HERI Research Brief

HIGHER EDUCATION RESEARCH INSTITUTE AT UCLA
*home of the* COOPERATIVE INSTITUTIONAL RESEARCH PROGRAM

November 2011

# Completing College

## *Assessing Graduation Rates at Four-Year Institutions*

A new report from the Higher Education Research Institute "Completing College: Assessing Graduation Rates at Four-Year Institutions" provides data-driven information on how to assess institutional graduation rates, emphasizing the importance of taking into account the characteristics of students that institutions enroll. A second important purpose is to provide equations that institutions can use to evaluate their own rates relative to others, accounting for the probabilities associated with the characteristics of the students they educate. Finally, we also provide degree completion calculators to allow institutions to evaluate how their own rates can be improved using alternative scenarios. These are available online at (http://www.heri.ucla.edu/GradRateCalculator.php).

In short, the focus is on data-driven assistance to help institutions improve their retention and graduation rates.

Many consider college degree completion rates to be among one of the most important indicators of institutional quality. But portraying raw graduation rates as a measure of institutional quality and effectiveness without first taking into account the types of students that enroll at an institution strongly favors the most selective institutions. It also tends to penalize institutions that offer broad access or enroll large numbers of first-generation students, even if these institutions are successful in helping their students earn degrees.

### DEGREE COMPLETION RATES

In this new report, we update and expand upon the previous HERI degree completion research by using the 2004 CIRP Freshman Survey merged with data from the National Student Clearinghouse (NCS), which collects unit record data from cooperating college registrars from a variety of institutions that participate in order to track individual students toward completion.

Only 38.9% of students across the country complete a degree after four years. The degree completion figure increases by 17.5 percentage points to 56.4% after five years, and by only another 4.8 percentage points to 61.2% after six years. The steep increase in degree completion between four and five years reinforces the common notion that many students today take five years to complete a baccalaureate degree. By looking

**Figure 1. Weighted Four-, Five-, and Six-Year Degree Attainment Rates, Across All Institutions**

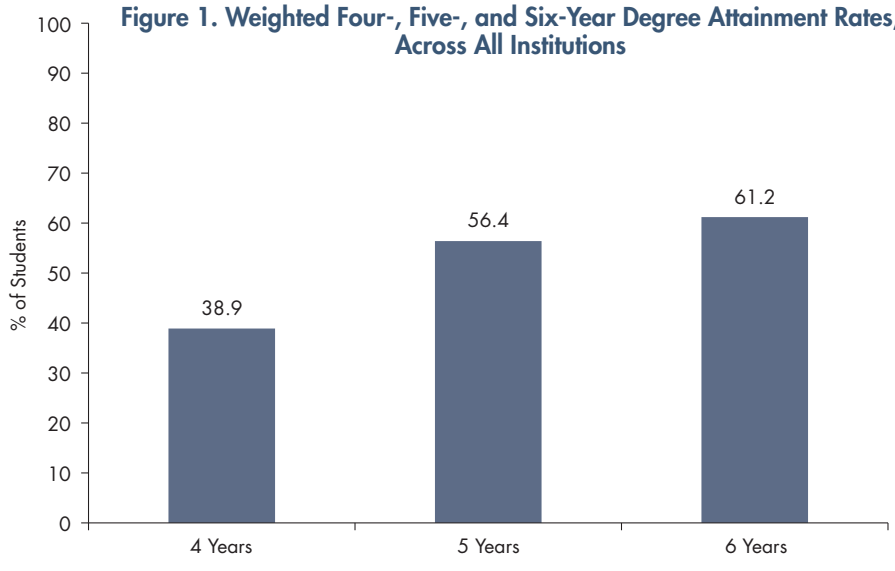


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**Table 1. Four-, Five-, and Six-Year Degree Attainment Rates, by Institutional Type**

| Institutional Type | Weighted Percent Completing Bachelor's Degree Within | | |
|---|---|---|---|
| | 4 Years | 5 Years | 6 Years |
| Public University | 37.1 | 59.8 | 65.6 |
| Private University | 64.0 | 75.9 | 78.2 |
| Public 4-Year College | 23.5 | 43.1 | 49.5 |
| Nonsectarian 4-Year College | 48.7 | 59.3 | 61.8 |
| Catholic 4-Year College | 54.1 | 64.0 | 66.0 |
| Other Religious 4-Year College | 47.8 | 56.3 | 57.9 |

at all three time points, it is clear that the likelihood that a student will eventually complete a degree quickly decreases after five years.

Students' rates of degree completion vary substantially by institutional type (see Table 1), especially four-year degree completion figures. Private universities have the highest four-year degree completion rate (64.0%), whereas public four-year colleges have the lowest (23.5%). With just over two out of every ten students at a public four-year college graduating after four years, the chance that a student attending a private university will graduate after four years is almost three times greater.

Although we examine differential graduation rates according to race/ethnicity and sex, a unique group examined in this report is students who are the first generation in their family to attend college. Significantly fewer first-generation students (27.4%) earn a degree after four years compared to a much larger percentage of students (42.1%) who come from families with parents who have higher education experience, a gap of 14.7 percentage points. After six years this gap remains basically unchanged at 14.0 percentage points, with just 50.2% of first-generation students completing their degrees as compared to 64.2% of their peers whose parents have college experience.

Students with higher grades in high school are more likely to complete college than are students with lower high-school grades. Prior academic achievement has a particularly large effect on which students are likely to graduate in four years, but only students with A/A+ grades have a four-year graduation rate above 50%. Among students starting college with SAT scores in the range of 1000 to 1099 in 1994, 63.2% earned a degree after six years compared to only 58.6% for the entering cohort of 2004, a gap of 4.6 percentage points.

The largest gains in degree attainment over the last decade were among students with SAT scores of 1300 or more. Thus, in the last decade, colleges are doing better at graduating their most academically-prepared students, but are not doing as well with students who begin college less academically prepared. Given that degree attainment rates for students starting college in the mid range of achievement were already low in the 1990s, institutions must do more to improve degree attainment outcomes for these students.

### PREDICTING DEGREE COMPLETION RATES

Predicting an expected graduation rate based upon the characteristics of the incoming first-year class is essential for any institution evaluating its degree attainment. The report reviews basic formulas that can be used to predict estimated four-, five-, and six-year degree completion using aggregate high-school GPA, SAT/ACT scores, race/ethnicity, and sex for the incoming class.

The inclusion of the CIRP Freshman Survey information in the calculations substantially improves the prediction of degree completion over the results when using only high-school GPA, SAT, gender, and race/ethnicity alone. Both the percent of cases that can be classified correctly in the logistic regression and the Pseudo-$R^2$ increase with the inclusion of the CIRP Freshman Survey variables. Adding the CIRP variables increases the Nagelkerke $R^2$ by 65.8%, for the four-year degree completion rate. Results for all other attainment rates also improve significantly, with a 53.7% increase in the Nagelkerke $R^2$ for five-year prediction, and a 52.8% increase for six-year prediction.

### ADDITIONAL FACTORS THAT INFLUENCE DEGREE ATTAINMENT

Table 2 includes some of the stronger predictors of degree attainment related to students' high-school experiences, college choice process, self-ratings, and expectations. Such information can be useful in guiding decisions about the makeup of the first-year class or environmental aspects an institution might seek to change.

The importance students place in the college choice process on selecting their institution because of early action/early decision admittance, the overall cost of attending, and the size of the college are the three factors that have the largest positive impact on degree completion.

Starting college already having had experience using the internet for research and homework, as measured by the frequency of such use during the senior year of high school, has a large impact on degree completion at each of the graduation year intervals.

The importance of a visit to campus in choosing which college to attend is also positively associated with

degree completion. Institutions wishing to maximize retention, speed time-to-degree, and eventual degree completion will want to consider how they can help students accurately assess their institution related to these factors before making a choice.

Expecting to participate in student clubs and groups during college, openness to changing one's choice of career, and the hours per week as a senior in high school spent on studying and homework are also factors that are positively associated with degree completion at intervals of four, five, and six years.

Lastly, the importance of living on campus during the first year of college to degree completion cannot be overstated. For commuter institutions or those for which housing additional students in residence halls is not an option, these results make it clear that the benefits students receive from living on campus need to be captured through alternative programming such as non-residential learning communities.

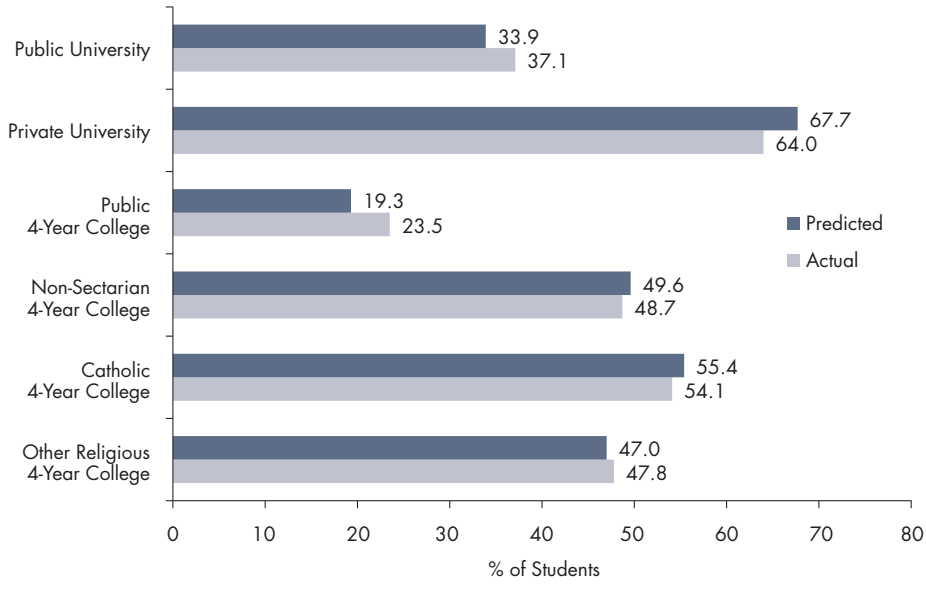
HERI has created reports that calculate expected degree attainment rates for institutions that use the CIRP Freshman Survey. These calculators are not static, but allow institutions to investigate how changes to their results might impact graduation rates. For instance, an institution can examine the expected change in predicted four-year graduation by bringing more students to campus for an admissions visit, or housing more students on campus. Information about ordering HERI's "Expected Graduation Rate Calculator" can be found at http://www.heri.ucla.edu/dsdownloads.php.

**Table 2. Selected Strong Predictors of Four-, Five-, and Six-Year Degree Attainment* (Odds Ratios)**

| | 4 Years | 5 Years | 6 Years |
|---|---|---|---|
| Early Action/Early Decision (reason for choosing your college) | 1.128 | 1.075 | 1.068 |
| Cost of Attending College (reason for choosing your college) | 1.100 | 1.092 | 1.083 |
| Size of College (reason for choosing your college) | 1.078 | 1.053 | |
| Used Internet for Research/Homework (senior year HS experience) | 1.077 | 1.080 | 1.076 |
| A Visit to Campus (reason for choosing your college) | 1.064 | | |
| Participate in Student Clubs/Groups (college expectation) | 1.063 | 1.073 | 1.079 |
| Emotional Health (self-rating) | 1.062 | 1.060 | 1.064 |
| Drive to Achieve (self-rating) | 1.061 | 1.083 | 1.085 |
| Change Career Choice (college expectation) | 1.060 | 1.079 | 1.085 |
| HPW on Studying/Homework (senior year HS experience) | 1.058 | 1.062 | 1.065 |
| I Wanted to Live Near Home (reason for choosing your college) | 1.049 | 1.059 | 1.060 |
| Performed Volunteer Work (senior year HS experience) | 1.049 | | |
| To Gain a General Education (reason for going to college) | | 1.053 | 1.049 |
| Graduates Get Good Jobs (reason for choosing your college) | | | 1.052 |
| Other Private Home or Residence (compared to residence hall plans) | 0.648 | 0.622 | 0.679 |
| Live with Family or Relatives (compared to residence hall plans) | 0.718 | 0.734 | 0.794 |
| Transfer to Another College (college expectation) | 0.844 | 0.810 | 0.796 |
| Came Late to Class (senior year HS experience) | 0.881 | 0.910 | 0.926 |
| Work Full-time While Attending College (college expectation) | 0.940 | 0.916 | 0.910 |

*Each of the predictors shown impacts the probability of the respective degree attainment rate by at least +/- 5 percent per unit increase. For instance: An increase in a student's "Drive to Achieve" score from *average* (3 on scale) to *above average* (4 on scale), which represents a one-unit increase, raises the likelihood of graduating in four years by 6.1%. Increasing it from *average* (3 on scale) to *highest 10%* (5 on scale), which represents a two-unit increase, raises the probability by 12.2%.

**Figure 2. Weighted Four-Year Predicted and Actual Degree Attainment Rates, by Institutional Type**



## REASSESSING DEGREE ATTAINMENT

In concluding the report, we return to the gap in degree completion between institutional types, where public four-year colleges had the lowest degree completion rates and private universities had the highest. Instead of comparing the raw degree completion rates of different institutional types, we can reexamine how well each institutional type performs in moving students towards degree completion based on the characteristics and experiences of the students whom they enroll.

Using this type of performance as a benchmark for success, public four-year colleges emerge at the top and private universities at the bottom (see Figure 2). After four years, public four-year colleges graduate more of their students than expected (actual rate, 23.5% vs. expected rate, 19.3%), 22% better than expected. Private universities, by contrast, graduate fewer of their students than expected (64.0% vs. 67.7%).

By comparing expected and actual graduation rates, it is clear that much of the success private institutions and private universities, in particular, have in degree completion is in the strength of the students they enroll. And, though public institutions have lower overall graduation rates, they are having relatively more success in moving the students they enroll towards graduation.

What would happen if we sent students with the characteristics and expectations of private university students to public four-year colleges instead? Using our models we would predict a four-year graduation rate of 56.4% for the private university students if they attended public four-year colleges instead, a decrease of 12% as compared to their actual four-year graduation rate of 64.0%. When we compare this predicted four-year graduation rate of 56.4% to the actual rate of 23.5% at public four-year colleges, we see a difference of 32.9 percentage points. This means that if public four-year colleges were to enroll students with the characteristics of private university students instead they could expect an increase in four-year degree attainment of an astonishing 140%.

Of course, most public four-year colleges offer broader access and serve a different type of student than the private universities. Our point is that it is important to focus on assessing institutions based on the degree of talent development that they actually achieve rather than just the raw graduation rate.

Our take-home message is this: much of the difference between institutions in their degree completion rates is attributable to differences in the characteristics and profiles of the enrolled students. As we move forward to dramatically ramp up degree completion at an institutional, state, and national level it will be important to understand exactly how we can move students toward degree completion. These talent development efforts, facilitated by data-driven planning and assessment, will allow us to focus on creating the conditions for success for all types of students at all types of institutions.

*Please contact the Higher Education Research Institute for more information or to order your copy of the Completing College monograph.*

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HERI

The Higher Education Research Institute (HERI) *is based in the Graduate School of Education & Information Studies at the University of California, Los Angeles. The Institute serves as an interdisciplinary center for research, evaluation, information, policy studies, and research training in postsecondary education.*

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The Cooperative Institutional Research Program (CIRP) *is a national longitudinal study of the American higher education system. It is regarded as the most comprehensive source of information on college students. Established in 1966 at the American Council on Education, the CIRP is the nation's largest and oldest empirical study of higher education, involving data on some 1,900 institutions and over 15 million college students. The Higher Education Research Institute has administered the CIRP since 1973. The CIRP longitudinal program consists of* The Freshman Survey, Your First College Year Survey, the Diverse Learning Environments Survey, the College Senior Survey, *and the triennial* Faculty Survey. *Information on the* CIRP Freshman Survey, *research and publications based on these data, and other research projects conducted by the Higher Education Research Institute can be found on the HERI website at: www.heri.ucla.edu*


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