

PENNSYLVANIA'S STATE SYSTEM OF HIGHER EDUCATION



Bloomsburg University's

WORKFORCE CHARACTERISTICS TECHNICAL REPORT

A report for Pennsylvania's
State System of Higher Education

2016



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GLOSSARY OF TERMS

The following descriptions provide a point of reference to understand terminology as well as the types of data and analysis undertaken in this study, reflecting historic and contemporary narratives.

Industry Change: A measure of the change in employment within an industry, used to identify whether an industry is growing or declining, as well as the rate of change. Projected changes lay out expectations of growth/decline for specific industries.

Job Postings: The number of unique (de-duplicated) online postings for a job in a given occupation.

Location Quotient: A comparative statistic used to calculate the relative employment concentration of a given industry or occupation against the average employment of the industry in a larger geography (for example, countrywide). Industries with a higher location quotient (usually greater than 1.2) indicate that the region has a comparative advantage or specialization in the production of that good or service or has a high degree of specialization within its workforce. For example, in Silicon Valley, we would expect the concentration of computer programming occupations to be greater than the rest of the US, giving rise to the conclusion that Silicon Valley has a comparative advantage in the computer programming workforce.

New and Replacement Jobs: A demand-side estimate of the number of job openings in an occupation that result from new job growth as well as replacement demand. Replacement demand comprises occupation job leavers based on separations, retirement, and death.

Occupation Jobs: A measure of employment within an occupation category, used to identify which occupations have been growing or declining, as well as the rate of change. Projected changes lay out expectations of growth/decline for specific occupation categories.

State System Learner Capture Rate: The percentage of State System enrolled learners from a specific county that are attending a given Pennsylvania State System university. State System universities typically capture a higher proportion of State System enrolled learners from counties in proximity to the institution.

State System Learner Share: Represents the contribution of learners from a defined geographic area that are enrolled in a State System university.

Sub-regions: A geographic area within Pennsylvania defined for more focused workforce and education gap analyses. Sub-regions were determined primarily on Partnerships for Regional Economic Performance (PREP) boundaries. PREP is Pennsylvania's network of business assistance partners designed to help companies start, grow, and prosper. Please refer to Appendix A for mapping of the Sub-regions and PREP boundaries.

ACRONYMS USED

ACS: American Community Survey

BLS: Bureau of Labor Statistics

EMSI: Economic Modeling Specialists International

CEW: Center on Education and the Workforce (Georgetown University)

IPEDS: Integrated Postsecondary Education Data System

LAUS: Local Area Unemployment Statistics

LEHD: Longitudinal Employment and Housing Dynamics

NCES: National Center for Education Statistics

OES: Occupational Employment Statistics

O*NET: Occupational Network

PUMS: Public Use Microdata Sample

QCEW: Quarterly Census of Employment and Wages

SAIPE: Small Area Income and Poverty Estimates

USDOE: US Department of Education

USDOL: US Department of Labor

1. INTRODUCTION

Pennsylvania’s State System of Higher Education (State System) comprises 14 universities, four branch campuses, multiple regional centers and the McKeever Environmental Learning Center.¹ The universities are located in rural, suburban, and small-town settings around Pennsylvania. The State System’s two educational hubs (with locations in Harrisburg, the Dixon University Center, and Philadelphia, State System @ Center City) offer academic programs through a consortium of public and private colleges and universities. Per Act 188 of 1982, the State System’s mission “is the provision of instruction for undergraduate and graduate students to and beyond the master’s degree in the liberal arts and sciences, and in the applied fields, including the teaching profession.” In doing so, the State System’s purpose is “to provide high quality education at the lowest possible cost to students.”² Analysis and understanding of the economy and workforce the State System supports, as well as future demands for talent advances the State System’s mission and philosophy—a key component of this report. Further, it enables effective and targeted strategies and decision-making, grounded in data-driven evidence.

Like all institutions of higher education, the State System’s universities face challenges in their effort to identify and quantify program needs for Pennsylvania residents and businesses that demand talent. They must account for the changing economic and workforce dynamics within the region they support, such as industry and occupation growth/decline, as well as the changing quality of the area’s workforce. Furthermore, as technology progresses, a growing need to address increasingly complex and specialized occupational tasks requires additional customization to education. As a result, education institutions are increasingly called upon to incorporate relevant courses that meet the needs of students and businesses in their service area—a departure from traditional supply-based education towards a more employer demand-driven model.

A fundamental challenge for any higher education system is to first understand the characteristics of the economy and workforce it supports. This study and

1 One of the State System’s entities, System-wide Functions and Services, is primarily located at the Dixon University Center in Harrisburg and includes: System-wide shared administrative services; System leadership functions of the Chancellor and Board of Governors; some System-wide initiatives and grants managed on behalf of the universities; and the academic, student, and facilities support for the multi-university sites in Harrisburg and Philadelphia.

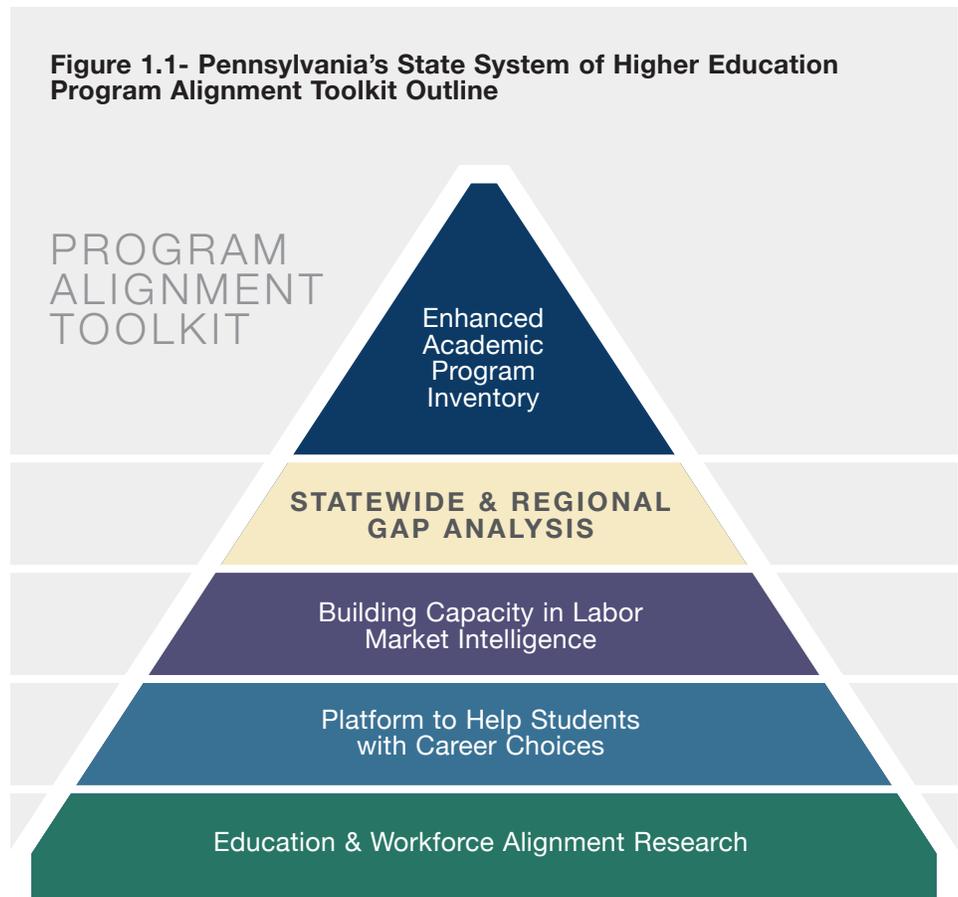
2 Source: The State System’s Economic and Employment Impact on the Commonwealth of Pennsylvania – released April 15, 2015.

the broader set of deliverables under the State System’s Supply/Demand Gap Analysis Project—hereinafter, Gap Analysis Project—will assist universities and education planners by providing an infrastructure of resources for internal planning, as well as external engagement. Understanding key economic aspects of the geography helps to better align policy and strategic direction in order to continue supporting the talent needs of Pennsylvania.

1.1 Pennsylvania’s State System of Higher Education Gap Analysis Project

In a fast-changing economic and social environment that is also experiencing rising costs for higher education, institutions are increasingly called upon to align their programs to the changing needs of the economy.

In response to improving career outcomes for its learners, Pennsylvania’s State System of Higher Education (State System) has produced a Program Alignment Toolkit—a central clearinghouse for key academic planning



information, developed in response to the State System's Strategic Plan "Rising to the Challenge 2020." The Program Alignment Toolkit helps provide multiple perspectives of how higher education can connect to the state's economy and lead to career success for students. A key component of this toolkit is the development of a statewide and regional gap analysis. Other high impact strategies that are a part of the State System's Program Alignment Toolkit are presented in Figure 1.1. The ultimate goal of this plan is to assist the State System's fourteen universities to increase their individual and collective impact on Pennsylvania's economy.

1.2 Goal of the Workforce Characteristics Report

The State System's Gap Analysis Project produced both a Workforce Characteristics Report and a Supply/Demand Gap Analysis Report for both the state and five sub-regions. The Workforce Characteristics Report contains a set of economic, workforce, demographic, and socio-economic information to contextualize the supply/demand gap analysis. The Supply/Demand Gap Analysis Report for Pennsylvania and its sub-regions provides a data-driven perspective of employer demand (new and replacement jobs by occupation in the state) and higher education supply (degree production by major program). The data sources utilized for the State System's Gap Analysis Project are diverse including Bureau of Labor Statistics (BLS), U.S. Census Bureau, American Community Survey (ACS), System Research Office, National Center for Education Statistics (NCES, Integrated Postsecondary Education Data System), IMPLAN (Input/Output Model), and Economic Modeling Specialists International (EMSI). Ultimately, the reports generated from this project will assist the State System universities with strategic engagement, program development and evaluation, student engagement, and marketing.

The intentions of this Workforce Characteristics Report are fourfold.

- First, it provides a baseline reporting structure to evaluate workforce characteristics at the state level and sub-region level within Pennsylvania, which can be repeated in the future.
- Second, it identifies sub-regions within Pennsylvania that will be used to conduct regionally specific analysis in subsequent reports.
- Third, it builds on CEW's State System degree production report. The Workforce Characteristics Report is a data-driven analysis and discussion of trends in Pennsylvania's economy, including projections of industry and occupational employment, key skilled high demand occupations, and changes in socio-economic characteristics.

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- Finally, this report creates the foundation to construct the State System's Gap Analysis reports for the state and its regions and complements the content of the supply/demand gap analysis reports.

While the main body of this report provides a high level summary, the Appendices provide an abundance of information for those seeking additional detail. Appendix A provides a map of the state sub-region boundaries along with PREP and WIA boundaries. Appendix B provides detail on the employment and enrollment by each county in Pennsylvania. Appendix C provides nearly 300 detailed industry employment projections for the region along with a measure of competitiveness for each industry. Lastly, Appendix D provides a description of occupation levels and employment projections for over 400 detailed occupations.

2. PENNSYLVANIA'S STATE SYSTEM LEARNER ORIGIN

This section provides an overview of where State System learners come from within Pennsylvania. It is then compared to where Pennsylvania's workforce is employed. This information is combined with other relevant economic data to define sub-regions as well as university workforce regions—adding valuable geographic granularity to the State System's program alignment toolkit.

Pennsylvania's total four year institution enrollment in 2013 was approximately 618,700 learners. Of this, the Pennsylvania State System of Higher Education comprised 112,225 enrolled learners—of which almost 90% were Pennsylvania residents.³ Based on analysis of the workforce size and the origin of learners, some counties within the Commonwealth appear to provide a higher or lower share of learners to the State System compared to other counties—indicating that learners in some counties are more prone to attending a State System university, compared to other counties. The map below (Figure 2.1) illustrates workforce size and the origin of Pennsylvania resident learners enrolled in Pennsylvania's State System of Higher Education. Counties that exceeded +/-1% difference of learners to workforce are found in Table 2.1 and Table 2.2. For example, Chester County provides a higher percentage of State System learners, compared to its workforce size, whereas Philadelphia County provides a low percentage of learners.

Table 2.1 – Counties with Higher Share of State System Learners vs. Workforce

County	State System Students from County	% of State System Students from PA	County Workforce	% of PA Workforce	Difference in Share
Chester	5,996	6.2%	272,270	4.3%	1.9%
Erie	3,469	3.6%	134,343	2.1%	1.5%
Monroe	2,532	2.6%	79,673	1.2%	1.4%

Source: Pennsylvania's State System of Higher Education Research Office, Bureau of Labor Statistics

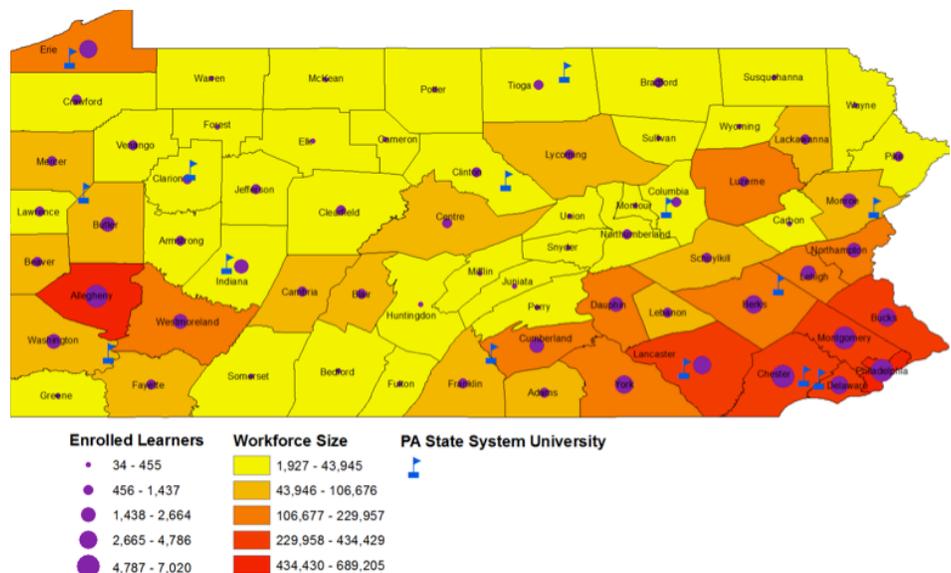
³ Based on Fall 2013 enrollment.

Table 2.2 – Counties with Lower Share of State System Learners vs. Workforce

County	State System Students from County	% of State System Students from PA	County Workforce	% of PA Workforce	Difference in Share
Montgomery	5,401	5.6%	434,429	6.8%	-1.2%
Allegheny	7,020	7.3%	644,822	10.1%	-2.8%
Philadelphia	5,263	5.5%	689,205	10.8%	-5.3%

Source: Pennsylvania's State System of Higher Education Research Office, Bureau of Labor Statistics

Figure 2.1 – State System Learner Origin and Workforce Size County

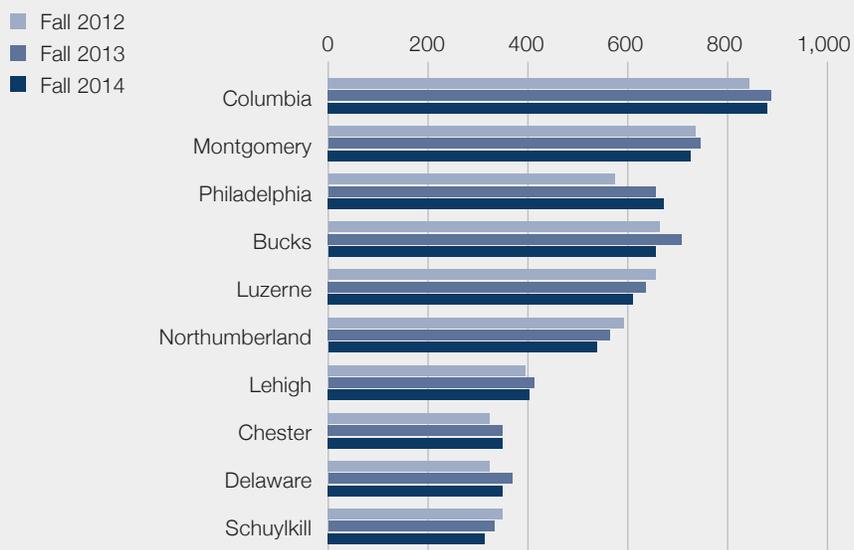


Source: Pennsylvania's State System of Higher Education, Oxford Economics mapping

2.1 Bloomsburg University's Learner Origin

Bloomsburg University learners, originally from Pennsylvania, come from nearly every county in the state. The vast majority of learners, however, come from counties that are in the central and eastern regions. The top 10 learner enrollment counties account for about 90% of resident enrollment in Bloomsburg University. Figure 2.2 shows the Pennsylvania resident fall enrollment numbers between 2012 and 2014 for the top 10 counties. Table 2.3 provides enrollment detail for the top 10 counties.

Figure 2.2 – Bloomsburg University Learner Enrollment by County



Source: Pennsylvania's State System of Higher Education

Table 2.3 Bloomsburg University Learner Enrollment by County

County	Fall 2012	Fall 2013	Fall 2014
Columbia	849	893	878
Montgomery	742	743	733
Philadelphia	579	661	676
Bucks	664	707	657
Luzerne	661	636	609
Northumberland	590	568	540
Lehigh	397	410	406
Chester	324	352	353
Delaware	326	366	350
Schuylkill	354	330	319

Source: Pennsylvania's State System of Higher Education

3. SUMMARY OF BLOOMSBURG UNIVERSITY WORKFORCE REGION

Located in Columbia County, Pennsylvania, Bloomsburg University (BU) supports the central region of Pennsylvania’s State System of Higher Education. It provides a breadth of degree programs and serves a student population of about 10,000 learners, of which about 89% are Pennsylvania residents.⁴

The following sections outline the supporting data used to select BU’s Pennsylvania workforce region—defined as Columbia, Montour, Luzerne, Northumberland, Schuylkill, Snyder, Sullivan, and Union counties. Subsequent sections provide a brief analysis of economic, workforce, demographic and socio-economic information. The purpose of providing this analysis is to gain better insight into how the workforce region has changed over the past several years, as well as projections of how the area will continue to change over the next several years.

A BRIEF NOTE ON DEVELOPING THE WORKFORCE REGION

Part of the geographic research and analysis involves central place theory—a geographical theory that seeks to explain the location and connectedness of economic activity. More specifically, this research seeks to quantify the interconnectedness of local economies surrounding the State System universities. This is measured by workforce commuting and economic activity (i.e. industry production, supply chains, sales, etc.). An additional aspect involves the geographic connection between the university’s learners. The university’s ability to draw learners from the surrounding region helps contextualize the geographic footprint of the institution.

The full details of this process are described in Appendix A.

⁴ Based on Average Fall Enrollment 2012-2014.

3.1 Defining Bloomsburg University’s Workforce Region

The main factors used to identify the university-specific workforce region involved evaluation of commuting patterns, learner capture rate, and economic activity (business demand and household demand). The aim is to identify the workforce region that surrounds the university and is consequently supported by the university, while also being inclusive of less populated rural counties. A workforce region is defined as: a labor market area or an economically integrated region within which residents can find jobs within a reasonable commuting distance or can change their employment without changing their place of residence.⁵

The counties in the region were identified using a multi-step process. Table 3.1 provides a shortened snapshot of three iterations, with the final selection of counties highlighted in green.⁶

When taken in the context of regional economic activity, about 53% of regional demand for goods and services are produced by businesses located within the region. This indicates that regional business activity is locally contained. Similarly, 83% of household demand is satisfied by local production, meaning that households are not traveling outside the region to purchase goods or services to consume.

Table 3.1- Bloomsburg Workforce Region Commuting Patterns, Learner Capture Rate, and Economic Activity

County Combination	Job Share of People Living in the Region	Job Share of People Employed in the Region	Business Demand	Household Demand	Learner Capture Rate
Columbia, Montour, Columbia	0.76	0.65	0.55	0.86	0.19
Columbia, Montour, Luzerne, Northumberland	0.81	0.70	0.54	0.84	0.26
Columbia, Montour, Luzerne, Northumberland, Schuylkill, Snyder, Sullivan, Union	0.85	0.74	0.53	0.83	0.32

Sources: US Census - LEHD, Minnesota IMPLAN Group, Pennsylvania’s State System of Higher Education

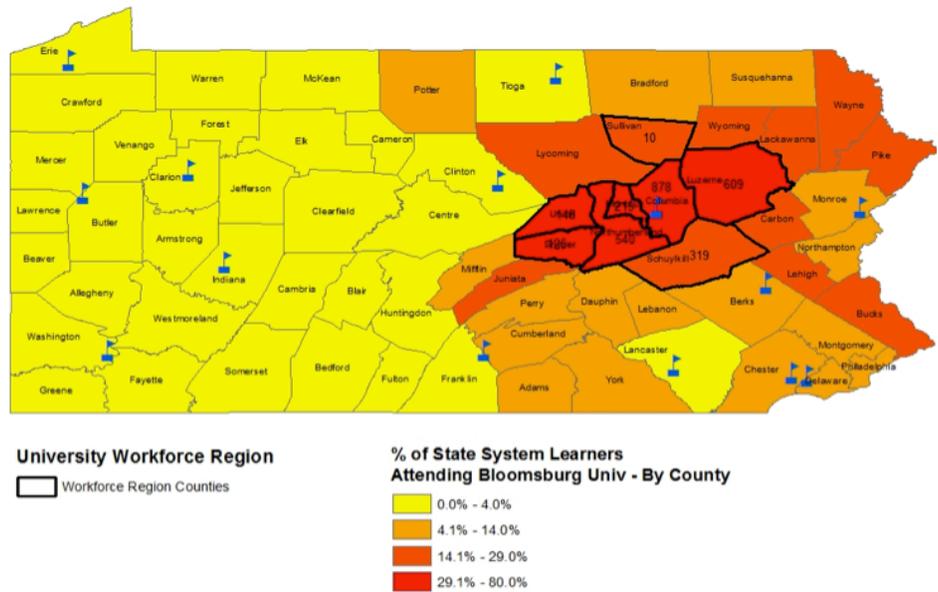
5 Bureau of Labor Statistics: Labor Market Area.

6 As mentioned in the methodology, no threshold values were explicitly set for each region. Rather the iterations sought to reasonably optimize each factor to meet the criteria for defining an economic area—recognizing the primary driving factor is workforce commuting.

The majority of the BU workforce region residents also work in the region (85%). This reflects a very strong centralized connection between workers and economic activity in a region that has nearly 300,000 jobs. Additionally, learners at BU originate from nearby surrounding counties. When looking at the percentage of learners attending State System universities, 32% (the capture rate) of State System learners in BU's workforce region attend BU.

Figure 3.1 illustrates learner capture rates for BU's workforce region. This provides a strong indication of whether State System learners within the region ultimately attend BU. Counties highlighted in yellow indicate that learners enrolled in a State System University are not generally going to BU, whereas counties highlighted in dark orange or red indicate that BU has a relatively high capture rate of State System enrolled learners.

Figure 3.1 – Bloomsburg Workforce Region Learner Origin by Percent of Total State System Student Population



Source: Pennsylvania's State System of Higher Education and Oxford Economics tabulations

4. LABOR MARKET OF BLOOMSBURG UNIVERSITY'S WORKFORCE REGION

The following sections provide a brief analysis of economic, workforce, demographic and socio-economic information. The purpose of providing this analysis is to gain better insight into how Bloomsburg University's workforce region has changed over the past several years, as well as projections of how the region will continue to change over the next several years. Table 4.1 provides a high level comparative summary of key workforce and economic indicators between Bloomsburg University's workforce region and Pennsylvania.

Table 4.1 – Summary of BU's Workforce Region and Pennsylvania Workforce Characteristics

Workforce Characteristic	BU Workforce Region	Pennsylvania	Source
Population	739,000	12.7 million	2009-2013 American Community Survey 5-Year Estimates
Employed	299,000	5.6 million	2014 BLS Quarterly Census of Employment and Wages
Unemployed	23,800	370,000	2014 BLS Local Area Unemployment Statistics
Unemployment Rate	6.7%	5.8%	2014 BLS Local Area Unemployment Statistics
Poverty Rate	15.0%	13.7%	2013 Census Small Area Income and Poverty Estimates
Business Establishments	16,700	347,000	2014 BLS Quarterly Census of Employment and Wages
Educational Attainment (25+ Population with Bachelor's or Higher)	18.4%	27.4%	2009-2013 American Community Survey 5-Year Estimates
Bachelor's or Higher Completions	6,700	137,000	Integrated Postsecondary Education Data System 3-Year Average AY2010-11 to AY2012-13
Projected Employment 2024	328,000	6.2 million	Oxford Economics Projections 2024

The analysis in the following sections is broken into three key sections, namely:

1. Industries – an evaluation of historic and current changes in sector employment, as well as top employers in the state.

2. Occupations – an evaluation of historic and projected changes in occupations, as well as more detailed analysis of key skilled occupations that align to university education.

- Top Skilled Occupations: largest skilled employed occupations and new and replacement job demand
- Key Skilled High Demand Occupations: five key skilled occupations and new and replacement job demand
- Job Posting Analytics: analysis of job postings vs. hires for five key skilled high demand occupations
- Industry Staffing Patterns: industry employment breakdown for five key skilled high demand occupations
- Key Occupational Profiles: regional demographic profile for five key skilled high demand occupations

3. Demographics and Socio-economic Indicators – an evaluation of the demographic profile of the population of Bloomsburg University’s workforce region. Also, a brief analysis of three key socio-economic indicators— educational attainment, unemployment, and poverty.

Each section is designed to provide additional context to the economic environment for the universities to consider broader aspects of strategic vision and program planning. Each section also provides the data-driven preparation for the next phase of research—namely the Supply/Demand Gap Analysis Report.

4.1 Employment Projections

Currently, the industry and occupation employment projections available from Pennsylvania’s Department of Labor and Industry reflect the time period from 2012–2022 and therefore do not incorporate much of the post-recession recovery that has taken place between 2012 and 2014. In order to capture recovery and reflect current employment data, the State System used 4-digit NAICS (industry) and 5-digit SOC (occupation) projections to 2024 at the county level for Pennsylvania. The projections incorporate Quarterly Census of Employment and Wages (QCEW) data through 2014, and therefore contain the most recent employment data that further reflects the economic recovery.

See Appendix C for 4-digit industry projections and Appendix D for 5-digit occupation projections.

Oxford Economics, a premier economic modeling and consulting firm, produced the projections. By updating projections, Oxford Economics provided insight into new job growth which better measures occupational demand over the next 10 years.

The next section provides an analysis of industries in Bloomsburg University's workforce region with a focus on the post-recession recovery period 2009 to 2014, as well as top employers in the region.

5. INDUSTRIES IN BLOOMSBURG UNIVERSITY'S WORKFORCE REGION

Over the five years of 2009 to 2014, Bloomsburg University's (BU) workforce region experienced job growth in many sectors. Sectors such as trade, transportation, and utilities; education and health services; and professional and business services added a combined 7,400 new jobs between 2009 and 2014. Government experienced the largest nominal employment loss, while large relative job losses occurred within information and construction. Overall, the economy added about 4,500 jobs during the recovery period, 2009 to 2014. This growth reflects the recovery period for Pennsylvania from one of the worst recessions since the Great Depression—the Great Recession which lasted from 2007 to 2009.

Figure 5.1 illustrates historic and current employment, while Table 5.1 provides data on broad industry categories by employment, growth, and percent change.

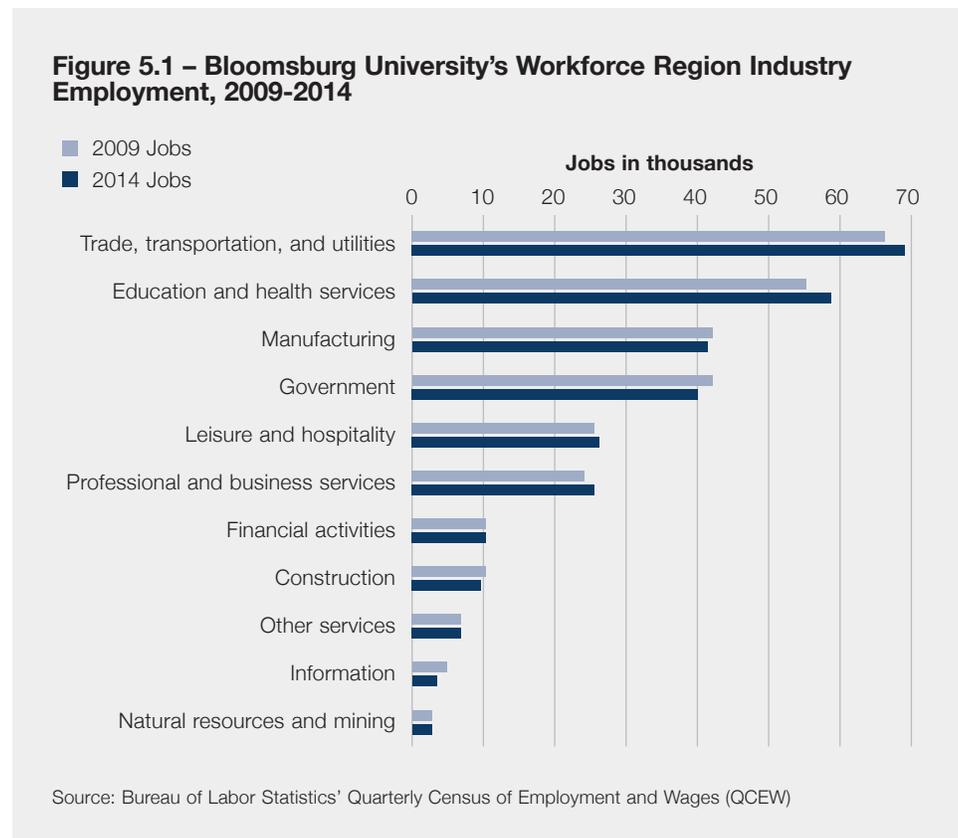


Table 5.1 – Bloomsburg University’s Workforce Region Industry Employment, 2009-2014

Industry Employment	2009 Jobs	2014 Jobs	Absolute Change 09-14	% Change 09-14
Total, all industries	288,322	292,806	4,484	1.6%
Trade, transportation, and utilities	65,910	68,284	2,374	3.6%
Education and health services	54,668	58,330	3,662	6.7%
Manufacturing	41,493	41,379	-114	-0.3%
Government	42,121	39,779	-2,342	-5.6%
Leisure and hospitality	25,382	26,290	908	3.6%
Professional and business services	23,715	25,066	1,351	5.7%
Financial activities	10,227	10,613	386	3.8%
Construction	10,124	9,412	-712	-7.0%
Other services	7,145	7,169	24	0.3%
Information	4,604	3,138	-1,466	-31.8%
Natural resources and mining	2,659	2,816	157	5.9%

Source: Bureau of Labor Statistics’ Quarterly Census of Employment and Wages (QCEW)

5.1 Top Employers in Bloomsburg University’s Workforce Region

Amongst the top employers within BU’s workforce region, education and health service establishments comprise a majority of the list. Other top employers in the region include federal, state, and local government as well as two pharmaceutical establishments.

Major employers in BU’s workforce region are listed in Table 5.2 on the next page.

While this section focused on the places where people in BU’s workforce region work, the next section builds a perspective of occupational employment. This perspective describes the types of jobs people have in BU’s workforce region and identifies the skills and characteristics of those people.

Table 5.2: Top Employers in Bloomsburg University’s Workforce Region

Establishment Name
Albright Care Services
Amazon.com
Bayada Home Health Care
Berwick Offray
Bucknell University
Conagra Foods Packaged Foods
Evangelical Community Hospital
Federal Government
Geisinger Clinic
Geisinger Medical Center
Geisinger System Services
Geisinger Wyoming Valley Medical Center
HH Knoebel Sons
Lowe's Home Centers
Pennsylvania State System of Higher Education
Red Rock Job Corps Center
Sapa Extrusions
Selinsgrove Area School District
State Government
Susquehanna University
The Highlands Care Center
Wal-Mart
Weis Markets
Wise Foods
Wood Mode

Source: Pennsylvania Department of Labor and Industry Quarterly Census of Employment and Wages (QCEW)

6. OCCUPATIONS IN BLOOMSBURG UNIVERSITY'S WORKFORCE REGION

The workforce within the region can be evaluated from many different angles in order to build a deeper profile of the qualities and attributes of workers. The next five sub-sections provide insight into the qualities of BU's workforce region, answering questions such as:

- What are the largest skilled occupations employed within the region?
- What are the key skilled high demand occupations that typically align to university-level education?
- Within the key skilled high demand occupations what is the current market demand in terms of jobs postings and hires?
- What sectors typically employ the key skilled high demand occupations?
- What type of demographic is typically found in key skilled high demand occupations?

Each perspective provides data-driven content for the universities to consider when engaging businesses, learners and program planners.

6.1 Skilled Occupations

The O*NET program is the nation's primary source of occupational information. Essential to the project is the O*NET database, containing information on hundreds of standardized and occupation-specific descriptors.⁷

For this analysis a "skilled" occupation is defined as an occupation in O*NET Job Zones 3, 4, or 5. A Job Zone is a group of occupations that are similar in how much education people need to do the work, how much related experience people need to do the work, and how much on-the-job training people need to do the work.⁸

Most occupations in Job Zone 3 require training in vocational schools, related on-the-job experience, or an associate's degree. Most occupations in Job Zone

⁷ <http://www.onetcenter.org/overview.html>

⁸ <https://www.onetonline.org/help/online/zones>

4 require a four-year bachelor's degree, but some do not. Most occupations in Job Zone 5 require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree). For a more detailed description of O*NET Job Zones and training requirements see Appendix D.

For the five key skilled high demand occupations, over 50% of those employed have attained an associate's degree or higher and are generally associated with university-level education.

6.2 Top Skilled Occupations in Bloomsburg University's Workforce Region

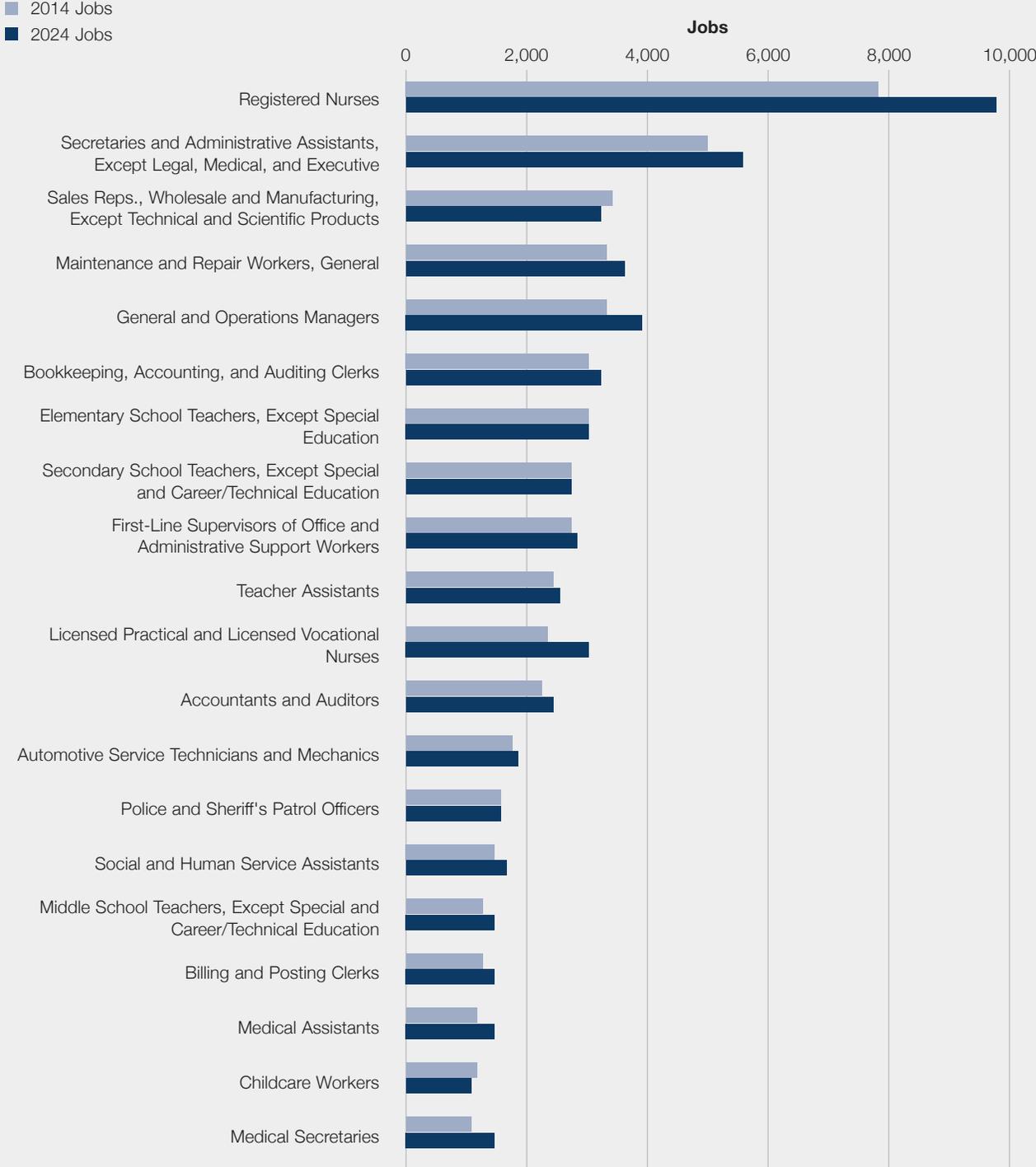
Top skilled occupations in the region are driven by industry composition. Medical centers employ a cadre of health professionals, while enterprise management companies employ a range of business professionals. Given the dominating presence of trade, transportation and utilities; healthcare and education services; and manufacturing establishments in BU's workforce region, top skilled occupations include: teachers, nurses, sales representatives, managers, and assistants. Figure 6.1 and Table 6.1 highlight the top 20 skilled occupations in the region, 10-year job growth projections, and new and replacement jobs.⁹

An important aspect to distinguish skilled occupations, in this sub-section, is that post-secondary education is not necessarily a pre-requisite for employment. However, a high percentage of those employed in the skilled occupation have a post-secondary education.

The next section provides a more narrow view of skilled occupations, focusing specifically on occupations that align to university-level education and have high demand for new and replacement jobs.

⁹ New and replacement job change takes into account demand for occupations based on: industry growth (new jobs), occupation productivity, workforce ageing, migration and other factors that would contribute to new and replacement job openings.

Figure 6.1 – Largest Skilled Occupations in BU’s Workforce Region and Projections, 2014-2024



Source: BLS (QCEW and OES); Pennsylvania Department of Labor & Industry; Oxford Economics Projections

Table 6.1 – Largest Skilled Occupations in BU’s Workforce Region and Projections, 2014-2024

SOC Code	Occupation Title	2014 Jobs	2024 Jobs	10-year New and Replacement Demand
29-1141	Registered Nurses	7,801	9,742	3,521
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	4,957	5,524	1,211
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	3,380	3,180	585
49-9071	Maintenance and Repair Workers, General	3,350	3,600	988
11-1021	General and Operations Managers	3,333	3,863	1,123
43-3031	Bookkeeping, Accounting, and Auditing Clerks	3,067	3,250	486
25-2021	Elementary School Teachers, Except Special Education	2,999	3,016	772
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	2,761	2,758	938
43-1011	First-Line Supervisors of Office and Administrative Support Workers	2,684	2,854	813
25-9041	Teacher Assistants	2,403	2,514	708
29-2061	Licensed Practical and Licensed Vocational Nurses	2,326	3,021	1,309
13-2011	Accountants and Auditors	2,255	2,419	915
49-3023	Automotive Service Technicians and Mechanics	1,739	1,887	653
33-3051	Police and Sheriff’s Patrol Officers	1,608	1,565	534
21-1093	Social and Human Service Assistants	1,510	1,686	627
25-2022	Middle School Teachers, Except Special and Career/Technical Education	1,295	1,490	520
43-3021	Billing and Posting Clerks	1,277	1,452	434
31-9092	Medical Assistants	1,195	1,489	534
39-9011	Childcare Workers	1,143	1,079	277
43-6013	Medical Secretaries	1,106	1,442	466

Source: BLS (QCEW and OES); Pennsylvania Department of Labor & Industry; Oxford Economics Projections

6.3 Key Skilled High Demand Occupations Aligning to University-level Education

Occupation demand can represent different perspectives of employment need. One perspective evaluates demand due to growth of new jobs. It also represents the need for replacement jobs. When combined, new and replacement job projections provide a more realistic perspective of labor demand.

To support the occupational demand for new and replacement jobs, this analysis also evaluates real-time job posting data. By measuring the number of unique job postings for a specific job title, which is then translated into an occupation classification, it is possible to gauge real-time demand—another perspective of employment need. The number of unique postings provides guidance on real-time changes in occupations that companies may be seeking to hire. As with all datasets, job posting data have caveats. Discrepancies between postings and actual hires can be challenging to measure—wherein a job posting may not result in a hire for one occupation, but another job posting for a different occupation may result in multiple hires.¹⁰

This section looks at both perspectives—occupation demand using projections of new and replacement jobs as well as real-time job postings—in order to draw specific insight into occupation demand within BU’s workforce region.

6.3.1 New and Replacement Demand for Key Skilled High Demand Occupations

Many skilled occupations exist in Pennsylvania. Demand for new and replacement jobs for key skilled high demand occupations that tie more closely to university-level programs are typically determined by the sheer size of the employment within the occupation and the demographic characteristics of those who are currently employed—specifically age. For example, Pennsylvania businesses employ approximately 54,400 accountants and auditors. Projections indicate that new employment for accountants and auditors will increase to about 60,000 by 2024—5,600 new jobs in 10 years. However, 47% of the employed accountants and auditors are over the age of 45, meaning that many of the currently employed accountants and auditors will likely retire over the next 10 years. This retirement will drive up the need to replace outgoing

¹⁰ When evaluating jobs postings, a specific caveat focuses on net openings and jobs filled (i.e. openings that result in an opportunity for a new entrant, rather than normal job turn wherein a worker moves to a different company in the region and their vacant job is filled by yet another incumbent worker at another company).

accountants and auditors with new workers—hence the reason we see nearly 23,700 new and replacement jobs (5,600 new and 18,100 replacement) for the occupation over the next 10 years.¹¹

Figure 6.2 and Table 6.2 outline the five key skilled high demand occupations for new and replacement jobs over the next 10 years, specifically: registered nurses, accountants and auditors, general and operations managers, physical therapists, and market research analysts and marketing specialists.¹²

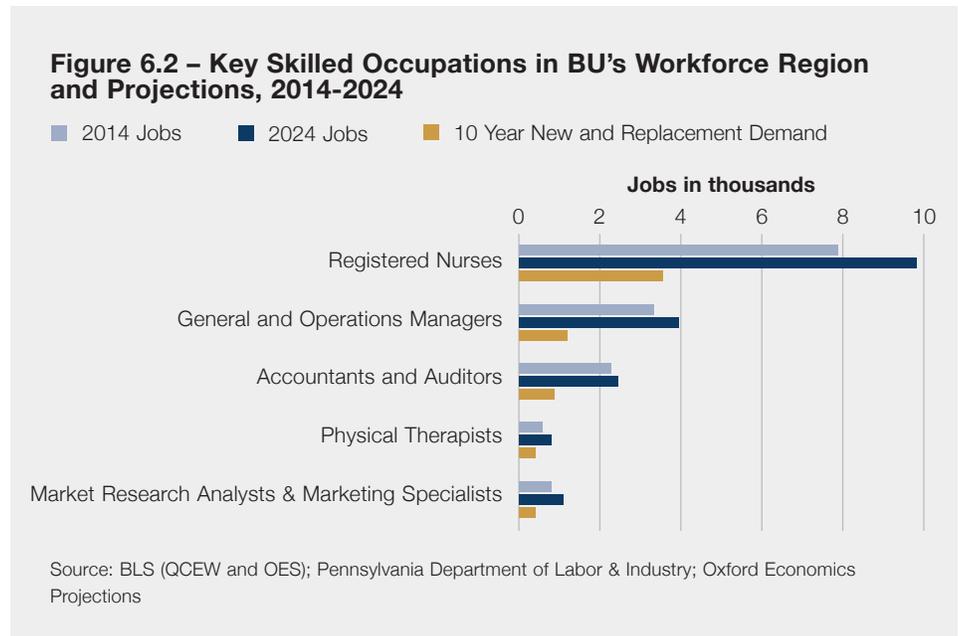


Table 6.2 – Key Skilled Occupations in BU’s Workforce Region and Projections, 2014-2024

SOC Code	Occupation Title	2014 Jobs	2024 Jobs	10 Year New and Replacement Demand
29-1141	Registered Nurses	7,801	9,742	3,521
11-1021	General and Operations Managers	3,333	3,863	1,123
13-2011	Accountants and Auditors	2,255	2,419	915
29-1123	Physical Therapists	584	811	393
13-1161	Market Research Analysts and Marketing Specialists	808	1,039	360

Source: BLS (QCEW and OES); Pennsylvania Department of Labor & Industry; Oxford Economics Projections

11 Retirement is only one of the metrics factored into new and replacement jobs. Other metrics include out-migration and death.
 12 Teachers (elementary and secondary) were found in the top skilled high demand occupations. However, the analysis focuses on private sector jobs and opportunities.

While this section focused on 10-year new and replacement demand, the next section highlights the importance of current demand using real-time job posting analytics.

6.3.2 Real-Time Job Postings for Key Skilled High Demand Occupations

Analysis of job postings for key skilled high demand occupations generally supports the findings from Section 6.3.1. Between July 2014 and July 2015 approximately 700 unique (de-duplicated) job postings appeared in BU's Workforce Region for the top five key skilled high demand occupations (registered nurses, accountants and auditors, general and operations managers, physical therapists, and market research analysts and marketing specialists). Sizable job postings include: registered nurses (425 unique postings per month), and physical therapists (123 unique postings per month).

Table 6.3 provides details on the average monthly job postings and the estimated average monthly hires between July 2014 and July 2015 for the key skilled occupations.

Job posting analytics also provide insight into the skills and certifications that employers seek from qualified job candidates. Individuals seeking jobs in the key skilled high demand occupations would increase their competitiveness by demonstrating skill proficiency and/or certifications. The following lists specific unique skills or certifications for each occupation that employers demand.

Table 6.3 – Job Postings and Hires for Key Skilled High Demand Occupations in Pennsylvania

Occupation	Average Monthly Postings (Jul 2014 - Jul 2015)	Estimated Average Monthly Hires (Jul 2014 - Jul 2015)	Ratio of Postings to Hires
Registered Nurses	425	329	1.3
Physical Therapists	123	34	3.6
General and Operations Managers	82	160	0.5
Accountants and Auditors	35	107	0.3
Market Research Analysts and Marketing Specialists	13	30	0.4

Source: Economic Modeling Specialists International (EMSI)

Registered Nurses

Unique skills: acute care, surgery, schedule/record keeping

Certifications: Cardiopulmonary Resuscitation (CPR), Basic Life Support (BLS), Advanced Life Support (ALS), Registered Nurse (RN) license

Accountants and Auditors

Unique skills: audits, finance, Generally Accepted Accounting Principles (GAAP)

Certifications: Certified Public Accountant (CPA)

Physical Therapists

Unique skills: physical therapy, rehabilitation services, injuries, plan of care

Certifications: accreditation, licenses to practice, current CPR certification

Market Research Analysts and Marketing Specialists

Unique skills: product marketing, product management, marketing concepts, market analysis, social media, product development, presentations

Certifications: Six Sigma, Project Management Professional (PMP)

General and Operations Managers

Unique skills: inventory management, payroll, recruiting/staffing, budgeting, meetings/presentations

Certifications: Six Sigma, Project Management Professional (PMP)

This list of skills and certifications does not encompass the entirety of skills and certifications that may be required for different industry sectors and job functions. However, these skills reflect the general online job posting minimum qualifications for those seeking to apply to one of the occupations.

The next section builds a broader sense of which industry sectors typically employ each of the top five skilled high demand occupations.

6.4 Industry Staffing Patterns for Key Skilled High Demand Occupations in Bloomsburg University's Workforce Region

Understanding which industries employ key skilled occupations is helpful when engaging businesses as well as communicating programs and potential career opportunities to learners. Also knowing the industries that predominately employ certain occupations can help align program planning.

The following tables show the staffing patterns for the key skilled high demand occupations by identifying the top five industries that employ each respective key skilled high demand occupation within the region. For each occupation, the table contains:

- The number of the occupation jobs in each respective industry in 2014 (e.g. general medical and surgical hospitals employ 4,077 registered nurses).
- The percentage of the occupation's employment in the region that is employed in the industry (e.g. the 4,077 registered nurses employed in general medical and surgical hospitals represent 52% of the total registered nurse workforce in the region).
- The percentage of the industry sector's employment that is made up of the occupation (e.g. the 4,077 registered nurses make up about 27% of employment within general medical and surgical hospitals).

Staffing Patterns for Registered Nurses Employed in BU's Workforce Region

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
General Medical and Surgical Hospitals	4,077	52.3%	27.2%
Outpatient Care Centers	743	9.5%	15.9%
Nursing Care Facilities (Skilled Nursing Facilities)	709	9.1%	9.9%
Home Health Care Services	671	8.6%	21.0%
Offices of Physicians	412	5.3%	9.4%

Source: Bureau of Labor Statistics – OES & QCEW Annual Data

Staffing Patterns for General and Operations Managers Employed in BU's Workforce Region

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Management of Companies and Enterprises	134	4.0%	2.7%
Warehousing and Storage	107	3.2%	0.9%
Restaurants and Other Eating Places	79	2.4%	0.5%
Individual and Family Services	77	2.3%	1.2%
Plastics Product Manufacturing	65	2.0%	1.5%

Source: Bureau of Labor Statistics – OES & QCEW Annual Data

Staffing Patterns for Accountants and Auditors Employed in BU's Workforce Region

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Accounting, Tax Preparation, Bookkeeping, and Payroll Services	493	21.8%	38.6%
Management of Companies and Enterprises	252	11.2%	5.0%
Insurance Carriers	60	2.6%	2.4%
Executive, Legislative, and Other General Government Support	58	2.6%	0.8%
Plastics Product Manufacturing	45	2.0%	1.0%

Source: Bureau of Labor Statistics – OES & QCEW Annual Data

Staffing Patterns for Market Research Analysts Employed in BU's Workforce Region

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Management of Companies and Enterprises	101	12.5%	2.0%
Management, Scientific, and Technical Consulting Services	48	6.0%	6.0%
Other Professional, Scientific, and Technical Services	44	5.4%	4.8%
Insurance Carriers	38	4.7%	1.5%
Advertising, Public Relations, and Related Services	26	3.3%	5.8%

Source: Bureau of Labor Statistics – OES & QCEW Annual Data

Staffing Patterns for Physical Therapists Employed in BU's Workforce Region

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Offices of Other Health Practitioners	218	37.4%	10.4%
General Medical and Surgical Hospitals	132	22.6%	0.9%
Home Health Care Services	93	16.0%	2.9%
Nursing Care Facilities (Skilled Nursing Facilities)	53	9.1%	0.7%
Specialty (except Psychiatric and Substance Abuse) Hospitals	25	4.4%	3.9%

Source: Bureau of Labor Statistics – OES & QCEW Annual Data

The above data establishes the top sectors where the key skilled high demand occupations are employed. However, to further place the perspective of these occupation profiles, it is important to consider the types of people who generally fill these roles. The next section contains a demographic profile for people from Pennsylvania who work in these key skilled occupations.

6.5 Key Skilled High Demand Occupational Profiles

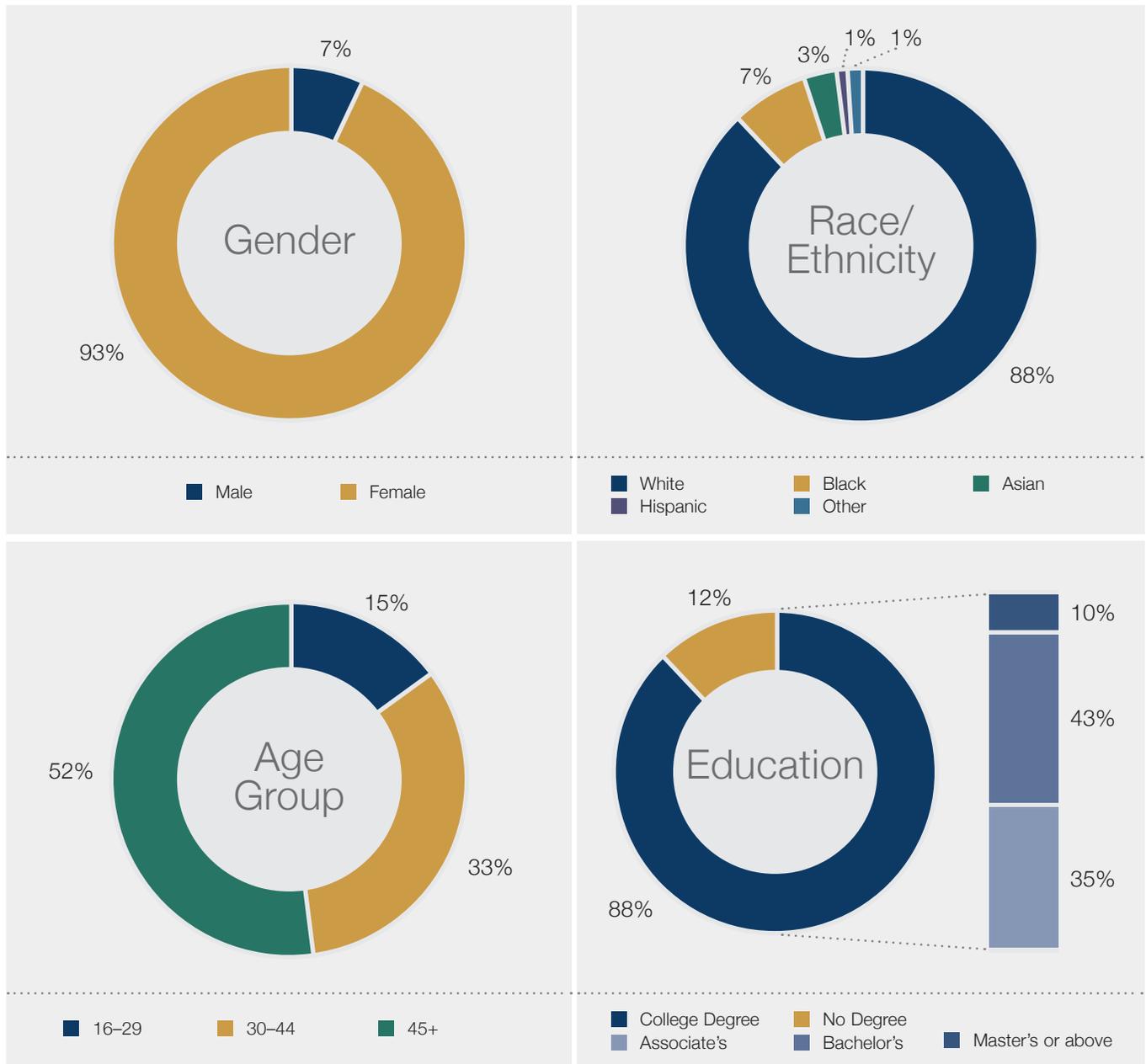
In addition to understanding the industries that employ key skilled high demand occupations, another lens to view key skilled high demand occupations focuses on the characteristics of those employed. The following section outlines the demographics for people from Pennsylvania who work in these key skilled occupations by showing each occupation's composition by gender, race/ethnicity, age, and education. This lends further insight into who generally works in the career and answers questions such as:

- Are women or men typically found in the occupation?
- Do certain races/ethnicities occupy larger shares of the occupation?
- What is the age distribution of the occupation?
- What is the educational attainment of workers in the occupation?

For comparative purposes, the demographic composition for the entire population of BU's workforce region is further described in Section 7 of the report.

REGISTERED NURSES IN PENNSYLVANIA

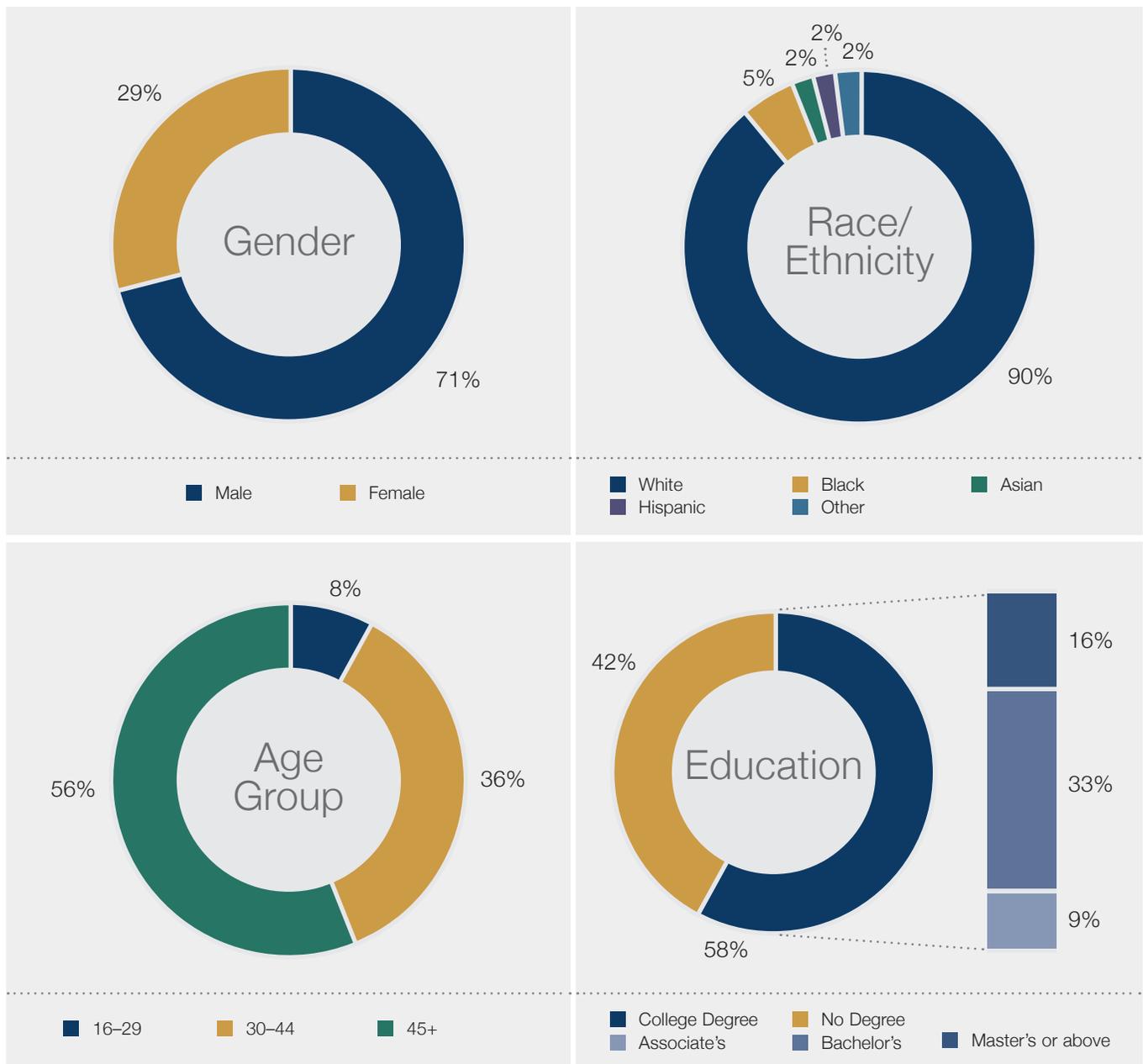
The demographic profile of registered nurses is dominated by white females. Age distribution indicates that registered nurses are a more mature cohort of workers (45 years and older), which can put increasing pressure on replacement jobs due to retirements over the next 10 years. Nearly 90% of registered nurses have an associate's degree or higher indicating that this is a highly educated occupation.



Source: U.S. Census - American Community Survey (ACS) 2009-2013 5-year file

GENERAL AND OPERATIONS MANAGERS IN PENNSYLVANIA

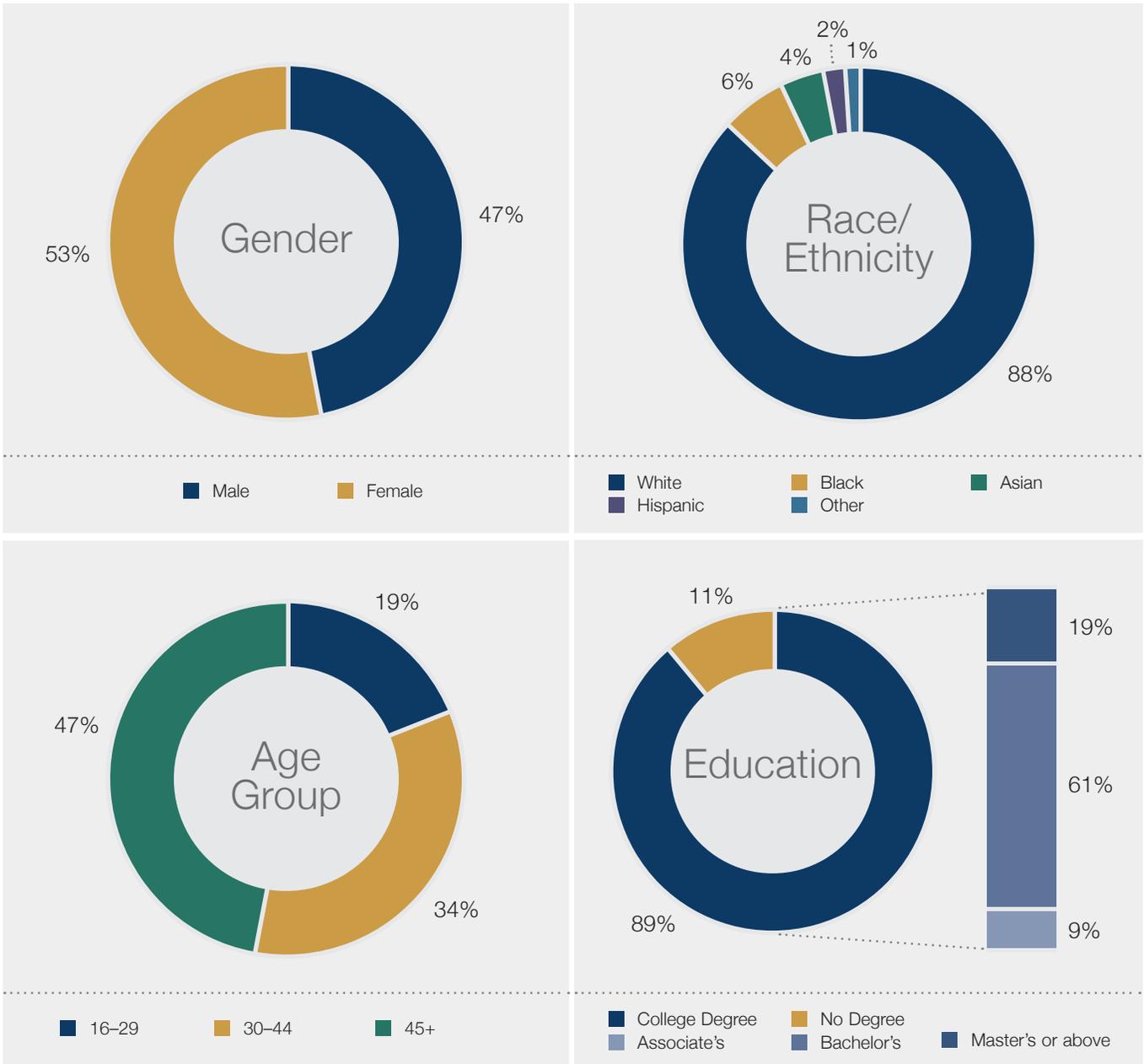
General and operations managers are typically male, though females occupy almost 30% of the employed population. The majority of those in this occupation are white. This occupation is represented by a more mature cohort of workers (45 years and older), though mid-career workers also occupy a significant proportion of the employment. Nearly 60% of general and operations managers have an associate's degree or higher.



Source: U.S. Census - American Community Survey (ACS) 2009-2013 5-year file

ACCOUNTANTS AND AUDITORS IN PENNSYLVANIA

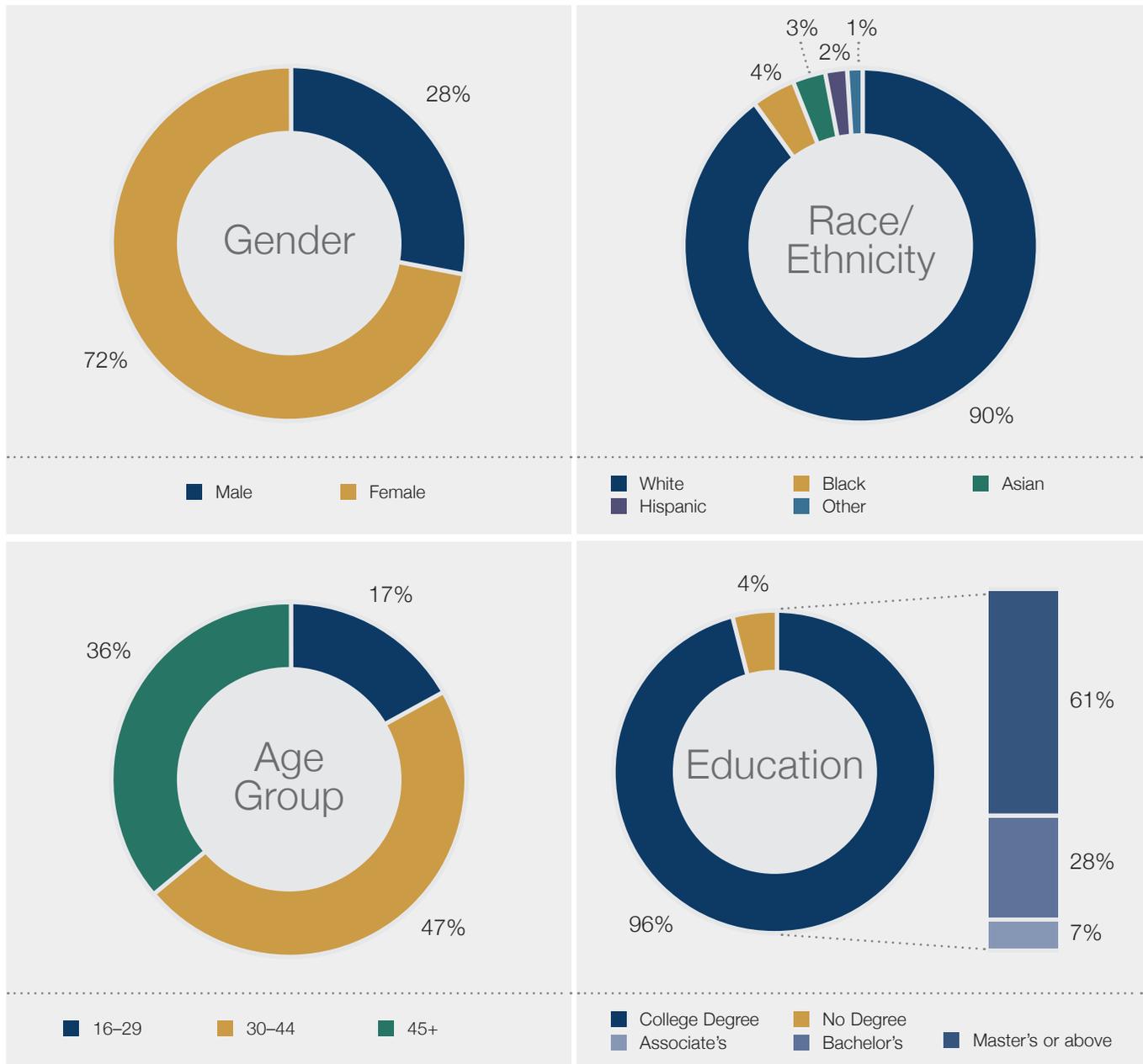
Accountants and auditors are fairly evenly split between male and female, though a slightly higher percent of employed accountants and auditors are female. A high proportion of white individuals are found in the occupation. Additionally, the age distribution is fairly even between entry-level and mature workers, indicating that the occupation provides good opportunities for first destinations of recent college graduates. Nearly 90% of accountants and auditors have an associate's degree or higher indicating that this is a highly educated occupation.



Source: U.S. Census - American Community Survey (ACS) 2009-2013 5-year file

PHYSICAL THERAPISTS IN PENNSYLVANIA

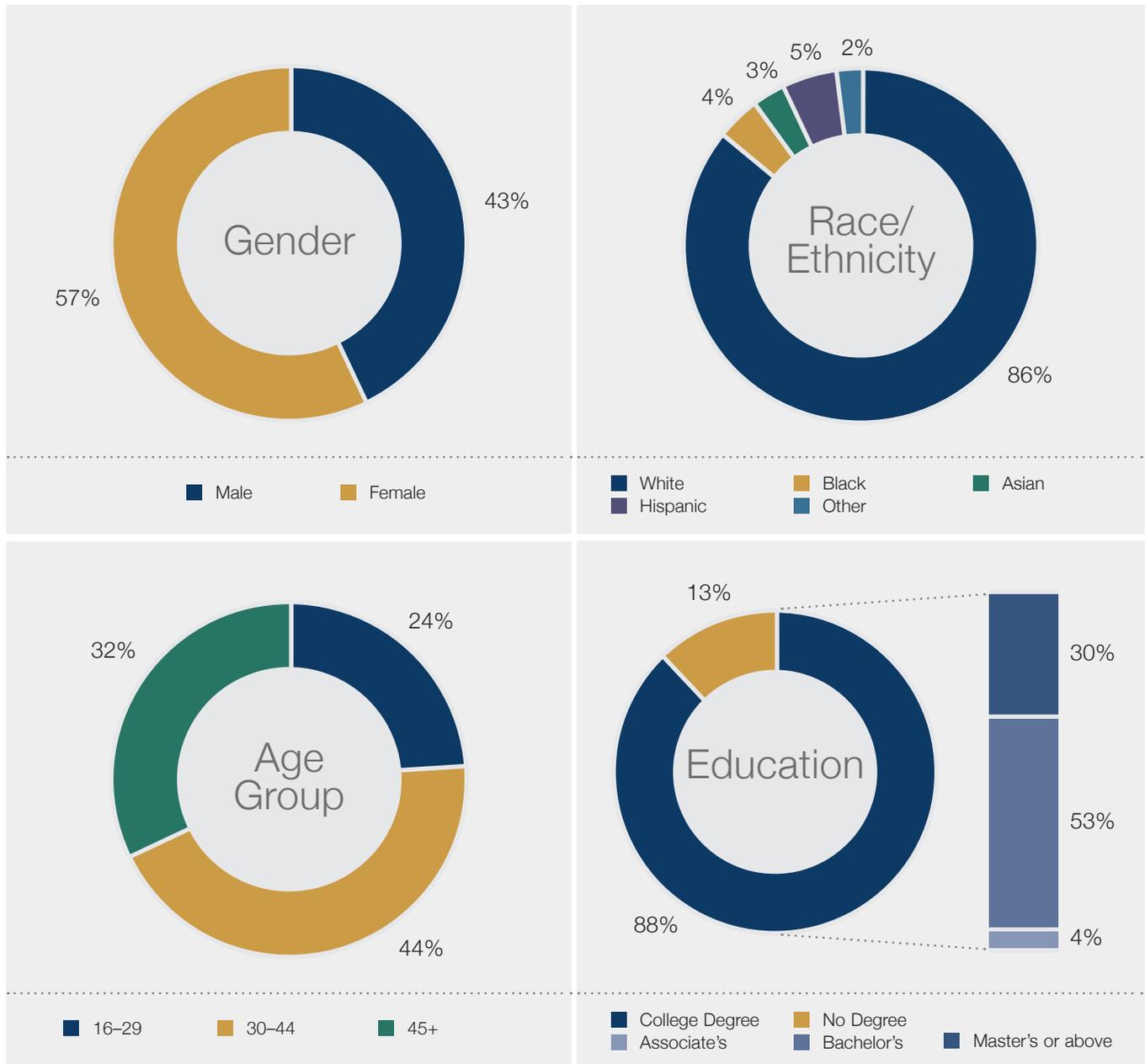
The demographic profile of physical therapists is largely dominated by white females. The age distribution of the occupation tends to favor a younger demographic, with nearly half of physical therapists between the ages of 30 and 44. Over 95% of physical therapists have an associate's degree or higher indicating that this is a highly educated occupation.



Source: U.S. Census - American Community Survey (ACS) 2009-2013 5-year file

MARKET RESEARCH ANALYSTS AND MARKETING SPECIALISTS IN PENNSYLVANIA

Market research analysts and marketing specialists indicate a larger proportion of females within the occupation compared to males. The race/ethnicity distribution within the occupation is predominately white. Additionally, the age distribution of the occupation tends to favor a younger demographic. More than two thirds of the employed market research analysts and marketing specialists are under 45 years old. Nearly 90% of market research analysts and marketing specialists have an associate's degree or higher indicating that this is a highly educated occupation.



Source: U.S. Census - American Community Survey (ACS) 2009-2013 5-year file

The final section of this report explores BU's workforce region demographic and socio-economic characteristics. While not tied to a specific occupation, the analysis further contextualizes the region's population and workforce.

7. DEMOGRAPHIC AND SOCIO-ECONOMIC INDICATORS OF BLOOMSBURG UNIVERSITY'S WORKFORCE REGION

This section provides further information about the demographic and socio-economic composition of BU's Workforce Region in order to better understand the characteristics of the population. An additional focus evaluates changes in age cohorts for university-age residents.

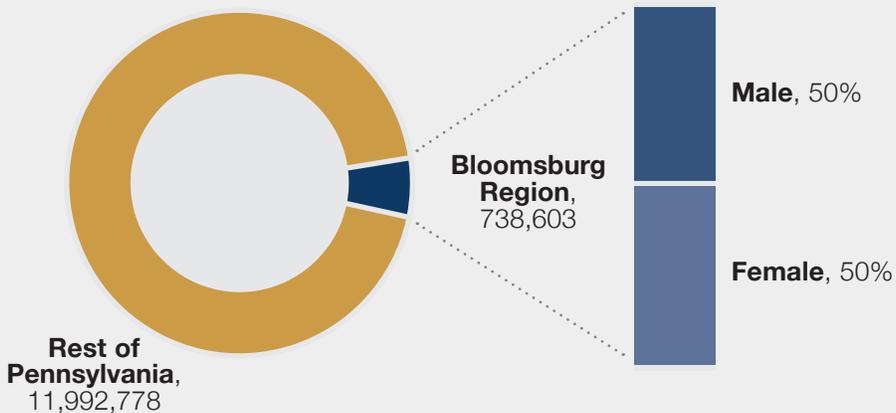
Analysis of three socio-economic indicators—education, unemployment, and poverty—also provides insight into the segment of the population that may be considered economically disadvantaged. Areas with high proportions of economically disadvantaged learners may require additional considerations in education and financial support.

7.1 Demographics of Bloomsburg University's Workforce Region

The BU workforce region has a population of about 739,000 people. As shown in Figure 7.1, females and males have an equal share of the population. Figure 7.2 illustrates that the majority of the region is represented by a White demographic, with Hispanics representing the next largest group, followed by a Black demographic.

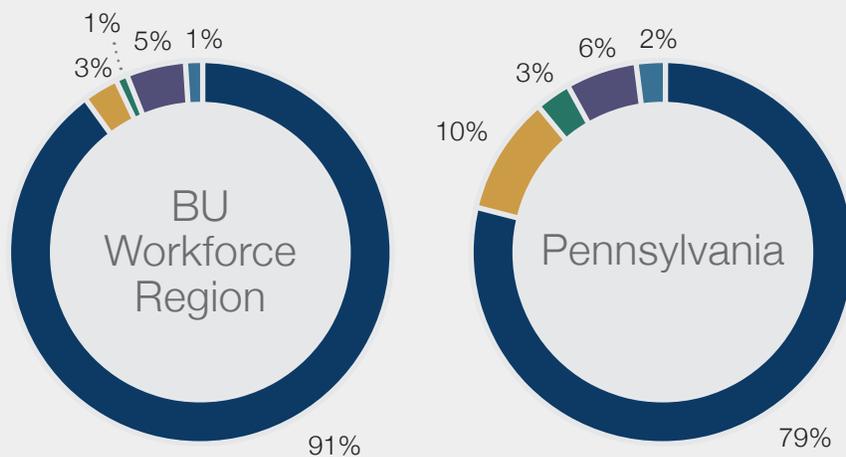
Fall 2014 data from the State System Research Office indicates that approximately 83% (90,966) of learners within the State System are traditional students—ages 18- to 22-year-old high school graduates—and 17% (18,640) are adult learners. A view of the change in population by age demographic indicates a diminishing number in the traditional age cohort and a growing rate of adults aged 25 to 34 years old. As illustrated in figure 7.3, the 10 to 19 year old cohort population declined by over 4,000 people between 2010 and 2014—a 4% decline. Conversely, the 25-34 year old cohort increased nearly 6%, or 4,800 people, over the same time period. This demographic shift presents an opportunity to incorporate a broader university recruitment strategy.

Figure 7.1 – Bloomsburg University’s Workforce Region Population and Gender Distribution



Source: U.S. Census - ACS

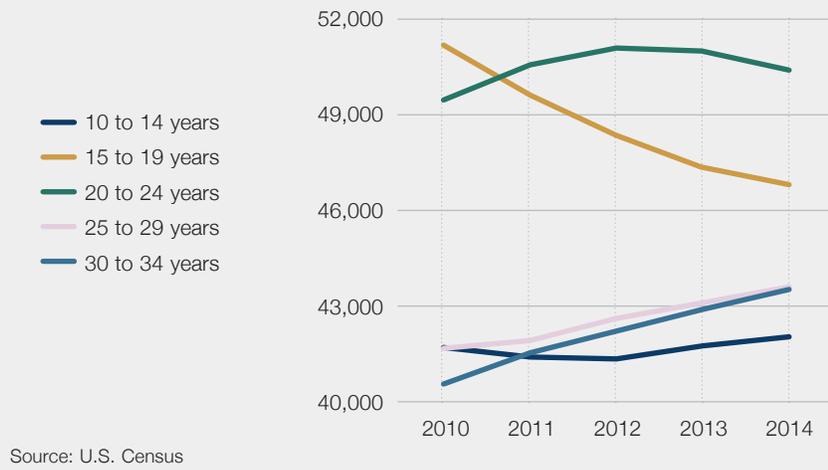
Figure 7.2 – Bloomsburg University’s Workforce Region Race/Ethnicity Composition



■ White ■ Black ■ Asian ■ Hispanic ■ Other

Source: U.S. Census - American Community Survey (ACS) 2009-2013 5-year file

Figure 7.3 – Bloomsburg University’s Workforce Region Changes in Population of Age Cohorts



The next sub-section further explores the shifting socio-economic characteristics in BU’s workforce region by identifying three inter-related variables.

7.2 Socio-economic Indicators of Bloomsburg University’s Workforce Region

This final section outlines three key socio-economic variables—educational attainment, poverty, and unemployment. Poverty data provides understanding on relative income inequality within an area. If poverty rates decline, then the standard of living, social inclusion, and equality of opportunity are typically considered to be increasing. Economic opportunities are often linked with access to jobs and training. Regions with high unemployment indicate the population is unable to find work or is not adequately trained to perform work in the jobs available within the region.

7.2.1 Educational Attainment in Bloomsburg University’s Workforce Region

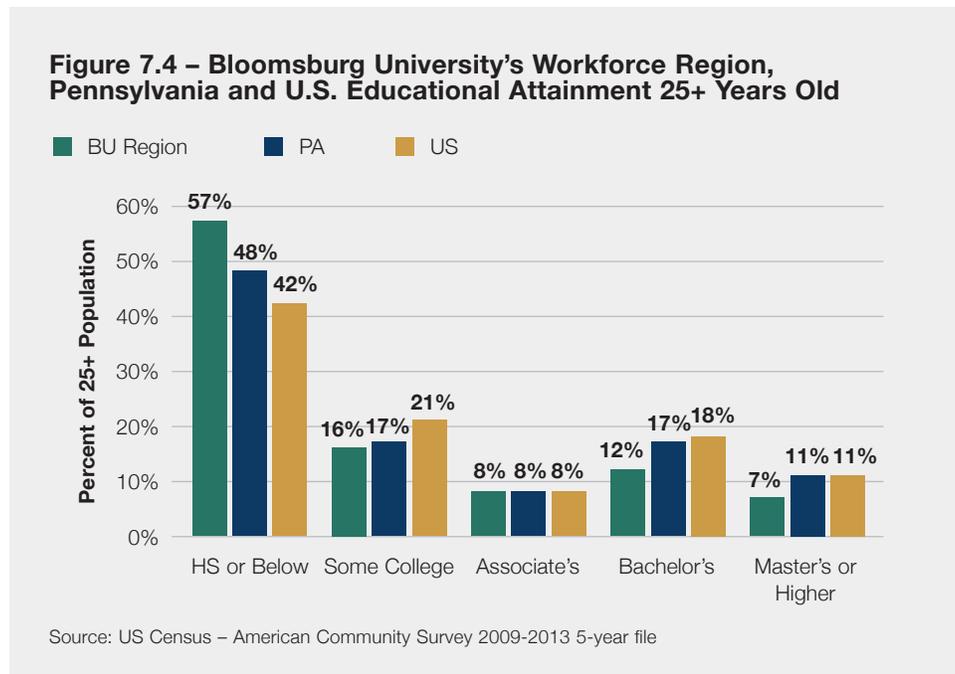
The levels of educational attainment of a population indicate several characteristics in an economy. Areas with better educated workers earn higher wages, are more productive and can typically adjust more quickly to changing economic conditions. Additionally, an educated workforce is less likely to be

unemployed, require social assistance, and more likely to lead a healthier lifestyle—aspects that bolster value in an economy.^{13, 14}

A view of educational attainment in BU's workforce region indicates that under half (43%) of those over 25 years old have had some post-secondary education or higher. Some college is defined by ACS as having some college, but less than one year or one or more years of college credit, but no degree. This is below the national average of 58% of the population having had at least some post-secondary education or higher.

When comparing degree completion, BU's workforce region is near the national average for the proportion of the population with an associate's degree but below the national average for the proportion of the population with a bachelor's degree and master's degrees or higher.

Figure 7.4 compares the educational attainment of the 25 years and older population in the U.S., Pennsylvania, and BU's workforce region.



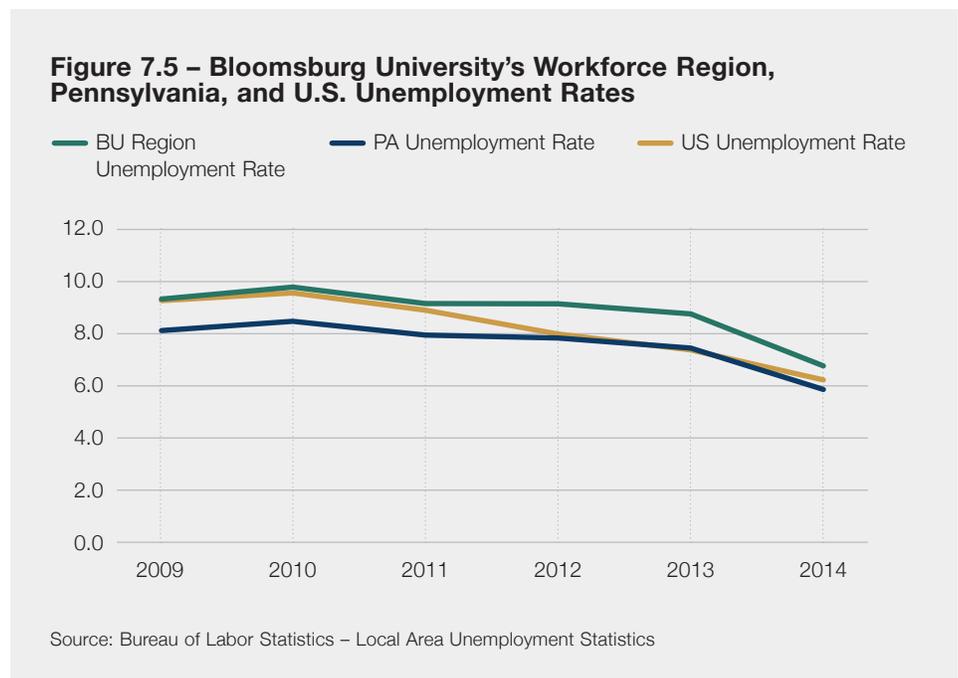
13 Feinstein et. al. (2006), "The effects of education on health: Concepts, evidence and policy implications: A review for the OECD Center for Educational Research and Innovation (CERI)", unpublished manuscript, OECD, Paris.

14 Mitra, Dana (2011), "Pennsylvania's Best Investment: The Social and Economic Benefits of Public Education." Report published for the Education Law Center.

7.2.2 Unemployment and Poverty in Bloomsburg University's Workforce Region

BU's workforce region unemployment rate—6.7% in 2014—has trended closely with the national unemployment rate until 2012, at which point the region's unemployment rate did not fall as quickly as the state or nation. This suggests that opportunities for dislocated workers on average are roughly worse compared to the rest of the nation.

Figure 7.5 shows the convergence of the unemployment rates of BU's workforce region, Pennsylvania, and the U.S. from 2009 to 2014.

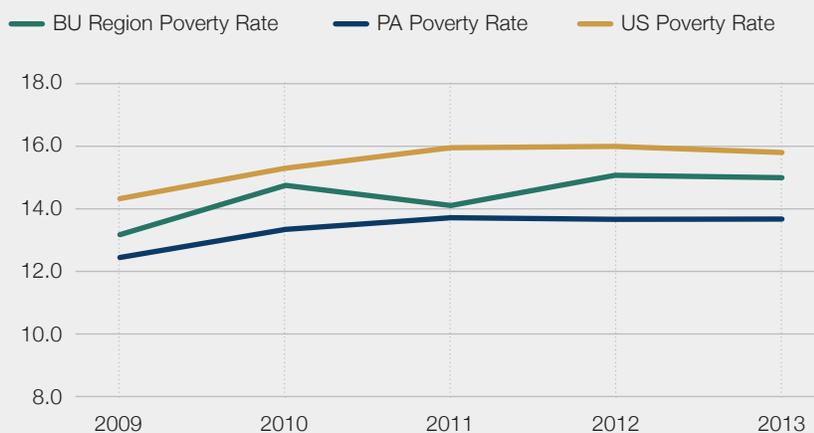


In BU's workforce region, the poverty rate trended upward since 2009. The region's poverty rate is above the state poverty rate; however, it has trended below the U.S. average.¹⁵ Given the lower poverty rate compared with the nation, there is an underlying assumption that the compensation associated with the jobs in BU's workforce region may be higher than the national average.

Figure 7.6 compares the poverty rates of BU's workforce region, Pennsylvania, and the U.S. from 2009 to 2013.

¹⁵ Poverty estimates are based on U.S. Census Bureau's Small Area Income and Poverty Estimates data series. Calculations comprise the total number of individuals (all ages) in the geography, divided by the number of individuals (all ages) that are classified as being in poverty.

Figure 7.6 – Bloomsburg University's Workforce Region, Pennsylvania, and U.S. Poverty Rates



Source: U.S. Census – Small Area Income & Poverty Estimates (SAIPE)

When unemployment and poverty are evaluated together, a decline in the unemployment rate to pre-recession levels, coupled with a small uptick in the poverty rate, suggests an underlying cause that is contributing to marginally increased poverty rates. This cause may be associated with the quality of new jobs that have emerged since the recession, which have done little to abate poverty rates, despite decreasing unemployment.

Although the poverty rate indicates an overall small increasing trend, the unemployment rate shows a decreasing trend, meaning a larger proportion of the workforce is either employed or is no longer seeking employment.

8. NEXT STEPS

This report sets the foundation for program planning by accomplishing three key tasks:

- Defining the university's workforce region.
- Describing key economic, workforce, and demographic attributes in the regional economy.
- Forecasting the demand for skilled occupations.

The next steps for research to support Pennsylvania's State System of Higher Education Program Alignment Toolkit are the development of an education supply and workforce demand gap analysis. Key data-driven aspects in the gap analysis research include:

- Development of an education program to occupation crosswalk.
- Analysis of completion data from the State System institutions as well as other institutions in the university's workforce region.
- Comparison of the occupation forecasts against the recent completions of education programs.
- Identification of programs that may require expansion or development, as well as programs that indicate a potential surplus of talent within the region.

DATA SOURCES

Bureau of Labor Statistics (BLS):

- QCEW - Quarterly Census of Employment & Wages (Bureau of Labor Statistics) - <http://www.bls.gov/cew/>
- OES – Occupational Employment Statistics (Bureau of Labor Statistics) - <http://www.bls.gov/oes/>
- LAUS – Local Area Unemployment Statistics (Bureau of Labor Statistics) - <http://www.bls.gov/lau/>

U.S. Census Bureau (Census):

- LEHD – Longitudinal Employer-Household Dynamics - <http://lehd.census.gov/>
- ACS – American Community Survey - <http://www.census.gov/acs/www/>
- SAIPE – Small Area Income and Poverty Estimates - <http://www.census.gov/did/www/saipe/>

National Center for Education Statistics (NCES):

- IPEDS – Integrated Postsecondary Education Data System (National Center for Education Statistics) - <https://nces.ed.gov/ipeds/>

Pennsylvania Department of Labor and Industry (PADLI):

- CWIA – Center for Workforce Information & Analysis (PA Department of Labor & Industry) – www.paworkstats.pa.gov

O*NET Resource Center (O*NET)

- Job Zones www.onetonline.org/help/online/zones

Economic Modeling Specialists International (EMSI)

APPENDIX A: METHODOLOGY FOR IDENTIFYING STATE SYSTEM UNIVERSITY WORKFORCE REGIONS

Introduction

Economic and workforce analysis is best undertaken at a geographic level that reflects how the economic market operates. In order to effectively analyze a relevant market area, a systematic approach to define the geography should be completed. This report provides a university-specific workforce characteristics analysis based on a defined workforce region. The following outlines the methodology for identifying university workforce regions.

A workforce region is defined as: a labor market area or an economically integrated region within which residents can find jobs within a reasonable commuting distance or can change their employment without changing their place of residence.¹⁶ When determining a workforce region, there is no universal approach.¹⁷ Given the target audience for the workforce region—State System universities—the context used to define the region should reflect multiple regional characteristics that the universities are tasked to support, while still conforming to the broader definition of what is often called a functional economic market area (FEMA). A FEMA is best described as an area that contains key economic markets. These economic markets best reflect drivers of the local economy such as the workforce and inter-industry business activity. For the purposes of this analysis, three drivers are measured in order to best define workforce regions, specifically:

- 1. Workforce flows** (primary input) - measured through commuting patterns.
- 2. Learner origin** (secondary input) - measured by the proportion of state system learners from a given county who are attending the university.
- 3. Economic activity** (secondary input) - measured through inter-industry

¹⁶ Bureau of Labor Statistics: Labor Market Area.

¹⁷ *Functional Economic Market Areas: An economic note*. Communities and Local Government. February 2010. <http://webarchive.nationalarchives.gov.uk/20120919132719/http://www.communities.gov.uk/documents/localgovernment/pdf/1469713.pdf>

exchange within the region and consumer purchasing activity within the region using an input-output model.

Further information on each of the measurements is detailed later.

Geographic Consideration

In order to define regions for State System universities, county-level data provide the best units of economic and workforce information. As such, county groupings serve as the best structure for describing the regions.

However, no one county is identical. Each county has different industry and workforce structures, as well as different learner populations. Additionally, some universities are located in areas that are near large metropolitan areas, while other universities are not. Therefore, a blanket approach of setting threshold primary driver values when defining a workforce region for each university would ultimately favor universities located near large metropolitan areas. In order to allow for broader geographic coverage, three specific considerations were taken into account:

1. Percent of commuters working and/or living in the workforce region.

Specifically, small population counties that contain a State System university do not contain a large workforce. Furthermore, the commuting flows of the workforce may seemingly favor the county containing the State System University. However, if a reasonable proportion of in commuters and out commuters (generally 10% or more) are traveling to work in contiguous counties, then these counties were included in the workforce region of the university.¹⁸

2. Inclusiveness of counties in Pennsylvania. The State System seeks to include all counties as part of the Rising to the Challenge Strategy. However, given the small population and workforce counties that exist across Pennsylvania, combined with many State System universities located within geographic proximity of these small counties, a second criterion of learner “capture rate” is used. The capture rate is simply the proportion of State System enrolled learners within a county that are attending a given

¹⁸ The contiguous region approach employs the U.S. Department of Labor, Bureau of Labor Statistics’ (BLS) Small Labor Market Areas’ criteria to designating a labor market area. However, the 25% threshold set by the BLS was relaxed in order to adhere to an additional criterion of inclusiveness, wherein every county in Pennsylvania is assigned to at least one university. To meet this criteria, the proportion of county-level State System learner enrollment within PA attending the university was also included to identify a contiguous geographic area that captures both labor shed and county-level learner enrollment density (i.e. a percentage of State System learners from within the county and nearby counties that are attending the university—a “capture rate”).

State System university. For example, about 75% of State System enrolled learners from Erie County attend Edinboro University. Therefore Edinboro's capture rate for Erie County is 75%.

3. Level of inter-industry exchange and ability to satisfy household demand for goods and services.

To provide additional context to regional economic activity and ensure that a final regional description can be considered a functional economic market area (FEMA), input-output modeling is used. In short, an input-output model is an inter-industry accounting framework, wherein a proportion of demand for inputs by one industry is satisfied through the production of an output by another industry within a supply chain. Regions with well-developed supply chains and integrated markets typically retain a higher proportion inter-industry trade, thus reducing the level of economic leakage. Similarly, the ability for a region's businesses to satisfy the demand for household consumption reduces economic leakage. This analysis considers both inter-industry exchange (called "output supply/demand") and household consumption (called "household supply/demand").

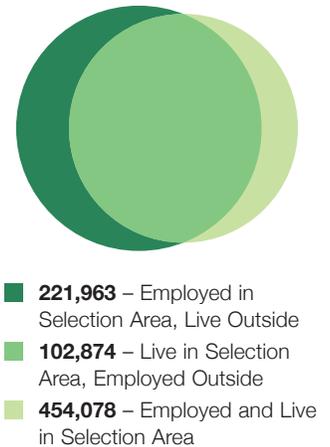
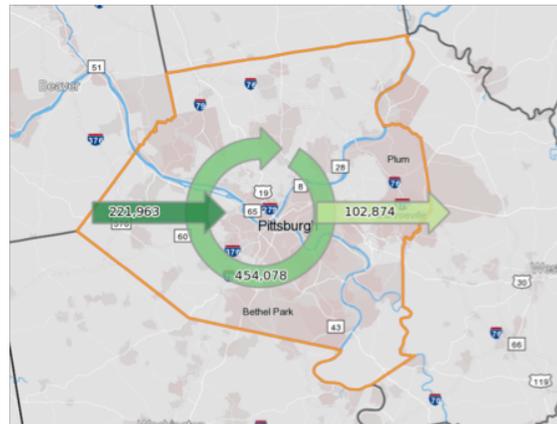
Process

Given the workforce/commute, learner and economic variances that exist within the different geographies across Pennsylvania, an iterative process is used to define the workforce region. This multiple step, iterative process seeks to maximize the primary driver value (workforce flows), while adhering to the guiding principles of a functional economic area. It also ensures that each county in Pennsylvania is assigned to at least one university workforce region— from which the secondary driver values (learner capture rate and economic activity) were used. The process can be broken into the following steps for each driver:

Workforce Flows:

Defined by commuting patterns, workforce flows represent the flow of workers into and out of the region. The following two illustrations for Allegheny County provide better understanding of commuting flows. The map indicates the commuting flow of workers. In short, 454,000 people who live in the county also work in the county. Additionally, almost 222,000 workers commute into Allegheny County for work, while nearly 103,000 county residents commute outside of Allegheny for their jobs.

Inflow/Outflow Job Counts in 2013



Source: U.S. Census Bureau – Longitudinal Employment and Housing Dynamics 2013

When these numbers are converted into percentages, we find that 67% of people who work in Allegheny county live in Allegheny County ($(454,078+221,963)/454,078 = 67.2\%$). This is represented by the darker green circle and center shaded area of the Venn diagram. Another way to describe this is that more than 30% of the jobs in Allegheny County are filled by workers outside of the county (i.e. in commuters).

Additionally, we find that 81.5% of people who live in Allegheny County work in the county ($(454,078+102,874)/454,078 = 81.5\%$). This is represented by the lighter green circle and center shaded area of the Venn diagram. Another way to describe this is less than 20% of Allegheny County's employed residents commute outside of the county for their job (i.e. out commuters).

When defining the workforce region for a University, the analysis begins with the county that the University is located, followed by:

- Identification of the top counties (by percent) of in commuters, using a cut-off of 10%.
- Identification of the top counties (by percent) of out commuters, using a cut-off of 10%.

The counties identified in these initial steps were carried forward to the next set of criterion (i.e. inclusiveness and proportion of learner capture rates).

Learner Capture Rates and Inclusiveness:

Characterized by the proportion of State System enrolled learners from a given Pennsylvania county who are attending a given State System university, the learner capture rate indicates how well the university is providing education to learners within a geographic proximity. This second set of criteria helps to shape the regional backdrop of learners supported within a contiguous area around the university. Not to be confused with the headcount of where a University's learners are coming from, this analysis is specifically designed to broaden the contiguous region to help ensure inclusiveness of other counties (many of which are often low population areas).

Counties were selected based on two criteria for learner origin. First, to evaluate each county, we consider the total number of State System learners who come from each respective county. We sum all students enrolled in the State System for each county and then calculate the share of students going to each State System university. Although a particular county may not contribute a large proportion of total State System students, this method ensured inclusiveness based upon each respective county's relative contribution. Second, to consider the university perspective, we calculate where the majority of learners come from within Pennsylvania for each respective university. This ensured that Chester County, for example, was included as part of Millersville's workforce region even though a majority of learners in Chester County do not attend Millersville University. Greater weight was given to the first criteria to ensure inclusiveness of all counties. Note that counties must be contiguous in order to conform to the definition of a workforce region.

Economic Activity and Concentration:

Concurrently, we measured the economic activity of the region using supply/demand ratios for businesses and households. After each workforce region was defined using the criteria for commuting and learner origin, the gross commodity demand was calculated for that region using IMPLAN. Gross commodity demand is the total demand for supply chain products and services by businesses in the region. The Output Supply/Demand ratio represents the percent of industry demand for supply chain products and services that are satisfied by businesses in the region. The Household Supply/Demand ratio represents the percent of household demand for goods and services that are satisfied by businesses in the region. For example, when defining Bloomsburg University's workforce region several county combinations were evaluated. The fourth iteration included Columbia, Montour, Luzerne, and Northumberland. The supply/demand ratios for businesses and households were 54% and

84% respectively. In the fifth iteration, Northampton was added to the region. Although this did increase the learner origin measure (marginally), it actually reduced the supply/demand ratios for businesses and households to 53% and 79% respectively. This indicated that Northampton was not as connected to the region economically as the other counties and it was not included in the workforce region as a result.

Table A.1 – State System Workforce Region by University

University	Counties
Bloomsburg University	Columbia, Montour, Luzerne, Northumberland, Union, Sullivan, Snyder, Schuylkill
California University	Washington, Allegheny, Fayette, Westmoreland, Greene
Cheyney University	Chester, Delaware, Philadelphia, Montgomery
Clarion University	Clarion, Armstrong, Butler, Venango, Jefferson, Forest, Elk, Allegheny
East Stroudsburg University	Monroe, Northampton, Lackawanna, Pike, Wayne, Carbon, Lehigh
Edinboro University	Erie, Crawford, Warren, McKean
Indiana University	Indiana, Allegheny, Westmoreland, Cambria, Armstrong, Blair, Bedford, Somerset, Jefferson
Kutztown University	Berks, Lehigh, Montgomery, Northampton, Schuylkill, Chester, Bucks
Lock Haven University	Clinton, Lycoming, Centre, Clearfield, Cameron, Mifflin, Juniata
Mansfield University	Tioga, Bradford, Potter, Susquehanna, Wyoming
Millersville University	Lancaster, Dauphin, Chester, York, Lebanon
Shippensburg University	Cumberland, Franklin, Dauphin, York, Perry, Huntingdon, Fulton, Adams
Slippery Rock University	Butler, Allegheny, Mercer, Lawrence, Beaver, Westmoreland
West Chester University	Chester, Delaware, Philadelphia, Montgomery, Bucks

Source: Oxford Economics modeling and tabulations

APPENDIX B: PENNSYLVANIA STATE AND COUNTY ENROLLMENT AND EMPLOYMENT

County	Fall 2014 Enrollment in Bloomsburg University	2014 QCEW Employment
Adams	59	34,139
Allegheny	14	683,111
Armstrong	0	17,582
Beaver	5	52,811
Bedford	3	15,397
Berks	282	166,792
Blair	7	58,233
Bradford	65	24,568
Bucks	657	250,889
Butler	3	84,472
Cambria	6	53,915
Cameron	2	2,015
Carbon	108	16,974
Centre	18	67,147
Chester	353	240,469
Clarion	2	13,586
Clearfield	13	29,938
Clinton	31	13,043
Columbia	878	24,974
Crawford	1	31,113
Cumberland	186	126,939
Dauphin	207	176,004
Delaware	350	216,261
Elk	4	14,994
Erie	10	124,095
Fayette	1	39,979
Forest	0	2,053
Franklin	29	56,715
Fulton	0	4,807
Greene	1	14,844
Huntingdon	7	12,343

County	Fall 2014 Enrollment in Bloomsburg University	2014 QCEW Employment
Indiana	2	32,653
Jefferson	2	15,435
Juniata	19	6,146
Lackawanna	243	97,259
Lancaster	212	225,673
Lawrence	0	29,500
Lebanon	88	48,869
Lehigh	406	180,757
Luzerne	609	140,329
Lycoming	199	53,197
McKean	1	15,770
Mercer	2	48,028
Mifflin	38	15,544
Monroe	221	52,933
Montgomery	733	472,655
Montour	215	15,578
Northampton	301	105,825
Northumberland	540	27,985
Perry	30	7,661
Philadelphia	676	640,987
Pike	89	10,748
Potter	9	5,291
Schuylkill	319	50,049
Snyder	125	15,522
Somerset	1	24,398
Sullivan	10	1,772
Susquehanna	26	9,281
Tioga	17	12,973
Union	148	16,597
Venango	4	19,251
Warren	0	15,031
Washington	2	86,961
Wayne	75	14,651
Westmoreland	11	132,312
Wyoming	30	10,181
York	207	172,145
Total Pennsylvania	8,912	5,643,676

Source: Enrollment - Pennsylvania State System of Higher Education, Employment- BLS QCEW

APPENDIX C: INDUSTRY PROJECTIONS 2014-2024 FOR BLOOMSBURG UNIVERSITY'S WORKFORCE REGION

A common measure of industry competitiveness is through the use of a location quotient statistic. Location quotients (LQ) provide a relative perspective on local comparative advantages in specific industry classifications by comparing employment within a local or state economy to a larger geographic area (e.g. nation). On its own, the analysis achieves little. However, when evaluated jointly with the employment data and growth, one gains a sense of the industry sectors that might benefit from efforts to align educational opportunities with economic development (i.e. industries that State System universities may consider engaging in larger conversations about aligning employer and educational needs).

To interpret results, LQs equal to 1 indicate that the area's industry concentration is equal the national concentration of the same industry. Industries with a higher location quotient (usually greater than 1.2) indicate that an area has a relatively higher concentration of jobs in the sector and therefore concludes that the area has a comparative advantage or specialization in the production of that good or service, compared to the national average. Note: High employment industries do not necessarily result in large location quotients, as this is a comparative statistic. The following table provides the industry LQs at the 4-digit NAICS level in BU's workforce region. Included in the table are the number of jobs in 2014 and the projected job growth/decline in 2024.

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
Total	All Industries	299,271	327,542	9.4%	1.0
1111	Oilseed and Grain Farming	148	152	2.7%	1.3
1112	Vegetable and Melon Farming	364	433	19.0%	1.7
1113	Fruit and Tree Nut Farming	17	21	23.5%	0.0
1114	Greenhouse, Nursery, and Floriculture Production	502	541	7.8%	1.6
1119	Other Crop Farming	39	47	20.5%	0.3
1121	Cattle Ranching and Farming	80	82	2.5%	0.2
1122	Hog and Pig Farming	17	19	11.8%	0.3
1123	Poultry and Egg Production	269	254	-5.6%	3.1
1129	Other Animal Production	29	33	13.8%	0.7
1132	Forest Nurseries and Gathering of Forest Products	7	9	28.6%	1.4
1133	Logging	64	75	17.2%	0.6
1141	Fishing	1	1	0.0%	0.1
1142	Hunting and Trapping	8	10	25.0%	1.9
1151	Support Activities for Crop Production	75	77	2.7%	0.1
1152	Support Activities for Animal Production	58	70	20.7%	0.9
1153	Support Activities for Forestry	4	5	25.0%	0.1
2121	Coal Mining	757	609	-19.6%	4.8
2123	Nonmetallic Mineral Mining and Quarrying	434	491	13.1%	2.2
2131	Support Activities for Mining	399	475	19.0%	0.4
2211	Electric Power Generation, Transmission and Distribution	1,857	1,784	-3.9%	1.8
2212	Natural Gas Distribution	465	459	-1.3%	1.8
2213	Water, Sewage and Other Systems	813	934	14.9%	1.8
2361	Residential Building Construction	1,206	1,388	15.1%	0.8
2362	Nonresidential Building Construction	1,256	1,602	27.5%	0.8
2371	Utility System Construction	1,353	1,840	36.0%	1.3
2372	Land Subdivision	69	100	44.9%	0.8
2373	Highway, Street, and Bridge Construction	1,077	1,388	28.9%	1.2
2379	Other Heavy and Civil Engineering Construction	50	53	6.0%	0.2
2381	Foundation, Structure, and Building Exterior Contractors	1,022	1,196	17.0%	0.6
2382	Building Equipment Contractors	2,813	3,052	8.5%	0.7
2383	Building Finishing Contractors	654	677	3.5%	0.4
2389	Other Specialty Trade Contractors	1,216	1,297	6.7%	1.0
3111	Animal Food Manufacturing	775	780	0.6%	6.5
3112	Grain and Oilseed Milling	149	161	8.1%	1.2
3113	Sugar and Confectionery Product Manufacturing	1,039	1,010	-2.8%	6.8
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing	1,201	1,153	-4.0%	3.2

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
3115	Dairy Product Manufacturing	497	527	6.0%	1.7
3116	Animal Slaughtering and Processing	1,349	1,352	0.2%	1.3
3118	Bakeries and Tortilla Manufacturing	1,732	1,700	-1.8%	2.7
3119	Other Food Manufacturing	829	879	6.0%	2.0
3121	Beverage Manufacturing	1,069	1,308	22.4%	2.5
3131	Fiber, Yarn, and Thread Mills	95	87	-8.4%	1.5
3132	Fabric Mills	369	199	-46.1%	3.1
3133	Textile and Fabric Finishing and Fabric Coating Mills	172	176	2.3%	2.4
3141	Textile Furnishings Mills	1,129	748	-33.7%	10.0
3149	Other Textile Product Mills	427	410	-4.0%	3.1
3151	Apparel Knitting Mills	41	26	-36.6%	1.4
3152	Cut and Sew Apparel Manufacturing	266	159	-40.2%	1.1
3159	Apparel Accessories and Other Apparel Manufacturing	31	25	-19.4%	1.2
3162	Footwear Manufacturing	44	52	18.2%	1.5
3169	Other Leather and Allied Product Manufacturing	8	10	25.0%	0.3
3211	Sawmills and Wood Preservation	327	430	31.5%	1.7
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	176	237	34.7%	1.1
3219	Other Wood Product Manufacturing	2,930	3,947	34.7%	6.4
3221	Pulp, Paper, and Paperboard Mills	330	376	13.9%	1.4
3222	Converted Paper Product Manufacturing	2,044	2,035	-0.4%	3.5
3231	Printing and Related Support Activities	1,154	916	-20.6%	1.2
3241	Petroleum and Coal Products Manufacturing	243	237	-2.5%	1.0
3251	Basic Chemical Manufacturing	573	571	-0.3%	1.8
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing	113	92	-18.6%	0.6
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	20	22	10.0%	0.2
3254	Pharmaceutical and Medicine Manufacturing	116	89	-23.3%	0.2
3255	Paint, Coating, and Adhesive Manufacturing	66	79	19.7%	0.5
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	148	167	12.8%	0.6
3259	Other Chemical Product and Preparation Manufacturing	229	241	5.2%	1.3
3261	Plastics Product Manufacturing	4,322	4,545	5.2%	3.6
3262	Rubber Product Manufacturing	179	220	22.9%	0.6
3271	Clay Product and Refractory Manufacturing	146	169	15.8%	1.7
3272	Glass and Glass Product Manufacturing	409	377	-7.8%	2.3
3273	Cement and Concrete Product Manufacturing	777	908	16.9%	2.0
3274	Lime and Gypsum Product Manufacturing	94	111	18.1%	3.0
3279	Other Nonmetallic Mineral Product Manufacturing	208	206	-1.0%	1.3

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
3311	Iron and Steel Mills and Ferroalloy Manufacturing	420	500	19.0%	2.1
3312	Steel Product Manufacturing from Purchased Steel	108	120	11.1%	0.8
3313	Alumina and Aluminum Production and Processing	627	496	-20.9%	4.9
3314	Nonferrous Metal (except Aluminum) Production and Processing	322	369	14.6%	2.4
3315	Foundries	669	710	6.1%	2.4
3321	Forging and Stamping	868	840	-3.2%	4.0
3322	Cutlery and Handtool Manufacturing	83	99	19.3%	1.0
3323	Architectural and Structural Metals Manufacturing	1,996	2,344	17.4%	2.5
3324	Boiler, Tank, and Shipping Container Manufacturing	262	277	5.7%	1.2
3325	Hardware Manufacturing	75	65	-13.3%	1.4
3326	Spring and Wire Product Manufacturing	1,001	1,031	3.0%	10.6
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	1,087	1,195	9.9%	1.3
3328	Coating, Engraving, Heat Treating, and Allied Activities	197	219	11.2%	0.7
3329	Other Fabricated Metal Product Manufacturing	354	424	19.8%	0.6
3331	Agriculture, Construction, and Mining Machinery Manufacturing	230	202	-12.2%	0.4
3332	Industrial Machinery Manufacturing	385	444	15.3%	1.6
3333	Commercial and Service Industry Machinery Manufacturing	158	167	5.7%	0.8
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	168	165	-1.8%	0.6
3335	Metalworking Machinery Manufacturing	169	156	-7.7%	0.4
3339	Other General Purpose Machinery Manufacturing	366	347	-5.2%	0.6
3341	Computer and Peripheral Equipment Manufacturing	112	133	18.8%	0.3
3344	Semiconductor and Other Electronic Component Manufacturing	385	414	7.5%	0.5
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	90	71	-21.1%	0.1
3351	Electric Lighting Equipment Manufacturing	80	72	-10.0%	0.8
3353	Electrical Equipment Manufacturing	92	75	-18.5%	0.3
3359	Other Electrical Equipment and Component Manufacturing	469	453	-3.4%	1.7
3362	Motor Vehicle Body and Trailer Manufacturing	630	655	4.0%	2.0
3363	Motor Vehicle Parts Manufacturing	63	70	11.1%	0.1
3364	Aerospace Product and Parts Manufacturing	728	752	3.3%	0.7
3365	Railroad Rolling Stock Manufacturing	202	253	25.2%	3.4
3369	Other Transportation Equipment Manufacturing	126	202	60.3%	1.8
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	1,143	965	-15.6%	2.3
3372	Office Furniture (including Fixtures) Manufacturing	440	383	-13.0%	2.0
3379	Other Furniture Related Product Manufacturing	412	461	11.9%	5.5
3391	Medical Equipment and Supplies Manufacturing	631	535	-15.2%	0.9

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
3399	Other Miscellaneous Manufacturing	576	533	-7.5%	0.9
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	837	844	0.8%	1.2
4232	Furniture and Home Furnishing Merchant Wholesalers	126	140	11.1%	0.6
4233	Lumber and Other Construction Materials Merchant Wholesalers	674	781	15.9%	1.5
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	828	837	1.1%	0.6
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	152	150	-1.3%	0.5
4236	Household Appliances and Electrical and Electronic Goods Merchant Wholesalers	258	244	-5.4%	0.4
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	452	494	9.3%	0.9
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	1,263	1,172	-7.2%	0.9
4239	Miscellaneous Durable Goods Merchant Wholesalers	521	608	16.7%	0.8
4241	Paper and Paper Product Merchant Wholesalers	172	198	15.1%	0.6
4242	Drugs and Druggists' Sundries Merchant Wholesalers	114	117	2.6%	0.3
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	56	52	-7.1%	0.2
4244	Grocery and Related Product Merchant Wholesalers	2,287	2,387	4.4%	1.4
4245	Farm Product Raw Material Merchant Wholesalers	60	73	21.7%	0.4
4246	Chemical and Allied Products Merchant Wholesalers	193	235	21.8%	0.7
4247	Petroleum and Petroleum Products Merchant Wholesalers	306	314	2.6%	1.4
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	251	298	18.7%	0.6
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	1,006	1,054	4.8%	1.4
4251	Wholesale Electronic Markets and Agents and Brokers	1,359	1,350	-0.7%	0.7
4411	Automobile Dealers	2,701	2,989	10.7%	1.0
4412	Other Motor Vehicle Dealers	273	252	-7.7%	0.9
4413	Automotive Parts, Accessories, and Tire Stores	1,220	1,264	3.6%	1.0
4421	Furniture Stores	286	260	-9.1%	0.6
4422	Home Furnishings Stores	284	300	5.6%	0.5
4431	Electronics and Appliance Stores	704	712	1.1%	0.7
4441	Building Material and Supplies Dealers	2,497	2,488	-0.4%	1.1
4442	Lawn and Garden Equipment and Supplies Stores	456	499	9.4%	1.4
4451	Grocery Stores	7,224	7,017	-2.9%	1.3
4452	Specialty Food Stores	481	466	-3.1%	1.0
4453	Beer, Wine, and Liquor Stores	730	829	13.6%	2.1
4461	Health and Personal Care Stores	2,345	2,336	-0.4%	1.1
4471	Gasoline Stations	2,772	2,643	-4.7%	1.4
4481	Clothing Stores	1,264	1,188	-6.0%	0.6
4482	Shoe Stores	211	205	-2.8%	0.5

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
4483	Jewelry, Luggage, and Leather Goods Stores	234	210	-10.3%	0.8
4511	Sporting Goods, Hobby, and Musical Instrument Stores	727	712	-2.1%	0.6
4512	Book Stores and News Dealers	176	180	2.3%	0.9
4521	Department Stores	2,771	2,216	-20.0%	0.9
4529	Other General Merchandise Stores	3,962	4,326	9.2%	1.0
4531	Florists	124	113	-8.9%	0.9
4532	Office Supplies, Stationery, and Gift Stores	489	408	-16.6%	0.8
4533	Used Merchandise Stores	283	350	23.7%	0.8
4539	Other Miscellaneous Store Retailers	612	603	-1.5%	0.9
4541	Electronic Shopping and Mail-Order Houses	1,544	1,968	27.5%	2.2
4542	Vending Machine Operators	122	119	-2.5%	1.5
4543	Direct Selling Establishments	797	696	-12.7%	2.7
4811	Scheduled Air Transportation	110	144	30.9%	0.1
4812	Nonscheduled Air Transportation	18	22	22.2%	0.2
4841	General Freight Trucking	4,034	4,805	19.1%	1.9
4842	Specialized Freight Trucking	1,462	1,583	8.3%	1.5
4851	Urban Transit Systems	184	216	17.4%	0.4
4852	Interurban and Rural Bus Transportation	177	172	-2.8%	3.6
4853	Taxi and Limousine Service	136	118	-13.2%	0.8
4854	School and Employee Bus Transportation	1,555	1,609	3.5%	2.9
4855	Charter Bus Industry	203	192	-5.4%	3.1
4859	Other Transit and Ground Passenger Transportation	91	111	22.0%	0.4
4862	Pipeline Transportation of Natural Gas	40	57	42.5%	0.6
4869	Other Pipeline Transportation	17	20	17.6%	1.0
4871	Scenic and Sightseeing Transportation, Land	8	8	0.0%	0.3
4881	Support Activities for Air Transportation	124	120	-3.2%	0.3
4882	Support Activities for Rail Transportation	9	7	-22.2%	0.1
4884	Support Activities for Road Transportation	272	340	25.0%	1.1
4885	Freight Transportation Arrangement	91	104	14.3%	0.2
4889	Other Support Activities for Transportation	8	7	-12.5%	0.1
4911	Postal Service	1,287	990	-23.1%	1.0
4921	Couriers and Express Delivery Services	907	977	7.7%	0.8
4922	Local Messengers and Local Delivery	45	37	-17.8%	0.4
4931	Warehousing and Storage	12,121	15,339	26.5%	7.4
5111	Newspaper, Periodical, Book, and Directory Publishers	1,003	814	-18.8%	1.1
5112	Software Publishers	136	135	-0.7%	0.2
5121	Motion Picture and Video Industries	256	291	13.7%	0.3

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
5151	Radio and Television Broadcasting	540	575	6.5%	1.1
5152	Cable and Other Subscription Programming	64	65	1.6%	0.5
5171	Wired Telecommunications Carriers	741	611	-17.5%	0.6
5172	Wireless Telecommunications Carriers (except Satellite)	43	43	0.0%	0.1
5179	Other Telecommunications	22	25	13.6%	0.1
5182	Data Processing, Hosting, and Related Services	1,281	1,217	-5.0%	2.1
5191	Other Information Services	383	454	18.5%	0.5
5221	Depository Credit Intermediation	3,174	2,934	-7.6%	0.9
5222	Nondepository Credit Intermediation	1,494	1,703	14.0%	1.2
5223	Activities Related to Credit Intermediation	41	44	7.3%	0.1
5231	Securities and Commodity Contracts Intermediation and Brokerage	252	247	-2.0%	0.3
5232	Securities and Commodity Exchanges	2	3	50.0%	0.1
5239	Other Financial Investment Activities	207	261	26.1%	0.2
5241	Insurance Carriers	2,514	2,850	13.4%	1.0
5242	Agencies, Brokerages, and Other Insurance Related Activities	1,788	2,053	14.8%	0.8
5311	Lessors of Real Estate	576	607	5.4%	0.4
5312	Offices of Real Estate Agents and Brokers	147	138	-6.1%	0.2
5313	Activities Related to Real Estate	316	337	6.6%	0.2
5321	Automotive Equipment Rental and Leasing	266	286	7.5%	0.6
5322	Consumer Goods Rental	313	361	15.3%	0.9
5323	General Rental Centers	66	84	27.3%	0.8
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	232	303	30.6%	0.7
5411	Legal Services	1,221	1,252	2.5%	0.5
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	1,276	1,295	1.5%	0.6
5413	Architectural, Engineering, and Related Services	1,314	1,500	14.2%	0.4
5414	Specialized Design Services	147	174	18.4%	0.5
5415	Computer Systems Design and Related Services	1,085	1,440	32.7%	0.3
5416	Management, Scientific, and Technical Consulting Services	802	951	18.6%	0.3
5417	Scientific Research and Development Services	75	66	-12.0%	0.1
5418	Advertising, Public Relations, and Related Services	456	541	18.6%	0.4
5419	Other Professional, Scientific, and Technical Services	908	1,078	18.7%	0.6
5511	Management of Companies and Enterprises	5,029	5,459	8.6%	1.1
5611	Office Administrative Services	47	36	-23.4%	0.0
5612	Facilities Support Services	540	740	37.0%	1.8
5613	Employment Services	5,176	7,200	39.1%	0.7
5614	Business Support Services	2,527	2,895	14.6%	1.3

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
5615	Travel Arrangement and Reservation Services	329	239	-27.4%	0.8
5616	Investigation and Security Services	1,102	1,354	22.9%	0.6
5617	Services to Buildings and Dwellings	2,844	2,878	1.2%	0.7
5619	Other Support Services	629	778	23.7%	0.9
5621	Waste Collection	611	715	17.0%	1.7
5622	Waste Treatment and Disposal	178	213	19.7%	0.7
5629	Remediation and Other Waste Management Services	266	330	24.1%	0.9
6111	Elementary and Secondary Schools	15,978	16,118	0.9%	0.9
6112	Junior Colleges	1,264	1,168	-7.6%	0.8
6113	Colleges, Universities, and Professional Schools	4,920	4,673	-5.0%	0.8
6114	Business Schools and Computer and Management Training	21	17	-19.0%	0.1
6115	Technical and Trade Schools	453	540	19.2%	1.4
6116	Other Schools and Instruction	243	258	6.2%	0.3
6117	Educational Support Services	63	73	15.9%	0.2
6211	Offices of Physicians	4,367	4,491	2.8%	0.8
6212	Offices of Dentists	1,666	1,783	7.0%	0.9
6213	Offices of Other Health Practitioners	2,096	2,983	42.3%	1.2
6214	Outpatient Care Centers	4,665	6,647	42.5%	2.8
6215	Medical and Diagnostic Laboratories	296	357	20.6%	0.5
6216	Home Health Care Services	3,201	4,771	49.0%	1.2
6219	Other Ambulatory Health Care Services	1,080	1,276	18.1%	1.7
6221	General Medical and Surgical Hospitals	14,992	17,649	17.7%	1.2
6222	Psychiatric and Substance Abuse Hospitals	1,193	1,151	-3.5%	2.3
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	659	787	19.4%	1.2
6231	Nursing Care Facilities (Skilled Nursing Facilities)	7,140	8,512	19.2%	1.9
6232	Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	4,623	5,057	9.4%	3.0
6233	Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	2,508	3,076	22.6%	1.3
6239	Other Residential Care Facilities	266	485	82.3%	0.7
6241	Individual and Family Services	6,214	8,383	34.9%	1.3
6242	Community Food and Housing, and Emergency and Other Relief Services	563	724	28.6%	1.7
6243	Vocational Rehabilitation Services	489	430	-12.1%	0.6
6244	Child Day Care Services	2,099	2,336	11.3%	1.2
7111	Performing Arts Companies	65	77	18.5%	0.3
7112	Spectator Sports	258	310	20.2%	0.9
7113	Promoters of Performing Arts, Sports, and Similar Events	369	429	16.3%	1.3

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
7115	Independent Artists, Writers, and Performers	22	28	27.3%	0.2
7121	Museums, Historical Sites, and Similar Institutions	103	100	-2.9%	0.2
7131	Amusement Parks and Arcades	599	539	-10.0%	1.4
7132	Gambling Industries	18	16	-11.1%	0.0
7139	Other Amusement and Recreation Industries	2,018	2,224	10.2%	0.7
7211	Traveler Accommodation	3,225	3,716	15.2%	0.8
7212	RV (Recreational Vehicle) Parks and Recreational Camps	174	205	17.8%	1.3
7213	Rooming and Boarding Houses	12	12	0.0%	0.4
7223	Special Food Services	1,771	1,911	7.9%	1.3
7224	Drinking Places (Alcoholic Beverages)	581	475	-18.2%	0.7
7225	Restaurants and Other Eating Places	17,193	18,491	7.5%	0.8
8111	Automotive Repair and Maintenance	1,745	1,912	9.6%	0.9
8112	Electronic and Precision Equipment Repair and Maintenance	268	319	19.0%	1.2
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	193	241	24.9%	0.4
8114	Personal and Household Goods Repair and Maintenance	22	19	-13.6%	0.1
8121	Personal Care Services	1,207	1,448	20.0%	0.8
8122	Death Care Services	391	440	12.5%	1.3
8123	Drycleaning and Laundry Services	417	451	8.2%	0.6
8129	Other Personal Services	301	375	24.6%	0.5
8131	Religious Organizations	585	605	3.4%	1.4
8132	Grantmaking and Giving Services	191	224	17.3%	0.6
8133	Social Advocacy Organizations	204	234	14.7%	0.4
8134	Civic and Social Organizations	1,439	1,404	-2.4%	1.7
8139	Business, Professional, Labor, Political, and Similar Organizations	591	611	3.4%	0.6
8141	Private Households	101	89	-11.9%	0.2
9211	Executive, Legislative, and Other General Government Support	7,215	6,977	-3.3%	1.1
9221	Justice, Public Order, and Safety Activities	5,144	5,004	-2.7%	1.3
9231	Administration of Human Resource Programs	353	337	-4.5%	0.2
9241	Administration of Environmental Quality Programs	550	539	-2.0%	0.8
9251	Administration of Housing Programs, Urban Planning, and Community Development	355	339	-4.5%	2.0
9261	Administration of Economic Programs	310	313	1.0%	0.2
9281	National Security and International Affairs	29	25	-13.8%	0.0

Source: Bureau of Labor Statistics, Occupational Employment Statistics (OES), Pennsylvania Department of Labor & Industry, Oxford Economics Projections

APPENDIX D: OCCUPATION PROJECTIONS 2014-2024 FOR BLOOMSBURG UNIVERSITY'S WORKFORCE REGION

For this analysis a “skilled” occupation is defined as an occupation in O*NET Job Zones¹⁹ Three, Four or Five. Most occupations in Job Zone Three require training in vocational schools, related on-the-job experience, or an associate’s degree.

The O*NET program is the nation’s primary source of occupational information. Central to the project is the O*NET database, containing information on hundreds of standardized and occupation-specific descriptors. The database, which is available to the public at no cost, is continually updated by surveying a broad range of workers from each occupation.²⁰

JOB ZONE ONE: Little or No Preparation Needed

- *Education* – Some of these occupations may require a high school diploma or GED certificate.
- *Related Experience* – Little or no previous work-related skill, knowledge, or experience is needed for these occupations. For example, a person can become a waiter or waitress even if he/she has never worked before.
- *Job Training* – Employees in these occupations need anywhere from a few days to a few months of training. Usually, an experienced worker could show you how to do the job.
- *Job Zone Examples* – These occupations involve following instructions and helping others. Examples include taxi drivers, amusement and recreation attendants, counter and rental clerks, nonfarm animal caretakers, continuous mining machine operators, and waiters/waitresses.

JOB ZONE TWO: Some Preparation Needed

- *Education* – These occupations usually require a high school diploma.

¹⁹ <https://www.onetonline.org/help/online/zones>

²⁰ <http://www.onetcenter.org/overview.html>

- *Related Experience* – Some previous work-related skill, knowledge, or experience is usually needed. For example, a teller would benefit from experience working directly with the public.
- *Job Training* – Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.
- *Job Zone Examples* – These occupations often involve using your knowledge and skills to help others. Examples include sheet metal workers, forest fire fighters, customer service representatives, physical therapist aides, salespersons (retail), and tellers.

JOB ZONE THREE: Medium Preparation Needed

- *Education* – Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.
- *Related Experience* – Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.
- *Job Training* – Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.
- *Job Zone Examples* – These occupations usually involve using communication and organizational skills to coordinate, supervise, manage, or train others to accomplish goals. Examples include food service managers, electricians, agricultural technicians, legal secretaries, occupational therapy assistants, and medical assistants.

JOB ZONE FOUR: Considerable Preparation Needed

- *Education* – Most of these occupations require a four-year bachelor's degree, but some do not.
- *Related Experience* – A considerable amount of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.

- *Job Training* – Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.
- *Job Zone Examples* – Many of these occupations involve coordinating, supervising, managing, or training others. Examples include accountants, sales managers, database administrators, teachers, chemists, art directors, and cost estimators.

JOB ZONE FIVE: Extensive Preparation Needed

- *Education* – Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).
- *Related Experience* – Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.
- *Job Training* – Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.
- *Job Zone Examples* – These occupations often involve coordinating, training, supervising, or managing the activities of others to accomplish goals. Very advanced communication and organizational skills are required. Examples include librarians, lawyers, sports medicine physicians, wildlife biologists, school psychologists, surgeons, treasurers, and controllers.

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
Total	All Occupations	NA	299,269	327,542	9.4%	113,971
11-1011	Chief Executives	5	588	593	0.9%	145
11-1021	General and Operations Managers	4	3,333	3,863	15.9%	1,123
11-1031	Legislators	4	122	97	-20.5%	7
11-2011	Advertising and Promotions Managers	4	28	26	-7.1%	7
11-2021	Marketing Managers	4	183	196	7.1%	53
11-2022	Sales Managers	4	466	445	-4.5%	80
11-2031	Public Relations and Fundraising Managers	4	58	55	-5.2%	9
11-3011	Administrative Services Managers	3	371	382	3.0%	68
11-3021	Computer and Information Systems Managers	4	382	475	24.3%	149
11-3031	Financial Managers	4	606	591	-2.5%	98
11-3051	Industrial Production Managers	4	441	424	-3.9%	84
11-3061	Purchasing Managers	4	81	79	-2.5%	17
11-3071	Transportation, Storage, and Distribution Managers	4	300	366	22.0%	141
11-3111	Compensation and Benefits Managers	4	26	24	-7.7%	6
11-3121	Human Resources Managers	4	149	176	18.1%	65
11-3131	Training and Development Managers	4	31	34	9.7%	12
11-9021	Construction Managers	4	253	323	27.7%	106
11-9031	Education Administrators, Preschool and Childcare Center/Program	4	102	100	-2.0%	26
11-9032	Education Administrators, Elementary and Secondary School	5	420	405	-3.6%	123
11-9033	Education Administrators, Postsecondary	5	197	178	-9.6%	36
11-9039	Education Administrators, All Other	5	32	35	9.4%	12
11-9041	Architectural and Engineering Managers	5	168	176	4.8%	52
11-9051	Food Service Managers	3	284	303	6.7%	76
11-9061	Funeral Service Managers	3	29	30	3.4%	10
11-9081	Lodging Managers	3	61	71	16.4%	37
11-9111	Medical and Health Services Managers	5	809	946	16.9%	333
11-9121	Natural Sciences Managers	5	28	31	10.7%	10
11-9131	Postmasters and Mail Superintendents	3	50	27	-46.0%	0
11-9141	Property, Real Estate, and Community Association Managers	4	93	108	16.1%	39
11-9151	Social and Community Service Managers	4	316	383	21.2%	140
11-9161	Emergency Management Directors	4	23	20	-13.0%	1
11-9199	Managers, All Other	4	312	326	4.5%	82
13-1021	Buyers and Purchasing Agents, Farm Products	4	29	29	0.0%	7

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
13-1022	Wholesale and Retail Buyers, Except Farm Products	3	220	212	-3.6%	52
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	4	702	703	0.1%	151
13-1031	Claims Adjusters, Examiners, and Investigators	4	552	590	6.9%	201
13-1032	Insurance Appraisers, Auto Damage	3	26	32	23.1%	16
13-1041	Compliance Officers	4	447	504	12.8%	149
13-1051	Cost Estimators	4	483	553	14.5%	234
13-1071	Human Resources Specialists	4	933	1,183	26.8%	449
13-1075	Labor Relations Specialists	4	176	145	-17.6%	20
13-1081	Logisticians	4	310	381	22.9%	113
13-1111	Management Analysts	4	648	739	14.0%	199
13-1121	Meeting, Convention, and Event Planners	4	109	135	23.9%	42
13-1131	Fundraisers	4	106	127	19.8%	45
13-1141	Compensation, Benefits, and Job Analysis Specialists	4	153	141	-7.8%	22
13-1151	Training and Development Specialists	4	463	520	12.3%	150
13-1161	Market Research Analysts and Marketing Specialists	4	808	1,039	28.6%	360
13-1199	Business Operations Specialists, All Other	4	713	710	-0.4%	81
13-2011	Accountants and Auditors	4	2,255	2,419	7.3%	915
13-2021	Appraisers and Assessors of Real Estate	4	53	51	-3.8%	6
13-2031	Budget Analysts	4	87	91	4.6%	40
13-2041	Credit Analysts	4	124	146	17.7%	59
13-2051	Financial Analysts	4	346	398	15.0%	143
13-2052	Personal Financial Advisors	4	168	203	20.8%	66
13-2053	Insurance Underwriters	4	191	224	17.3%	108
13-2061	Financial Examiners	4	68	71	4.4%	25
13-2071	Credit Counselors	4	100	121	21.0%	42
13-2072	Loan Officers	3	604	683	13.1%	246
13-2081	Tax Examiners and Collectors, and Revenue Agents	3	239	198	-17.2%	56
13-2082	Tax Preparers	3	77	68	-11.7%	14
13-2099	Financial Specialists, All Other	4	156	141	-9.6%	11
15-1111	Computer and Information Research Scientists	5	6	6	0.0%	0
15-1121	Computer Systems Analysts	4	767	924	20.5%	293
15-1122	Information Security Analysts	4	87	109	25.3%	35
15-1131	Computer Programmers	4	401	471	17.5%	201
15-1132	Software Developers, Applications	4	707	946	33.8%	340
15-1133	Software Developers, Systems Software	4	301	271	-10.0%	16
15-1134	Web Developers	3	156	198	26.9%	67

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
15-1141	Database Administrators	4	191	233	22.0%	82
15-1142	Network and Computer Systems Administrators	4	609	555	-8.9%	51
15-1143	Computer Network Architects	4	116	143	23.3%	45
15-1151	Computer User Support Specialists	3	991	1,257	26.8%	443
15-1152	Computer Network Support Specialists	4	219	228	4.1%	52
15-1199	Computer Occupations, All Other	4	309	355	14.9%	101
15-2011	Actuaries	4	47	59	25.5%	27
15-2031	Operations Research Analysts	5	96	111	15.6%	38
15-2041	Statisticians	5	53	64	20.8%	29
17-1011	Architects, Except Landscape and Naval	4	65	82	26.2%	40
17-1012	Landscape Architects	4	21	27	28.6%	12
17-1021	Cartographers and Photogrammetrists	4	8	9	12.5%	2
17-1022	Surveyors	4	43	55	27.9%	23
17-2011	Aerospace Engineers	4	16	21	31.3%	9
17-2021	Agricultural Engineers	4	2	2	0.0%	1
17-2031	Biomedical Engineers	4	27	25	-7.4%	5
17-2041	Chemical Engineers	4	54	55	1.9%	16
17-2051	Civil Engineers	4	373	451	20.9%	180
17-2061	Computer Hardware Engineers	4	61	54	-11.5%	6
17-2071	Electrical Engineers	4	262	264	0.8%	67
17-2072	Electronics Engineers, Except Computer	4	70	61	-12.9%	8
17-2081	Environmental Engineers	5	95	105	10.5%	38
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	4	33	33	0.0%	10
17-2112	Industrial Engineers	4	414	421	1.7%	147
17-2131	Materials Engineers	4	37	46	24.3%	22
17-2141	Mechanical Engineers	4	394	414	5.1%	168
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	4	17	15	-11.8%	5
17-2161	Nuclear Engineers	4	165	190	15.2%	81
17-2171	Petroleum Engineers	4	7	9	28.6%	4
17-2199	Engineers, All Other	4	134	155	15.7%	48
17-3011	Architectural and Civil Drafters	4	147	173	17.7%	62
17-3012	Electrical and Electronics Drafters	3	42	35	-16.7%	1
17-3013	Mechanical Drafters	3	182	172	-5.5%	30
17-3019	Drafters, All Other	3	5	6	20.0%	2
17-3021	Aerospace Engineering and Operations Technicians	4	7	9	28.6%	3
17-3022	Civil Engineering Technicians	3	58	67	15.5%	23

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
17-3023	Electrical and Electronics Engineering Technicians	3	156	144	-7.7%	27
17-3024	Electro-Mechanical Technicians	3	7	6	-14.3%	1
17-3025	Environmental Engineering Technicians	4	31	36	16.1%	13
17-3026	Industrial Engineering Technicians	3	89	92	3.4%	25
17-3027	Mechanical Engineering Technicians	3	50	57	14.0%	19
17-3029	Engineering Technicians, Except Drafters, All Other	3	118	158	33.9%	70
17-3031	Surveying and Mapping Technicians	3	43	50	16.3%	17
19-1012	Food Scientists and Technologists	4	28	33	17.9%	15
19-1013	Soil and Plant Scientists	5	4	5	25.0%	2
19-1021	Biochemists and Biophysicists	5	5	5	0.0%	1
19-1022	Microbiologists	5	19	22	15.8%	10
19-1023	Zoologists and Wildlife Biologists	5	8	8	0.0%	2
19-1029	Biological Scientists, All Other	5	18	17	-5.6%	4
19-1031	Conservation Scientists	4	29	33	13.8%	13
19-1032	Foresters	4	25	28	12.0%	11
19-1041	Epidemiologists	5	7	7	0.0%	1
19-1042	Medical Scientists, Except Epidemiologists	5	72	81	12.5%	26
19-1099	Life Scientists, All Other	5	9	11	22.2%	4
19-2012	Physicists	5	8	7	-12.5%	1
19-2021	Atmospheric and Space Scientists	4	6	6	0.0%	1
19-2031	Chemists	4	113	126	11.5%	49
19-2032	Materials Scientists	5	16	16	0.0%	5
19-2041	Environmental Scientists and Specialists, Including Health	4	67	78	16.4%	33
19-2042	Geoscientists, Except Hydrologists and Geographers	4	27	29	7.4%	12
19-2043	Hydrologists	4	5	5	0.0%	1
19-2099	Physical Scientists, All Other	5	18	14	-22.2%	0
19-3011	Economists	5	17	23	35.3%	11
19-3022	Survey Researchers	5	85	88	3.5%	30
19-3031	Clinical, Counseling, and School Psychologists	5	330	355	7.6%	125
19-3039	Psychologists, All Other	5	21	24	14.3%	9
19-3041	Sociologists	5	3	3	0.0%	1
19-3051	Urban and Regional Planners	5	81	83	2.5%	40
19-3093	Historians	5	5	4	-20.0%	0
19-3099	Social Scientists and Related Workers, All Other	4	27	27	0.0%	6
19-4011	Agricultural and Food Science Technicians	3	26	23	-11.5%	6

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
19-4021	Biological Technicians	4	63	68	7.9%	25
19-4031	Chemical Technicians	3	117	128	9.4%	48
19-4041	Geological and Petroleum Technicians	4	13	16	23.1%	10
19-4051	Nuclear Technicians	3	140	162	15.7%	84
19-4061	Social Science Research Assistants	4	19	23	21.1%	12
19-4091	Environmental Science and Protection Technicians, Including Health	4	46	58	26.1%	32
19-4092	Forensic Science Technicians	4	9	9	0.0%	4
19-4093	Forest and Conservation Technicians	3	21	22	4.8%	11
19-4099	Life, Physical, and Social Science Technicians, All Other	3	85	108	27.1%	59
21-1011	Substance Abuse and Behavioral Disorder Counselors	5	609	696	14.3%	261
21-1012	Educational, Guidance, School, and Vocational Counselors	5	589	568	-3.6%	117
21-1013	Marriage and Family Therapists	5	78	122	56.4%	61
21-1014	Mental Health Counselors	5	851	1,017	19.5%	399
21-1015	Rehabilitation Counselors	5	453	539	19.0%	213
21-1019	Counselors, All Other	5	71	78	9.9%	23
21-1021	Child, Family, and School Social Workers	4	1,005	1,237	23.1%	467
21-1022	Healthcare Social Workers	5	496	670	35.1%	290
21-1023	Mental Health and Substance Abuse Social Workers	5	804	1,013	26.0%	436
21-1029	Social Workers, All Other	5	69	75	8.7%	21
21-1091	Health Educators	4	159	208	30.8%	93
21-1092	Probation Officers and Correctional Treatment Specialists	4	241	252	4.6%	89
21-1093	Social and Human Service Assistants	4	1,510	1,686	11.7%	627
21-1094	Community Health Workers	4	64	73	14.1%	25
21-1099	Community and Social Service Specialists, All Other	4	85	89	4.7%	25
21-2011	Clergy	5	117	138	17.9%	49
21-2021	Directors, Religious Activities and Education	4	103	121	17.5%	64
21-2099	Religious Workers, All Other	4	28	23	-17.9%	4
23-1011	Lawyers	5	735	786	6.9%	176
23-1012	Judicial Law Clerks	5	69	70	1.4%	15
23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers	5	43	43	0.0%	9
23-1022	Arbitrators, Mediators, and Conciliators	5	13	15	15.4%	4
23-1023	Judges, Magistrate Judges, and Magistrates	5	16	13	-18.8%	1
23-2011	Paralegals and Legal Assistants	3	298	349	17.1%	102

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
23-2091	Court Reporters	3	63	70	11.1%	24
23-2093	Title Examiners, Abstractors, and Searchers	3	134	160	19.4%	56
23-2099	Legal Support Workers, All Other	3	42	41	-2.4%	6
25-1011	Business Teachers, Postsecondary	5	187	199	6.4%	40
25-1021	Computer Science Teachers, Postsecondary	5	93	102	9.7%	22
25-1022	Mathematical Science Teachers, Postsecondary	5	125	122	-2.4%	16
25-1031	Architecture Teachers, Postsecondary	5	20	24	20.0%	6
25-1032	Engineering Teachers, Postsecondary	5	100	112	12.0%	28
25-1041	Agricultural Sciences Teachers, Postsecondary	5	14	11	-21.4%	0
25-1042	Biological Science Teachers, Postsecondary	5	142	134	-5.6%	14
25-1043	Forestry and Conservation Science Teachers, Postsecondary	5	5	4	-20.0%	0
25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	5	29	30	3.4%	5
25-1052	Chemistry Teachers, Postsecondary	5	60	62	3.3%	11
25-1053	Environmental Science Teachers, Postsecondary	5	11	10	-9.1%	1
25-1054	Physics Teachers, Postsecondary	5	39	43	10.3%	10
25-1061	Anthropology and Archeology Teachers, Postsecondary	5	12	10	-16.7%	0
25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	5	16	16	0.0%	3
25-1063	Economics Teachers, Postsecondary	5	43	44	2.3%	8
25-1064	Geography Teachers, Postsecondary	5	12	12	0.0%	2
25-1065	Political Science Teachers, Postsecondary	5	40	39	-2.5%	5
25-1066	Psychology Teachers, Postsecondary	5	96	94	-2.1%	14
25-1067	Sociology Teachers, Postsecondary	5	64	70	9.4%	16
25-1069	Social Sciences Teachers, Postsecondary, All Other	5	17	20	17.6%	5
25-1071	Health Specialties Teachers, Postsecondary	5	282	277	-1.8%	38
25-1072	Nursing Instructors and Teachers, Postsecondary	5	148	144	-2.7%	19
25-1081	Education Teachers, Postsecondary	5	135	125	-7.4%	11
25-1082	Library Science Teachers, Postsecondary	5	12	13	8.3%	3
25-1111	Criminal Justice and Law Enforcement Teachers, Postsecondary	5	24	22	-8.3%	2
25-1112	Law Teachers, Postsecondary	5	21	22	4.8%	4
25-1113	Social Work Teachers, Postsecondary	5	23	20	-13.0%	1
25-1121	Art, Drama, and Music Teachers, Postsecondary	5	184	208	13.0%	52
25-1122	Communications Teachers, Postsecondary	5	59	60	1.7%	10
25-1123	English Language and Literature Teachers, Postsecondary	5	194	181	-6.7%	18

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
25-1124	Foreign Language and Literature Teachers, Postsecondary	5	72	74	2.8%	13
25-1125	History Teachers, Postsecondary	5	59	59	0.0%	9
25-1126	Philosophy and Religion Teachers, Postsecondary	5	54	52	-3.7%	6
25-1191	Graduate Teaching Assistants	5	53	56	5.7%	11
25-1192	Home Economics Teachers, Postsecondary	5	4	3	-25.0%	0
25-1193	Recreation and Fitness Studies Teachers, Postsecondary	5	39	36	-7.7%	3
25-1194	Vocational Education Teachers, Postsecondary	3	339	346	2.1%	59
25-1199	Postsecondary Teachers, All Other	5	164	183	11.6%	44
25-2011	Preschool Teachers, Except Special Education	3	730	901	23.4%	380
25-2012	Kindergarten Teachers, Except Special Education	4	318	310	-2.5%	89
25-2021	Elementary School Teachers, Except Special Education	4	2,999	3,016	0.6%	772
25-2022	Middle School Teachers, Except Special and Career/Technical Education	4	1,295	1,490	15.1%	520
25-2023	Career/Technical Education Teachers, Middle School	4	34	40	17.6%	16
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	4	2,761	2,758	-0.1%	938
25-2032	Career/Technical Education Teachers, Secondary School	4	244	225	-7.8%	60
25-2051	Special Education Teachers, Preschool	4	35	40	14.3%	12
25-2052	Special Education Teachers, Kindergarten and Elementary School	4	580	616	6.2%	167
25-2053	Special Education Teachers, Middle School	4	203	209	3.0%	53
25-2054	Special Education Teachers, Secondary School	4	439	458	4.3%	125
25-2059	Special Education Teachers, All Other	4	14	16	14.3%	4
25-3011	Adult Basic and Secondary Education and Literacy Teachers and Instructors	4	74	71	-4.1%	12
25-3021	Self-Enrichment Education Teachers	3	255	237	-7.1%	36
25-3097	Teachers and Instructors, All Other, Except Substitute Teachers	3	181	205	13.3%	55
25-3098	Substitute Teachers	3	861	777	-9.8%	96
25-4011	Archivists	5	9	10	11.1%	2
25-4012	Curators	5	9	8	-11.1%	2
25-4013	Museum Technicians and Conservators	4	10	10	0.0%	3
25-4021	Librarians	5	250	242	-3.2%	54
25-4031	Library Technicians	4	133	127	-4.5%	69
25-9011	Audio-Visual and Multimedia Collections Specialists	4	10	11	10.0%	3
25-9021	Farm and Home Management Advisors	5	2	1	-50.0%	0

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
25-9031	Instructional Coordinators	5	174	169	-2.9%	11
25-9041	Teacher Assistants	3	2,403	2,514	4.6%	708
25-9099	Education, Training, and Library Workers, All Other	4	37	35	-5.4%	2
27-1011	Art Directors	4	41	46	12.2%	16
27-1012	Craft Artists	2	3	2	-33.3%	0
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	3	13	12	-7.7%	4
27-1014	Multimedia Artists and Animators	4	15	18	20.0%	6
27-1019	Artists and Related Workers, All Other	4	7	5	-28.6%	0
27-1021	Commercial and Industrial Designers	4	50	37	-26.0%	3
27-1022	Fashion Designers	3	19	18	-5.3%	5
27-1023	Floral Designers	2	87	66	-24.1%	24
27-1024	Graphic Designers	4	341	339	-0.6%	106
27-1025	Interior Designers	4	48	55	14.6%	26
27-1026	Merchandise Displayers and Window Trimmers	3	149	169	13.4%	63
27-1027	Set and Exhibit Designers	5	6	7	16.7%	2
27-2011	Actors	2	24	27	12.5%	12
27-2012	Producers and Directors	4	139	153	10.1%	75
27-2021	Athletes and Sports Competitors	2	39	47	20.5%	23
27-2022	Coaches and Scouts	4	309	290	-6.1%	79
27-2023	Umpires, Referees, and Other Sports Officials	3	14	14	0.0%	4
27-2031	Dancers	3	4	3	-25.0%	1
27-2032	Choreographers	4	4	4	0.0%	2
27-2041	Music Directors and Composers	3	54	43	-20.4%	9
27-2042	Musicians and Singers	3	43	39	-9.3%	12
27-2099	Entertainers and Performers, Sports and Related Workers, All Other	3	3	3	0.0%	0
27-3011	Radio and Television Announcers	3	99	100	1.0%	48
27-3012	Public Address System and Other Announcers	2	5	6	20.0%	2
27-3022	Reporters and Correspondents	4	79	58	-26.6%	21
27-3031	Public Relations Specialists	4	346	347	0.3%	54
27-3041	Editors	4	152	142	-6.6%	40
27-3042	Technical Writers	4	53	49	-7.5%	12
27-3043	Writers and Authors	4	61	59	-3.3%	13
27-3091	Interpreters and Translators	4	38	45	18.4%	12
27-3099	Media and Communication Workers, All Other	4	12	10	-16.7%	1
27-4011	Audio and Video Equipment Technicians	3	75	78	4.0%	20

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
27-4012	Broadcast Technicians	3	46	47	2.2%	13
27-4014	Sound Engineering Technicians	3	17	17	0.0%	4
27-4021	Photographers	3	81	73	-9.9%	16
27-4031	Camera Operators, Television, Video, and Motion Picture	3	25	25	0.0%	3
27-4032	Film and Video Editors	3	16	15	-6.3%	2
27-4099	Media and Communication Equipment Workers, All Other	3	9	7	-22.2%	0
29-1011	Chiropractors	5	66	97	47.0%	46
29-1021	Dentists, General	5	184	195	6.0%	58
29-1022	Oral and Maxillofacial Surgeons	5	7	7	0.0%	2
29-1023	Orthodontists	5	5	6	20.0%	2
29-1029	Dentists, All Other Specialists	5	5	5	0.0%	1
29-1031	Dietitians and Nutritionists	5	206	235	14.1%	56
29-1041	Optometrists	5	65	87	33.8%	44
29-1051	Pharmacists	5	690	761	10.3%	253
29-1061	Anesthesiologists	5	66	69	4.5%	21
29-1062	Family and General Practitioners	5	318	357	12.3%	128
29-1063	Internists, General	5	48	46	-4.2%	9
29-1064	Obstetricians and Gynecologists	5	15	19	26.7%	7
29-1065	Pediatricians, General	5	19	23	21.1%	9
29-1066	Psychiatrists	5	70	75	7.1%	24
29-1067	Surgeons	5	103	132	28.2%	56
29-1069	Physicians and Surgeons, All Other	5	706	747	5.8%	227
29-1071	Physician Assistants	5	246	271	10.2%	73
29-1081	Podiatrists	5	25	49	96.0%	34
29-1122	Occupational Therapists	5	348	475	36.5%	182
29-1123	Physical Therapists	5	584	811	38.9%	393
29-1124	Radiation Therapists	3	52	56	7.7%	15
29-1125	Recreational Therapists	4	94	91	-3.2%	20
29-1126	Respiratory Therapists	3	298	368	23.5%	113
29-1127	Speech-Language Pathologists	5	262	349	33.2%	126
29-1128	Exercise Physiologists	5	18	24	33.3%	8
29-1129	Therapists, All Other	4	27	39	44.4%	15
29-1131	Veterinarians	5	94	128	36.2%	68
29-1141	Registered Nurses	3	7,801	9,742	24.9%	3,521
29-1151	Nurse Anesthetists	5	96	106	10.4%	30
29-1161	Nurse Midwives	5	9	13	44.4%	5

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
29-1171	Nurse Practitioners	5	198	251	26.8%	89
29-1181	Audiologists	5	27	35	29.6%	14
29-1199	Health Diagnosing and Treating Practitioners, All Other	5	26	25	-3.8%	4
29-2011	Medical and Clinical Laboratory Technologists	4	423	486	14.9%	191
29-2012	Medical and Clinical Laboratory Technicians	3	513	613	19.5%	246
29-2021	Dental Hygienists	3	458	539	17.7%	205
29-2031	Cardiovascular Technologists and Technicians	3	166	212	27.7%	71
29-2032	Diagnostic Medical Sonographers	3	129	157	21.7%	46
29-2033	Nuclear Medicine Technologists	3	60	70	16.7%	19
29-2034	Radiologic Technologists	3	523	661	26.4%	219
29-2035	Magnetic Resonance Imaging Technologists	3	71	83	16.9%	24
29-2041	Emergency Medical Technicians and Paramedics	3	696	800	14.9%	333
29-2051	Dietetic Technicians	2	194	272	40.2%	101
29-2052	Pharmacy Technicians	3	788	882	11.9%	185
29-2053	Psychiatric Technicians	3	129	132	2.3%	29
29-2054	Respiratory Therapy Technicians	3	30	28	-6.7%	1
29-2055	Surgical Technologists	3	228	312	36.8%	106
29-2056	Veterinary Technologists and Technicians	3	141	191	35.5%	65
29-2057	Ophthalmic Medical Technicians	3	48	65	35.4%	23
29-2061	Licensed Practical and Licensed Vocational Nurses	3	2,326	3,021	29.9%	1,309
29-2071	Medical Records and Health Information Technicians	3	443	550	24.2%	227
29-2081	Opticians, Dispensing	3	153	220	43.8%	120
29-2091	Orthotists and Prosthetists	5	14	16	14.3%	3
29-2092	Hearing Aid Specialists	3	8	8	0.0%	2
29-2099	Health Technologists and Technicians, All Other	3	173	241	39.3%	82
29-9011	Occupational Health and Safety Specialists	4	114	122	7.0%	42
29-9012	Occupational Health and Safety Technicians	3	23	26	13.0%	9
29-9091	Athletic Trainers	5	61	83	36.1%	40
29-9099	Healthcare Practitioners and Technical Workers, All Other	4	47	40	-14.9%	4
31-1011	Home Health Aides	2	3,186	4,328	35.8%	2,018
31-1013	Psychiatric Aides	2	167	159	-4.8%	35
31-1014	Nursing Assistants	2	4,926	5,914	20.1%	1,983
31-1015	Orderlies	2	140	172	22.9%	59
31-2011	Occupational Therapy Assistants	3	137	198	44.5%	104
31-2012	Occupational Therapy Aides	3	31	45	45.2%	23

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
31-2021	Physical Therapist Assistants	3	247	366	48.2%	185
31-2022	Physical Therapist Aides	2	113	156	38.1%	70
31-9011	Massage Therapists	3	92	134	45.7%	51
31-9091	Dental Assistants	3	622	680	9.3%	195
31-9092	Medical Assistants	3	1,195	1,489	24.6%	534
31-9093	Medical Equipment Preparers	2	116	149	28.4%	54
31-9094	Medical Transcriptionists	3	230	209	-9.1%	42
31-9095	Pharmacy Aides	2	81	63	-22.2%	1
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	3	84	84	0.0%	18
31-9097	Phlebotomists	3	277	357	28.9%	144
31-9099	Healthcare Support Workers, All Other	3	74	66	-10.8%	4
33-1011	First-Line Supervisors of Correctional Officers	3	78	83	6.4%	35
33-1012	First-Line Supervisors of Police and Detectives	3	169	192	13.6%	79
33-1021	First-Line Supervisors of Fire Fighting and Prevention Workers	3	47	54	14.9%	28
33-1099	First-Line Supervisors of Protective Service Workers, All Other	3	87	100	14.9%	41
33-2011	Firefighters	3	289	291	0.7%	89
33-2021	Fire Inspectors and Investigators	3	14	12	-14.3%	2
33-3011	Bailiffs	2	12	10	-16.7%	1
33-3012	Correctional Officers and Jailers	3	959	875	-8.8%	213
33-3021	Detectives and Criminal Investigators	3	160	156	-2.5%	37
33-3041	Parking Enforcement Workers	2	25	28	12.0%	13
33-3051	Police and Sheriff's Patrol Officers	3	1,608	1,565	-2.7%	534
33-3052	Transit and Railroad Police	3	5	4	-20.0%	0
33-9011	Animal Control Workers	2	11	11	0.0%	3
33-9021	Private Detectives and Investigators	3	62	57	-8.1%	19
33-9031	Gaming Surveillance Officers and Gaming Investigators	2	1	1	0.0%	0
33-9032	Security Guards	2	1,684	2,017	19.8%	805
33-9091	Crossing Guards	1	226	174	-23.0%	6
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	2	266	275	3.4%	202
33-9093	Transportation Security Screeners	2	75	71	-5.3%	17
33-9099	Protective Service Workers, All Other	2	208	251	20.7%	192
35-1011	Chefs and Head Cooks	3	236	243	3.0%	54
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	2	1,528	1,663	8.8%	604

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
35-2011	Cooks, Fast Food	1	443	395	-10.8%	49
35-2012	Cooks, Institution and Cafeteria	2	1,027	1,041	1.4%	228
35-2014	Cooks, Restaurant	2	2,047	2,590	26.5%	1,019
35-2015	Cooks, Short Order	1	369	432	17.1%	154
35-2021	Food Preparation Workers	1	1,959	1,766	-9.9%	426
35-3011	Bartenders	2	1,413	1,398	-1.1%	581
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	1	7,027	7,916	12.7%	3,908
35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	1	599	579	-3.3%	366
35-3031	Waiters and Waitresses	1	4,887	5,326	9.0%	3,025
35-3041	Food Servers, Nonrestaurant	1	693	834	20.3%	365
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	1	773	793	2.6%	394
35-9021	Dishwashers	1	1,097	1,036	-5.6%	472
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	1	749	785	4.8%	641
35-9099	Food Preparation and Serving Related Workers, All Other	1	63	76	20.6%	50
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	2	304	324	6.6%	104
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	3	113	112	-0.9%	12
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2	4,332	4,454	2.8%	1,116
37-2012	Maids and Housekeeping Cleaners	2	2,046	2,332	14.0%	808
37-2019	Building Cleaning Workers, All Other	2	14	12	-14.3%	1
37-2021	Pest Control Workers	2	64	73	14.1%	29
37-3011	Landscaping and Groundskeeping Workers	1	1,354	1,431	5.7%	472
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	2	20	18	-10.0%	3
37-3013	Tree Trimmers and Pruners	2	110	145	31.8%	73
37-3019	Grounds Maintenance Workers, All Other	2	5	4	-20.0%	0
39-1011	Gaming Supervisors	2	2	2	0.0%	1
39-1021	First-Line Supervisors of Personal Service Workers	3	408	506	24.0%	180
39-2011	Animal Trainers	2	8	9	12.5%	5
39-2021	Nonfarm Animal Caretakers	1	169	205	21.3%	62
39-3011	Gaming Dealers	2	12	12	0.0%	6
39-3012	Gaming and Sports Book Writers and Runners	2	2	2	0.0%	1
39-3021	Motion Picture Projectionists	2	10	11	10.0%	7
39-3031	Ushers, Lobby Attendants, and Ticket Takers	2	204	234	14.7%	156

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
39-3091	Amusement and Recreation Attendants	1	688	708	2.9%	411
39-3092	Costume Attendants	2	2	3	50.0%	2
39-3093	Locker Room, Coatom, and Dressing Room Attendants	2	33	30	-9.1%	15
39-3099	Entertainment Attendants and Related Workers, All Other	2	22	21	-4.5%	12
39-4021	Funeral Attendants	2	106	129	21.7%	57
39-4031	Morticians, Undertakers, and Funeral Directors	3	64	82	28.1%	37
39-5011	Barbers	3	23	25	8.7%	10
39-5012	Hairdressers, Hairstylists, and Cosmetologists	3	815	972	19.3%	388
39-5092	Manicurists and Pedicurists	2	109	127	16.5%	29
39-5093	Shampooers	2	47	53	12.8%	14
39-5094	Skincare Specialists	3	39	40	2.6%	3
39-6011	Baggage Porters and Bellhops	2	45	52	15.6%	23
39-6012	Concierges	3	30	38	26.7%	16
39-7011	Tour Guides and Escorts	3	37	33	-10.8%	16
39-7012	Travel Guides	3	4	3	-25.0%	1
39-9011	Childcare Workers	3	1,143	1,079	-5.6%	277
39-9021	Personal Care Aides	2	3,711	5,769	55.5%	2,553
39-9031	Fitness Trainers and Aerobics Instructors	3	439	495	12.8%	133
39-9032	Recreation Workers	4	689	896	30.0%	289
39-9041	Residential Advisors	3	466	613	31.5%	381
39-9099	Personal Care and Service Workers, All Other	3	61	48	-21.3%	4
41-1011	First-Line Supervisors of Retail Sales Workers	2	2,302	2,321	0.8%	538
41-1012	First-Line Supervisors of Non-Retail Sales Workers	4	403	367	-8.9%	25
41-2011	Cashiers	1	8,765	8,032	-8.4%	3,389
41-2021	Counter and Rental Clerks	1	669	691	3.3%	219
41-2022	Parts Salespersons	2	538	590	9.7%	213
41-2031	Retail Salespersons	2	9,415	9,712	3.2%	3,715
41-3011	Advertising Sales Agents	3	245	232	-5.3%	87
41-3021	Insurance Sales Agents	4	636	680	6.9%	237
41-3031	Securities, Commodities, and Financial Services Sales Agents	4	329	304	-7.6%	67
41-3041	Travel Agents	3	113	70	-38.1%	15
41-3099	Sales Representatives, Services, All Other	4	1,118	1,390	24.3%	593
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	4	345	301	-12.8%	33
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	4	3,380	3,180	-5.9%	585

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
41-9011	Demonstrators and Product Promoters	2	78	74	-5.1%	20
41-9012	Models	1	4	4	0.0%	2
41-9021	Real Estate Brokers	4	26	24	-7.7%	2
41-9022	Real Estate Sales Agents	3	192	192	0.0%	32
41-9031	Sales Engineers	4	98	106	8.2%	29
41-9041	Telemarketers	2	506	453	-10.5%	189
41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	2	5	4	-20.0%	0
41-9099	Sales and Related Workers, All Other	3	89	74	-16.9%	4
43-1011	First-Line Supervisors of Office and Administrative Support Workers	3	2,684	2,854	6.3%	813
43-2011	Switchboard Operators, Including Answering Service	2	298	253	-15.1%	61
43-2021	Telephone Operators	2	10	6	-40.0%	0
43-3011	Bill and Account Collectors	2	702	741	5.6%	275
43-3021	Billing and Posting Clerks	2	1,277	1,452	13.7%	434
43-3031	Bookkeeping, Accounting, and Auditing Clerks	3	3,067	3,250	6.0%	486
43-3041	Gaming Cage Workers	2	8	10	25.0%	6
43-3051	Payroll and Timekeeping Clerks	2	398	401	0.8%	99
43-3061	Procurement Clerks	3	145	122	-15.9%	33
43-3071	Tellers	2	960	790	-17.7%	393
43-3099	Financial Clerks, All Other	2	49	53	8.2%	21
43-4011	Brokerage Clerks	3	69	76	10.1%	33
43-4021	Correspondence Clerks	2	28	31	10.7%	12
43-4031	Court, Municipal, and License Clerks	3	142	149	4.9%	31
43-4041	Credit Authorizers, Checkers, and Clerks	3	64	46	-28.1%	1
43-4051	Customer Service Representatives	2	5,388	6,072	12.7%	2,312
43-4061	Eligibility Interviewers, Government Programs	3	508	478	-5.9%	80
43-4071	File Clerks	2	241	202	-16.2%	32
43-4081	Hotel, Motel, and Resort Desk Clerks	2	483	542	12.2%	353
43-4111	Interviewers, Except Eligibility and Loan	2	471	544	15.5%	177
43-4121	Library Assistants, Clerical	2	207	202	-2.4%	91
43-4131	Loan Interviewers and Clerks	3	377	433	14.9%	112
43-4141	New Accounts Clerks	2	45	38	-15.6%	11
43-4151	Order Clerks	2	619	635	2.6%	237
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	3	332	296	-10.8%	63
43-4171	Receptionists and Information Clerks	2	1,849	1,878	1.6%	540
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	2	46	49	6.5%	17

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
43-4199	Information and Record Clerks, All Other	2	176	125	-29.0%	4
43-5011	Cargo and Freight Agents	2	43	41	-4.7%	13
43-5021	Couriers and Messengers	2	116	101	-12.9%	12
43-5031	Police, Fire, and Ambulance Dispatchers	2	182	191	4.9%	66
43-5032	Dispatchers, Except Police, Fire, and Ambulance	2	416	456	9.6%	170
43-5041	Meter Readers, Utilities	2	118	115	-2.5%	46
43-5051	Postal Service Clerks	2	160	120	-25.0%	30
43-5052	Postal Service Mail Carriers	2	634	484	-23.7%	215
43-5053	Postal Service Mail Sorters, Processors, and Processing Machine Operators	2	295	224	-24.1%	42
43-5061	Production, Planning, and Expediting Clerks	3	759	787	3.7%	242
43-5071	Shipping, Receiving, and Traffic Clerks	2	1,927	1,951	1.2%	599
43-5081	Stock Clerks and Order Fillers	2	5,253	5,426	3.3%	2,008
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	2	200	251	25.5%	103
43-6011	Executive Secretaries and Executive Administrative Assistants	3	964	904	-6.2%	96
43-6012	Legal Secretaries	3	320	349	9.1%	93
43-6013	Medical Secretaries	3	1,106	1,442	30.4%	466
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	3	4,957	5,524	11.4%	1,211
43-9011	Computer Operators	3	205	174	-15.1%	24
43-9021	Data Entry Keyers	2	548	509	-7.1%	152
43-9022	Word Processors and Typists	2	396	340	-14.1%	56
43-9031	Desktop Publishers	3	31	28	-9.7%	6
43-9041	Insurance Claims and Policy Processing Clerks	3	439	503	14.6%	207
43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service	2	288	252	-12.5%	75
43-9061	Office Clerks, General	2	6,361	6,313	-0.8%	1,417
43-9071	Office Machine Operators, Except Computer	2	209	182	-12.9%	56
43-9081	Proofreaders and Copy Markers	4	24	21	-12.5%	4
43-9111	Statistical Assistants	4	21	21	0.0%	6
43-9199	Office and Administrative Support Workers, All Other	3	201	229	13.9%	87
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	3	30	31	3.3%	9
45-2011	Agricultural Inspectors	2	21	19	-9.5%	6
45-2041	Graders and Sorters, Agricultural Products	1	24	26	8.3%	8
45-2091	Agricultural Equipment Operators	2	28	31	10.7%	13
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	1	136	118	-13.2%	37

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	1	89	95	6.7%	43
45-4011	Forest and Conservation Workers	3	10	11	10.0%	2
45-4021	Fallers	1	5	4	-20.0%	0
45-4022	Logging Equipment Operators	1	40	57	42.5%	33
45-4023	Log Graders and Scalers	3	7	9	28.6%	3
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	3	876	1,048	19.6%	279
47-2011	Boilermakers	3	42	56	33.3%	36
47-2021	Brickmasons and Blockmasons	2	122	146	19.7%	37
47-2022	Stonemasons	3	16	17	6.3%	1
47-2031	Carpenters	2	1,607	1,868	16.2%	498
47-2041	Carpet Installers	2	60	70	16.7%	25
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	2	13	11	-15.4%	1
47-2044	Tile and Marble Setters	2	30	35	16.7%	10
47-2051	Cement Masons and Concrete Finishers	2	249	289	16.1%	71
47-2053	Terrazzo Workers and Finishers	2	3	2	-33.3%	0
47-2061	Construction Laborers	2	1,630	2,072	27.1%	836
47-2071	Paving, Surfacing, and Tamping Equipment Operators	2	117	130	11.1%	38
47-2072	Pile-Driver Operators	2	3	3	0.0%	1
47-2073	Operating Engineers and Other Construction Equipment Operators	2	1,060	1,081	2.0%	328
47-2081	Drywall and Ceiling Tile Installers	2	52	47	-9.6%	6
47-2082	Tapers	2	15	17	13.3%	4
47-2111	Electricians	3	1,059	1,198	13.1%	427
47-2121	Glaziers	2	58	64	10.3%	25
47-2131	Insulation Workers, Floor, Ceiling, and Wall	2	20	22	10.0%	6
47-2132	Insulation Workers, Mechanical	2	18	23	27.8%	8
47-2141	Painters, Construction and Maintenance	2	185	196	5.9%	50
47-2142	Paperhangers	2	5	4	-20.0%	0
47-2151	Pipelayers	2	73	75	2.7%	21
47-2152	Plumbers, Pipefitters, and Steamfitters	3	704	747	6.1%	171
47-2161	Plasterers and Stucco Masons	1	13	17	30.8%	4
47-2171	Reinforcing Iron and Rebar Workers	2	14	15	7.1%	3
47-2181	Roofers	2	168	177	5.4%	73
47-2211	Sheet Metal Workers	2	234	237	1.3%	52
47-2221	Structural Iron and Steel Workers	2	86	99	15.1%	46
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	2	38	44	15.8%	10

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
47-3012	Helpers--Carpenters	2	40	64	60.0%	29
47-3013	Helpers--Electricians	2	64	91	42.2%	39
47-3014	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	1	6	6	0.0%	1
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	2	52	56	7.7%	12
47-3016	Helpers--Roofers	2	16	23	43.8%	11
47-3019	Helpers, Construction Trades, All Other	2	13	16	23.1%	4
47-4011	Construction and Building Inspectors	3	184	219	19.0%	86
47-4021	Elevator Installers and Repairers	3	16	14	-12.5%	4
47-4031	Fence Erectors	2	39	35	-10.3%	6
47-4041	Hazardous Materials Removal Workers	3	89	114	28.1%	57
47-4051	Highway Maintenance Workers	2	653	657	0.6%	130
47-4061	Rail-Track Laying and Maintenance Equipment Operators	2	22	19	-13.6%	2
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	1	63	71	12.7%	28
47-4099	Construction and Related Workers, All Other	3	22	21	-4.5%	2
47-5011	Derrick Operators, Oil and Gas	1	12	13	8.3%	7
47-5012	Rotary Drill Operators, Oil and Gas	2	41	47	14.6%	36
47-5013	Service Unit Operators, Oil, Gas, and Mining	2	30	47	56.7%	36
47-5021	Earth Drillers, Except Oil and Gas	2	54	66	22.2%	36
47-5031	Explosives Workers, Ordnance Handling Experts, and Blasters	2	14	16	14.3%	6
47-5041	Continuous Mining Machine Operators	1	62	51	-17.7%	18
47-5042	Mine Cutting and Channeling Machine Operators	2	53	43	-18.9%	11
47-5049	Mining Machine Operators, All Other	2	16	7	-56.3%	1
47-5051	Rock Splitters, Quarry	1	43	49	14.0%	22
47-5061	Roof Bolters, Mining	2	68	55	-19.1%	21
47-5071	Roustabouts, Oil and Gas	1	42	52	23.8%	29
47-5081	Helpers--Extraction Workers	2	81	76	-6.2%	36
47-5099	Extraction Workers, All Other	2	5	5	0.0%	1
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	3	863	955	10.7%	338
49-2011	Computer, Automated Teller, and Office Machine Repairers	3	198	230	16.2%	95
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairers	3	12	14	16.7%	3
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	3	167	154	-7.8%	30
49-2091	Avionics Technicians	3	21	24	14.3%	10
49-2092	Electric Motor, Power Tool, and Related Repairers	3	21	21	0.0%	6

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49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	3	10	9	-10.0%	1
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	3	175	152	-13.1%	26
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	3	94	91	-3.2%	24
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	3	6	8	33.3%	3
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	3	30	30	0.0%	15
49-2098	Security and Fire Alarm Systems Installers	3	104	124	19.2%	45
49-3011	Aircraft Mechanics and Service Technicians	3	48	47	-2.1%	19
49-3021	Automotive Body and Related Repairers	2	336	392	16.7%	144
49-3022	Automotive Glass Installers and Repairers	2	45	51	13.3%	21
49-3023	Automotive Service Technicians and Mechanics	3	1,739	1,887	8.5%	653
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	3	839	1,017	21.2%	391
49-3041	Farm Equipment Mechanics and Service Technicians	3	46	39	-15.2%	10
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	3	203	208	2.5%	75
49-3043	Rail Car Repairers	2	11	6	-45.5%	0
49-3051	Motorboat Mechanics and Service Technicians	3	12	11	-8.3%	2
49-3052	Motorcycle Mechanics	3	59	68	15.3%	30
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	2	81	90	11.1%	30
49-3091	Bicycle Repairers	2	14	12	-14.3%	4
49-3092	Recreational Vehicle Service Technicians	2	20	17	-15.0%	5
49-3093	Tire Repairers and Changers	2	163	153	-6.1%	55
49-9011	Mechanical Door Repairers	2	17	16	-5.9%	6
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	3	75	87	16.0%	40
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	3	630	717	13.8%	279
49-9031	Home Appliance Repairers	3	45	42	-6.7%	17
49-9041	Industrial Machinery Mechanics	3	968	1,069	10.4%	417
49-9043	Maintenance Workers, Machinery	3	391	426	9.0%	105
49-9044	Millwrights	3	65	89	36.9%	40
49-9045	Refractory Materials Repairers, Except Brickmasons	2	7	8	14.3%	4
49-9051	Electrical Power-Line Installers and Repairers	3	333	393	18.0%	204
49-9052	Telecommunications Line Installers and Repairers	2	282	310	9.9%	140
49-9062	Medical Equipment Repairers	3	145	191	31.7%	97
49-9063	Musical Instrument Repairers and Tuners	3	14	13	-7.1%	5

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
49-9064	Watch Repairers	3	1	1	0.0%	0
49-9069	Precision Instrument and Equipment Repairers, All Other	3	14	14	0.0%	4
49-9071	Maintenance and Repair Workers, General	3	3,350	3,600	7.5%	988
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	2	113	109	-3.5%	26
49-9092	Commercial Divers	3	16	14	-12.5%	5
49-9094	Locksmiths and Safe Repairers	2	13	11	-15.4%	2
49-9095	Manufactured Building and Mobile Home Installers	2	8	10	25.0%	5
49-9096	Riggers	2	15	19	26.7%	8
49-9098	Helpers--Installation, Maintenance, and Repair Workers	2	234	237	1.3%	77
49-9099	Installation, Maintenance, and Repair Workers, All Other	2	153	180	17.6%	51
51-1011	First-Line Supervisors of Production and Operating Workers	2	1,981	2,076	4.8%	493
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	2	90	93	3.3%	32
51-2021	Coil Winders, Tapers, and Finishers	2	13	12	-7.7%	2
51-2022	Electrical and Electronic Equipment Assemblers	2	226	235	4.0%	63
51-2023	Electromechanical Equipment Assemblers	2	69	57	-17.4%	6
51-2031	Engine and Other Machine Assemblers	2	52	46	-11.5%	13
51-2041	Structural Metal Fabricators and Fitters	3	319	352	10.3%	191
51-2091	Fiberglass Laminators and Fabricators	2	57	64	12.3%	24
51-2092	Team Assemblers	2	2,736	2,880	5.3%	779
51-2099	Assemblers and Fabricators, All Other	2	335	455	35.8%	182
51-3011	Bakers	2	745	726	-2.6%	218
51-3021	Butchers and Meat Cutters	2	431	375	-13.0%	72
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	1	169	132	-21.9%	14
51-3023	Slaughterers and Meat Packers	1	246	228	-7.3%	74
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	2	43	44	2.3%	16
51-3092	Food Batchmakers	2	646	639	-1.1%	266
51-3093	Food Cooking Machine Operators and Tenders	2	167	180	7.8%	67
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	3	433	554	27.9%	272
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	3	48	44	-8.3%	11
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	2	536	529	-1.3%	187
51-4022	Forging Machine Setters, Operators, and Tenders, Metal and Plastic	2	123	122	-0.8%	43

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	2	194	166	-14.4%	35
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	2	664	670	0.9%	134
51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	54	43	-20.4%	10
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	273	279	2.2%	113
51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	113	116	2.7%	44
51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	3	69	74	7.2%	30
51-4041	Machinists	3	912	1,012	11.0%	368
51-4051	Metal-Refining Furnace Operators and Tenders	2	102	102	0.0%	31
51-4052	Pourers and Casters, Metal	2	81	77	-4.9%	28
51-4061	Model Makers, Metal and Plastic	3	12	10	-16.7%	0
51-4062	Patternmakers, Metal and Plastic	3	22	24	9.1%	11
51-4071	Foundry Mold and Coremakers	2	49	50	2.0%	16
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	2	559	536	-4.1%	119
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	563	590	4.8%	225
51-4111	Tool and Die Makers	3	223	233	4.5%	52
51-4121	Welders, Cutters, Solderers, and Brazers	3	914	1,091	19.4%	475
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	2	111	121	9.0%	54
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	2	74	69	-6.8%	18
51-4192	Layout Workers, Metal and Plastic	2	19	20	5.3%	5
51-4193	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	2	85	84	-1.2%	28
51-4194	Tool Grinders, Filers, and Sharpeners	2	22	19	-13.6%	3
51-4199	Metal Workers and Plastic Workers, All Other	2	54	70	29.6%	28
51-5111	Prepress Technicians and Workers	3	106	70	-34.0%	10
51-5112	Printing Press Operators	3	498	388	-22.1%	53
51-5113	Print Binding and Finishing Workers	2	143	110	-23.1%	17
51-6011	Laundry and Dry-Cleaning Workers	1	426	495	16.2%	222
51-6021	Pressers, Textile, Garment, and Related Materials	1	52	53	1.9%	13
51-6031	Sewing Machine Operators	1	778	635	-18.4%	228
51-6041	Shoe and Leather Workers and Repairers	2	5	6	20.0%	5
51-6042	Shoe Machine Operators and Tenders	2	44	52	18.2%	55
51-6051	Sewers, Hand	2	224	194	-13.4%	25

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
51-6052	Tailors, Dressmakers, and Custom Sewers	3	38	36	-5.3%	10
51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders	2	65	61	-6.2%	47
51-6062	Textile Cutting Machine Setters, Operators, and Tenders	2	248	210	-15.3%	111
51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders	2	325	165	-49.2%	74
51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	2	193	130	-32.6%	54
51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	2	74	32	-56.8%	0
51-6092	Fabric and Apparel Patternmakers	3	15	12	-20.0%	1
51-6093	Upholsterers	2	68	61	-10.3%	27
51-6099	Textile, Apparel, and Furnishings Workers, All Other	2	80	82	2.5%	16
51-7011	Cabinetmakers and Bench Carpenters	2	546	488	-10.6%	170
51-7021	Furniture Finishers	1	136	156	14.7%	99
51-7031	Model Makers, Wood	3	20	23	15.0%	7
51-7032	Patternmakers, Wood	3	3	4	33.3%	1
51-7041	Sawing Machine Setters, Operators, and Tenders, Wood	2	441	626	42.0%	384
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	2	635	874	37.6%	384
51-7099	Woodworkers, All Other	2	9	9	0.0%	1
51-8011	Nuclear Power Reactor Operators	3	43	47	9.3%	21
51-8012	Power Distributors and Dispatchers	3	80	87	8.8%	38
51-8013	Power Plant Operators	2	247	247	0.0%	115
51-8021	Stationary Engineers and Boiler Operators	3	183	232	26.8%	128
51-8031	Water and Wastewater Treatment Plant and System Operators	3	394	428	8.6%	200
51-8091	Chemical Plant and System Operators	2	108	103	-4.6%	61
51-8092	Gas Plant Operators	3	81	83	2.5%	47
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	2	50	53	6.0%	30
51-8099	Plant and System Operators, All Other	2	19	18	-5.3%	7
51-9011	Chemical Equipment Operators and Tenders	2	197	214	8.6%	123
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	2	116	132	13.8%	69
51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	2	139	157	12.9%	75
51-9022	Grinding and Polishing Workers, Hand	1	84	88	4.8%	35
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	2	486	540	11.1%	243
51-9031	Cutters and Trimmers, Hand	2	23	17	-26.1%	1

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders	2	221	183	-17.2%	24
51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	2	238	231	-2.9%	87
51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	2	48	45	-6.3%	18
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	2	1,353	1,408	4.1%	406
51-9071	Jewelers and Precious Stone and Metal Workers	3	22	18	-18.2%	3
51-9081	Dental Laboratory Technicians	2	60	62	3.3%	35
51-9082	Medical Appliance Technicians	3	55	45	-18.2%	17
51-9083	Ophthalmic Laboratory Technicians	2	55	52	-5.5%	21
51-9111	Packaging and Filling Machine Operators and Tenders	2	1,389	1,424	2.5%	459
51-9121	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	2	272	323	18.8%	122
51-9122	Painters, Transportation Equipment	2	84	87	3.6%	27
51-9123	Painting, Coating, and Decorating Workers	2	50	43	-14.0%	8
51-9141	Semiconductor Processors	2	14	15	7.1%	7
51-9151	Photographic Process Workers and Processing Machine Operators	2	52	33	-36.5%	3
51-9191	Adhesive Bonding Machine Operators and Tenders	2	46	50	8.7%	19
51-9192	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	2	45	50	11.1%	18
51-9193	Cooling and Freezing Equipment Operators and Tenders	2	48	48	0.0%	17
51-9194	Etchers and Engravers	2	17	17	0.0%	6
51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	2	156	161	3.2%	77
51-9196	Paper Goods Machine Setters, Operators, and Tenders	2	762	802	5.2%	217
51-9197	Tire Builders	2	17	21	23.5%	11
51-9198	Helpers--Production Workers	2	1,799	1,810	0.6%	470
51-9199	Production Workers, All Other	2	145	143	-1.4%	35
53-1011	Aircraft Cargo Handling Supervisors	2	9	10	11.1%	3
53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	2	558	677	21.3%	294
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	2	640	752	17.5%	303
53-2012	Commercial Pilots	3	25	29	16.0%	14
53-2021	Air Traffic Controllers	3	25	24	-4.0%	11
53-2022	Airfield Operations Specialists	3	4	5	25.0%	3
53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	2	93	119	28.0%	46

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
53-3021	Bus Drivers, Transit and Intercity	2	185	217	17.3%	83
53-3022	Bus Drivers, School or Special Client	2	1,635	1,741	6.5%	519
53-3031	Driver/Sales Workers	2	1,168	1,201	2.8%	256
53-3032	Heavy and Tractor-Trailer Truck Drivers	2	5,796	6,674	15.1%	2,098
53-3033	Light Truck or Delivery Services Drivers	2	1,917	1,861	-2.9%	308
53-3041	Taxi Drivers and Chauffeurs	1	381	398	4.5%	94
53-3099	Motor Vehicle Operators, All Other	2	46	55	19.6%	20
53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers	2	10	7	-30.0%	0
53-6011	Bridge and Lock Tenders	1	7	2	-71.4%	1
53-6021	Parking Lot Attendants	2	204	246	20.6%	161
53-6031	Automotive and Watercraft Service Attendants	1	134	144	7.5%	52
53-6041	Traffic Technicians	3	4	4	0.0%	2
53-6051	Transportation Inspectors	3	16	15	-6.3%	5
53-6061	Transportation Attendants, Except Flight Attendants	2	59	56	-5.1%	12
53-6099	Transportation Workers, All Other	2	16	18	12.5%	9
53-7011	Conveyor Operators and Tenders	2	130	129	-0.8%	47
53-7021	Crane and Tower Operators	3	83	112	34.9%	61
53-7032	Excavating and Loading Machine and Dragline Operators	2	140	142	1.4%	24
53-7033	Loading Machine Operators, Underground Mining	2	19	15	-21.1%	0
53-7051	Industrial Truck and Tractor Operators	2	3,108	3,748	20.6%	1,660
53-7061	Cleaners of Vehicles and Equipment	2	650	692	6.5%	253
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	2	9,341	12,022	28.7%	6,047
53-7063	Machine Feeders and Offbearers	2	630	608	-3.5%	141
53-7064	Packers and Packagers, Hand	2	2,731	3,044	11.5%	1,173
53-7071	Gas Compressor and Gas Pumping Station Operators	2	22	27	22.7%	18
53-7072	Pump Operators, Except Wellhead Pumpers	2	34	37	8.8%	22
53-7073	Wellhead Pumpers	2	9	12	33.3%	9
53-7081	Refuse and Recyclable Material Collectors	2	328	345	5.2%	123
53-7111	Mine Shuttle Car Operators	2	31	31	0.0%	15
53-7121	Tank Car, Truck, and Ship Loaders	2	41	40	-2.4%	15
53-7199	Material Moving Workers, All Other	2	25	36	44.0%	19

Source: Bureau of Labor Statistics, Occupational Employment Statistics (OES), O*NET OnLine, Pennsylvania Department of Labor & Industry, Oxford Economics Projections

ABOUT THE STATE SYSTEM'S GAP ANALYSIS PROJECT

The Workforce Characteristics Report was produced through a multi-organization collaboration that consisted of Pennsylvania's State System of Higher Education Office of the Chancellor, Oxford Economics USA Inc., and Georgetown University's Center on Education and the Workforce. Oxford Economics completed the analysis and research work for this report, under the guidance of The State System's Office of the Chancellor, the team sought feedback and insight from senior administration and representatives from each of the 14 State System Universities. The team also drew on insight and feedback from subject matter experts involved in labor market intelligence and education program alignment.

The modeling and results presented here are based on information provided by third parties, upon which Oxford Economics has relied in producing its report and forecasts in good faith. Any subsequent revision or update of those data will affect the assessments and projections shown.

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