



Higher Education Pays:

The Initial Earnings of Graduates of Texas Public Colleges and Universities

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Executive Summary

Texas, with more than 25 million residents, is home to more than 8% of the U.S. population. Texas is also fast growing: Between 2000 and 2010, its growth rate of 20.6% was more than twice that of the nation. Texas has a slightly larger concentration of students approaching traditional college age than the nation as a whole: About 7.5% of its population is between the ages of 15 and 19, higher than the 7.1% national average. This percentage translates into an existing pool of around 2 million young students who are or soon will be reaching traditional college age. In turn, high demand is likely to continue for admission to colleges and universities throughout the state.

As students make their decisions about where to invest their time and money in pursuit of postsecondary degrees, the Texas Higher Education Coordinating Board (THECB) is working with College Measures to make publicly available the first-year earnings of recent graduates from two- and four-year public institutions across the state who are working in Texas one year after obtaining their degree or certificate.¹

The results suggest that the degree a student earns matters, but that there are important variations in returns by program and by institution. This report documents some of the differences in first-year earnings ranging from certificate programs through master's programs.

Among the findings are:

- Technical-oriented associate's degree programs in the state of Texas are helping many students successfully enter the labor market by equipping them with skills that are in demand. On average, a year after graduation, students with two-year technical degrees have first-year median earnings of more than \$50,000, just over \$11,000 more than graduates of bachelor's degree programs across the state.
- Graduates with these two-year technical degrees earn, on average, about \$30,000 more than students who completed academically oriented two-year degrees and are now in the labor force.

¹ First-year earnings represent the wages earned by graduates for four consecutive quarters, starting six months after graduation. The period after graduation is calculated based on the month and year of graduation. If an individual has multiple jobs, all wages are included.

- The first-year earnings of graduates from different community colleges vary widely. For academic associate's degrees, the range is from around \$10,000 (Ranger College) to more than \$30,000 for graduates from the Trinity Campus of Tarrant County Junior College and from Central Texas Community College. For graduates with technical degrees the range is even greater, from approximately \$20,000 for graduates from Clarendon College to more than \$65,000 for graduates from seven community colleges: College of the Mainland Community College District, San Jacinto College South Campus, Tarrant County Junior College South Campus, Galveston College, El Centro College, Trinity Valley Community College, and Weatherford College.
- Certificates are one of the fastest-growing credentials offered by community colleges. The median first-year earnings of certificate holders often exceed those of graduates from academic and technical associate's programs. For example, the median first-year earnings of certificate holders in Business Administration/Management (\$36,987) exceed those with academic associate's degrees in the same field of study by \$11,000. In criminal justice/police sciences, the median first-year earnings of certificate holders (\$48,230) exceed academic associate's degree holders in criminal justice by more than \$24,000 and those with a technical associate's degree by about \$11,500. In contrast, across Texas, graduates with technical associate's degrees in Registered Nursing/Registered Nurse programs earn close to \$50,000 more than new certificate holders in the same field of study (\$68,059 vs. \$19,729).
- The median first-year wages of graduates from some certificate programs are above \$70,000, or \$30,000 more than the Texas-wide median bachelor's degree salary. Among these high-paying programs, health care is well represented, along with certificates in construction, such as Construction Engineering Technology/Technician (Brazosport College), Electrician (Lee College), and Pipefitting (Lee College). A number of certificate programs turning out technicians in engineering, industrial technology, and instrumentation (e.g., from Brazosport College, San Jacinto College Central Campus, and Frank Phillips College) are also on the list of high-paying programs.
- In contrast, in two dozen certificate programs, recipients earned less than \$13,000 in their first year. The largest concentration of these low-paying certificate programs is in cosmetology (10 programs) and four are in nursing/patient care assistants. One program in computer and information systems (from Alamo Community College–San Antonio College) and one in Network and System Administration/Administrator (Laredo Community College) are on the list.
- The median first-year earnings of bachelor's degree recipients statewide are around \$39,000. However, there is a wide range in earnings, depending upon field of study: First-year earnings in popular fields of study range from around \$25,000 (Biology) to around \$47,000 (Accounting).

- More generally, despite the interest in increasing the number of graduates in Science, Technology, Engineering, and Mathematics (STEM), biology graduates at both the bachelor's and the master's level earn below statewide medians. In contrast, there is a premium for bachelor's graduates in mathematics, who out earn biology graduates by more than \$20,000 statewide and all bachelor's graduates by more than \$9,000.
- Master's degree graduates earn more—often far more—than students with a bachelor's degree. The median first-year earnings of master's graduates in Texas are \$63,340, or \$24,000 higher than the median first-year earnings of bachelor's graduates.
- The smallest difference (less than \$5,000) between graduates with a bachelor's degree and those with a master's degree is in multi- or interdisciplinary studies. A person with a master's degree in engineering earns about \$14,000 more than a person with a bachelor's degree, but graduates with either degree are the highest paid in that field. Graduates with master's degrees in accounting earn almost \$20,000 more than recent bachelor's degree recipients in accounting. The largest difference is in business administration, with an increment of more than \$44,000 in first-year wages for master's graduates versus bachelor's graduates.

Together, these findings demonstrate why students, their families, and policy makers need to look more carefully at the data available at www.collegemeasures.org/esm/texas.

Introduction

With more than 25 million residents, Texas is the home to more than 8% of the U.S. population. Texas is also fast growing: Between 2000 and 2010, its growth rate of 20.6% was more than twice that of the nation. Texas has a slightly larger concentration of students approaching traditional college age than the nation as a whole. About 7.5% of its population is between the ages of 15 and 19, higher than the 7.1% national average. This percentage translates into an existing pool of approximately 2 million students who soon will reach traditional college age.² But, so far, Texas lags behind the nation in the percentage of its population with higher education: Only about 25.3% of Texans have a bachelor's education or above, and about 8.5% have advanced degrees. That is lower than the 27.9% and the 10.3% of the U.S. population with bachelor's and advanced degrees, respectively.³

Between the growing population of college-age students and the likely need of the state to catch up to the nation in terms of adults with postsecondary credentials, demand is likely to increase for admission to colleges and universities throughout the state. As students make their decisions about where to invest their time and money in pursuit of postsecondary degrees, the Texas Higher Education Coordinating Board is working with College Measures to make publicly available the first-year earnings of recent graduates from two-year and four-year institutions across the state who are working in Texas one year after obtaining their degrees or certificates.

The goal is to better inform prospective students, policy makers, and those who lead institutions of higher learning about the labor market success of graduates from different institutions and different programs across the state. We hope that these data will help students understand the likely earnings they will command with different degrees, and we hope that these data will also help them make better-informed decisions about how to fund their education—specifically about how much they might consider borrowing.

Exploring the Data on Labor Market Outcomes of Texas Graduates

Before examining indicators of the earnings of graduates from different programs across the state, we describe how these data were gathered as well as some limitations of the data that the reader should keep in mind when reading this report or accessing the more detailed data available at www.collegemeasures.org/esm/texas.

² Source: U.S. Census Bureau, "Demographic Profiles: Census 2010." See Table 16. State Resident Population by Age and Sex: 2010

³ <http://www.census.gov/compendia/statab/2012/tables/12s0233.pdf>.

With the support of the Lumina Foundation, College Measures is assisting state agencies such as the Texas Higher Education Coordinating Board in its efforts to make publicly accessible information about the earnings of graduates from higher education programs.⁴ Together College Measures, Texas, and our other partner states are making it possible to compare the earnings of graduates at the state, institutional, and program levels. The data in this report show that earnings can vary across degree programs and across institutions in the state.⁵ Because students study a specific subject in a specific college, the detailed information reported here matters—students graduating, for example, with a business or psychology degree from one campus may earn substantially more than students graduating with the same degree from another school. The information provides prospective students with data they can use in selecting an institution and a program of study and for estimating the potential earnings they may achieve and thinking more carefully about the debt they may incur.

It is important to note that graduates' earnings are not the only measure of how well a program or institution is performing. For example, individual students' success reflects a variety of factors independent of their educational experience, such as each student's background, the local job market, and so on.

Furthermore, students take many different paths after graduation. For some institutions and degree levels (for example, transfer-oriented academic associate's degrees or bachelor's degree programs focused on preparation for graduate study), wage outcomes soon after graduation may be less important than programs that usually represent the culmination of a student's formal postsecondary education. Nonetheless, students who go into the job market within a year of completing their education represent an important segment of every school's graduating class. In turn, the percentage of students covered by the wage data reported here varies across programs and institutions.⁶

⁴ Appendix B describes how earnings and other terms used in this report are computed. In this report, the term "earnings" refers to data reported by the state's unemployment insurance (UI) records system. The report also focuses on what is termed "first-year earnings." In this definition, students have six months (two quarters) to find work before starting their "first year." The terms "program" or "field of study" refer to the Classification of Instructional Program (CIP) developed and maintained by the U.S. Department of Education's National Center for Education Statistics (NCES). For more information about CIP codes, please visit the NCES Web site: <http://nces.ed.gov/ipeds/cipcode>. See the appendix for more information about this and other measures used.

⁵ Note that only *public* institutions are included in our database and this report. Across the nation, very few states have collected data from private institutions (either not-for-profit or for-profit), but most students attend public institutions. In Texas, public institutions enroll about 80% of all students in four-year and above colleges and universities and more than 90% of all students enrolled in two-year colleges.

⁶ Appendixes A1 and A2 lists the percentage of graduates found for bachelor's and associate's degrees at the college/university level.

In short, the data used in this report present a somewhat limited picture of the total contribution colleges make to the success of their graduates. However, from the perspective of any individual state, this limitation is less severe than it may seem at first glance. For example, by measuring the percentage of graduates who remain to work in the state after graduation, a state can see which campuses and programs are contributing the most toward improving the economic prospects and quality of life of state residents. And, despite data limitations, the earnings students achieve in the labor market represent valuable information, especially for students and their families as they consider their plans for higher education and how to finance those plans.

This report and its accompanying Web site (www.collegemeasures.org/esm/texas) focus on the variation in first-year earnings of graduates from public higher education institutions in the state of Texas who are working in Texas one year after graduation.⁷ In the past few months, College Measures has released Web-based reporting tools for other states (including Arkansas, Tennessee, Virginia, and Colorado). The patterns in those states can be compared to the results reported for Texas.

About the Data Sources

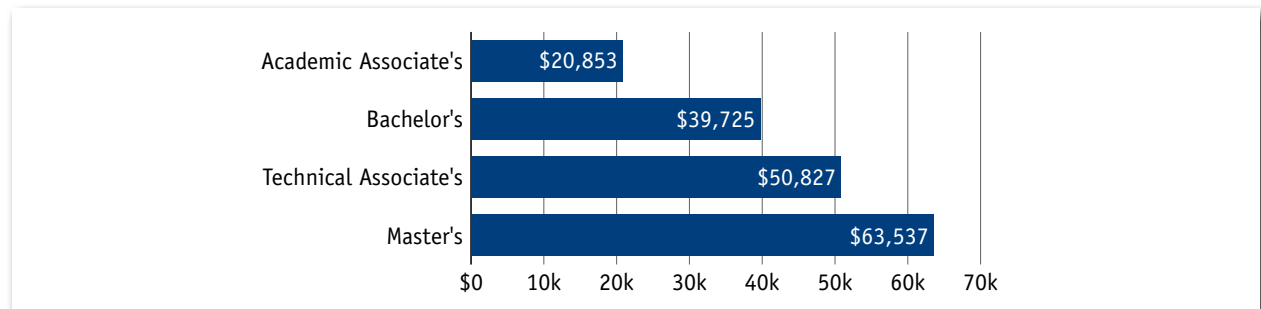
The program and graduation data used to inform this report were provided by colleges and universities to the Texas Higher Education Coordinating Board as part of the state's higher education accountability system. Records were limited to students who completed undergraduate or graduate programs at a public institution between 2006 and 2010. The employment data include Unemployment Insurance (UI) Wage Records for employment in Texas provided by the Texas Workforce Commission (TWC) and through national databases from the Office of Personnel Management, US Postal Service, and Department of Defense (military service records). They do not include nonfederal employees outside of Texas. First-year earnings are the sum of wages earned by graduates employed in Texas for quarters 3 through 6 for all levels of employment (full- and part-time). Many of the results presented here are for median income, the point at which half of the graduates earned above the amount and half earned below the amount. Median income is a useful measure because it is not highly sensitive to abnormally high or abnormally low values that would affect averages far more.

⁷ First-year earnings data are earnings from quarters three through six following graduation of students who graduated from a given program between 2006 and 2010. See Appendix B for more details on this and other measures. It is clearly necessary to more fully assess the labor market success of graduates. THECB is currently exploring the variation in graduates' earnings growth over a decade.

The Overall Relationship Between Postsecondary Degrees and Earnings

Figure 1 shows the median earnings of graduates in the first year after graduation according to the degree they have completed. Several findings and cautions are suggested by the data.

Figure 1: Median First-Year Earnings by Degree



First, note the high value of a two-year technical degree. With median first-year earnings averaging more than \$50,000, graduates with technical two-year degrees are earning about \$30,000 more than recent graduates with an academic associate's degree who are in the labor market.

There is a caution to keep in mind when considering this comparison: A number of students who graduated with associate's degrees are currently enrolled in four-year institutions; this includes about 22% of technical associate's degree graduates and around 42% of academic associate's graduates. Graduates who are pursuing further postsecondary studies are likely to have lower earnings than graduates who are not continuing their studies. Thus, the far higher rate of academic associate's graduates continuing their education likely depresses their median earnings more than for graduates with technical degrees. In turn, some part of the gap in median earnings between graduates from the two tracks traces to this enrollment pattern.

Keeping this in mind, we can still see the market value of the technical associate's degree, a fact that is reinforced by another simple pattern evident in Figure 1: The median first-year earnings of graduates with technical associate's degrees is *more than \$11,000 higher than bachelor's degree graduates*.

Setting aside the technical associate's degree, the data suggest the additional payoff for students with higher levels of more academically oriented education. There is a large increment for students who attain the next highest degree: Moving from an academic associate's degree to a bachelor's degree yields an increase of slightly less than \$19,000; the increment for a master's degree graduate compared to a bachelor's graduate is around \$24,000. Of course, many factors affect these median earnings: Master's degree graduates are older than bachelor's graduates and have more likely been in the job market longer; there is selection bias in that students

earning advanced degrees may be more talented than students who end their studies at earlier points in the academic pipeline, etc. Remember, our indicators are not causal—but they do contain important information about the value of different degrees in the labor market.

In the following sections, we look more closely at the data behind these overall patterns. We begin with bachelor's degrees and look at earnings at different levels. We next look at the earnings outcomes of students with master's degrees and then turn to the earnings of graduates with associate's degrees across the state. We also present some data on the earnings of students with certificates granted by the state's two-year colleges—perhaps the fastest-growing postsecondary credential in the nation.

Bachelor's Degrees

First-Year Earnings of Bachelor's Degree Recipients

The bachelor's degree is the most common degree granted in the United States. Historically, a bachelor's degree has been a good investment. According to data from the Bureau of Labor Statistics, bachelor's degree holders nationwide earn on average about 65% per year more than high school graduates, and bachelor's degree holders are far less likely to be unemployed.⁸

However, these national data mask differences in the labor market outcomes of bachelor's degree holders. As is evident in the following charts, there is a wide variation in returns to graduates from different institutions and with different majors. In short, graduates do not earn just a bachelor's degree; they earn a degree from a specific institution and in a specific field of study. And these choices have consequences as graduates enter the labor market. The data in this report and on the College Measures Web site enable the reader to dig deeper into this variation.

First, we examine the range of first-year earnings of graduates from four-year bachelor degree-granting institutions in Texas. We then look at the median earnings of graduates who have specialized in different fields of study. And finally we look at how graduates from the same programs across various colleges and universities fared in the labor market. This last level of detail is the most important, because, as noted, students earn degrees in specific fields awarded by specific colleges and universities.

⁸ http://www.bls.gov/emp/ep_chart_001.htm.

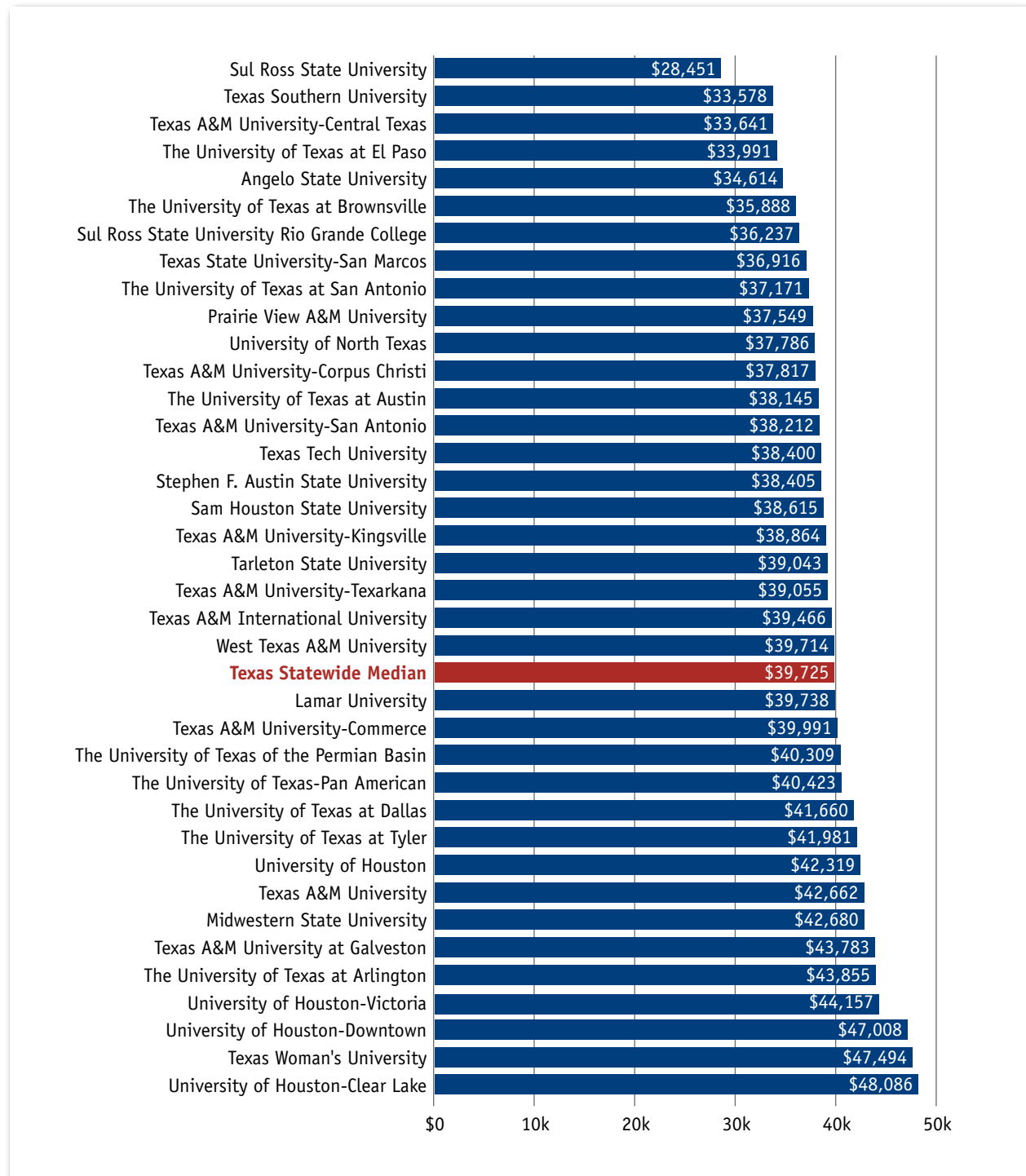
Variation by College/University

In Figure 2, we report the median first-year earnings of graduates by institution. Overall, the median earnings of bachelor's degree recipients in Texas one year after graduation is \$39,725. But there is considerable variation in the first-year earnings of graduates from the four-year colleges and universities across the state. When looking at the data in Figure 2, the reader should bear in mind that Texas is a large state, with many regional economies that vary widely in their demand for new workers and cost of living. These factors may affect the variation shown.

For example, graduates from Sul Ross State University have the lowest median earnings of any college/university in Texas. But Sul Ross is located in Alpine, Texas, classified by the National Center for Education Statistics as a remote town and is located in the foothills of the Davis Mountains in Far West Texas. In contrast, graduates from institutions with the highest earnings tend to have attended campuses located in larger metropolitan areas. Keeping that in mind, we find a wide range in the labor market outcomes of graduates from different campuses, with slightly under \$20,000 separating the median earnings of graduates of Sul Ross (at \$28,451) and graduates of the University of Houston–Clear Lake (\$48,086). Although the range from top to bottom is large, in fact the earnings of graduates from many campuses cluster tightly around the state median. For example, graduates of 17 campuses earn within \$2,000 of the statewide median, indicating that many paths into the labor market can benefit students.

We should also note that the median first-year earnings of graduates from the University of Texas–Austin, one of the state's premier institutions, are below the state median. This is likely the result of a large proportion of their students—likely many of their most successful ones—choosing to go on to graduate training or to seek employment outside the state. Indeed, the percentage of graduates from University of Texas–Austin that we find in the state's wage database (57%) is far below the state average (70%).

Figure 2: Median First-Year Earnings of Bachelor's Degree Graduates by Institution



Variation by Program of Study

In Figure 3, we display the median earnings of graduates from the 10 most popular programs across the state⁹. We can see that the graduates who majored in nursing, the top-paying program, earn almost three times the wages of biology majors, the bottom one. More generally, of the six programs where graduates earn more than the state median, four are business-related, and graduates with accounting degrees earn the most. Indeed, the median earnings of accounting graduates are more than \$8,000 higher than the statewide bachelor's graduate median. Close behind are graduates with finance degrees, out earning the statewide bachelor's graduate median by about \$7,500. Graduates with bachelor's degree in business and marketing also earn more than the statewide median.

The most interesting entry on the list of above-median earnings is the strong showing of graduates with bachelor's degrees in multi- or interdisciplinary studies. In other states for which College Measures has reported data, graduates with degrees in multidisciplinary studies lag statewide student wage performance¹⁰ and they lag business administration graduates by even more. Yet as shown in Figure 3, graduates from these programs are doing relatively well in the labor market. Much of this is likely driven by the popularity of this major for students who enter the teaching field. Indeed, many universities explicitly market their multidisciplinary (also called interdisciplinary) degree programs to students interested in becoming teachers.¹¹ Initial teaching positions in Texas offer salaries of \$35,000–\$45,000, thus raising the median wages of graduates from these programs.

More typical is the pattern of majors with below-median first-year earnings. These programs are concentrated in traditional liberal arts and sciences, with the earnings of graduates having popular majors, such as psychology and English literature, lagging other graduates, at least in the early years after graduation.

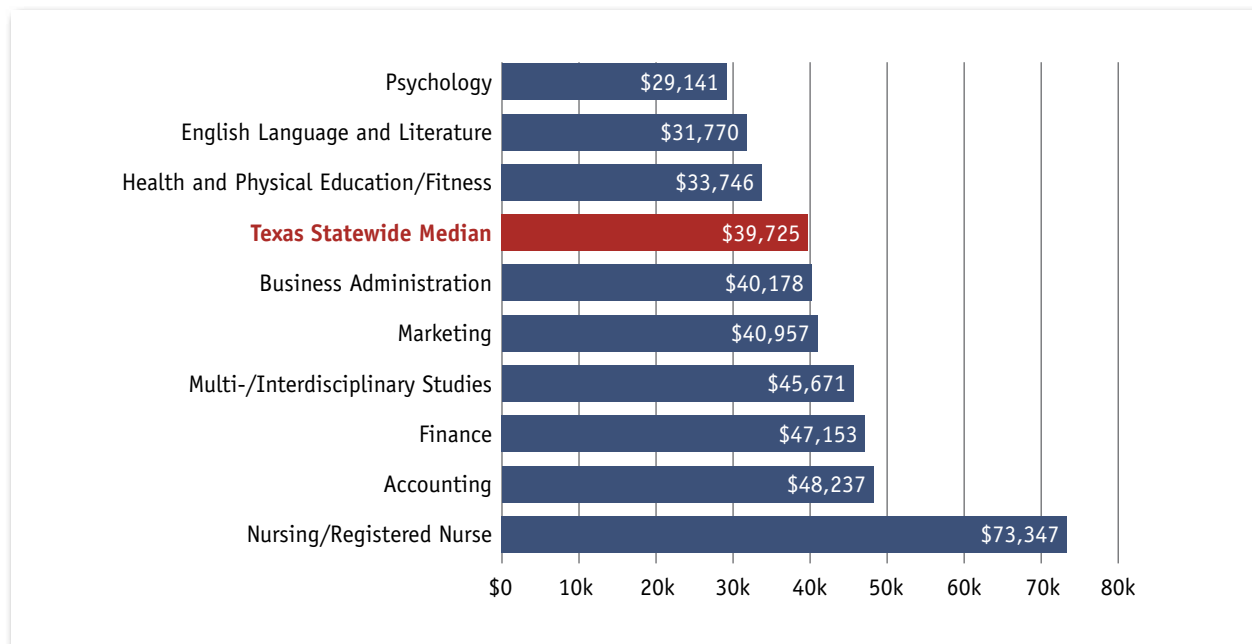
Finally, we should note that although there is a national interest in producing more graduates in science, technology, engineering, and mathematics (STEM) fields, bachelor's graduates in biology (the most widely chosen STEM subject) do not do well in the labor market (a pattern evident in other states as well). Indeed, of the 10 most popular undergraduate majors, biology graduates who enter the labor market lag behind all other graduates.

⁹ We are using “popular” as reflected by enrollments. Each of these majors had more than 9,000 graduates in our wage data.

¹⁰ For Tennessee, see: http://www.air.org/files/Earning_Power_TN_Graduates_Sept12.pdf. For Virginia see http://www.air.org/files/Virginia_EMS_Report1.pdf.

¹¹ See for example the description of the Department of Interdisciplinary Learning and Teaching at <http://utsa.edu/ucat/coehd/idscidept.html>.

Figure 3: Median First-Year Earnings of Graduates from Popular Bachelor's Degree Programs in Texas



Variation Across Programs in Different Institutions

The program-level data we report here and on the College Measures Web site give more detail than most previous work on how much graduates earn in the labor market. For example, the Bureau of Labor Statistics¹² and Georgetown University's Center on Education and the Workforce¹³ have identified the nation's highest-paying professions. For the last several years, PayScale¹⁴ has reported early and midcareer salaries of graduates from about 1,000 bachelor's degree-granting institutions. More recently, with the support of College Measures, PayScale expanded its reporting to include salary data from graduates from approximately 600 two-year institutions, available at collegemeasures.org. These studies provide information on the median earnings of a field of study or median wages after graduating from a specific college. With the dataset we are making public now, the variation in earnings for graduates from individual programs in individual colleges can be explored.

¹² <http://www.bls.gov/bls/blswage.htm>.

¹³ <http://cew.georgetown.edu/collegepayoff>.

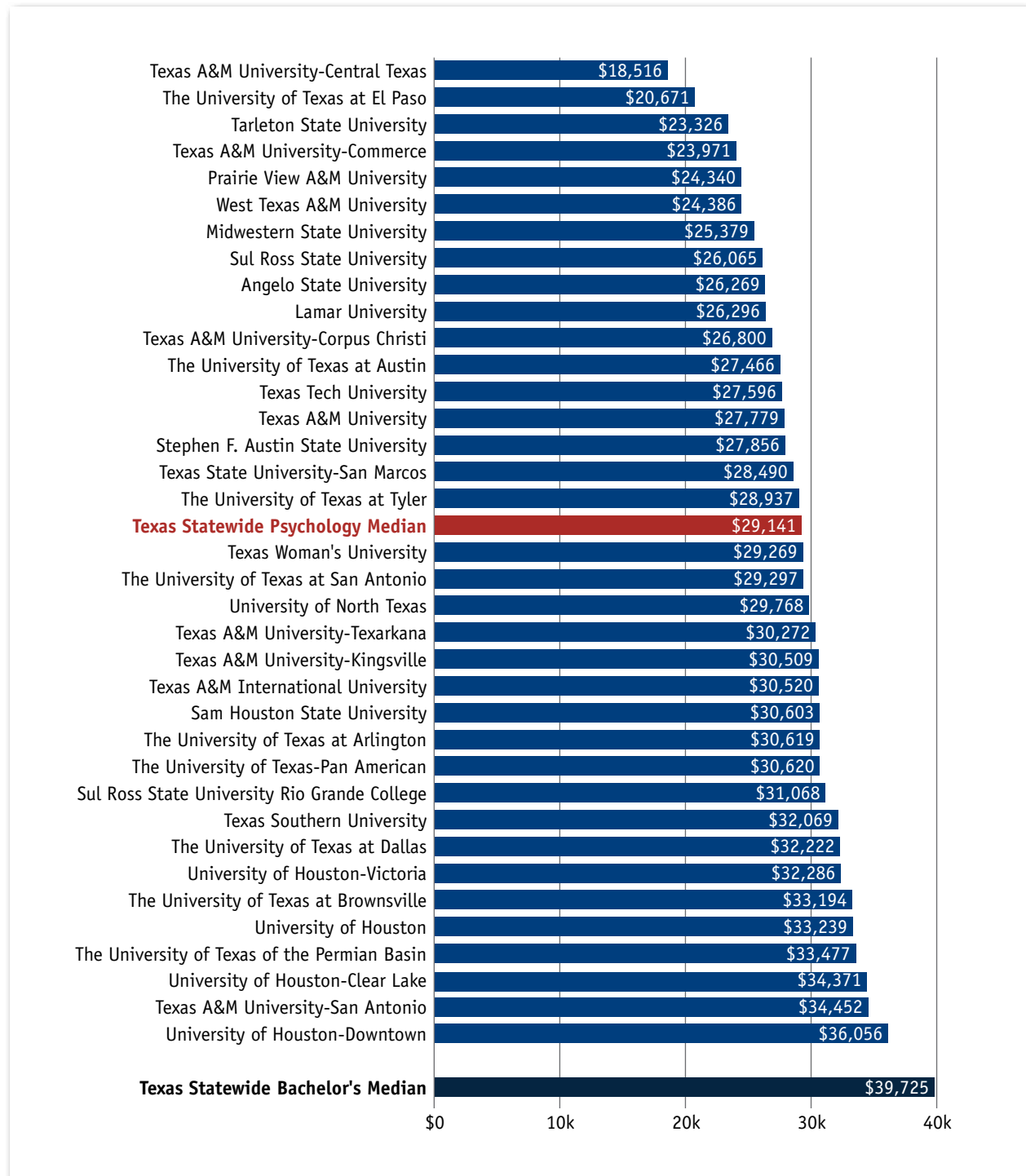
¹⁴ <http://www.payscale.com/college-education-value>.

Our data show the variation in first-year earnings across programs and institutions can be substantial. In the next few figures, we look at the earnings of graduates from some of the most popular undergraduate majors across the state. We report both the median wage for each field of study as well as the state median for all bachelor's degrees. This report allows a comparison of the relative performance of each program within a field of study as well as a sense of how well graduates from that program area are faring in the labor market relative to all bachelor's degree graduates in the state.

We look at the earnings outcomes of graduates in four major areas of study: psychology, business, and two important STEM fields—biology and mathematics.

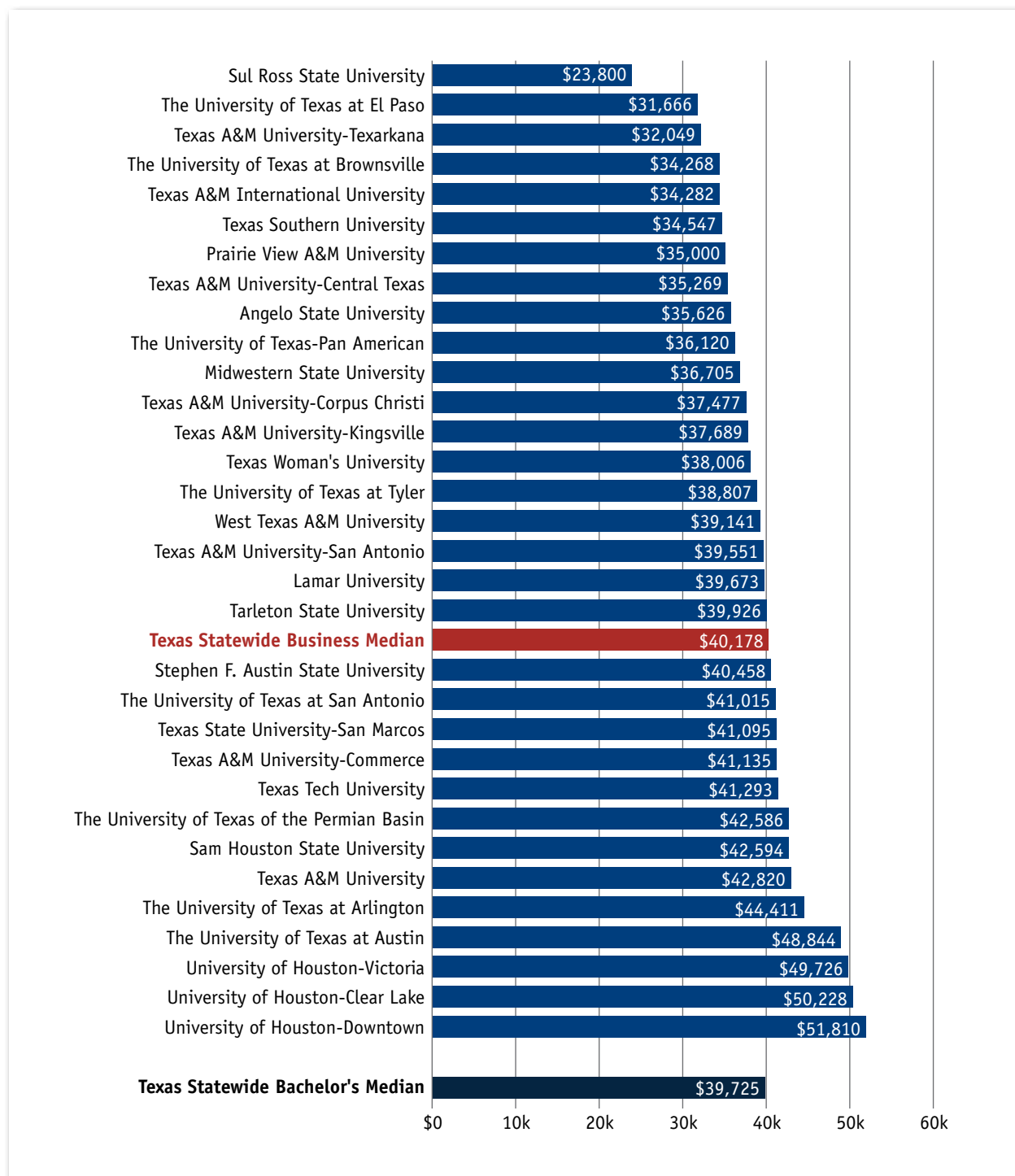
Psychology is one of the largest majors on most campuses. Figure 4 shows that the median earnings of graduates of psychology programs are less than the statewide median for all bachelor's degree recipients. Indeed, the median first-year wages of graduates from the University of Houston–Downtown, the program whose graduates have the highest first-year earnings, fall below the state median for all bachelor's graduates (\$36,056 versus \$39,725). Among graduates from psychology programs across the state, the range is substantial—from \$18,516 (Texas A&M University–Central Texas) to \$36,056 for psychology graduates from University of Houston–Downtown.

Figure 4: Median First-Year Earnings, Psychology Bachelor's Graduates



In contrast to the relatively low starting wages of psychology graduates, students who complete a degree in business administration tend to earn more. This is immediately evident, as the median first-year wages for graduates of business programs statewide is higher than the statewide median for all bachelor's degrees. However, as Figure 5 makes clear, there is substantial variation in the earnings of students from different business programs across the state. Graduates of Sul Ross University earn the lowest of graduates from all business programs, with a median of about \$24,000. But, as noted earlier, the reader should keep in mind the remote location of that school. Graduates from two University of Houston campuses—one at Clear Lake, the other its Downtown branch—have median first-year earnings that top \$50,000, and graduates from the University of Houston–Victoria and the University of Texas–Austin have median earnings just shy of the \$50,000 mark.

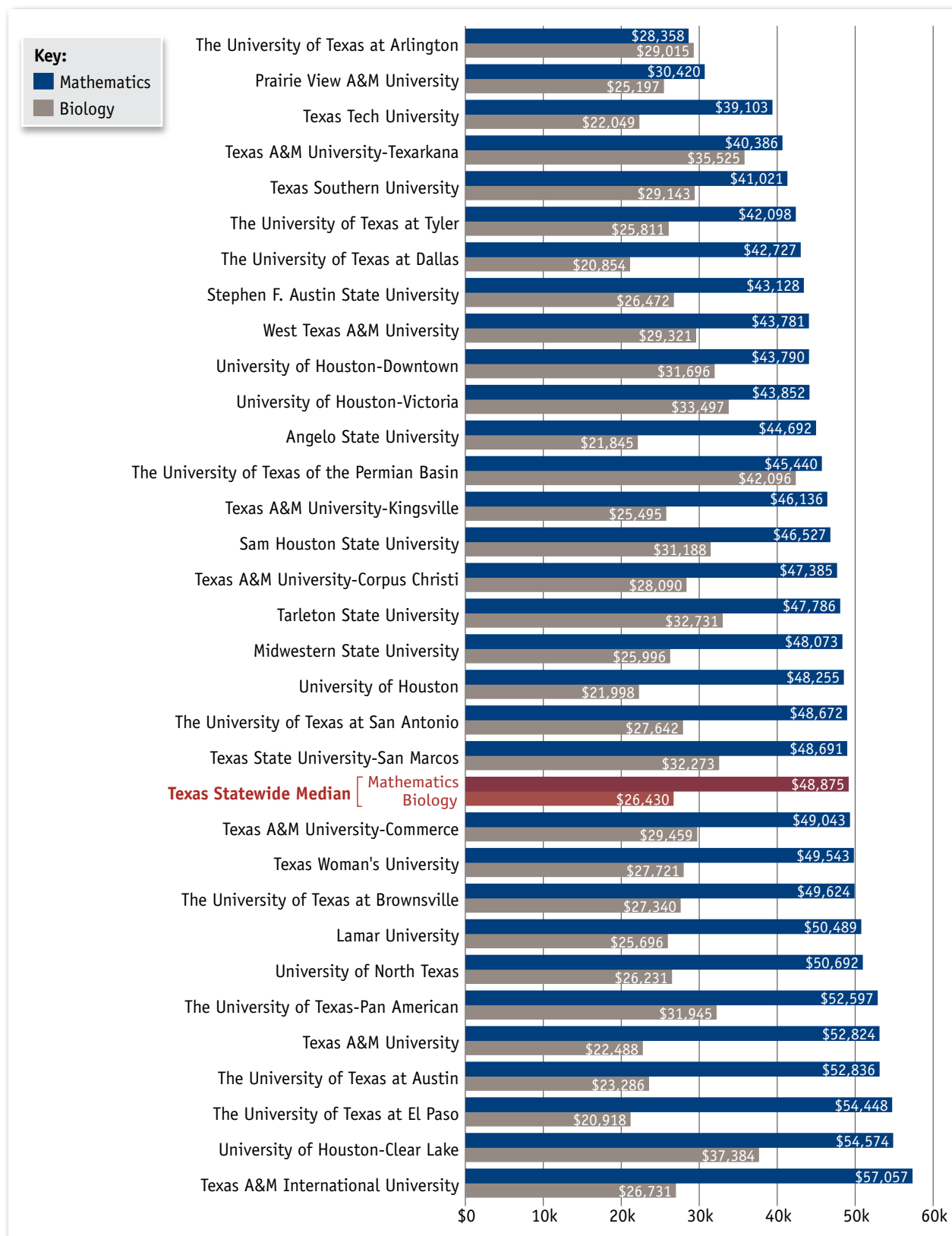
Figure 5: Median First-Year Earnings: Business Bachelor's Graduates



In Texas, as in most of the nation, there is an interest in increasing the number of graduates with degrees in the STEM fields. However, as Figure 6 shows, the earnings of students completing majors in the largest science field, biology, are far lower than for students earning a bachelor's degree in mathematics. This is evident by comparing the median first-year earnings for biology graduates (just less than \$29,500, only about 55% of the median wages of students with bachelor's degrees in mathematics). Recall that the median first-year earnings for all bachelor's graduates are \$39,725—about \$10,000 higher than the median for biology graduates but \$10,000 less than mathematics bachelor's graduates. At the institutional level, the differences in the earnings of graduates with these two different STEM majors ranges from very small (slightly over \$500 at The University of Texas at Arlington, where biology graduates actually have higher first-year earnings than mathematics graduates) to more than \$15,000 in 24 campuses and to more than \$25,000 at five schools: University of Houston, The University of Texas at El Paso, Texas A&M University, The University of Texas at Austin, and Texas A&M International in favor of mathematics graduates.

Clearly, the labor market is rewarding mathematics majors more than most graduates, and it is rewarding the “M” students in STEM far more than the most numerous “S” students who major in biology and enter the labor market after earning their bachelor's degree.

Figure 6: Median First-Year Earnings: Biology and Mathematics Bachelor's Graduates



Master's Degrees

The First-Year Earnings of Master's Degree Graduates

Public institutions in Texas granted more than 120,000 master's degrees during the years covered in this report, and more than 70% of these graduates are found in the wage database used in this report. Graduates with master's degrees are rewarded in the labor market, often earning a large premium over the bachelor's degree. Some of this is, no doubt, attributable to the fact that many master's students are older students already launched in careers and we would expect their wages to be higher.¹⁵ Thus, further work is needed to separate the added value of the skills learned when attaining a master's degree from the characteristics of the students who earn these degrees. But as our data make clear, master's degree graduates earn more—often far more—than students with a bachelor's degree. Consider for example that the median first-year earnings of master's graduates in Texas is \$63,537, or \$24,000 higher than the \$39,725 median first-year earnings of bachelor's graduates.

Consider further the data in Figure 7. Note the substantial earnings premium that master's students collect compared to bachelor's graduates in each of seven large programs for which we have sufficient numbers of graduates to report. The smallest difference (less than \$5,000) is for graduates of master's programs in multi- or interdisciplinary studies—but bachelor's graduates in this field are making an above-median wage of more than \$45,000. English language master's graduates earn approximately \$6,000 more than bachelor's graduates in the same field, but at both levels, they have the lowest first-year earnings among these programs. Master's students with degrees in computer and information sciences earn a wage premium of \$7,500 compared to bachelor's students in the same field. Master's degree graduates in engineering earn about \$14,000 more than bachelor's graduates (although at both levels, the graduates with this specialty are the highest paid). Far larger premiums are earned by master's students in accounting (with an increment of almost \$20,000) and business administration, with an increment of more than \$44,000 in first-year wages.

¹⁵ The average age of a master's student in Texas is 31 compared to 25 for students pursuing bachelor's degree. See Appendix C for more detailed information on the average age of bachelor's and master's graduates.

**Figure 7: Master's vs. Bachelor's Graduates' Median First-Year Earnings:
Seven Large Programs**

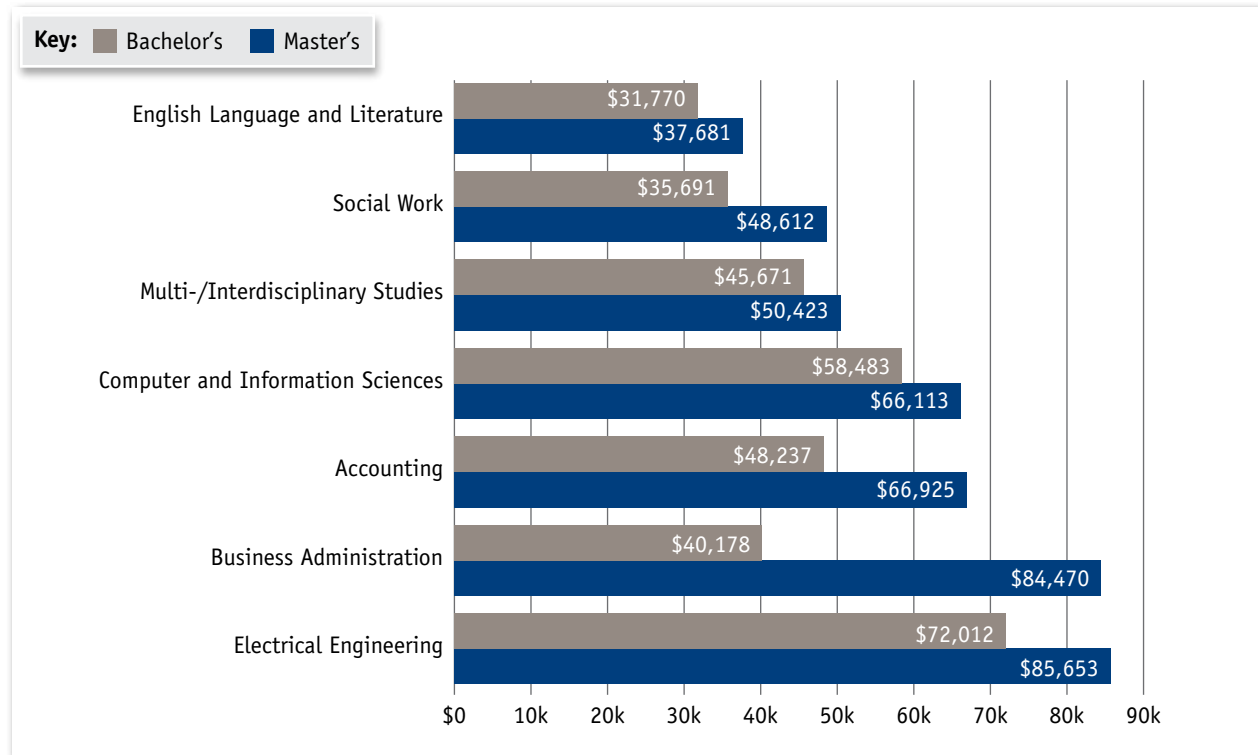


Figure 8 shows the wage premium for the master's degree for each institution across Texas with sufficient numbers of graduates in our database to report. With the exception of Texas A&M University at Galveston (where slightly more than \$11,000 separates the first-year earnings of master's and bachelor's students), from every other campus, the difference exceeds \$15,000. In seven institutions (Texas A&M University–Texarkana, Lamar University, Sam Houston State University, Prairie View A&M University, The University of Texas at Austin, Sul Ross State University Rio Grande College, and Texas Southern University), master's graduates earned at least \$25,000 more than bachelor's graduates from the same school. In five more schools (The University of Texas at Dallas, The University of Texas at Brownsville, The University of Texas at El Paso, Texas A&M University–Central Texas, and Sul Ross State University), the wage premium topped \$29,000.

Figure 8: Median First-Year Earnings of Bachelor's and Master's Degree Graduates by Institution

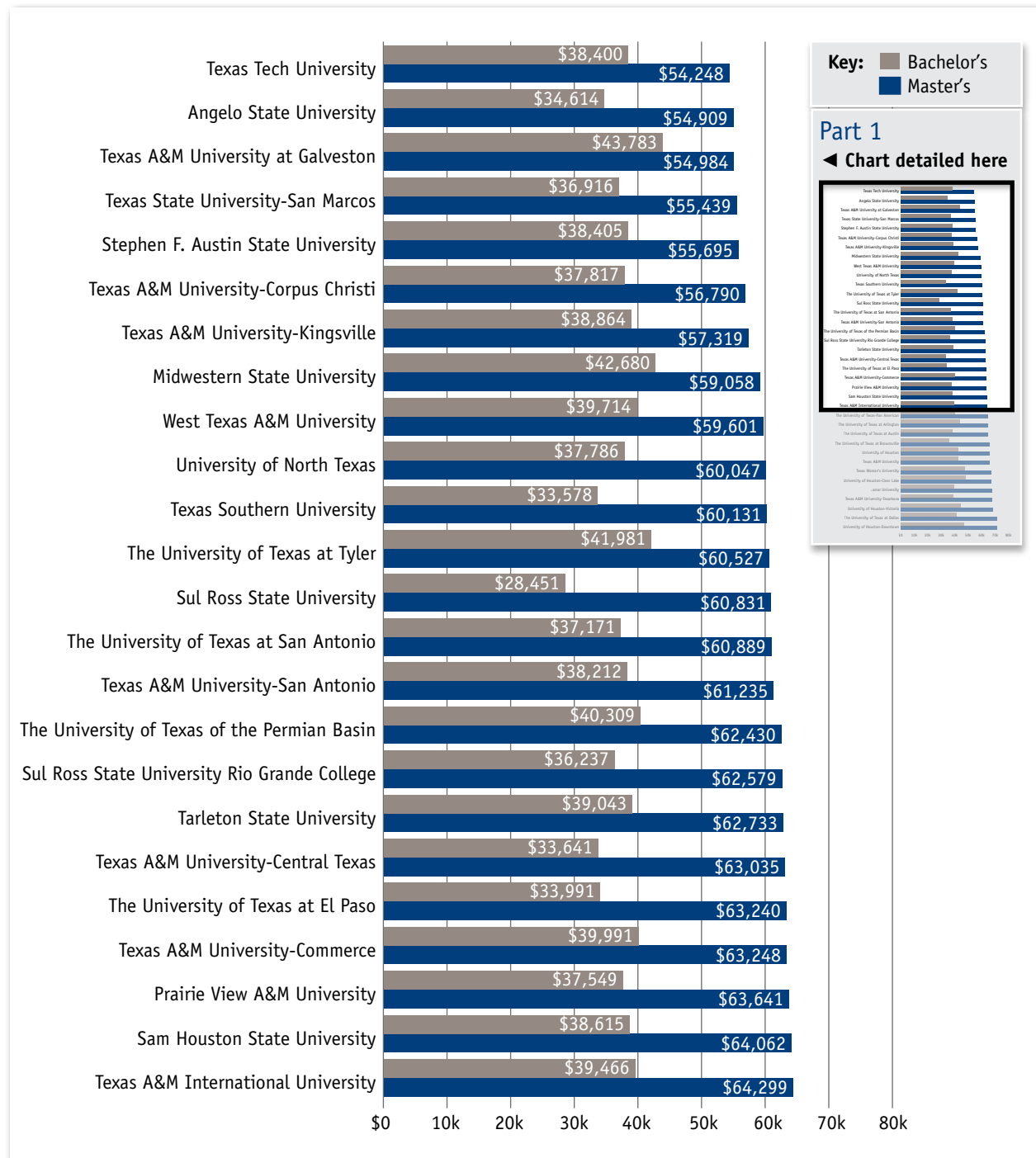
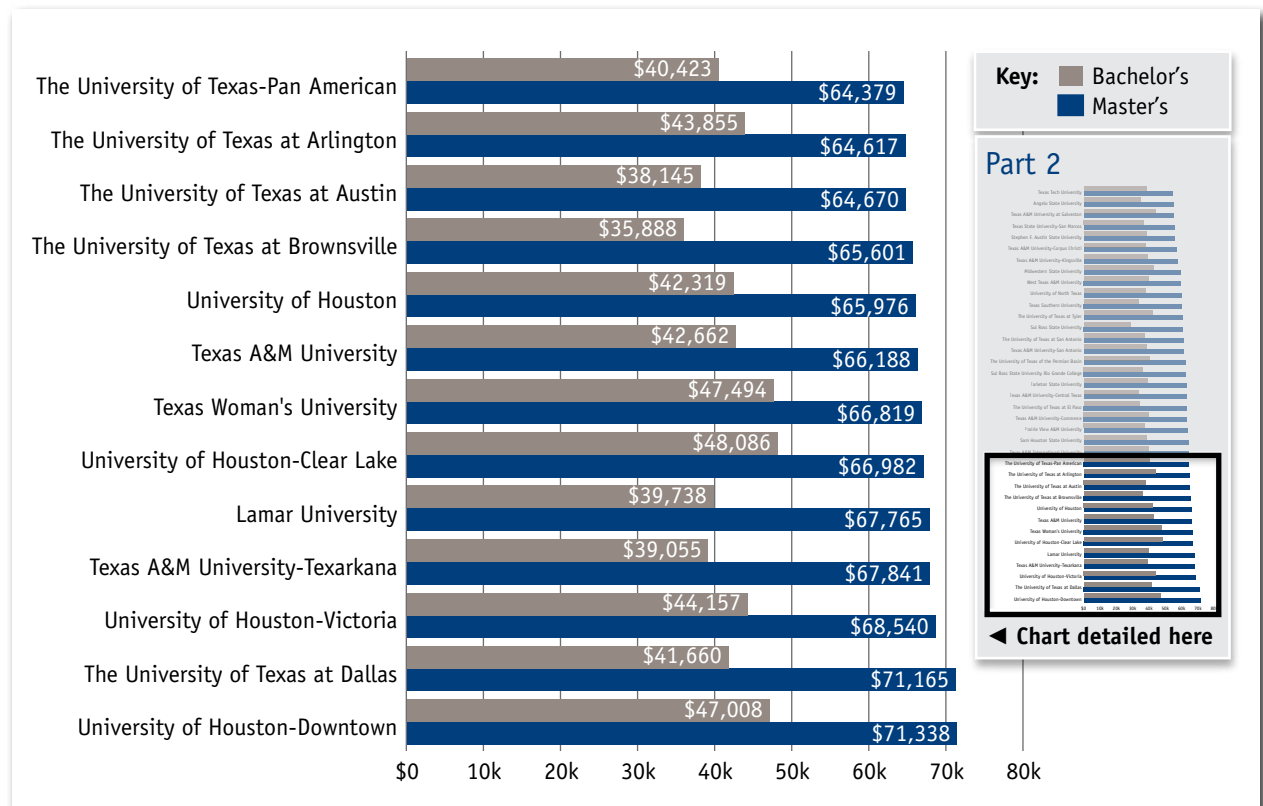


Figure 8 continued



Associate's Degrees

Figure 1 showed significant differences in the median first-year earnings of graduates with academic associate's degrees versus those with technical associate's degrees. The next two figures display separately the earnings of graduates with each type of degree.

Figure 9 shows the median first-year wages of graduates with academic associate's degrees by institution. The range is from somewhat over \$10,000 (Ranger College) to more than \$40,000 at Central Texas College. Excluding these extremes, there is still substantial variation: Graduates from a dozen two-year schools with academic associate's degrees have median earnings of less than \$17,500, and graduates from nine two-year schools have median first-year earnings of more than \$25,000.

Figure 10 shows the median earnings of graduates with technical degrees from Texas' two-year colleges. The differences are considerable, ranging from first-year earnings of less than \$18,000 (graduates of Clarendon College) to more than \$73,000 (College of the Mainland Community College District).

Comparisons across tables show how much graduates with technical associate's degrees earn compared to graduates with academic associate's degrees. As noted earlier, the median first-year earnings of graduates with technical degrees are well over twice the median for academic associate's degree holders. And while graduates with academic associate's degree programs from only 10 two-year colleges have median earning *above \$25,000*, graduates with technical degrees from only 3 schools have median earnings *below \$25,000*. Furthermore, graduates with academic degrees from only one two-year college had median earnings over \$40,000, whereas graduates with technical degrees from well over half of the schools exceeded \$40,000.¹⁶

¹⁶ Again, a contributing factor to this large disparity is likely the higher proportion of students with academic associate's degrees who are currently enrolled in higher education.

Figure 9: Median First-Year Earnings of Academic Associate's Degree Graduates by Institution

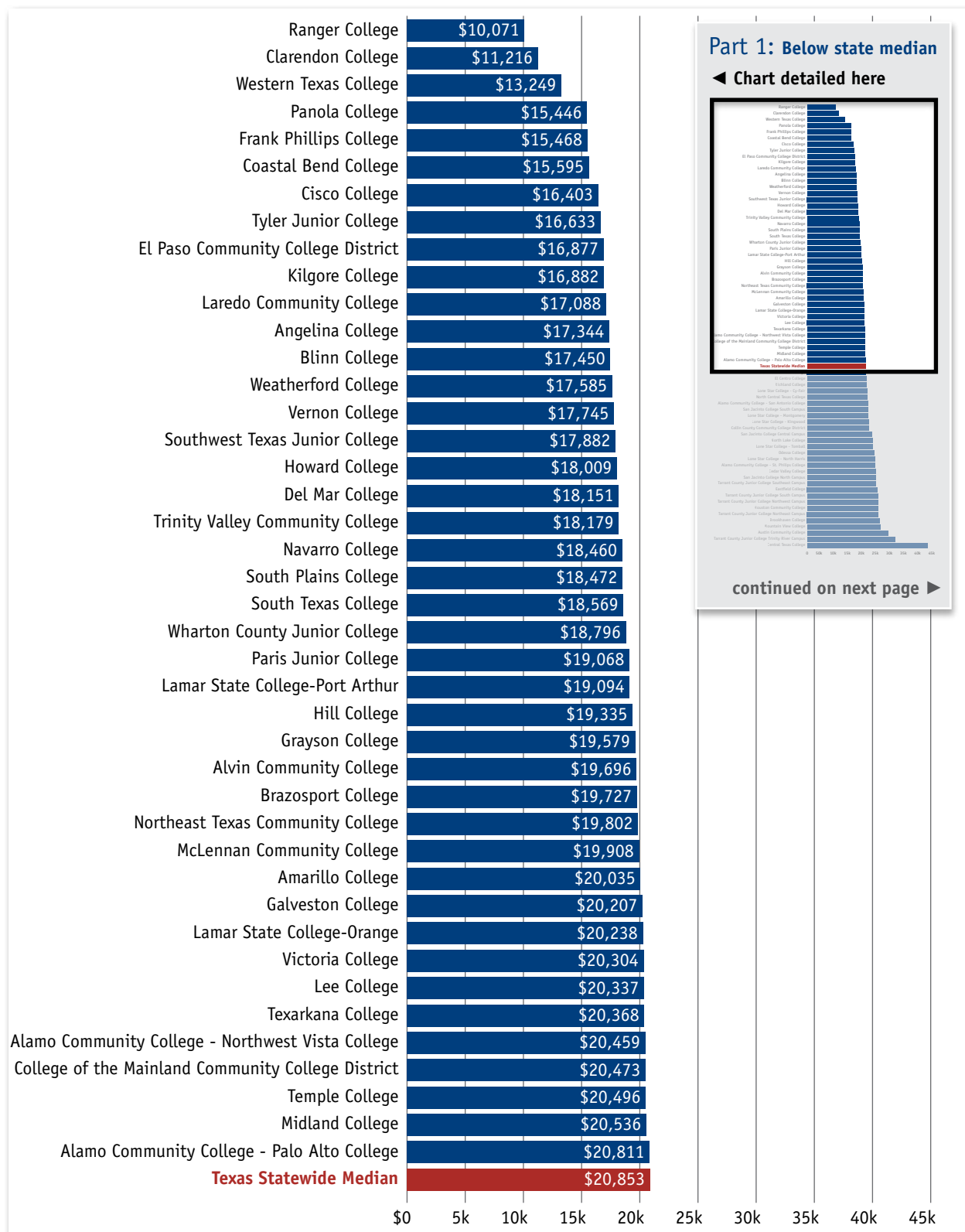


Figure 9 continued

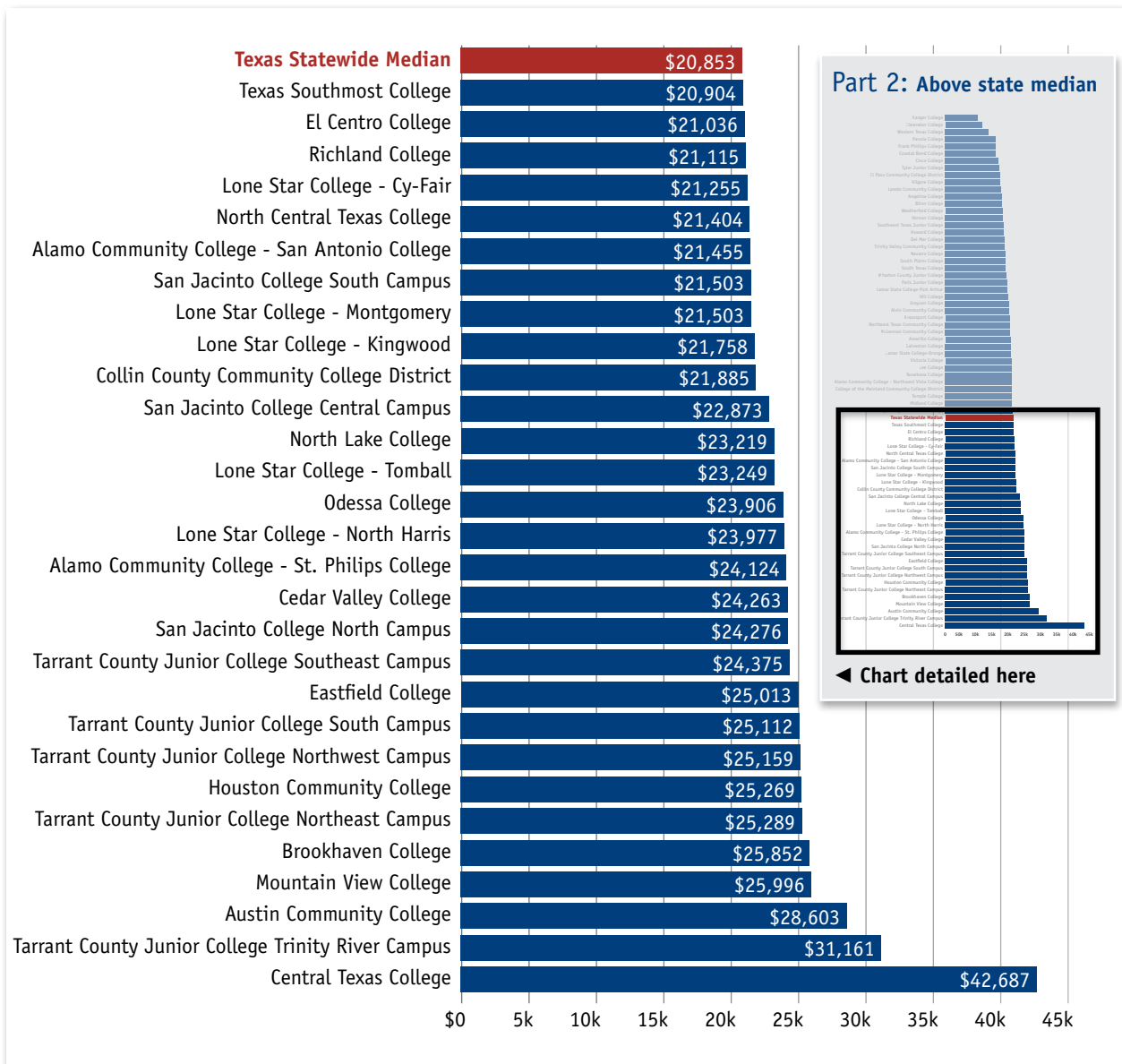


Figure 10: Median First-Year Earnings of Technical Associate's Degree Graduates by Institution

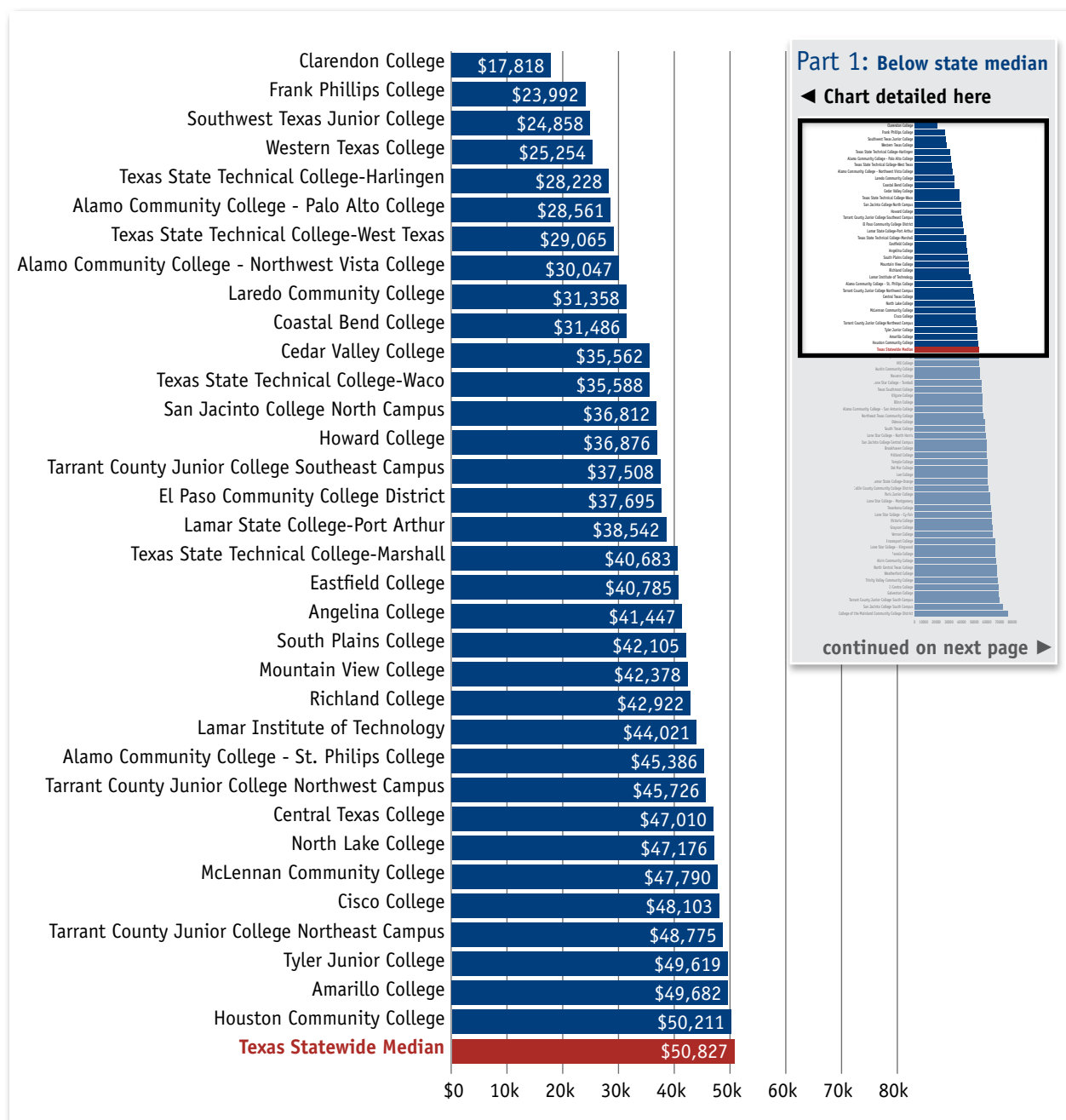
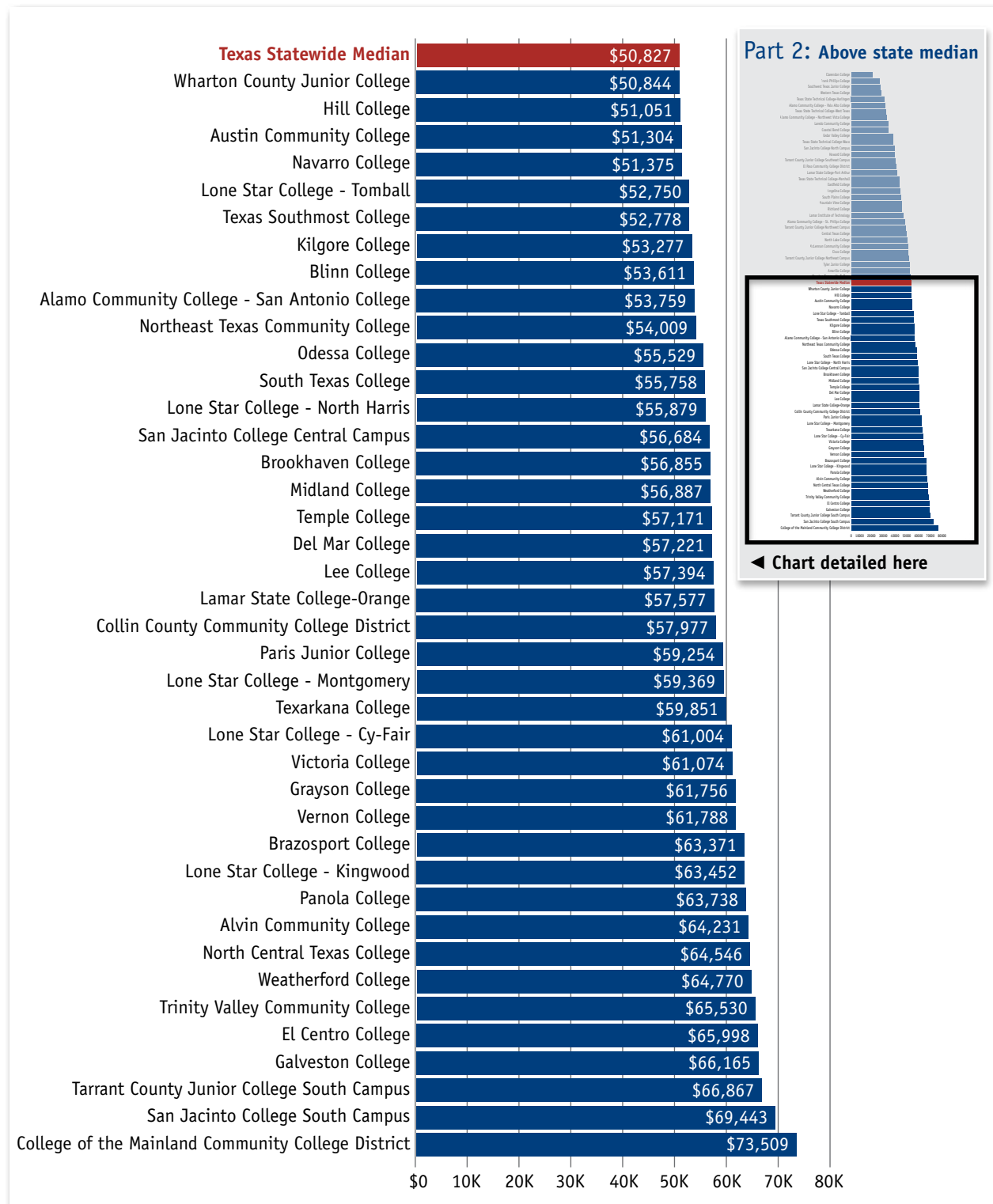


Figure 10 continued



Figures 11 and 12 combine the information in the previous charts into a direct comparison of the median wages of graduates with academic associate's degrees versus those with technical degrees from each two-year college in Texas that awarded enough degrees to be included in the database. Given the number of two-year colleges in Texas, schools are divided into two groups based on the median first-year earnings of their graduates. Figure 11 shows the comparative earnings data for colleges with median technical earnings of less than \$50,000. Figure 12 shows colleges whose graduates had median earnings greater than \$50,000.

In every institution, technical degree holders out earn their peers who completed academic associate degrees. The gaps in favor of technical degrees can be quite large. In six schools, the difference is in excess of \$45,000: Galveston College, Trinity Valley Community College, Weatherford College, San Jacinto College—South Campus, Panola College, and College of the Mainland Community College District.

In contrast, six institutions show a difference of less than \$10,000, but that is because—with the exception of Central Texas College—graduates with technical degrees in these schools are among the lowest paid in the state. The six are: Central Texas College, Clarendon College, Southwest Texas Junior College, Alamo Community College, Frank Phillips College, and Alamo Community College—Northwest Vista College.

Figure 11: Academic vs. Technical Degrees: Community Colleges With Technical Degree Recipients' First-Year Earnings Median Less Than \$50,000

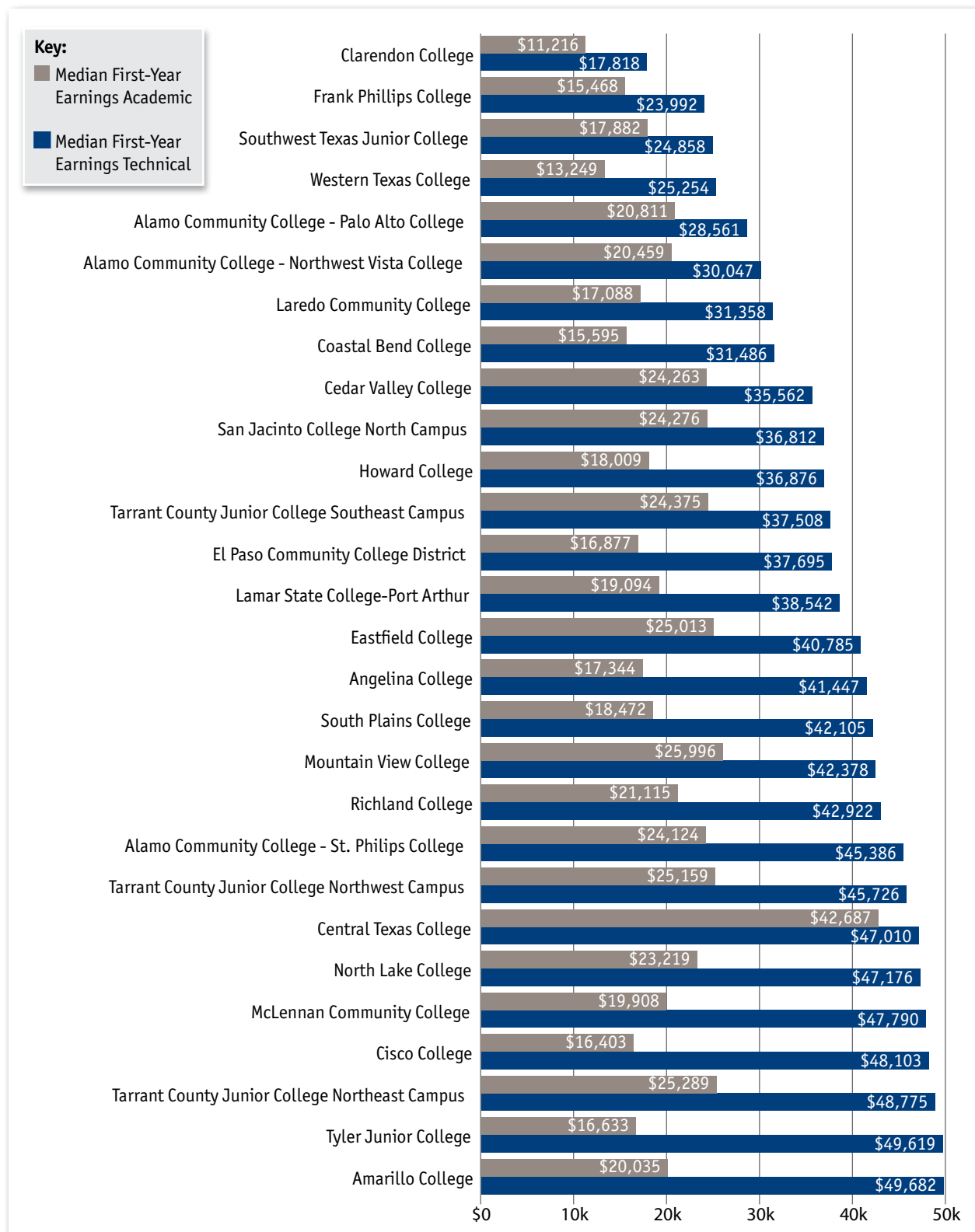


Figure 12: Academic vs. Technical Degrees: Community Colleges With Technical Degree Recipients' First-Year Earnings Median More Than \$50,000

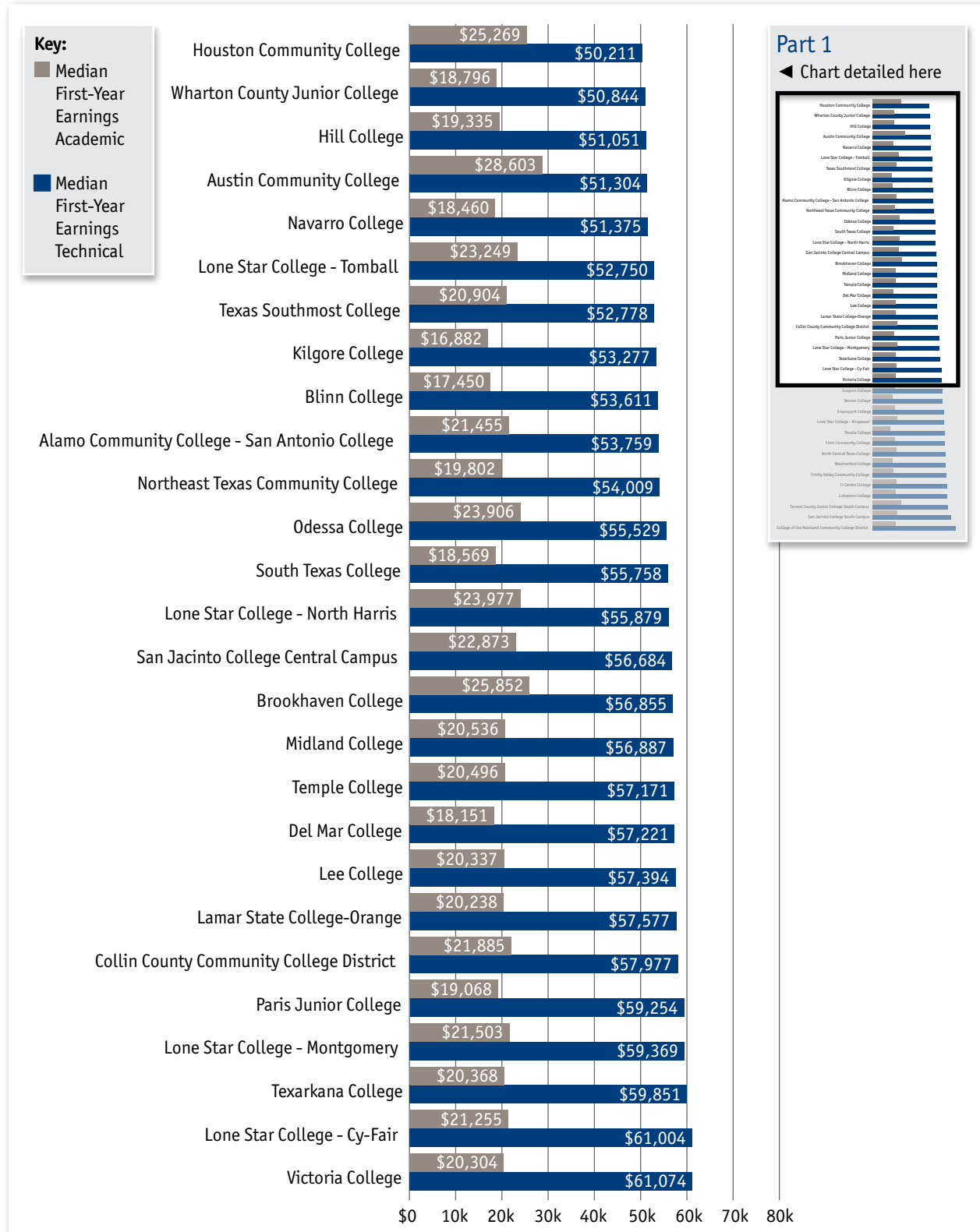
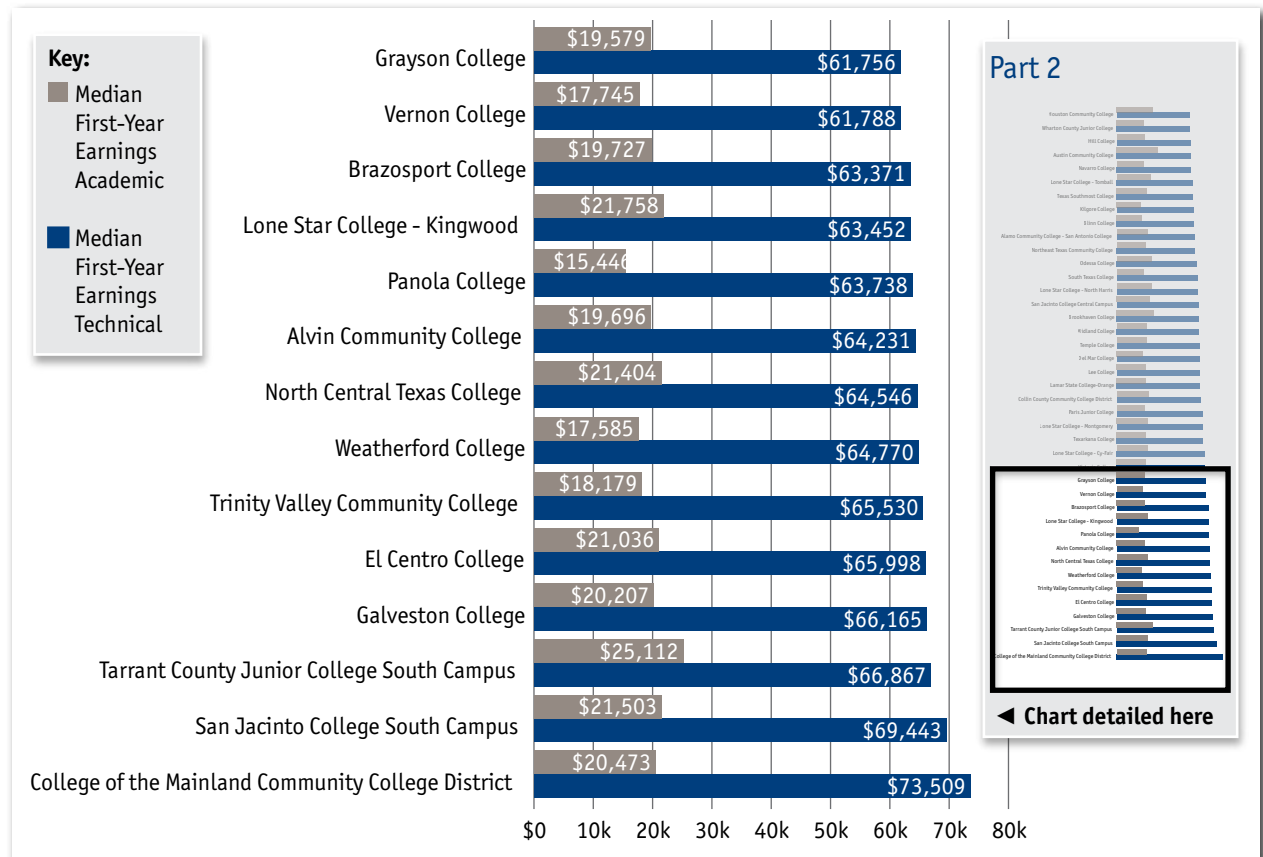


Figure 12 continued



The Earnings of Graduates from the Most Popular Associate's Degree Programs

Figure 13 shows the median earnings of graduates from the 11 most popular academic associate's degree programs in Texas.

The range is from \$16,500 or less (teacher education and biology) to \$25,500 or more for the two business-related programs of study. Paralleling the low first-year earnings of bachelor's graduates specializing in biology, note that graduates with academic associate's degrees in biology also earn less than graduates with other degrees.

In contrast, and consistent with the other data shown, graduates with technically oriented associate's degrees tend to do better. See Figure 14. Of the technical programs, the lowest paid is the one related to education (child development); its graduates' median earnings are less than \$25,000. There is a large step up from that program to the others. Graduates with an associate's degree in criminal justice have median earnings of \$6,500 per year more than graduates in child development. Note that, of the six technical programs whose graduates have median wages above the state median, four programs are in the health professions. Given the centrality of the oil industry to the Texas economy, perhaps it is not surprising that graduates with degrees in chemical technology are the highest paid in the state (with median earnings exceeding \$74,000).

Figure 13: Median First-Year Earnings of Graduates With the Most Popular Academic Associate's Degrees

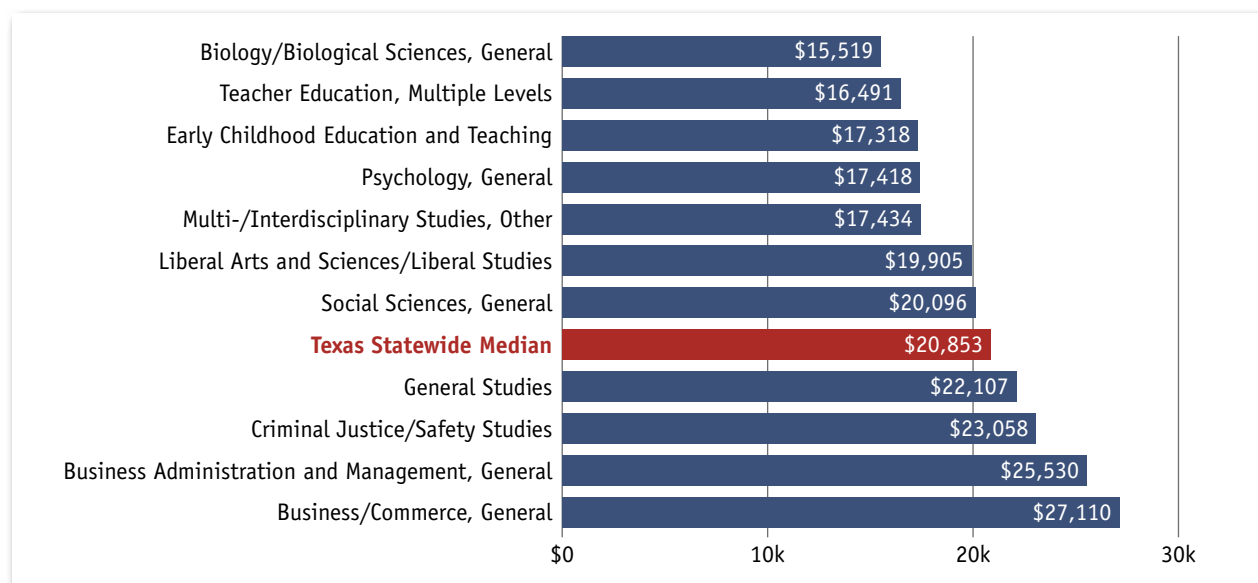
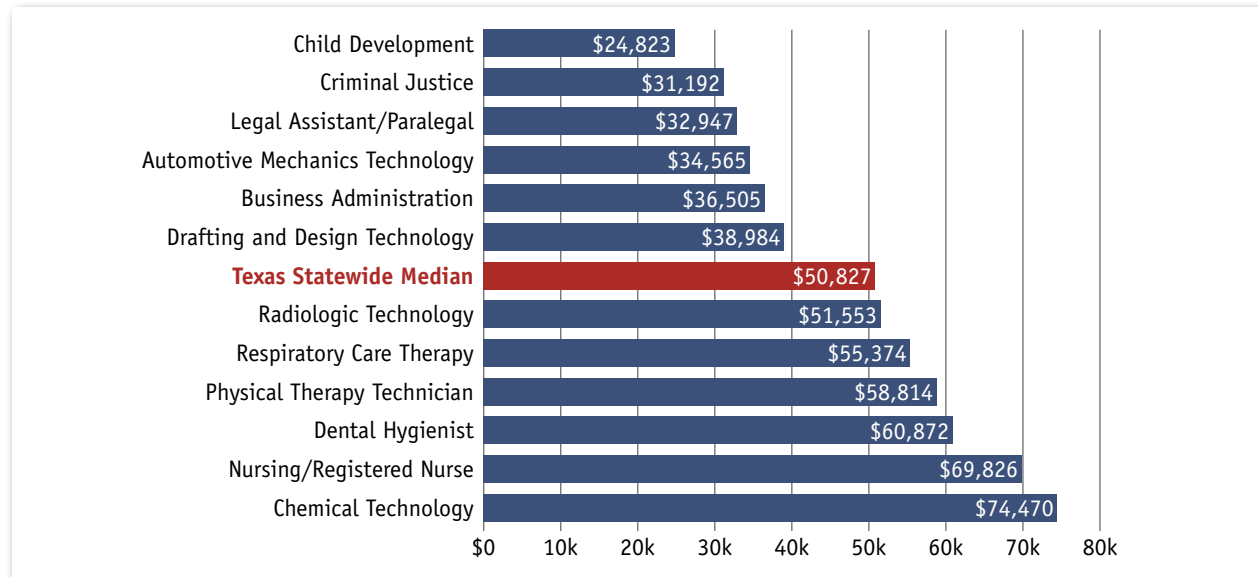


Figure 14: Median First-Year Earnings of Graduates With the Most Popular Technical Associate's Degrees

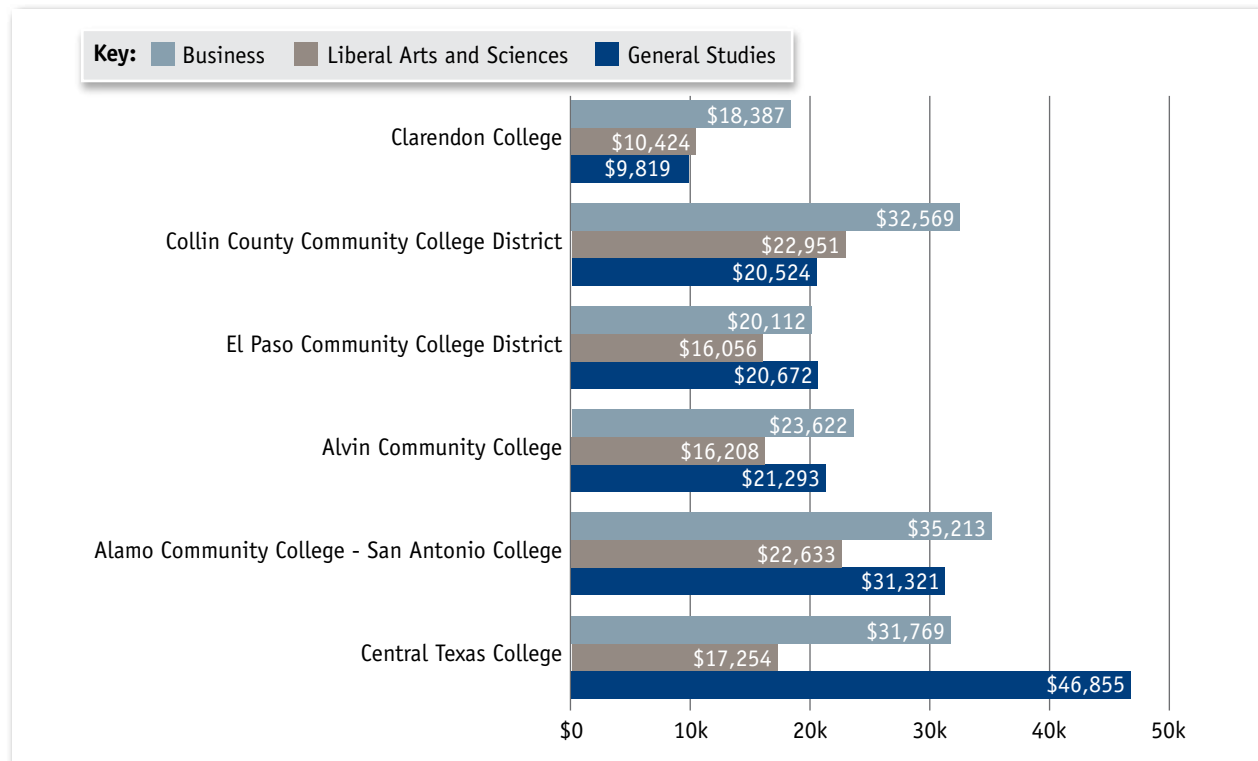


Variation Across Associate's Degree Programs

Figure 15 displays the median first-year wages of graduates of two-year colleges that have all three of these large academic associate's degree programs. The purpose of this figure is to demonstrate that not only *what* students study but *where* they study matters: Graduates with the same major can earn vastly different amounts depending on where they earned their degree.

Indeed, Figure 15 shows that graduates of the highest-paying programs in business and liberal arts have median wages twice those of graduates from the lowest-paying programs. In general studies, the salary range is nearly 5 to 1, with graduates in general studies from Central Texas earning more than \$46,000 compared to graduates with the same field of study from Clarendon College, who earn on average less than \$10,000 the first year after graduation.

Figure 15: Median First-Year Earnings of Graduates With the Three Most Popular Academic Associate's Degrees by College



Although only a small number of two-year colleges offer all three of these academic associate's programs, a far greater number of colleges—19—offer all three of the most popular technical associate's degree programs. Of the two health-related programs (Radiography and Nursing) among these most popular programs, graduates with radiologic technology/science–radiographer degrees earn less than nursing graduates.

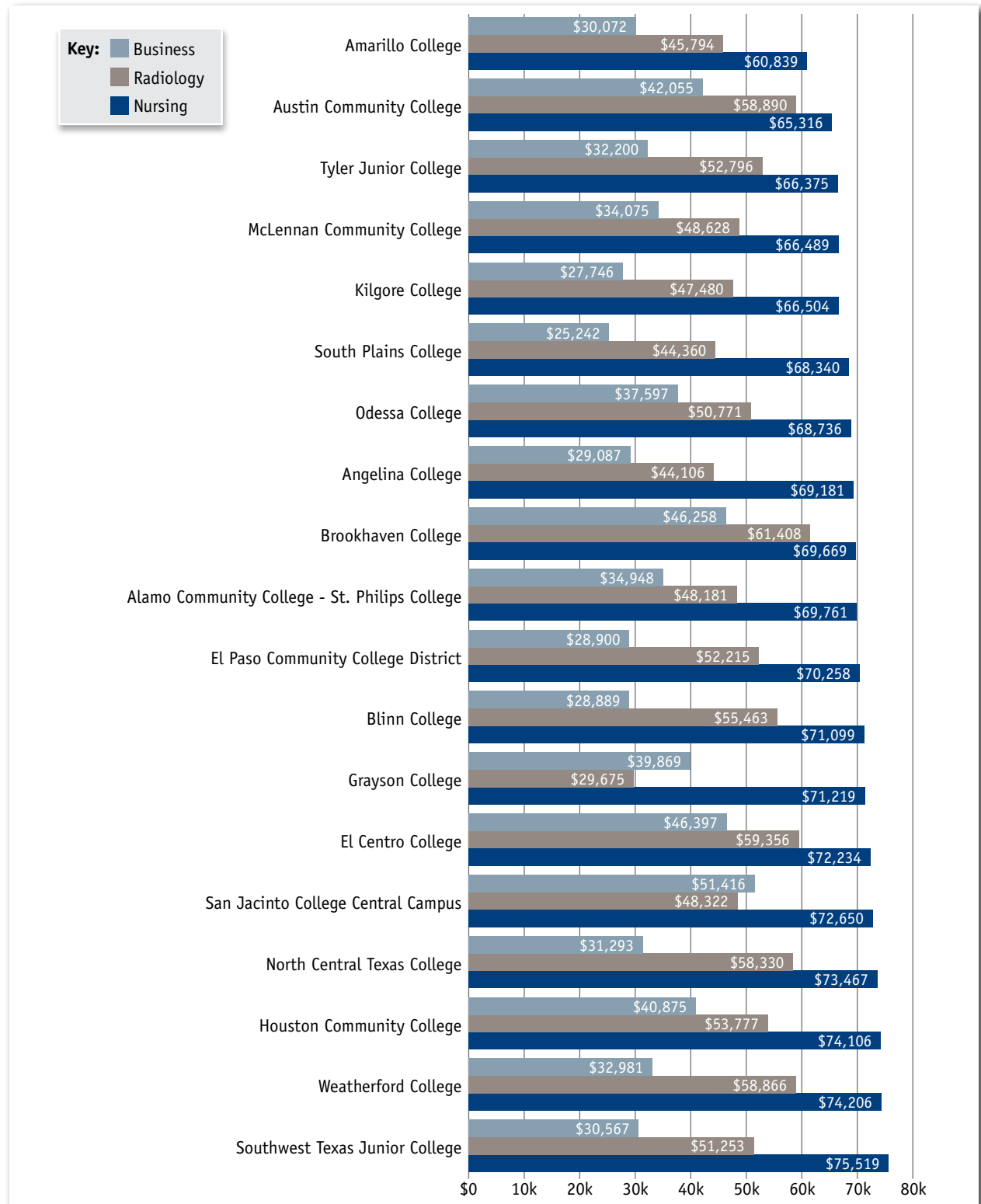
Within each program there is wide range in first-year earnings. For example, graduates in Radiography from Grayson College earn less than \$30,000, whereas graduates in the same field of study from Brookhaven College have median first-year earnings of \$61,408—twice that of Grayson's graduates. The range for nursing graduates is not quite as large as for radiography. However nursing graduates from Amarillo College had first-year earnings of \$60,839, roughly \$15,000 less than nursing graduates from Southwest Texas Junior College.

Turning to the technical associate's degree in Business Administration, we see first that first-year earnings are much lower than in the two health-related programs. In 17 of these colleges, Radiography program graduates earn more than Business graduates and in six of these schools the difference is greater than \$20,000. In only two schools, business graduates earn more than radiography graduates. One of these is Grayson College and, as noted above, its radiography graduates were the lowest paid in the state. At San Jacinto College Central Campus, business graduates' median first-year earnings are about \$3,000 more than radiography graduates'. Indeed business graduates from San Jacinto have the highest median first-year earnings of all of the colleges in Table 16.

Looking at differences between the first-year earnings of nursing graduates and business graduates, we see gaps in favor of nursing graduates ranging from more than \$20,000 at San Jacinto College Central Campus to somewhat less than \$45,000 at Southwest Texas Junior College.

Many more comparisons of first-year earning outcomes across Texas programs can be found at www.collegemeasures.org/esm/texas. The analyses presented here are designed to show the importance of the program-level data now available. Graduates with the same major can earn tens of thousands of dollars more or less than graduates with the same major from different programs. Students should know these data before they attend a school or choose a program.

Figure 16: Median First-Year Earnings of Graduates With the Three Most Popular Technical Associate's Degrees by College



Certificates

Across the nation, certificates are among the fastest-growing credential offered by community colleges. Although these credentials are gaining in popularity, government statistics have not kept pace. Anthony Carnevale, Director of Georgetown University's Center for Education and the Workforce and one of the nation's leading scholars of the relationship between college education and earnings, recently noted that "only one of the major government socioeconomic surveys has information on certificate holding," and certificates have received limited evidence-based attention.¹⁷ But as the report's title—*Certificates: Gateway to Gainful Employment and College Degrees*—implies, certificates can be valuable credentials in the labor market. Certificates often involve a more specialized and shorter training program than the associate's degree—and hence are often less expensive and faster to earn. But as Carnevale also has noted, we are only now beginning to develop the data that can help us determine whether (and which) certificates lead to high paying jobs. These Texas data represent an important step toward providing evidence about the value of certificates.

In Figure 17, we compare the median first-year earnings of certificate holders with first-year earnings of graduates from academic and technical associate's programs. In many of these five popular fields of study, certificate holders earn as much or more than holders of technical associate's degrees in the same area. Furthermore, in every program of study, certificate holders earn more in their first year than graduates with academic associate's degrees.

The reader should recall that many students who hold academic associate's degrees are pursuing additional studies, suppressing their current earnings. In addition, many students who pursue certificates may have degrees already and are seeking to improve existing skills and careers. That said, the data suggest that students should look carefully at the labor market outcomes of gaining certificates and judge whether or not a certificate represents a gateway to the career and earnings they desire.

Figures 18 and 19 provide some information that could help students as they begin that investigation—and we again refer students to www.collegemeasures.org/esm/texas for more information and comparisons. Figure 18 shows the certificate programs in Texas where graduates have the highest first-year earnings.

¹⁷ Carnevale, A., Rose, S., & Hanson, A., *Certificates: Gateway to gainful employment and college degrees*. Washington, DC: Center on Education and the Workforce, Georgetown University, June 2012, pp. 1, 3 [<http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/Certificates.ExecutiveSummary.071712.pdf>].

Figure 17: Median First-Year Earnings of Certificate vs. Associate's Degree Holders in Six Popular Fields of Study

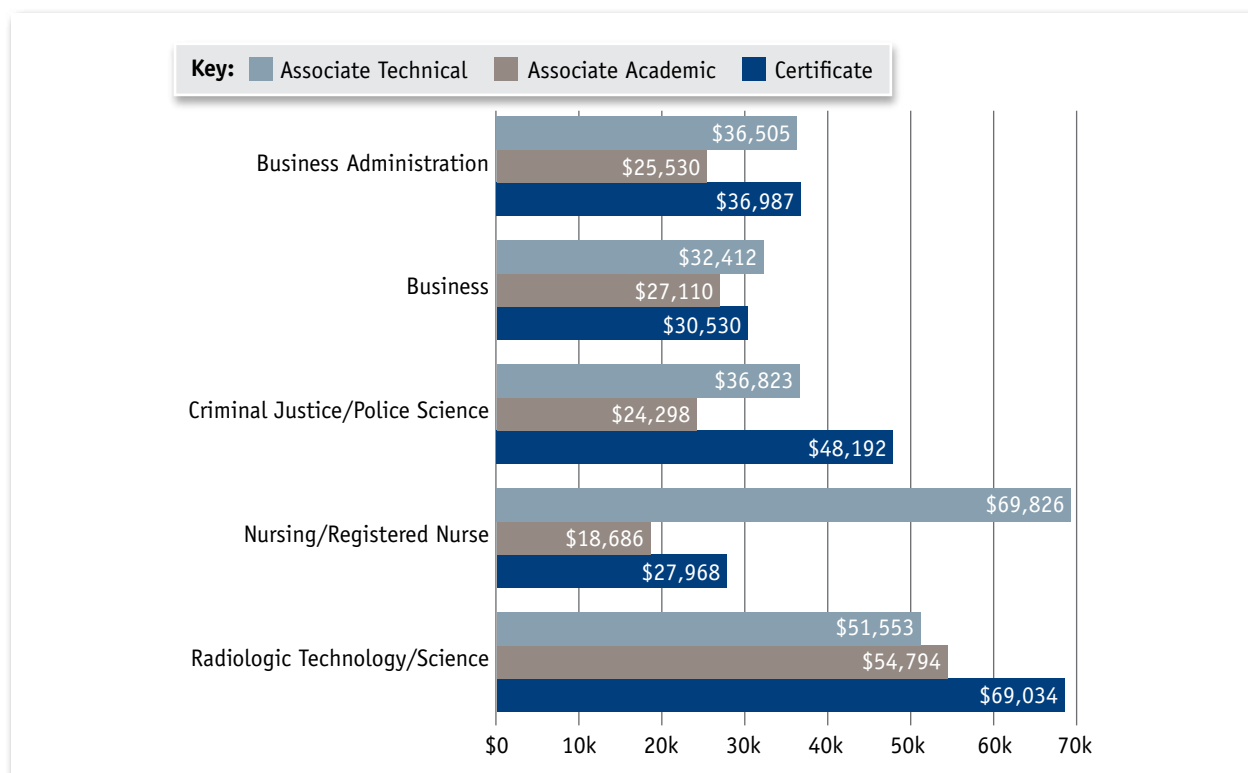


Figure 18 shows the 17 programs across Texas whose graduates earn a median of more than \$70,000 in the first year after graduation. Remember, this amount is \$30,000 more than the median bachelor's degree first-year salary and around \$20,000 more than the median first-year earnings of students earning a technical associate's degree.

A wide variety of specialties are represented. Not surprisingly, health care is well represented, but a number of these high-paying certificates are in construction, such as construction engineering technology/technician (Brazosport College), electrician (Lee College), and pipefitting (Lee College). A number of programs turning out technicians in engineering, industrial technology, and instrumentation (e.g., from Brazosport College and Frank Phillips College) are also on the list of high-paying certificate programs.

Figure 19 shows 22 certificate programs where completers earned less than \$13,000 in their first year after completion. The largest concentration of these low-paying certificate programs is in cosmetology (10 programs) and another three are in nursing/patient care assistants. One program on the list is in computer and information systems (from Alamo Community College - San Antonio College) and another is network and system administration/administrator (Laredo Community College).

This is only a sampling of the range of first-year earnings that students completing different certificates across the state claim. Given the range of earnings (from less than \$10,000 to more than \$90,000), prospective students should study carefully the data available here and on the College Measures Web site before deciding that a certificate program is right for them.

Figure 18: Median First-Year Earnings: Graduates With Highest-Earning Certificates by College and Subject

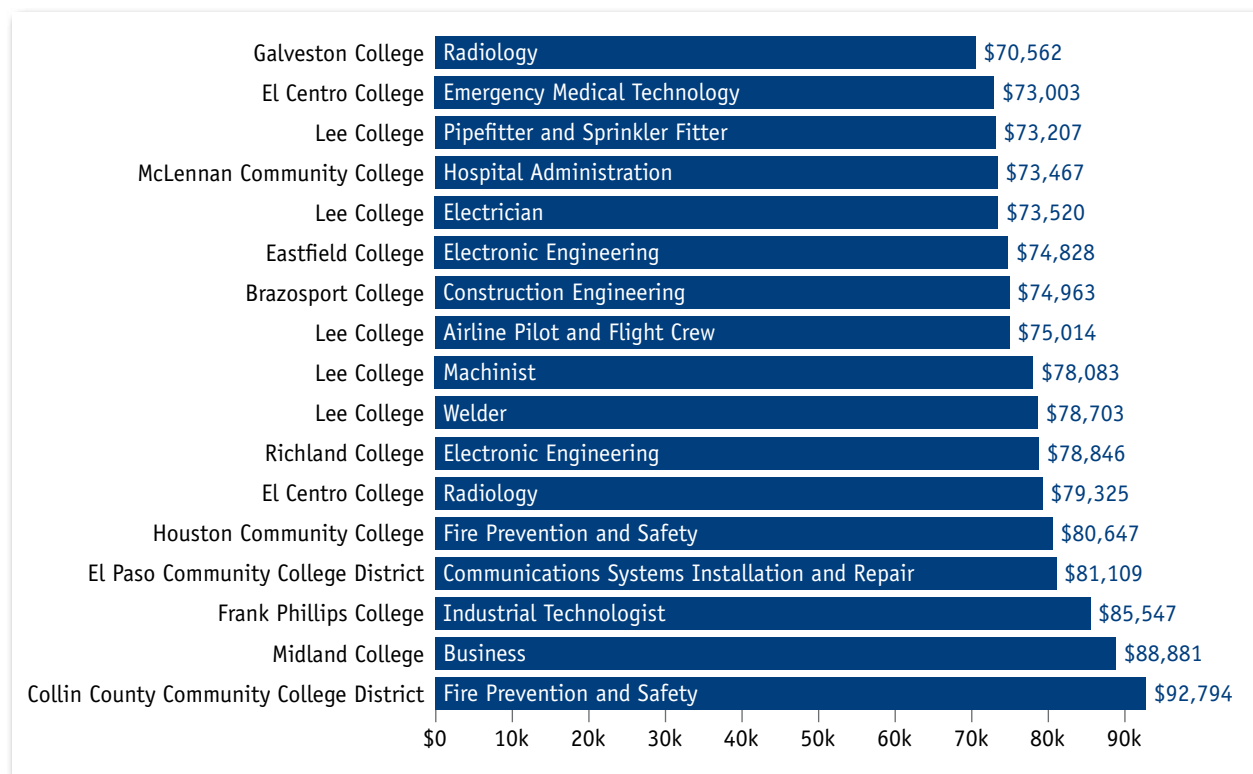
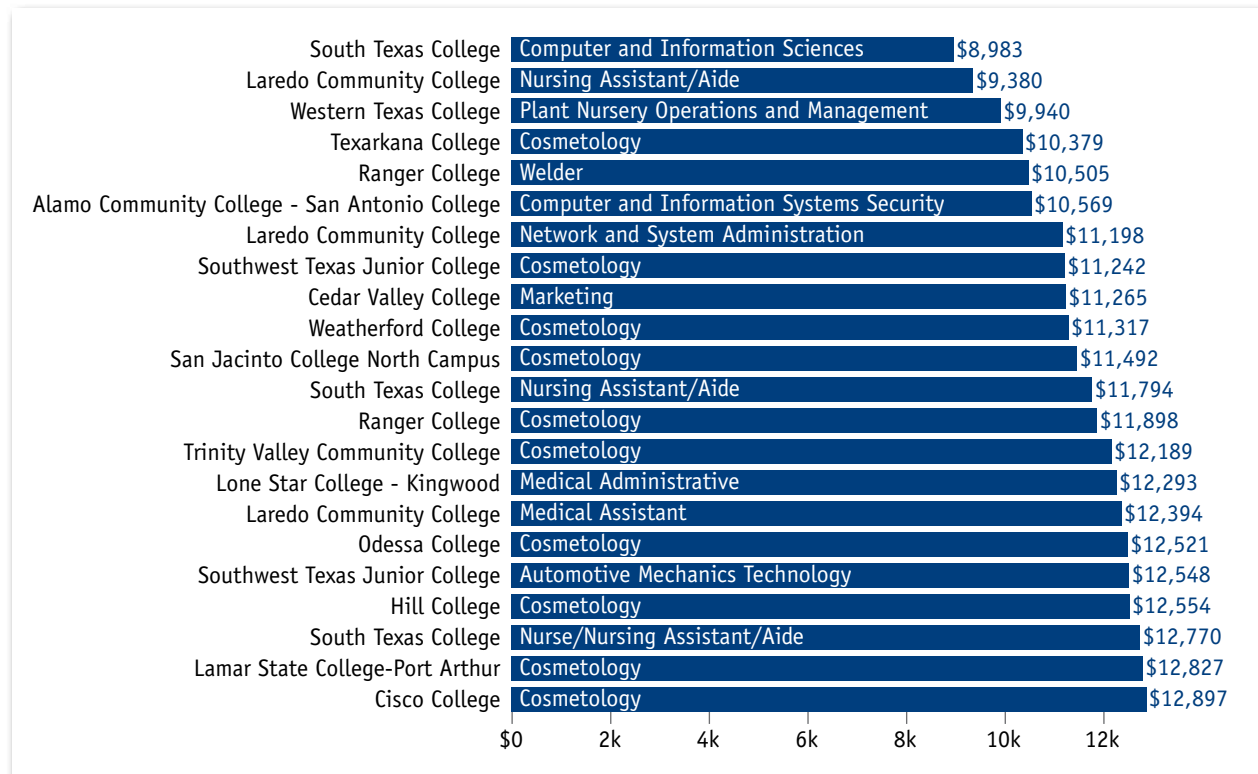


Figure 19: Median First-Year Earnings: Graduates With Lowest-Earning Certificates by School and Subject



Conclusion

Higher Education Pays: But Far More for Some Programs Than for Others

The Bureau of Labor Statistics and the Census Bureau have documented the “big payoff” for higher education,¹⁸ but this report shows that the payoff varies considerably from program to program and from institution to institution. We also have confirmed an observation made by Georgetown University’s Center for Education and the Workforce: Associate’s degrees can have a payoff that exceeds that of a bachelor’s degree (at least in the short term that can be observed from our current data).

The bottom line: The degree students earn, and where they earn it, matters. Most notably, we have shown that many pathways to success exist in the labor market. Three aspects of the relationship between postsecondary education and earnings in particular merit special attention: (1) the high labor market value of technical associate’s degrees; (2) certain certificates may represent a new and efficient pathway into the labor market; and (3) at the bachelor’s degree level, graduates from many campuses in the state—not just the state’s best-known—earn on average roughly the same first-year wages. In short, many pathways to strong earnings are available to students in Texas, and we hope the data we are making available can help students find these pathways.

As students and others consider these data, we reiterate some of the cautions put forward earlier in this report. Although wide variation occurs in the first-year financial success of graduates from different programs, we generally have not tried to explain such variation, leaving that to further analysis. For example, we know that the credentials of incoming students vary across institutions, missions vary across institutions, and many schools serve regional labor markets where earnings vary. And the data reported here are all *short-term* labor market results. In the long term, graduates with bachelor’s degrees tend to increase their earnings faster than those with associate’s degrees, so that the large differences we document here may erode over time.

We also know that postsecondary education has many rewards in addition to the boost in earnings; however, if a student borrows \$50,000 and is earning \$25,000, he or she likely will be so consumed by trying to pay off the loan as to have little time to enjoy these other rewards.

We believe that government officials and political leaders should know about the variations in the economic payoff of degrees and programs of study—but they need to be careful about using these data in any program of institutional accountability. However, the data reported here should be made widely accessible to the public and should inform consumer decisions about which programs, degrees, and colleges to pursue.

¹⁸ See <http://www.census.gov/prod/2002pubs/p23-210.pdf> and more recently <http://www.census.gov/prod/2011pubs/acs-14.pdf>

Appendixes

Appendix A1: Match Rate for Bachelor's Degree Graduates

Institution	Percentage of Completers With Wage Data
Angelo State University	72%
Lamar University	75%
Midwestern State University	72%
Prairie View A&M University	72%
Sam Houston State University	75%
Stephen F. Austin State University	74%
Sul Ross State University	61%
Sul Ross State University Rio Grande College	78%
Tarleton State University	75%
Texas A&M International University	78%
Texas A&M University	66%
Texas A&M University at Galveston	62%
Texas A&M University-Central Texas	56%
Texas A&M University-Commerce	77%
Texas A&M University-Corpus Christi	71%
Texas A&M University-Kingsville	75%
Texas A&M University-San Antonio	76%
Texas A&M University-Texarkana	64%
Texas Southern University	69%
Texas State University-San Marcos	73%
Texas Statewide	70%
Texas Tech University	66%
Texas Woman's University	76%
The University of Texas at Arlington	75%
The University of Texas at Austin	57%
The University of Texas at Brownsville	76%
The University of Texas at Dallas	68%
The University of Texas at El Paso	63%
The University of Texas at San Antonio	71%
The University of Texas at Tyler	77%
The University of Texas of the Permian Basin	77%
The University of Texas-Pan American	75%
University of Houston	70%
University of Houston-Clear Lake	77%
University of Houston-Downtown	78%
University of Houston-Victoria	80%
University of North Texas	69%
West Texas A&M University	73%

Appendix A2: Match Rates for Community College Graduates

Institution	Percentage of Completers With Wage Data/ Academic Associates	Percentage of Completers With Wage Data/Technical Associates
Alamo Community College-Northwest Vista College	53%	59%
Alamo Community College-Palo Alto College	51%	73%
Alamo Community College-San Antonio College	52%	81%
Alamo Community College-St. Philips College	53%	78%
Alvin Community College	49%	85%
Amarillo College	54%	82%
Angelina College	44%	78%
Austin Community College	55%	79%
Blinn College	46%	85%
Brazosport College	46%	86%
Brookhaven College	55%	87%
Cedar Valley College	53%	45%
Central Texas College	52%	68%
Cisco College	44%	80%
Clarendon College	28%	37%
Coastal Bend College	44%	71%
College of the Mainland Community College District	50%	87%
Collin County Community College District	53%	82%
Del Mar College	47%	82%
Eastfield College	54%	75%
El Centro College	51%	85%
El Paso Community College District	42%	71%
Frank Phillips College	36%	53%
Galveston College	47%	89%
Grayson College	48%	80%
Hill College	47%	76%
Houston Community College	53%	75%
Howard College	42%	77%
Kilgore College	42%	80%
Lamar Institute of Technology	N/A	79%
Lamar State College-Orange	47%	69%
Lamar State College-Port Arthur	52%	79%
Laredo Community College	45%	74%
Lee College	47%	81%
Lone Star College-Cy-Fair	51%	82%
Lone Star College-Kingwood	49%	85%
Lone Star College-Montgomery	50%	83%
Lone Star College-North Harris	56%	81%

Appendix A2: continued

Institution	Percentage of Completers With Wage Data/ Academic Associates	Percentage of Completers With Wage Data/Technical Associates
Lone Star College-Tomball	52%	84%
McLennan Community College	49%	84%
Midland College	43%	84%
Mountain View College	61%	79%
Navarro College	47%	83%
North Central Texas College	53%	79%
North Lake College	50%	69%
Northeast Texas Community College	51%	84%
Odessa College	52%	84%
Panola College	35%	70%
Paris Junior College	48%	84%
Ranger College	26%	N/A
Richland College	47%	68%
San Jacinto College Central Campus	53%	85%
San Jacinto College North Campus	56%	71%
San Jacinto College South Campus	48%	87%
South Plains College	50%	76%
South Texas College	48%	82%
Southwest Texas Junior College	47%	70%
Tarrant County Junior College Northeast Campus	59%	78%
Tarrant County Junior College Northwest Campus	57%	74%
Tarrant County Junior College South Campus	59%	88%
Tarrant County Junior College Southeast Campus	58%	69%
Tarrant County Junior College Trinity River Campus	62%	N/A
Temple College	47%	87%
Texarkana College	43%	78%
Texas Southmost College	55%	84%
Texas State Technical College-Harlingen	N/A	67%
Texas State Technical College-Marshall	N/A	74%
Texas State Technical College-Waco	N/A	74%
Texas State Technical College-West Texas	N/A	70%
Texas Statewide	50%	79%
Trinity Valley Community College	43%	90%
Tyler Junior College	45%	82%
Vernon College	40%	85%
Victoria College	54%	90%
Weatherford College	46%	88%
Western Texas College	24%	65%
Wharton County Junior College	48%	85%

Appendix B: Economic Success Measures—Texas Methodology

Completer Cohort

The cohort includes all completers from undergraduate and graduate programs offered by Texas who graduated during the most recent five consecutive years. For example, the 2010 cohort includes all graduates from the last five years, beginning with 2006. Single-year data are not reported. Each graduate is identified by a valid Social Security Number, necessary for matching with employment records. The records are unduplicated between years.

Completers With Any Wage

This subgroup of the completer cohort includes all completers who have a first-year wage (see first-year wage). A completer does not need to have a wage in every quarter to be included.

Employment Records

The employment data include Unemployment Insurance (UI) Wage Records for employment in Texas provided by the Texas Workforce Commission (TWC) and through national databases from the Office of Personnel Management, US Postal Service, and Department of Defense (military service records). They do not include nonfederal employees outside of Texas.

Disclosable Program

The programs included in the report must have at least 10 graduates and more than 5 graduates in the matched data. A program is defined based on Classification of Instructional Programs (CIP) 6-digit codes. For program information see <http://www.txhighereddata.org/Interactive/CIP/>

First-Year Wage

The wage earned by graduates for four consecutive quarters, starting six months after graduation. The period after graduation is calculated based on the month and year of graduation. If an individual has multiple jobs, all wages are included.

All wages are adjusted for inflation, previous years being adjusted to the last year's dollars, using the values from the Bureau of Labor Statistics' CPI inflation calculator (http://www.bls.gov/data/inflation_calculator.htm).

Median First-Year Earnings

The median of the earnings from quarters three through six after the graduation of students in the cohort.

Appendix C: Average Age of Bachelor's and Master's Graduates by Institution

Institution	Bachelor's	Master's
Angelo State University	25	31
Lamar University	26	34
Midwestern State University	27	33
Prairie View A&M University	24	33
Sam Houston State University	24	32
Stephen F. Austin State Univ	24	31
Sul Ross Rio Grande College	30	37
Sul Ross State University	25	36
Tarleton State University	26	33
Texas A&M International Univ	26	31
Texas A&M Univ At Galveston	23	30
Texas A&M Univ-Central Texas	33	35
Texas A&M Univ-Corpus Christi	26	32
Texas A&M University	22	26
Texas A&M University-Commerce	29	32
Texas A&M University-Texarkana	30	35
Texas A&M Univ-Kingsville	25	28
Texas A&M Univ-San Antonio	31	34
Texas Southern University	27	33
Texas State Univ - San Marcos	25	30
Texas Tech University	23	28
Texas Woman's University	28	34
U. Of Houston-Clear Lake	29	30
U. Of Houston-Downtown	29	37
U. Of Houston-Victoria	31	35
U. Of Texas At Arlington	29	33
U. Of Texas At Austin	22	28
U. Of Texas At Brownsville	28	35
U. Of Texas At Dallas	25	28
U. Of Texas At El Paso	27	33
U. Of Texas At San Antonio	25	31
U. Of Texas At Tyler	26	32
U. Of Texas-Pan American	25	31
U. Of Texas-Permian Basin	27	33
University Of Houston	25	29
University Of North Texas	25	31
West Texas A&M University	26	31
Statewide	25	31



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