the sample.

After obtaining the raw sampling of award winners, we weighted the Nobel Prize three times more heavily than the other six awards. The Nobel Prize is the most competitive of all the awards and widely considered the pinnacle of academic and scholarly accomplishment. If an institution were to have one winner for each award, its total awards score would be nine (three for the Nobel Prize and one of each of the other six).

This weighted score was then adjusted by faculty size. Other things equal, a school with more faculty/instructors would have a higher probability of one of those individuals winning an award. The total weighted value of faculty awards won by an institution was divided by that institution's 2007 FTE Instruction/Research and Public Service staff as provided by the Integrated Postsecondary Education Data System (IPEDS) database. These faculty award values figured in as a 5% factor in the final overall rating of a college.

### **Four-Year Debt Load for Typical Student Borrowers (20%)**

Student debt is incorporated in the ranking as a measure of the relative affordability of attending a particular school. The amount of expected debt students may face if they borrow money to attend college is important consumer information. The weighting of this component increased to 20% this year from the 16 2/3% weighting it received last year because the current economic hardship facing many American families arguably makes cost more important than ever. In the *Forbes*/CCAP rankings, student debt is inversely related to the school's overall ranking, meaning that higher debt is associated with a lower ranking. In this way, the rankings account for schools which have higher student debt and would be considered less affordable for students.

The figure used for student debt is the average debt for the typical student borrower. We exclude from consideration those students who do not borrow for college. The data for the student debt is obtained from the U.S. Department of Education database (IPEDS). The figure is the sum of the average amount of loan aid received by student borrowers for the years 2003/2004 to 2006/2007 (the most recent years with available data). This four-year span assumes that a student graduates in the normal four year period. According to IPEDS, student debt is defined as any financial aid which the student must repay, including "all Title IV subsidized and unsubsidized loans and all institutionally- and privately-sponsored loans." This debt burden, however, does not include PLUS loans or loans made directly to the parents.

Although full data is available in IPEDS for most schools, there are several data anomalies. For schools with data missing for only one of the four years (Marlboro College, the United States Merchant Marine Academy, Tulane University, and Loyola University New Orleans), the year of missing data is estimated as the average debt of the three other years for which data is available. Two other schools (Hillsdale and Grove City Colleges) do not report debt figures for any of these years. For these schools, the "average indebtedness of 2007 graduates" as reported on the website *Collegedata.com* is used. Bob Jones University does not report debt figures to IPEDS or any other databases of which we are aware. Thus, the figure assigned Bob Jones is the average of

the other 23 ranked schools that belong to the same control and Carnegie classification groups (i.e. private, non-profit Master’s Colleges and Universities—Medium Programs). Finally, Fairleigh Dickinson University reports debt figures separately for both its Florham and Metropolitan campuses; the average of these two figures is used in the ranking.

The overall four-year raw debt data are standardized using Z-scores. These standardized rates are then assigned a score between 0 and 100 commensurate with where they fall in a normal distribution. This final indexed figure is weighted at 20% of the overall 2009 Forbes ranking of America’s Best Colleges.

## How Sensitive Are the Rankings To Small Data Changes?

In order to test the relative robustness of our ranking, we compared schools’ ranks using three additional weighting systems. These weighting systems, which are summarized in Table 1, were chosen because they portray different approaches which may be more in line with the priorities and tastes of various prospective students. The weighting scheme used to construct the *Forbes/CCAP* Rank is described elsewhere in this methodology.

For our purposes, we have defined “college as investment” as a weighting scheme focused more on college as monetary return on investment where the student’s primary concern is the future earnings that result from attending college. “College as socialization” looks at college education as strictly a consumer good; that is, the student is more concerned with the present, rather than future value, of the education received while in college. Finally, “college as scholarship” focuses more upon present academic value of a college education.

**Table 1. Description of Various Weighting Schemes**

<i>College as Investment</i>		<i>College as Socialization</i>		<i>College as Scholarship</i>	
Data set	Weighting	Data set	Weighting	Data set	Weighting
<i>Who’s Who in America</i>	25%	<i>Who’s Who in America</i>	6.25%	<i>Who’s Who in America</i>	0%
<i>Payscale</i> salary	25%	<i>Payscale</i> salary	6.25%	<i>Payscale</i> salary	0%
<i>RateMyProfessor</i>	10%	<i>RateMyProfessor</i>	50%	<i>RateMyProfessor</i>	40%
Graduation Rates	15%	Graduation Rates	12.5%	Graduation Rates	15%
Student NCAs	0%	Student NCAs	8%	Student NCAs	20%
Faculty NCAs	0%	Faculty NCAs	4.5%	Faculty NCAs	10%
Debt	25%	Debt	12.5%	Debt	15%

Table 2 gives the correlations between these three weighting schemes and the official *Forbes/CCAP* rank for all 600 schools.

**Table 2. Correlations Between Various Weighting Schemes**

	<i>Forbes/CCAP Rank</i>	<i>College as Investment Rank</i>	<i>College as Socialization Rank</i>	<i>College as Scholarship Rank</i>
<b>Forbes/CCAP Rank</b>	1			
<b>College as Investment Rank</b>	0.8586	1		
<b>College as Socialization Rank</b>	0.9069	0.5965	1	
<b>College as Scholarship Rank</b>	0.9002	0.5709	0.9899	1

Table 3 lists the top 50 schools in the official *Forbes/CCAP* rankings as compared to their rankings using the three other ranking schemes.

**Table 3. Top 50 *Forbes/CCAP* Schools and Their Ranks Using Various Weighting Schemes**

<b>Institution</b>	<b>State</b>	<b>Forbes/CCAP Rank</b>	<b>College as Investment Rank</b>	<b>College as Socialization Rank</b>	<b>College as Scholarship Rank</b>
United States Military Academy	NY	1	2	1	2
Princeton University	NJ	2	3	2	1
California Institute of Technology	CA	3	4	6	3
Williams College	MA	4	1	5	6
Harvard University	MA	5	7	12	4
Wellesley College	MA	6	8	3	5
United States Air Force Academy	CO	7	15	4	7
Amherst College	MA	8	9	8	12
Yale University	CT	9	21	33	9
Stanford University	CA	10	22	20	10
Massachusetts Institute of Technology	MA	11	18	28	11
Swarthmore College	PA	12	37	17	8
Columbia University	NY	13	6	49	46
Centre College	KY	14	20	11	20
Haverford College	PA	15	10	18	30
Boston College	MA	16	32	7	15
Northwestern University	IL	17	16	35	40
Bowdoin College	ME	18	14	24	56
Vassar College	NY	19	23	40	38
Whitman College	WA	20	53	9	13
University of Chicago	IL	21	19	60	42
Kenyon College	OH	22	24	42	49
Carleton College	MN	23	46	10	16
Colby College	ME	24	47	13	18
Middlebury College	VT	25	36	19	23
Union College	NY	26	12	65	98
Claremont McKenna College	CA	27	17	64	81

<b>Institution</b>	<b>State</b>	<b>Forbes/CCAP Rank</b>	<b>College as Investment Rank</b>	<b>College as Socialization Rank</b>	<b>College as Scholarship Rank</b>
Pomona College	CA	28	44	16	19
Colgate University	NY	29	5	117	145
United States Naval Academy	MD	30	11	177	101
Smith College	MA	31	41	27	28
Wabash College	IN	32	38	15	37
Harvey Mudd College	CA	33	42	22	24
Washington and Lee University	VA	34	33	31	67
Bryn Mawr College	PA	35	81	14	14
Franklin and Marshall College	PA	36	27	78	96
Wesleyan University	CT	37	40	59	66
Brandeis University	MA	38	28	116	116
Tufts University	MA	39	13	152	172
Barnard College	NY	40	77	25	22
Lawrence University	WI	41	43	29	79
DePauw University	IN	42	31	122	135
Rice University	TX	43	25	144	146
Reed College	OR	44	48	39	68
Washington University, St. Louis	MO	45	75	21	29
Bucknell University	PA	46	26	131	158
Mount Holyoke College	MA	47	69	69	53
College of William and Mary	VA	48	30	164	161
Hamilton College	NY	49	79	56	45
University of Notre Dame	IN	50	52	55	106

## **A Note on the “Best Value Ranking”**

For many students, the price of a school is equally as important a factor in deciding where to go to college as its quality. Knowing where you can get the most quality for each tuition dollar spent is important for those shopping on a budget. Answering this question is the goal of this year’s “Best Value Ranking.” To produce the ranking, we divide each school’s overall quality score by its average net tuition rate from 2003/2004 to 2006/2007.

The quality score is calculated by summing the scores for each criterion in the main ranking described above, excluding the debt category. The amount of debt held by the typical borrower at a school is related to cost of the school; to include debt in the quality score for the “Best Value Ranking” would count the cost of attendance twice. We feel that each of the other categories represent the quality of outputs that could be expected from attending a school. Therefore, the overall quality score is a summation of each school’s standardized score in the categories of *Who’s Who*, *PayScale.com* salary, *RateMyProfessor.com*, student nationally competitive awards, faculty nationally competitive awards, actual graduation rate, and actual versus predicted graduation rate, as calculated in the primary ranking.

This score is then divided by a school's average net tuition for the years 2003/2004 to 2006/2007. Net tuition is defined as the average out-of-pocket costs for students and is equal to the published tuition minus all federal, state, local and institutional grant aid.<sup>15</sup> Net tuition was used rather than published tuition (a school's "sticker price") because the former more accurately details the actual amount an average student will pay to attend a school. Some schools have published tuitions but guarantee institutional grants that will cover the entire cost of attendance. In these circumstances, the net tuition would be calculated as \$0 while the published tuition can be in excess of \$20,000. Some schools provide better financial aid than others and some states provide more grants than others. Therefore, the net tuition figure represents the actual costs to attendees better than the sticker price of an institution.

For public schools, net tuition was calculated using in-state tuition prices. Students looking at a public school in another state may not find it to be as good a buy as demonstrated by its position in the Best Value ranking. Private schools have the same tuition for both in- and out-of-state students.

Finally, all schools with an actual four-year graduation rate lower than 25% are excluded from the "Best Value Ranking." We believe that to be considered a "high value" investment there must be a reasonable expectation of completing one's degree within the normal time period.

## **A Note on the "Do-It-Yourself" Variables**

Although not included in the Forbes/CCAP college ranking, there are several variables available for readers to use as they construct their own rankings (this option is available on *Forbes.com*). All of the variables used to construct the Forbes/CCAP official ranking are available in the "do-it-yourself" option, but the additional variables include: 5 year graduation rates, acceptance rate, SAT scores, undergraduate enrollment, student-faculty ratio, in-state tuition, out-of-state tuition, and a crime index.

For the five-year graduation rate, we use a model (identical to the model we use for the four-year graduation rate in the official Forbes/CCAP ranking) to predict a school's five-year graduation rate. Half of this component is based on the actual graduation rate while the other half is based on the difference between the actual and predicted graduation rate.

The acceptance rate is the percentage of student applicants who received an offer to enroll in the institution. The SAT scores are the 25<sup>th</sup> percentile composite score for admitted students. The undergraduate enrollment is the FTE undergraduate enrollment for the 2006-07 academic year. The student to faculty ratio is computed by dividing FTE undergraduate enrollment by FTE faculty. In-state tuition is the cost for instruction (tuition and required fees) public institutions charge for undergraduate students who are residents of the same state in which the school is located while out-of-state tuition is cost for instruction charged to undergraduates who are not residents of the same state in which the public college is located. For private schools, in-state and out-of-state tuition charges are the same.

The crime index is computed by dividing the number of violent crimes that are reported by a school by a school's FTE undergraduate enrollment (in thousands). For this variable, we averaged the index for both 2006 and 2007. The number of crimes is the weighted sum of murders/non-negligent homicide, negligent manslaughter, forcible and non-forcible sexual offenses, robbery, aggravated assault, burglary, motor vehicle theft, and arson (murder and forcible sexual offenses were weighted double the other reported crimes). Thus, this crime index is number of reported violent crimes per year per thousand undergraduate students.

Some of the data used for the "do-it-yourself" variables are based on estimates for schools where the data was not directly reported by the school to the U.S. Department of Education.

For all of these "do-it-yourself" variables, no inherent weight is assigned to any of them. Individual reader can assign the weights to each of these variables to construct the ranking which they deem best suited to their own needs.

## **Conclusions**

Colleges often do not like being assessed. They often prefer secrecy to transparency. Yet they are selling a product that, to the typical consumer, is the second largest expenditure made in a lifetime, after the purchase of a home. Just as Consumers Report and J.D. Powers Associates help people wanting to buy cars, so ranking organizations like *U.S. News & World Report*, the Princeton Review, and *Forbes* provide consumers with assistance in choosing a college. The best school for an individual student is *not* necessarily the highest ranked school. West Point is a marvelous school – but not every student wants a military career. Williams College is a fine institution, but not everyone has the academic skills or motivation to go there. Indeed, our "do-it-yourself" rankings, of which we are very proud, are a first step in personalizing the rankings to meet the tastes of individual consumers. Low ranked schools like the Rochester Institute of Technology may have areas of strength within the institution that make some parts of the school high quality. Remember, too, that we are excluding the vast majority of American universities, many of which objectively would be lower ranked than the 600 schools included in our survey. The rankings are one tool – but by no means the only one – that students should use in selecting an institution. More information is better than less, and the folks at *Forbes* and CCAP hope these rankings provide some useful guidance to those making one of the most important investment decisions of their lives.

## Endnotes

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<sup>1</sup> The compilation of these rankings was done at the Center for College Affordability and Productivity, although in cooperation and active consultation with the staff of *Forbes*. At *Forbes*, the CCAP staff worked particularly closely with David Ewalt, Michael Noer and, especially, Hana Alberts. This was truly a collaborative effort in the finest sense of that term.

At CCAP, Director Richard Vedder took overall charge of the project. He appreciates the assistance of Ohio University, and particularly the cooperation of the chair of its Economics Department, Prof. Rosemary Rossiter. The work on the rankings was done by a team of students working with Prof. Vedder. Five persons were particularly critical: Jonathan Robe, Matthew Denhart, Luke Myers, Robert Villwock, and Jonathan Leirer. Others assisting in the effort included Michael Malesick, Christopher Denhart, Ryan Brady, Karen Vedder, Jordan Templeton, Daniel Bennett, Andrew Gillen, and former CCAP employee James Coleman.

<sup>2</sup> For further information on the Carnegie Classification system, see The Carnegie Foundation for the Advancement of Teaching, “Basic Classification Description,” available at: <http://www.carnegiefoundation.org/classifications/index.asp?key=791>, accessed July 1, 2009.

<sup>3</sup> For our purposes full-time equivalent (FTE) undergraduate enrollment is defined as the sum of the full-time undergraduate enrollment and one-third of the part-time undergraduate enrollment as reported by the Department of Education.

<sup>4</sup> Marquis Who’s Who, “About Us,” available at: [http://www.marquiswhoswho.com/about/about\\_us.asp](http://www.marquiswhoswho.com/about/about_us.asp), accessed July 2, 2009.

<sup>5</sup> William L. Hamilton, “Who Are You? Why Are You Here?” *New York Times* Nov. 13, 2005, available at: [http://query.nytimes.com/gst/fullpage.html?res=9507E0D6123EF930A25752C1A9639C8B63&sec=&spon=&page\\_wanted=2](http://query.nytimes.com/gst/fullpage.html?res=9507E0D6123EF930A25752C1A9639C8B63&sec=&spon=&page_wanted=2), accessed July 3, 2009.

<sup>6</sup> Richard Vedder, James Coleman, Jonathan Robe, and Thomas Ruchti. “An Outcomes Based Assessment of Universities: Using Who’s Who in America.” (Washington, D.C.: Center for College Affordability and Productivity, March 2008), available at: [http://www.centerforcollegeaffordability.org/uploads/Who%27s\\_Who\\_final.pdf](http://www.centerforcollegeaffordability.org/uploads/Who%27s_Who_final.pdf).

<sup>7</sup> The University of Massachusetts, Amherst was legally designated the flagship campus of the University of Massachusetts system in 2003. See <http://www.dailycollegian.com/2.10120/amherst-is-now-legally-the-flagship-of-umass-system-1.1385733>, accessed July 2, 2009.

<sup>8</sup> James Otto, Douglas A. Sanford Jr., and Douglas Ross. “Does ratemyprofessor.com really rate my professor?” *Assessment & Evaluation in Higher Education* 33, no. 4 (August 2008): 355-368.

<sup>9</sup> Michael E. Sonntag, Jonathan F. Bassett, and Timothy Snyder. “An Empirical Test of the Validity of Student Evaluations of Teaching Made on RateMyProfessors.com,” *Assessment & Evaluation in Higher Education* (July 2008). See also, Scott Jaschik. “Validation for RateMyProfessors.com?” *Inside Higher Ed*, April 25, 2008, available at <http://www.insidehighered.com/news/2008/04/25/mp>, accessed April 25, 2008.

<sup>10</sup> Theodore Coladarci and Irv Kornfield, “RateMyProfessors.com Versus Formal In-class Evaluations of Teaching,” *Practical Assessment, Research & Evaluation* (May 2007).

<sup>11</sup> Otto, Sanford, and Ross.

<sup>12</sup> James Felton, Peter T. Koper, John Mitchell, and Michael Stinson. “Attractiveness, Easiness, and Other Issues: Student Evaluations of Professors on RateMyProfessors.com,” the abstract page of which is available on <http://ssrn.com/abstract=918283>, accessed on August 11, 2008.

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<sup>13</sup> For further discussion of Bayesian approaches to rankings see James O. Berger and John Deely. “A Bayesian Approach to Ranking and Selection of Related Means With Alternatives to Analysis-of-Variance Methodology” *Journal of the American Statistical Association* 83, no. 402 (June 1988): 364-373.

<sup>14</sup> One prominent example of a misinterpretation of a logistic regression coefficient is discussed in the following letter to the editor. Andrew Gelman, “Letter to the editors regarding some papers of Dr. Satoshi Kanazawa” *Journal of Theoretical Biology* 245, no. 3 (April 7, 2007): 597-599

<sup>15</sup> For further discussion of net tuition, see Andrew Gillen, James Coleman and Hans Zhong. *Net Tuition Trends in the United States*. Washington, DC: Center for College Affordability and Productivity. October 2008. available at: [http://www.centerforcollegeaffordability.org/uploads/Microsoft%20Word%20-%20Net\\_tuition\\_010309.pdf](http://www.centerforcollegeaffordability.org/uploads/Microsoft%20Word%20-%20Net_tuition_010309.pdf).