



EMPLOYMENT

OUTCOMES REPORT

2017

Oklahoma State System of Higher Education
Research Park, Oklahoma City
Presented to the State Regents February 1, 2018

OKLAHOMA STATE REGENTS
FOR HIGHER EDUCATION

Ronald H. White
Chairman
Oklahoma City

Jay Helm
Vice Chairman
Tulsa

Andrew W. "Andy" Lester
Edmond

Joseph L. Parker, Jr.
Secretary
Tulsa

John Massey
Durant

Ann Holloway
Assistant Secretary
Ardmore

General Toney Stricklin
Lawton

Jeffrey W. Hickman
Fairview

Michael C. Turpen
Oklahoma City

Glen D. Johnson
Chancellor

The Oklahoma State Regents for Higher Education, in compliance with Titles VI and VII of the Civil Rights Act of 1964, Executive Order 11236 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990 and other federal laws, do not discriminate on the basis of race, color, national origin, sex, age, religion, handicap or status as a veteran in any of its policies, practices, or procedures. This includes, but is not limited to, admissions, employment, financial aid and educational services.

This publication, duplicated by the State Regents' central services, is issued by the Oklahoma State Regents for Higher Education as authorized by 70 O.S. 2001, Section 3206. Copies have been prepared and distributed internally. Copies have been deposited with the Publications Clearinghouse of the Oklahoma Department of Libraries.

TABLE OF CONTENTS

<u>EXECUTIVE SUMMARY</u>	i
<u>BACKGROUND</u>	1
<u>INTRODUCTION</u>	2
<u>INITIATIVES</u>	3
<u>METHODOLOGY</u>	4
<u>FINDINGS (ALL GRADUATES)</u>	6
<u>Employment Rate Comparison</u>	6
<u>Employment by Field of Study</u>	7
<u>STEM Employment Rates</u>	9
<u>Median Annual Salary Comparison</u>	10
<u>Median Annual Salary Comparison by Field of Study</u>	11
<u>OKLAHOMA RESIDENTS ONLY</u>	13
<u>Employment Rate Comparison</u>	13
<u>NON-OKLAHOMA RESIDENTS ONLY</u>	15
<u>Employment Rate Comparison</u>	15
<u>CONCLUSIONS</u>	17
<u>APPENDIX</u>	18
<u>A – Tableau Link</u>	18
<u>B – North American Industry Classification System (NAICS)</u>	18
<u>C – Classification of Instructional Programs (CIP)</u>	18

Oklahoma State Regents for Higher Education

Employment Outcomes Report

2017

EXECUTIVE SUMMARY

The 2017 Employment Outcomes Report analyzes employment data for graduates of Oklahoma public colleges and universities one year through five years after graduation, 2009-10 through 2013-14.

The current study supports national data that link salary to educational attainment. Oklahoma data for graduates of the state's public colleges and universities confirm that the higher the degree a student earns, the higher the salary he or she is likely to earn.

A majority of Oklahoma college graduates remain in the state, contributing to the state's economy and opportunities for growth, even five years after graduation. Following are highlights of the most recent Oklahoma employment data for the state's higher education graduates:

Employment by degree level five years after graduation shows associate in applied science graduates with the highest percentage of employment (80.1 percent), followed by certificate holders (79.8 percent).

In addition to employment rates, the actual number of graduates produced will affect availability of degreed individuals in the workforce. The following fields of study yield the largest workforce size one year after graduation: health professions (4,458 graduates employed), business management and administration (3,953 employed), education (2,807 employed), liberal arts/general studies (2,335 employed), and social sciences (1,140 graduates employed). The fields where employment rates are highest after five years are: health professions (2,910 graduates employed), business management and administration (2,881 employed), education (2,268 employed), liberal arts/general studies (1,254 employed), and social sciences (531 employed).

The median salary for graduates after five years is higher than for graduates after only one year at all degree levels. For instance, the data indicate that after five years of employment with a bachelor's degree, graduates command a median annual salary of \$41,460, compared to \$28,836 one year after graduation (a 44 percent increase). For doctoral degrees, the median annual salary increases from \$42,936 one year after graduation to \$70,000 five years after graduation (a 63 percent increase). This supports other findings that the earnings gap between educational levels increases as graduates gain experience in the workforce.

Resident retention is excellent in the state of Oklahoma, with 87 percent of 2013-14 Oklahoma residents' bachelor's and master's degree recipients employed in-state one year after graduation. Additionally, 92 percent of the resident associate in applied science graduates remained; 89

percent of certificate and associate in arts/science recipients remained; and professional and doctoral degree recipients remained in-state at rates of 73 and 67 percent, respectively.

Comparing 2013-14 Oklahoma residents' employment rates to the previous report for 2012-13 resident graduates after one year, rates increased at all degree levels from certificate to master's. On the other hand, rates for professional and doctoral degree graduates decreased from the prior reporting period.

Efforts to improve student preparation and awareness of college, strategic scholarship programs, and accelerated degree completion programs all contribute to increases in numbers of college graduates in the state, assisting workforce efforts. In 2010, Oklahoma joined with *Complete College America (CCA)*, a national nonprofit organization focused on raising degree attainment. Significant progress is being made toward the program goals. In the first four years of the CCA initiative, the number of degrees and certificates earned in Oklahoma has increased by **8,462**, surpassing the state benchmark of **6,800**. Governor Mary Fallin framed the importance of this goal and the state's commitment in a September 2011 press conference when she said, "We can and must do better in producing a highly skilled and educated workforce in our state. This is part of our agenda – developing the Complete College America program."¹

¹ <http://okhighered.org/complete-college-america/> .

This page left blank intentionally.

Oklahoma State Regents for Higher Education

Employment Outcomes Report

2017

BACKGROUND

The Oklahoma State Regents for Higher Education has been compiling and analyzing employment data since 1994. This endeavor began with a partnership among the Oklahoma State Occupational Information Coordinating Committee (SOICC), the Oklahoma Employment Security Commission (OESC), and the State Regents. With the assistance of the Office of the Governor, in 1997 the Oklahoma Tax Commission (OTC) joined the data exchange.

In 1997, the American Association of State Colleges and Universities (AASCU), the American Association of Community Colleges (AACC), and the National Association of State Universities and Land-Grant Colleges (NASULGC) sponsored the Joint Commission on Accountability Reporting (JCAR) to identify standard reporting conventions. The State Regents were active participants in developing the standards for reporting placement and employment rates as published in the *JCAR Technical Conventions Manual*.

The Workforce Investment Opportunity Act (WIOA) and the Carl D. Perkins Vocational and Technical Education Act require accountability reporting on several indicators, including employment outcomes (percentage of students or graduates who are employed).

Findings from the employment data collection and analysis have been used in degree program reviews, a May 1998 document, *The General Degree Productivity and Retention of Oklahoma Graduates*, and Department of Commerce presentations to prospective employers.

This is the ninth *Employment Outcomes Report* designed to study the value of public higher education in the state of Oklahoma by addressing the following questions:

- What percentage of Oklahoma residents and non-Oklahoma residents who graduate from public colleges and universities remain in Oklahoma?
- How does level of education impact salary?
- What is the median annual salary by field of study and level of degree of Oklahoma graduates?

In 2017, the report has been condensed, since additional detail is now available through Tableau software, which displays data in an interactive manner. Now the user can answer his/her own questions and display the data in the form of dynamic bars, plots, and maps. The freedom to interact with the data means that pages of tables and reports are no longer necessary, and a summarized form of the data is provided here along with a link to the full interactive data dashboard.

(<http://okhighered.org/econ-dev/dashboards/dashboard-StatewideMedianAnnualSalary.html>).

This report and the accompanying dashboard examine the employment outcomes of all graduates of Oklahoma **public** higher education institutions, as well as Oklahoma residents and non-Oklahoma resident graduates. Highlights are included in the report.

INTRODUCTION

Research has repeatedly confirmed the individual benefits of higher education in terms of increased salaries, greater participation in the labor force, and lower unemployment rates. A Pew Research Center study states “On virtually every measure of economic well-being and career attainment – from personal earnings to job satisfaction to the share employed full time – young college graduates are outperforming their peers with less education.”² According to the *Digest of Education Statistics, 2017*.³

- The median annual income in 2015 for year-round, full-time male workers 25 years old and over ranged from approximately \$27,160 for those with less than a 9th grade education, to \$41,570 for high school graduates, to \$52,070 for associate degree recipients, to \$71,390 for bachelor’s degree holders, to \$86,740 for master’s degrees, to over \$100,000 for doctoral and professional degree holders. On average, female workers earned less than males, but similar earnings differences existed by education level.
- In 2015, about 86 percent of adults, aged 25-64 with a bachelor’s or higher degree, participated in the labor force, compared with 72 percent of persons who had completed high school and 60 percent of those who were not high school completers.
- Unemployment rates for adults aged 25-64 in 2015 were 3 percent for those with a bachelor’s degree or higher, 7 percent for high school completers, and 10 percent for those who had not completed high school.

Policy makers understand the contributions graduates make in terms of higher personal income tax contributions and their attractiveness to new business and economic development efforts. They are also aware of public benefits that accrue from college graduates, including better health and increased socioeconomic status, to name a few.⁴

Because of the demonstrated impact that higher education has on individuals and the society in which they live, it is important to assess employment data and identify factors which may affect decisions to remain in-state or seek employment elsewhere. Various factors, including residency status, level of degree attainment, field of study, and type and selectivity of school attended have been evaluated in other studies.

² “The Rising Cost of Not Going to College,” Pew Research Center, Social and Demographic Trends, February 11, 2014.

³ National Center for Education Statistics, *Digest of Education Statistics, 2017*, Chapter 5.

⁴ “Education Pays 2016: The Benefits of Higher Education for Individuals and Society,” *Trends in Higher Education Series*, College Board, December 2016.

A 2015 South Dakota Board of Regents report revealed significant differences in employment rates for recent public higher education graduates who were South Dakota residents compared to students who were non-residents. From 2010 to 2014, 72.6 percent of the South Dakota resident degree completers were found employed in South Dakota, compared to 32.1 percent of non-residents who were found employed in South Dakota. For graduate students, 68.2 percent of South Dakota resident degree holders were found compared to 22.5 percent of non-residents.⁵

INITIATIVES

One avenue for retaining more graduates in Oklahoma is to increase the number of Oklahoma citizens attending and graduating from higher education institutions in-state. One of the key Oklahoma efforts to increase college enrollment is *Oklahoma's Promise, or formerly, the Oklahoma Higher Learning Access Program* (OHLAP), which provides tuition subsidies for students whose families cannot afford college and who meet the challenge of rigorous academic preparation.

Creating opportunities for students to enroll in Oklahoma higher education is one step toward producing more graduates and increasing the state's intellectual capital. It is equally important that students who enter college actually continue to the point of graduation. Prominent initiatives that advance this goal include:

- *Reach Higher*, an accelerated adult degree completion program, which began offering courses in spring 2007. A statewide project involving nine public universities, the program targets working adults who have previously completed at least 72 credit hours. Through flexible schedules and multiple learning environments, such as face-to-face classes, web-based resources and activities, individual and group projects, capstone achievements, and recognition of prior learning, students have the opportunity to complete a bachelor's degree in as little as 18 months. Additionally, an associate in arts/associate in science degree completion program is available to students who already have at least 18 hours of college credit.
- Established in 2009, *Complete College America* is a national nonprofit with a single mission: to work with states to significantly increase the number of Americans with quality career certificates or college degrees and to close attainment gaps for traditionally underrepresented populations. Oklahoma's goal is to increase the number of degrees and certificates by an average of 1,700 per year, from 30,500 annually in 2011 to 50,900 annually by 2023, a 67 percent increase. In the first four years of the CCA initiative, the number of degrees and certificates earned in Oklahoma has increased by **8,462**, surpassing the state benchmark of 6,800.

More opportunity for students to attend and finish their higher education careers means more opportunity for Oklahoma businesses to gain educated and credentialed individuals.

⁵ "2015 SDBOR Graduate Placement Dashboard," South Dakota Board of Regents.

METHODOLOGY

Process

Oklahoma State System degree recipients are identified using the State Regents' Unitized Data System (UDS). The last degree earned is selected for students who earn multiple degrees, which is normally the highest degree earned. A student who earned a bachelor's degree in 2009-10 and a master's degree in 2013-14 is reported only once in the 2013-14 academic year.

With the help of the Center for Economic and Management Research (CEMR) at the University of Oklahoma, the list of graduates is compared to data at the Oklahoma Employment Security Commission (OESC). When a match is found, the industry code, based on the North American Industry Classification System (NAICS) (see Appendix), and quarterly wage information are attached to the degree recipient's record and returned to the State Regents without an identification number. This report uses graduate records matched within five quarters of employment from the second quarter of 2014 to the second quarter of 2015. *Median* annual salary is captured within the Tableau application using the wage information. Beginning with this year's report, median salary is used, providing a better measure of centrality than average salary, which was used in prior reports.

Because the OESC database only contains information about employees with unemployment insurance, the search was expanded to include Oklahoma Tax Commission (OTC) records. When no match is found by OESC, the degree recipients' records are then compared to state resident tax returns. "Found" or "Not Found" information only is returned for these Tax Commission matches. This report is based on the 2014 tax year.

All data is now being viewed in the form of Tableau dashboards, a data analytics tool that displays trends in an interactive manner. Samples from the Tableau data are included in this report under "FINDINGS," and links to the dashboards are provided in the Background and Appendix.

The dashboards analyze all data for the graduating classes of 2009-10 through 2013-14, which allows for review of employment five, four, three, two, or one year(s) after graduation. This report will summarize the information for one and five years after graduation.

The populations are divided into two groups: (1) Oklahoma residents and (2) non-Oklahoma residents. Graduates are considered Oklahoma residents if the original state of residence when entering an Oklahoma higher education institution is Oklahoma. If the original state of residence is anything other than Oklahoma, then the graduate is a non-Oklahoma resident.

Once in Tableau, the data is sorted to display employment by degree level, field of study, industry, and industry in detail. There are filters included to select a year of graduation, a field of study, an institution, STEM or non-STEM, and resident or non-resident indicators. The Public filter should always display "Y" to indicate filtering of public institutions **only**. The State Regents utilize metrics from public institutions only to avoid fluctuations due to inconsistent reporting of private institutions' graduates to the Oklahoma State Regents for Higher Education.

Limitations

The OESC database includes only employees who have Oklahoma unemployment insurance. The self-employed, employees of the federal government (e.g., military and postal service), and graduates working outside of Oklahoma are not included in the OESC database.

The Tax Commission database includes couples filing joint returns; therefore, employment of the degree recipient is assumed, but may be that of a spouse. Also, Tax Commission data does not include industry codes; therefore, NAICS information is not available for graduates found through tax data matches.

Privacy

A data exchange agreement defines the procedures for protecting all data. All agencies protect the identity of individuals. The OESC, CEMR, and the Tax Commission do not provide social security numbers to the State Regents with their data matches. The State Regents' *Employment Outcomes Report and the dashboards* include only aggregate data and only when six or more individuals are being described.

FINDINGS

All data and tables are from the Tableau link in the Appendix, and it is strongly advised to visit and interact with the Tableau dashboard to view information in full detail.

All Graduates (Oklahoma and Non-Oklahoma Residents)

Employment Rate Comparison

Employment by degree level for one year after graduation shows associate in applied science and certificate graduates with the highest percentage of employment (88 percent), followed by associate in arts/science (85 percent), bachelor's (78 percent), master's (68 percent), professional (64 percent), and doctoral degree holders (51 percent). For students who graduated five years prior to the employment period for this study, employment rates dropped by 8 to 12 percentage points for certificate through master's degree holders. The change for professional degree holders was minimal (3 percentage points), but the change for doctoral degree holders was considerable (21 points).

Comparing last year's employment data (for 2008-09 and 2012-13 graduates) shown in Table 2, one can see that the one-year out employment rates for 2013-14 graduates are higher than the 2012-13 graduates at the certificate, associate in applied science, and bachelor's degree level, while one-year out rates are lower for associate in arts/science, master's, professional, and doctoral recipients. After five years, the 2009-10 graduates had higher employment rates for all degree levels except doctoral, compared to the 2008-09 graduates after five years.

Table 1
Employment by Degree Level
for All State System Graduates

Degree Level	Five Years After Graduation (2009-10)		One Year After Graduation (2013-14)	
	Number Employed	Percent Employed	Number Employed	Percent Employed
Certificate	305	80%	649	88%
Associate in Applied Science	1,987	80%	2,816	88%
Associate in Arts/Science	1,937	74%	5,894	85%
Bachelor	8,443	64%	12,386	78%
Master	2,380	57%	3,250	66%
Professional	557	61%	586	64%
Doctoral	129	30%	245	51%

-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, June 2017.

Table 2
Employment by Degree Level
for All State System Graduates

Degree Level	<i>Five Years After Graduation (2008-09)</i>		<i>One Year After Graduation (2012-13)</i>	
	Number Employed	Percent Employed	Number Employed	Percent Employed
Certificate	332	65%	79	74%
Associate in Applied Science	2,468	78%	3,407	85%
Associate in Arts/Science	2,511	71%	6,478	79%
Bachelor	13,116	61%	14,892	77%
Master	4,151	56%	4,525	69%
Professional	869	59%	929	71%
Doctoral	388	33%	418	61%

-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, September 2016.

Employment by Field of Study

In addition to employment rates, the actual number of graduates produced will affect availability of degreed individuals in the workforce. In terms of workforce size, the following fields of study yield the largest workforce one year after graduation: health professions (4,458 graduates employed), business management and administration (3,953 employed), education (2,807 employed), liberal arts/general studies (2,335 employed), and social sciences (1,140 graduates employed). The fields where employment rates are highest after five years are health professions (2,910 graduates employed), business management and administration (2,881 employed), education (2,268 employed), liberal arts/general studies (1,254 employed), and social sciences (531 graduates employed).

Figures 1 and 2 show the top five workforce producing fields of study for the current employment period (2009-10 graduates after five years and 2013-14 graduates after one year), compared to the previous study (2008-09 graduates after five years and 2012-13 graduates after one year).

Figure 1
Top Five Fields of Study
Oklahoma Employment
Five Years After Graduation (2009-10/2008-09)
For All State System Graduates

1. **Health Professions – 2,910 Employed (71%)/2,710 (72%)**
2. **Business Management & Admin – 2,881 Employed (63%)**
/2,709 (61%)
3. **Education – 2,268 Employed (78%)/2,339 (76%)**
4. **Liberal Arts/Gen Studies – 1,254 Employed (65%)**
/1,232 (66%)
5. **Social Sciences – 531 Employed (59%)/559 (55%)**



-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, June 2017.

Figure 2
Top Five Fields of Study
Oklahoma Employment
One Year After Graduation (2013-14/2012-13)
For All State System Graduates

1. **Health Professions – 4,458 Employed (85%)/4,153 (83%)**
2. **Business Management & Admin – 3,953 Employed (73%)**
/3,889 (75%)
3. **Education – 2,807 Employed (88%)/2,848 (86%)**
4. **Liberal Arts/Gen Studies – 2,335 Employed (79%)**
/2,027 (75%)
5. **Social Sciences – 1,140 Employed (83%)/ Psychology – 965 (76%)**



-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, June 2017.

Science, Technology, Engineering, and Math (STEM) Employment Rates

Oklahoma is still in need of more traditional STEM graduates. Although the Oklahoma one-year retention rates of STEM certificate (96 percent) and associate degree holders (89 and 87 percent) are higher than for all fields, the retention rates of bachelor’s (74 percent), master’s (49 percent), and doctoral (43 percent) STEM degree holders are lower than those rates for all fields combined. After five years, STEM certificate and associate degree holders were retained at about the same rates as those for all fields; while higher degree holders in STEM fields were retained at lower rates than were the same level degree holders overall. It is well known that STEM graduates are more in-demand, as evidenced by their higher salaries and the difference in retention rates between one and five years after graduation. This is especially true of graduates with higher degrees.

Employment rates and counts for the current study’s graduates (2013-13 and 2009-10) are shown in Table 3, with employment data from the previous year’s study (2012-13 and 2008-09 graduates) shown in Table 4. In general, graduates at lower education levels were employed at greater rates in this study than in the previous study, while graduates at higher education levels were retained at lower rates in this study, compared to the previous study. One positive note deserves mention: for doctoral degree recipients, the *difference* between one- and five-year employment rates is lower in the current study (22 percentage points difference), compared to the prior year’s study where the difference was 31 percentage points. This suggests the out-migration of STEM graduates who first get a job in Oklahoma has grown better.

**Table 3
STEM Employment by Degree Level
For All State System Graduates**

Degree Level	Five Years After Graduation (2009-10)		One Year After Graduation (2013-14)	
	Number Employed	Percent Employed	Number Employed	Percent Employed
Certificate	13	81%	26	96%
Associate in Applied Science	309	79%	526	89%
Associate in Arts/Science	119	75%	522	87%
Bachelor	1,370	60%	2,371	74%
Master	294	42%	416	49%
Doctoral	39	21%	98	43%

-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, June 2017.

Table 4
STEM Employment by Degree Level
For All State System Graduates

Degree Level	Five Years After Graduation (2008-09)		One Year After Graduation (2012-13)	
	Number Employed	Percent Employed	Number Employed	Percent Employed
Certificate	20	55%	52	90%
Associate in Applied Science	328	75%	580	82%
Associate in Arts/Science	187	65%	694	77%
Bachelor	2,243	54%	2,908	74%
Master	699	42%	770	56%
Doctoral	175	28%	173	59%

-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, September 2016.

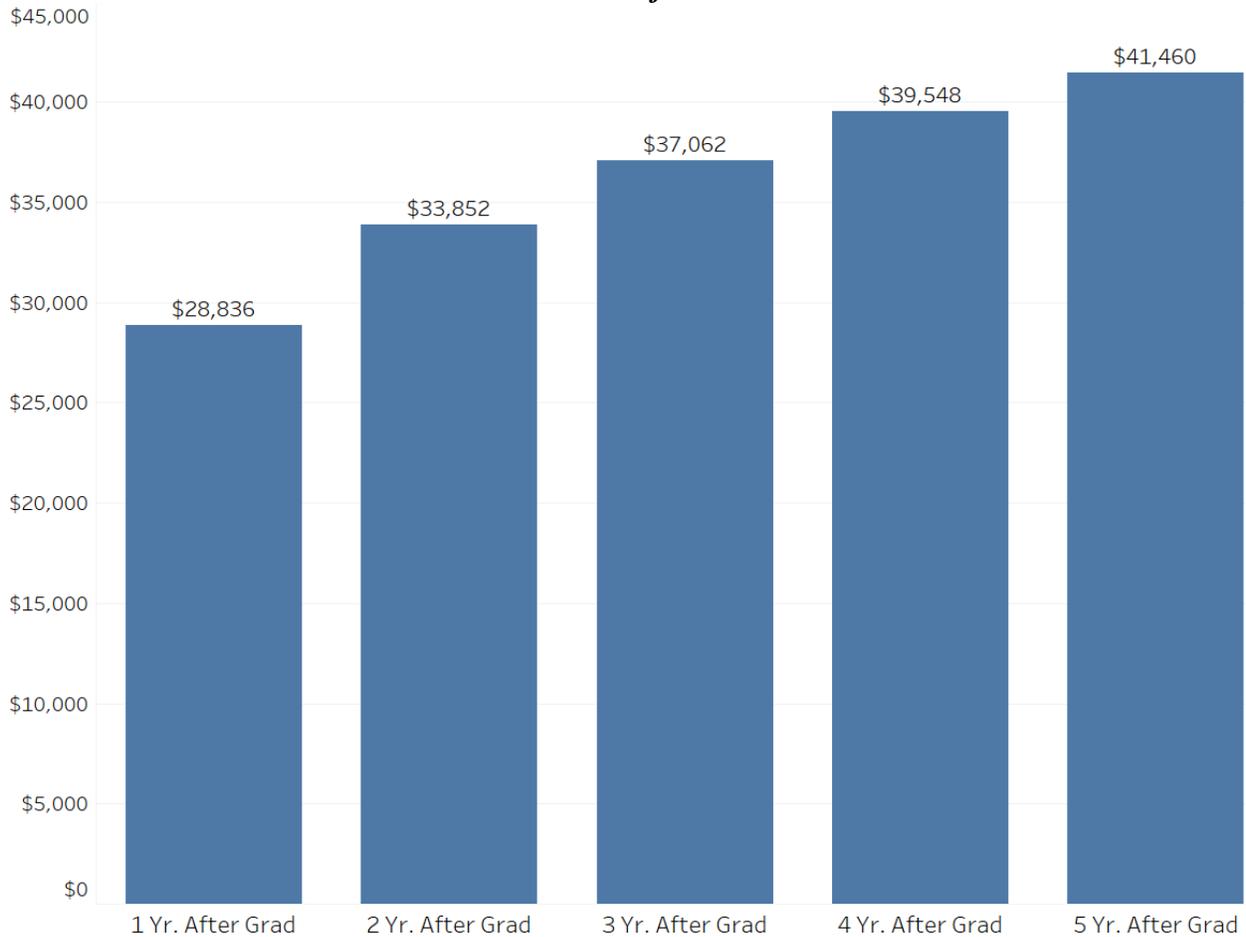
Median Annual Salary Comparison

Beginning with this report, **median** annual salary is used instead of **average** annual salary which was used in prior reports. Since this is the first data cycle to use median salary, no comparison can be made to past data.

The current study supports national data that link salary to educational attainment. Whether looking at employment one year after graduation or employment five years after graduation, Oklahoma data show that higher median salaries are earned by those who have higher degrees. After five years, certificate and associate in arts/science recipients earned median annual salaries in the low \$20,000s; while bachelor’s and associate in applied science degree holders had median salaries in the low \$40,000 range; and doctoral and professional degree holders commanded the highest salaries with \$70,000 for doctoral recipients and \$85,154 for first professional degree holders.

Data from this study suggest that work experience does impact salary. The median annual salary for graduates after five years was higher than for graduates after only one year at all degree levels. Figure 3 shows the **median** annual salary for bachelor’s degree holders one, two, three, four, and five years after graduation. After five years of employment with a bachelor’s degree, graduates’ median salary was \$41,460, which is 44 percent higher than the \$28,836 median annual salary of bachelor’s degree holders one year after graduation.

Figure 3
Median Annual Salary
Bachelor's Degrees Recipients
2013-14 through 2009-10
One – Five Years After Graduation

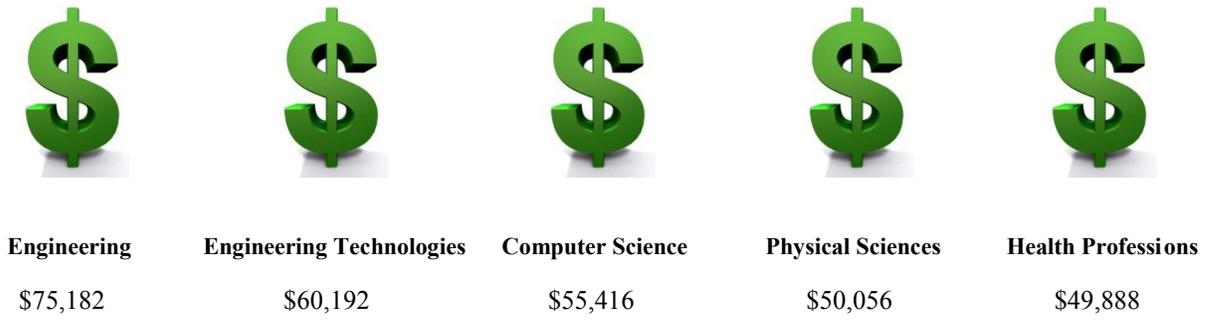


-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, June 2017.

Median Annual Salary Comparison by Field of Study

Graduates with Science, Technology, Engineering, and Math (STEM) degrees consistently earn higher salaries, although health professions and business management also command strong salaries. In general, this is true for all degree levels. Figure 4 displays median annual salaries for the top five fields among bachelor's degree holders five years after graduation. Engineers command a median annual salary of \$75,182; the median annual salary for engineering technology bachelor's degree graduates is \$60,192, followed by computer science majors (\$55,416), physical sciences majors (\$50,056) and health profession graduates (\$49,888).

Figure 4
Top Five - Median Annual Salary by Field of Study
2009-10 Bachelor's Degrees
After Five Years



-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, June 2017.

Oklahoma Residents Only

Employment Rate Comparison

Even after five years, Oklahoma is retaining a majority of its resident graduates (those whose original state of residence when entering an Oklahoma higher education institution was Oklahoma). Table 5 displays employment rates of Oklahoma resident graduates one and five years after graduation, by degree level. After five years, associate in applied science degree holders were employed at the highest rate (85 percent), followed by certificate holders (83 percent), associate in arts/science (80 percent), bachelor's and master's degree holders (both at 77 percent), and professional degree holders (71 percent). Doctoral degree holders showed the lowest employment rate after five years, 56 percent, which represents more than half of the original graduating class.

As would be expected, the out-migration of Oklahoma residents in the current study is less than the Oklahoma graduate population as a whole. Not only are more resident graduates employed in Oklahoma one year after graduation, but the percent of graduates lost within the next four years is smaller than for all graduates. For resident graduates, the out-migration year one and year five ranges from 6 percentage points for certificate holders to 11 percentage points for doctoral degree holders. Professional degree holders reflect a different pattern, however, with only 2 percentage points more in graduates lost after five years.

In comparison to the previous year's Employment Outcomes data (September 2016 report), every single level of education reflected increased employment rates for one and five years after graduation between the two reports (Figures 5 and 6), except doctoral degrees one and five years after graduation and professional degrees one year after graduation. In both cases, doctoral degrees decreased from 61 percent to 56 percent (2008-09 graduates to 2009-10 graduates) and 71 percent to 67 percent (2012-13 graduates to 2013-14 graduates). The largest increases came from the certificate level (66 percent to 83 percent from 2008-09 graduates to 2009-10 graduates and 74 percent to 89 percent from 2012-13 graduates to 2013-14 graduates).

Table 5
Employment by Degree Level
For Oklahoma Residents Only

Degree Level	<i>Five Years After Graduation (2009-10)</i>		<i>One Year After Graduation (2013-14)</i>	
	Number Employed	Percent Employed	Number Employed	Percent Employed
Certificate	287	83%	585	89%
Associate in Applied Science	1,884	85%	2,616	92%
Associate in Arts/Science	1,841	80%	5,524	89%
Bachelor	7,819	77%	10,873	87%
Master	2,111	77%	2,813	87%
Professional	482	71%	491	73%
Doctoral	97	56%	153	67%

-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, June 2017.

Table 6
Employment by Degree Level
For Oklahoma Residents Only

Degree Level	<i>Five Years After Graduation (2008-09)</i>		<i>One Year After Graduation (2012-13)</i>	
	Number Employed	Percent Employed	Number Employed	Percent Employed
Certificate	295	66%	729	74%
Associate in Applied Science	2,208	83%	3,005	89%
Associate in Arts/Science	2,252	76%	5,878	81%
Bachelor	10,268	71%	11,931	84%
Master	2,787	74%	3,187	84%
Professional	695	67%	671	77%
Doctoral	157	61%	206	71%

-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, September 2016

Non-Oklahoma Residents Only

Employment Rate Comparison

Non-Oklahoma residents are retained at a lower rate (less than half of the graduates are retained one year after graduation). The percentages are even lower for five years after graduation, especially for bachelor's, master's, and doctoral degree holders (21, 19, and 12 percent, respectively).

Comparing the current study to the 2016 Employment Outcomes report, non-resident retention after one year is lower for all degree levels except certificate, with retention rate changes ranging from -3 (bachelor's) to -14 (doctoral and professional) percentage points. Employment rates after five years did not change as much between the two studies, with rate changes varying between -3 points for bachelor's to an increase of 2 points for certificate and professional award recipients.

Table 7
Employment by Degree Level
For Non-Oklahoma Residents Only

Degree Level	Five Years After Graduation (2009-10)		One Year After Graduation (2013-14)	
	Number Employed	Percent Employed	Number Employed	Percent Employed
Certificate	18	53%	64	84%
Associate in Applied Science	103	40%	200	55%
Associate in Arts/Science	96	30%	370	51%
Bachelor	624	21%	1,513	44%
Master	269	19%	437	27%
Professional	75	32%	95	39%
Doctoral	32	12%	92	37%

-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, June 2017.

Table 8
Employment by Degree Level
For Non-Oklahoma Residents Only

Degree Level	<i>Five Years After Graduation (2008-09)</i>		<i>One Year After Graduation (2012-13)</i>	
	Number Employed	Percent Employed	Number Employed	Percent Employed
Certificate	37	51%	60	68%
Associate in Applied Science	260	39%	402	55%
Associate in Arts/Science	259	32%	600	55%
Bachelor	2,848	24%	2,961	47%
Master	1,364	20%	1,338	34%
Professional	174	30%	258	53%
Doctoral	231	14%	212	51%

-Source: Oklahoma State Regents for Higher Education Employment Outcomes Data, September 2016.

CONCLUSIONS

The findings of this study support national data that link salary to educational attainment. Oklahoma employment data for graduates of Oklahoma public colleges and universities confirm that, on average, the higher the degree a student earns, the higher the median annual salary he/she commands.

- Five years after graduation, 2009-10 bachelor's degree recipients employed in Oklahoma earned a median annual salary of \$41,460. The median salary for 2009-10 certificate holders was the lowest at \$21,808, while professional degree holders were highest at \$85,154.
- Salary differences among major fields of study have been reported. Graduates with engineering, mathematics, computer science, and other technical degrees consistently earn higher median salaries, although fields of study such as health professions and business management also command strong salaries and have some of the highest employment rates.

Oklahoma is retaining a majority of its graduates, even after five years.

- The current data show employment rates for the 2009-10 graduates: 80 percent of certificate holders remain in state; 74 percent of associate in arts/science, 80 percent of associate in applied science, 64 percent of bachelor's, and 57, 61, and 30 percent of master's, professional, and doctoral degree recipients, respectively, remain in Oklahoma five years after graduation.
- For graduates who were Oklahoma residents at the time they entered college, the employment rates are higher. Five years after graduation, 83 percent of certificate holders, 80 percent of associate in arts/science, 85 percent of associate in applied science, 77 percent of bachelor's, 77 percent of master's, 71 percent of professional, and 56 percent of doctoral degree holders are found in state.
- Although the vast majority of graduates of Oklahoma public higher education institutions remain in Oklahoma, the out-migration is evident in technical fields of study such as engineering, computer science, architecture, and physical sciences.

The priority of this study resides in the continued partnership between industry and higher education as they continue to educate and employ a 21st century workforce to serve Oklahoma.

Employment Outcomes Report

2017

Appendix

A. All Tables and Figures completed using Tableau 2017 Employment Outcomes Data

Tableau website: <http://okhighered.org/econ-dev/dashboards/dashboard-StatewideMedianAnnualSalary.html>

B. North American Industry Classification System (NAICS)

Taken from the *2017 U.S. NAICS Manual*, United States Office of Management and Budget. Link: <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2017>

C. Classification of Instructional Programs (CIP)

Taken from 2010 Edition of the *Classification of Instructional Programs*, National Center for Education Statistics.

Link: <https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=55>