

# Analysis of Efficiency and Graduation Rates at The University of Texas at Austin and Other Public Research Universities in the United States

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## Executive Summary

Much of the current debate surrounding higher education reform in Texas focuses on achieving efficiency in public colleges and universities.

With dwindling state budgets and widespread opposition to steep tuition increases, this is an appropriate and necessary issue to discuss. Institutions of higher learning must be expected to produce desired outcomes, most notably graduating large numbers of well-educated students, with limited resources.

By several key measures, The University of Texas at Austin already does this exceedingly well. It is among the most efficient public universities in the nation.

Tuition remains less than \$10,000 a year and the state allocates \$7,300 per student, significantly less than at many peer institutions. Yet, the university's six-year graduation rate of 81 percent ranks 13th out of the nation's 120 public research universities. In Texas, this graduation rate among all universities is second only to Rice. Similarly, the university ranks 10th in the percentage of students it graduates for every public dollar it receives. And it is second in the number of faculty it employs for every public dollar it receives.

Looking at these three measures collectively suggests The University of Texas at Austin is tied with the University of Illinois at Urbana-Champaign as the second most efficient public research university in the country, just behind the University of Florida. By the same measures, Texas A&M and Texas Tech Universities are also among the nation's most efficient institutions of higher learning.

The University of Texas at Austin achieves this efficiency without compromising its excellence. It ranks 45th on U.S. News and World Report's list of best colleges and 38th on the Academic Ranking of World Universities' list of best research universities in the world.

There is, of course, room for improvement, especially in four-year graduation rates. Just 53 percent of University of Texas at Austin students graduate in that time frame, an unacceptably low number and well behind the University of California-Berkeley and the University of Michigan, which graduate about 70 percent of their students in that time. Similarly, although our six-year graduation rate provides a model for most public research universities, it also lags behind those same two highly regarded peer institutions, which graduate about 90 percent of their students after six years.

The University of Texas at Austin has already adopted or is developing programs and tuition rates designed to help students graduate more quickly. Data from other institutions suggest the university may also be able to increase graduation rates by lowering the student-to-faculty ratio and hiring high-potential faculty who are capable of rising to the rank of full professor.

Accomplishing such goals in this era of dwindling funding will require a continued — even an increased — level of efficiency. This, however, is an area in which the university already excels and provides a model for other colleges and universities to emulate.

# Introduction

In 2004, the Commission of 125 released a report consisting of recommendations meant to improve the quality and standing of The University of Texas at Austin. This report was the result of countless hours of research, reflection, and discussion among some of the most prominent leaders of the state. As noted in the report, the Commission believed that the university should always make decisions with the “goal of being ‘first-in-class.’” Since that time the university has taken several concrete steps, including the creation of the School of Undergraduate Studies, to ensure that it adheres to the Commission’s vision of being among the best research universities in the world.

The university currently enjoys great success, ranking 45th among all universities and 13th among public ones in U.S. News and World Report’s 2010 rankings. The Academic Ranking of World Universities (ARWU) places UT Austin 38th on the list of the best universities in the world. Graduate programs in the university similarly boast high rankings, with many in the top 20 in their fields. The undergraduate accounting program, for example, is rated by U.S. News and World Report as the best in the nation. The undergraduate program in computer engineering ranks 7th, and almost all of the other engineering programs are in the top 10. High school guidance counselors also think highly of UT Austin: according to U.S. News and World Report, their ranking for UT Austin is 35th in the nation.

Given these rankings, UT Austin is clearly a university of the first class and an asset to the people of Texas. But, as the Commission notes, the university cannot rest on its successes and instead must always strive to become better, both for its students and for the state.

One area in which the university should seek improvements is in its graduation rates. Currently, UT Austin has a six-year graduation rate of about 81 percent. Although it is laudable that the vast majority of its incoming students eventually receive a degree, this number still means that up to 19 percent of students leave with no degree. Some of these students will go on to other universities to receive four-year degrees, but many others will simply vanish from the higher education system and will never receive a degree.

The costs of these failures are hard to estimate, but they must certainly be high. Former students themselves suffer from the lost tuition money, the time lost in the labor market, the lack of credentials to propel their careers forward, and the likely loss of self-esteem that comes with failing to receive a diploma. Families and communities that expected and hoped those students would graduate also suffer from the loss of income and joy that accompanies a college degree. The people of Texas similarly suffer the loss of money they paid to the university to educate those students.

So can the university improve its graduation rate, and in so doing, follow the enjoiner of the Commission of 125 to always being ‘first-in-class?’ It is unlikely that UT Austin will ever achieve the graduation rates of private universities like Harvard (98 percent), Yale (98 percent), or Princeton (96 percent). Among public universities, the highest six-year graduation rate in the country is held by the University of Virginia at 93 percent.<sup>1</sup> Of universities the approximate size of UT Austin, the highest graduation rate is 90 percent at the University of California-Berkeley, with the University of Michigan and UCLA both at 89 percent. It is reasonable to expect that UT Austin’s graduation rate be similar to those of other outstanding public universities.

The purpose of this report is to examine data for national research universities to explore predictors of graduation rates, and in so doing, help discover the ways that UT Austin might improve its graduation rate. This is vital to improving overall quality and standing in the state and academic community. Three main questions are addressed in this report.

1. How does UT Austin compare to other public research universities in terms of graduation rates, student and state funding, and faculty?
2. How does UT Austin compare in terms of measures of efficiency and productivity?
3. What factors drive graduation rates at public research universities?

The major findings of this report include:

1. UT Austin is among the national leaders at enrolling large numbers of students and graduating a high percentage of those students.
2. UT Austin is the second most efficient public research university when considering graduation rates and comparing the amount of public money received to the percentage of students who graduate and the number of professors employed.
3. While UT Austin’s graduation efficiency (public dollars spent to graduate one percent of students) is among the best, our actual graduation rate lags behind other schools ranked in the top 50 according to U.S. News and World Report.
4. Nationally, the proportion of faculty at the highest rank is a strong predictor of high graduation rates and a high quality education. Lower student-faculty ratios are also associated with higher graduation rates.
5. Enrolling higher numbers of out-of-state students and students with high SAT scores are also strong predictors of graduation rates.

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<sup>1</sup> Graduation rates were obtained using the Integrated Postsecondary Education Data System (<http://nces.ed.gov/ipeds/>) for 2009.

# IPEDS Data Description

The data for this report came from the Integrated Postsecondary Education Data System (IPEDS), a collection of surveys of institutions of higher education released by the U.S. Department of Education. We use the 2009 data, the most recently available in the public files. All variables used in the analyses are from 2009 with the exception of two that were not available for that year. Percentage of students receiving financial aid is reflective of 2008–09, and the measure of percentage of students who are in-state was derived from migration variables in the IPEDS that were assessed in 2008.

We focus on the 120 public universities in IPEDS, which are classified by the Carnegie Classification 2005 as being either research universities or doctoral/research universities (i.e., codes 15, 16 and 17). This set of schools contains many of the top ranked public universities in the country, such as the University of California-Berkeley, University of Michigan, and the University of North Carolina at Chapel Hill. It also contains The University of Texas at Austin and six other schools in Texas: Texas A&M, Texas Tech, Texas Woman’s University, The University of Texas at Dallas, University of Houston, and University of North Texas. In different parts of the research report these Texas schools are specially marked to ease comparisons within the state.<sup>2</sup>

## AUF FUNDING

The IPEDS data includes direct state appropriations to universities and does not include money that universities receive from external sources, such as endowments. Therefore, it does not include funding that The University of Texas at Austin and Texas A&M University receive from the state’s Available University Fund (AUF) or money that other universities might receive from similar funds. We do not include the AUF funding in our calculations because there is no data set that would allow us to compare Texas universities accurately with those in other states. Additionally, since the AUF money does not come directly from taxpayers and Texas families, we believe it is more analogous to funds generated by other endowments than to the tuition or state allocations we analyze in this report.

Nonetheless, even when AUF funding is included, The University of Texas at Austin remains extremely efficient. We conducted an additional analysis in which we added the approximately \$160 million that UT Austin receives from the AUF each year while making no adjustments to other universities’ funding information. This analysis revealed that, with AUF funding included:

- UT Austin is the fourth most efficient university in the nation (compared to second without AUF funding included – see Table 2).
- The university ranks ninth in professors employed for every public dollar received (compared to second without the AUF funding – see Table 2)
- It ranks 28th in graduation rate efficiency (down from number 10 – see Table 2).

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<sup>2</sup> Entries in the tables designated with the symbol “-” indicate that the referenced values were not available in the data set. For the models shown in Tables 4, 5, and 6, missing values were imputed using sample means as necessary to preserve the overall sample size. However, given the small number of missing data points, these imputations were small in number.

# Analytical Findings

## GRADUATION RATES AND PROJECTED DEGREES AWARDED

IPEDS publishes the six-year graduation rate among first-time students for the universities in our sample. Because the rate of students receiving a degree after six years is very small, the six-year rate is likely a good indicator of the number of students actually receiving a degree from that university. Unfortunately, however, the publicly-available IPEDS data does not include an exact measure of the number of students who leave a university without a degree. That number can be projected, with many caveats owing to error, based on the number of first-time students entering the university in a year and the graduation rate. For example, if a university has 1,000 students in its entering class and a six-year graduation rate of 50 percent, we can realistically project that, if the graduation rate holds, within six years about 500 of those students will receive a degree at that university. On the other hand, the other 500 will receive no degree there or will do so only after six years.

The first two columns of Table 1 show 4-year and 6-year graduation rates for the universities in the sample. The third column shows the number of first-time enrollments. Using the information on graduation rates and first-time enrollments, the fourth and fifth columns indicate the projected number of students leaving with a degree after 6 years and the number leaving with no degree. To facilitate comparisons between universities on other important aspects of university performance, the last two columns show tuition and state funds per student FTE and median SAT scores. The table is sorted by six-year graduation rates.

**TABLE 1: ESTIMATES OF STUDENTS LEAVING UNIVERSITIES WITH NO DEGREE**

(Data source: Integrated Postsecondary Education Data System, 2009)

	Graduation Rates		First-Time Students	6-Year Projected Status		Tuition and State Funds per Student FTE	Median SAT Score
	6-year	4-year		Degrees Awarded	Attrition		
UNIVERSITY OF VIRGINIA-MAIN CAMPUS	93	84	3,246	3,019	227	\$20,054	1285
COLLEGE OF WILLIAM AND MARY	91	83	1,395	1,269	126	\$18,431	1295
UNIVERSITY OF CALIFORNIA-BERKELEY	90	66	4,356	3,920	436	\$21,256	1260
UNIVERSITY OF CALIFORNIA-LOS ANGELES	89	67	4,472	3,980	492	\$23,986	1210
UNIVERSITY OF MICHIGAN-ANN ARBOR	89	73	6,079	5,410	669	\$22,803	1280
PENNSYLVANIA STATE UNIVERSITY-MAIN CAMPUS	85	62	6,560	5,576	984	--	1150
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	85	72	3,960	3,366	594	\$28,357	1260
UNIVERSITY OF CALIFORNIA-SAN DIEGO	84	56	3,749	3,149	600	\$17,611	1200
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN	83	65	6,984	5,797	1,187	\$16,693	1260
UNIVERSITY OF CALIFORNIA-IRVINE	82	58	4,030	3,305	725	\$15,126	1120
UNIVERSITY OF FLORIDA	82	58	6,256	5,130	1,126	\$15,671	1195
UNIVERSITY OF MARYLAND-COLLEGE PARK	82	63	4,202	3,446	756	\$22,829	1250
THE UNIVERSITY OF TEXAS AT AUSTIN	81	51	7,243	5,867	1,376	\$16,253	1165
UNIVERSITY OF WASHINGTON-SEATTLE CAMPUS	81	54	6,184	5,009	1,175	\$18,664	1160
UNIVERSITY OF WISCONSIN-MADISON	81	48	5,680	4,601	1,079	\$20,700	1230
TEXAS A&M UNIVERSITY	80	45	8,071	6,457	1,614	\$18,224	1135
UNIVERSITY OF CALIFORNIA-DAVIS	80	50	4,414	3,531	883	\$21,309	1115
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY	80	53	5,050	4,040	1,010	\$17,188	1160
UNIVERSITY OF GEORGIA	79	49	4,684	3,700	984	\$19,954	1180

**TABLE 1: ESTIMATES OF STUDENTS LEAVING UNIVERSITIES WITH NO DEGREE (CONTINUED)**

	Graduation Rates		First-Time Students	6-Year Projected Status		Tuition and State Funds per Student FTE	Median SAT Score
	6-year	4-year		Degrees Awarded	Attrition		
UNIVERSITY OF CONNECTICUT	78	61	3,221	2,512	709	\$33,689	1165
UNIVERSITY OF PITTSBURGH-PITTSBURGH CAMPUS	78	57	3,621	2,824	797	--	1215
MICHIGAN STATE UNIVERSITY	77	49	7,386	5,687	1,699	\$18,560	1080
RUTGERS UNIVERSITY-NEW BRUNSWICK	77	52	5,835	4,493	1,342	\$22,816	1125
OHIO STATE UNIVERSITY-MAIN CAMPUS	75	48	6,739	5,054	1,685	\$18,136	1175
UNIVERSITY OF DELAWARE	75	59	4,223	3,167	1,056	--	1115
INDIANA UNIVERSITY-BLOOMINGTON	74	53	7,327	5,422	1,905	\$19,712	1115
NORTH CAROLINA STATE UNIVERSITY AT RALEIGH	73	42	4,772	3,484	1,288	\$21,424	1130
UNIVERSITY OF VERMONT	73	57	2,619	1,912	707	\$22,271	1140
FLORIDA STATE UNIVERSITY	71	47	5,955	4,228	1,727	\$17,403	1155
PURDUE UNIVERSITY-MAIN CAMPUS	70	38	6,209	4,346	1,863	\$19,050	1095
UNIVERSITY OF OREGON	70	46	3,839	2,687	1,152	\$12,480	1047
ILLINOIS STATE UNIVERSITY	69	42	3,033	2,093	940	\$12,053	1110
IOWA STATE UNIVERSITY	69	35	4,329	2,987	1,342	\$19,153	1120
OHIO UNIVERSITY-MAIN CAMPUS	69	48	4,074	2,811	1,263	\$14,372	1030
UNIVERSITY OF IOWA	69	42	4,063	2,803	1,260	\$19,753	1130
UNIVERSITY OF SOUTH CAROLINA-COLUMBIA	69	46	3,917	2,703	1,214	\$14,110	1135
WASHINGTON STATE UNIVERSITY	69	40	3,668	2,531	1,137	\$17,524	1025
UNIVERSITY OF MINNESOTA-TWIN CITIES	68	45	5,400	3,672	1,728	\$22,864	1195
UNIVERSITY OF MISSOURI-COLUMBIA	68	43	5,589	3,801	1,788	\$17,304	1120
AUBURN UNIVERSITY MAIN CAMPUS	67	37	3,918	2,625	1,293	\$20,543	1120
STONY BROOK UNIVERSITY	67	45	2,806	1,880	926	\$26,818	1150
TEMPLE UNIVERSITY	67	38	4,203	2,816	1,387	--	1055
UNIVERSITY OF COLORADO AT BOULDER	67	41	5,548	3,717	1,831	\$13,548	1130
THE UNIVERSITY OF ALABAMA	66	38	5,116	3,377	1,739	\$15,013	1055
RUTGERS UNIVERSITY-NEWARK	65	34	914	594	320	\$12,057	1010
COLORADO STATE UNIVERSITY	64	35	4,323	2,767	1,556	\$9,283	1065
GEORGE MASON UNIVERSITY	64	39	2,656	1,700	956	\$13,346	1085
KANSAS STATE UNIVERSITY	63	28	3,523	2,219	1,304	\$16,000	1076
<b>THE UNIVERSITY OF TEXAS AT DALLAS</b>	<b>63</b>	<b>43</b>	<b>1,331</b>	<b>839</b>	<b>492</b>	<b>\$14,871</b>	<b>1150</b>
UNIVERSITY AT BUFFALO	63	42	3,428	2,160	1,268	\$21,692	1100
UNIVERSITY OF CENTRAL FLORIDA	63	34	6,359	4,006	2,353	\$9,660	1135
UNIVERSITY OF NEBRASKA-LINCOLN	63	25	3,986	2,511	1,475	\$17,852	1120
UNIVERSITY OF OKLAHOMA NORMAN CAMPUS	63	29	3,720	2,344	1,376	\$15,952	1105
THE UNIVERSITY OF TENNESSEE	61	31	3,717	2,267	1,450	\$19,628	1105
UNIVERSITY OF KANSAS	61	32	3,942	2,405	1,537	\$19,091	1125
OKLAHOMA STATE UNIVERSITY-MAIN CAMPUS	60	31	3,140	1,884	1,256	\$20,078	1040
OREGON STATE UNIVERSITY	60	28	3,506	2,104	1,402	\$14,371	1020
<b>TEXAS TECH UNIVERSITY</b>	<b>60</b>	<b>32</b>	<b>4,586</b>	<b>2,752</b>	<b>1,834</b>	<b>\$13,009</b>	<b>1040</b>
UNIVERSITY OF KENTUCKY	60	32	4,153	2,492	1,661	\$22,108	1050
UNIVERSITY OF MISSISSIPPI MAIN CAMPUS	60	36	2,576	1,546	1,030	\$12,748	980
UNIVERSITY OF RHODE ISLAND	60	39	2,956	1,774	1,182	\$15,317	995
LOUISIANA STATE UNIVERSITY	59	26	4,789	2,826	1,963	\$19,343	1125
UNIVERSITY OF ARKANSAS	59	34	2,919	1,722	1,197	\$17,625	1080
BALL STATE UNIVERSITY	58	35	4,178	2,423	1,755	\$12,907	990
UNIVERSITY OF ARIZONA	58	32	6,966	4,040	2,926	\$18,530	1030

**TABLE 1: ESTIMATES OF STUDENTS LEAVING UNIVERSITIES WITH NO DEGREE (CONTINUED)**

	Graduation Rates		First-Time Students	6-Year Projected Status		Tuition and State Funds per Student FTE	Median SAT Score
	6-year	4-year		Degrees Awarded	Attrition		
UNIVERSITY OF UTAH	58	22	2,867	1,663	1,204	\$17,060	1060
WEST VIRGINIA UNIVERSITY	58	32	4,589	2,662	1,927	\$15,546	995
CENTRAL MICHIGAN UNIVERSITY	57	21	3,724	2,123	1,601	\$11,343	949
EAST CAROLINA UNIVERSITY	57	30	3,956	2,255	1,701	\$14,752	965
ARIZONA STATE UNIVERSITY	56	29	9,344	5,233	4,111	\$15,335	1015
UNIVERSITY OF IDAHO	56	25	1,780	997	783	\$18,485	1030
UNIVERSITY OF CINCINNATI-MAIN CAMPUS	55	20	4,301	2,366	1,935	\$16,942	1075
UNIVERSITY OF WYOMING	55	22	1,594	877	717	\$22,762	1040
UTAH STATE UNIVERSITY	55	27	2,839	1,561	1,278	\$14,871	1005
INDIANA UNIVERSITY OF PENNSYLVANIA -MAIN CAMPUS	54	33	3,039	1,641	1,398	\$10,813	930
SOUTH DAKOTA STATE UNIVERSITY	54	22	2,133	1,152	981	\$12,056	1070
UNIVERSITY OF ILLINOIS AT CHICAGO	54	24	3,147	1,699	1,448	\$21,420	1055
UNIVERSITY OF NORTH DAKOTA	54	23	1,992	1,076	916	\$15,383	1050
WESTERN MICHIGAN UNIVERSITY	54	22	3,193	1,724	1,469	\$13,555	1050
UNIVERSITY OF MASSACHUSETTS-LOWELL	53	29	1,522	807	715	\$18,027	1010
MONTANA STATE UNIVERSITY	52	19	2,315	1,204	1,111	\$14,918	1065
NORTH DAKOTA STATE UNIVERSITY-MAIN CAMPUS	52	22	2,459	1,279	1,180	\$14,553	1030
OLD DOMINION UNIVERSITY	51	23	2,755	1,405	1,350	\$11,838	1005
GEORGIA STATE UNIVERSITY	50	18	3,026	1,513	1,513	\$12,912	1015
VIRGINIA COMMONWEALTH UNIVERSITY	50	24	3,610	1,805	1,805	\$15,705	1035
NORTHERN ILLINOIS UNIVERSITY	48	23	3,033	1,456	1,577	\$14,437	955
UNIVERSITY OF ALABAMA IN HUNTSVILLE	48	17	800	384	416	\$13,717	1085
UNIVERSITY OF HAWAII AT MANOA	48	16	1,922	923	999	\$23,432	1025
UNIVERSITY OF LOUISVILLE	48	21	2,478	1,189	1,289	\$18,062	1070
UNIVERSITY OF SOUTH FLORIDA-MAIN CAMPUS	48	21	3,767	1,808	1,959	\$12,962	1100
<b>UNIVERSITY OF NORTH TEXAS</b>	<b>47</b>	<b>19</b>	<b>3,368</b>	<b>1,583</b>	<b>1,785</b>	<b>\$11,115</b>	<b>1025</b>
UNIVERSITY OF NEVADA-RENO	46	12	2,170	998	1,172	\$20,587	992.5
FLORIDA INTERNATIONAL UNIVERSITY	46	20	2,897	1,333	1,564	\$10,568	1055
UNIVERSITY OF SOUTH DAKOTA	45	20	1,125	506	619	\$12,761	1035
UNIVERSITY OF TOLEDO	45	23	4,336	1,951	2,385	\$14,909	1076
WRIGHT STATE UNIVERSITY-MAIN CAMPUS	45	3	2,548	1,147	1,401	\$15,022	1076
SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	44	24	2,450	1,078	1,372	\$17,847	1010
<b>TEXAS WOMAN'S UNIVERSITY</b>	<b>44</b>	<b>22</b>	<b>759</b>	<b>334</b>	<b>425</b>	<b>\$11,844</b>	<b>960</b>
THE UNIVERSITY OF MONTANA	44	20	2,306	1,015	1,291	\$11,026	1030
EAST TENNESSEE STATE UNIVERSITY	43	19	2,099	903	1,196	\$12,395	915
UNIVERSITY OF COLORADO DENVER	43	17	1,124	483	641	\$9,508	1015
UNIVERSITY OF NEW MEXICO-MAIN CAMPUS	43	10	3,409	1,466	1,943	\$18,084	1000
UNIVERSITY OF WISCONSIN-MILWAUKEE	43	15	4,151	1,785	2,366	\$12,055	1030
WICHITA STATE UNIVERSITY	42	15	1,387	583	804	\$11,534	1035
OAKLAND UNIVERSITY	41	12	2,465	1,011	1,454	\$11,564	1030
<b>UNIVERSITY OF HOUSTON</b>	<b>41</b>	<b>12</b>	<b>3,295</b>	<b>1,351</b>	<b>1,944</b>	<b>\$14,047</b>	<b>1020</b>
UNIVERSITY OF MISSOURI-KANSAS CITY	41	16	1,004	412	592	\$16,132	1105
UNIVERSITY OF MISSOURI-ST LOUIS	41	21	525	215	310	\$13,495	1070
TENNESSEE STATE UNIVERSITY	40	13	1,338	535	803	\$12,052	822
FLORIDA AGRICULTURAL AND MECHANICAL UNIVERSITY	39	12	2,444	953	1,491	\$14,077	865

**TABLE 1: ESTIMATES OF STUDENTS LEAVING UNIVERSITIES WITH NO DEGREE (CONTINUED)**

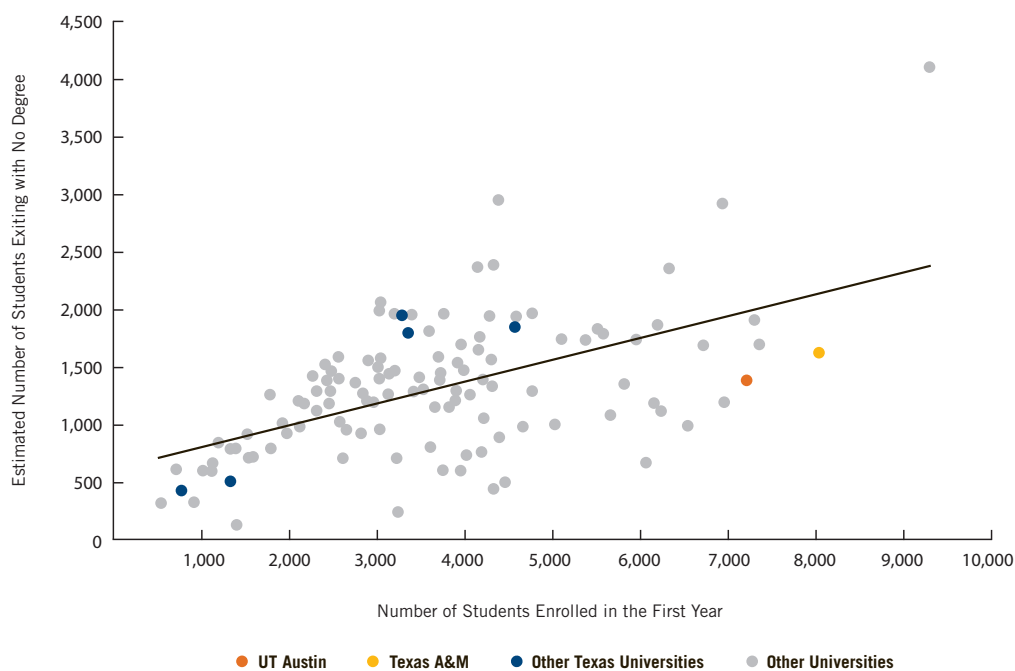
	Graduation Rates		First-Time Students	6-Year Projected Status		Tuition and State Funds per Student FTE	Median SAT Score
	6-year	4-year		Degrees Awarded	Attrition		
UNIVERSITY OF ALABAMA AT BIRMINGHAM	39	17	1,517	592	925	\$24,970	1055
UNIVERSITY OF NEVADA-LAS VEGAS	39	12	3,236	1,262	1,974	\$13,910	950
FLORIDA ATLANTIC UNIVERSITY	38	16	2,563	974	1,589	\$12,797	1015
UNIVERSITY OF MEMPHIS	37	12	2,269	840	1,429	\$12,898	955
INDIANA UNIVERSITY-PURDUE UNIVERSITY -INDIANAPOLIS	34	10	3,019	1,026	1,993	\$17,615	945
UNIVERSITY OF AKRON MAIN CAMPUS	33	11	4,387	1,448	2,939	\$13,004	1076
WAYNE STATE UNIVERSITY	32	10	3,046	975	2,071	\$18,212	950
IDAHO STATE UNIVERSITY	30	7	1,789	537	1,252	\$14,910	1076
CLEVELAND STATE UNIVERSITY	29	7	1,183	343	840	\$15,066	910
UNIVERSITY OF ARKANSAS AT LITTLE ROCK	14	4	701	98	603	\$13,821	1076

Among the 120 schools in the sample, the highest graduation rates belong to the University of Virginia and the College of William and Mary. UT Austin and Texas A&M have 6-year graduation rates only about 10 percentage points below those top performing schools. However, in terms of 4-year graduation rates, UT-Austin and Texas A&M both fare relatively worse than the schools with the highest rates in the sample.

But, it is important to note other aspects of these findings. First, the projected degrees awarded based on entering cohort sizes and graduation rates for UT-Austin and Texas A&M are the highest in this sample. Put another way, according to these projections, UT Austin and Texas A&M produce more degrees from first-time students than any other college in the nation. Also of note are the differences in revenue: in general, schools with the very highest graduation rates all generate more revenue from tuition and state funds on a per student basis than both UT Austin and Texas A&M. Similarly, the top schools also report considerably higher median SAT scores for their entering classes.

This table shows, in stark relief, what UT Austin faces if it plans to raise its graduation rates to match those of schools like UC Berkeley, UCLA and the University of Michigan. Those schools admit fewer students, have higher average SAT scores, and receive more revenue in tuition and state funding per student. Schools that have similar funding and SAT levels to UT Austin (e.g., UC Irvine, University of Florida) also have similar 6-year graduation rates, though their 4-year rates are higher.

FIGURE 1: ESTIMATES OF STUDENTS EXITING WITH NO DEGREE BY NUMBER OF STUDENTS ENROLLED IN THE FIRST YEAR.



Of special note are the projected numbers of students who leave their respective universities with no degree. At UT Austin, that attrition amount is close to 1,400 students, clearly higher than anyone would consider ideal. But the number of students who leave without a degree is heavily conditional on the number admitted, thus that level of attrition must be put into context of the size of the entering class. Figure 1 puts this number into perspective by showing a scatter plot of the number of first-time students by the number of students projected to exit with no degree. The line in the middle of the figure represents the general trend line revealed by the data. According to this figure, as the size of entering cohorts increases, so too does the number of students who leave with no degree. The trend line is also useful for understanding which schools perform better than average on the ratio of cohort size to students exiting with no degrees. The schools above the line perform worse than average on this metric; the ones below the line tend to perform better. For a large public university, the ideal state is to be in the lower right-hand corner: high numbers of entering students, but low numbers of students leaving with no degree.

In this chart, UT Austin, Texas A&M, and other Texas schools are specially marked to show their positions within the field of 120 schools. UT Austin and Texas A&M are clustered at the lower right-hand portion of the chart. Both schools admit a high number of students but have relatively few who leave with no degree. Indeed, of all the schools in the chart, they are closest to the lower right-hand corner and thus perform well by this metric. Simply put, although they admit high numbers of students, UT Austin and Texas A&M do an excellent job of producing degrees for those students.

In sum, although the absolute number of students we lose is high, it is clear that UT Austin and Texas A&M, are among the best of the universities in the sample.

## UNIVERSITY EFFICIENCY

All universities should strive to be efficient, that is, produce the most good for the least cost. Using data in IPEDS, simple measures of efficiency can be derived to allow comparisons between public universities.

We focus on two sources of revenue that flow to public universities: state appropriations and tuition. These two sources combined form the nucleus of student and state support for public universities and reflect much of the state's investment in UT Austin. Other sources of revenue, such as endowments and grants, are heavily dependent upon the actions of universities and their faculty. Thus, the more money that is raised through these two revenue streams, the more the money paid by students and the state is leveraged to produce good outcomes.

Given the importance of tuition and state revenue to this overall system of funding, it is important to understand how much good those funds are contributing to a university. As argued above, one of the most important student outcomes for any university is degree completion. Just as important, if not more so, is the need to provide an excellent educational experience that produces high-quality degrees and an academic foundation for their students' lives. It would be useful then to know how much revenue is necessary for universities to produce their degrees. Thus, we first consider graduation rate, that is, what is the cost to the state for graduating students? Universities that graduate more of their students, and do so at less cost, are more efficient than those that graduate fewer students at greater cost.

One of the most important factors in producing graduates, as explained below, is faculty. Faculty, however, tend to be very expensive in terms of salary, benefits, and other costs. Yet, even with these costs in mind, it is likely that some universities are more efficient in hiring and retaining faculty than others. Thus, we also examine the efficiency of universities based on student and state revenue per faculty member: universities that receive less revenue per faculty member are more efficient than those that receive more per faculty member.

Table 2 compares the public research universities in the sample along the lines of these efficiency measures. As shown in the table, efficiency was based on graduation rates, and the amount of student/state support (i.e., tuition plus state funding per student full-time equivalent) for every 1 percent of students who graduate and for the number of professors. Lower dollar amounts on this measure indicate greater efficiency. Every university in the sample (with the exception of a few that did not have funding data) was scored along these dimensions and then ranked on each dimension. The rankings were then averaged across all three categories to create an overall average ranking. The universities shown in Table 2 are sorted according to this average ranking, with the most efficient universities appearing at the top.

**TABLE 2: GRADUATION RATES AND OTHER MEASURES OF EFFICIENCY**

(Data Source: Integrated Postsecondary Education Data System, 2009)

	Tuition and State Funds per Student FTE			6-Year Graduation		Efficiency in Dollars Per Student in Tuition and State Funds				Average of Graduation and Efficiency	
	Tuition	State	Total	Rate	Rank	6-Year Graduation		Professors		Avg.	Rank
						Funds	Rank	Funds	Rank		
UNIVERSITY OF FLORIDA	\$4,222	\$11,449	\$15,671	82	10	\$191.11	7	\$8.98	7	8.0	1
<b>THE UNIVERSITY OF TEXAS AT AUSTIN</b>	<b>\$8,900</b>	<b>\$7,353</b>	<b>\$16,253</b>	<b>81</b>	<b>13</b>	<b>\$200.65</b>	<b>10</b>	<b>\$8.21</b>	<b>2</b>	<b>8.3</b>	<b>2</b>
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN	\$10,266	\$6,427	\$16,693	83	9	\$201.12	11	\$8.66	5	8.3	2
<b>TEXAS A&amp;M UNIVERSITY</b>	<b>\$7,698</b>	<b>\$10,526</b>	<b>\$18,224</b>	<b>80</b>	<b>16</b>	<b>\$227.80</b>	<b>26</b>	<b>\$9.20</b>	<b>8</b>	<b>16.7</b>	<b>4</b>
UNIVERSITY OF WASHINGTON -SEATTLE CAMPUS	\$10,143	\$8,521	\$18,664	81	13	\$230.42	28	\$12.05	11	17.3	5
COLORADO STATE UNIVERSITY	\$9,091	\$192	\$9,283	64	46	\$145.05	1	\$8.73	6	17.7	6
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY	\$8,912	\$8,276	\$17,188	80	16	\$214.85	19	\$14.42	23	19.3	7
MICHIGAN STATE UNIVERSITY	\$10,916	\$7,644	\$18,560	77	22	\$241.04	34	\$8.57	4	20.0	8
UNIVERSITY OF MICHIGAN-ANN ARBOR	\$15,684	\$7,119	\$22,803	89	4	\$256.21	46	\$10.73	10	20.0	8
OHIO STATE UNIVERSITY-MAIN CAMPUS	\$10,057	\$8,079	\$18,136	75	24	\$241.81	35	\$8.42	3	20.7	10
UNIVERSITY OF CALIFORNIA-IRVINE	\$7,788	\$7,338	\$15,126	82	10	\$184.46	5	\$16.88	47	20.7	10
UNIVERSITY OF CALIFORNIA-BERKELEY	\$9,713	\$11,543	\$21,256	90	3	\$236.18	31	\$14.79	29	21.0	12
UNIVERSITY OF CENTRAL FLORIDA	\$3,397	\$6,263	\$9,660	63	48	\$153.33	2	\$12.63	15	21.7	13
UNIVERSITY OF COLORADO AT BOULDER	\$13,548	\$0	\$13,548	67	40	\$202.21	12	\$12.45	13	21.7	13
UNIVERSITY OF SOUTH CAROLINA -COLUMBIA	\$8,660	\$5,450	\$14,110	69	32	\$204.49	14	\$14.25	22	22.7	15
UNIVERSITY OF GEORGIA	\$6,665	\$13,289	\$19,954	79	19	\$252.58	39	\$12.29	12	23.3	16
UNIVERSITY OF WISCONSIN-MADISON	\$8,809	\$11,891	\$20,700	81	13	\$255.56	45	\$13.34	17	25.0	17
GEORGE MASON UNIVERSITY	\$7,864	\$5,482	\$13,346	64	46	\$208.53	16	\$12.46	14	25.3	18
UNIVERSITY OF VIRGINIA-MAIN CAMPUS	\$13,753	\$6,301	\$20,054	93	1	\$215.63	20	\$18.47	58	26.3	19
ILLINOIS STATE UNIVERSITY	\$7,258	\$4,795	\$12,053	69	32	\$174.68	3	\$16.98	48	27.7	20
UNIVERSITY OF CALIFORNIA -LOS ANGELES	\$10,105	\$13,881	\$23,986	89	4	\$269.51	53	\$14.99	30	29.0	21
UNIVERSITY OF CALIFORNIA-SAN DIEGO	\$8,861	\$8,750	\$17,611	84	8	\$209.66	17	\$19.52	64	29.7	22
INDIANA UNIVERSITY-BLOOMINGTON	\$13,632	\$6,080	\$19,712	74	26	\$266.38	50	\$13.26	16	30.7	23
<b>TEXAS TECH UNIVERSITY</b>	<b>\$7,044</b>	<b>\$5,965</b>	<b>\$13,009</b>	<b>60</b>	<b>56</b>	<b>\$216.82</b>	<b>21</b>	<b>\$13.36</b>	<b>18</b>	<b>31.7</b>	<b>24</b>
PURDUE UNIVERSITY-MAIN CAMPUS	\$11,410	\$7,640	\$19,050	70	30	\$272.14	56	\$9.97	9	31.7	24
UNIVERSITY OF CALIFORNIA-DAVIS	\$8,807	\$12,502	\$21,309	80	16	\$266.36	49	\$15.53	34	33.0	26
UNIVERSITY OF OREGON	\$9,622	\$2,858	\$12,480	70	30	\$178.29	4	\$19.97	68	34.0	27
OHIO UNIVERSITY-MAIN CAMPUS	\$8,901	\$5,471	\$14,372	69	32	\$208.29	15	\$17.70	55	34.0	27
FLORIDA STATE UNIVERSITY	\$4,648	\$12,755	\$17,403	71	29	\$245.11	36	\$16.30	41	35.3	29
THE UNIVERSITY OF ALABAMA	\$8,900	\$6,113	\$15,013	66	44	\$227.47	25	\$16.34	42	37.0	30
UNIVERSITY OF MARYLAND -COLLEGE PARK	\$10,595	\$12,234	\$22,829	82	10	\$278.40	60	\$16.53	44	38.0	31
COLLEGE OF WILLIAM AND MARY	\$12,189	\$6,242	\$18,431	91	2	\$202.54	13	\$32.62	100	38.3	32
UNIVERSITY OF MISSOURI-COLUMBIA	\$8,191	\$9,113	\$17,304	68	38	\$254.47	43	\$15.70	35	38.7	33
NORTH CAROLINA STATE UNIVERSITY AT RALEIGH	\$6,024	\$15,400	\$21,424	73	27	\$293.48	71	\$14.62	26	41.3	34
CENTRAL MICHIGAN UNIVERSITY	\$7,773	\$3,570	\$11,343	57	68	\$199.00	8	\$17.03	49	41.7	35
UNIVERSITY OF OKLAHOMA NORMAN CAMPUS	\$8,900	\$7,052	\$15,952	63	48	\$253.21	40	\$16.23	39	42.3	36
RUTGERS UNIVERSITY-NEW BRUNSWICK	\$12,285	\$10,531	\$22,816	77	22	\$296.31	73	\$15.43	32	42.3	36
ARIZONA STATE UNIVERSITY	\$8,492	\$6,843	\$15,335	56	70	\$273.84	57	\$8.12	1	42.7	38
BALL STATE UNIVERSITY	\$5,992	\$6,915	\$12,907	58	64	\$222.53	23	\$16.78	45	44.0	39

**TABLE 2: GRADUATION RATES AND OTHER MEASURES OF EFFICIENCY (CONTINUED)**

	Tuition and State Funds per Student FTE			6-Year Graduation		Efficiency in Dollars Per Student in Tuition and State Funds				Average of Graduation and Efficiency	
	Tuition	State	Total	Rate	Rank	6-Year Graduation		Professors		Avg.	Rank
						Funds	Rank	Funds	Rank		
IOWA STATE UNIVERSITY	\$7,554	\$11,599	\$19,153	69	32	\$277.58	59	\$16.53	43	44.7	40
UNIVERSITY OF IOWA	\$9,372	\$10,381	\$19,753	69	32	\$286.28	68	\$16.15	37	45.7	41
WASHINGTON STATE UNIVERSITY	\$7,232	\$10,292	\$17,524	69	32	\$253.97	42	\$19.87	66	46.7	42
UNIVERSITY OF NORTH TEXAS	\$6,556	\$4,559	\$11,115	47	91	\$236.49	32	\$14.11	20	47.7	43
FLORIDA INTERNATIONAL UNIVERSITY	\$3,824	\$6,744	\$10,568	46	92	\$229.74	27	\$14.68	28	49.0	44
INDIANA UNIVERSITY OF PENNSYLVANIA -MAIN CAMPUS	\$6,118	\$4,695	\$10,813	54	75	\$200.24	9	\$19.45	63	49.0	44
RUTGERS UNIVERSITY-NEWARK	\$6,492	\$5,565	\$12,057	65	45	\$185.49	6	\$31.98	98	49.7	46
UNIVERSITY OF MISSISSIPPI -MAIN CAMPUS	\$7,036	\$5,712	\$12,748	60	56	\$212.47	18	\$22.17	75	49.7	46
UNIVERSITY OF NEBRASKA-LINCOLN	\$6,313	\$11,539	\$17,852	63	48	\$283.37	64	\$16.23	40	50.7	48
EAST CAROLINA UNIVERSITY	\$5,030	\$9,722	\$14,752	57	68	\$258.81	48	\$16.18	38	51.3	49
KANSAS STATE UNIVERSITY	\$7,223	\$8,777	\$16,000	63	48	\$253.97	41	\$19.90	67	52.0	50
UNIVERSITY OF MINNESOTA-TWIN CITIES	\$10,045	\$12,819	\$22,864	68	38	\$336.24	91	\$14.68	27	52.0	50
WESTERN MICHIGAN UNIVERSITY	\$8,422	\$5,133	\$13,555	54	75	\$251.02	38	\$16.80	46	53.0	52
UNIVERSITY OF SOUTH FLORIDA -MAIN CAMPUS	\$4,210	\$8,752	\$12,962	48	86	\$270.04	54	\$14.14	21	53.7	53
GEORGIA STATE UNIVERSITY	\$5,182	\$7,730	\$12,912	50	84	\$258.24	47	\$15.50	33	54.7	54
UNIVERSITY OF ARIZONA	\$7,790	\$10,740	\$18,530	58	64	\$319.48	82	\$13.61	19	55.0	55
WEST VIRGINIA UNIVERSITY	\$8,933	\$6,613	\$15,546	58	64	\$268.03	51	\$17.47	51	55.3	56
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$8,897	\$19,460	\$28,357	85	6	\$333.61	88	\$21.71	73	55.7	57
THE UNIVERSITY OF TENNESSEE	\$6,120	\$13,508	\$19,628	61	54	\$321.77	83	\$15.32	31	56.0	58
OREGON STATE UNIVERSITY	\$6,975	\$7,396	\$14,371	60	56	\$239.52	33	\$26.42	87	58.7	59
UNIVERSITY OF CINCINNATI-MAIN CAMPUS	\$9,660	\$7,282	\$16,942	55	72	\$308.04	79	\$14.59	25	58.7	59
AUBURN UNIVERSITY MAIN CAMPUS	\$10,258	\$10,285	\$20,543	67	40	\$306.61	78	\$18.49	59	59.0	61
UNIVERSITY OF COLORADO DENVER	\$8,478	\$1,030	\$9,508	43	100	\$221.12	22	\$18.43	57	59.7	62
UNIVERSITY OF WISCONSIN-MILWAUKEE	\$7,007	\$5,048	\$12,055	43	100	\$280.35	62	\$14.47	24	62.0	63
UNIVERSITY OF RHODE ISLAND	\$11,154	\$4,163	\$15,317	60	56	\$255.28	44	\$26.05	86	62.0	63
UNIVERSITY OF KANSAS	\$8,895	\$10,196	\$19,091	61	54	\$312.97	80	\$17.68	53	62.3	65
THE UNIVERSITY OF TEXAS AT DALLAS	\$8,345	\$6,526	\$14,871	63	48	\$236.05	30	\$38.73	110	62.7	66
OLD DOMINION UNIVERSITY	\$4,842	\$6,996	\$11,838	51	83	\$232.12	29	\$22.55	77	63.0	67
UNIVERSITY OF UTAH	\$6,625	\$10,435	\$17,060	58	64	\$294.14	72	\$18.87	60	65.3	68
SOUTH DAKOTA STATE UNIVERSITY	\$5,829	\$6,227	\$12,056	54	75	\$223.26	24	\$32.85	101	66.7	69
LOUISIANA STATE UNIVERSITY	\$5,991	\$13,352	\$19,343	59	62	\$327.85	84	\$18.39	56	67.3	70
UTAH STATE UNIVERSITY	\$4,248	\$10,623	\$14,871	55	72	\$270.38	55	\$24.34	84	70.3	71
UNIVERSITY AT BUFFALO	\$5,772	\$15,920	\$21,692	63	48	\$344.32	95	\$21.41	72	71.7	72
THE UNIVERSITY OF MONTANA	\$6,868	\$4,158	\$11,026	44	97	\$250.59	37	\$23.66	82	72.0	73
VIRGINIA COMMONWEALTH UNIVERSITY	\$7,709	\$7,996	\$15,705	50	84	\$314.10	81	\$17.49	52	72.3	74
UNIVERSITY OF KENTUCKY	\$8,457	\$13,651	\$22,108	60	56	\$368.47	99	\$19.09	62	72.3	74
UNIVERSITY OF VERMONT	\$18,692	\$3,579	\$22,271	73	27	\$305.08	77	\$47.69	114	72.7	76
UNIVERSITY OF ARKANSAS	\$5,966	\$11,659	\$17,625	59	62	\$298.73	74	\$24.24	83	73.0	77
UNIVERSITY OF CONNECTICUT	\$10,026	\$23,663	\$33,689	78	20	\$431.91	108	\$27.93	91	73.0	77
NORTHERN ILLINOIS UNIVERSITY	\$6,063	\$8,374	\$14,437	48	86	\$300.77	75	\$18.87	60	73.7	79
OKLAHOMA STATE UNIVERSITY -MAIN CAMPUS	\$8,575	\$11,503	\$20,078	60	56	\$334.63	90	\$22.79	79	75.0	80
UNIVERSITY OF HOUSTON	\$7,836	\$6,211	\$14,047	41	105	\$342.61	94	\$15.85	36	78.3	81

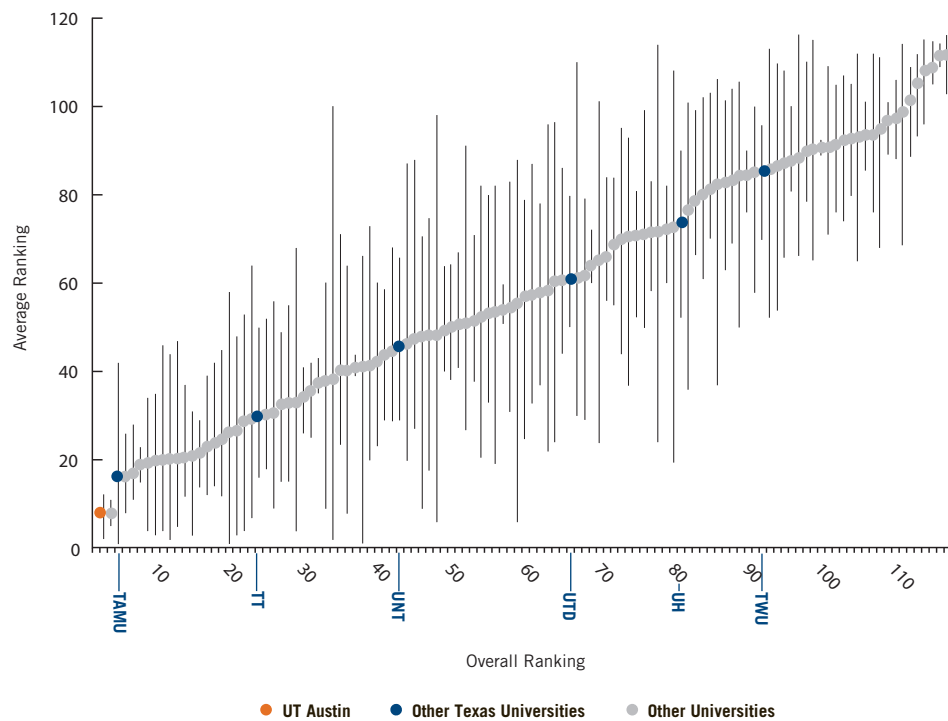
**TABLE 2: GRADUATION RATES AND OTHER MEASURES OF EFFICIENCY (CONTINUED)**

	Tuition and State Funds per Student FTE			6-Year Graduation		Efficiency in Dollars Per Student in Tuition and State Funds				Average of Graduation and Efficiency	
	Tuition	State	Total	Rate	Rank	6-Year Graduation		Professors		Avg.	Rank
						Funds	Rank	Funds	Rank		
UNIVERSITY OF NORTH DAKOTA	\$8,503	\$6,880	\$15,383	54	75	\$284.87	66	\$32.25	99	80.0	82
NORTH DAKOTA STATE UNIVERSITY -MAIN CAMPUS	\$6,779	\$7,774	\$14,553	52	81	\$279.87	61	\$32.85	102	81.3	83
UNIVERSITY OF ILLINOIS AT CHICAGO	\$10,644	\$10,776	\$21,420	54	75	\$396.67	103	\$20.68	70	82.7	84
STONY BROOK UNIVERSITY	\$5,200	\$21,618	\$26,818	67	40	\$400.27	104	\$34.60	106	83.3	85
OAKLAND UNIVERSITY	\$8,034	\$3,530	\$11,564	41	105	\$282.05	63	\$25.58	85	84.3	86
MONTANA STATE UNIVERSITY	\$8,170	\$6,748	\$14,918	52	81	\$286.89	69	\$33.23	104	84.7	87
UNIVERSITY OF NEVADA-LAS VEGAS	\$5,645	\$8,265	\$13,910	39	110	\$356.67	97	\$17.09	50	85.7	88
UNIVERSITY OF TOLEDO	\$9,284	\$5,625	\$14,909	45	94	\$331.31	87	\$22.32	76	85.7	88
WICHITA STATE UNIVERSITY	\$5,017	\$6,517	\$11,534	42	104	\$274.62	58	\$31.77	97	86.3	90
EAST TENNESSEE STATE UNIVERSITY	\$4,854	\$7,541	\$12,395	43	100	\$288.26	70	\$27.67	90	86.7	91
TEXAS WOMAN'S UNIVERSITY	\$5,218	\$6,626	\$11,844	44	97	\$269.18	52	\$46.45	113	87.3	92
UNIVERSITY OF MEMPHIS	\$5,887	\$7,011	\$12,898	37	114	\$348.60	96	\$17.69	54	88.0	93
UNIVERSITY OF IDAHO	\$5,791	\$12,694	\$18,485	56	70	\$330.09	86	\$37.19	108	88.0	93
UNIVERSITY OF LOUISVILLE	\$8,670	\$9,392	\$18,062	48	86	\$376.29	100	\$23.52	81	89.0	95
UNIVERSITY OF ALABAMA IN HUNTSVILLE	\$6,155	\$7,562	\$13,717	48	86	\$285.77	67	\$53.79	116	89.7	96
UNIVERSITY OF SOUTH DAKOTA	\$5,850	\$6,911	\$12,761	45	94	\$283.58	65	\$50.24	115	91.3	97
UNIVERSITY OF HAWAII AT MANOA	\$7,756	\$15,676	\$23,432	48	86	\$488.17	110	\$22.62	78	91.3	97
WRIGHT STATE UNIVERSITY-MAIN CAMPUS	\$7,955	\$7,067	\$15,022	45	94	\$333.82	89	\$28.78	92	91.7	99
FLORIDA ATLANTIC UNIVERSITY	\$4,500	\$8,297	\$12,797	38	113	\$336.76	92	\$21.05	71	92.0	100
TENNESSEE STATE UNIVERSITY	\$5,859	\$6,193	\$12,052	40	109	\$301.30	76	\$30.82	94	93.0	101
UNIVERSITY OF NEW MEXICO -MAIN CAMPUS	\$4,143	\$13,941	\$18,084	43	100	\$420.56	107	\$21.97	74	93.7	102
SOUTHERN ILLINOIS UNIVERSITY CARBONDALE	\$8,242	\$9,605	\$17,847	44	97	\$405.61	105	\$23.42	80	94.0	103
UNIVERSITY OF AKRON MAIN CAMPUS	\$8,083	\$4,921	\$13,004	33	116	\$394.06	102	\$19.61	65	94.3	104
UNIVERSITY OF MISSOURI-ST LOUIS	\$7,474	\$6,021	\$13,495	41	105	\$329.15	85	\$31.17	95	95.0	105
UNIVERSITY OF MASSACHUSETTS-LOWELL	\$9,351	\$8,676	\$18,027	53	80	\$340.13	93	\$45.75	112	95.0	105
UNIVERSITY OF WYOMING	\$3,680	\$19,082	\$22,762	55	72	\$413.86	106	\$39.25	111	96.3	107
UNIVERSITY OF MISSOURI-KANSAS CITY	\$9,117	\$7,015	\$16,132	41	105	\$393.46	101	\$27.44	89	98.3	108
FLORIDA AGRICULTURAL AND MECHANICAL UNIVERSITY	\$3,986	\$10,091	\$14,077	39	110	\$360.95	98	\$27.12	88	98.7	109
WAYNE STATE UNIVERSITY	\$8,684	\$9,528	\$18,212	32	117	\$569.13	114	\$20.63	69	100.0	110
UNIVERSITY OF NEVADA-RENO	\$5,752	\$14,835	\$20,587	46	92	\$447.54	109	\$36.57	107	102.7	111
INDIANA UNIVERSITY-PURDUE UNIVERSITY-INDIANAPOLIS	\$8,759	\$8,856	\$17,615	34	115	\$518.09	112	\$29.26	93	106.7	112
CLEVELAND STATE UNIVERSITY	\$8,937	\$6,129	\$15,066	29	119	\$519.52	113	\$31.59	96	109.3	113
UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$5,985	\$18,985	\$24,970	39	110	\$640.26	115	\$33.43	105	110.0	114
IDAHO STATE UNIVERSITY	\$5,664	\$9,246	\$14,910	30	118	\$497.00	111	\$38.33	109	112.7	115
UNIVERSITY OF ARKANSAS AT LITTLE ROCK	\$6,041	\$7,780	\$13,821	14	120	\$987.21	116	\$33.22	103	113.0	116
PENNSYLVANIA STATE UNIVERSITY -MAIN CAMPUS	--	--	--	85	6	--	--	--	--	--	--
TEMPLE UNIVERSITY	--	--	--	67	40	--	--	--	--	--	--
UNIVERSITY OF DELAWARE	--	--	--	75	24	--	--	--	--	--	--
UNIVERSITY OF PITTSBURGH -PITTSBURGH CAMPUS	--	--	--	78	20	--	--	--	--	--	--

The table shows that, compared to all of the other universities in the sample, The University of Texas at Austin is tied for second place on the average of these three dimensions. UT Austin’s worst ranking appears for graduation rate: out of all schools, UT Austin is 13th in graduation rate with a six-year graduation rate of 81 percent. Given a student plus state total of \$16,253 per student FTE, UT Austin is able to produce one percentage point in graduation rate for every \$201 brought in; that amount puts the university as the 10th most efficient in the sample. UT Austin performs even better on faculty efficiency: for the cost paid by students and the state for each of its professors, UT Austin is the second-most efficient in the sample. All of these measures taken together mean that when considering money paid by students, their families, and the people of Texas against faculty and graduation rates, UT Austin is very efficient — among the most efficient universities in the country.

Looking down the list, other Texas schools are not far behind. For example, Texas A&M is tied for 4th in the overall ranking, and Texas Tech is 24th. Including UT Austin, all three of these schools perform very well on the faculty side, but their rankings could easily be improved if graduation rates for each were to substantially increase. Such an increase would be good not just for the rankings but also for students, their families, and the state. Thus, an effort to achieve better outcomes in graduation rates and efficiency is something that all Texas schools should pursue.

**FIGURE 2: AVERAGE RANKING OF GRADUATION RATES AND FACULTY EFFICIENCY**



The findings in Figure 2 present the same data as Table 2 but in a different form. This figure shows the overall efficiency ranking on the x-axis and the average efficiency in the y-axis. The bars around each point represent the highest and lowest of any of the four rankings for that university. Long bars mean a large spread between the highest and lowest rankings while short ones mean very little variability. This provides a visual measure of how consistent a university’s rank is across

the three measures. As noted in Table 2, UT Austin is the second most efficient university in the sample and appears in the bottom left corner with Texas A&M slightly to the right. Other Texas schools are marked in the chart to facilitate comparisons between Texas and out-of-state schools.

The next two figures show further details on the relationship between per-student funding and the other measures. Figure 3 is a scatter plot that shows the state and tuition funding per student FTE on the x-axis and the graduation rate on the y-axis. Universities above the trend line in the figure can be said to be more efficient than average in terms of graduation rates versus funding; those below the bar are less efficient than average. The ideal place for a university to be on this chart is in the upper-left corner: high graduation rates coupled with low levels of funding. As shown in the figure, both UT Austin and Texas A&M are well above the trend line and are two of the universities closest to the upper-left portion of the chart.

**FIGURE 3: GRADUATION RATES BY STUDENT FUNDING**

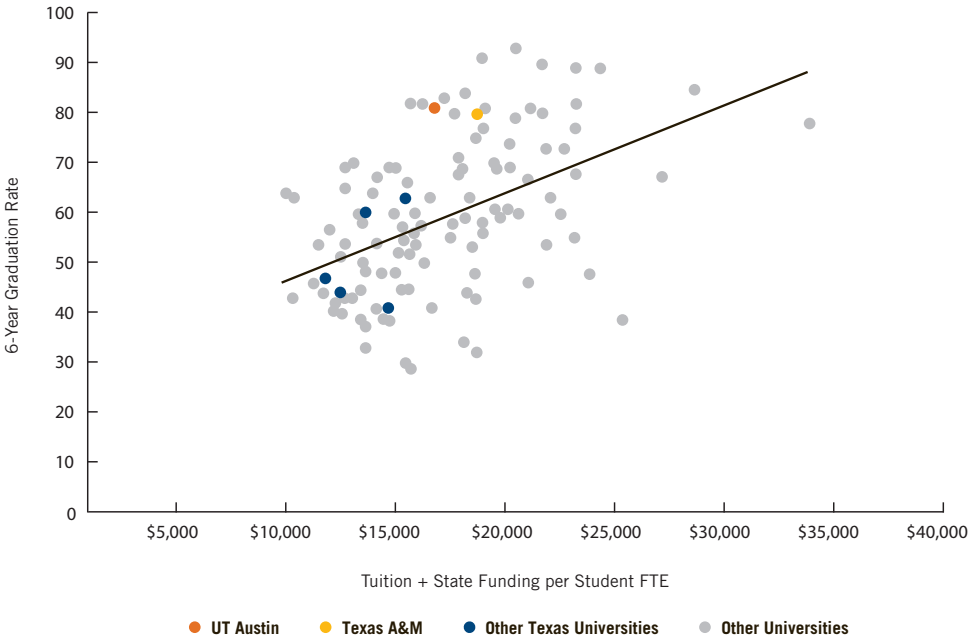
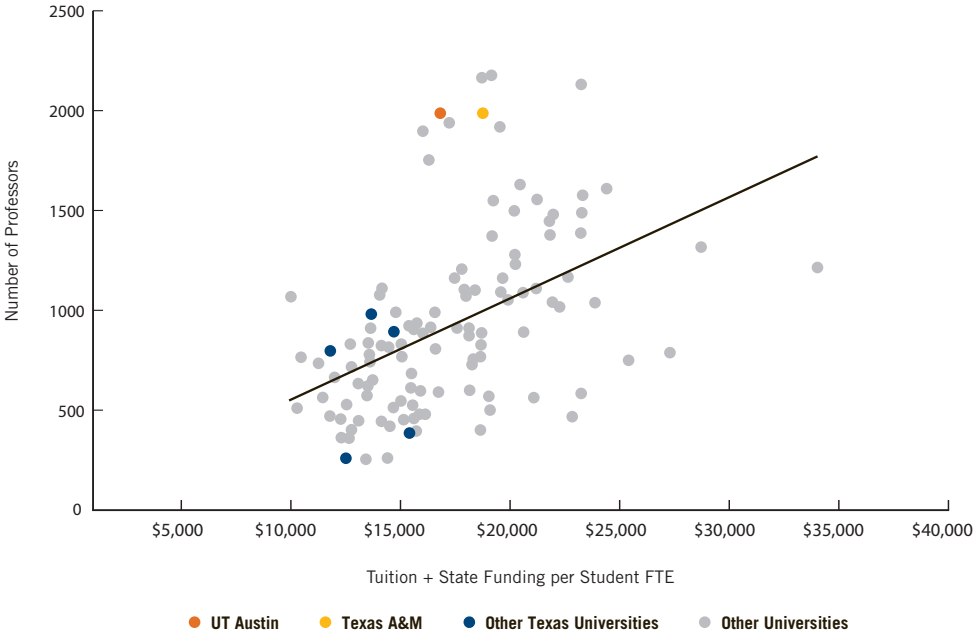


Figure 4 is similar to the previous figure, but the y-axis is the number of professors. Universities above the trend line are more efficient than average; those below are less efficient; and the upper-left corner reflects the greatest efficiency. Again, UT Austin and Texas A&M stand out in their efficiency by being among the universities closest to the ideal location on the chart.

**FIGURE 4: NUMBER OF PROFESSORS BY STUDENT FUNDING**



In sum, according to very straightforward measures of efficiency generated from IPEDS data, UT Austin is among the most efficient public research universities in the country in terms of graduation rates and faculty. For the money it receives in tuition and state funding, there are only a handful of universities that are able to produce such a high graduation rate. And for faculty, there is only one other public research university in the country that employs as many professors for the revenue it receives. Based on these data, there is no question that compared to other public research universities, UT Austin uses the money paid by students, their families, and Texas taxpayers very efficiently.

## UNDERSTANDING GRADUATION RATES

Public research universities across the U.S. enroll hundreds of thousands of new students every year. Indeed, according to the figures in Table 1, more than 400,000 students enroll in the 120 universities in the sample on a yearly basis. At the same time, 156,000 (or 36 percent) of those students will leave their respective universities without a degree. According to Table 2, the average amount of student and state funding per student FTE for all universities in the sample is \$16,620. Multiplying that one year of cost by the estimated number of students reveals that at least \$2 billion is lost when students leave with no degree, and that figure assumes students who attrit took only one year of coursework. It is likely some of the students transfer elsewhere and receive degrees, but it is impossible to know how many do so.

Like all public universities, UT Austin and other Texas schools must do more to stem the tide of students who leave with no degree. But, to find answers to this problem, leaders in Texas and elsewhere must look at data at a broad level to see what seems to support excellence in this outcome. The next portion of the report examines the factors that are associated with higher graduation rates.

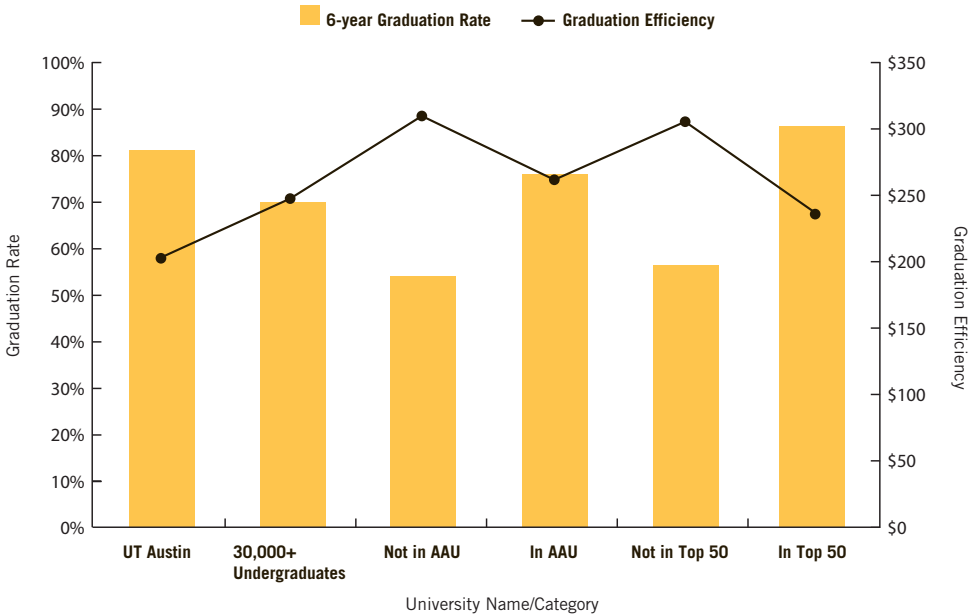
Table 3 provides different university groupings, within the larger group of 120 public research universities, against which to compare data on UT Austin: those with undergraduate enrollments of more than 30,000; tier one Association of American Universities (AAU) member and non-member universities, and those in and not in the top 50 rankings of U.S. News and World Report. Regardless of the comparison group, UT Austin performs very well. For example the six-year graduation rate of 81 percent at UT Austin is the highest of all the groups except the few universities in the top 50. Compared to all groups, UT Austin’s graduation efficiency, professor efficiency, and total faculty efficiency are all the best. Part of this efficiency owes to the fact that UT Austin’s per student FTE state revenue figure, \$7,353, is lowest among all the groups.

**TABLE 3: GRADUATION RATES, RETENTION RATES AND OTHER UNIVERSITY CHARACTERISTICS AT UT-AUSTIN AND IN OTHER UNIVERSITY GROUPINGS**

	UT Austin	30,000+ Undergraduates	AAU Universities		Top 50 Universities	
			Not in AAU	In AAU	Not in Top 50	In Top 50
NUMBER IN GROUP	1	16	88	31	106	13
6-YEAR GRADUATION RATE	81%	70%	54%	77%	56%	86%
RETENTION RATE	92%	89%	79%	90%	80%	95%
GRADUATION EFFICIENCY	\$201	\$247	\$310	\$262	\$305	\$238
TOTAL PROFESSORS	1,980	1,564	751	1,427	868	1,396
TOTAL OF ALL FACULTY	2,370	1,797	874	1,611	1,002	1,579
UNDERGRADUATE STUDENT-FACULTY RATIO	19.3	25.6	24.3	19.4	23.7	17.8
FULL PROFESSORS % OF ALL FACULTY	41%	36%	31%	40%	32%	46%
PROFESSORS % OF ALL FACULTY	84%	87%	86%	89%	86%	89%
PROFESSOR EFFICIENCY	\$8	\$12	\$27	\$15	\$25	\$17
ALL FACULTY EFFICIENCY	\$7	\$10	\$23	\$13	\$22	\$15
IN-STATE PRICE PER YEAR	\$22,874	\$21,019	\$19,842	\$22,258	\$20,053	\$23,880
TUITION REVENUE PER STUDENT FTE	\$8,900	\$8,050	\$7,252	\$9,642	\$7,553	\$10,418
STATE REVENUE PER STUDENT FTE	\$7,353	\$8,752	\$8,781	\$10,109	\$9,011	\$9,998
UNDERGRADUATE ENROLLMENT	38,168	35,887	17,783	26,980	19,613	24,651
STUDENT % RECEIVING GRANTS	52%	69%	69%	59%	69%	47%
SIZE OF STUDENT GRANTS	\$7,807	\$7,010	\$6,219	\$7,770	\$6,201	\$10,064
SAT MEDIAN SCORE	1165	1128	1045	1163	1058	1217
SAT DISPERSION SCORE	130	113	126	118	125	113

Consider two of the more important values in this table: graduation rates and graduation efficiency. Figure 5 shows these values for UT Austin and the averages for other groupings of universities. The bars in the figure represent the overall graduation rate, the line represents efficiency. Ideally universities would want their respective bars to be high and lines to be low. Universities perform best when the height of the line is lower than the height of the bar, and the bigger that distance the more successful they are overall in terms of graduation rates. UT Austin shows this highest separation between the bar and line, whereas other schools, such as those not in the AAU or not in the top 50, show points on the line that are well above the heights of their bars. The only set of schools that performs similarly to UT Austin in the figure are those in the top 50. But as the line and findings in Table 3 show, UT Austin is considerably better at turning student and state revenue into degree completion.

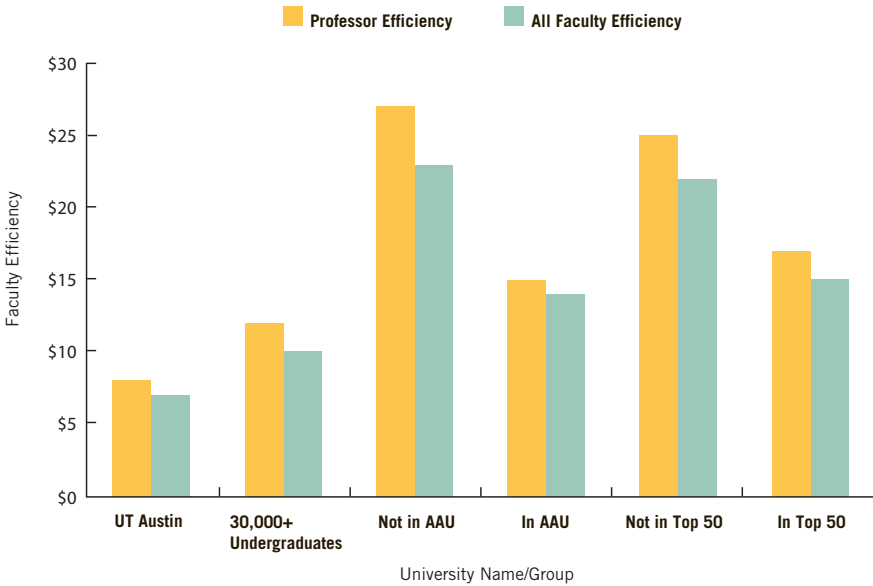
**FIGURE 5: GRADUATION RATES AND EFFICIENCY AT UT AUSTIN AND IN OTHER UNIVERSITY GROUPINGS**



Graduation efficiency is defined as: 6-year graduation rate / (tuition per student FTE + state funds per student FTE)

The next figure, Figure 6, charts faculty efficiency levels for UT Austin against other school groupings. As the chart shows, UT Austin is an outlier: its faculty efficiency is better than any of the other groupings, and in some cases, by a wide margin. The least efficient schools, according to these measures, are schools not in the AAU and not in the top 50. The message from this chart and the one prior to it is clear: UT Austin is already one of the most efficient public research universities in the U.S. To get even better, it must remain efficient in its use of funds but also find ways to increase its graduation rate, the one outcome where it lags other top 50 schools. We turn now to examining what factors predict higher graduation rates.

**FIGURE 6: FACULTY EFFICIENCY AT UT AUSTIN AND IN OTHER UNIVERSITY GROUPINGS**



Faculty efficiency is defined as:  $\text{Number of Faculty} / (\text{tuition per student FTE} + \text{state funds per FTE})$   
 Professor efficiency is limited to tenured and tenure track professors.  
 Faculty efficiency includes all faculty.

## PREDICTORS OF GRADUATION RATES

The statistical technique of ordinary least squares multiple regression allows us to simultaneously test several possible predictors of graduation rates. Table 4 presents results from this analysis. The first model shows the effects of undergraduate enrollment and number of professors on graduation rates. As undergraduate enrollments increase, graduation rates tend to decrease. As the number of professors on a campus increases, so too does the graduation rate. These two findings imply something that the Commission of 125 and many others already know to be true: the key to producing a high-quality education is the student-faculty ratio. Universities that have a high number of faculty tend to produce more degrees.

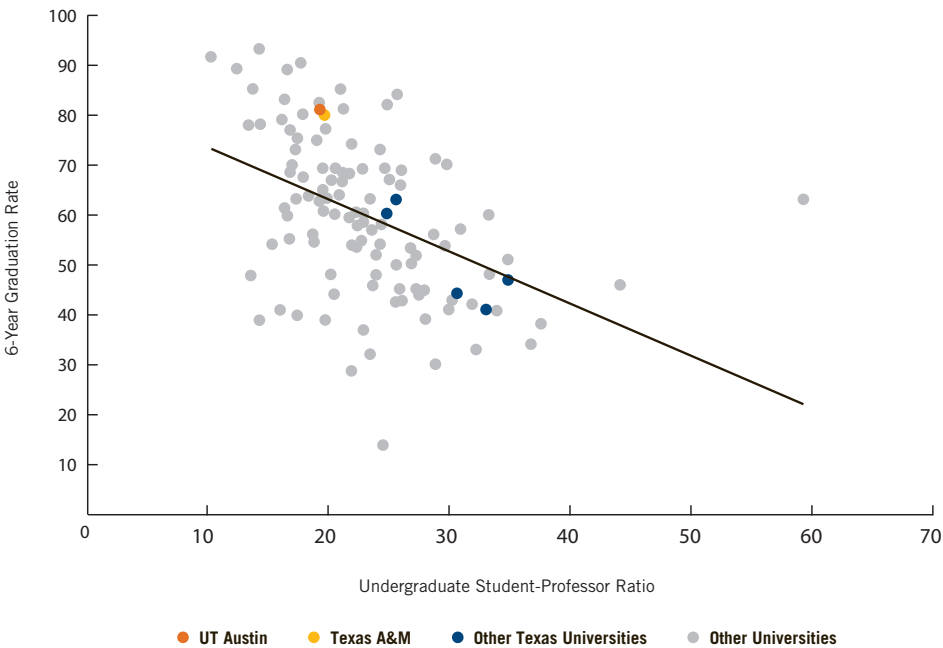
TABLE 4: ESTIMATED NET EFFECTS OF FACULTY CHARACTERISTICS AND OTHER FACTORS ON 6-YEAR GRADUATION RATES<sup>1</sup> (N=120)

	Model 1		Model 2		Model 3	
	B	B	B	B	B	B
UNIVERSITY CHARACTERISTICS						
UNDERGRADUATE ENROLLMENT	-.56	-.31**	-.18	-.10	-.03	-.02
NUMBER OF PROFESSORS	3.20	.92***	1.83	.53***	.94	.27**
UNDERGRADUATES IN-STATE %	--	--	-25.82	-.25***	-18.19	-.18***
FULL PROFESSORS % OF ALL FACULTY	--	--	60.25	.31***	31.80	.16**
TOTAL COST FOR IN-STATE STUDENTS	--	--	7.35	.15*	1.78	.04
STUDENT CHARACTERISTICS						
PERCENTAGE OF STUDENTS WITH GRANTS	--	--	--	--	.74	-.11*
AVERAGE SIZE OF GRANT	--	--	--	--	.07	.10
SAT MEDIAN SCORE	--	--	--	--	-.07	.39***
SAT 25TH - 75TH DIFFERENCE	--	--	--	--	-.03	-.13**
ADJUSTED R <sup>2</sup>	.48		.60		.74	
INTERCEPT	59.66		59.86		59.79	

<sup>1</sup>Ordinary least squares regression estimates. Unstandardized and standardized coefficients are shown.  
+  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

To give a better sense of the relationship between student-faculty ratio and graduation rates, the two are charted in a scatter plot in Figure 7. In this plot, the x-axis is the student-professor ratio, the y-axis is the graduation rate. Ideally universities would want to find themselves above the trend line, in the upper-left quadrant, which reflects high graduation rates coupled with low student-professor ratios. UT Austin and Texas A&M are well above the trend line, but with a student-professor ratio of about 19, they are near the middle of the distribution in the figure. Note that very few universities have higher student-to-faculty ratios and produce similar or higher graduation rates (i.e. values to the upper right of UT Austin and Texas A&M in the figure). UT Austin and A&M should look at those schools (e.g., Penn State) to find best practices in an effort to improve their own rates.

**FIGURE 7: 6-YEAR GRADUATION RATES BY UNDERGRADUATE STUDENT-PROFESSOR RATIO**



Continuing on Table 4, the second model introduces adjustments for percentage of undergraduates coming from in-state, percentage of professors that are full rank, and total cost for in-state students. The results indicate that as the percentage of students from in-state increases, the graduation rate tends to decline. In contrast, higher percentages of full professors and higher in-state costs both predict higher graduation rates.

In the final model of the table, several variables related specifically to students are included: percentage of students with financial aid grants, size of the average grant among students who have them, median score on the SAT, and the difference between the 75th and 25th percentiles on the SAT. The latter measure of SAT dispersion can be seen as an indicator of the variability of students on campus; that is, wider dispersions indicate more variability in college readiness among entering students or more lax admissions practices. Not all universities reported SAT scores in the IPEDS, but for those universities that reported ACT scores, the scores were converted to comparable SAT levels using online translation tables.

The results for this model are unsurprising. For example, as median SAT scores increase, so too do graduation rates. Indeed, of all of the variables in the model, median SAT score is the biggest predictor of graduation rates. The SAT dispersion measure also significantly affects graduation rates, but in the opposite direction: as the dispersion or variability among students increases, graduation rates tend to decline. Similarly, schools reporting higher numbers of students with financial aid grants tend to report lower graduation rates, though the size of the grants have no effect in this model.

Looking at this final model we can see the effects of all variables after adjustment. The  $R^2$  for the model is .74, meaning that about 75 percent of the variance in graduation rates in public research universities are explained by the 9 variables in this model. Thus, this fairly parsimonious model does an excellent job of explaining differences in graduation rates within this sample of universities. More importantly, it provides clues for the strategies that UT Austin should pursue to improve its graduation rates. The rest of this summary uses this final model to consider the implications of the findings for each of the variables.

**Undergraduate enrollments.** The effects of the size of undergraduate enrollment remain negative, but are no longer significant in the final model. The effects of undergraduate enrollment actually drop to insignificance in Model 2; consequently, we explored the relationships among these three variables. After adjusting for the number of professors on campus, percentage of in-state students is positively associated with number of undergraduate students with a correlation coefficient of .51 ( $p < .0001$ ), but percentage of full professors is negatively associated at -.33 ( $p < .0001$ ). In other words, as the number of undergraduates increases at a university, so too does the percentage of students who are in-state; but universities with these characteristics tend to have a lower percentage of faculty who are full professors. In short, higher undergraduate enrollments go hand in hand with more in-state students and a smaller percentage of full professors, suggesting why higher enrollments are associated with lower graduation rates across the country.

**Number of professors and percentage of full professors.** In the final model, the number of professors on a campus was positively associated with graduation rates as was the percentage of professors who are at the full rank. The effect of professors is the second largest in the model (behind median SAT score) with a standardized effect size of .27. The percentage of full professors also shows a strong effect of .16. In sum, this model shows that two very strong predictors of student success in terms of graduation are the number and quality of professors on campus. Universities that want to increase graduation rates, and thereby become more efficient with student and state funds, must find ways to bring in more professors. Moreover, because being a full professor is an indicator, in general, of faculty quality, the data also suggest that having the best faculty is an important predictor of graduation rates. These findings suggest that overall, universities are the most efficient in terms of graduation rates when they employ the best faculty; attempts to move away from professors of the highest caliber are likely to hurt student success.

**Percentage of in-state undergraduates.** Because all of the schools in the sample are state-supported universities, they have a natural tendency to enroll in-state students. Often the bar for entry is lower for these students than for out-of-state ones, meaning that college

readiness is probably at lower levels for them than for out-of-state students. This speculation is supported by the correlation of  $-.49$  ( $p < .0001$ ) between median SAT and percentage of in-state students. This correlation is what leads to the drop in effect size of in-state students between Models 2 and 3. But, the significant findings remain in Model 3, meaning that other factors may be explaining this effect. One possibility is that the lower bar for entry also suggests a lower bar for exit. Typically, in-state students have less financial investment in their educations because part of the cost is being picked up by the state. Thus, when an in-state student leaves a public university with no degree, their sunk costs are only part of the total financial costs lost upon their departure. For out-of-state students, the calculus is very different: all of their costs are personally paid, so their exit with no degree represents a much larger financial loss. When one factors in the costs of living, these differences grow even larger. Some in-state students will already live near their university and will incur no additional living costs while attending. However, almost by definition, for out-of-state students the costs of attending university will include all of the extra living costs as well. In short, the financial disincentive for leaving a university without a degree, based on sunk costs, is much lower for in-state students than for out-of-state ones. This, combined with average lower college readiness, leads to the unsurprising finding that a higher proportion of in-state students is associated with lower graduation rates.

**SAT Scores.** The findings for SAT scores are fairly straightforward: as SAT scores, or general college readiness, increase, so too do graduation rates. Put another way, universities that attract students who are better prepared for college tend to produce higher graduation rates. Thus, universities wishing to boost graduation rates must focus on increasing the quality of incoming students. SAT dispersion also is associated with graduation rates, but in the negative direction. In all likelihood, as dispersion increases, universities must spend more of their limited resources to serve a broader student constituency. In contrast, universities with less dispersion can focus their limited resources more effectively and, in so doing, better serve their student populations. The implication of this finding is that any move to increase enrollments that results in higher levels of dispersion or lower median SAT scores will also likely lead to lower graduation rates. Thus, higher levels of enrollment must go hand in hand with increased attention paid to college readiness if high graduation rates are to be maintained.

## PREDICTORS OF RETENTION RATES

The next table, Table 5, is similar to Table 4 but instead examines the predictors of student retention rates. These retention rates reflect the percentage of students, among those who did not graduate, who re-enrolled in their institution. Although retention rates are not as important as graduation rates in terms of overall university success, they nonetheless are an essential component of getting students to the degree. Given the explicit linkages between retention and graduation rates, it is not surprising that the findings in this model are similar to the graduation rates model. The number of professors and percentage of full professors are both positive and significant predictors of retention rates. SAT median score is again a significant predictor and exhibits the largest effect on retention rates. SAT dispersion remains a negative predictor of this student success outcome. As was the case for graduation rates, much of the variance (74 percent) in retention rates is explained by the few variables in this model.

TABLE 5: ESTIMATED NET EFFECTS OF FACULTY CHARACTERISTICS AND OTHER FACTORS ON RETENTION RATES<sup>1</sup> (N=120)

	Model 1		Model 2		Model 3	
	B	B	B	B	B	B
UNIVERSITY CHARACTERISTICS						
UNDERGRADUATE ENROLLMENT	-.13	-.13	.03	.03	.08	.09
NUMBER OF PROFESSORS	1.48	.82***	.90	.50***	.46	.25*
UNDERGRADUATES IN-STATE %	--	--	-7.57	-.14*	-3.73	-.07
FULL PROFESSORS % OF ALL FACULTY	--	--	29.58	.29***	12.88	.13*
TOTAL COST FOR IN-STATE STUDENTS	--	--	2.69	.10	-.13	-.01
STUDENT CHARACTERISTICS						
PERCENTAGE OF STUDENTS WITH GRANTS	--	--	--	--	-.02	-.04
AVERAGE SIZE OF GRANT	--	--	--	--	.47	.12+
SAT MEDIAN SCORE	--	--	--	--	.04	.41***
SAT 25TH - 75TH DIFFERENCE	--	--	--	--	-.05	-.19***
ADJUSTED R <sup>2</sup>	.51		.58		.74	
INTERCEPT	81.93		82.03		82.00	

<sup>1</sup>Ordinary least squares regression estimates. Unstandardized and standardized coefficients are shown.  
+  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

## PREDICTORS OF SAT SCORES

The previous two sets of models showed the overwhelming importance of median SAT scores on graduation rates, retention rates, and likely student success in general. Given the magnitude of this effect, it is important for universities to understand what drives SAT scores if they wish to increase overall graduation rates. The next portion of the analyses uses the IPEDS data to learn more about the factors that are associated with higher median SAT scores. To do so, we switched SAT scores from being a predictor to being what is predicted. That is, we ask: what features of a university are associated with higher SAT scores? This analysis suggests the type of factors that draw higher performing students to a university.

**TABLE 6: ESTIMATED NET EFFECTS OF FACULTY CHARACTERISTICS AND OTHER FACTORS ON MEDIAN SAT SCORES<sup>1</sup> (N=120)**

	Model 1		Model 2	
	B	B	B	B
UNDERGRADUATE ENROLLMENT	-3.06	-.30*	-1.41	-.14
NUMBER OF PROFESSORS	.16	.82***	.09	.48***
UNDERGRADUATES IN-STATE %	--	--	-80.74	-.14*
FULL PROFESSORS % OF ALL FACULTY	--	--	295.45	.27**
TOTAL COST FOR IN-STATE STUDENTS	--	--	41.63	.15+
ADJUSTED R <sup>2</sup>	.35		.49	
INTERCEPT	928.81		1024.99	

<sup>1</sup>Ordinary least squares regression estimates. Unstandardized and standardized coefficients are shown.  
 +  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

According to the findings shown in Table 6, the largest predictor of SAT scores is the number of professors on a campus. That is, universities with larger numbers of tenured and tenure-track faculty tend to also have higher median SAT scores. The effect of professors on SAT scores is by far the largest in the model with a standardized score of .48. Another important predictor of SAT scores is the proportion of faculty who are full professors. Again, as this proportion increases, the median SAT score of the student body also increases. In contrast, universities that have more in-state students tend to also have lower SAT scores. This finding is not surprising given that for in-state students, the bar for entry is often lower than for out-of-state ones. Overall the model explains about 49 percent of the variance in median SAT scores.

SAT scores are one of the most important predictors of overall graduation rates, thus universities wishing to increase the latter should take steps to also improve the quality of incoming students. For state universities, however, options are limited for recruiting the best students when they must compete with elite private universities often offering extensive recruitment packages. But, the models indicate that the best students tend to be drawn to universities that rely heavily on professors and especially the professors at the highest ranks. Efforts made to increase the size of the faculty and improve their reputation and effectiveness will also yield higher incoming SAT scores and boost graduation rates.

## EFFICIENCY IN EXTERNAL RANKINGS

Another method of examining the overall efficiency of UT Austin is to examine its rankings by external agencies versus the money it generates in tuition dollars and state funds. The primary external ranking relied on by many universities is the U.S. News and World Report ranking, in which UT Austin is 45th. Another ranking is produced by Academic Ranking of World Universities (ARWU) and places UT Austin 38th in the world and 29th in the U.S. These rankings show that UT Austin is both one of the best overall universities in the U.S. and in the world. In the state of Texas, only Rice University can compete in terms of overall rankings.

But how efficient are UT Austin and other public research universities in achieving their rankings? Universities can spend great sums of money to lower student-faculty ratios, boost research productivity, and raise other factors that would lead to better overall rankings. Yet, the best universities will find ways to raise these factors without spending as much money as their competitors.

One way of analyzing this efficiency in external rankings is to compare our measure of student and state support (i.e., tuition + state funding per student FTE) to rankings from U.S. News and World Report and ARWU. Unfortunately, creating an efficiency score using rankings and student/state support is not as straightforward as the efficiency scores for graduation rates and faculty shown above. To create an efficiency score using these rankings, we must first create a distance score from the bottom of the ranking scale. That is, for each university we created a percentage that reflects how far an individual ranking is from the worst ranking on the scale. Using this distance measure, universities with better rankings have higher percentage distances, whereas those with worse rankings have smaller percentage distances. We can then take the revenues in tuition and state funding per student FTE and divide it by this percentage distance. The resulting ratio is an indication of the revenue obtained to raise the university's ranking by one percentage point. Universities with lower values on this ratio can be said to be more efficient in generating their rankings.

The findings from this external ranking efficiency analysis are shown in Table 7. The columns of University Quality show the U.S. News and World Report university ranking and the ARWU national ranking. Many of the schools used in earlier parts of the analysis were not ranked by either or both of these organizations and so are not included in the table. The efficiency columns show the amount of student and state revenue generated per ranking percentage point. Again, lower dollar amounts in these columns mean overall greater efficiency in using state and tuition dollars to generate rankings. The final column totals and averages across the two sets of rankings.

**TABLE 7: EFFICIENCY OF RANKINGS BY EXTERNAL ORGANIZATIONS**

*(U.S. News and World Report and the Academic Ranking of World Universities)*

	University Quality		Tuition Plus State Funding	Efficiency				Total Rankings	
	U.S. News	ARWU		U.S. News		ARWU		Average	Overall
				Funds	Rank	Funds	Rank		
UNIVERSITY OF CALIFORNIA-IRVINE	41	32	\$15,126	\$193	1	\$191	3	2	1
UNIVERSITY OF CALIFORNIA-SAN DIEGO	35	12	\$17,611	\$216	3	\$191	4	3.5	2
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN	47	19	\$16,693	\$221	5	\$190	2	3.5	2
<b>THE UNIVERSITY OF TEXAS AT AUSTIN</b>	<b>45</b>	<b>29</b>	<b>\$16,253</b>	<b>\$213</b>	<b>2</b>	<b>\$200</b>	<b>6</b>	<b>4</b>	<b>4</b>
UNIVERSITY OF COLORADO AT BOULDER	86	25	\$13,548	\$246	9	\$162	1	5	5
UNIVERSITY OF FLORIDA	53	42	\$15,671	\$217	4	\$215	9	6.5	6
UNIVERSITY OF WASHINGTON -SEATTLE CAMPUS	41	14	\$18,664	\$238	7	\$205	7	7	7
UNIVERSITY OF CALIFORNIA-BERKELEY	22	2	\$21,256	\$240	8	\$215	8	8	8
COLORADO STATE UNIVERSITY	124	80	\$9,283	\$265	12	\$193	5	8.5	9
OHIO STATE UNIVERSITY-MAIN CAMPUS	56	40	\$18,136	\$257	11	\$245	13	12	10
UNIVERSITY OF WISCONSIN-MADISON	45	15	\$20,700	\$271	17	\$229	11	14	11
UNIVERSITY OF MICHIGAN-ANN ARBOR	29	18	\$22,803	\$269	14	\$258	15	14.5	12
UNIVERSITY OF CALIFORNIA-DAVIS	39	32	\$21,309	\$268	13	\$269	20	16.5	13
UNIVERSITY OF VIRGINIA-MAIN CAMPUS	25	52	\$20,054	\$231	6	\$303	28	17	14
PURDUE UNIVERSITY-MAIN CAMPUS	56	43	\$19,050	\$270	16	\$264	19	17.5	15
UNIVERSITY OF CALIFORNIA-LOS ANGELES	25	11	\$23,986	\$276	19	\$258	16	17.5	15
THE UNIVERSITY OF ALABAMA	79	80	\$15,013	\$256	10	\$312	29	19.5	17
<b>TEXAS A&amp;M UNIVERSITY</b>	<b>63</b>	<b>51</b>	<b>\$18,224</b>	<b>\$272</b>	<b>18</b>	<b>\$272</b>	<b>22</b>	<b>20</b>	<b>18</b>
MICHIGAN STATE UNIVERSITY	79	49	\$18,560	\$317	22	\$272	21	21.5	19
UNIVERSITY OF MARYLAND-COLLEGE PARK	56	28	\$22,829	\$323	24	\$279	24	24	20
UNIVERSITY OF MINNESOTA-TWIN CITIES	64	20	\$22,864	\$344	30	\$263	18	24	20
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY	69	80	\$17,188	\$269	15	\$358	34	24.5	22
INDIANA UNIVERSITY-BLOOMINGTON	75	50	\$19,712	\$325	25	\$292	26	25.5	23
UNIVERSITY OF GEORGIA	56	62	\$19,954	\$282	20	\$334	32	26	24
UNIVERSITY OF IOWA	72	62	\$19,753	\$317	23	\$331	31	27	25
RUTGERS UNIVERSITY-NEW BRUNSWICK	64	37	\$22,816	\$343	29	\$300	27	28	26
OREGON STATE UNIVERSITY	139	62	\$14,371	\$528	46	\$241	12	29	27
UNIVERSITY OF ARIZONA	120	45	\$18,530	\$498	41	\$262	17	29	27
UNIVERSITY OF OREGON	111	101	\$12,480	\$298	21	\$363	37	29	27
UNIVERSITY OF UTAH	129	47	\$17,060	\$526	44	\$246	14	29	27
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	30	30	\$28,357	\$336	26	\$352	33	29.5	31
ARIZONA STATE UNIVERSITY	143	46	\$15,335	\$610	53	\$219	10	31.5	32
FLORIDA STATE UNIVERSITY	104	80	\$17,403	\$382	34	\$362	36	35	33
GEORGE MASON UNIVERSITY	143	80	\$13,346	\$531	47	\$278	23	35	33
UNIVERSITY OF SOUTH CAROLINA-COLUMBIA	111	101	\$14,110	\$337	27	\$410	44	35.5	35
IOWA STATE UNIVERSITY	94	80	\$19,153	\$377	32	\$399	41	36.5	36
UNIVERSITY OF NEBRASKA-LINCOLN	104	80	\$17,852	\$392	35	\$372	38	36.5	36
UNIVERSITY OF MISSOURI-COLUMBIA	94	101	\$17,304	\$341	28	\$503	47	37.5	38
NORTH CAROLINA STATE UNIVERSITY AT RALEIGH	111	62	\$21,424	\$512	42	\$359	35	38.5	39
THE UNIVERSITY OF TENNESSEE	104	80	\$19,628	\$431	39	\$408	43	41	40
WASHINGTON STATE UNIVERSITY	111	101	\$17,524	\$418	37	\$509	48	42.5	41
UNIVERSITY OF KANSAS	104	101	\$19,091	\$419	38	\$555	50	44	42

**TABLE 7: EFFICIENCY OF RANKINGS BY EXTERNAL ORGANIZATIONS (CONTINUED)**

	University Quality		Tuition Plus State Funding	Efficiency				Total Rankings	
				U.S. News		ARWU			
	U.S. News	ARWU		Funds	Rank	Funds	Rank	Average	Overall
LOUISIANA STATE UNIVERSITY	124	80	\$19,343	\$551	48	\$403	42	45	43
UNIVERSITY OF CENTRAL FLORIDA	179	101	\$9,660	\$1,538	65	\$281	25	45	43
UNIVERSITY OF OKLAHOMA NORMAN CAMPUS	111	125	\$15,952	\$381	33	\$847	59	46	45
VIRGINIA COMMONWEALTH UNIVERSITY	167	80	\$15,705	\$1,250	62	\$327	30	46	45
UNIVERSITY OF VERMONT	94	101	\$22,271	\$439	40	\$647	54	47	47
AUBURN UNIVERSITY MAIN CAMPUS	85	146	\$20,543	\$370	31	\$3,955	66	48.5	48
OHIO UNIVERSITY-MAIN CAMPUS	124	146	\$14,372	\$410	36	\$2,767	63	49.5	49
STONY BROOK UNIVERSITY	99	80	\$26,818	\$557	49	\$558	51	50	50
UNIVERSITY OF CONNECTICUT	69	80	\$33,689	\$527	45	\$701	56	50.5	51
UNIVERSITY OF ILLINOIS AT CHICAGO	143	80	\$21,420	\$852	57	\$446	45	51	52
KANSAS STATE UNIVERSITY	132	125	\$16,000	\$518	43	\$850	60	51.5	53
UNIVERSITY AT BUFFALO	120	101	\$21,692	\$584	51	\$630	52	51.5	53
UNIVERSITY OF CINCINNATI-MAIN CAMPUS	156	101	\$16,942	\$925	58	\$492	46	52	55
UNIVERSITY OF HAWAII AT MANOA	159	62	\$23,432	\$1,399	64	\$392	40	52	55
UNIVERSITY OF SOUTH FLORIDA -MAIN CAMPUS	183	101	\$12,962	\$3,095	66	\$377	39	52.5	57
UNIVERSITY OF KENTUCKY	129	101	\$22,108	\$681	54	\$642	53	53.5	58
THE UNIVERSITY OF TEXAS AT DALLAS	143	125	\$14,871	\$592	52	\$790	57	54.5	59
UNIVERSITY OF ALABAMA AT BIRMINGHAM	151	80	\$24,970	\$1,192	60	\$520	49	54.5	59
TEXAS TECH UNIVERSITY	159	125	\$13,009	\$776	55	\$691	55	55	61
UNIVERSITY OF ARKANSAS	132	125	\$17,625	\$571	50	\$936	61	55.5	62
CUNY GRADUATE SCHOOL AND UNIVERSITY CENTER	61	101	\$56,050	\$824	56	\$1,629	62	59	63
UNIVERSITY OF RHODE ISLAND	167	125	\$15,317	\$1,219	61	\$813	58	59.5	64
UNIVERSITY OF WYOMING	153	146	\$22,762	\$1,144	59	\$4,382	67	63	65
UTAH STATE UNIVERSITY	170	146	\$14,871	\$1,353	63	\$2,863	64	63.5	66
MONTANA STATE UNIVERSITY	183	146	\$14,918	\$3,562	67	\$2,872	65	66	67

Given the findings in the earlier efficiency analyses, the findings here for UT Austin should not be surprising. Among the 70 universities ranked on this list, UT Austin is the fourth in overall efficiency. UC Irvine is the most efficient among public research universities in generating its rankings based on the dollars it generates in student and state funds. In earlier analyses Texas A&M had been closely aligned with UT Austin in efficiency, but in this analysis it drops to number 18 on the list. Many other highly ranked universities (e.g., University of California-Berkeley) score high in efficiency, but their rankings are somewhat worse than UT Austin’s owing to their greater costs. In contrast, schools that bring in large numbers of students, while seeming efficient based on those matriculation levels, are fairly mediocre in terms of their efficiency on this measure largely because of their U.S. News and World Report rankings.

## Conclusion

This report was compiled in an effort to understand UT Austin's funding, productivity, and efficiency within the population of public research universities in the U.S. Using data from IPEDS and external rankings organizations, the results were very consistent: UT Austin is reliably one of the most efficient public research universities in the U.S. Indeed, taking together all of the measures of efficiency here, it is likely that UT Austin is the single most efficient public research university in the country. This is a finding that should make the university, its alumni, and the state it serves proud of its accomplishments. So too should the state be proud of its other flagship, Texas A&M, which similarly shows very high levels of efficiency.

Over the past few years many commentators have argued that UT Austin and Texas A&M should look to other universities around the country for guidance on efficiency. It is no doubt true that both universities could become more efficient. For example, UT Austin's graduation rate of 81 percent could and should go higher, though among all universities in this sample, the highest was 93 percent at the University of Virginia. A reasonable graduation rate goal would likely be 90 to 91 percent and certainly could be achievable with the proper reforms. Many of these reforms could be planned and implemented by looking at universities like the University of Florida and several in the University of California system schools. Students in those schools enter with levels of college readiness similar to students at UT Austin but graduate at higher rates.

However, reforming the university by bringing in more students or students with lower levels of college readiness would no doubt drive down the graduation rate and make the university less efficient. The best faculty also produce higher graduation rates, so efforts to replace faculty with lower cost lecturers and adjuncts would also likely lead to lower graduation rates and less efficiency. It seems paradoxical that higher cost faculty would lead to higher levels of efficiency, but given the value that those faculty bring to universities through their teaching, research, and grant-generating activities, it is not surprising that, in the end, the highest quality faculty are also the best value.

Ultimately, the university must find ways to maintain its current level of success in the face of declining levels of state funding. The means to achieve success are no doubt available, but it will take some creativity on the part of university faculty, administrators, and students, all working together, to find them. It will also mean looking outwards to the best universities in the country, not in an effort to emulate them entirely, but to find the elements of their strategies that make them efficient and incorporate them into our own environment.

But those universities should also look to UT Austin as a model of an efficient university and should try to learn from us the methods that would make their own campuses more efficient. In the end, with the great universities across the country collaborating in an effort to identify the practices that both bolster their excellence and make them more efficient, the country as a whole will benefit for generations to come.

**FOR MORE INFORMATION**

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