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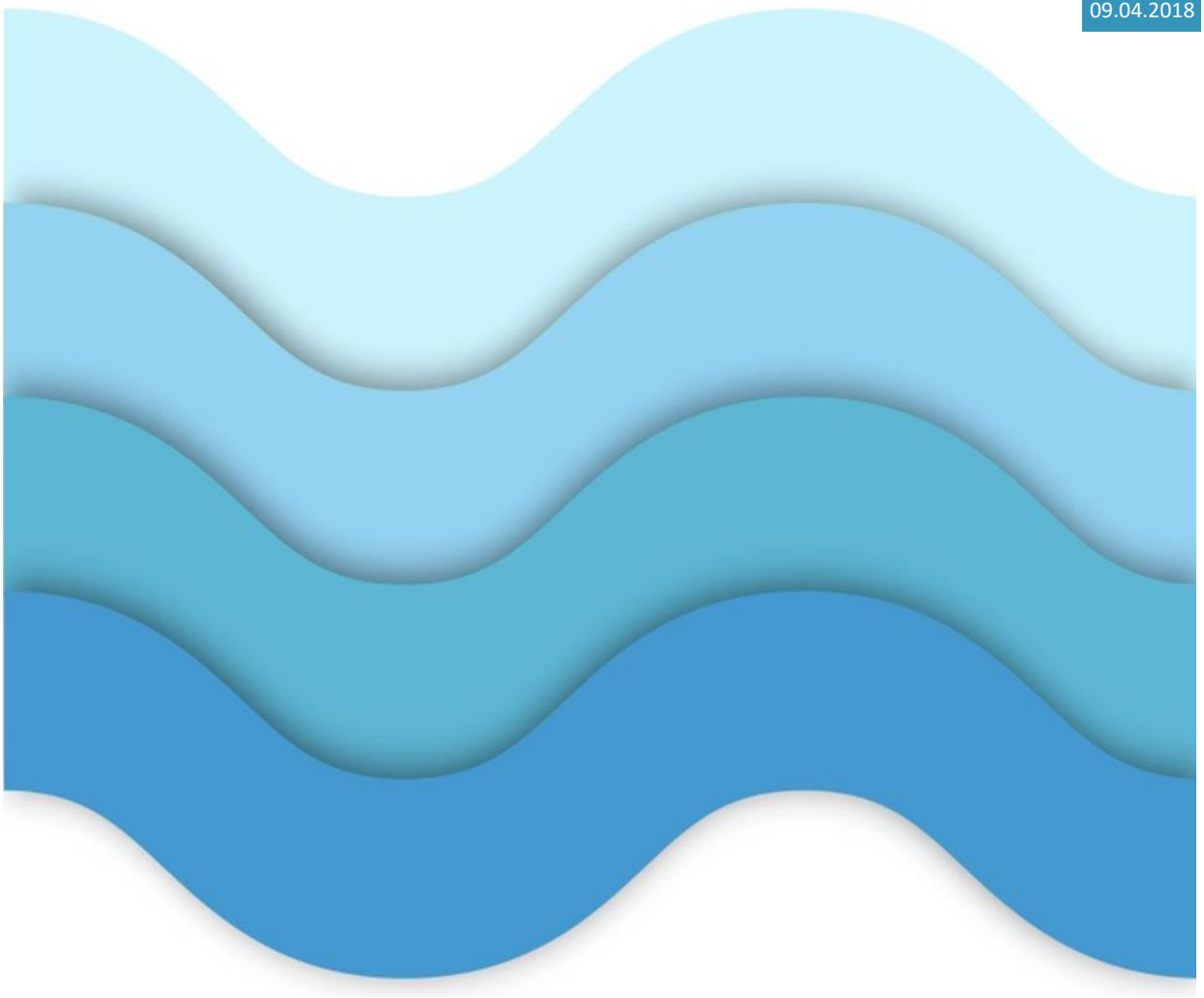

Washington State Community and Technical Colleges: Faculty and Administrator Salary Study Update

PREPARED BY THE CENTER FOR ECONOMIC AND BUSINESS RESEARCH

Heleana Lally
Allison Rucker
Lucas Dubois
Josh Grandbouche
Nick Sparling
Tyler Murphy

WESTERN WASHINGTON UNIVERSITY
CENTER OF ECONOMIC AND BUSINESS RESEARCH

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

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About the Authors

The Center for Economic and Business Research (CEBR) is an outreach center at Western Washington University, located within the College of Business and Economics. The Center connects the resources found throughout the University to assist for-profit, non-profit, government agencies, quasi-government entities and tribal communities in gathering and analyzing useful data. We use a number of collaborative approaches to help inform our clients so that they are better able to hold policy discussions and craft decisions.

The Center employs students, staff and faculty from across the University as well as outside resources to meet the individual needs of those we work with. Our work is based on academic approaches and rigor. We not only provide a neutral perspective in our analysis, but also provide applied learning opportunities. We focus on developing collaborative relationships with our clients and facilitating meaningful discussions, instead of simply delivering an end product.

The approaches we utilize are insightful, useful, and are all a part of the debate surrounding the topics we explore. However, none are absolutely fail-safe. Data, by nature, are challenged by how it is collected and leveraged with other data sources; following only one approach without deviation is ill-advised. We provide a variety of insights within our work – not only on the topic at hand but the resources (data) that inform that topic.

We are always seeking opportunities to bring the strengths of Western Washington University to fruition within our region. If you have a need for analysis work or comments on this report, we encourage you to contact us at 360-650-3909. To learn more about CEBR visit us online at https://cbe.wwu.edu/cebr/center-economic-and-business-research.

The Center for Economic and Business Research is directed by Hart Hodges, PhD and James McCafferty.

About this Study

The 2018 supplemental operating budget (ESSB 6032) provided funds to study the Community and Technical Colleges' compensation policies. Specifically, we were asked to look at academic, classified, and professional employee compensation data, source of funding, and the duties or categories for which that compensation is paid; identify comparable market rate salaries; incorporate data from OFM compensation studies from 2017-19; and provide analysis on whether a local labor market adjustment formula should be implemented.

In 2007-08 and 2013-14, the Washington State Board for Community and Technical Colleges (SBCTC) worked with a consultant, MGT of America Consulting, LLC (MGT), and a stakeholder task force, to complete a comparative analysis of salaries. This study was needed based on increasing difficulty at colleges to recruit and retain high caliber faculty and administrative staff.

In this report we update the data obtained in the previous 2007-08 and 2013-14 studies and apply, where meaningful, the same, methodology and analysis methods used in the previous studies. We use a different approach when adjusting compensation for cost of living, and note in the report when and why we are using the different approach.

This report provides SBCTC with collected community and technical college faculty and administrator salary data gathered using IPEDS (Integrated Postsecondary Education Data System), JobsEQ, C2ER (Council for Community and Economic Research), and other sources. The report also provides analysis of the collected data for the national and regional compensation data, administration and faculty salaries, comparison of nominal and adjusted cost-of-living average salaries, comparisons with the data results from the previous studies, hard to hire variables and index, and an economic impact analysis of salary increases.

Peer Groups

In order to evaluate salary levels for administrator and instructional staff within Washington State's community and technical colleges, we compared salary levels relative to other states. There are three *Peer Groups* made up of various U.S. states. One of the groups is the Regional Peer States (RPS) which consist of all of the Pacific Northwest States around Washington. Next is the Global Challenge States (GCS) group which is a make-up of the top 10 states in the New Economic Index, produced by the Information Technology & Innovation Foundation (ITIF) and used by Washington Learns. The ITIF uses 21 indicators that measure how well a state competes in the global economy.[1] Lastly, we have the MGT-Selected Peer States (MGT) group. The methodology for this last group was designed and used by MGT during the 2007-08 Salary Study, which determines the top 15 states that compare to Washington based on their state economic factors and colleges' total revenue (i.e. Tuition & Fees; Federal, State, and Local Appropriations), enrollment size, and number of faculty.

As updated through application of the previously developed methodology, the Peer Groups[2] include:

1. **Regional Peer States (RPS):** California (CA), Oregon (OR), Idaho (ID), Montana (MT), and Nevada (NV)
2. **Global Challenge States (GCS)[3]:** California (CA), Colorado (CO), Connecticut (CT), Maryland (MD), New Jersey (NJ), New York (NY), Utah (UT), Virginia (VA), and Washington (WA).
3. **MGT-Selected Peer States (MGT)[4]:** Arizona (AZ), California (CA), Colorado (CO), Connecticut (CT), Illinoi (IL), Kansas (KS), Massachusetts (MA), Maryland (MD), Main (MN), North Carolina (NC), New Jersey (NJ), New Mexico (NM), Texas (TX), Virginia (VA), and Washington (WA).

In regards to the GCS group, we changed the sample size from seven states to ten states since ITIF's index involves the top ten states. Additionally, Delaware was listed as the fifth state in the *New Economic Index*, however because IPEDS does not have any institution information on colleges in the State of Delaware, we had to leave Delaware out and use the next available state on the list. Lastly, for simplicity and continuity, we continued with MGT's methodology for the MGT group so that comparison(s) between the 2013-14 study and 2016-17 studies may be made.

[1] The 2017 State New Economic Index, *Information Technology and Innovation Foundation*, (pp. 6-12), 2017. http://www2.itif.org/2017-state-new-economy-index.pdf

[2] For a visual representation, see Map 1 at the end of this report.

[3] The 2017 State New Economic Index, *Information Technology and Innovation Foundation*, (pp. 6-12), 2017. http://www2.itif.org/2017-state-new-economy-index.pdf

[4] MGT of America Consulting LLC, *Final Report Faculty and Administrator Salary Study Update*, 2013-14. To our knowledge this report was not referenced in prior salary adjustments. https://www.mgtconsulting.com/

Methodology

This study entailed data collection and analysis of system's policies and practices, as well as faculty and administrator salaries. In conducting our research, we implemented several changes and adjustments throughout this report to reflect either data revisions, methodology clarifications, or framework shifts that were applicable since the 2013-14 study. Most changes were made in order to improve upon previous methods, allowing for a more accurate analysis; such as the sample size of the peer groups, a region-to-region focus on Cost of Living (COL) by Washington's Workforce Development Areas, and the exclusion of the "SBCTC Enrollment and Budget as Predictors of Average Salary" and "Local Funding as Predictor of Nominal Average Faculty Salaries" regression models.

We chose to exclude both of the Average Salary regression models because until June 2018 colleges did not have the authority to negotiate faculty salary levels. With such a recent policy change in local-negotiation-of-salary, we saw no reason to include the regression models that predict the correlation between average salary levels with enrollment, budget, and local funding. That being said, over the next few years as colleges have more robust enrollments, larger budgets, and further exposure to local-salary-negotiations we recommend reevaluating these regressions in the next salary report. This way it will be possible to see if a correlation exists between average salary levels and the given predictor variables. We explain other changes in the sections below.

Peer System Review of Policies & Practices

In the 2007-08 and 2013-14 studies, eight state college systems participated in a survey providing information on their system's policy and practices for: Funding, Staff Compensation, Cost-of-Living Salary Adjustments, Faculty Contract Days, Faculty Workload policies, Part-Time Faculty Compensation, Collective Bargaining policies, Healthcare & Retirement benefits, and Other College-Specific benefits. The survey information was collected by MGT through a direct survey sent out to all college systems in the peer states. The college systems that participated are the following: Colorado Community College System, New Mexico Independent Community Colleges, North Carolina Community Colleges, Texas State Technical College System, Virginia Community College System, SUNY Community College System (New York), Florida Department of Education, and Minnesota State Colleges and Universities.

This study updates the same college systems' information by conducting primary research from each systems' policies and practices. The tables for this can be seen at the end of this document under the section titled, *Peer System Policies & Practices Tables*. As in the past report, we have not used data available from College and University Professional Association for Human Resources' (CUPA-HR) survey, due to low participation rates and data inconsistencies.

Cost of Living

The following section describes the differences in the cost of living in different parts of Washington State and applies a Cost of Living (COL) factor to faculty and administrator salaries in order to adjust for the cost of living in a given region. This section is broken into two parts:

Part I – Workforce Development Area Average COL Weighted by Population

Part II – State Average COL Weighted by Population

Note: The methodology in this section differs from previous reports. In earlier reports, MGT looked at how the cost of living in Washington compared to other states, but did not look at differences in the cost of living in different parts of the state. We note that applying the same cost of living adjustment factor to salaries in different parts of the state can be misleading.

By looking at COL averages through a micro- and macro-lens we are attempting to account for the different living costs within Washington State and in Washington State compared to other states.

The source of the COL data comes from the C2ER, which produces a *Cost of Living Index* three times per year, providing a measure of how the cost of living differs in a range of urban areas across the country. The index is based on a basket of products that reflect different categories of consumer expenditures (e.g. Grocery Items: steak, lettuce, etc.; Housing: apartment rent, home price, etc.; Utilities: electricity, gas, etc.) The *Cost of Living Index* measures relative price levels for consumer goods and services in participating areas, with participants collecting the same data (using the same list of items) in all locations during a three-day period. The average for all participating places, equals 100, and each participant's index is read as a percentage of the average for all places.[5] In this sense, the cost of living in any given location can easily be seen as a certain percentage above or below the national average. In addition, the index allows easy comparisons of the cost of living in different places at a given point in time. (MGT also used the C2ER COL data in previous reports.)

(In disclosure, The Center collects and provides data for C2ER for 5 Washington State counties. This makes us very familiar with the data collected and the methodology utilized.)

Part I

Workforce Development Area Average COL Weighted by Population

Washington State is organized in workforce development areas which reflect workforce areas that have definable characteristics (e.g. labor areas, industry, geography, etc.). Each of these areas has stand-alone boards that advise and direct workforce efforts which are traditionally very connected to the two-year colleges within their boundaries.[6] The workforce development areas were defined with the intention of providing collaboration at the local-level in order to serve regional economies more effectively.

We view the 12 workforce areas in the state as regions that can have meaningful differences in cost of living. In this section we discuss the different impacts on salary levels when adjusting by (1) a workforce

[5] Council for Community and Economic Research (C2ER), *Cost of Living Index*, 2018 Q1.
[6] For a visual representation, see Map 2 at the end of this report.

development area COL verses (2) an overall state average COL, both being weighted by population in order to account for extreme regional variances.

In order for Washington State community and technical colleges to keep-pace with national salary figures, it is necessary to consider peer states and their salary levels within community and technical colleges. However, throughout this study we found that it would also be beneficial to consider implementing regional salary competition within Washington State. By considering the COL index (COLI) in each workforce development area (12 in total), we are able to better understand how pay differed across the state, in both nominal terms and adjusted for cost of living. Without this regional comparison, salaries in the Seattle-King and Snohomish workforce areas would be viewed as "better" if they were just a little higher than salaries in the South Central and Benton-Franklin workforce areas because the implicit assumption would be that the cost of living is the same everywhere in the state.[7] Furthermore, because an overall state COL average is necessary for national comparisons, we attempted to correct for this statistical skew by weighting each counties COLI by population. The following example portrays the potential salary differences between non-weighted- and weighted-state, and weighted-regional COL adjusted salaries.

COL Index Values:

Simple, unweighted average of COLI values across the state: 111.5

Population weighted average COLI value for the state: 123.5

Example workforce area, population weighted average COLI values, which takes into consideration the COL values from different counties in a workforce area and the population in the different counties (detailed description and numbers provided below)

- Seattle King: 151.7
- Northwest: 112.8
- South Central: 94.0

Application:

If a faculty member is paid $59,977 on average at North Seattle College and we adjust this wage using the unweighted state COLI average = 111.5 (not weighted by population), then their adjusted pay (what it would "feel" like) is ($59,977/111.5)*100 = $53,791. This adjustment accounts for the fact that a bundle of goods in Washington costs roughly 11.5% more than elsewhere in the U.S. Or, put another way, paying someone at North Seattle College $59,977 per year is equivalent to paying someone living in a city that has a cost of living the same as the national average a salary of $53,791.

If we adjust the wage with a population weighted state average COLI = 123.5, then the adjusted pay is ($59,977/123.5)*100 = $48,564. The population weighted average is higher because of the larger share of population living in the high cost areas of the Puget Sound. And the effective or adjusted pay is lower because it reflects the higher cost of living.

If we use the workforce development area, population weighted average COLI for Seattle of 151.7, then the adjusted pay is ($59,977/151.7)*100 = $39,537. The adjustment difference is much larger

[7] We discuss the impacts of this purchasing power difference later in the *Economic Impact Analysis* section.

than both the weighted and non-weighted state average COLI adjustment because we are considering the cost of living in that region rather than the state as a whole. In other words, their purchasing power in Seattle is significantly reduced by how expensive basic living costs are in Seattle versus another area in Washington State.

There is a significant cost of living expense not captured or accounted for when using both the non-weighted and weighted state average COL. It is helpful to use the state average COL methods when comparing how much it costs to live in Washington compared to anywhere else in the U.S. However, it is not helpful to use this method when attempting to capture how much it costs to live in one area of Washington compared to another area in Washington. The workforce development area COL average provides a more accurate representation of these regional costs. We would like to note that the state average COL method is not incorrect but rather inaccurate when calculating salaries for different areas within Washington State relative to one another. We highlight here that this impacts nearly all the areas of the state to varying degrees and reference Seattle only because of the obvious magnitude.

Focusing in on the methodology, again, the workforce development area COL values were developed using county-level COL indexes from JobsEQ by Chmura Economics & Analytics[8] and county population levels from the U.S. Census Bureau.[9] We created weighted average COL indexes for each workforce development area by summing the products of counties' population times the COL within a workforce development area and dividing by the sum of the counties' populations within that same workforce development area.[10]

$$Workforce\ Dist\ COL = \frac{\sum [(\text{County Pop1} * \text{COL1}) + (\text{County Pop2} * \text{COL2}) + \ldots + (\text{County Popi} * \text{COLi})]}{\sum (\text{County Pop1} + \text{County Pop2} + \ldots + \text{County Popi})}$$

Figure 1 (below) depicts the weighted averages of the COL by workforce development areas in Washington State and shows which colleges fall under a given workforce area.[11] Figure 2 depicts the same values but also includes Washington State's weighted average COLI (the yellow bar) for reference purpose. This figure demonstrates how a single measure for cost of living would not result in meaningful numbers when adjusting salaries for cost of living differences. The Seattle-King workforce area has the highest COLI at 151.7. In other words, it costs 51.7% more to live in the Seattle-King workforce

[8] JobsEQ by Chmura Economics & Analytics is a software service that provides users 24-hour access to economic development, education, and workforce market data for all of the United States. JobsEQ collects their COL data from the C2ER, 2018 Q1.

[9] The U.S. Census Bureau only collects population data at the county level every 10 years because of frequent migration. The most recent 10 year mark occurred in 2010, thus the data that CEBR has collected are Census projections using 2010 numbers.

[10] In constructing the data points for this series we only considered the COL for the county (or counties) in which colleges' reside-in, in order to better project a COLI that would be experienced by employees. It is possible a person may choose to have a longer commute to reduce their cost of living, but in most cases the amount saved is minimal.

[11] For a visual representation of these numbers, see Map 3 at the end of this report.

development area than the average in the United States. The South Central workforce area has the lowest COLI in the state at 94.0, which means it cost 6.0% less to live in the South Central workforce development area compared to the average in the United States.

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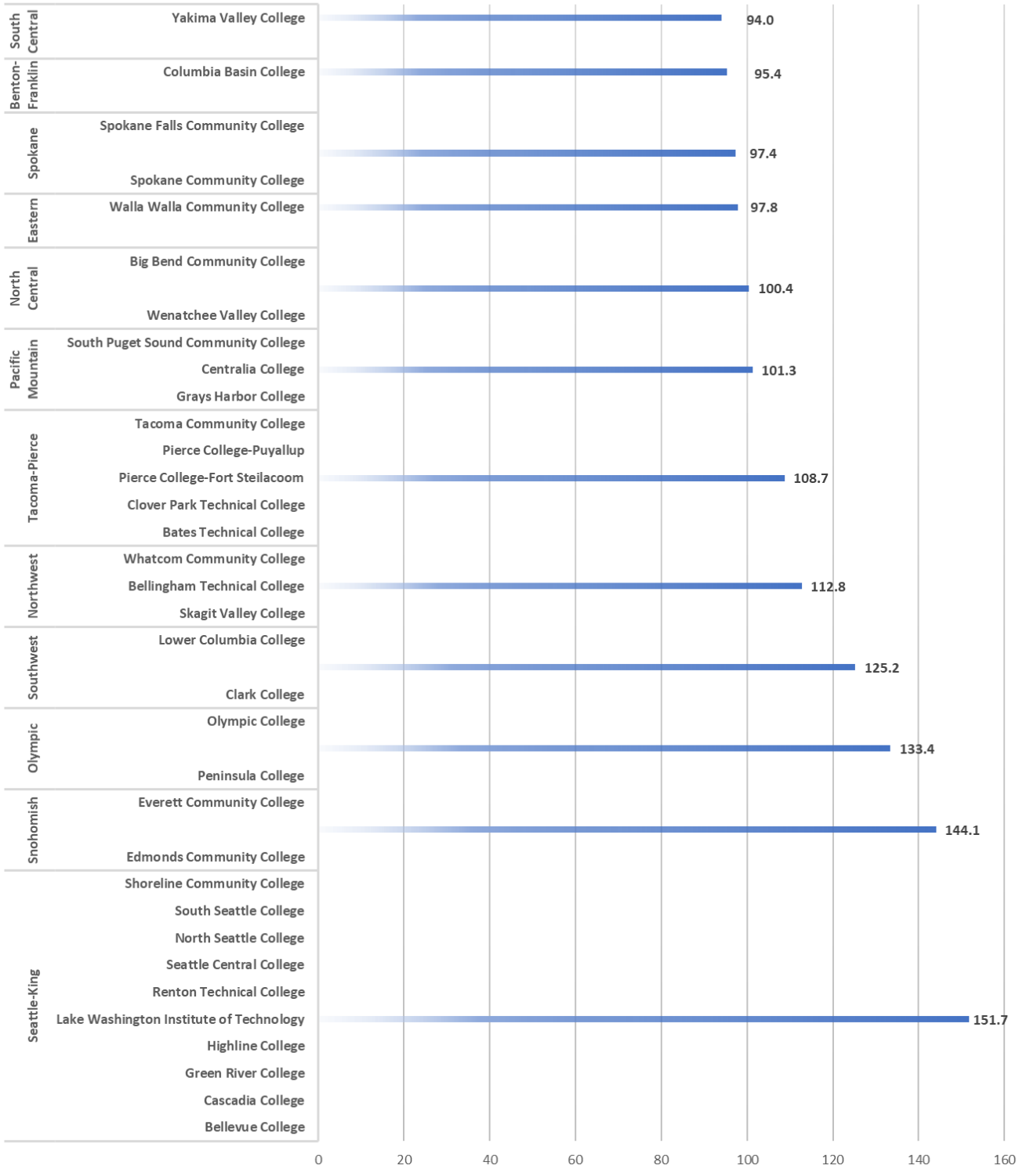
FIGURE 1: WASHINGTON STATE WORKFORCE AREA WEIGHTED AVERAGE COSTOF LIVING



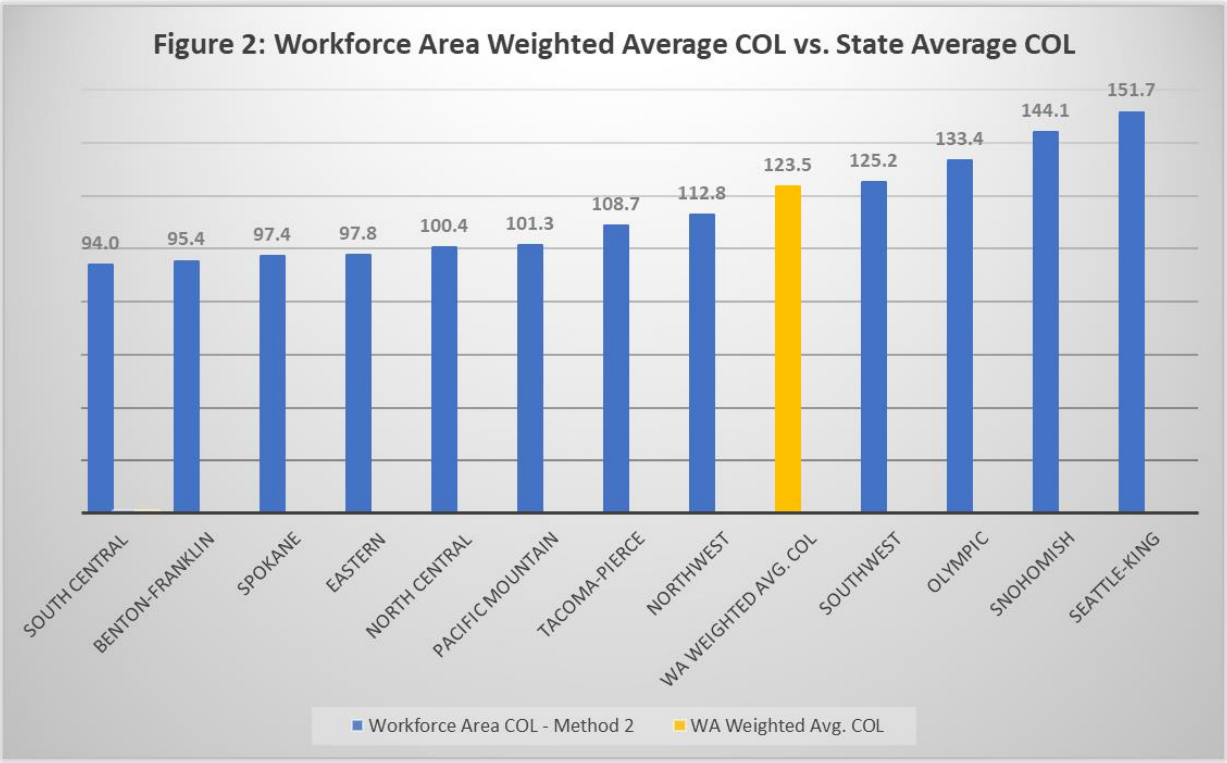
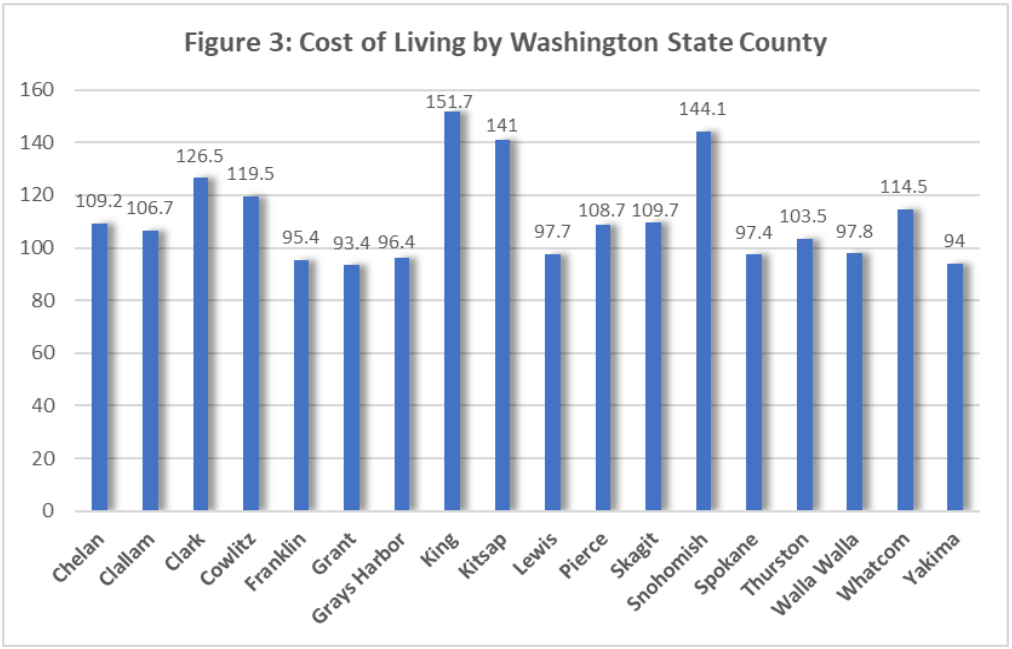


Figure 3 shows the COL by county for the convenience of understanding the COL differences between the counties in each workforce area. We do not recommend using the 'by county COL' as a measurement over the 'by workforce area COL,' because it will not account for those that live in a given county but work in a neighboring county. Workforce development areas account for a large amount of this across-regions commute and economic development/behavior activities.



Part II

State Average COL Weighted by Population

In this section we show the population weighted average state COLI for all of the peer group states, so that comparisons can be made between Washington State and its Peer Groups. Though this section is short, we show all of the weighted average state index values for reporting and reference purposes. These averages are used in the next section (Faculty Salary) when applied to the average faculty salary levels.

A similar methodology to Part I was used in this section when calculating the population weighted average state COLI: summing the product of all of the counties in the state and the counties' population, and then dividing by the sum of all of the counties' total population. (We can think of this as an aggregate of the workforce area method)

As mentioned before, the challenge with calculating an average COLI for the state stems from the fact that people are not distributed evenly within the state. For example, the population in Yakima is smaller than the population in Seattle, therefore we do not want to assign the same weight to each workforce areas' COL when calculating a state average COL value, because this would cause some areas to be over- or under- represented. In order to better reflect the state average COL, we have taken into consideration the population base within each workforce development area. This also accounts for large variances in COL-levels throughout a given workforce development area, such as the Southwest workforce development area which contains Lower Columbia College (119.5) and Clark College (126.5).

Figure 4 depicts the weighted average COLI values for all of the states in the U.S.[12] When looking at the results, Washington State stands five positions higher, at 10th place, when compared to the COL adjustments from the 2013-14 salary study.[13]

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[12] It is critical to keep in mind that there will be significant variances by region within all of these states.
[13] Conducted by, MGT of America Consulting LLC, *Final Report Faculty and Administrator Salary Study Update*, 2013-14. To our knowledge this report was not referenced in prior salary adjustments. https://www.mgtconsulting.com/

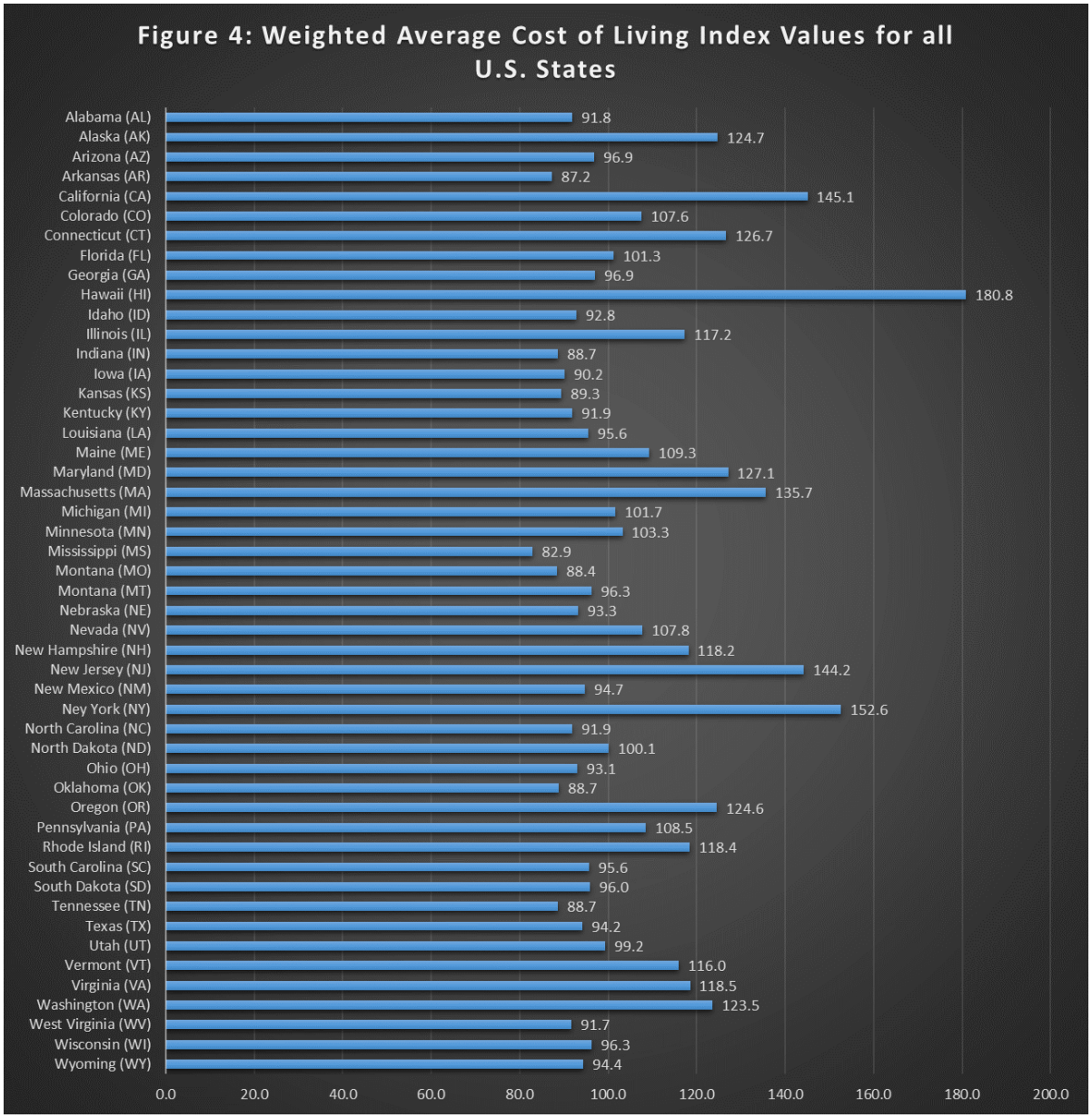


Figure 4: Weighted Average Cost of Living Index Values for all U.S. States
Alabama (AL) 91.8
Alaska (AK) 124.7
Arizona (AZ) 96.9
Arkansas (AR) 87.2
California (CA) 145.1
Colorado (CO) 107.6
Connecticut (CT) 126.7
Florida (FL) 101.3
Georgia (GA) 96.9
Hawaii (HI) 180.8
Idaho (ID) 92.8
Illinois (IL) 117.2
Indiana (IN) 88.7
Iowa (IA) 90.2
Kansas (KS) 89.3
Kentucky (KY) 91.9
Louisiana (LA) 95.6
Maine (ME) 109.3
Maryland (MD) 127.1
Massachusetts (MA) 135.7
Michigan (MI) 101.7
Minnesota (MN) 103.3
Mississippi (MS) 82.9
Montana (MO) 88.4
Montana (MT) 96.3
Nebraska (NE) 93.3
Nevada (NV) 107.8
New Hampshire (NH) 118.2
New Jersey (NJ) 144.2
New Mexico (NM) 94.7
Ney York (NY) 152.6
North Carolina (NC) 91.9
North Dakota (ND) 100.1
Ohio (OH) 93.1
Oklahoma (OK) 88.7
Oregon (OR) 124.6
Pennsylvania (PA) 108.5
Rhode Island (RI) 118.4
South Carolina (SC) 95.6
South Dakota (SD) 96.0
Tennessee (TN) 88.7
Texas (TX) 94.2
Utah (UT) 99.2
Vermont (VT) 116.0
Virginia (VA) 118.5
Washington (WA) 123.5
West Virginia (WV) 91.7
Wisconsin (WI) 96.3
Wyoming (WY) 94.4
0.0 20.0 40.0 60.0 80.0 100.0 120.0 140.0 160.0 180.0 200.0

Faculty Salary

Similar to the prior section (Cost of Living), this section is broken into two parts, a micro- and macro-lens that looks at average faculty salary levels:

Part I – SBCTC Faculty Salaries

Part II – Peer Group Salaries

All of the data for faculty salaries has been collected from the Integrated Postsecondary Education Data System (IPEDS) which is the Department of Education's National Center for Education Statistics'. IPEDS collects the data through a self-reported survey by all postsecondary institutions. Because the information is independently reported, it is important to note that there may be discrepancies within the data compared to actual salaries. IPEDS also allows institutions to revise their information for up to a year after the survey has been put into the public-online database. The updated information is not reflected on the public-online database until the following year, thus giving another reason for discrepancies within the data if you are looking at the data used in a report done one year and a similar report using the same data, but completed a year or two later. This study relies upon 2016-17 salaries for its comparisons – this is the most recent publication of IPEDS data on their public-online database.

The main IPEDS variables used in this portion of the analysis are, Salary Outlays for Instructional Staff Equated to a 9-month Contract Total, and Instructional Staff - Total. These variables reflect a total salary value for 9, 10, 11, and 12-month non-medical instructional staff at each community and technical college in 2016-17, and the number of 9, 10, 11, and 12-month full-time non-medical instructional staff that worked at each college in 2016-17. IPEDS does not report salaries for part-time non-medical instructional staff, therefore we were unable to collect this data.

Part I

SBCTC Faculty Salaries

Figure 5 displays the average salary in 2016-17 for each of the 34 colleges under the Washington State Board for Community and Technical Colleges (SBCTC). Since IPEDS has not updated their "Prior Year Data Revisions" we obtained these variables from SBCTC's data department. They have early-access to the prior-year-revised data, causing their numbers to be a more accurate representation of the salary numbers. Bellevue College holds the highest average total salary outlays for instructional staff, at $65,989, and Olympic College and Walla Walla Community College tie for the median-level of average total salary outlays for instructional staff, at $60,602 and $60,502 respectively.

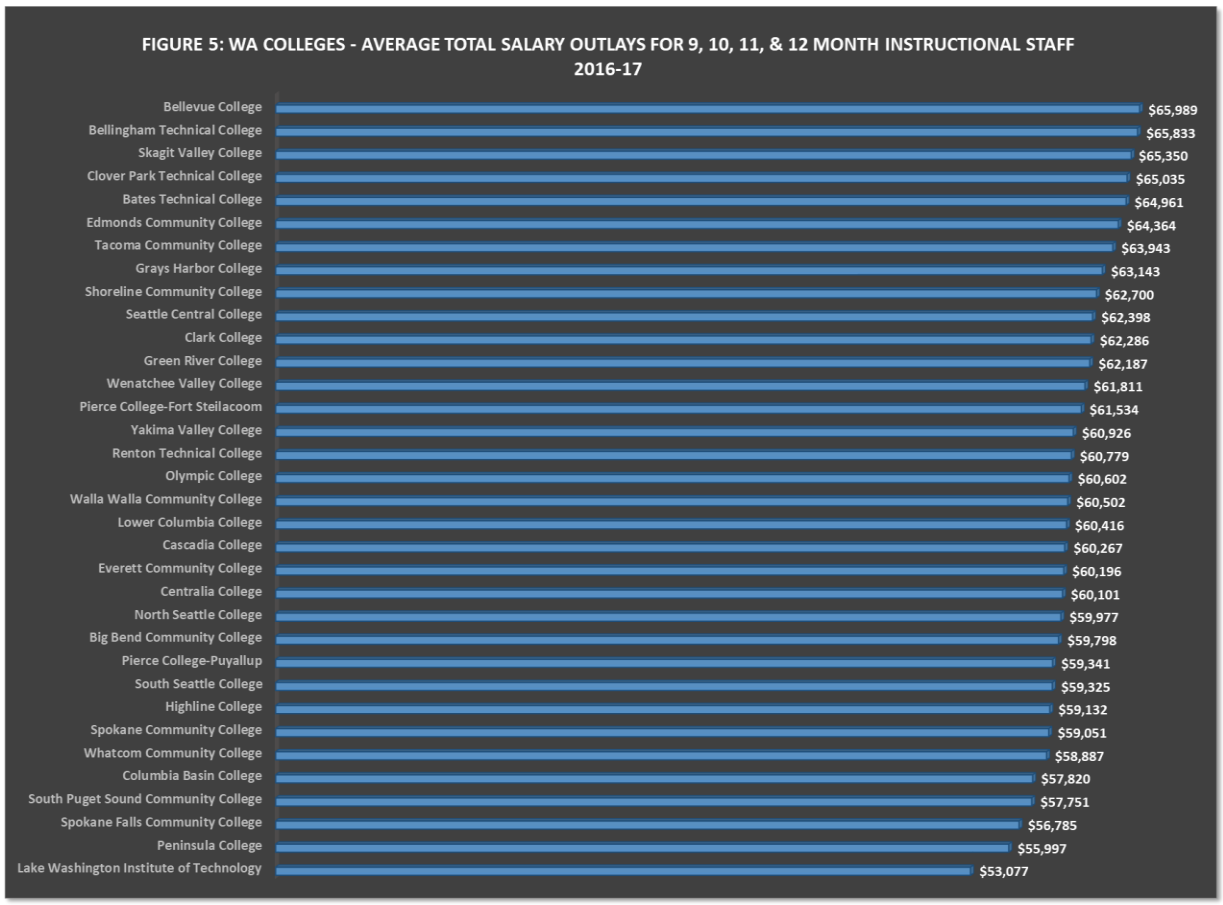


FIGURE 5: WA COLLEGES - AVERAGE TOTAL SALARY OUTLAYS FOR 9, 10, 11, & 12 MONTH INSTRUCTIONAL STAFF
2016-17
Bellevue College $65,989
Bellingham Technical College $65,833
Skagit Valley College $65,350
Clover Park Technical College $65,035
Bates Technical College $64,961
Edmonds Community College $64,364
Tacoma Community College $63,943
Grays Harbor College $63,143
Shoreline Community College $62,700
Seattle Central College $62,398
Clark College $62,286
Green River College $62,187
Wenatchee Valley College $61,811
Pierce College-Fort Steilacoom $61,534
Yakima Valley College $60,926
Renton Technical College $60,779
Olympic College $60,602
Walla Walla Community College $60,502
Lower Columbia College $60,416
Cascadia College $60,267
Everett Community College $60,196
Centralia College $60,101
North Seattle College $59,977
Big Bend Community College $59,798
Pierce College-Puyallup $59,341
South Seattle College $59,325
Highline College $59,132
Spokane Community College $59,051
Whatcom Community College $58,887
Columbia Basin College $57,820
South Puget Sound Community College $57,751
Spokane Falls Community College $56,785
Peninsula College $55,997
Lake Washington Institute of Technology $53,077

Part II

Peer Group Salaries

The macro-lens focuses on the peer groups and states that make up those peer groups relative to Washington's average faculty salary level. This is where the COL indices from the Cost of Living section, Part II, Figure 4 are applied. All state salary averages were calculated by the sum of each colleges' total salary outlays divided by each colleges' total number of faculty.

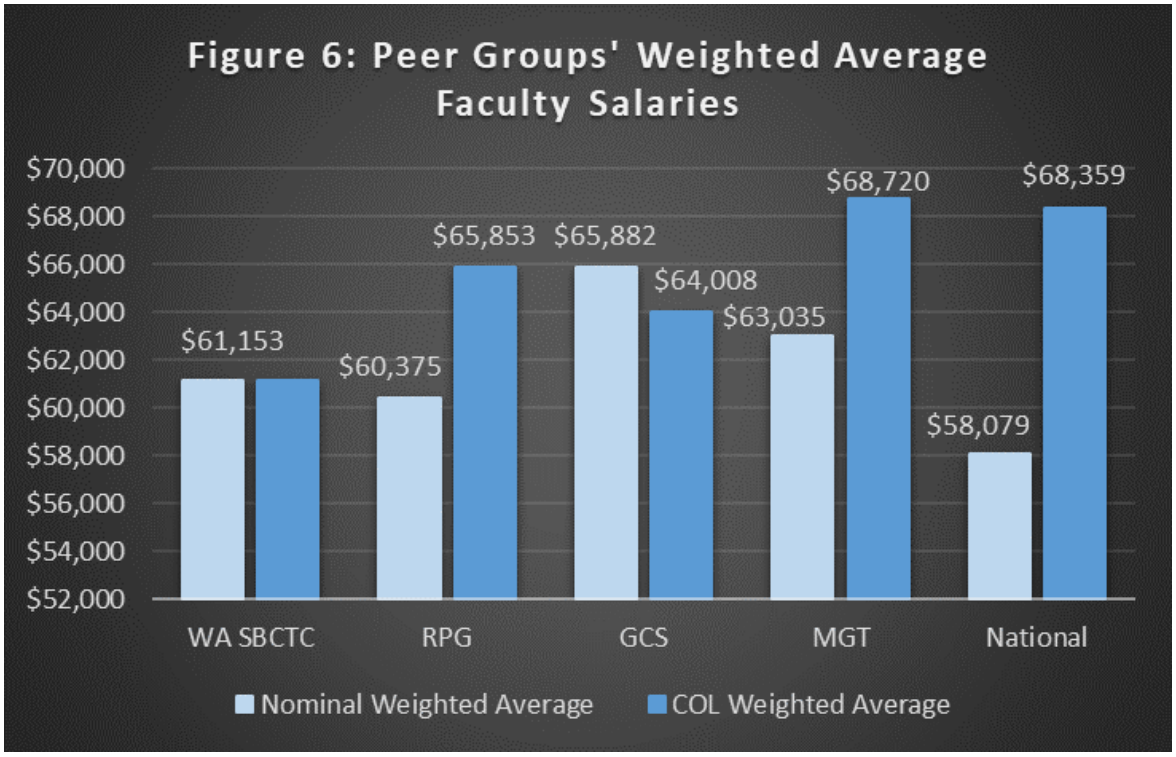
The following figure 6 depicts the weighted average faculty salaries of all three the peer groups, Washington State (SBCTC), and the National average. There are two bars representing each group's salary averages. The light blue bar measures the nominally adjusted state weighted average faculty salary:

$$WA\ Nominal\ Weighted\ Avg\ Salary = \frac{\left[\left(Fac_{College1} * \ Avg\ Sal_{College1}\right) + \left(Fac_{College2} * Avg\ Sal_{College2}\right) \ldots\right]}{\left[Fac_{College1} + \ Fac_{College2} + \ldots\right]}$$

and the dark blue bar measures the COL adjusted state weighted average faculty salary:

$$WA\ COL\ Weighted\ Avg\ Salary = (WA\ Nominal\ Weighted\ Avg\ Salary) * (WA\ Adjusted\ COL\ Factor)$$

The "WA Adjusted COL Factor" variable was calculated by taking Washington State's average COLI value (123.5) and dividing it by each peer group state's average COLI value. By doing this we are adjusting (or normalizing) all of the COL values, and by association salary levels in other states relative to Washington State.



The percentage changes between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries are the following:

Table 1: 2016-17 Percentage Change of Faculty Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = -1.3%	RPG = 7.7%
GCS = 7.7%	GCS = 4.7%
MGT = 3.1%	MGT = 12.4%
National = -5.0%	National = 11.8%

WA SBCTC's **Nominal Weighted** Average Faculty Salary level is 3.1% less than their MGT peers, and WA SBCTC's **COL Weighted** Average Faculty Salary level is 12.4% lower than their MGT-Selected peers. In other words, Washington institutions currently pay, on average, 3.1% less than those states most similar to Washington, and when COL adjustments are applied, Washington pays faculty 12.4% less than those states it is most similar to. While WA SBCTC's salary levels still fall behind their MGT peer states, the gap between the two groups has decreased. Compared to the 2013-14 Salary Study,[14] the gap between Washington State's COL adjusted weighted average faculty salary level and it's MGT peers has decreased 1.3% (from 13.7% to 12.4%).

Table 2: 2016-17 Percentage Change of Faculty Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = 9.2%	RPG = 9.0%
GCS = 18.1%	GCS = 4.4%
MGT = 10.8%	MGT = 13.7%
National = 2.1%	National = 4.3%

A significantly deep question to ponder when looking at this data is who the CTCs are competing with when attracting and retaining high quality instructional staff. High quality faculty members are price sensitive, while also looking for institutions that reflect their values and interests. Some faculty can be place-bound due to spouses or other externalities creating the wage competition not necessarily from teaching institutions only but also from discipline related employers that are seeking the same skills. The last section of this report, *Hard to Hire*, touches on this topic and possible solutions to consider.

[14] No funding or salary adjustments resulted from the 2013-14 Salary Study conducted by MGT of America Consulting LLC.

Administrator Salary

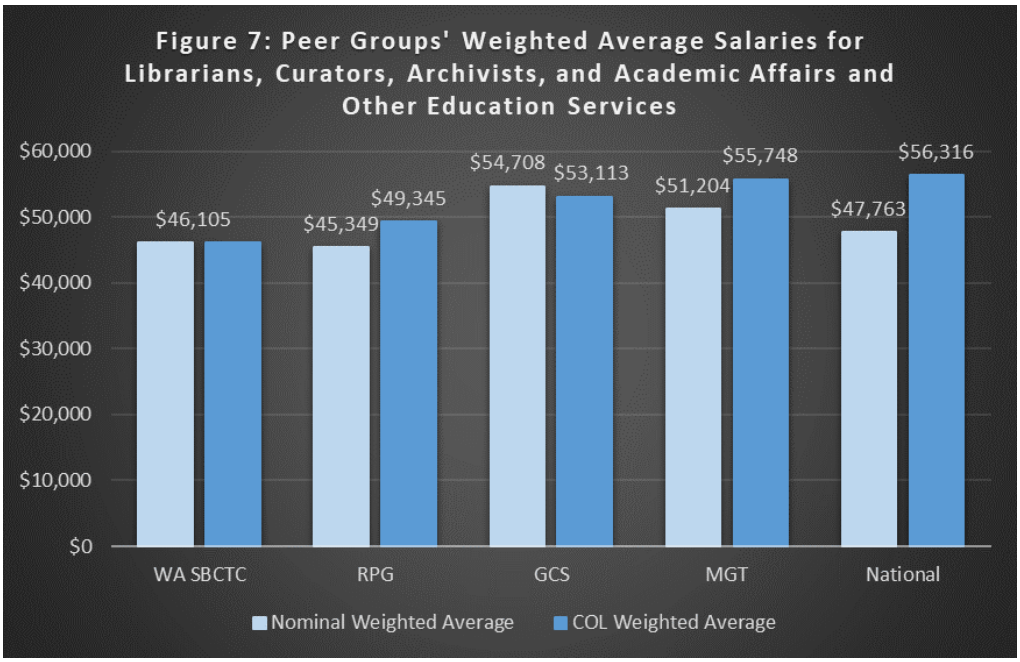
This section examines eleven general administrator positions relative to SBCTC's peer group states. All of the data for administrator salaries has been collected from the Integrated Postsecondary Education Data System (IPEDS) which is the Department of Education's National Center for Education Statistics. As mentioned above in the Faculty Salary section, IPEDS collects the data through a self-reported survey by all postsecondary institutions, therefore the same discrepancies may apply. IPEDS defines all of the variables used in this section as, non-medical and non-instructional postsecondary occupations. Throughout this report we will refer to these occupations as "administrator positions," though it has the same meaning as the term "exempt staff" which is used throughout SBCTC's system. The eleven variables extracted from IPEDS database are the following : Librarians, Curators, Archivists, and Academic Affairs and Other Education Services; Management Occupations; Business and Financial Operations; Computer, Engineering, and Science Occupations; Community, Social Service, Legal, Arts, Design, Entertainment, Sports and Media Occupations; Healthcare Practitioners and Technical Occupations; Service Occupations; Sales and Related Occupations; Office and Administrative Support Occupations; Natural Resources, Construction, and Maintenance Occupations; and Production, Transportation, and Material Moving Occupations.[15]

The administrator salary averages were computed by taking the total number of salary outlays for a given variable and dividing it by the number of people working in that given position. IPEDS defines these variables from the Bureau of Labor Statistics – 2018 Standard Occupational Classification (SOC codes).[16]

It is important to note that there may be some outliers that have caused drastic changes in the percentage change results. We believe much of this is due to inaccurate reporting of institutions to IPEDS because administrator categories and job descriptions are different for every system, and can even be categorized differently throughout a system. Even with this discrepancy we believe IPEDS's variables to be the best representation and categorization for administrator positions because each variable is the leading variable of a general category section in the SOC system, therefore various jobs alike can fall under it as a subcategory (e.g. Under the Business and Financial Operations variable (SOC 13-0000) is a sub-variable such as general Human Resource Occupations (SOC 13-1070)). To insure that this was the case, we went through administrator job titles and descriptions provided by SBCTC[17] and matched those titles to IPEDS SOC code variable names and descriptions and found that the SOC codes are a sufficient representations of generalized administrator positions at community and technical colleges.

[15] IPEDS database provides a total of thirteen variables, two of which we chose to leave out because there was not enough data reported by each state for "Research Occupations" and "Public Service Occupations."
[16] Definitions and reference to all IPEDS variables can be found at the end of this report.
[17] Washington State Board for Community and Technical Colleges, Excel File: *2018 Admin Salary Report*, 2018.

Figure 7 depicts the weighted average salaries for Librarians, Curators, Archivists, and Academic Affairs and Other Education Services of all three peer groups, Washington State (SBCTC), and the National average. The calculations were conducted the same as those in figure 6.



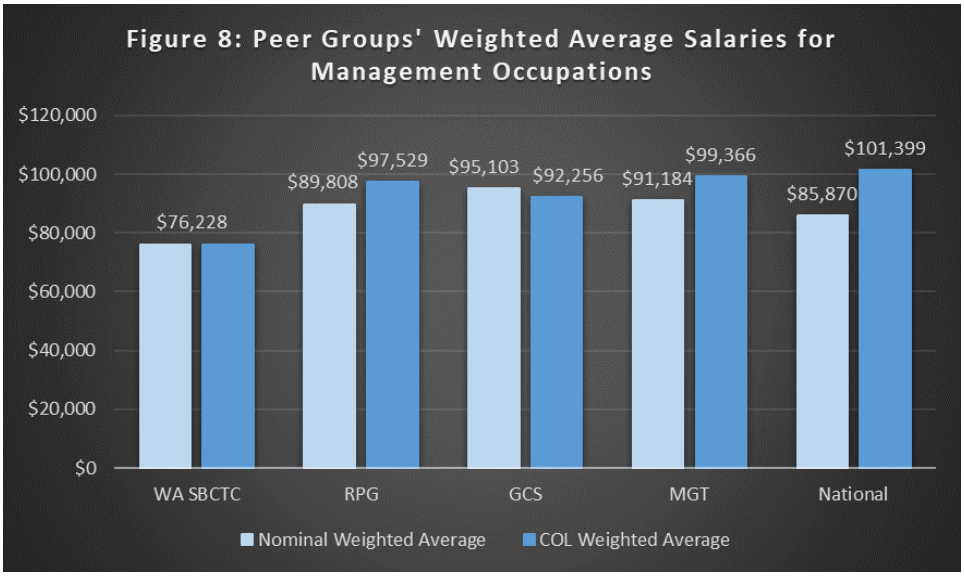
The percentage differences between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries for Librarians, Curators, Archivists, and Academic Affairs and Other Education Services are the following:

Table 3: 2016-17 Percentage Change of Librarians, Curators, Archivists, and Academic Affairs and Other Education Services Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = -1.7%	RPG = 7.0%
GCS = 18.6%	GCS = 15.2%
MGT = 11.0%	MGT = 20.9%
National = 3.6%	National = 22.1%

WA SBCTC's **Nominal Weighted** Average Salary level for Librarians, Curators, Archivists, and Academic Affairs and Other Education Services is 11.0% less than their MGT peers, and WA SBCTC's **COL Weighted** Average Salary level for Librarians, Curators, Archivists, and Academic Affairs and Other Education Services is 20.9% lower than their MGT-Selected peers. This large difference could be due in part to discrepancies in the data, such as some salaries having been updated in the system and others not visible yet.

Figure 8 depicts the weighted average salaries for Management Occupations of all three peer groups, Washington State (SBCTC), and the National average.

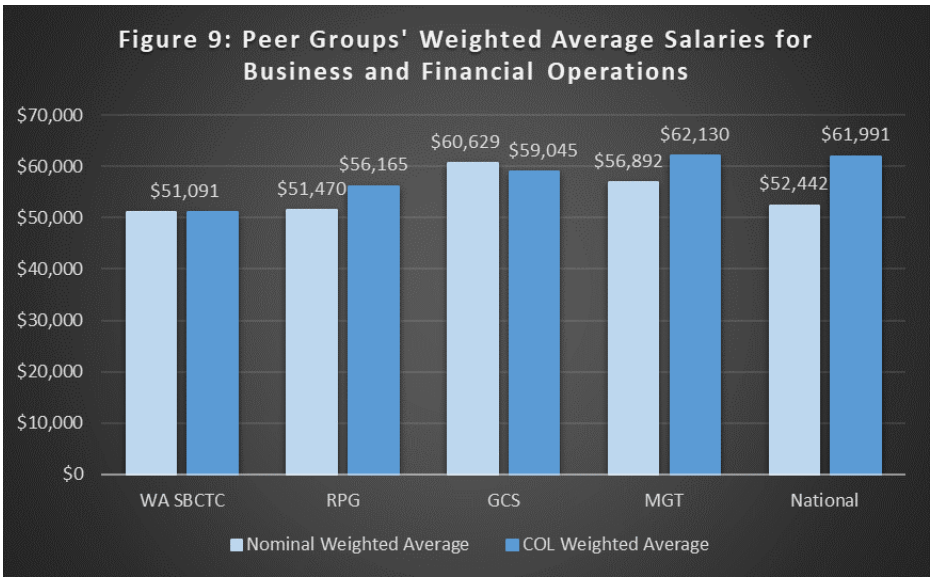


The percentage changes between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries for Management Occupations are the following:

Table 4: 2016-17 Percentage Change of Management Occ. Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = 17.8%	RPG = 28.0%
GCS = 24.8%	GCS = 21.1%
MGT = 19.6%	MGT = 30.4%
National = 12.6%	National = 33.1%

Figure 9 depicts the weighted average salaries for Business and Financial Operations of all three peer groups, Washington State (SBCTC), and the National average.

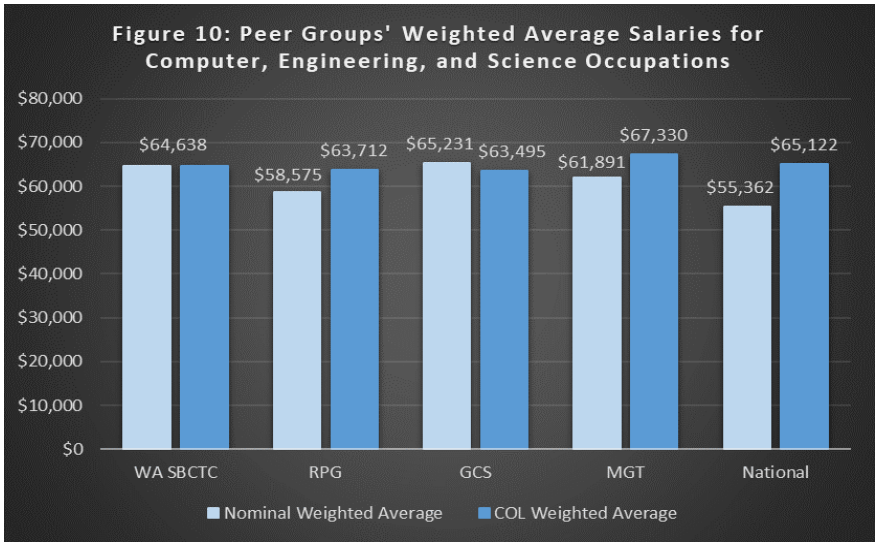


The percentage changes between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries for Business and Financial Operations are the following:

Table 5: 2016-17 Percentage Change of Business and Financial Operations Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = 0.7%	RPG = 10.0%
GCS = 18.7%	GCS = 15.6%
MGT = 11.4%	MGT = 21.6%
National = 2.6%	National = 21.4%

Figure 10 depicts the weighted average salaries for Computer, Engineering, and Science Occupations of all three peer groups, Washington State (SBCTC), and the National average.

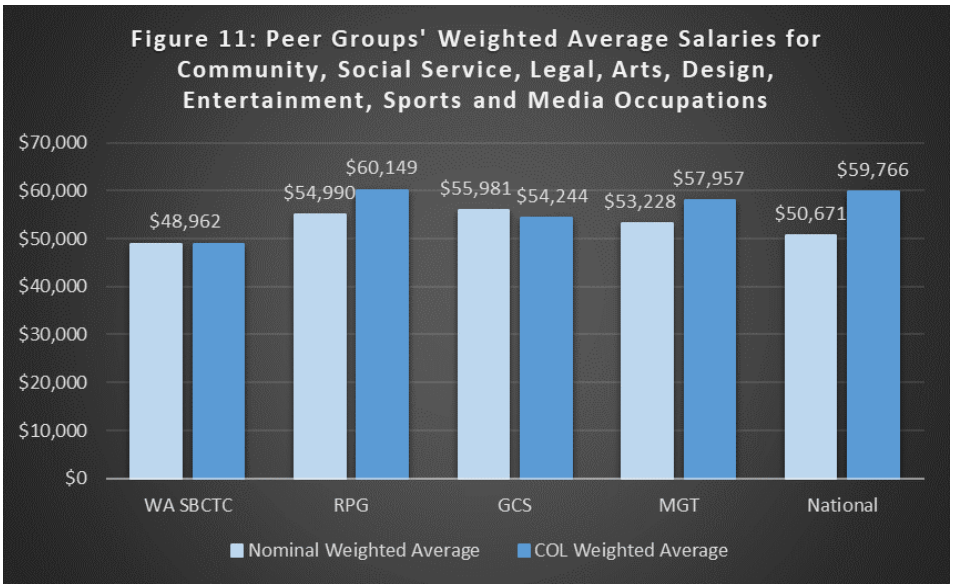


The percentage changes between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries Computer, Engineering, and Science Occupations are the following:

Table 6: 2016-17 Percentage Change of Computer, Engineering, and Science Occ. Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = -9.4%	RPG = -1.4%
GCS = 0.9%	GCS = -1.7%
MGT = -4.2%	MGT = 4.2%
National = -14.3%	National = 0.8%

Figure 11 depicts the weighted average salaries for Community, Social Service, Legal, Arts, Design, Entertainment, Sports and Media Occupations of all three peer groups, Washington State (SBCTC), and the National average.

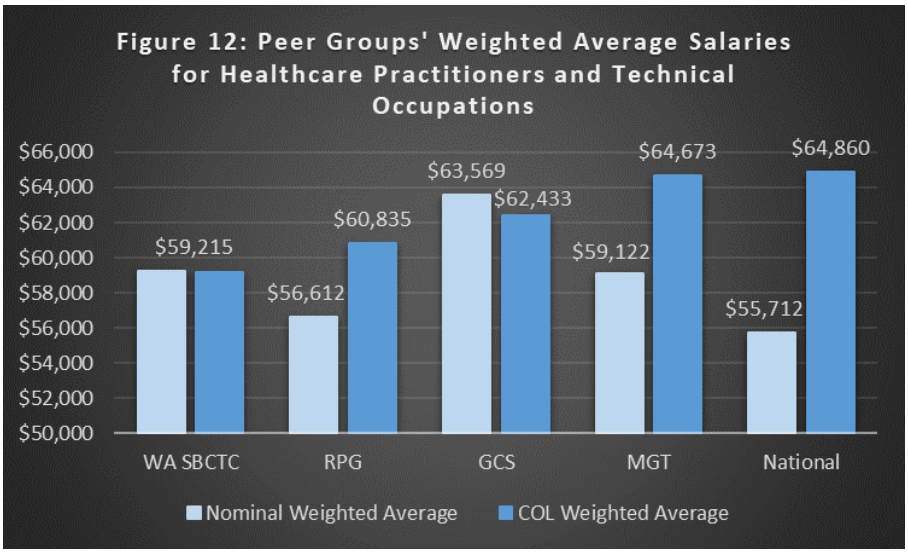


The percentage changes between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries for Community, Social Service, Legal, Arts, Design, Entertainment, Sports and Media Occupations are the following:

Table 7: 2016-17 Percentage Change of Community, Social Service, Legal, Arts, Design, Entertainment, Sports and Media Occ. Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = 12.3%	RPG = 22.9%
GCS = 14.3%	GCS = 10.8%
MGT = 8.7%	MGT = 18.4%
National = 3.5%	National = 22.1%

Figure 12 depicts the weighted average salaries for Healthcare Practitioners and Technical Occupations of all three peer groups, Washington State (SBCTC), and the National average.

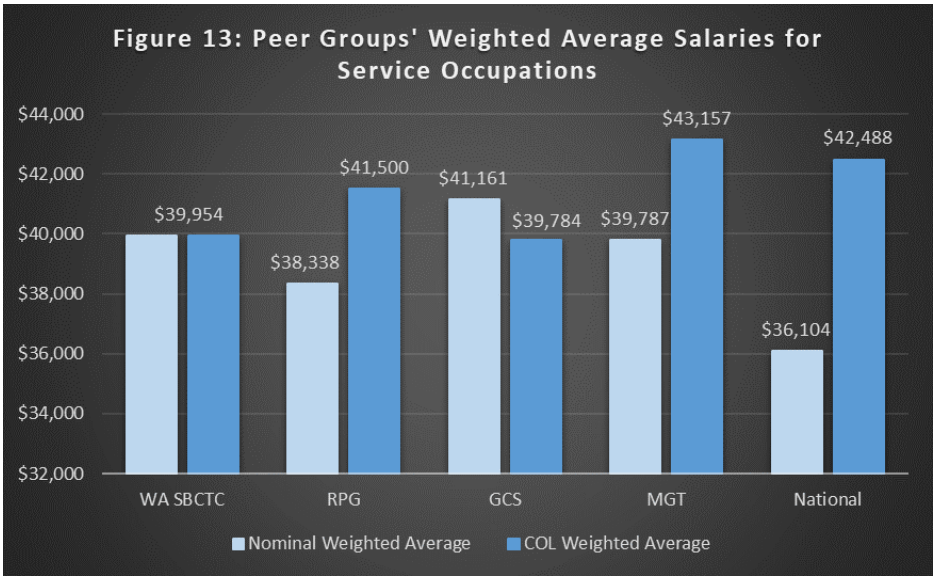


The percentage changes between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries for Healthcare Practitioners and Technical Occupations are the following:

Table 8: 2016-17 Percentage Change of Healthcare Practitioners and Technical Occ. Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = -4.4%	RPG = 2.8%
GCS = 7.4%	GCS = 5.5%
MGT = -0.2%	MGT = 9.3%
National = -5.9%	National = 9.6%

Figure 13 depicts the weighted average salaries for Service Occupations of all three peer groups, Washington State (SBCTC), and the National average.

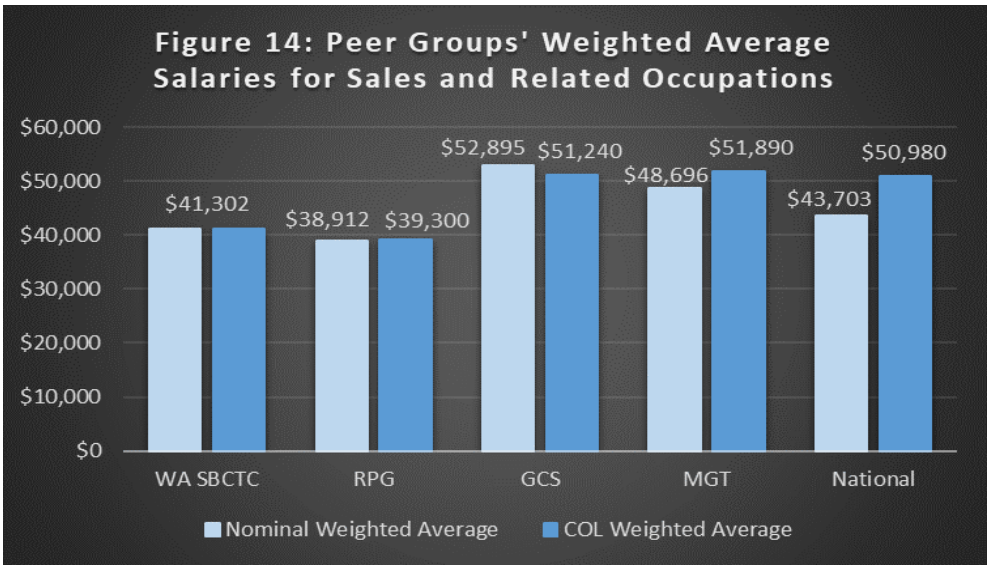


The percentage changes between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries for Service Occupations are the following:

Table 9: 2016-17 Percentage Change of Service Occ. Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = -4.0%	RPG = 3.9%
GCS = 3.0%	GCS = -0.4%
MGT = -0.4%	MGT = 8.1%
National = -9.6%	National = 6.4%

Figure 14 depicts the weighted average salaries for Sales and Related Occupations of all three peer groups, Washington State (SBCTC), and the National average.

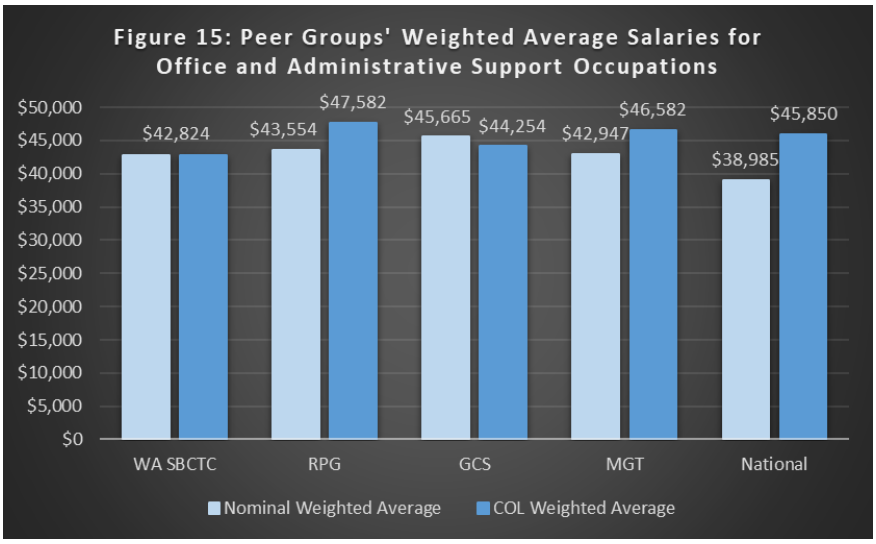


The percentage changes between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries for Sales and Related Occupations are the following:

Table 10: 2016-17 Percentage Change of Sales and Related Occ.*Salary from WA SBCTC to Peer Group*

Nominally Adjusted	COL Adjusted
RPG = -5.8%	RPG = -4.8%
GCS = 28.1%	GCS = 24.1%
MGT = 17.9%	MGT = 25.7%
National = 5.8%	National = 23.5%

Figure 15 depicts the weighted average salaries for Office and Administrative Support Occupations of all three peer groups, Washington State (SBCTC), and the National average.

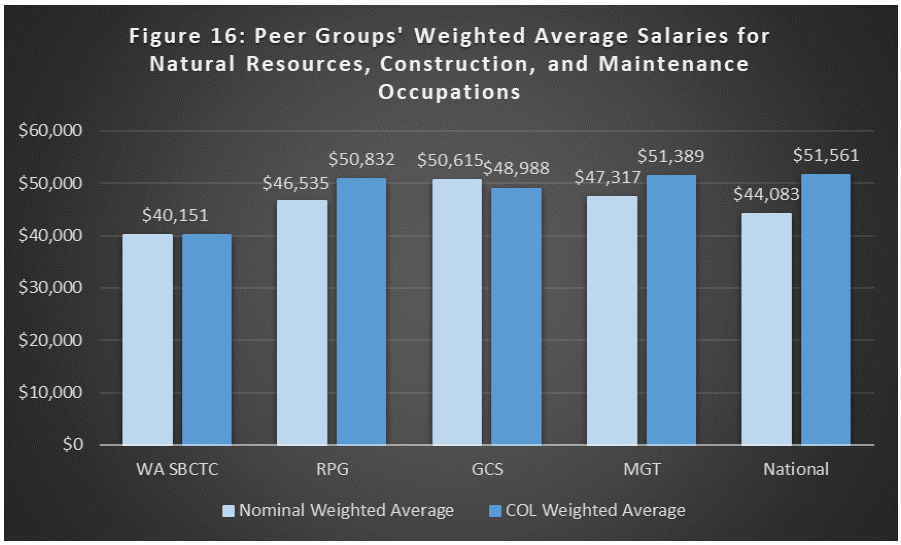


The percentage changes between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries for Office and Administrative Support Occupations are the following:

Table 11: 2016-17 Percentage Change of Office and Administrative Support Occ. Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = 1.7%	RPG = 11.1%
GCS = 6.6%	GCS = 3.4%
MGT = 0.3%	MGT = 8.8%
National = -9.0%	National = 7.1%

Figure 16 depicts the weighted average salaries for Natural Resources, Construction, and Maintenance Occupations of all three peer groups, Washington State (SBCTC), and the National average.

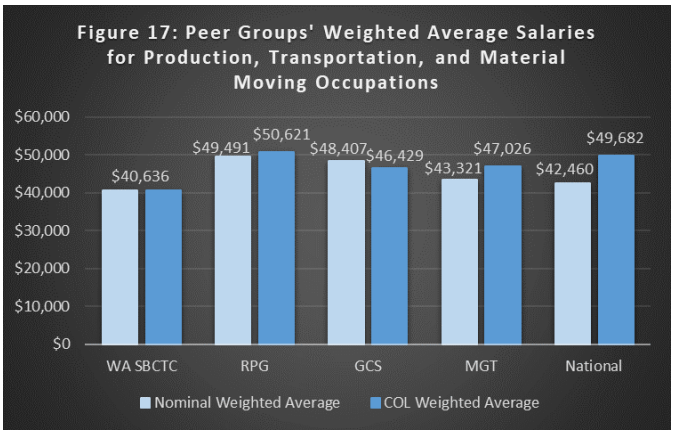


The percentage changes between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries for Natural Resources, Construction, and Maintenance Occupations are the following:

Table 12: 2016-17 Percentage Change of Natural Resources, Construction, and Maintenance Occ. Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = 15.9%	RPG = 26.6%
GCS = 26.1%	GCS = 22.0%
MGT = 17.8%	MGT = 28.0%
National = 9.8%	National = 28.5%

Figure 17 depicts the weighted average salaries for Production, Transportation, and Material Moving Occupations of all three peer groups, Washington State (SBCTC), and the National average.



The percentage changes between "WA SBCTC" weighted average salaries and the Peer Groups' weighted average salaries for Production, Transportation, and Material Moving Occupations are the following:

Table 13: 2016-17 Percentage Change of Production, Transportation, and Material Moving Occ. Salary from WA SBCTC to Peer Group

Nominally Adjusted	COL Adjusted
RPG = 21.8%	RPG = 24.6%
GCS = 19.1%	GCS = 14.3%
MGT = 6.6%	MGT = 15.8%
National = 4.5%	National = 22.3%

Economic Impact Analysis

When adjusting salaries for cost of living, there are measurable impacts to the economy in the regions in which the salary change takes place. These impacts are organized as direct, indirect, and induced effects on the economy. Due to the nature of this sort of salary change – no increased demand for business services and no change in business income – only induced effects, the spending completed by employees of the company with their pay increase in their everyday lives, are relevant to consider. These impacts are useful in understanding how a salary adjustment affects employment, output, and tax revenue in a region, and can be used as part of a cost-benefit analysis.

To look at these impacts, we created a number of input-output models in IMPLAN, an impact analysis software. These models – one for each workforce area in the state as well as a statewide model – each contained data on two different salary change scenarios. Both were derived using the methodology mentioned in the above section, *Faculty Salary*, and are used to illustrate the effects of different types of salary change. We utilized two scenarios as there is no method to discern a market salary for faculty, due to the fact that rates are not set by supply and demand. Therefore, we can illustrate what kind of impacts we would expect to see under very different conditions. One scenario adjusts Washington salaries to the purchasing power of the U.S. average salary for community and technical college faculty while the other looks at a large increase in purchasing power for most around the state. The two scenarios are as follows:

1. U.S. Average – all regions' salaries are either adjusted to have the current purchasing power of the U.S. average salary for faculty of community and technical colleges, based on data from JobsEQ, or are left alone if already at or above the U.S. average. This is not necessarily the market rate but does most closely reflect the reality of faculty pay at these institutions in the United States.
2. South Central – all regions' salaries are adjusted to have the current purchasing power of the South Central workforce area, which has the lowest cost of living and no concurrent reduction in salary, giving faculty there the largest average purchasing power amongst faculty in the state. In essence we normalize all salaries to be the equivalent of those currently in the South Central region while adjusting them for regional cost of living differences. This could be conducted using any region as the base region, we chose South Central as it illustrated their relatively high purchasing power.

Salary Adjustments by Scenario

The U.S. scenario is perhaps the closest to approximating a market rate. Some districts, such as rural workforce areas with low costs of living, were not modified due to the fact that they are already paid at or above the U.S. average purchasing power and any scenario that would indicate a reduction in pay has been eliminated. Urban areas often saw pay increases to account for the increased cost of living. The average pay increase amongst workforce areas was $15,912 per full-time instructor. The Seattle-King and Snohomish workforce areas called for the largest pay increases simply to adjust for cost of living, with the Olympic district not far behind.

The total appropriation required by the legislature to fund this strategy would be $42.3 million per year.[18]

The South Central scenario, with its lower cost of living and relatively higher salary, has the largest purchasing power in the state. Adjusting that salary to the cost of living in other regions to make purchasing power equal across the state results in large pay increases in every workforce area (except South Central because it is used as the baseline for the scenario). The largest increase would be seen in the Seattle-King district, with its extremely higher relative cost of living – faculty there would need, on average, a $37,000 increase to achieve the same purchasing power as faculty currently experience in South Central. Most increases would not be as substantial, averaging $11,602 for all workforce areas outside of South Central and Seattle-King.

The total appropriation required by the legislature to fund this strategy would be $69.4 Million per year. This amount does not include administrator staff, nor part-time faculty which would require additional funds to include.

The data on these salary adjustments are presented below in tables 14 and 15.

Table 14: Current Faculty Population, Cost of Living, and Salary Outlays by Workforce Area

Workforce Area	COL	# of Faculty	Salary Outlays	Current Avg. Salary
South Central	94.0	129	$ 7,859,480.00	$60,926
Benton-Franklin	95.4	127	$ 7,343,079.00	$57,820
Spokane	97.4	340	$ 19,762,267.00	$58,124
Eastern	97.8	118	$ 7,139,264.00	$60,502
North Central	100.4	118	$ 7,201,071.00	$61,026
Pacific Mountain	101.3	232	$ 13,938,090.00	$60,078
Tacoma-Pierce	108.7	443	$ 28,106,830.00	$63,447
Northwest	112.8	241	$ 15,235,467.00	$63,218
Southwest	125.2	267	$ 16,501,297.00	$61,803
Olympic	133.4	161	$ 9,558,920.00	$59,372
Snohomish	144.1	252	$ 15,694,549.00	$62,280
Seattle-King	151.7	1139	$ 69,793,802.00	$61,276

[18] The total appropriation value comes from the difference between the current 9, 10, 11, and 12 month faculty salary outlays that are being payed and the scenario adjusted, COL adjusted 9, 10, 11, and 12 month faculty salary outlays. This value does not include administrator staff, nor part-time faculty.

Table 15: Adjusted Wages for Each Scenario by Cost of Living and Workforce Area.

	U.S. Average Annual Salary	Adjusted South Central Annual Salary
	$53,893	$64,815.11
Workforce Area	**Avg. Desired Wage**	**Avg. Desired Wage**
South Central	$ N/A	$ N/A
Benton-Franklin	$ N/A	$ 61,833.61
Spokane	$ N/A	$ 63,129.92
Eastern	$ N/A	$ 63,389.18
North Central	$ N/A	$ 65,102.25
Pacific Mountain	$ N/A	$ 65,657.70
Tacoma-Pierce	$ N/A	$ 70,454.02
Northwest	$ 65,491.60	$ 73,087.10
Southwest	$ 72,722.88	$ 81,157.04
Olympic	$ 77,494.03	$ 86,481.54
Snohomish	$ 83,692.22	$ 93,398.57
Seattle-King	$ 88,106.24	$ 98,324.52

Note: Workforce areas labeled "N/A" are not adjusted as they are either the baseline for the South Central Scenario or already above the average U.S. purchasing power and no pay cuts are being considered.

Scope of Impact

In the model, a Labor Income Change activity was modeled, using an employee compensation event. This employee compensation event was set to the level of the salary change, or the difference between current total salary outlays and the cost-of-living-adjusted total salary outlays. Each model was ran twice, once for each scenario, and results are presented below in tables 16 and 17.

All values in the employee column indicate the number of jobs supported by the increased spending – the induced effect – of the faculty in their community due to their increased salary. The Labor Income column is an aggregate of increased employee and proprietor compensation in the region, including increased pay to workers and business owners amongst businesses the faculty frequent. Total Value Added represents the new value generated in the region by the spending of additional income. Finally, the Output generated is the summation of these benefits, described as increases in production rather than income.

Table 16: Economic Impact of U.S. Average COL salary adjustment by workforce area with adjusted wage[19]

Scenario 1 - U.S. Average				
Workforce Area	**Employment**	**Labor Income**	**Total Value Added**	**Output**
Northwest	2.5	$ 92,275.34	$ 183,393.50	$ 322,149.72
Southwest	11.7	$ 469,928.73	$ 931,399.61	$ 1,528,938.82
Olympic	11.5	$ 404,235.97	$ 836,906.59	$ 1,465,246.43
Snohomish	18.4	$ 754,665.85	$ 1,490,775.57	$ 2,370,945.11
Seattle-King	99.1	$ 5,853,040.36	$ 10,486,163.39	$ 16,076,724.63
Total	**143.1**	**$ 7,574,146.25**	**$ 13,928,638.66**	**$ 21,764,004.71**

Table 17: Economic Impact of South Central COL salary adjustment by workforce area with adjusted wage[20]

Scenario 2 - South Central				
Workforce Area	**Employment**	**Labor Income**	**Total Value Added**	**Output**
Benton-Franklin	2.3	$ 99,187.49	$ 184,040.55	$ 310,146.11
Spokane	11.1	$ 474,964.21	$ 860,726.77	$ 1,488,336.04
Eastern	1.3	$ 42,339.65	$ 89,619.16	$ 161,170.48
North Central	2.0	$ 73,051.85	$ 145,376.84	$ 254,768.38
Pacific Mountain	5.7	$ 224,625.34	$ 442,817.06	$ 753,498.14
Tacoma-Pierce	13.1	$ 620,075.25	$ 1,133,468.97	$ 1,825,342.22
Northwest	10.9	$ 400,503.53	$ 795,984.59	$ 1,398,229.53
Southwest	20.7	$ 832,873.77	$ 1,650,757.35	$ 2,709,800.35
Olympic	17.2	$ 604,716.09	$ 1,251,968.94	$ 2,191,932.81
Snohomish	26.7	$ 1,096,762.09	$ 2,166,556.40	$ 3,445,714.05
Seattle-King	136.8	$ 8,082,197.92	$ 14,479,867.33	$ 22,199,619.74
Total	**247.8**	**$ 12,551,297.20**	**$ 23,201,183.96**	**$ 36,738,557.85**

Scenario 2 generates larger induced effects in all categories than Scenario 1. This is not surprising, as more workforce areas would realize a salary increase under Scenario 2 and those increases would be larger. In both scenarios, the Seattle-King workforce area experiences the largest impacts, mainly due to the extremely high cost of living in the area causing significant faculty wage adjustments.

One thing that is important to note is that oftentimes additional spending in a region helps create employment and economic growth outside of the region or that faculty may be commuting from a different workforce area, earning their income in one but spending it in another. These spillover effects can be modeled by running the same scenarios in a Washington state model, to see how much of the effect of a salary increase in one workforce district affects others. This analysis does not include spillover

[19] For a visual representation of these numbers, see Map 4 at the end of this report. Titled: *Scenario 1 Induced Effect on Employment by Workforce Development Area*

[20] For a visual representation of these numbers, see Map 5 at the end of this report. Titled: *Scenario 2 Induced Effect on Employment by Workforce Development Area*

effects into other surrounding areas, such as Oregon, Idaho, British Columbia, or elsewhere, although these are expected to be relatively minimal. The results of the spillover models are presented below in table 18. The numbers in the row labeled "State Model Effects" indicate the estimate for the entire amount of economic impacts for Washington State for that scenario.

Table 18: Estimation of Spillover Induced Effects in Washington State

Economic Impact Spillover Estimation				
	Scenario 1 - U.S. Average			
	Employment	*Labor Income*	*Total Value Added*	*Output*
Sum of County Effects	143.1	$ 7,574,146.25	$ 13,928,638.66	$ 21,764,004.71
State Model Effects	216.2	$ 11,111,090.19	$ 20,477,116.86	$ 34,098,932.02
Total Spillover	**73.1**	**$ 3,536,943.95**	**$ 6,548,478.20**	**$ 12,334,927.31**
	Scenario 2 - South Central			
Sum of County Effects	247.8	$ 12,551,297.20	$ 23,201,183.96	$ 36,738,557.85
State Model Effects	354.3	$ 18,209,293.36	$ 33,558,707.70	$ 55,882,676.27
Total Spillover	**106.5**	**$ 5,657,996.16**	**$ 10,357,523.73**	**$ 19,144,118.42**

Effects on employment, output, etc. are not the only changes to consider when looking at the impact of a salary change around the state. The ripple effects of the initial salary boost also generate federal, state, and local tax revenue. Those changes are enumerated in table 19 below.

Table 19: Estimation of Induced Effects on Tax Revenue in Washington State, Including Spillover Effects

Total Tax Revenue Impacts		
	Scenario 1 - U.S. Salary Average	**Scenario 2 - South Central**
State and Local Taxes	$ 1,488,553	$ 2,576,808
Federal Taxes	$ 1,948,761	$ 3,270,831
Total S&L Spillover	$ 777,344	$ 1,136,634
Total Fed Spillover	$ 1,026,178	$ 1,604,615
Total S&L	**$ 2,265,897**	**$ 3,713,442**
Total Fed	**$ 2,974,939**	**$ 4,875,446**

Again, spillover effects are those that are not generated in the workforce area where a specific salary change took place but are still captured in Washington State. Therefore, all state and local taxes in the table above would go towards governmental bodies in Washington State for each scenario. It is also important to remember that this is not a cost-benefit analysis, but rather an estimation of the effects on tax revenue of a salary increase to adjust for cost of living.

The South Central scenario generates more tax revenue, mainly due to the fact that salaries are raised in all workforce areas and by more than seen under the U.S. Average scenario. The tax revenue generated in the U.S. Average scenario is roughly 60 percent of that seen in the South Central scenario.

Hard to Hire Factor

Cost of living is only one salary adjustment necessary to account for regional differences in economic conditions. The desirability of a location, the availability of work for a spouse, and other factors also may play into whether a potential faculty or staff member at a technical or community college finds a given salary to be acceptable. A location with less general amenities may struggle to maintain faculty and staff if there is not a significant salary incentive. Vice versa, a location with more amenities in general will often be more attractive to job applicants and therefore the salary incentive may not need to be as large or may be negative if amenities are so valuable that people would rather take a relatively lower pay than not live nearby.

In this section, we create "Hard to Hire Factors" (HTH) in an effort to account for this desirability element to the job search. These factors are used to further adjust the COL adjusted salaries. The result will be a salary value, in current dollars, that has taken into account regional amenities and cost of living.

While we know this model does not consider every possible factor in a person's decision for accepting, or not accepting a position it is meant to be a starting place to fuel a discussion surrounding salary ranges used to attract and retain employees – specifically those difficult to fill.

Part of our task for this analysis was to create a quantitative measure of how salaries might need to be adjusted to account for the different HTH factors. We have made an effort to identify likely factors and show how salaries might need to be adjusted as a result of those factors. We also believe the various technical and community colleges should interview employees and, if possible, employees who have left and job candidates who did not accept an offer to learn why different positions may be hard to fill. Each college likely faces HTH factors not included in the list provided in this analysis. Again, this section is intended as a starting point for considering HTH factors and how salaries might need to be adjusted due to those factors.

Methodology

Six attributes were chosen to develop HTH factors for each Workforce Development Area. Since each applicant is different and may value different regional amenities, attributes were chosen for their relatively universal appeal. For example, climate is hard to quantify in terms of desirable or non-desirable, as some prefer a warm climate while others prefer cold temperatures. The six attributes used in our analysis are:

- Spousal Employment Opportunities
- Primary Education Student-to-Teacher Ratio
- Distance to Hospitals
- Retail Diversity
- Poverty Rate
- Crime Rate

Spousal Employment Opportunities

Moving to a new region for a job can be much easier if your spouse can also find work in the new region. To account for the fact that a spouse can work in a variety of industries, we collected total industry labor demand data from JobsEQ by Chmura Economics and Analytics.[21] This value was created by multiplying the average annual wage for a job in an industry by its new, speculative demand (based on transfers, exits, and industry growth). The resulting total for each industry in a Workforce Area was aggregated to a total for the entire region. The total for each Workforce Area was divided by the population of the Workforce Area to determine the total amount of dollars available per-capita in a Workforce Area. Putting it in per-capita terms helped to control for extreme population differences between Workforce Areas.

In more plain language, our approach follows this logic: if a region has a larger number of dollars available per-capita, it is more likely that a spouse would find well-paying employment in that region. In this way, we can compare the spousal employment prospects between Workforce Areas. An example of this process is included below for the Olympic Workforce Area.

[21] Occupational Snapshot, [YEAR]

Table 20: Total Industry Labor Demand for the Olympic Workforce Development Area

Industry	Olympic
Agriculture, Forestry, Fishing and Hunting	$5,681,868
Mining, Quarrying, and Oil and Gas Extraction	$339,955
Utilities	$4,005,568
Construction	$35,590,902
Manufacturing	$134,516,352
Wholesale Trade	$11,119,090
Retail Trade	$69,357,444
Transportation and Warehousing	$14,326,620
Information	$6,111,084
Finance and Insurance	$13,093,960
Real Estate and Rental and Leasing	$9,668,988
Professional, Scientific, and Technical Services	$50,279,728
Management of Companies and Enterprises	$3,632,496
Administrative and Support and Waste Management and Remediation Services	$19,247,052
Educational Services	$49,772,483
Health Care and Social Assistance	$99,052,518
Arts, Entertainment, and Recreation	$17,307,150
Accommodation and Food Services	$39,168,048
Other Services (except Public Administration)	$17,957,275
Public Administration	$65,237,640
Total - All Industries	**$704,879,593**
Population	375,122
Total Dollars Available **per Capita**	**$1,879.07**

Student-to-Teacher Ratio

If a faculty or staff member is considering a move to a different region, they may have children to consider as well. Low student-to-teacher ratios allow for greater personal interaction between the student and teacher, and this factor can be used as a potential proxy for the quality and capacity of local primary education. To measure this, we collected data on each district from the National Center for Education Statistics – Institute of Education Sciences (IES), and in each Workforce Area were aggregated to get an average ratio for each region. This allowed comparison between regions.

Distance to Medical Facilities

Distance from the nearest hospital or medical facility might be a matter of comfort, but could be very important. Therefore, we collected data on the average distance between a college and the nearest hospital in its workforce region. Google Maps was used to determine distances and the results from each college were averaged to get a distance value for each Workforce Area. At this point, the values were comparable between Workforce Areas.

Retail Diversity

There are a variety of physical amenities available on a regional basis, but retail is one that could matter to everyone as shopping is required on a regular basis (whether for food, work clothes, or other items . Measuring the strength of retail presence in a region is difficult. Our approach focuses on the availability of a diverse retail market which serves as a proxy for the potential diversity of selection available to consumers. This can be thought of as the amount of different types of retail in the area, which would increase the likelihood of finding specific goods or services. Utilizing data from ESRI[22], we obtained information on shopping centers across the state of a certain minimum size: 100,000+ Gross Leasable Area (sq ft) as of February 2015. Those centers were sorted into categories based on size, including very small, small, medium, large, and very large. The size cutoffs for those categories are listed in the table below:

Table 21: Retail Categorization Scale

Category	Gross Leasable Area (sq. ft.)
Very Small	< 200,000
Small	200,001 - 300,000
Medium	300,001 - 500,000
Large	500,001 - 800,000
Very Large	800,000 +

The mix of retail for each Workforce Area was then determined by dividing the number of a certain size of shopping center by the total number of shopping centers in a Workforce Area. This created a percentage value for each size of shopping center, for each Workforce Area. We could then compare the mix of retail sizes across Workforce Area to determine which had a more appealing mix. The core assumption made during this process is that if a Workforce Area had a greater percentage of one type of retail than the state average, this was considered positive and appealing.

[22] ESRI, *Major Shopping Center Map*, February 2015.

An example of the retail data for one workforce area is included below for illustrative purposes.

Table 22: Retail Categorization Scale and Results for the Olympic Workforce Development Area

Retail Size ->	Very Large		Large		Medium		Small		Very Small		
Workforce Area	Number of Centers	% of Total	Number of Centers	% of Total	Number of Centers	% of Total	Number of Centers	% of Total	Number of Centers	% of Total	Total
Olympic	1	33%	0	0%	1	33%	1	33%	0	0%	3

Poverty Rate

The poverty rate at all ages of every county in Washington was gathered from the Census Bureau[23] and multiplied by the same county's population to get an overall level of impoverished people in the county. Those levels were aggregated by Workforce Area and then divided by population to put the number back into the form of a per-capita rate that can be used to build an index.

Crime Rate

Crime data was gathered by county from the Washington State Statistical Analysis Center, under the State Office of Financial Management[24] and aggregated into Workforce Area. The data is in the form of number of reported offenses at all levels of crime. Then, it was divided by population – similar to the poverty level – to determine the amount of crime per-capita. This number was then compared across Workforce Areas.

[23] Small Area Income and Poverty Estimates, 2016
[24] Criminal Justice Data Book, 2016

Results

All of these factors, after being sorted into comparable numbers between Workforce Areas, were built into indexes and then aggregated to find a single HTH factor for each region. All factors are weighted equally. As with COL data an index score below 100 means it would easier to attract talent whereas scores above 100 indicate the relative difficulty that attracting talent may incur.

Table 23: Hard-to-Hire Index

Workforce Area	Spousal Employment	Student-to-Teacher Ratio	Distance to Hospitals	Retail Diversity	Poverty	Crime	HTH Index
Olympic	147.5	99.2	56.8	108.5	100.0	88.2	**100.03**
Pacific Mountain	143.1	102.8	83.0	90.5	111.0	93.3	**103.95**
Northwest	140.7	102.7	116.5	96.4	113.3	100.0	**111.63**
Snohomish	124.9	119.4	63.4	99.9	70.7	96.7	**95.83**
Seattle - King	14.3	113.3	116.2	101.2	82.2	106.9	**89.00**
Tacoma - Pierce	137.7	116.9	81.3	108.7	106.9	135.5	**114.50**
Southwest	136.9	109.2	28.4	87.9	91.5	79.7	**88.94**
North Central	136.0	92.8	172.6	120.6	133.5	92.4	**124.64**
South Central	139.8	99.7	48.1	84.3	157.8	113.9	**107.24**
Eastern	150.5	83.6	174.8	126.4	152.2	78.6	**127.67**
Benton - Franklin	118.9	93.1	104.9	115.5	105.1	89.9	**104.57**
Spokane	130.2	105.6	105.6	105.2	117.5	63.0	**104.54**

These HTH factors were then used to adjust salaries in the same fashion as the Cost of Living index values. The adjusted salaries are presented below, based off of the Scenario 1 (U.S. Avg. Salary) results in the Economic Impact Analysis section of this report. In essence the current salary is adjusted by the relative COL value and further adjusted based on the HTH factor. These two independent variables may either add or subtract to the resulting adjustment.

Table 24: Hard-to-Hire Factors Applied to COL Adjusted Average Faculty Salaries

Workforce Area	Current Salary	COL Adj. Salary	HTH & COL Adj. Salary	Difference (HTH & COL vs Current)
Olympic	$59,372	$77,494	$77,515	$18,142
Pacific Mountain	$60,078	$58,834	$61,161	$1,083
Northwest	$63,218	$65,492	$73,107	$9,889
Snohomish	$62,280	$83,692	$80,202	$17,922
Seattle - King	$61,276	$88,106	$78,413	$17,137
Tacoma - Pierce	$63,447	$63,132	$72,289	$8,843
Southwest	$61,803	$72,723	$64,682	$2,879
North Central	$61,026	$58,337	$72,713	$11,687
Eastern	$60,502	$56,802	$72,519	$12,016
Benton - Franklin	$57,820	$55,408	$57,941	$122
Spokane	$58,124	$56,569	$59,139	$1,015

Note: South Central is not presented in this table as the combination of COL and HTH adjustment would result in a lower average salary for the region than currently offered and this report is not considering the impacts of any pay reduction.

The Olympic Workforce Area would receive the largest pay increase per the results of our HTH and COL factor adjustment, at $18,142. Seattle - King and Snohomish are not far behind at $17,137 and $17,922, respectively. The smallest increase would be seen in the Benton-Franklin Workforce Area, at $122.

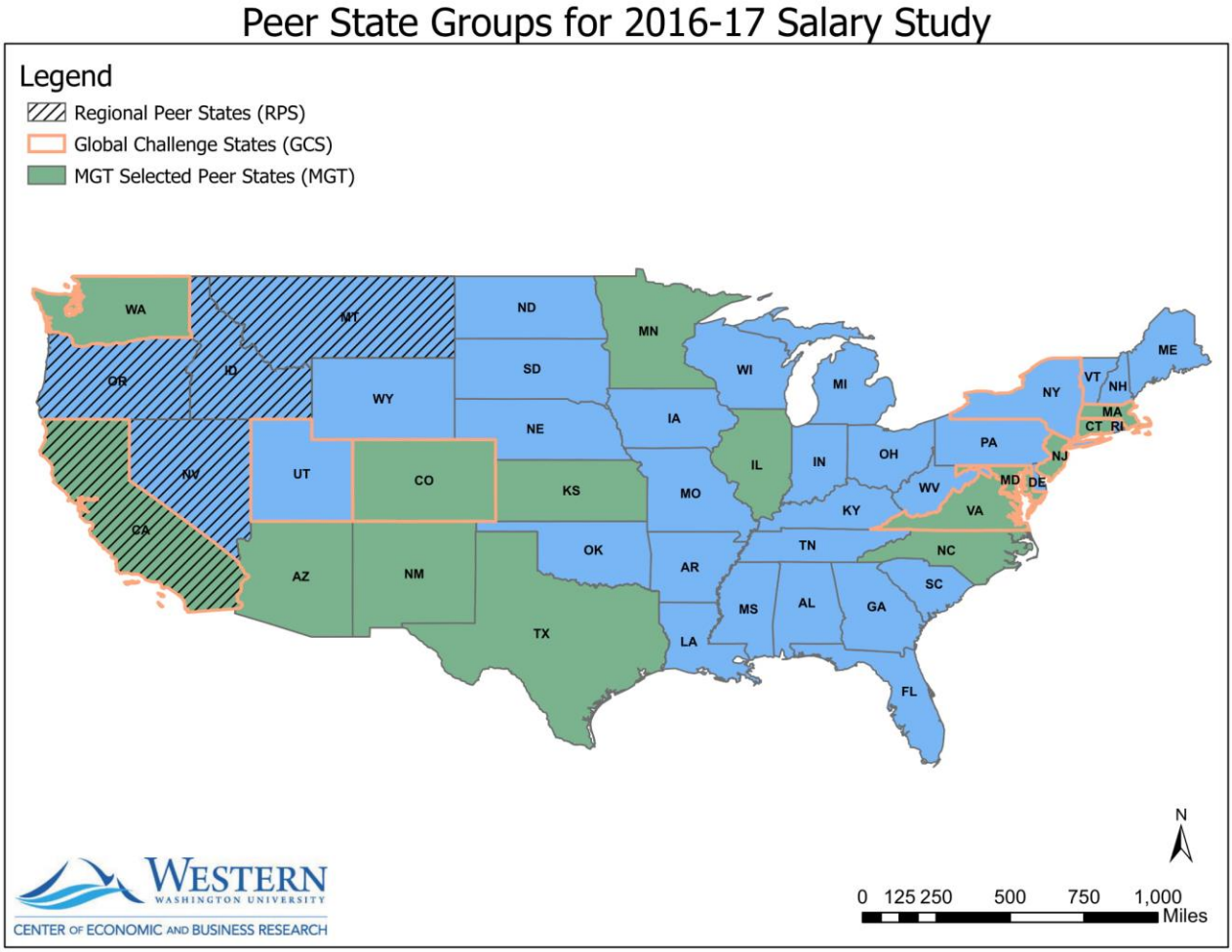
It is important to note that the HTH index we have developed do not and cannot account for all variables that go into an applicant's desire to move to a certain region. A more accurate but time-intensive approach would be to develop HTH factors for specific cohorts – sorted by age, area of expertise, or some other identifying category. However, in terms of components that are universally appealing, our HTH index uses reasonable assumptions to rate the relative desirability of the different Workforce Areas in Washington State.

A key component not included in this analysis is the substitute work value. An employee is employable by other entities at a salary that may or may not be comparable to those presented in this work. While this is an intriguing comparison point it is unrealistic to attempt the construction of a matrix to analyze the possibilities due to the enormous number of variables possible.

One further consideration is that salary incentives may not be the most efficient or effective way to fill roles at certain colleges around the state. Rotating staff through multiple colleges for short, intensive classes or remote presentation classes where the instructor teaches via streaming video are some options to be considered for schools in the hardest areas to hire.

Geographical Information System (GIS) Maps

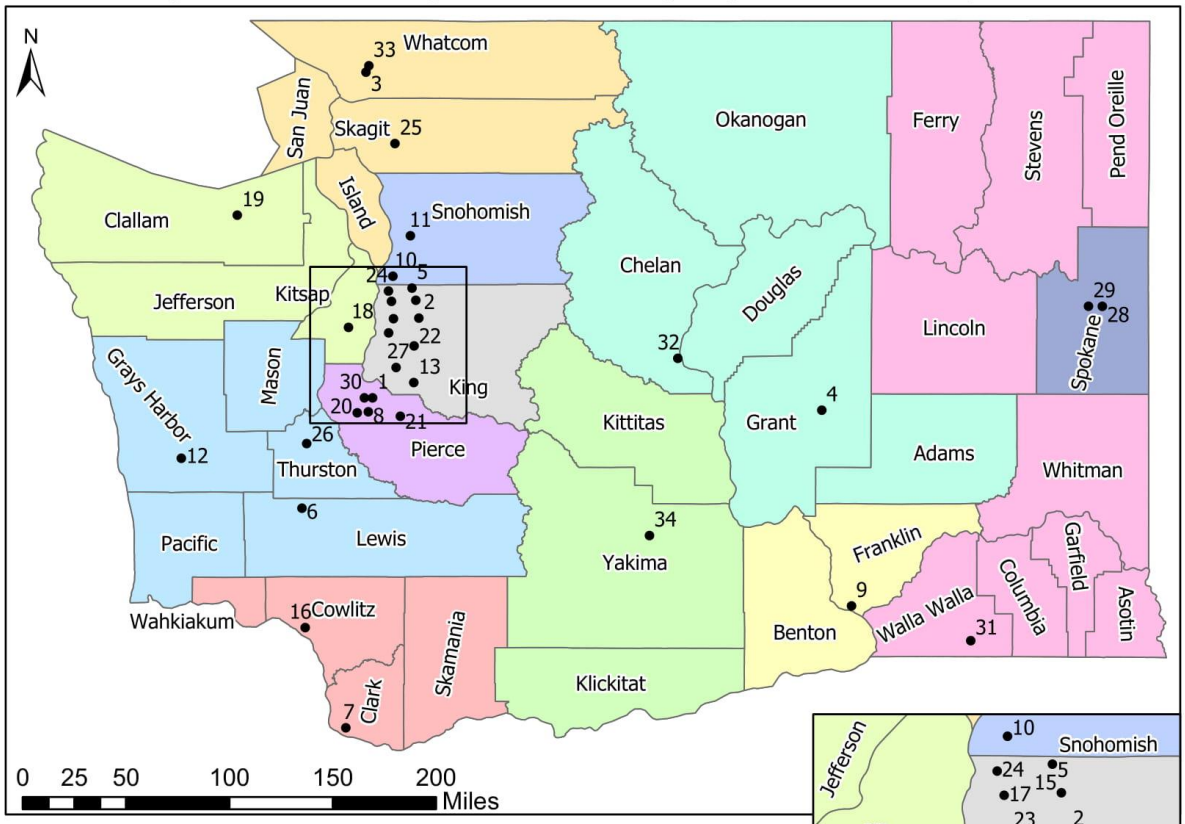
Map 1

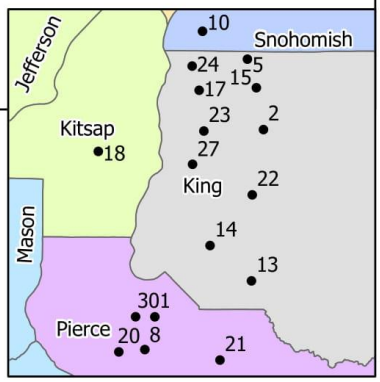


Source: The 2017 State New Economy Index by Informatin Technology & Innovation Foundation

Map 2

Washington State Community & Technical Colleges by Workforce Deveolpment Area





Workforce Area

- 1- Olympic
- 2 - Pacific Mountain
- 3 - Northwest
- 4 - Snohomish
- 5 - King
- 6 - Tacoma-Pierce
- 7 - Southwest
- 8 -North Central
- 9 - South Central
- 10 - Eastern
- 11 - Benton-Franklin
- 12 - Spokane

Washington State Community and Technical Colleges

1.Bates Technical College
2.Bellevue College
3.Bellingham Technical College
4.Big Bend Community College
5.Cascadia College
6.Centralia College
7.Clark College
8.Clover Park Technical College
9.Columbia Basin College
10.Edmonds Community College
11.Everett Community College
12.Grays Harbor College
13.Green River College
14.Highline College
15.Lake Washington Institute of Technology
16.Lower Columbia College
17.North Seattle College
18.Olympic College
19.Peninsula College
20.Pierce College Fort Steilacoom
21.Pierce College Puyallup
22.Renton Technical College
23.Seattle Central College
24.Shoreline Community College
25.Skagit Valley College
26.South Puget Sound Community College
27.South Seattle College
28.Spokane Community College
29.Spokane Falls Community College
30.Tacoma Community College
31.Walla Walla Community College
32.Wenatchee Valley College
33.Whatcom Community College
34.Yakima Valley College

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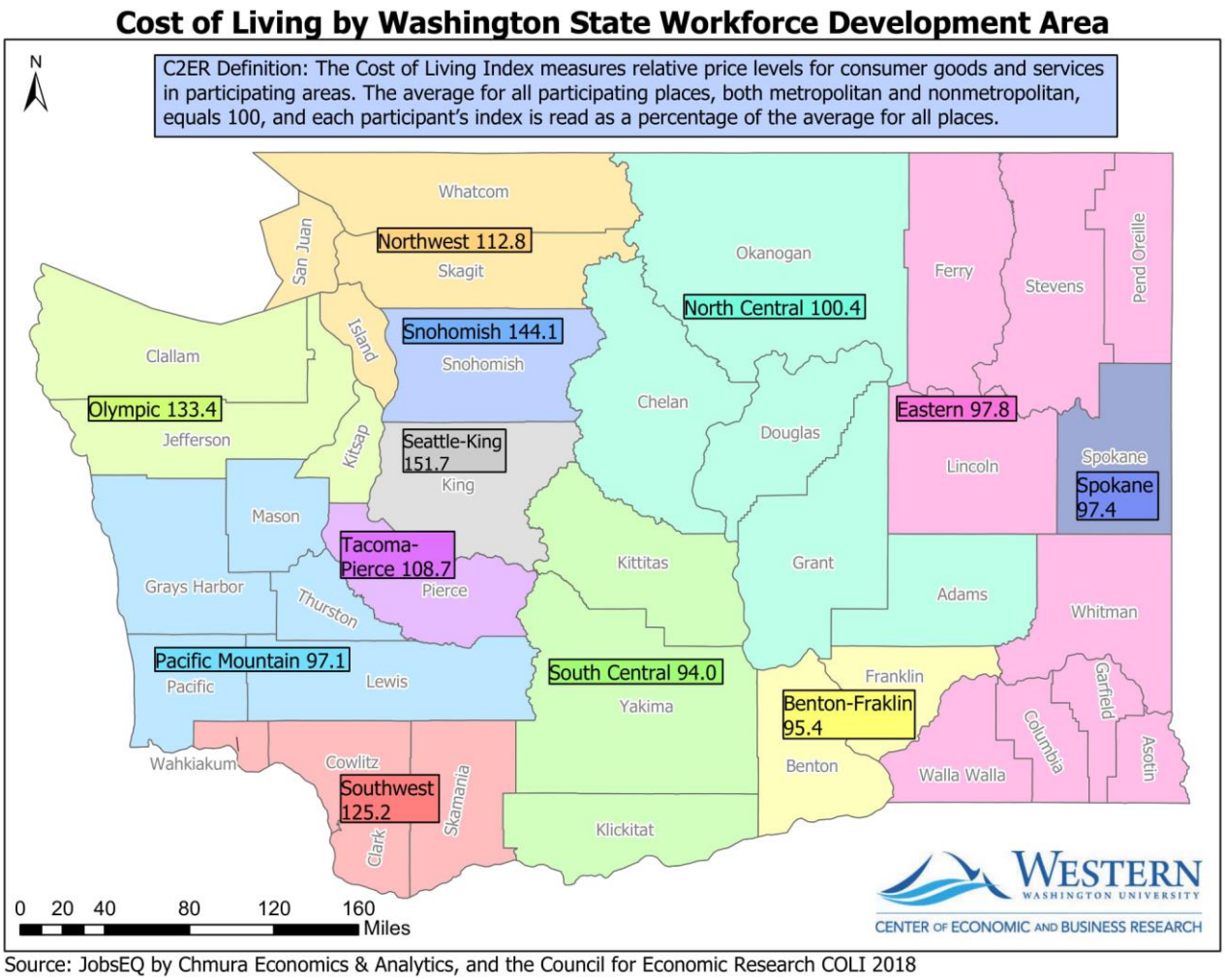
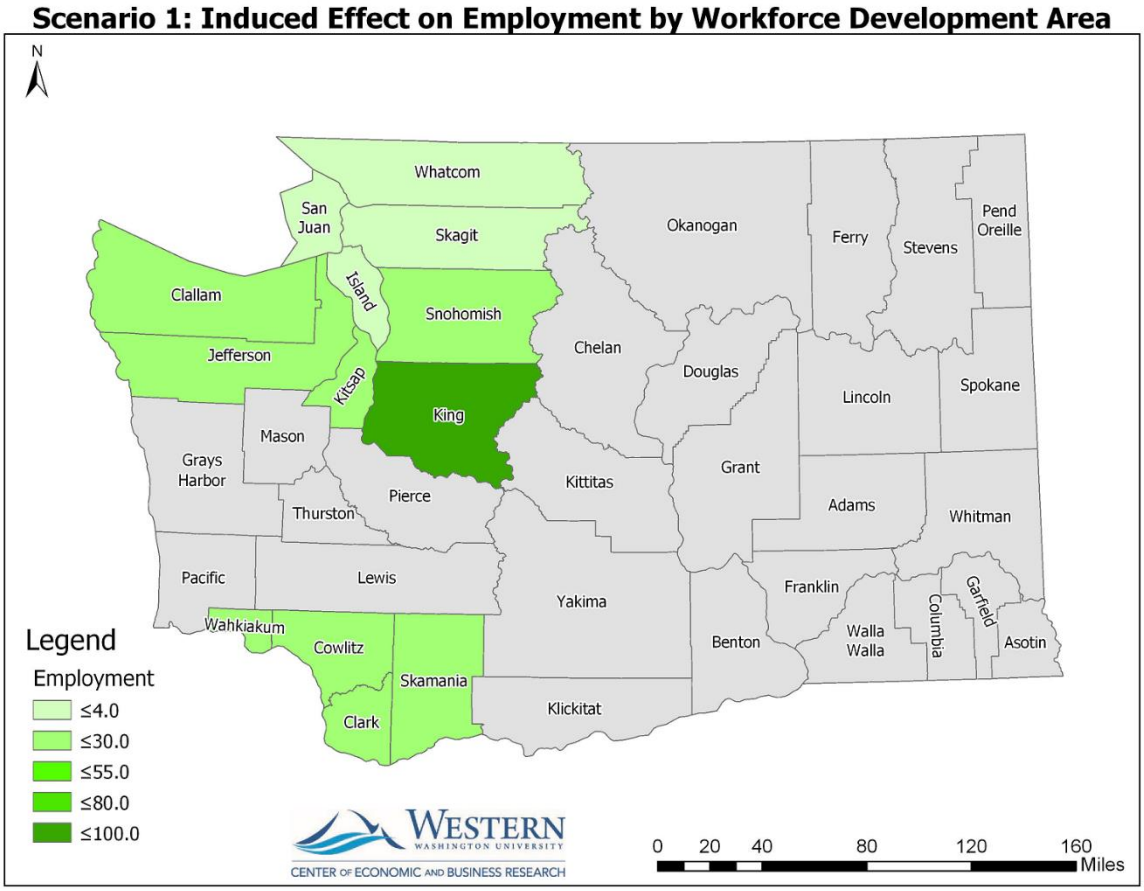
Map 3



Source: JobsEQ by Chmura Economics & Analytics, and the Council for Economic Research COLI 2018

Map 4


Scenario 1: Induced Effect on Employment by Workforce Development Area
N
Whatcom
San Juan
Skagit
Okanogan
Ferry
Stevens
Pend Oreille
Island
Clallam
Snohomish
Chelan
Douglas
Lincoln
Spokane
Jefferson
Kitsap
King
Mason
Grays Harbor
Pierce
Kittitas
Grant
Adams
Whitman
Thurston
Pacific
Lewis
Yakima
Franklin
Garfield
Columbia
Asotin
Wahkiakum
Cowlitz
Benton
Walla Walla
Skamania
Clark
Klickitat
Legend
Employment
≤4.0
≤30.0
≤55.0
≤80.0
≤100.0
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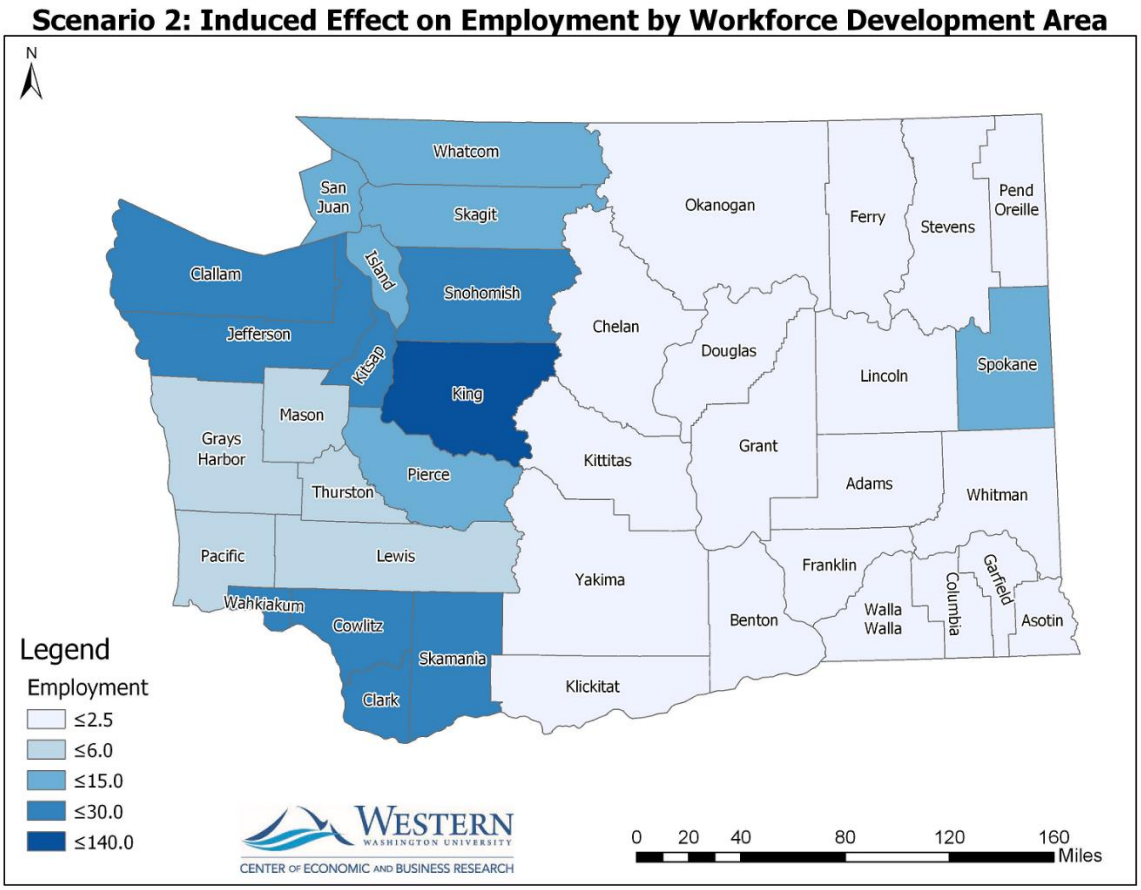
0 20 40 80 120 160
Miles

Map 5


Scenario 2: Induced Effect on Employment by Workforce Development Area
N
Whatcom
San Juan
Skagit
Island
Snohomish
Clallam
Jefferson
Kitsap
King
Mason
Grays Harbor
Thurston
Pierce
Pacific
Lewis
Wahkiakum
Cowlitz
Skamania
Clark
Okanogan
Ferry
Stevens
Pend Oreille
Chelan
Douglas
Lincoln
Spokane
Kittitas
Grant
Adams
Whitman
Yakima
Franklin
Garfield
Columbia
Walla Walla
Asotin
Benton
Klickitat
Legend
Employment
≤2.5
≤6.0
≤15.0
≤30.0
≤140.0
WESTERN WASHINGTON UNIVERSITY
CENTER OF ECONOMIC AND BUSINESS RESEARCH
0 20 40 80 120 160
Miles

Peer System Policies & Practices Tables

Table P.P.1: Funding Policies & Practices

2016-17 Results			
System	**Limitations on Setting Tuition**	**Funding Sources**	**Academic Year**
Washington State Board for Community and Technical Colleges	The state legislature sets the maximum amount that tuition can be increased by the State Board.	State General Fund & Special Revenue 47%, Grants & Contracts 19%, Local Dedicated Fund 10%, Tuition (aka: Operating Fees) 24%	Quarter
Colorado Community College System	"All tuition rates, fees, and charges for services that are specifically delineated below, must be approved annually by the Board." -State board	Tuition, state funds, grants, contracts	Semester
New Mexico Independent Community Colleges	Colleges have the ability to set the price of tuition and fees	Gift donors, tuition and fees, state appropriations, local mild levy appropriations, sources meant to support I&G expendatures (general opperating costs)	Semester
North Carolina Community College System	Local colleges have the authority to determine tuition prices	Tuition, state funds, local funds, donors	Semester
Texas State Technical College System	Tuition and fees must be approved by the board of regents	Tuition and fees, grants, general revenue, gifts,	Semester
Virginia Community College System	Statewide tuition rates are set by the state board	Grants, tuition, state funds, other revenues, gifts, contracts	Semester
SUNY Community College System	Determined at the state level	Tuition, government funds	Semester
Florida Department of Education	Decided by the school districts	State appropriations, tuition and fees	Semester
Minnesota State Colleges and Universities	Colleges must charge tuition that adheres to Minnesota statutes and policies	Tuition and fees, state funds, grants, revenue fund	Semester

Table P.P.2: Compensation Practices

2016-17 Results					
System	**Compensation Structure**		**Pay for Performance**	**Increases**	
	Salary Schedules	**Determined Locally**		**Merit**	**Step**
Washington State Board for Community and Technical Colleges	Faculty salary schedules are locally negotiated by each district. Administrators/exempt employees salaries are locally set, primarily based upon a combination internal alignment and market influences.	Faculty and adminstrator salaries are set locally. Until recently (June 2018), salary increases could only occur if authorized by the Legislature.	No	No	Many colleges have negotiated step increases for faculty. Administrators and exempt employees typically do not have a salary schedule, no step increases.
Colorado Community College System	Colleges have the authority to determine salaries: "The board indents that the college presidents shall have sole responsibility for establishing salary plans for faculty of their colleges." -CCCS	Yes, but the salary **pool** for each college is determined at the state level	Pay increases are merit based, faculty that earns a performance rating of "commendable" (the grades are: exemplary, commendable, needs improvement) or above are eligible for a pay increase. *The colleges decide the criterion for these performance ratings.	"[P]lans must include a merit-driven process to guide individual salary decisions. The salary allocation plans shall be reviewed by the system president...there shall be two categories of salary adjustments, base building and non-base building. Faculty may be eligible for either of these types of salary adjustment. Merit shall be the prevailing factor in all salary adjustments." -CCCS	New hires are given a starting salary. Pay increases are largely determined by merit, however salaries increase for faculty that has completed four semesters and 18 credits of teaching experience.
New Mexico Independent Community Colleges	Faculty is placed on a salary range decided by the state.	Not determined locally. The state board decides salaries and salary increases.	Employees move up and down the salary range based on performance.	The regular staff pay structure consists of 26 pay grades (A-Z). The pay grades reflect comparative levels of knowledge, skills, abilities and responsibilities.	Yes
North Carolina Community College System	Determined locally but approved by the state board.	Determined Locally	Yes, employees will have merit based increases in salaries, however salaries cannot exceed the maximum salary for their position.	Advancement from minimum to maximum salary is based on merit.	Yes
Texas State Technical College System	Salary increases are part of the annual budget formulation and job performance reviews.	Determined Locally	Yes	Yes - An increase in salary of at least $30 per month on Salary Schedule A or an increase in salary on Salary Schedule B within the same salary group.	No
Virginia Community College System	Salary ranges are system-wide	No	Yes	Salary increases are based on merit	No
SUNY Community College System	Minimum and maximum salaries for all colleges	Determined with collective bargaining (state level)	Yes	Yes	Yes
Florida Department of Education	X	Determined at the district level	Yes, employees are evaluated. *Highly effective employees see salary increase.	Yes	Yes: "Salary adjustment for salary schedule step." -FDE
Minnesota State Colleges and Universities	Salaries are increased at the end of the fiscal year, the college's president has the authority to increase salaries.	Yes	Yes, award for good performance	X	Yes

Table P.P.3: COL Salary Adjustments

2016-17 Results			
System	**Timeframe**	**Across the Board**	**Legislatively Mandated**
Washington State Board for Community and Technical Colleges	Received annual, but decided biannually. By statute, Faculty receive an annual COL adjustment based upon the King County CPI, unless set aside by the Legislature.	Funds are allocated to colleges on an "across the board" basis, but may be distributed to employees differentially, based on local decision-making and bargaining.	Yes
Colorado Community College System	Depends on the annual budged, pay increases are determined by merit.	No	No
New Mexico Independent Community Colleges	Annually, as granted by the board (depends on the availability of funds)	Yes	No
North Carolina Community College System	Salaries can be adjusted annually or when a faculty member is promoted, salary range is determined by the state board.	Varies	Yes
Texas State Technical College System	Annually	Varies	No
Virginia Community College System	Salary increases are based only on merit which is based on performance evaluations.	No	No
SUNY Community College System	Annually	Yes	No
Florida Department of Education	Annually	Varies	No
Minnesota State Colleges and Universities	Salaries are increased at the end of the year.	X	No

Table P.P.4: Faculty Contract Days

2016-17 Results		
System	**Number**	**How Determined**
Washington State Board for Community and Technical Colleges	Average: 177 (min: 166, max: 221)	Local collective bargaining
Colorado Community College System	166	X
New Mexico Independent Community Colleges	Either Year Long (365 days) or Semester Long (110-111 days) *Temporary employee contracts do not last longer than 6 months	Determined at the college level
North Carolina Community College System	9 Month Contracts	Contract length is for all state-colleges, however individual colleges can choose to extend the contract lengths.
Texas State Technical College System	Employment contracts can last not longer than one year.	System-Wide
Virginia Community College System	9 Month Contracts	Determined at college level
SUNY Community College System	10 or 12 Month Contracts	Determined at the state level
Florida Department of Education	210 days for temporary employees 9, 9.5, or 12 Month Contracts for Full-time Employees	Numbers are standard for the whole state
Minnesota State Colleges and Universities	X	Renewed Annually

Table P.P.5: Faculty Workload Policies

2016-17 Results	
System	**System-Wide Policy**
Washington State Board for Community and Technical Colleges	Faculty workload varies based upon mode of instruction. Faculty are typically required to teach 15 credits or 165 contract hours per quarter in lecture/lab. Faculty are also required to have office hours, advise students, and participate in college governance activities.
Colorado Community College System	Each faculty member and instructor should not exceed 21 credit hours of work per semester. Employees will be credited with 2.25 hours of service per week, and will be credited with an additional credit hour for each additional hour of work per week.
New Mexico Independent Community Colleges	Nine month faculty teach 30 hours divided over fall, winter, and spring quarter and maintain no less than 7 office hours, provide no less than 50 hours of college service per academic semester. Twelve month employees should teach 38 hours every academic year with 15 pay hours taught during the fall and spring, 7 office hours, required to work 40 hours per week.
North Carolina Community College System	Faculty adheres to their assigned 30 hour work week with at least 1 office hour per day and 5 office hours per week, but may work as many as 40 every week. Specifically for lectures/lab classes faculty is required 21 contact hours, for shop/lecture/lab classes (ex: autobody repair) faculty are required 24 contact hours.
Texas State Technical College System	Full time employees work 40 hours a week, part time employees work 20 hours a week.
Virginia Community College System	Academic-year workload is 33-39 credits with 39-49 contact hours. No more than 3 credit hours of overload may be assigned in an academic year.
SUNY Community College System	Varies depending on college - locally determined
Florida Department of Education	Varies depending on college - locally determined
Minnesota State Colleges and Universities	Faculty work 4o hour per weeks

Table P.P.6: Part-time Faculty Compensation

2016-17 Results		
System	**How Determined**	**Variation from Full-Time Compensation Policies**
Washington State Board for Community and Technical Colleges	Salaries are determined locally through collective bargaining. Typically, part-time instructors are paid a flat per credit rate, however, some colleges have negotiated salary steps and pay for additional assigned duties.	Salary is based upon a negotiated per credit or contact hour rate for work necessary to produce the assigned credits for students (preparation, teaching, evaluation). Additional pay for work outside of teaching (advising, office hours, etc.) may be incorporated into the per credit rate or paid as a stipend.
Colorado Community College System	All salaries are determined by the college's president	X
New Mexico Independent Community Colleges	Part time salary is calculated using the "pro-rata" hourly rate of the minimum salary for each education level.	Pay is based on workload of any given course; part time course compensation is calculated on the workload times the appropriate hourly rate.
North Carolina Community College System	The pro-rata hourly rate of the minimum salary for each education level shall be used to determine the minimum salary for part-time faculty members.	The pro-rata hourly rate of the minimum salary for adjunct faculty is calculated by dividing the full-time faculty minimum by 1560 hours (number of hours for 9/12th of a work year).
Texas State Technical College System	Determined at college level	Part time salary is a percentage of the full time salary. Part-time employees are normally placed on the salary schedule at the minimum salary of the grade for the position which they hold.
Virginia Community College System	Compensation is pro-rated and benefits are restricted consistent with state policies and regulations.	Part-time nine-month teaching faculty are employed on a continuing basis to teach approximately 60%-80% of a regular faculty workload and carry regular faculty duties and responsibilities.
SUNY Community College System	The salary ranges for full time employees (that the part time salaries are based on) are determined by collective bargaining. Prorating full time salaries is a state policy.	If a faculty member does not have a full load their salary is prorated
Florida Department of Education	X	X
Minnesota State Colleges and Universities	Determined by employer in contract	Determined by employer in contract

Table P.P.7: Collective Bargaining Policies & Practices

2016-17 Results			
System	**Institutions with Unionized Faculty**	**Contract Terms Negotiated**	**Affiliations**
Washington State Board for Community and Technical Colleges	100%	Most Terms	NEA - National Education Association AFT - American Federation of Teachers
Colorado Community College System	None	None	None
New Mexico Independent Community Colleges	Some	Most Terms	New Mexico Employees Union
North Carolina Community College System	None	None	None
Texas State Technical College System	Some	Some	Texas Community College Teacher's Association
Virginia Community College System	Some	Some	Virginia Community Colleges Association
SUNY Community College System	100%	Negotiate Pay Increases	State University Professional Services Negotiating Unit, Administrative Services Unit, Operational Services Unit, Institutional Services Unit, Professional Agency Police Services Unit, and Scientific and Technical Services Unit
Florida Department of Education	100%	Most Terms	Florida Education Association, United Faculty of Florida
Minnesota State Colleges and Universities, includes technical colleges	100%	All Terms	Inner Faculty Organization, Minnesota State College Faculty, Minnesota State University Association of Administrative and Service Faculty, American Federation of State, County, and Municipal Employees, Minnesota Association of Professional Employees, Minnesota Government Engineer Council, Middle Management Association, and Minnesota Nurses Association

Table P.P.8: Healthcare Benefits

2016-17 Results			
System	**% of Individual Salary**	**Employee Cost**	**Employer Portion**
Washington State Board for Community and Technical Colleges	X	Depends on the insurance plan; for a single employee the cost is between $45 and $162; for a full family the price range is $79-$387	Health insurance is provided by the state
Colorado Community College System	X	X	Employer contributes $60/month ($720/year) to employee's health savings account
New Mexico Independent Community Colleges	X	Varies	80, 75, or 65% of total premium
North Carolina Community College System	Depends on the college's insurance plan	Depends on the insurance plan Per person per year costs are between: $4,500 and $6,500 (not including the employer-pad portion)	The maximum annual employer contribution rate (2016) was $5,471 and $4,650 for Medicare employees. However, the contribution rate varies for the 2017-18.
Texas State Technical College System	Varies	None	100%
Virginia Community College System	Total premium depends on plan and family size	Depends on the plan (Highest was around 15%)	A portion of the insurance is paid for by the state
SUNY Community College System	X	16%	84%
Florida Department of Education	Determined Locally	Determined Locally	Determined Locally
Minnesota State Colleges and Universities	No more than 60% of salary	Depends on the plan: 0%, 50%, 75%, 100% of premium	Depends on the plan: 0%, 50%, 75%, 100% of premium. The state also contributes to insurance premiums.

Table P.P.9: Retirement Benefits Policies and Practices

2016-17 Results			
System	**% of Individual Salary**	**Employee Contribution**	**Employer Contribution**
Washington State Board for Community and Technical Colleges	10%, 15%, 20% (depending on age)	5%, 7.5%, 10% (depending on age)	5%, 7.5%, 10% (depending on age)
Colorado Community College System	Retirement program called PERA requires a payment of 8% of the individuals salary every month	X	50% match on employee contributions
New Mexico Independent Community Colleges	24.60%	10.70%	13.90%
North Carolina Community College System	16.12%	Yes	17.13%
Texas State Technical College System	7.50%	3.75%	3.75%
Virginia Community College System	X	5%, 7.5% or 10% (depending on age)	Yes, employer must match 100% of employee's contribution
SUNY Community College System	Various ranges from 3% - 6%	Various ranges from 3% - 6%	8% contribution for the first 7 years, and then 10% contribution thereafter
Florida Department of Education	6.50%	3%	7%
Minnesota State Colleges and Universities	X	4.5%, 5.5% or 7.5%	5.5%, 6%, 7.5%

Table P.P.10: Other Benefit Policies and Practices

2016-17 Results	
System	**Detail**
Washington State Board for Community and Technical Colleges	Life Insurance, Dental Insurance, Vision, Flexible Spending Arrangements (FSA), Dependent Care Assistance Program (DCAP), Health Savings Account (HSA), Auto and Home Insurance, Health Savings Account, Long-term Disability Benefits, Voluntary Employee Benefits Account, and Long-term Care/Assistance Services
Colorado Community College System	Tuition Assistance, Dental Insurance, Vision Insurance, Flexible Spending Accounts, Life Insurance, Supplemental Retirement Plans, PERA Information, Disability Benefits, Worker's Compensation Benefits, Faculty Sick Leave, Funeral Leave, Holiday Leave, Jury-Duty Leave, and Military Training Leave
New Mexico Independent Community Colleges	Dental Insurance, Vision Insurance, Basic Life Insurance, Additional Life Insurance, and Long-term Disability Insurance
North Carolina Community College System	Tuition and Fee Waiver, Sick Leave, Annual Leave, Disability Benefits, Pierce Group Benefits (Insurance agency), Dental Insurance, Vision Insurance, and Life Insurance
Texas State Technical College System	Employee Education Program, Employee Paid-Leave and Holidays, Tuition Assistance, Life Insurance, Disability Insurance, and Dental Insurance
Virginia Community College System	Life Insurance, Sickness and Disability Program, Vacation Leave, Flexible Reimbursement Accounts, Holiday Leave, Tax-Sheltered Annuities, Deferred Compensation, Cash Match, Educational Assistance, Employee Assistance Program, Wellness Program, Worker's Compensation, Virginia College Savings Plan, Teachers Credit Union, and Discounts Program
SUNY Community College System	Tuition waivers, Dental Insurance, Disability Insurance, Life Insurance, Deductible and Prescription Drug Co-Payment, Credit Union, and Flexible Spending Plan
Florida Department of Education	Tuition waivers, Life, Disability, & Dental Insurance, Vacation & Sabbatical Leave, and Flexible Spending Plan
Minnesota State Colleges and Universities	Time-off Benefits, Dental Insurance, Life Insurance, Disability and Long-term Care Pre-tax Benefits, Health and Wellness Programs, and Tuition Waivers

IPEDS Variables: Definitions and Source Reference

Instructional Staff

Instructional staff – total

Variable Description

Number of full-time, non-medical, instructional staff - total as of November 1, on 9, 10, 11 or 12 month contract and less less-than 9-month contract.

Instructional Staff- An occupational category that consists of the following two functions: 1) "Instruction" only and 2) "Instruction combined with research and/or public service

Contract length - The contracted teaching period. The number of months should correspond with the number of months worked (which may differ from the number of months over which staff are paid).

Excludes medical staff - Staff employed by or staff working in the medical school (Doctor of Medicine [M.D.] and/or Doctor of Osteopathic Medicine [D.O.]) component of a postsecondary institution or in a free standing medical school. Does not include staff employed by or employees working strictly in a hospital associated with a medical school or those who work in health or allied health schools or departments such as dentistry, veterinary medicine, nursing or dental hygiene unless the health or allied health schools or departments are affiliated with (housed in or under the authority of) the medical school.

Salary outlays for instructional staff equated to a 9-month contract-total

Variable Description

Total salary outlays of full-time, non-medical, instructional staff - total equated to month contract.
This is calculated by adjusting the salary outlays at 10-, 11- 12-month contracts to a 9-month contract as follows:
(salary outlays at 9-months SA09MOT)+
(.90 * salary outlays at 10 months SA10MOT)+
(.818 *salary outlays at 11 months SA11MOT) +
(.75 * salary outlays at 12 months SA12MOT)

Instructional Staff- An occupational category that consists of the following two functions: 1) "Instruction" only and 2) "Instruction combined with research and/or public service

Annual salary outlays (combined salaries of all staff) include base salaries only – no supplements, overloads or bonuses. Additional stipends for administrative, managerial or other responsibilities are NOT included in the salary outlays data for instructional staff.
Contract length – ibid.
Excludes medical staff – ibid.

Non-Medical and Non-Instructional Staff

Researchers

Variable Description

Research - An occupational category used to classify persons whose specific assignments customarily are made for the purpose of conducting research. Regardless of title, academic rank, or tenure status, these employees formally spend the majority of their time conducting research

Public Service

Variable Description

Public Service - An occupational category used to classify persons whose specific assignments customarily are made for the purpose of carrying out public service activities such as agricultural extension services, clinical services, or continuing education. Regardless of title, academic rank, or tenure status, these employees formally spend the majority of their time carrying out public service activities. (This category includes employees with a public service assignment regardless of the location of the assignment (e.g., in the field rather than on campus).

Librarians, Curators, Archivists, and Academic Affairs and Other Education Services

Variable Description
This variable includes the following four SOC categories

Archivists, Curators, and Museum Technicians - An occupational category based on the broad occupation in the 2010 Standard Occupational Classification (SOC) Manual called "Archivists, Curators, and Museum Technicians." For detailed information, refer to the following website: http://www.bls.gov/soc/2010/soc254010.htm.

Librarians - An occupational category based on the broad occupation in the 2010 Standard Occupational Classification (SOC) Manual called "Librarians." For detailed information, refer to the following website: http://www.bls.gov/soc/2010/soc254020.htm

Library Technicians An occupational category based on the broad occupation in the 2010 Standard Occupational Classification (SOC) Manual called "Library Technicians." For detailed information, refer to the following website: http://www.bls.gov/soc/2010/soc254030.htm.

Academic Affairs and Other Education Services Occupations - An occupational category based on the following three minor groups in the 2010 Standard Occupational Classification (SOC) Manual: 1) Pre-school, Primary, Secondary, and Special Education School Teachers (http://www.bls.gov/soc/2010/soc250000.htm#25-2000); 2) Other Teachers and Instructors (http://www.bls.gov/soc/2010/soc250000.htm#25-3000); and 3) Other Education, Training, and Library Occupations (http://www.bls.gov/soc/2010/soc250000.htm#25-9000).

Management
Variable Description
Management Occupations - An occupational category based on the major group in the 2010 Standard Occupational Classification (SOC) Manual called “Management Occupations.” For detailed information refer to the following website: http://www.bls.gov/soc/2010/soc110000.htm.

Business and Financial Operations
Variable Description
Business and Financial Operations Occupations - An occupational category based on the major group in the 2010 Standard Occupational Classification (SOC) Manual called “Business and Financial Operations Occupations.” For detailed information refer to the following website: http://www.bls.gov/soc/2010/soc130000.htm.

Computer, Engineering, and Science
Variable Description
Computer, Engineering, and Science Occupations - An occupational category based on the following three major groups in the 2010 Standard Occupational Classification (SOC) Manual: 1) Computer and Mathematical Occupations (http://www.bls.gov/soc/2010/soc150000.htm); 2) Architecture and Engineering Occupations (http://www.bls.gov/soc/2010/soc170000.htm); and 3) Life, Physical, and Social Science Occupations (http://www.bls.gov/soc/2010/soc190000.htm).

Community, Social Service, Legal, Arts, Design, Entertainment, Sports and Media
Variable Description
Community, Social Service, Legal, Arts, Design, Entertainment, Sports and Media Occupations - An occupational category based on the following three major groups in the 2010 Standard Occupational Classification (SOC) Manual: 1) Community and Social Service Occupations (http://www.bls.gov/soc/2010/soc210000.htm); 2) Legal Occupations (http://www.bls.gov/soc/2010/soc230000.htm); and 3) Arts, Design, Entertainment, Sports, and Media Occupations (http://www.bls.gov/soc/2010/soc270000.htm).

Healthcare Practitioners and Technical
Variable Description
Healthcare Practitioners and Technical Occupations - An occupational category based on the major group in the 2010 Standard Occupational Classification (SOC) Manual called “Healthcare Practitioners and Technical Occupations.” For detailed information refer to the following website: http://www.bls.gov/soc/2010/soc290000.htm

Service
Variable Description

Service Occupations - An occupational category based on the following five major groups in the 2010 Standard Occupational Classification (SOC) Manual: 1) Healthcare Support Occupations (http://www.bls.gov/soc/2010/soc310000.htm); 2) Protective Service Occupations (http://www.bls.gov/soc/2010/soc330000.htm); 3) Food Preparation and Serving Related Occupations (http://www.bls.gov/soc/2010/soc350000.htm); 4) Building and Grounds Cleaning and Maintenance Occupations (http://www.bls.gov/soc/2010/soc370000.htm); and 5) Personal Care and Service Occupations (http://www.bls.gov/soc/2010/soc390000.htm).

Sales and related

Variable Description

Sales and Related Occupations - An occupational category based on the major group in the 2010 Standard Occupational Classification (SOC) Manual called "Sales and Related Occupations." For detailed information refer to the following website: http://www.bls.gov/soc/2010/soc410000.htm.

Office and Administrative Support

Variable Description

Office and Administrative Support Occupations - An occupational category based on the major group in the 2010 Standard Occupational Classification (SOC) Manual called "Office and Administrative Support Occupations." For detailed information refer to the following website: http://www.bls.gov/soc/2010/soc430000.htm.

Natural Resources, Construction, and Maintenance

Variable Description

Natural Resources, Construction, and Maintenance Occupations - An occupational category based on the following three major groups in the 2010 Standard Occupational Classification (SOC) Manual: 1) Farming, Fishing, and Forestry Occupations (http://www.bls.gov/soc/2010/soc450000.htm); 2) Construction and Extraction Occupations (http://www.bls.gov/soc/2010/soc470000.htm); and 3) Installation, Maintenance, and Repair Occupations (http://www.bls.gov/soc/2010/soc490000.htm).

Production, Transportation, and Material Moving

Variable Description

Production, Transportation, and Material Moving Occupations - An occupational category based on the following two major groups in the 2010 Standard Occupational Classification (SOC) Manual: 1) Production Occupations (http://www.bls.gov/soc/2010/soc510000.htm) and 2) Transportation and Material Moving Occupations (http://www.bls.gov/soc/2010/soc530000.htm).