



Northeast Pennsylvania's  
**WORKFORCE  
CHARACTERISTICS  
TECHNICAL REPORT**

A report for Pennsylvania's  
State System of Higher Education

2016



# CONTENTS

5	<b>1. Introduction</b>
6	1.1 Goal of Report
7	1.2 Pennsylvania's State System of Higher Education Gap Analysis Project
9	<b>2. Pennsylvania's State System of Higher Education</b>
10	2.1 Universe of Postsecondary Degree Granting Institutions in Pennsylvania
10	2.2 The State System's Bachelor's Degree Output
12	<b>3. Identifying the State System's Sub-regions</b>
13	3.1 Pennsylvania's Sub-regions and State System Learner Origin
16	<b>4. Overview of the Labor Market of Northeast Pennsylvania</b>
17	4.1 About Employment Projections
19	<b>5. Industries in Northeast Pennsylvania</b>
20	5.1 Top Employers in Northeast Pennsylvania
22	<b>6. Occupations in Northeast Pennsylvania</b>
22	6.1 Skilled Occupations
23	6.2 Top Skilled Occupations in Northeast Pennsylvania
26	6.3 Key Skilled High Demand Occupations Aligning to University-level Education
30	6.4 Staffing Patterns for Key Skilled High Demand Occupations in Northeast Pennsylvania
32	6.5 Key Skilled High Demand Occupational Profiles
39	<b>7. Demographic and Socio-economic Indicators in Northeast Pennsylvania</b>
39	7.1 Workforce Region Demographics

45	<b>8. Next Steps</b>
46	<b>Data Sources Key</b>
47	<b>Appendix A: State System Sub-regions with PREP Regions and WIA Regions</b>
48	<b>Appendix B: Pennsylvania State and County Enrollment and Employment</b>
50	<b>Appendix C: Industry Projections 2014-2024 for Northeast Pennsylvania</b>
60	<b>Appendix D: Occupation Projections 2014-2024 for Northeast Pennsylvania</b>
87	<b>About The State System's Gap Analysis Project</b>

## 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 U.S., 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:** U.S. Department of Education

**USDOL:** U.S. 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.<sup>1</sup> 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.”<sup>2</sup> 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 efforts 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

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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.

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the characteristics of the economy and workforce it supports. This study and 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 Goal of Report**

The first phase of the State System’s Gap Analysis Project was creating the context for the supply/demand analysis. This was possible with a Georgetown University-State System collaboration, which resulted in the production of the report “Degrees of Value: College Majors and the Pennsylvania State System’s Contribution to the Workforce”.<sup>3</sup> Georgetown University’s Center on Education and the Workforce is a premier world-class independent, nonprofit research and policy institute that studies the link between education, career qualifications, and workforce demands. In their report, Georgetown’s Center on Education and the Workforce (CEW) provides contextual data on Baccalaureate-level education output in order to support and inform efforts associated with the State System’s Gap Analysis Project. This report is similar to previous national level work from CEW that examines earnings, employment, and occupational outcomes by major for bachelor’s degree (BD) holders. In this report, customized to the State System and Pennsylvania, CEW delves into the increasing importance of BD holders in the Pennsylvania workforce, the critical role of the State System as part of the state’s BD sector, and how earnings and employment vary by field of study and occupational area.

The 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 used for the 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,

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<sup>3</sup> Georgetown’s Center on Education and the Workforce analysis of degree production in the Pennsylvania Baccalaureate Sector.

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.
- 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.

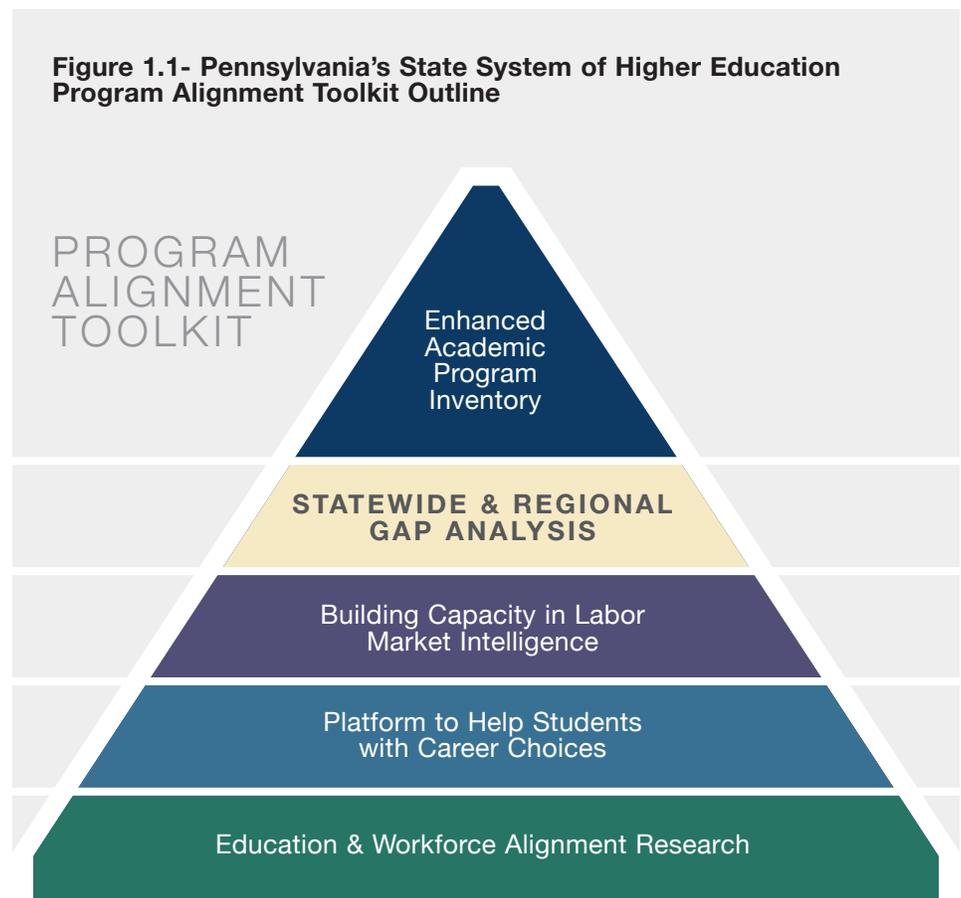
While the main body of this report provides a high-level summary, the Appendices provide an abundance of information for those seeking additional detail. Appendix A provides a map of the state sub-region boundaries along with PREP and WIA boundaries. Appendix B provides detail on the employment and enrollment 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.

## **1.2 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 the figure below. 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.



The next section provides a high-level overview of the State System and its fourteen universities in terms of location, enrollment, and bachelor’s degree output.

## 2. PENNSYLVANIA'S STATE SYSTEM OF HIGHER EDUCATION

During the fall of 2013, total enrollment in State System universities was 112,225—inclusive of resident and non-resident enrollment. Figure 2.1 depicts the geographic location of each university across Pennsylvania, while Table 2.1 shows the enrollment by university.

**Figure 2.1 – Locations of Pennsylvania's State System of Higher Education Universities**



Source: U.S. Department of the Interior – U.S. Geological Survey: Colleges and Universities (published 09-30-2010)

**Table 2.1 – Pennsylvania's State System of Higher Education Enrollment by University**

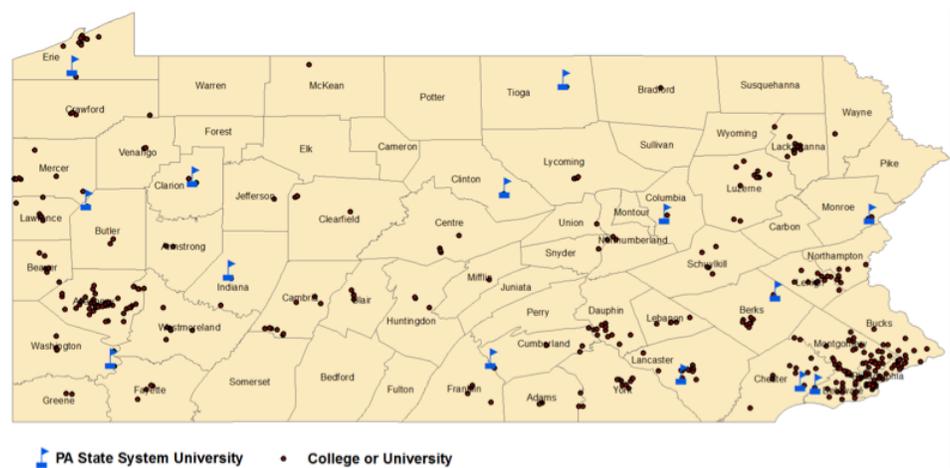
University	Fall 2013 Enrollment
Bloomsburg University of Pennsylvania	10,127
California University of Pennsylvania	8,243
Cheyney University of Pennsylvania	1,212
Clarion University of Pennsylvania	6,080
East Stroudsburg University of Pennsylvania	6,778
Edinboro University of Pennsylvania	7,098
Indiana University of Pennsylvania	14,925
Kutztown University of Pennsylvania	9,513
Lock Haven University	5,260
Mansfield University of Pennsylvania	2,970
Millersville University of Pennsylvania	8,279
Shippensburg University of Pennsylvania	7,548
Slippery Rock University of Pennsylvania	8,347
West Chester University of Pennsylvania	15,845

Source: National Center for Education Statistics' Integrated Postsecondary Education Data System (IPEDS)

## 2.1 Universe of Postsecondary Degree Granting Institutions in Pennsylvania

There are approximately 400 postsecondary institutions in Pennsylvania with 394 reporting their enrollment data in 2013. Figure 2.2 illustrates the locations of colleges and universities in 2010—latest latitude and longitude data available—for institutions that report to IPEDS. Latest data indicate these 394 institutions had 814,120 students enrolled. This means approximately one in eight postsecondary enrollees in Pennsylvania institutions are from the fourteen State System universities.<sup>4</sup> Furthermore, enrollment in the 166 four-year institutions during this time period was 618,738 indicating that one in six four-year enrollees came from the State System universities.

**Figure 2.2 – Locations of Pennsylvania’s Colleges and Universities**



Source: U.S. Department of the Interior – U.S. Geological Survey: Colleges and Universities (published 09-30-2010)

## 2.2 The State System’s Bachelor’s Degree Output

In response to “Rising to the Challenge 2020” strategic plan, the State System formed a unique partnership with Georgetown’s Center on Education and the Workforce (CEW) to produce a report on the statewide bachelor’s degree output from the State System universities and contextualize the output within Pennsylvania’s baccalaureate sector. The forthcoming report provides key data and analysis on the State System’s contribution to Pennsylvania’s production of

<sup>4</sup> Source: National Center for Education Statistics’ [NCES], Integrated Postsecondary Education Data System [IPEDS]

bachelor's degrees, the top fields of study among completers, recent trends in the bachelor's degree population and workforce in the state, and occupational areas of employment among incumbent Pennsylvania workers with these undergraduate majors. High-level key findings from the report indicate:<sup>5</sup>

- In recent years, bachelor's degree-holders constituted a growing share of Pennsylvania's population and workforce. About one-out-of-five bachelor's degrees awarded in Pennsylvania were from State System institutions, and the most common State System major groups were STEM-H, Business, Education, Humanities & Liberal Arts, and Social Sciences.
- Pennsylvania bachelor's degree-holders in STEM, health, and business majors had relatively high earnings, while education, social science, and humanities and liberal arts majors typically made less than college-educated workers in the state overall.
- Workers with a bachelor's degree or better had the highest median earnings in the Southeast region and the lowest in the Northwest region, but the magnitude of these geographic differences varied by field of study.
- Pennsylvania workers with a bachelor's degree in education or health had tighter relationships with a single related occupational area, while humanities and liberal arts and social sciences majors had more varied occupational destinations. Business majors fell somewhere in between.

With an understanding of where institutions are located and a high-level view of degree production, the next section evaluates where State System learners originate. This provides additional geographic perspective of enrollment and workforce size.

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<sup>5</sup> Key findings are extracted from a forthcoming report from Georgetown University's Center on Education and the Workforce's State System Report.

### 3. IDENTIFYING THE STATE SYSTEM'S SUB-REGIONS

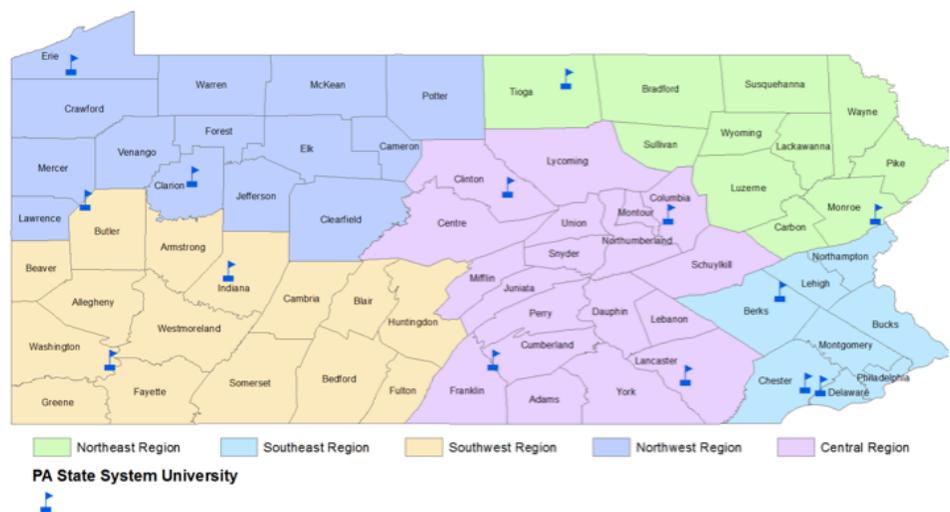
Pennsylvania's economically diverse geography supports the need for a more regionalized perspective of economic and workforce characteristics. The State System conducted original research to identify five broad sub-regions as well as fourteen university-specific workforce regions. It is important to note that these five regions align with Pennsylvania's Partnerships for Regional Economic Performance (PREP). The PREP regions are Pennsylvania's network of businesses as defined by the Department of Community and Economic Development (DCED). Aligning the State System's five regions to the PREP regions reflects a broader goal of the State System to connect higher education with economic development in the commonwealth.

The only exception to the PREP region boundary is Schuylkill County, which was allocated to the Central sub-region. This allocation balances enrollment between regions, although learners from Schuylkill were nearly evenly dispersed between the Central, Northeast and Southeast sub-regions.

Figure 3.1 illustrates the geographic areas for the sub-regions as well as the locations of the State System universities. Table 3.1 provides summary data of the population and learner enrollment for each respective sub-region.

For PREP geographic boundaries please see Appendix A.

**Figure 3.1 – Pennsylvania State System Sub-regions**



Source: Oxford Economics mapping

The counties in Northeast Pennsylvania’s region are listed below:

Bradford	Monroe	Tioga
Carbon	Pike	Wayne
Lackawanna	Sullivan	Wyoming
Luzerne	Susquehanna	

**Table 3.1 – Pennsylvania Population and State System Learner Enrollment by Sub-region**

Pennsylvania Region	Number of Counties	Regional Population	Regional Population Share	PA Resident State System Learners*	Regional State System Learner Share
Northwest	14	941,584	7.4%	11,504	11.7%
Southwest	15	2,943,544	23.1%	21,741	22.1%
Central	19	2,690,436	21.1%	22,813	23.2%
Northeast	11	1,061,613	8.3%	8,202	8.4%
Southeast	8	5,094,204	40.0%	33,940	34.6%
<b>Pennsylvania Total</b>	<b>67</b>	<b>12,731,381</b>	<b>100.0%</b>	<b>98,200</b>	<b>100.0%</b>

\* Enrollment represents a three-year average from 2012-2014.

Source: American Community Survey 2009-2013 five-year file; Pennsylvania’s State System of Higher Education Research Office

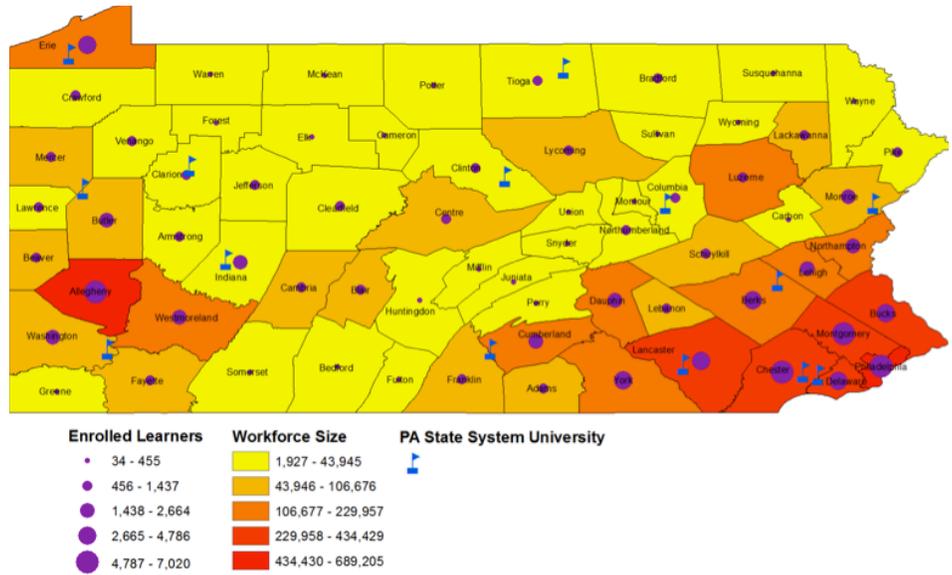
### 3.1 Pennsylvania’s Sub-regions and State System Learner Origin

This section provides an overview of where State System learners come from within Pennsylvania and the region. 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% are Pennsylvania residents.<sup>6</sup> The Commonwealth’s urban and rural economic geography is very diverse, comprising of two distinct urban centers on the Western and Southeastern portions of the state, as well as key cities located throughout.

The map below (Figure 3.2) illustrates workforce size and the origin of Pennsylvania resident learners enrolled in Pennsylvania’s State System of Higher Education.

6 Based on Fall 2013 enrollment.

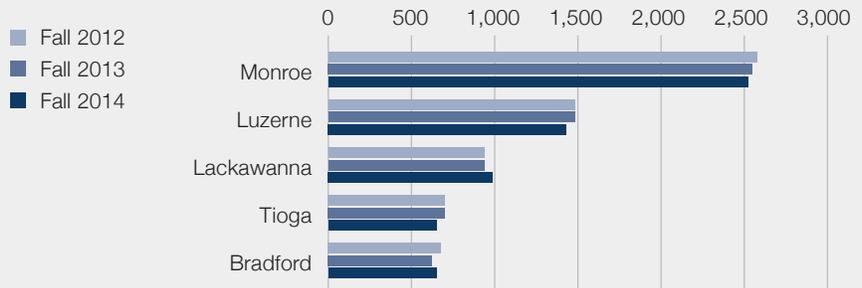
**Figure 3.2 – State System Learner Origin and Workforce Size by County**



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

State System learners, originally from Northeast Pennsylvania, come from every county in the region. State system learner enrollment from the region accounts for about 8% of total resident enrollment in the State System. The top counties in the region include Monroe, Luzerne, Lackawanna, Tioga, and Bradford. Figure 3.3 highlights the Northeast Pennsylvania resident fall enrollment numbers between 2012 and 2014 for the top 5 counties. Table 3.2 provides enrollment detail for all counties in Northeast Pennsylvania.

**Figure 3.3 – Northeast Pennsylvania State System Learner Enrollment by County**



Source: Pennsylvania's State System of Higher Education

**Table 3.2 Northeast Pennsylvania State System Learner Enrollment by County**

<b>County</b>	<b>Fall 2012</b>	<b>Fall 2013</b>	<b>Fall 2014</b>
Bradford	674	635	641
Carbon	463	463	455
Lackawanna	943	933	986
Luzerne	1,484	1,472	1,437
Monroe	2,583	2,543	2,532
Pike	611	623	633
Sullivan	38	44	34
Susquehanna	268	231	219
Tioga	712	711	656
Wayne	376	366	356
Wyoming	155	148	162
<b>Total</b>	<b>8,307</b>	<b>8,169</b>	<b>8,111</b>

Source: Pennsylvania's State System of Higher Education

The next section of this report describes key economic and workforce data and contextualizes Northeast Pennsylvania's economic environment.

## 4. OVERVIEW OF THE LABOR MARKET OF NORTHEAST PENNSYLVANIA

The following sections outline a brief analysis of economic, workforce, demographic and socio-economic information. The purpose of providing this analysis is to gain better insight into how Northeast Pennsylvania’s workforce 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 Northeast Pennsylvania and the state.

**Table 4.1 – Summary of Northeast Pennsylvania and Pennsylvania Workforce Characteristics**

<b>Workforce Characteristic</b>	<b>Northeast Pennsylvania</b>	<b>Pennsylvania</b>	<b>Source</b>
Population	1.1 million	12.7 million	2009-2013 American Community Survey 5-Year Estimates
Employed	400,000	5.6 million	2014 BLS Quarterly Census of Employment and Wages
Unemployed	35,000	370,000	2014 BLS Local Area Unemployment Statistics
Unemployment Rate	6.90%	5.80%	2014 BLS Local Area Unemployment Statistics
Poverty Rate	14.10%	13.70%	2013 Census Small Area Income and Poverty Estimates
Business Establishments	25,000	347,000	2014 BLS Quarterly Census of Employment and Wages
Educational Attainment (% of 25+ Population with Bachelor's or Higher)	21.80%	27.40%	2009-2013 American Community Survey 5-Year Estimates
Bachelor's or Higher Completions	8,100	137,000	Integrated Postsecondary Education Data System 3-Year Average AY2010-11 to AY2012-13
Projected Employment in 2024	439,000	6.2 million	Oxford Economics Projections 2014-2024

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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 profiles for five key skilled high demand occupations.

**3. Demographics and Socio-economic Indicators** – an evaluation of the demographic profile of Northeast Pennsylvania’s population. 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 About 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 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

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employment trends that further reflects the economic recovery. See Appendix C for 4-digit industry projections and Appendix D for 5-digit occupation projections.

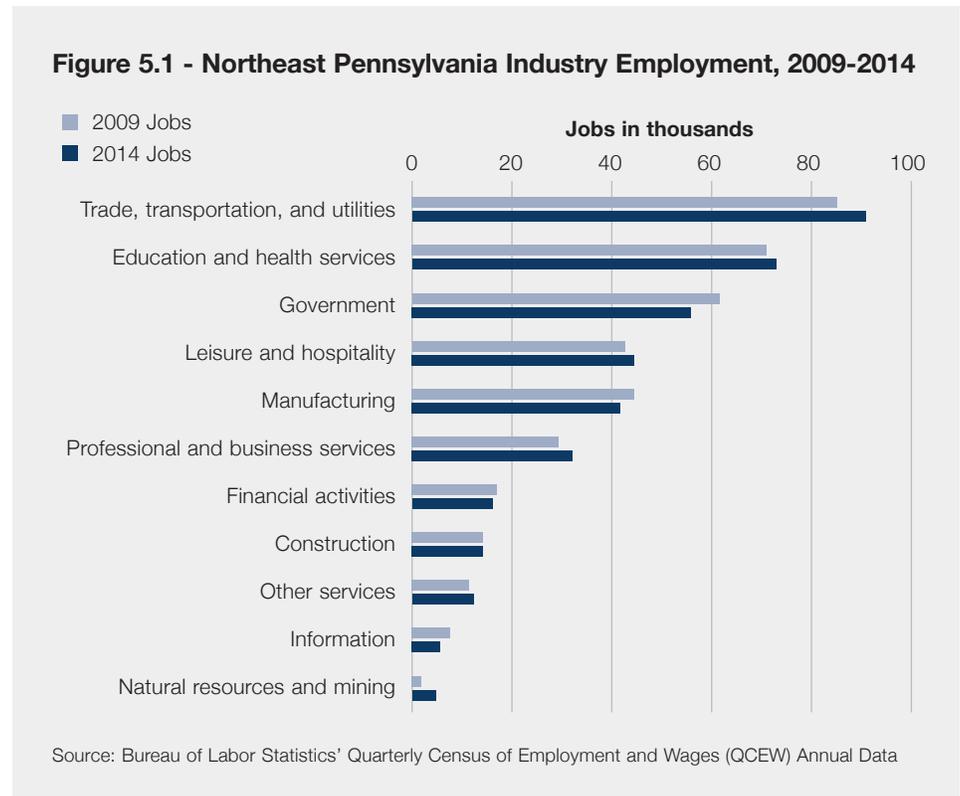
Oxford Economics, a premier economic modeling and consulting firm, produced the projections. By updating the projections, Oxford Economics provided insight into new job growth and occupational demand over the next 10 years.

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

# 5. INDUSTRIES IN NORTHEAST PENNSYLVANIA

Over the five years of 2009 to 2014, the Northeast Pennsylvania economy experienced significant growth in the service and mining sectors, while Information and Government saw a reduction in jobs. Sectors such as professional and business services; trade, transportation and utilities; and natural resources and mining added a combined 11,700 new jobs between 2009 and 2014. Financial activities declined modestly, while the largest job losses occurred within manufacturing, government, and information. Overall, the economy added about 3,700 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 percentage change.



**Table 5.1 – Northeast Pennsylvania Industry Employment, 2009-2014**

Industry Employment	2009 Jobs	2014 Jobs	Absolute Change 09-14	% Change 09-14
<b>Total, all industries</b>	<b>387,998</b>	<b>391,669</b>	<b>3,671</b>	<b>0.9%</b>
Trade, transportation, and utilities	85,468	90,860	5,392	6.3%
Education and health services	71,135	72,915	1,780	2.5%
Government	61,368	55,612	-5,756	-9.4%
Leisure and hospitality	43,094	44,536	1,442	3.3%
Manufacturing	44,811	41,700	-3,111	-6.9%
Professional and business services	29,338	32,685	3,347	11.4%
Financial activities	17,011	16,208	-803	-4.7%
Construction	14,127	14,294	167	1.2%
Other services	11,854	12,057	203	1.7%
Information	7,523	5,643	-1,880	-25.0%
Natural resources and mining	2,001	4,931	2,930	146.4%

Source: Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW) Annual Data

Appendix C contains additional data on employment in detailed industry sectors as well as location quotients.

## 5.1 Top Employers in Northeast Pennsylvania

Amongst the top employers within Northeast Pennsylvania, 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 retail and leisure and hospitality establishments.

Major employers in the region are listed in Table 5.2 on the next page.

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

**Table 5.2- Top Employers in Northeast Pennsylvania**

<b>Firm Name</b>
Allied Services Foundation
Amazon.com
Aventis Pasteur
Barnes-Kasson County Hospital
Bayada Home Health Care
Delaware Valley School District
Federal Government
Geisinger Wyoming Valley Medical Center
Gnaden Huetten Memorial Hospital
Guthrie Medical Group
Kovatch Partners
Montrose Area School District
Pennsylvania State System of Higher Education
Procter & Gamble
Red Rock Job Corps Center
Robert Packer Hospital
Scranton School District
Split Rock Resort
State Government
Susquehanna Health System
Tunkhannock Area School District
Wallenpaupack Area School District
Wal-Mart
Wayne County Memorial Hospital
Woodloch Pines

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

## 6. OCCUPATIONS IN NORTHEAST PENNSYLVANIA

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 Northeast Pennsylvania's workforce, 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.<sup>7</sup>

For this analysis a "skilled" occupation is defined as an occupation in O\*NET Job Zones Three, Four, or Five. 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.<sup>8</sup>

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

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

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

Job Zone Four require a four-year bachelor's degree, but some do not. Most occupations in Job Zone Five 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 Northeast Pennsylvania**

Top skilled occupations in the state 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 government establishments in Northeast Pennsylvania, top skilled occupations include: registered nurses, police officers, secretaries and administrative assistants, sales representatives, and teachers. 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.<sup>9</sup>

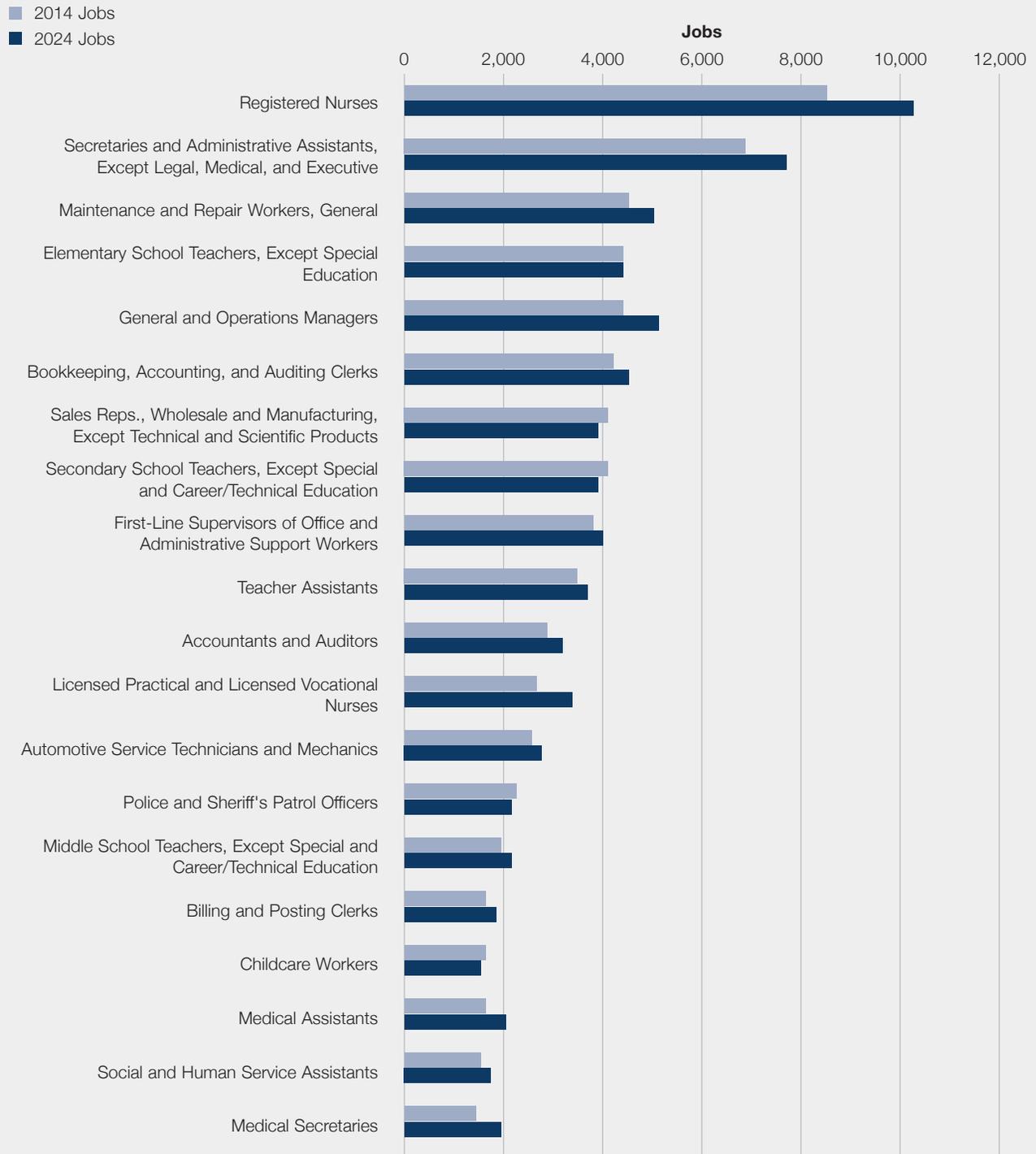
An important aspect to distinguish skilled occupations, in this sub-section, is that postsecondary education is not necessarily a pre-requisite for employment. However, a high percentage of those employed in the skilled occupations have a postsecondary education.

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 in the Northeast region.

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<sup>9</sup> 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 Northeast Pennsylvania and Projections to 2024**



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

**Table 6.1 – Largest Skilled Occupations and New and Replacement Demand in Northeast Pennsylvania**

<b>SOC Code</b>	<b>Occupation Title</b>	<b>2014 Jobs</b>	<b>2024 Jobs</b>	<b>10-Year New and Replacement Demand</b>
29-1141	Registered Nurses	8,544	10,329	3,515
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	6,859	7,688	1,719
49-9071	Maintenance and Repair Workers, General	4,564	5,023	1,464
25-2021	Elementary School Teachers, Except Special Education	4,477	4,459	1,108
11-1021	General and Operations Managers	4,459	5,152	1,486
43-3031	Bookkeeping, Accounting, and Auditing Clerks	4,195	4,534	754
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	4,153	3,942	754
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	4,118	3,962	1,247
43-1011	First-Line Supervisors of Office and Administrative Support Workers	3,795	4,038	1,152
25-9041	Teacher Assistants	3,544	3,680	1,017
13-2011	Accountants and Auditors	2,919	3,181	1,233
29-2061	Licensed Practical and Licensed Vocational Nurses	2,679	3,394	1,423
49-3023	Automotive Service Technicians and Mechanics	2,527	2,732	940
33-3051	Police and Sheriff's Patrol Officers	2,259	2,164	716
25-2022	Middle School Teachers, Except Special and Career/Technical Education	1,929	2,184	739
43-3021	Billing and Posting Clerks	1,675	1,885	549
39-9011	Childcare Workers	1,634	1,570	424
31-9092	Medical Assistants	1,629	2,061	759
21-1093	Social and Human Service Assistants	1,567	1,802	702
43-6013	Medical Secretaries	1,482	1,948	639

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.<sup>10</sup>

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 Northeast Pennsylvania.

### 6.3.1 New and Replacement Demand for Key Skilled High Demand Occupations

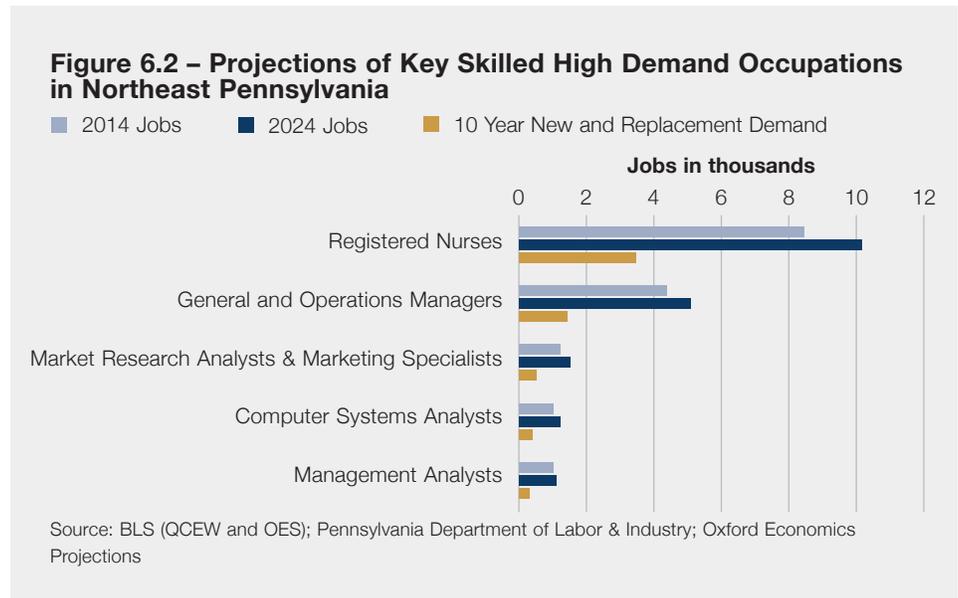
Many skilled occupations exist in Pennsylvania. Demand for new and replacement jobs for key skilled high demand occupations that tie more closely to university-level programs are typically determined by the sheer size of the employment within the occupation and the demographic characteristics of those 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

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<sup>10</sup> When evaluating jobs postings, 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.<sup>11</sup>

Figure 6.2 and Table 6.2 outline the five key skilled high demand occupations in the Northeast region for new and replacement jobs over the next 10 years, specifically: registered nurses, general and operations managers, market research analysts and marketing specialists, computer system analysts, and management analysts.<sup>12</sup>



**Table 6.2 – Projections of Key Skilled High Demand Occupations in Northeast Pennsylvania**

Code	Occupation Title	2014 Jobs	2024 Jobs	10 Year New and Replacement Demand
29-1141	Registered Nurses	8,544	10,329	3,515
11-1021	General and Operations Managers	4,459	5,152	1,486
13-1161	Market Research Analysts and Marketing Specialists	1,204	1,547	537
15-1121	Computer Systems Analysts	1,022	1,264	423
13-1111	Management Analysts	1,018	1,145	296

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 1,000 unique (de-duplicated) job postings appeared in Northeast Pennsylvania for the top five key skilled high demand occupations (registered nurses, accountants and auditors, general and operations managers, computer system analysts, and market research analysts and marketing specialists). Sizable job postings include: registered nurses (732 unique postings per month) and general and operations managers (132 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 high demand occupations.

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

<b>Occupation</b>	<b>Average Monthly Postings (Jul 2014 - Jul 2015)</b>	<b>Average Monthly Hires (Jul 2014 - Jul 2015)</b>	<b>Ratio of Postings to Hires</b>
Registered Nurses	732	381	1.9
General and Operations Managers	132	284	0.5
Computer Systems Analysts	55	47	1.2
Management Analysts	24	53	0.5
Market Research Analysts and Marketing Specialists	12	58	0.2

Source: Economic Modeling Specialists International (EMSI)

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.

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### **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

### **General and Operations Managers**

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

*Certifications:* Six Sigma, Project Management Professional (PMP)

### **Computer Systems Analysts**

*Unique skills:* information systems, SAP software, SQL programming, Oracle databases

*Certifications:* security clearance, Certified Information Systems Security Professional (CISSP), Microsoft certified professional, Certified Information Systems Auditor (CISA)

### **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)

### **Management Analysts**

*Unique skills:* management consulting, SQL, best practices, business processes

*Certifications:* Six Sigma, Certified Public Accountant (CPA), 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 Staffing Patterns for Key Skilled High Demand Occupations in Northeast Pennsylvania

Understanding which industries employ key skilled high demand 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 jobs in each respective industry in 2014 (e.g. general medical and surgical hospitals employ over 4,200 registered nurses);
- The percentage of the occupation's employment in the region that is employed in the industry (e.g. the 4,200 registered nurses employed in general medical and surgical hospitals represent almost 50% 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 4,200 registered nurses make up about 27% of employment within general medical and surgical hospitals).

### Staffing Patterns for Registered Nurses Employed in Northeast Pennsylvania

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
General Medical and Surgical Hospitals	4,247	27.2%	49.7%
Nursing Care Facilities (Skilled Nursing Facilities)	817	9.9%	9.6%
Outpatient Care Centers	715	15.9%	8.4%
Home Health Care Services	694	21.0%	8.1%
Offices of Physicians	664	9.4%	7.8%

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

### Staffing Patterns for General and Operations Managers Employed in Northeast Pennsylvania

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Restaurants and Other Eating Places	108	0.5%	2.4%
Management of Companies and Enterprises	106	2.7%	2.4%
Business, Professional, Labor, Political, and Similar Organizations	101	4.5%	2.3%
Other Amusement and Recreation Industries	100	2.0%	2.2%
Individual and Family Services	100	1.2%	2.2%

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

### Staffing Patterns for Computer Systems Analysts Employed in Northeast Pennsylvania

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Computer Systems Design and Related Services	184	12.8%	18.0%
Data Processing, Hosting, and Related Services	122	7.6%	11.9%
Insurance Carriers	105	2.8%	10.2%
Management of Companies and Enterprises	94	2.4%	9.2%
Employment Services	72	1.0%	7.0%

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

### Staffing Patterns for Management Analysts Employed in Northeast Pennsylvania

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Management, Scientific, and Technical Consulting Services	317	14.6%	31.1%
Wholesale Electronic Markets and Agents and Brokers	124	6.6%	12.2%
Executive, Legislative, and Other General Government Support	78	0.7%	7.7%
Insurance Carriers	66	1.8%	6.5%
Management of Companies and Enterprises	50	1.3%	4.9%

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

### Staffing Patterns for Market Research Analysts and Marketing Specialists Employed in Northeast Pennsylvania

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Management, Scientific, and Technical Consulting Services	130	6.0%	10.8%
Management of Companies and Enterprises	79	2.0%	6.6%
Other Professional, Scientific, and Technical Services	70	4.8%	5.9%
Insurance Carriers	56	1.5%	4.7%
Depository Credit Intermediation	40	0.7%	3.4%

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

## 6.5 Key Skilled High Demand Occupational Profiles

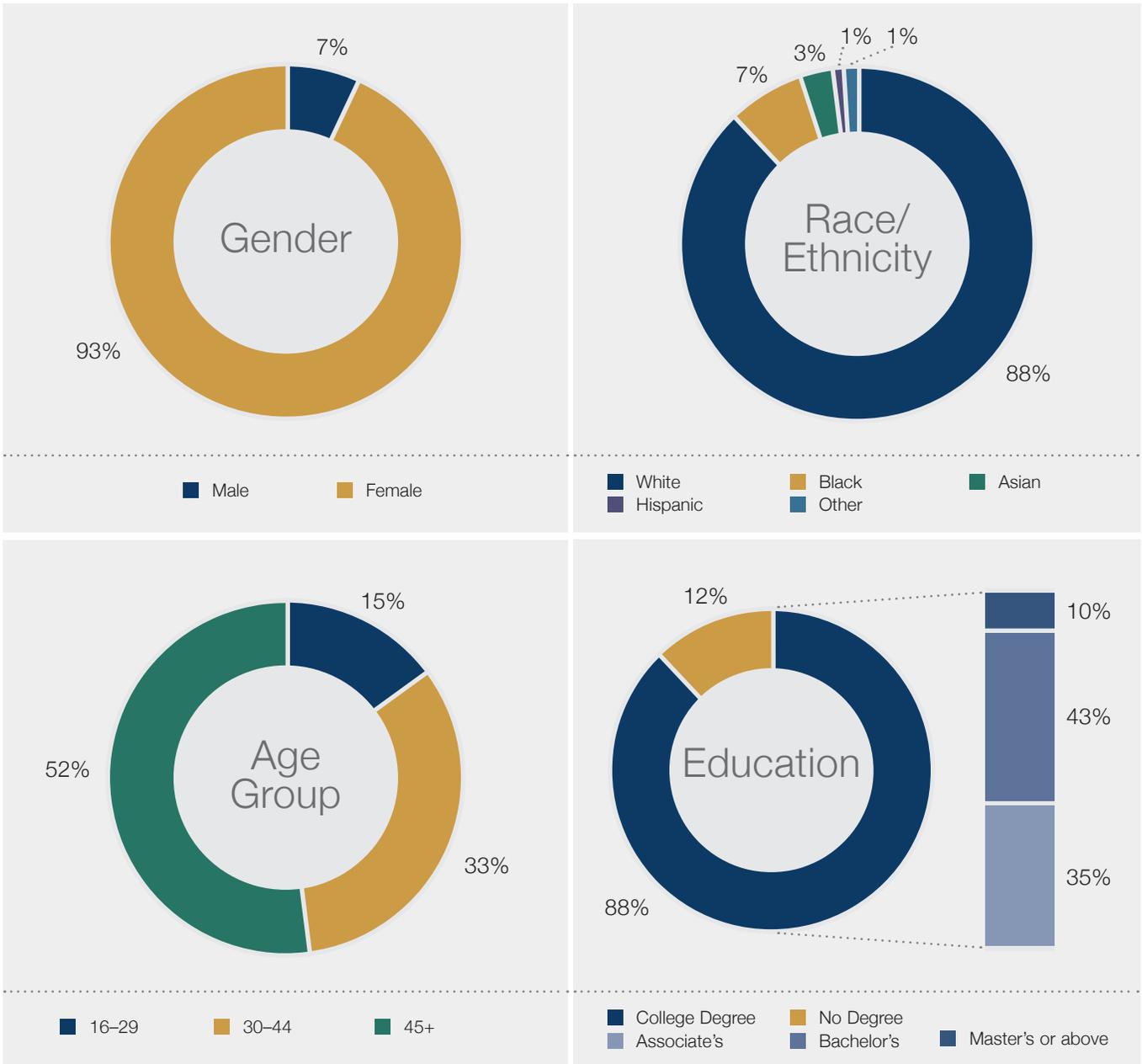
In addition to understanding the industries that employ key skilled high demand occupations, another lens focuses on the characteristics of those employed. The following section outlines the demographics for people from Pennsylvania who work in these key skilled occupations by showing each occupation’s composition by gender, race/ethnicity, age, and education. This lends further insight into who generally works in the occupation 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 of Northeast Pennsylvania’s entire population is further described in Section 7 of the report.

## REGISTERED NURSES

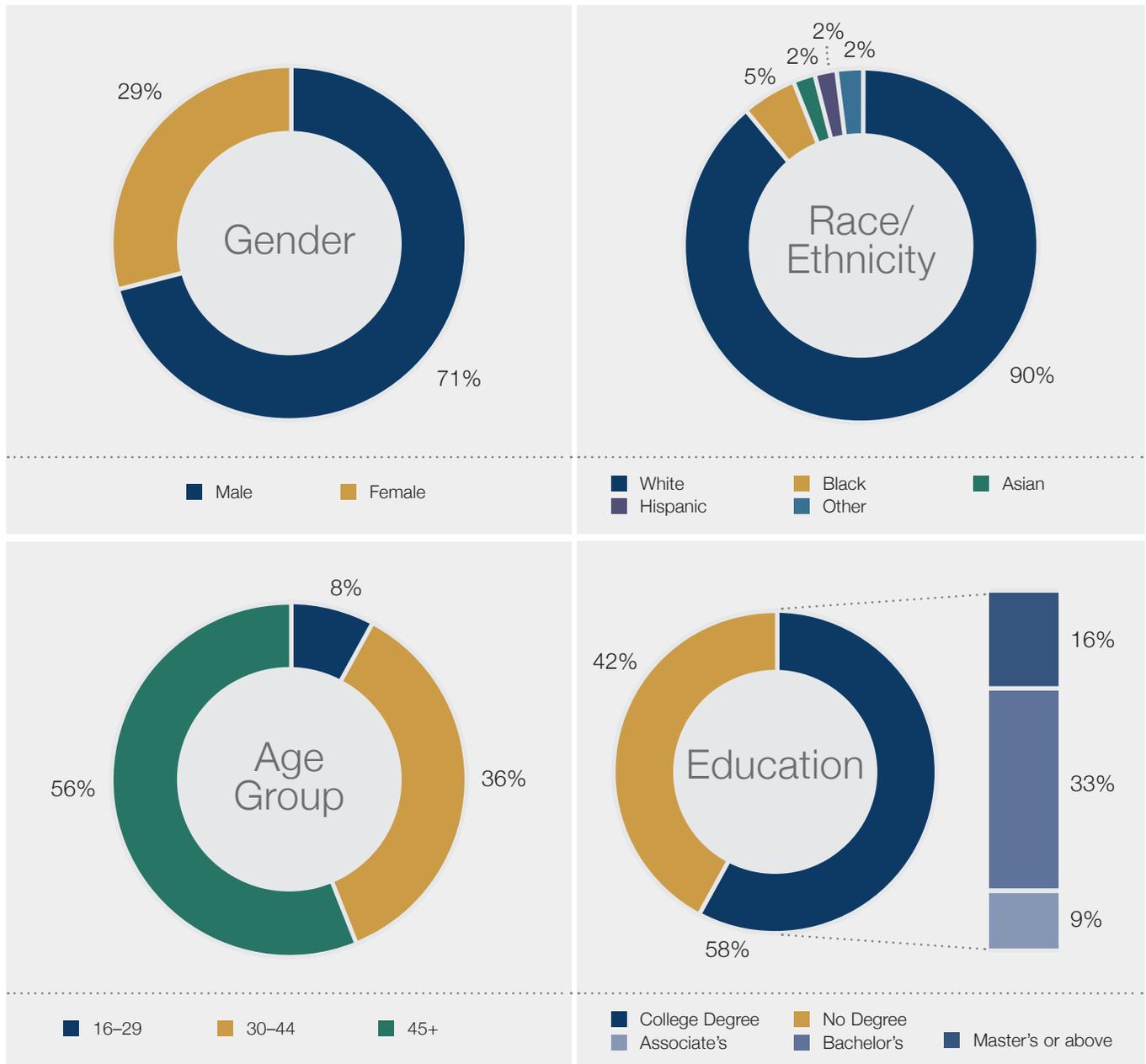
The demographic profile of registered nurses is dominated by white females. Age distribution indicates that registered nurses are a more mature cohort of workers (45 years and older), which can put increasing pressure on replacement jobs due to retirements over the next 10 years. Nearly 90% of registered 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

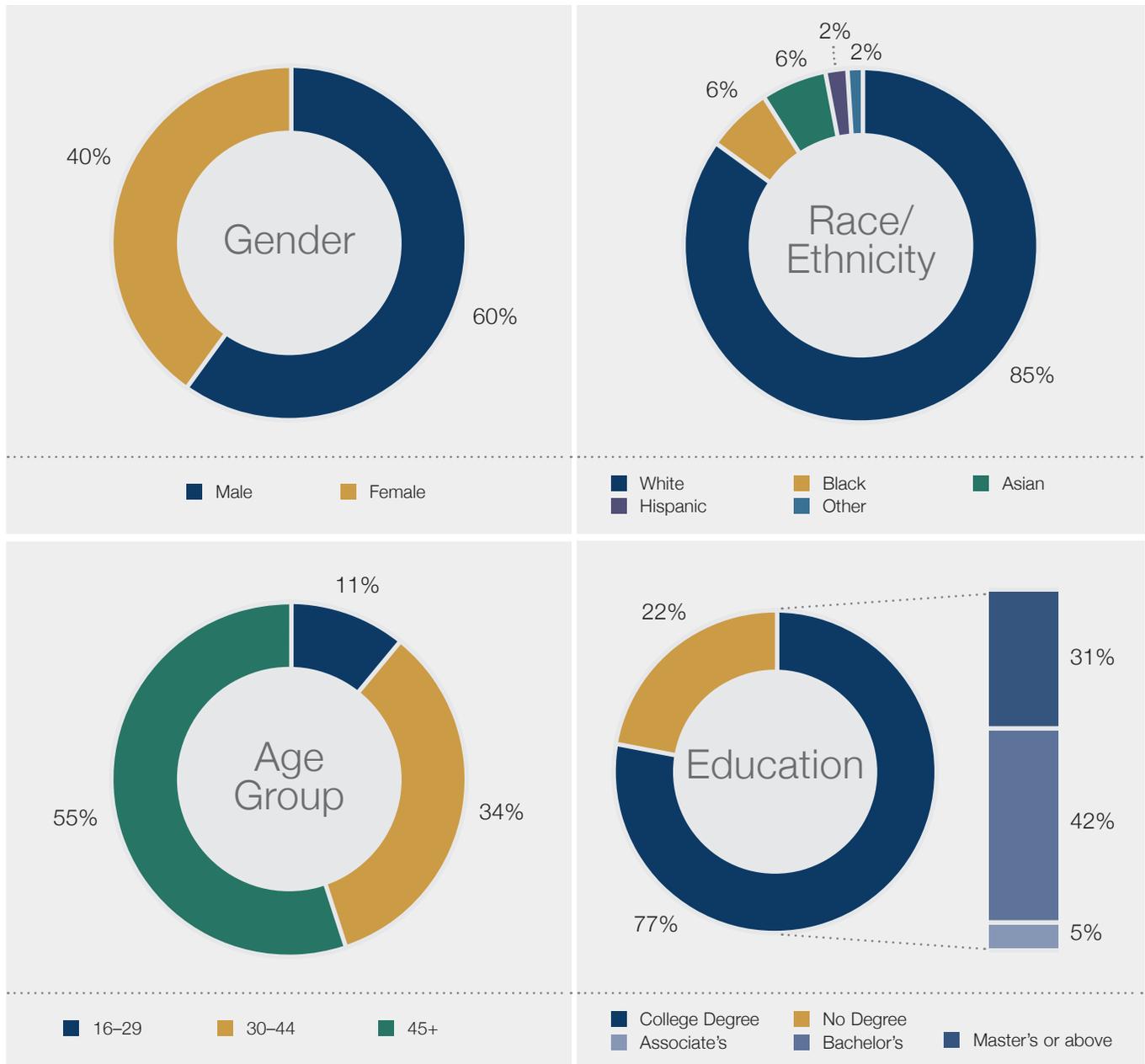
General and operations managers are typically male, though females occupy almost 30% of the employed population. The majority of those in this occupation are white. This occupation is represented by a more mature cohort of workers (45 years and older), though mid-career workers also occupy a significant 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

## MANAGEMENT ANALYSTS

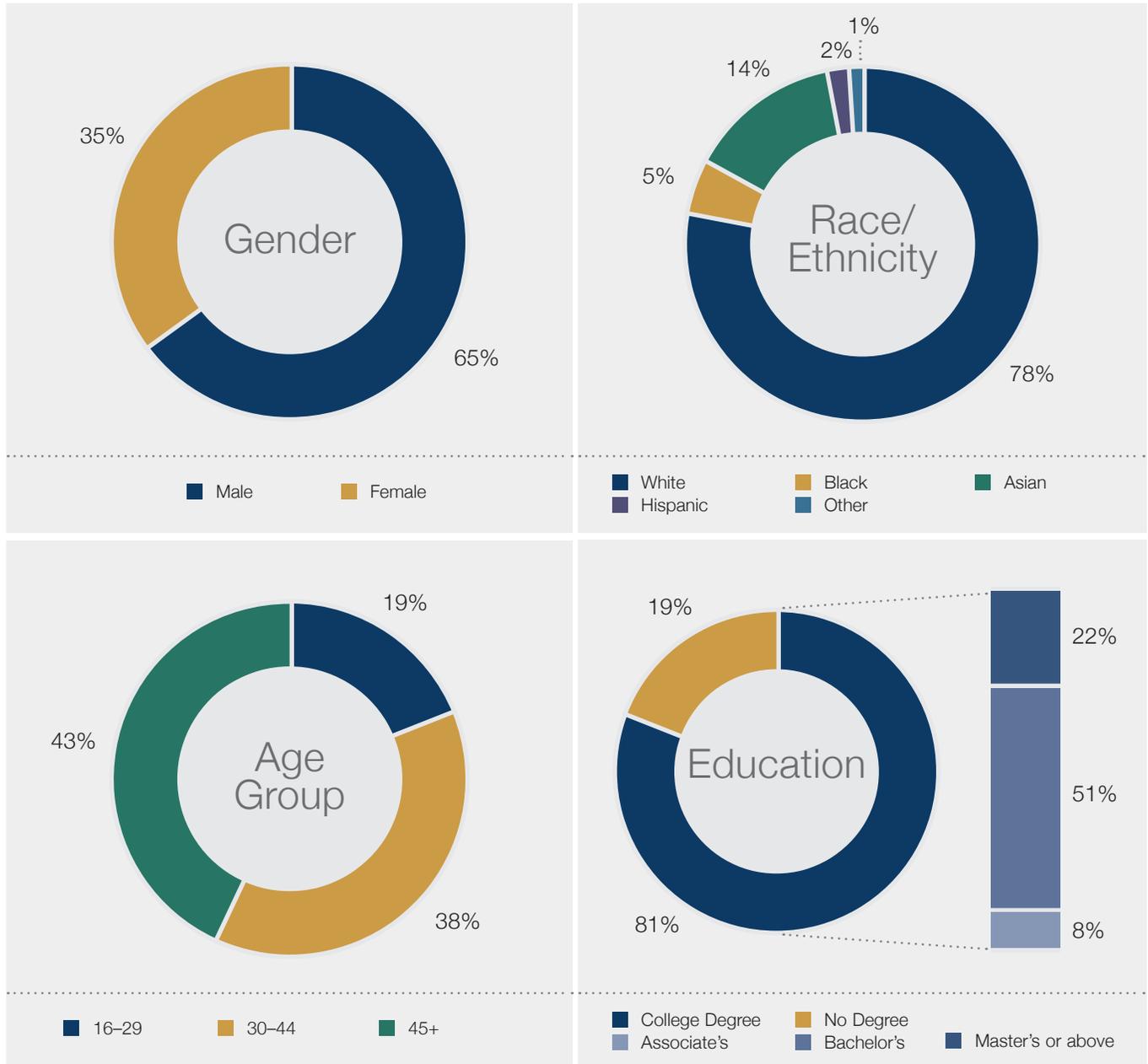
Management analysts are typically male, though females occupy about 40% of the employed population. A high proportion of white individuals are found in the occupation. This occupation is represented by a more mature cohort of workers (45 years and older), though mid-career workers also occupy a significant proportion of the employment. Nearly 80% of management analysts 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

## COMPUTER SYSTEMS ANALYSTS

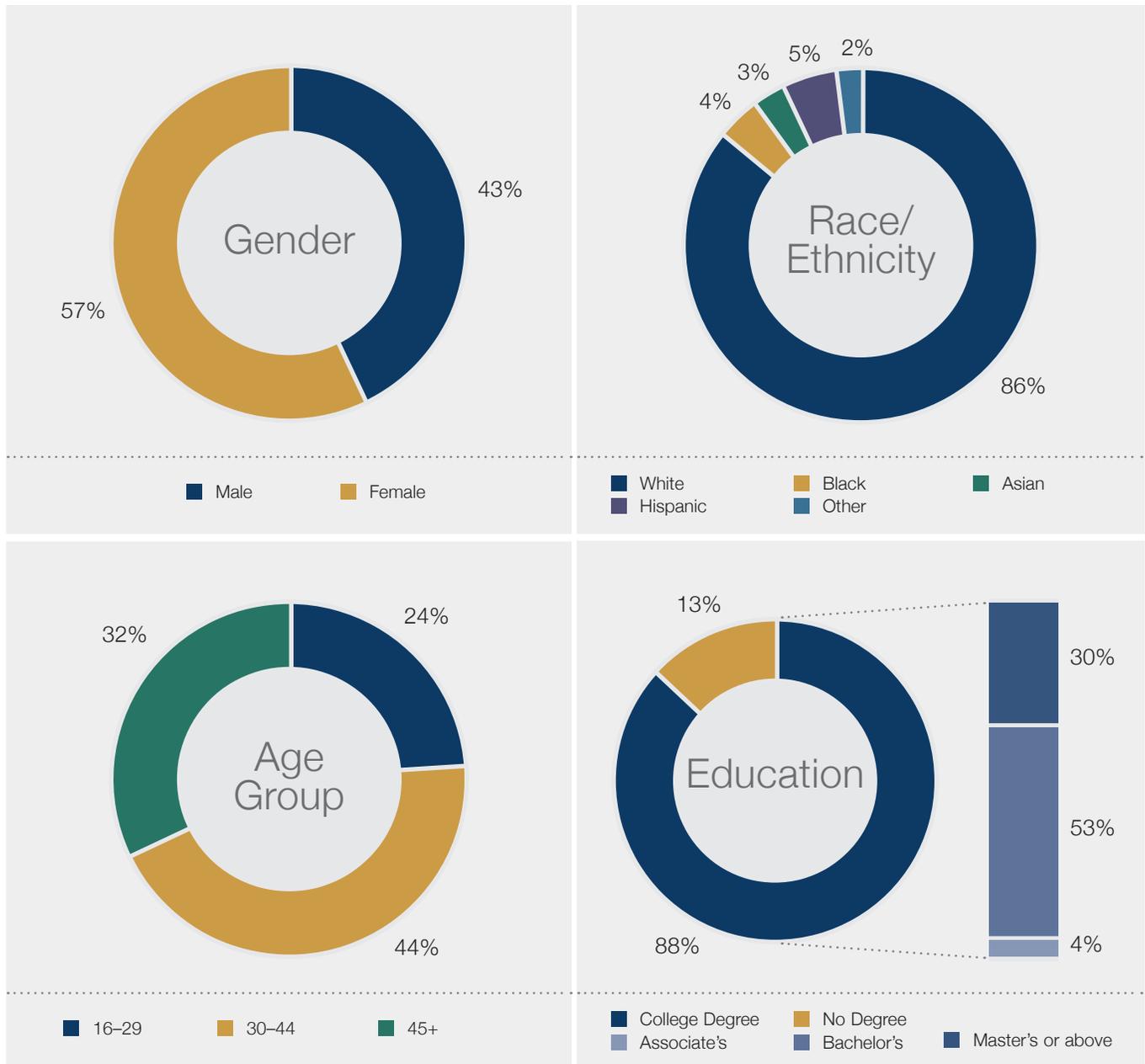
Computer systems analysts show a larger proportion of males in the occupation compared to females. While still represented by a larger share of white workers, a significant number of Asian workers are found in the occupation, making this occupation more diverse than the average Pennsylvania demographic makeup. The age composition of this occupation indicates that a higher proportion of younger (16-29) and mid-career (30-44) workers make up the workforce. Over 80% of computer systems analysts 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

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

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

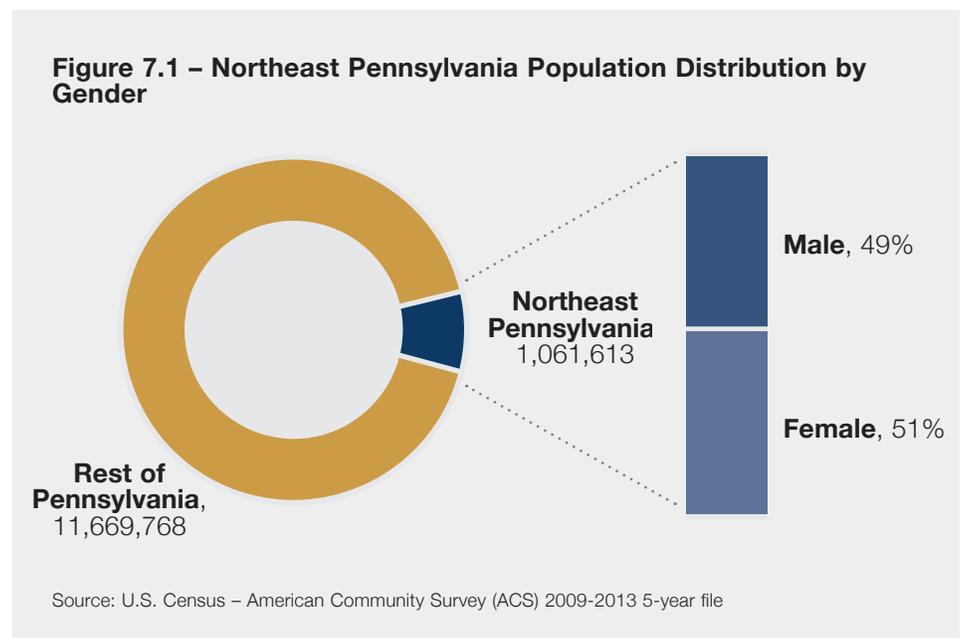
# 7. DEMOGRAPHIC AND SOCIO-ECONOMIC INDICATORS IN NORTHEAST PENNSYLVANIA

This section provides further information about the regional demographic and socio-economic composition of Northeast Pennsylvania’s workforce in order to better understand the characteristics of the population. An additional focus evaluates changes in age cohorts for university-age residents.

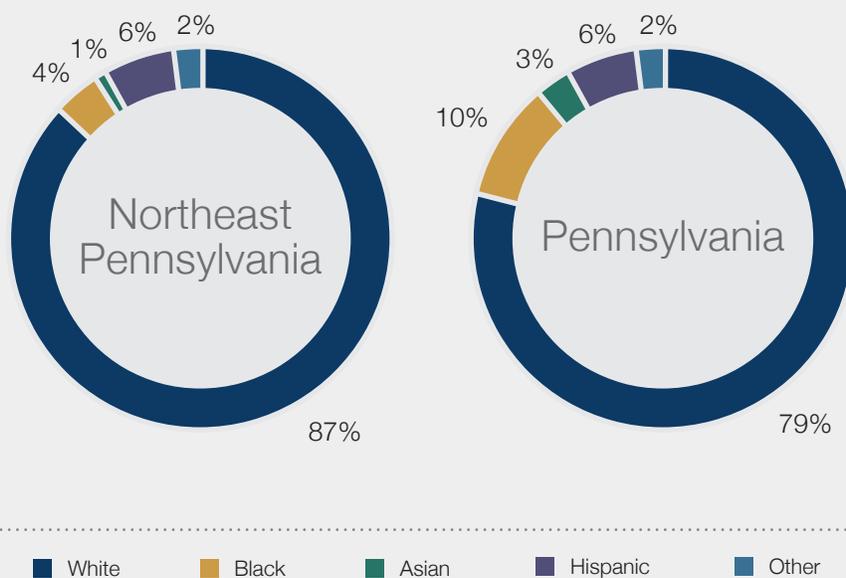
Analysis of three socio-economic indicators—education, unemployment, and poverty—also provides insight into the segment of the population that may be considered economically disadvantaged. Areas with high proportions of economically disadvantaged learners may require additional considerations in education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

## 7.1 Workforce Region Demographics

The Northeast Pennsylvania region has a population of about 1.1 million people. As shown in Figure 7.1, females make up a slightly larger share of the population compared to males. Figure 7.2 illustrates that the majority of the region is represented by a White demographic, with Blacks representing the next largest group, followed by Hispanics.



**Figure 7.2 – Northeast Pennsylvania and Pennsylvania Race/ Ethnicity Composition**

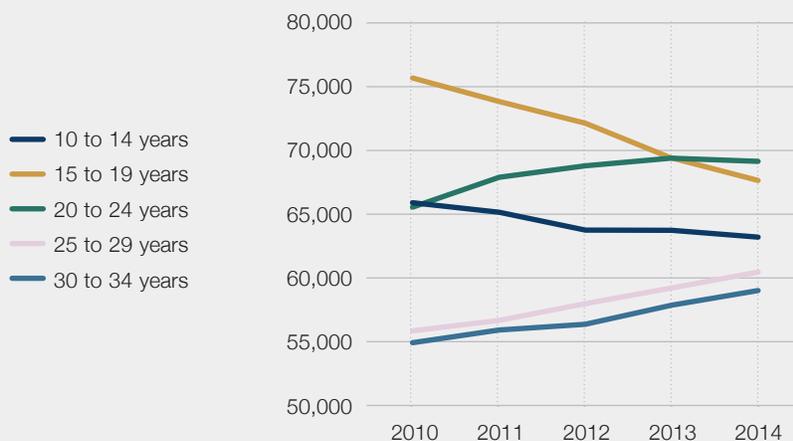


Source: U.S. Census - American Community Survey (ACS) 2009-2013 5-year file

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 indicates a diminishing number in the traditional age cohort and a growing number of adults aged 25 to 34 years old. As illustrated in figure 7.3, the 10 to 19 year old cohort population declined by nearly 10,800 people between 2010 and 2014—an 8% decline. Conversely, the 25-34 year old cohort increased by nearly 8%, or 8,600 people, over the same time period. This demographic shift presents an opportunity to incorporate a broader university recruitment strategy.

The next sub-section further explores the shifting socio-economic characteristics in Northeast Pennsylvania by identifying three inter-related variables.

**Figure 7.3 – Northeast Pennsylvania Changes in Age Cohorts**



Source: U.S. Census

## 7.2 Northeast Pennsylvania’s Socio-economic Indicators

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 Northeast Pennsylvania

The levels of educational attainment in 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.<sup>13, 14</sup>

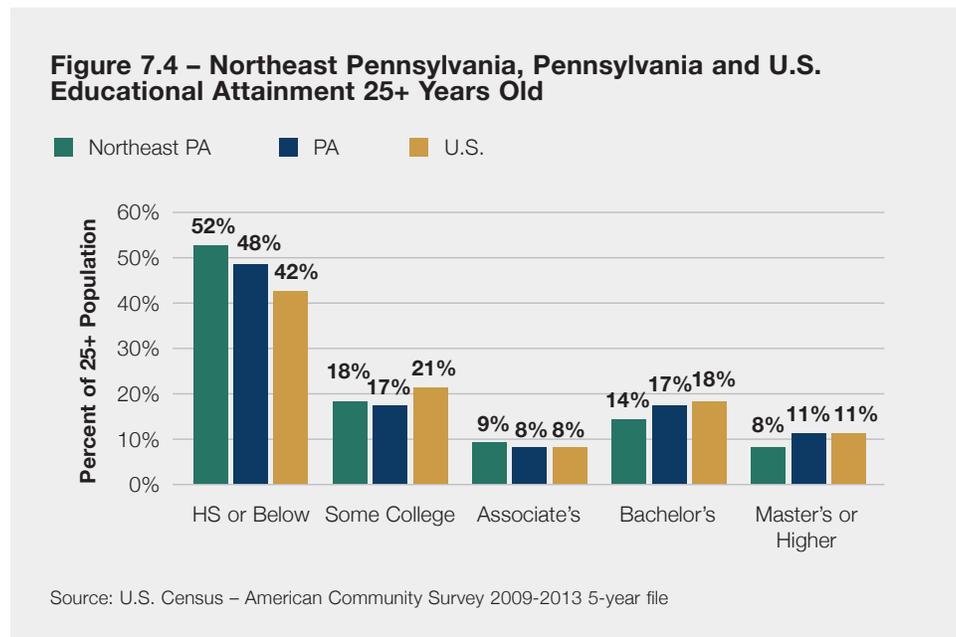
13 Feinstein et. al. (2006), “The effects of education on health: Concepts, evidence and policy implications: A review for the OECD Center for Educational Research and Innovation (CERI)”, unpublished manuscript, OECD, Paris.

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

A view of Northeast Pennsylvania’s educational attainment indicates that just under half (48%) of those over 25 years old have had some postsecondary 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 lags behind the national average of 58% of the population having had at least some postsecondary education or higher.

When comparing degree completion, Northeast Pennsylvania is near the national average for the proportion of the population with an associate’s degree and slightly 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 Northeast Pennsylvania.

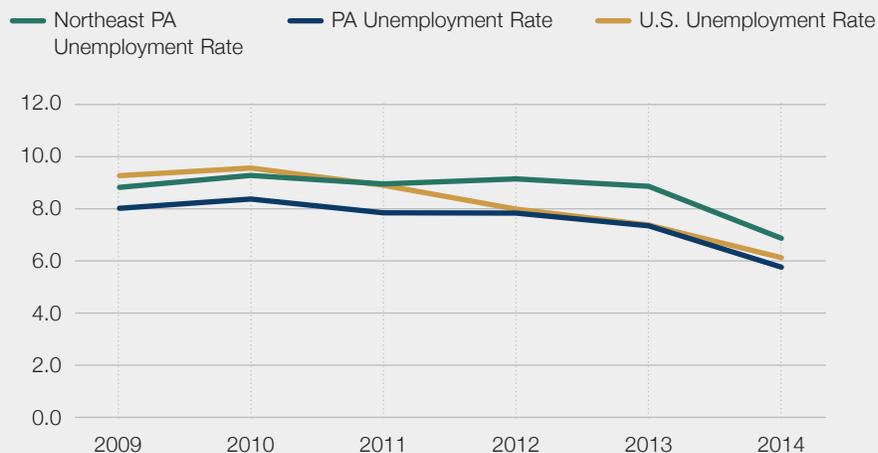


### 7.2.2 7.2.2 Unemployment and Poverty in Northeast Pennsylvania

Northeast Pennsylvania’s unemployment rate—6.9% in 2014—trended closely with the national unemployment rate until 2012, at which point the national unemployment rate declined more rapidly. This suggests that on average there are fewer opportunities for dislocated workers in the region compared to the rest of the nation.

Figure 7.5 shows the convergence of the unemployment rates of Northeast Pennsylvania, Pennsylvania, and the U.S. from 2009 to 2014.

**Figure 7.5 – Northeast Pennsylvania, Pennsylvania and U.S. Unemployment Rates**



Source: Bureau of Labor Statistics – Local Area Unemployment Statistics

In Northeast Pennsylvania, the poverty rate trended upward since 2009, but declined slightly from 2012 to 2013. The region’s poverty rate is slightly above the state poverty rate; however, it has trended below the U.S. average.<sup>15</sup> Given the lower poverty rate compared with the nation, there is an underlying assumption that the compensation associated with the jobs in Northeast Pennsylvania may be higher than the national average.

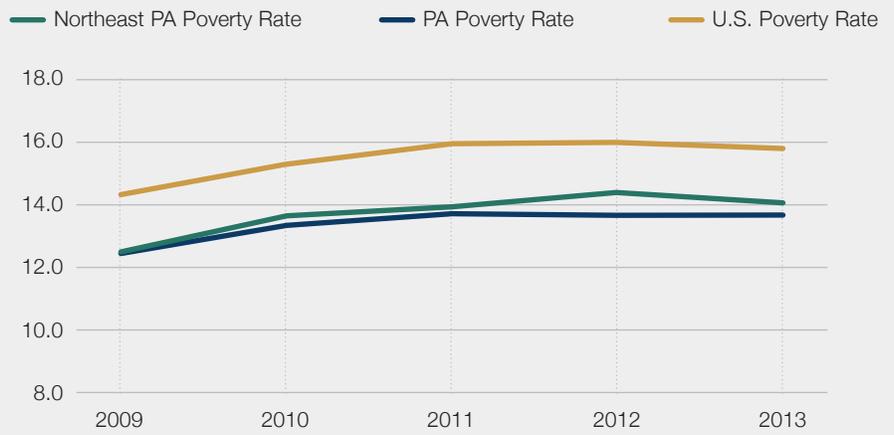
Figure 7.6 compares the poverty rates of Northeast Pennsylvania, Pennsylvania, and the U.S. from 2009 to 2013.

When unemployment and poverty are evaluated together, a significant decline in unemployment 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.

<sup>15</sup> 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 – Northeast Pennsylvania, Pennsylvania and U.S. Poverty Rates**



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

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## 8. NEXT STEPS

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

- Defining the state's sub-region workforce areas.
- Describing key economic, workforce and demographic attributes in the regional economy.
- Forecasting the initial 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 Pennsylvania.
- 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 state.

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# DATA SOURCES KEY

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](http://www.paworkstats.pa.gov)

O\*NET Resource Center (O\*NET)

- Job Zones [www.onetonline.org/help/online/zones](http://www.onetonline.org/help/online/zones)

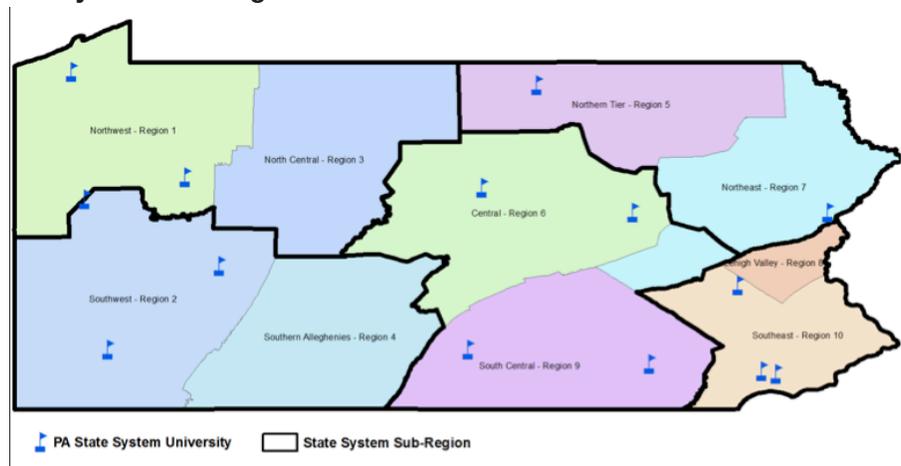
Economic Modeling Specialists International (EMSI)

# APPENDIX A: STATE SYSTEM SUB-REGIONS WITH PREP REGIONS AND WIA REGIONS

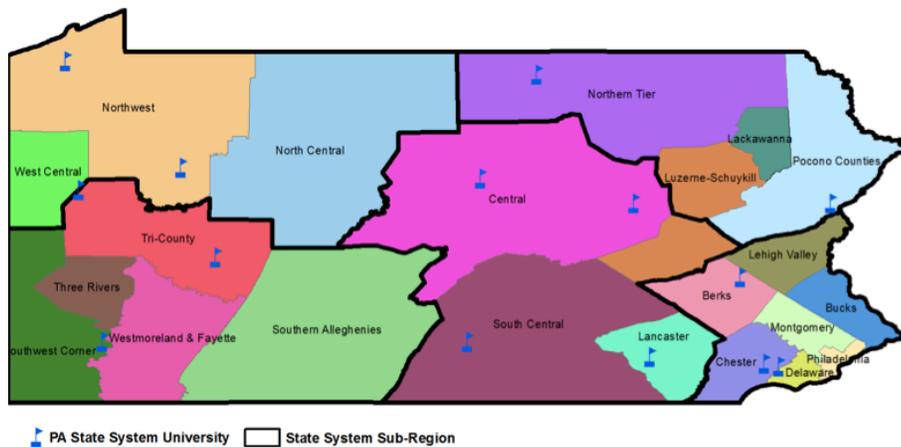
Partnerships for Regional Economic Performance (PREP) regions provide geographic context of how the Pennsylvania Department of Community & Economic Development divides resources and services to support business development, start-ups, investment and other economic development initiatives. To define sub-regions for this project, PREP regions served as the starting point. The following figures outline the sub-regions in relation to PREP regions.

An additional map of Pennsylvania's Workforce Investment Act (WIA) regional boundaries is also provided.

**State System Sub-regions and PREP Boundaries**



**State System Sub-regions and WIA Boundaries**



# APPENDIX B: PENNSYLVANIA STATE AND COUNTY ENROLLMENT AND EMPLOYMENT

<b>County</b>	<b>Fall 2014 Enrollment in PA's State System</b>	<b>2014 QCEW Employment</b>
Allegheny	7,020	683,111
Chester	5,996	240,469
Montgomery	5,401	472,655
Philadelphia	5,263	640,987
Lancaster	4,786	225,673
Delaware	4,206	216,261
Bucks	4,145	250,889
Berks	3,759	166,792
Erie	3,469	124,095
York	3,104	172,145
Lehigh	2,664	180,757
Westmoreland	2,606	132,312
Cumberland	2,537	126,939
Monroe	2,532	52,933
Northampton	2,514	105,825
Butler	2,067	84,472
Dauphin	1,952	176,004
Washington	1,915	86,961
Indiana	1,645	32,653
Luzerne	1,437	140,329
Franklin	1,302	56,715
Fayette	1,137	39,979
Beaver	1,121	52,811
Mercer	1,095	48,028
Columbia	1,074	24,974
Schuylkill	1,068	50,049
Cambria	1,032	53,915
Crawford	1,024	31,113
Lycoming	1,013	53,197
Lackawanna	986	97,259

<b>County</b>	<b>Fall 2014 Enrollment in PA's State System</b>	<b>2014 QCEW Employment</b>
Northumberland	938	27,985
Clarion	883	13,586
Clearfield	881	29,938
Venango	840	19,251
Armstrong	814	17,582
Lawrence	810	29,500
Lebanon	803	48,869
Adams	705	34,139
Centre	699	67,147
Tioga	656	12,973
Bradford	641	24,568
Pike	633	10,748
Clinton	600	13,043
Jefferson	587	15,435
Blair	584	58,233
Carbon	455	16,974
Elk	398	14,994
Wayne	356	14,651
Montour	340	15,578
Warren	324	15,031
Somerset	323	24,398
Perry	319	7,661
Union	313	16,597
Mifflin	290	15,544
McKean	277	15,770
Snyder	269	15,522
Susquehanna	219	9,281
Bedford	202	15,397
Greene	201	14,844
Huntingdon	182	12,343
Wyoming	162	10,181
Potter	140	5,291
Juniata	123	6,146
Fulton	81	4,807
Cameron	65	2,015
Forest	57	2,053
Sullivan	34	1,772
<b>Total Pennsylvania</b>	<b>96,074</b>	<b>5,643,676</b>

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

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# APPENDIX C: INDUSTRY PROJECTIONS 2014-2024 FOR NORTHEAST PENNSYLVANIA

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 Pennsylvania. Also included in the table are the number of jobs in 2014 and the projected job growth/decline to 2024.

NAICS	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
<b>Total</b>	<b>All Industries</b>	<b>399,586</b>	<b>439,344</b>	<b>9.9%</b>	<b>1.0</b>
1111	Oilseed and Grain Farming	18	22	22.2%	0.1
1112	Vegetable and Melon Farming	77	87	13.0%	0.3
1113	Fruit and Tree Nut Farming	16	17	6.3%	0.0
1114	Greenhouse, Nursery, and Floriculture Production	144	149	3.5%	0.3
1119	Other Crop Farming	18	18	0.0%	0.1
1121	Cattle Ranching and Farming	143	134	-6.3%	0.3
1122	Hog and Pig Farming	25	28	12.0%	0.3
1123	Poultry and Egg Production	12	14	16.7%	0.1
1124	Sheep and Goat Farming	3	3	0.0%	0.6
1125	Aquaculture	14	12	-14.3%	0.8
1129	Other Animal Production	42	41	-2.4%	0.8
1131	Timber Tract Operations	24	30	25.0%	1.2
1132	Forest Nurseries and Gathering of Forest Products	8	9	12.5%	1.2
1133	Logging	101	79	-21.8%	0.7
1141	Fishing	1	1	0.0%	0.1
1142	Hunting and Trapping	2	2	0.0%	0.3
1151	Support Activities for Crop Production	44	38	-13.6%	0.0
1152	Support Activities for Animal Production	126	150	19.0%	1.5
1153	Support Activities for Forestry	25	24	-4.0%	0.5
2111	Oil and Gas Extraction	518	669	29.2%	0.9
2121	Coal Mining	253	195	-22.9%	1.2
2123	Nonmetallic Mineral Mining and Quarrying	1,086	1,020	-6.1%	4.1
2131	Support Activities for Mining	2,839	3,548	25.0%	2.2
2211	Electric Power Generation, Transmission and Distribution	1,747	1,634	-6.5%	1.2
2212	Natural Gas Distribution	557	572	2.7%	1.6
2213	Water, Sewage and Other Systems	943	1,072	13.7%	1.5
2361	Residential Building Construction	1,706	1,913	12.1%	0.9
2362	Nonresidential Building Construction	1,744	2,295	31.6%	0.9
2371	Utility System Construction	2,465	3,385	37.3%	1.8
2372	Land Subdivision	113	159	40.7%	0.9
2373	Highway, Street, and Bridge Construction	1,295	1,701	31.4%	1.1
2379	Other Heavy and Civil Engineering Construction	77	85	10.4%	0.2
2381	Foundation, Structure, and Building Exterior Contractors	1,310	1,547	18.1%	0.6
2382	Building Equipment Contractors	3,880	4,562	17.6%	0.7
2383	Building Finishing Contractors	838	901	7.5%	0.4
2389	Other Specialty Trade Contractors	2,467	2,883	16.9%	1.4

NAICS	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
3111	Animal Food Manufacturing	228	236	3.5%	1.4
3112	Grain and Oilseed Milling	13	13	0.0%	0.1
3113	Sugar and Confectionery Product Manufacturing	948	1,035	9.2%	4.7
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing	479	496	3.5%	1.0
3115	Dairy Product Manufacturing	537	513	-4.5%	1.4
3116	Animal Slaughtering and Processing	1,687	1,952	15.7%	1.2
3117	Seafood Product Preparation and Packaging	16	22	37.5%	0.2
3118	Bakeries and Tortilla Manufacturing	1,620	1,741	7.5%	1.9
3119	Other Food Manufacturing	436	505	15.8%	0.8
3121	Beverage Manufacturing	962	1,153	19.9%	1.7
3122	Tobacco Manufacturing	72	86	19.4%	1.8
3131	Fiber, Yarn, and Thread Mills	41	22	-46.3%	0.5
3132	Fabric Mills	292	247	-15.4%	1.8
3133	Textile and Fabric Finishing and Fabric Coating Mills	124	117	-5.6%	1.3
3141	Textile Furnishings Mills	45	55	22.2%	0.3
3149	Other Textile Product Mills	167	147	-12.0%	0.9
3151	Apparel Knitting Mills	25	30	20.0%	0.6
3152	Cut and Sew Apparel Manufacturing	165	200	21.2%	0.5
3159	Apparel Accessories and Other Apparel Manufacturing	84	71	-15.5%	2.5
3169	Other Leather and Allied Product Manufacturing	12	14	16.7%	0.4
3211	Sawmills and Wood Preservation	349	440	26.1%	1.3
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	547	711	30.0%	2.6
3219	Other Wood Product Manufacturing	1,487	1,904	28.0%	2.4
3221	Pulp, Paper, and Paperboard Mills	367	388	5.7%	1.2
3222	Converted Paper Product Manufacturing	2,838	2,896	2.0%	3.6
3231	Printing and Related Support Activities	1,660	1,392	-16.1%	1.2
3241	Petroleum and Coal Products Manufacturing	163	175	7.4%	0.5
3251	Basic Chemical Manufacturing	264	317	20.1%	0.6
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing	213	206	-3.3%	0.8
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	26	33	26.9%	0.2
3254	Pharmaceutical and Medicine Manufacturing	2,244	2,639	17.6%	2.7
3255	Paint, Coating, and Adhesive Manufacturing	119	138	16.0%	0.7
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	547	582	6.4%	1.8
3259	Other Chemical Product and Preparation Manufacturing	276	284	2.9%	1.1
3261	Plastics Product Manufacturing	4,027	4,189	4.0%	2.5
3262	Rubber Product Manufacturing	223	272	22.0%	0.6

NAICS	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
3271	Clay Product and Refractory Manufacturing	95	119	25.3%	0.8
3272	Glass and Glass Product Manufacturing	605	581	-4.0%	2.5
3273	Cement and Concrete Product Manufacturing	666	683	2.6%	1.3
3274	Lime and Gypsum Product Manufacturing	81	101	24.7%	1.9
3279	Other Nonmetallic Mineral Product Manufacturing	201	203	1.0%	1.0
3311	Iron and Steel Mills and Ferroalloy Manufacturing	420	500	19.0%	1.6
3313	Alumina and Aluminum Production and Processing	283	304	7.4%	1.7
3314	Nonferrous Metal (except Aluminum) Production and Processing	1,038	1,089	4.9%	5.7
3315	Foundries	1,140	1,149	0.8%	3.1
3321	Forging and Stamping	755	768	1.7%	2.6
3322	Cutlery and Handtool Manufacturing	61	78	27.9%	0.5
3323	Architectural and Structural Metals Manufacturing	1,415	1,569	10.9%	1.3
3324	Boiler, Tank, and Shipping Container Manufacturing	239	255	6.7%	0.8
3325	Hardware Manufacturing	40	36	-10.0%	0.6
3326	Spring and Wire Product Manufacturing	971	1,004	3.4%	7.7
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	1,000	990	-1.0%	0.9
3328	Coating, Engraving, Heat Treating, and Allied Activities	176	184	4.5%	0.4
3329	Other Fabricated Metal Product Manufacturing	853	834	-2.2%	1.0
3331	Agriculture, Construction, and Mining Machinery Manufacturing	187	213	13.9%	0.3
3332	Industrial Machinery Manufacturing	299	345	15.4%	0.9
3333	Commercial and Service Industry Machinery Manufacturing	219	219	0.0%	0.9
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	150	176	17.3%	0.4
3335	Metalworking Machinery Manufacturing	258	294	14.0%	0.5
3339	Other General Purpose Machinery Manufacturing	281	270	-3.9%	0.4
3341	Computer and Peripheral Equipment Manufacturing	158	191	20.9%	0.3
3342	Communications Equipment Manufacturing	80	96	20.0%	0.3
3343	Audio and Video Equipment Manufacturing	37	40	8.1%	0.6
3344	Semiconductor and Other Electronic Component Manufacturing	374	413	10.4%	0.3
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	548	507	-7.5%	0.5
3346	Manufacturing and Reproducing Magnetic and Optical Media	190	151	-20.5%	3.8
3351	Electric Lighting Equipment Manufacturing	102	99	-2.9%	0.7
3353	Electrical Equipment Manufacturing	226	226	0.0%	0.5
3359	Other Electrical Equipment and Component Manufacturing	287	297	3.5%	0.8
3362	Motor Vehicle Body and Trailer Manufacturing	335	401	19.7%	0.8
3363	Motor Vehicle Parts Manufacturing	677	739	9.2%	0.4

NAICS	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
3364	Aerospace Product and Parts Manufacturing	464	439	-5.4%	0.3
3365	Railroad Rolling Stock Manufacturing	35	43	22.9%	0.4
3369	Other Transportation Equipment Manufacturing	78	94	20.5%	0.8
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	294	333	13.3%	0.4
3372	Office Furniture (including Fixtures) Manufacturing	110	114	3.6%	0.4
3379	Other Furniture Related Product Manufacturing	394	442	12.2%	3.9
3391	Medical Equipment and Supplies Manufacturing	1,746	1,585	-9.2%	1.9
3399	Other Miscellaneous Manufacturing	986	906	-8.1%	1.2
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	1,344	1,345	0.1%	1.4
4232	Furniture and Home Furnishing Merchant Wholesalers	196	210	7.1%	0.7
4233	Lumber and Other Construction Materials Merchant Wholesalers	1,088	1,307	20.1%	1.8
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	967	1,029	6.4%	0.5
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	93	97	4.3%	0.3
4236	Household Appliances and Electrical and Electronic Goods Merchant Wholesalers	570	572	0.4%	0.6
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	709	792	11.7%	1.0
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	1,524	1,450	-4.9%	0.8
4239	Miscellaneous Durable Goods Merchant Wholesalers	532	590	10.9%	0.6
4241	Paper and Paper Product Merchant Wholesalers	270	279	3.3%	0.8
4242	Drugs and Druggists' Sundries Merchant Wholesalers	337	397	17.8%	0.6
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	88	85	-3.4%	0.2
4244	Grocery and Related Product Merchant Wholesalers	2,685	2,901	8.0%	1.3
4245	Farm Product Raw Material Merchant Wholesalers	36	41	13.9%	0.2
4246	Chemical and Allied Products Merchant Wholesalers	237	283	19.4%	0.6
4247	Petroleum and Petroleum Products Merchant Wholesalers	368	369	0.3%	1.3
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	321	387	20.6%	0.6
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	1,154	1,204	4.3%	1.2
4251	Wholesale Electronic Markets and Agents and Brokers	1,882	1,917	1.9%	0.7
4411	Automobile Dealers	3,730	4,160	11.5%	1.1
4412	Other Motor Vehicle Dealers	436	468	7.3%	1.1
4413	Automotive Parts, Accessories, and Tire Stores	1,965	2,152	9.5%	1.3
4421	Furniture Stores	454	443	-2.4%	0.7
4422	Home Furnishings Stores	445	474	6.5%	0.6
4431	Electronics and Appliance Stores	991	949	-4.2%	0.7
4441	Building Material and Supplies Dealers	3,833	3,829	-0.1%	1.2

NAICS	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
4442	Lawn and Garden Equipment and Supplies Stores	627	638	1.8%	1.5
4451	Grocery Stores	10,546	10,521	-0.2%	1.4
4452	Specialty Food Stores	660	631	-4.4%	1.0
4453	Beer, Wine, and Liquor Stores	826	937	13.4%	1.8
4461	Health and Personal Care Stores	3,591	3,491	-2.8%	1.2
4471	Gasoline Stations	4,326	4,121	-4.7%	1.7
4481	Clothing Stores	2,874	2,628	-8.6%	1.0
4482	Shoe Stores	622	661	6.3%	1.1
4483	Jewelry, Luggage, and Leather Goods Stores	397	356	-10.3%	1.0
4511	Sporting Goods, Hobby, and Musical Instrument Stores	1,335	1,446	8.3%	0.9
4512	Book Stores and News Dealers	178	167	-6.2%	0.7
4521	Department Stores	3,845	3,375	-12.2%	1.0
4529	Other General Merchandise Stores	6,084	6,202	1.9%	1.2
4531	Florists	179	163	-8.9%	1.0
4532	Office Supplies, Stationery, and Gift Stores	854	718	-15.9%	1.0
4533	Used Merchandise Stores	244	265	8.6%	0.5
4539	Other Miscellaneous Store Retailers	1,211	1,258	3.9%	1.4
4541	Electronic Shopping and Mail-Order Houses	2,280	2,920	28.1%	2.4
4542	Vending Machine Operators	188	182	-3.2%	1.8
4543	Direct Selling Establishments	973	866	-11.0%	2.5
4811	Scheduled Air Transportation	131	173	32.1%	0.1
4812	Nonscheduled Air Transportation	8	7	-12.5%	0.1
4832	Inland Water Transportation	46	61	32.6%	0.6
4841	General Freight Trucking	4,102	4,727	15.2%	1.5
4842	Specialized Freight Trucking	2,036	2,409	18.3%	1.6
4851	Urban Transit Systems	497	619	24.5%	0.7
4852	Interurban and Rural Bus Transportation	174	157	-9.8%	2.7
4853	Taxi and Limousine Service	146	129	-11.6%	0.6
4854	School and Employee Bus Transportation	1,956	2,063	5.5%	2.7
4855	Charter Bus Industry	178	166	-6.7%	2.0
4859	Other Transit and Ground Passenger Transportation	138	168	21.7%	0.5
4862	Pipeline Transportation of Natural Gas	76	78	2.6%	0.9
4869	Other Pipeline Transportation	4	5	25.0%	0.2
4871	Scenic and Sightseeing Transportation, Land	14	13	-7.1%	0.4
4879	Scenic and Sightseeing Transportation, Other	1	1	0.0%	0.1
4881	Support Activities for Air Transportation	166	161	-3.0%	0.3
4882	Support Activities for Rail Transportation	200	237	18.5%	2.1

NAICS	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
4883	Support Activities for Water Transportation	1	1	0.0%	0.0
4884	Support Activities for Road Transportation	462	631	36.6%	1.4
4885	Freight Transportation Arrangement	460	614	33.5%	0.8
4889	Other Support Activities for Transportation	90	88	-2.2%	1.0
4911	Postal Service	2,040	1,608	-21.2%	1.2
4921	Couriers and Express Delivery Services	1,005	1,110	10.4%	0.7
4922	Local Messengers and Local Delivery	174	193	10.9%	1.1
4931	Warehousing and Storage	10,888	14,281	31.2%	5.0
5111	Newspaper, Periodical, Book, and Directory Publishers	1,790	1,454	-18.8%	1.5
5112	Software Publishers	116	120	3.4%	0.1
5121	Motion Picture and Video Industries	491	465	-5.3%	0.5
5122	Sound Recording Industries	7	8	14.3%	0.2
5151	Radio and Television Broadcasting	663	677	2.1%	1.0
5152	Cable and Other Subscription Programming	24	20	-16.7%	0.1
5171	Wired Telecommunications Carriers	1,595	1,392	-12.7%	0.9
5172	Wireless Telecommunications Carriers (except Satellite)	43	43	0.0%	0.1
5179	Other Telecommunications	83	62	-25.3%	0.3
5182	Data Processing, Hosting, and Related Services	1,612	1,584	-1.7%	2.0
5191	Other Information Services	688	800	16.3%	0.7
5221	Depository Credit Intermediation	5,923	5,602	-5.4%	1.2
5222	Nondepository Credit Intermediation	1,542	1,731	12.3%	0.9
5223	Activities Related to Credit Intermediation	160	145	-9.4%	0.2
5231	Securities and Commodity Contracts Intermediation and Brokerage	365	396	8.5%	0.3
5232	Securities and Commodity Exchanges	7	9	28.6%	0.3
5239	Other Financial Investment Activities	489	531	8.6%	0.4
5241	Insurance Carriers	3,739	4,217	12.8%	1.1
5242	Agencies, Brokerages, and Other Insurance Related Activities	2,054	2,347	14.3%	0.7
5251	Insurance and Employee Benefit Funds	1	1	0.0%	0.1
5311	Lessors of Real Estate	697	710	1.9%	0.4
5312	Offices of Real Estate Agents and Brokers	381	353	-7.3%	0.5
5313	Activities Related to Real Estate	722	828	14.7%	0.4
5321	Automotive Equipment Rental and Leasing	367	418	13.9%	0.7
5322	Consumer Goods Rental	353	371	5.1%	0.8
5323	General Rental Centers	117	146	24.8%	1.0
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	625	709	13.4%	1.5
5331	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	6	6	0.0%	0.1

NAICS	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
5411	Legal Services	2,228	2,372	6.5%	0.7
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	1,479	1,592	7.6%	0.5
5413	Architectural, Engineering, and Related Services	2,279	2,611	14.6%	0.5
5414	Specialized Design Services	194	227	17.0%	0.5
5415	Computer Systems Design and Related Services	1,435	1,798	25.3%	0.3
5416	Management, Scientific, and Technical Consulting Services	2,164	2,307	6.6%	0.6
5417	Scientific Research and Development Services	160	176	10.0%	0.1
5418	Advertising, Public Relations, and Related Services	363	441	21.5%	0.3
5419	Other Professional, Scientific, and Technical Services	1,466	1,759	20.0%	0.8
5511	Management of Companies and Enterprises	3,958	4,400	11.2%	0.6
5611	Office Administrative Services	109	97	-11.0%	0.1
5612	Facilities Support Services	920	1,155	25.5%	2.3
5613	Employment Services	7,415	10,628	43.3%	0.7
5614	Business Support Services	2,919	3,252	11.4%	1.1
5615	Travel Arrangement and Reservation Services	884	825	-6.7%	1.5
5616	Investigation and Security Services	1,742	2,112	21.2%	0.7
5617	Services to Buildings and Dwellings	4,152	4,284	3.2%	0.7
5619	Other Support Services	713	690	-3.2%	0.8
5621	Waste Collection	796	994	24.9%	1.7
5622	Waste Treatment and Disposal	338	450	33.1%	0.9
5629	Remediation and Other Waste Management Services	548	727	32.7%	1.4
6111	Elementary and Secondary Schools	23,879	23,728	-0.6%	1.0
6112	Junior Colleges	1,467	1,438	-2.0%	0.7
6113	Colleges, Universities, and Professional Schools	7,766	7,915	1.9%	0.9
6114	Business Schools and Computer and Management Training	26	25	-3.8%	0.1
6115	Technical and Trade Schools	395	477	20.8%	0.9
6116	Other Schools and Instruction	590	625	5.9%	0.5
6117	Educational Support Services	65	86	32.3%	0.1
6211	Offices of Physicians	7,029	7,626	8.5%	1.0
6212	Offices of Dentists	2,428	2,696	11.0%	0.9
6213	Offices of Other Health Practitioners	3,058	4,223	38.1%	1.3
6214	Outpatient Care Centers	4,492	6,206	38.2%	2.0
6215	Medical and Diagnostic Laboratories	700	827	18.1%	1.0
6216	Home Health Care Services	3,312	4,381	32.3%	0.9
6219	Other Ambulatory Health Care Services	1,893	2,359	24.6%	2.2
6221	General Medical and Surgical Hospitals	15,617	17,572	12.5%	1.0
6222	Psychiatric and Substance Abuse Hospitals	1,295	1,564	20.8%	1.9

NAICS	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	417	459	10.1%	0.6
6231	Nursing Care Facilities (Skilled Nursing Facilities)	8,235	9,808	19.1%	1.6
6232	Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	3,893	4,741	21.8%	1.9
6233	Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	2,823	3,599	27.5%	1.1
6239	Other Residential Care Facilities	392	560	42.9%	0.8
6241	Individual and Family Services	8,113	10,291	26.8%	1.3
6242	Community Food and Housing, and Emergency and Other Relief Services	210	239	13.8%	0.5
6243	Vocational Rehabilitation Services	1,070	1,241	16.0%	1.0
6244	Child Day Care Services	3,129	3,595	14.9%	1.3
7111	Performing Arts Companies	108	133	23.1%	0.3
7112	Spectator Sports	400	497	24.3%	1.0
7113	Promoters of Performing Arts, Sports, and Similar Events	545	667	22.4%	1.5
7114	Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures	20	20	0.0%	0.3
7115	Independent Artists, Writers, and Performers	45	56	24.4%	0.3
7121	Museums, Historical Sites, and Similar Institutions	390	458	17.4%	0.6
7131	Amusement Parks and Arcades	188	234	24.5%	0.3
7132	Gambling Industries	200	185	-7.5%	0.3
7139	Other Amusement and Recreation Industries	5,059	6,243	23.4%	1.3
7211	Traveler Accommodation	9,321	10,905	17.0%	1.7
7212	RV (Recreational Vehicle) Parks and Recreational Camps	1,150	1,261	9.7%	6.7
7213	Rooming and Boarding Houses	22	27	22.7%	0.5
7223	Special Food Services	2,718	2,818	3.7%	1.5
7224	Drinking Places (Alcoholic Beverages)	1,152	1,173	1.8%	1.1
7225	Restaurants and Other Eating Places	23,575	25,429	7.9%	0.8
8111	Automotive Repair and Maintenance	2,509	2,665	6.2%	1.0
8112	Electronic and Precision Equipment Repair and Maintenance	179	226	26.3%	0.6
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	421	479	13.8%	0.7
8114	Personal and Household Goods Repair and Maintenance	47	48	2.1%	0.2
8121	Personal Care Services	1,958	2,289	16.9%	1.0
8122	Death Care Services	499	604	21.0%	1.2
8123	Drycleaning and Laundry Services	911	945	3.7%	1.0
8129	Other Personal Services	365	462	26.6%	0.4
8131	Religious Organizations	1,074	1,071	-0.3%	2.0
8132	Grantmaking and Giving Services	140	127	-9.3%	0.3

NAICS	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
8133	Social Advocacy Organizations	236	269	14.0%	0.4
8134	Civic and Social Organizations	1,595	1,655	3.8%	1.4
8139	Business, Professional, Labor, Political, and Similar Organizations	2,235	2,562	14.6%	1.8
8141	Private Households	128	131	2.3%	0.2
9211	Executive, Legislative, and Other General Government Support	10,681	10,536	-1.4%	1.2
9221	Justice, Public Order, and Safety Activities	3,547	3,736	5.3%	0.6
9231	Administration of Human Resource Programs	546	581	6.4%	0.2
9241	Administration of Environmental Quality Programs	875	892	1.9%	0.9
9251	Administration of Housing Programs, Urban Planning, and Community Development	481	462	-4.0%	2.0
9261	Administration of Economic Programs	364	355	-2.5%	0.2
9281	National Security and International Affairs	3,066	2,549	-16.9%	1.8

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

# APPENDIX D: OCCUPATION PROJECTIONS 2014-2024 FOR NORTHEAST PENNSYLVANIA

For this analysis a “skilled” occupation is defined as an occupation in O\*NET Job Zones<sup>16</sup> 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.<sup>17</sup>

## **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.

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<sup>16</sup> <https://www.onetonline.org/help/online/zones>

<sup>17</sup> <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	399,586	439,344	9.9%	155,228
11-1011	Chief Executives	5	724	729	0.7%	177
11-1021	General and Operations Managers	4	4,459	5,152	15.5%	1,486
11-1031	Legislators	4	171	140	-18.1%	14
11-2011	Advertising and Promotions Managers	4	42	37	-11.9%	9
11-2021	Marketing Managers	4	256	265	3.5%	65
11-2022	Sales Managers	4	616	599	-2.8%	117
11-2031	Public Relations and Fundraising Managers	4	82	75	-8.5%	11
11-3011	Administrative Services Managers	3	501	520	3.8%	96
11-3021	Computer and Information Systems Managers	4	497	629	26.6%	205
11-3031	Financial Managers	4	797	767	-3.8%	118
11-3051	Industrial Production Managers	4	489	493	0.8%	116
11-3061	Purchasing Managers	4	90	93	3.3%	24
11-3071	Transportation, Storage, and Distribution Managers	4	321	399	24.3%	157
11-3111	Compensation and Benefits Managers	4	29	27	-6.9%	6
11-3121	Human Resources Managers	4	172	214	24.4%	87
11-3131	Training and Development Managers	4	42	50	19.0%	19
11-9021	Construction Managers	4	405	506	24.9%	160
11-9031	Education Administrators, Preschool and Childcare Center/Program	4	147	149	1.4%	42
11-9032	Education Administrators, Elementary and Secondary School	5	628	592	-5.7%	171
11-9033	Education Administrators, Postsecondary	5	288	274	-4.9%	68
11-9039	Education Administrators, All Other	5	41	47	14.6%	17
11-9041	Architectural and Engineering Managers	5	256	271	5.9%	81
11-9051	Food Service Managers	3	409	438	7.1%	111
11-9061	Funeral Service Managers	3	37	41	10.8%	15
11-9071	Gaming Managers	3	3	3	0.0%	0
11-9081	Lodging Managers	3	186	215	15.6%	110
11-9111	Medical and Health Services Managers	5	902	1,034	14.6%	351
11-9121	Natural Sciences Managers	5	62	66	6.5%	20
11-9131	Postmasters and Mail Superintendents	3	79	52	-34.2%	7
11-9141	Property, Real Estate, and Community Association Managers	4	150	182	21.3%	71
11-9151	Social and Community Service Managers	4	362	432	19.3%	153
11-9161	Emergency Management Directors	4	29	25	-13.8%	1
11-9199	Managers, All Other	4	425	457	7.5%	125

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
13-1011	Agents and Business Managers of Artists, Performers, and Athletes	4	13	11	-15.4%	3
13-1021	Buyers and Purchasing Agents, Farm Products	4	37	39	5.4%	12
13-1022	Wholesale and Retail Buyers, Except Farm Products	3	298	289	-3.0%	73
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	4	855	884	3.4%	212
13-1031	Claims Adjusters, Examiners, and Investigators	4	748	857	14.6%	331
13-1032	Insurance Appraisers, Auto Damage	3	37	50	35.1%	26
13-1041	Compliance Officers	4	695	797	14.7%	246
13-1051	Cost Estimators	4	623	723	16.1%	312
13-1071	Human Resources Specialists	4	1,230	1,541	25.3%	574
13-1075	Labor Relations Specialists	4	614	580	-5.5%	147
13-1081	Logisticians	4	372	450	21.0%	128
13-1111	Management Analysts	4	1,018	1,145	12.5%	296
13-1121	Meeting, Convention, and Event Planners	4	219	276	26.0%	91
13-1131	Fundraisers	4	135	167	23.7%	62
13-1141	Compensation, Benefits, and Job Analysis Specialists	4	188	184	-2.1%	38
13-1151	Training and Development Specialists	4	605	690	14.0%	205
13-1161	Market Research Analysts and Marketing Specialists	4	1,204	1,547	28.5%	537
13-1199	Business Operations Specialists, All Other	4	1,028	1,063	3.4%	157
13-2011	Accountants and Auditors	4	2,919	3,181	9.0%	1,233
13-2021	Appraisers and Assessors of Real Estate	4	88	86	-2.3%	11
13-2031	Budget Analysts	4	101	98	-3.0%	40
13-2041	Credit Analysts	4	154	184	19.5%	76
13-2051	Financial Analysts	4	481	557	15.8%	202
13-2052	Personal Financial Advisors	4	276	325	17.8%	101
13-2053	Insurance Underwriters	4	264	316	19.7%	154
13-2061	Financial Examiners	4	75	78	4.0%	27
13-2071	Credit Counselors	4	123	147	19.5%	51
13-2072	Loan Officers	3	884	990	12.0%	351
13-2081	Tax Examiners and Collectors, and Revenue Agents	3	335	290	-13.4%	91
13-2082	Tax Preparers	3	90	79	-12.2%	16
13-2099	Financial Specialists, All Other	4	207	182	-12.1%	6
15-1111	Computer and Information Research Scientists	5	8	9	12.5%	2
15-1121	Computer Systems Analysts	4	1,022	1,264	23.7%	423
15-1122	Information Security Analysts	4	112	132	17.9%	38
15-1131	Computer Programmers	4	541	611	12.9%	248

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
15-1132	Software Developers, Applications	4	960	1,237	28.9%	414
15-1133	Software Developers, Systems Software	4	429	388	-9.6%	19
15-1134	Web Developers	3	222	278	25.2%	92
15-1141	Database Administrators	4	266	325	22.2%	114
15-1142	Network and Computer Systems Administrators	4	835	770	-7.8%	78
15-1143	Computer Network Architects	4	164	189	15.2%	51
15-1151	Computer User Support Specialists	3	1,341	1,671	24.6%	570
15-1152	Computer Network Support Specialists	4	302	297	-1.7%	53
15-1199	Computer Occupations, All Other	4	411	469	14.1%	131
15-2011	Actuaries	4	75	94	25.3%	43
15-2031	Operations Research Analysts	5	140	173	23.6%	67
15-2041	Statisticians	5	79	104	31.6%	52
17-1011	Architects, Except Landscape and Naval	4	110	139	26.4%	68
17-1012	Landscape Architects	4	35	46	31.4%	22
17-1021	Cartographers and Photogrammetrists	4	12	14	16.7%	4
17-1022	Surveyors	4	67	101	50.7%	51
17-2011	Aerospace Engineers	4	26	35	34.6%	16
17-2021	Agricultural Engineers	4	5	6	20.0%	3
17-2031	Biomedical Engineers	4	38	34	-10.5%	7
17-2041	Chemical Engineers	4	105	122	16.2%	47
17-2051	Civil Engineers	4	598	734	22.7%	299
17-2061	Computer Hardware Engineers	4	76	71	-6.6%	10
17-2071	Electrical Engineers	4	323	342	5.9%	99
17-2072	Electronics Engineers, Except Computer	4	128	113	-11.7%	17
17-2081	Environmental Engineers	5	152	178	17.1%	70
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	4	75	84	12.0%	33
17-2112	Industrial Engineers	4	519	515	-0.8%	172
17-2131	Materials Engineers	4	65	79	21.5%	39
17-2141	Mechanical Engineers	4	498	512	2.8%	203
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	4	21	19	-9.5%	6
17-2161	Nuclear Engineers	4	164	186	13.4%	79
17-2171	Petroleum Engineers	4	86	110	27.9%	55
17-2199	Engineers, All Other	4	179	224	25.1%	81
17-3011	Architectural and Civil Drafters	4	200	226	13.0%	74
17-3012	Electrical and Electronics Drafters	3	62	53	-14.5%	3
17-3013	Mechanical Drafters	3	186	174	-6.5%	28

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
17-3019	Drafters, All Other	3	9	11	22.2%	3
17-3021	Aerospace Engineering and Operations Technicians	4	5	6	20.0%	2
17-3022	Civil Engineering Technicians	3	96	111	15.6%	39
17-3023	Electrical and Electronics Engineering Technicians	3	227	209	-7.9%	38
17-3024	Electro-Mechanical Technicians	3	22	20	-9.1%	4
17-3025	Environmental Engineering Technicians	4	58	65	12.1%	22
17-3026	Industrial Engineering Technicians	3	109	112	2.8%	31
17-3027	Mechanical Engineering Technicians	3	80	89	11.3%	29
17-3029	Engineering Technicians, Except Drafters, All Other	3	168	225	33.9%	98
17-3031	Surveying and Mapping Technicians	3	71	90	26.8%	35
19-1012	Food Scientists and Technologists	4	24	30	25.0%	14
19-1013	Soil and Plant Scientists	5	7	9	28.6%	5
19-1021	Biochemists and Biophysicists	5	11	14	27.3%	6
19-1022	Microbiologists	5	28	43	53.6%	24
19-1023	Zoologists and Wildlife Biologists	5	16	16	0.0%	4
19-1029	Biological Scientists, All Other	5	25	26	4.0%	8
19-1031	Conservation Scientists	4	39	45	15.4%	18
19-1032	Foresters	4	30	33	10.0%	13
19-1041	Epidemiologists	5	9	8	-11.1%	1
19-1042	Medical Scientists, Except Epidemiologists	5	269	331	23.0%	127
19-1099	Life Scientists, All Other	5	13	16	23.1%	5
19-2012	Physicists	5	11	10	-9.1%	1
19-2021	Atmospheric and Space Scientists	4	8	7	-12.5%	1
19-2031	Chemists	4	294	384	30.6%	184
19-2032	Materials Scientists	5	15	16	6.7%	6
19-2041	Environmental Scientists and Specialists, Including Health	4	138	161	16.7%	67
19-2042	Geoscientists, Except Hydrologists and Geographers	4	73	84	15.1%	37
19-2043	Hydrologists	4	9	9	0.0%	2
19-2099	Physical Scientists, All Other	5	26	21	-19.2%	1
19-3011	Economists	5	28	29	3.6%	10
19-3022	Survey Researchers	5	141	153	8.5%	57
19-3031	Clinical, Counseling, and School Psychologists	5	416	452	8.7%	163
19-3039	Psychologists, All Other	5	31	36	16.1%	14
19-3041	Sociologists	5	5	4	-20.0%	2
19-3051	Urban and Regional Planners	5	120	116	-3.3%	54

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
19-3093	Historians	5	7	6	-14.3%	0
19-3099	Social Scientists and Related Workers, All Other	4	38	38	0.0%	8
19-4011	Agricultural and Food Science Technicians	3	21	18	-14.3%	5
19-4021	Biological Technicians	4	229	258	12.7%	105
19-4031	Chemical Technicians	3	211	256	21.3%	112
19-4041	Geological and Petroleum Technicians	4	80	101	26.3%	60
19-4051	Nuclear Technicians	3	132	151	14.4%	77
19-4061	Social Science Research Assistants	4	30	37	23.3%	21
19-4091	Environmental Science and Protection Technicians, Including Health	4	81	104	28.4%	59
19-4092	Forensic Science Technicians	4	12	12	0.0%	5
19-4093	Forest and Conservation Technicians	3	29	32	10.3%	17
19-4099	Life, Physical, and Social Science Technicians, All Other	3	120	149	24.2%	80
21-1011	Substance Abuse and Behavioral Disorder Counselors	5	612	688	12.4%	250
21-1012	Educational, Guidance, School, and Vocational Counselors	5	807	817	1.2%	200
21-1013	Marriage and Family Therapists	5	93	124	33.3%	52
21-1014	Mental Health Counselors	5	909	1,050	15.5%	390
21-1015	Rehabilitation Counselors	5	562	712	26.7%	308
21-1019	Counselors, All Other	5	81	87	7.4%	24
21-1021	Child, Family, and School Social Workers	4	1,187	1,348	13.6%	438
21-1022	Healthcare Social Workers	5	559	711	27.2%	282
21-1023	Mental Health and Substance Abuse Social Workers	5	819	1,033	26.1%	444
21-1029	Social Workers, All Other	5	83	93	12.0%	29
21-1091	Health Educators	4	172	204	18.6%	79
21-1092	Probation Officers and Correctional Treatment Specialists	4	338	352	4.1%	123
21-1093	Social and Human Service Assistants	4	1,567	1,802	15.0%	702
21-1094	Community Health Workers	4	68	73	7.4%	22
21-1099	Community and Social Service Specialists, All Other	4	94	102	8.5%	31
21-2011	Clergy	5	174	196	12.6%	64
21-2021	Directors, Religious Activities and Education	4	184	212	15.2%	110
21-2099	Religious Workers, All Other	4	51	40	-21.6%	6
23-1011	Lawyers	5	1,215	1,339	10.2%	331
23-1012	Judicial Law Clerks	5	97	98	1.0%	21
23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers	5	60	57	-5.0%	10

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
23-1022	Arbitrators, Mediators, and Conciliators	5	20	25	25.0%	8
23-1023	Judges, Magistrate Judges, and Magistrates	5	22	19	-13.6%	2
23-2011	Paralegals and Legal Assistants	3	487	590	21.1%	185
23-2091	Court Reporters	3	80	90	12.5%	31
23-2093	Title Examiners, Abstractors, and Searchers	3	178	222	24.7%	84
23-2099	Legal Support Workers, All Other	3	59	63	6.8%	14
25-1011	Business Teachers, Postsecondary	5	275	317	15.3%	84
25-1021	Computer Science Teachers, Postsecondary	5	129	152	17.8%	43
25-1022	Mathematical Science Teachers, Postsecondary	5	176	177	0.6%	28
25-1031	Architecture Teachers, Postsecondary	5	30	35	16.7%	10
25-1032	Engineering Teachers, Postsecondary	5	155	184	18.7%	53
25-1041	Agricultural Sciences Teachers, Postsecondary	5	21	18	-14.3%	1
25-1042	Biological Science Teachers, Postsecondary	5	213	218	2.3%	38
25-1043	Forestry and Conservation Science Teachers, Postsecondary	5	7	6	-14.3%	0
25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	5	47	52	10.6%	13
25-1052	Chemistry Teachers, Postsecondary	5	89	95	6.7%	19
25-1053	Environmental Science Teachers, Postsecondary	5	17	16	-5.9%	2
25-1054	Physics Teachers, Postsecondary	5	60	70	16.7%	19
25-1061	Anthropology and Archeology Teachers, Postsecondary	5	18	17	-5.6%	2
25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	5	26	28	7.7%	6
25-1063	Economics Teachers, Postsecondary	5	65	72	10.8%	17
25-1064	Geography Teachers, Postsecondary	5	19	21	10.5%	5
25-1065	Political Science Teachers, Postsecondary	5	63	66	4.8%	12
25-1066	Psychology Teachers, Postsecondary	5	140	149	6.4%	31
25-1067	Sociology Teachers, Postsecondary	5	93	106	14.0%	28
25-1069	Social Sciences Teachers, Postsecondary, All Other	5	26	32	23.1%	10
25-1071	Health Specialties Teachers, Postsecondary	5	402	412	2.5%	72
25-1072	Nursing Instructors and Teachers, Postsecondary	5	193	189	-2.1%	26
25-1081	Education Teachers, Postsecondary	5	204	203	-0.5%	31
25-1082	Library Science Teachers, Postsecondary	5	19	22	15.8%	6
25-1111	Criminal Justice and Law Enforcement Teachers, Postsecondary	5	33	34	3.0%	6
25-1112	Law Teachers, Postsecondary	5	32	34	6.3%	8
25-1113	Social Work Teachers, Postsecondary	5	35	33	-5.7%	3
25-1121	Art, Drama, and Music Teachers, Postsecondary	5	285	336	17.9%	94

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
25-1122	Communications Teachers, Postsecondary	5	90	99	10.0%	23
25-1123	English Language and Literature Teachers, Postsecondary	5	272	271	-0.4%	41
25-1124	Foreign Language and Literature Teachers, Postsecondary	5	106	117	10.4%	27
25-1125	History Teachers, Postsecondary	5	87	93	6.9%	20
25-1126	Philosophy and Religion Teachers, Postsecondary	5	84	87	3.6%	16
25-1191	Graduate Teaching Assistants	5	83	95	14.5%	26
25-1192	Home Economics Teachers, Postsecondary	5	6	5	-16.7%	0
25-1193	Recreation and Fitness Studies Teachers, Postsecondary	5	58	57	-1.7%	8
25-1194	Vocational Education Teachers, Postsecondary	3	360	369	2.5%	63
25-1199	Postsecondary Teachers, All Other	5	247	287	16.2%	78
25-2011	Preschool Teachers, Except Special Education	3	1,077	1,383	28.4%	615
25-2012	Kindergarten Teachers, Except Special Education	4	475	469	-1.3%	140
25-2021	Elementary School Teachers, Except Special Education	4	4,477	4,459	-0.4%	1,108
25-2022	Middle School Teachers, Except Special and Career/Technical Education	4	1,929	2,184	13.2%	739
25-2023	Career/Technical Education Teachers, Middle School	4	50	59	18.0%	24
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	4	4,118	3,962	-3.8%	1,247
25-2032	Career/Technical Education Teachers, Secondary School	4	365	331	-9.3%	86
25-2051	Special Education Teachers, Preschool	4	54	63	16.7%	19
25-2052	Special Education Teachers, Kindergarten and Elementary School	4	866	905	4.5%	236
25-2053	Special Education Teachers, Middle School	4	303	307	1.3%	73
25-2054	Special Education Teachers, Secondary School	4	628	660	5.1%	185
25-2059	Special Education Teachers, All Other	4	20	24	20.0%	6
25-3011	Adult Basic and Secondary Education and Literacy Teachers and Instructors	4	103	93	-9.7%	12
25-3021	Self-Enrichment Education Teachers	3	449	426	-5.1%	73
25-3097	Teachers and Instructors, All Other, Except Substitute Teachers	3	297	337	13.5%	92
25-3098	Substitute Teachers	3	1,283	1,176	-8.3%	161
25-4011	Archivists	5	19	21	10.5%	6
25-4012	Curators	5	25	30	20.0%	11
25-4013	Museum Technicians and Conservators	4	27	34	25.9%	13
25-4021	Librarians	5	389	395	1.5%	102

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
25-4031	Library Technicians	4	213	219	2.8%	126
25-9011	Audio-Visual and Multimedia Collections Specialists	4	15	16	6.7%	4
25-9021	Farm and Home Management Advisors	5	3	2	-33.3%	0
25-9031	Instructional Coordinators	5	242	252	4.1%	31
25-9041	Teacher Assistants	3	3,544	3,680	3.8%	1,017
25-9099	Education, Training, and Library Workers, All Other	4	55	53	-3.6%	4
27-1011	Art Directors	4	58	62	6.9%	20
27-1012	Craft Artists	2	3	2	-33.3%	0
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	3	19	18	-5.3%	5
27-1014	Multimedia Artists and Animators	4	21	20	-4.8%	5
27-1019	Artists and Related Workers, All Other	4	9	7	-22.2%	0
27-1021	Commercial and Industrial Designers	4	52	40	-23.1%	4
27-1022	Fashion Designers	3	18	21	16.7%	8
27-1023	Floral Designers	2	129	100	-22.5%	38
27-1024	Graphic Designers	4	503	487	-3.2%	143
27-1025	Interior Designers	4	69	84	21.7%	43
27-1026	Merchandise Displayers and Window Trimmers	3	198	226	14.1%	86
27-1027	Set and Exhibit Designers	5	12	14	16.7%	5
27-2011	Actors	2	47	52	10.6%	24
27-2012	Producers and Directors	4	186	189	1.6%	85
27-2021	Athletes and Sports Competitors	2	67	83	23.9%	42
27-2022	Coaches and Scouts	4	522	524	0.4%	168
27-2023	Umpires, Referees, and Other Sports Officials	3	29	30	3.4%	10
27-2031	Dancers	3	6	5	-16.7%	1
27-2032	Choreographers	4	10	10	0.0%	4
27-2041	Music Directors and Composers	3	87	69	-20.7%	13
27-2042	Musicians and Singers	3	78	68	-12.8%	21
27-2099	Entertainers and Performers, Sports and Related Workers, All Other	3	5	5	0.0%	0
27-3011	Radio and Television Announcers	3	113	110	-2.7%	50
27-3012	Public Address System and Other Announcers	2	9	11	22.2%	5
27-3022	Reporters and Correspondents	4	124	92	-25.8%	33
27-3031	Public Relations Specialists	4	513	516	0.6%	82
27-3041	Editors	4	270	239	-11.5%	56
27-3042	Technical Writers	4	64	59	-7.8%	15
27-3043	Writers and Authors	4	97	90	-7.2%	18

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
27-3091	Interpreters and Translators	4	57	51	-10.5%	3
27-3099	Media and Communication Workers, All Other	4	19	16	-15.8%	0
27-4011	Audio and Video Equipment Technicians	3	126	142	12.7%	43
27-4012	Broadcast Technicians	3	53	52	-1.9%	14
27-4014	Sound Engineering Technicians	3	24	22	-8.3%	4
27-4021	Photographers	3	124	115	-7.3%	27
27-4031	Camera Operators, Television, Video, and Motion Picture	3	36	32	-11.1%	2
27-4032	Film and Video Editors	3	23	19	-17.4%	0
27-4099	Media and Communication Equipment Workers, All Other	3	14	11	-21.4%	0
29-1011	Chiropractors	5	96	137	42.7%	63
29-1021	Dentists, General	5	265	310	17.0%	112
29-1022	Oral and Maxillofacial Surgeons	5	10	10	0.0%	3
29-1023	Orthodontists	5	7	9	28.6%	4
29-1029	Dentists, All Other Specialists	5	8	7	-12.5%	2
29-1031	Dietitians and Nutritionists	5	231	261	13.0%	60
29-1041	Optometrists	5	97	128	32.0%	63
29-1051	Pharmacists	5	936	1,014	8.3%	325
29-1061	Anesthesiologists	5	97	103	6.2%	32
29-1062	Family and General Practitioners	5	419	480	14.6%	178
29-1063	Internists, General	5	63	61	-3.2%	14
29-1064	Obstetricians and Gynecologists	5	22	28	27.3%	11
29-1065	Pediatricians, General	5	23	30	30.4%	11
29-1066	Psychiatrists	5	76	84	10.5%	30
29-1067	Surgeons	5	135	177	31.1%	78
29-1069	Physicians and Surgeons, All Other	5	966	1,024	6.0%	311
29-1071	Physician Assistants	5	329	400	21.6%	135
29-1081	Podiatrists	5	37	65	75.7%	43
29-1122	Occupational Therapists	5	411	557	35.5%	211
29-1123	Physical Therapists	5	710	968	36.3%	459
29-1124	Radiation Therapists	3	53	54	1.9%	12
29-1125	Recreational Therapists	4	106	119	12.3%	39
29-1126	Respiratory Therapists	3	310	365	17.7%	100
29-1127	Speech-Language Pathologists	5	333	432	29.7%	149
29-1128	Exercise Physiologists	5	21	29	38.1%	10
29-1129	Therapists, All Other	4	31	45	45.2%	18
29-1131	Veterinarians	5	150	212	41.3%	115

<b>SOC Code</b>	<b>Occupation Title</b>	<b>Job Zone</b>	<b>2014</b>	<b>2024</b>	<b>% Change 2014-2024</b>	<b>New and Replacement Jobs</b>
29-1141	Registered Nurses	3	8,544	10,329	20.9%	3,515
29-1151	Nurse Anesthetists	5	132	146	10.6%	42
29-1161	Nurse Midwives	5	11	16	45.5%	6
29-1171	Nurse Practitioners	5	255	327	28.2%	118
29-1181	Audiologists	5	40	51	27.5%	20
29-1199	Health Diagnosing and Treating Practitioners, All Other	5	36	34	-5.6%	6
29-2011	Medical and Clinical Laboratory Technologists	4	533	598	12.2%	226
29-2012	Medical and Clinical Laboratory Technicians	3	642	776	20.9%	317
29-2021	Dental Hygienists	3	664	798	20.2%	314
29-2031	Cardiovascular Technologists and Technicians	3	183	235	28.4%	80
29-2032	Diagnostic Medical Sonographers	3	152	172	13.2%	41
29-2033	Nuclear Medicine Technologists	3	64	70	9.4%	15
29-2034	Radiologic Technologists	3	623	729	17.0%	203
29-2035	Magnetic Resonance Imaging Technologists	3	84	102	21.4%	31
29-2041	Emergency Medical Technicians and Paramedics	3	1,125	1,374	22.1%	620
29-2051	Dietetic Technicians	2	220	306	39.1%	112
29-2052	Pharmacy Technicians	3	1,103	1,223	10.9%	247
29-2053	Psychiatric Technicians	3	138	166	20.3%	56
29-2054	Respiratory Therapy Technicians	3	31	29	-6.5%	2
29-2055	Surgical Technologists	3	243	329	35.4%	109
29-2056	Veterinary Technologists and Technicians	3	226	298	31.9%	97
29-2057	Ophthalmic Medical Technicians	3	74	104	40.5%	39
29-2061	Licensed Practical and Licensed Vocational Nurses	3	2,679	3,394	26.7%	1,423
29-2071	Medical Records and Health Information Technicians	3	522	649	24.3%	267
29-2081	Opticians, Dispensing	3	231	311	34.6%	159
29-2091	Orthotists and Prosthetists	5	36	40	11.1%	8
29-2092	Hearing Aid Specialists	3	12	13	8.3%	2
29-2099	Health Technologists and Technicians, All Other	3	179	246	37.4%	81
29-9011	Occupational Health and Safety Specialists	4	174	184	5.7%	61
29-9012	Occupational Health and Safety Technicians	3	55	69	25.5%	29
29-9091	Athletic Trainers	5	89	119	33.7%	57
29-9099	Healthcare Practitioners and Technical Workers, All Other	4	53	48	-9.4%	8
31-1011	Home Health Aides	2	3,672	4,591	25.0%	1,929
31-1013	Psychiatric Aides	2	175	197	12.6%	67
31-1014	Nursing Assistants	2	5,518	6,729	21.9%	2,325

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
31-1015	Orderlies	2	150	174	16.0%	53
31-2011	Occupational Therapy Assistants	3	170	236	38.8%	118
31-2012	Occupational Therapy Aides	3	35	52	48.6%	27
31-2021	Physical Therapist Assistants	3	313	454	45.0%	225
31-2022	Physical Therapist Aides	2	145	201	38.6%	90
31-9011	Massage Therapists	3	152	211	38.8%	75
31-9091	Dental Assistants	3	903	995	10.2%	290
31-9092	Medical Assistants	3	1,629	2,061	26.5%	759
31-9093	Medical Equipment Preparers	2	121	154	27.3%	56
31-9094	Medical Transcriptionists	3	273	248	-9.2%	49
31-9095	Pharmacy Aides	2	112	94	-16.1%	9
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	3	136	150	10.3%	43
31-9097	Phlebotomists	3	379	468	23.5%	176
31-9099	Healthcare Support Workers, All Other	3	92	84	-8.7%	7
33-1011	First-Line Supervisors of Correctional Officers	3	109	117	7.3%	49
33-1012	First-Line Supervisors of Police and Detectives	3	238	287	20.6%	129
33-1021	First-Line Supervisors of Fire Fighting and Prevention Workers	3	66	75	13.6%	40
33-1099	First-Line Supervisors of Protective Service Workers, All Other	3	124	147	18.5%	61
33-2011	Firefighters	3	406	420	3.4%	137
33-2021	Fire Inspectors and Investigators	3	20	18	-10.0%	5
33-3011	Bailiffs	2	17	14	-17.6%	2
33-3012	Correctional Officers and Jailers	3	1,344	1,250	-7.0%	323
33-3021	Detectives and Criminal Investigators	3	224	235	4.9%	69
33-3041	Parking Enforcement Workers	2	36	41	13.9%	19
33-3051	Police and Sheriff's Patrol Officers	3	2,259	2,164	-4.2%	716
33-3052	Transit and Railroad Police	3	7	5	-28.6%	1
33-9011	Animal Control Workers	2	15	15	0.0%	5
33-9021	Private Detectives and Investigators	3	87	83	-4.6%	29
33-9031	Gaming Surveillance Officers and Gaming Investigators	2	11	10	-9.1%	4
33-9032	Security Guards	2	2,519	3,068	21.8%	1,255
33-9091	Crossing Guards	1	313	240	-23.3%	7
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	2	390	464	19.0%	357
33-9093	Transportation Security Screeners	2	105	100	-4.8%	23
33-9099	Protective Service Workers, All Other	2	278	345	24.1%	267

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
35-1011	Chefs and Head Cooks	3	393	425	8.1%	110
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	2	2,168	2,385	10.0%	882
35-2011	Cooks, Fast Food	1	628	580	-7.6%	90
35-2012	Cooks, Institution and Cafeteria	2	1,355	1,372	1.3%	298
35-2014	Cooks, Restaurant	2	3,082	3,948	28.1%	1,583
35-2015	Cooks, Short Order	1	553	644	16.5%	227
35-2021	Food Preparation Workers	1	2,809	2,565	-8.7%	644
35-3011	Bartenders	2	2,262	2,429	7.4%	1,121
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	1	9,835	11,118	13.0%	5,508
35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	1	862	839	-2.7%	533
35-3031	Waiters and Waitresses	1	7,435	8,277	11.3%	4,776
35-3041	Food Servers, Nonrestaurant	1	910	1,025	12.6%	408
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	1	1,270	1,369	7.8%	713
35-9021	Dishwashers	1	1,647	1,618	-1.8%	770
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	1	1,091	1,164	6.7%	955
35-9099	Food Preparation and Serving Related Workers, All Other	1	98	122	24.5%	81
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	2	497	538	8.2%	179
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	3	195	203	4.1%	31
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2	6,132	6,403	4.4%	1,677
37-2012	Maids and Housekeeping Cleaners	2	3,846	4,405	14.5%	1,540
37-2019	Building Cleaning Workers, All Other	2	20	17	-15.0%	2
37-2021	Pest Control Workers	2	94	107	13.8%	43
37-3011	Landscaping and Groundskeeping Workers	1	2,324	2,577	10.9%	930
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	2	29	25	-13.8%	4
37-3013	Tree Trimmers and Pruners	2	161	204	26.7%	99
37-3019	Grounds Maintenance Workers, All Other	2	7	6	-14.3%	1
39-1011	Gaming Supervisors	2	23	22	-4.3%	11
39-1012	Slot Supervisors	2	1	1	0.0%	0
39-1021	First-Line Supervisors of Personal Service Workers	3	536	713	33.0%	284
39-2011	Animal Trainers	2	11	12	9.1%	6
39-2021	Nonfarm Animal Caretakers	1	250	302	20.8%	90

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
39-3011	Gaming Dealers	2	105	100	-4.8%	48
39-3012	Gaming and Sports Book Writers and Runners	2	4	5	25.0%	2
39-3019	Gaming Service Workers, All Other	2	1	1	0.0%	0
39-3021	Motion Picture Projectionists	2	20	18	-10.0%	10
39-3031	Ushers, Lobby Attendants, and Ticket Takers	2	347	404	16.4%	272
39-3091	Amusement and Recreation Attendants	1	1,069	1,369	28.1%	907
39-3092	Costume Attendants	2	4	4	0.0%	3
39-3093	Locker Room, Coatroom, and Dressing Room Attendants	2	77	75	-2.6%	40
39-3099	Entertainment Attendants and Related Workers, All Other	2	35	36	2.9%	22
39-4021	Funeral Attendants	2	136	174	27.9%	82
39-4031	Morticians, Undertakers, and Funeral Directors	3	82	115	40.2%	57
39-5011	Barbers	3	37	40	8.1%	15
39-5012	Hairdressers, Hairstylists, and Cosmetologists	3	1,308	1,540	17.7%	602
39-5092	Manicurists and Pedicurists	2	177	196	10.7%	38
39-5093	Shampooers	2	75	82	9.3%	20
39-5094	Skincare Specialists	3	65	64	-1.5%	3
39-6011	Baggage Porters and Bellhops	2	100	112	12.0%	50
39-6012	Concierges	3	63	75	19.0%	29
39-7011	Tour Guides and Escorts	3	74	79	6.8%	44
39-7012	Travel Guides	3	11	11	0.0%	7
39-9011	Childcare Workers	3	1,634	1,570	-3.9%	424
39-9021	Personal Care Aides	2	4,216	6,444	52.8%	2,791
39-9031	Fitness Trainers and Aerobics Instructors	3	885	1,139	28.7%	409
39-9032	Recreation Workers	4	1,139	1,416	24.3%	413
39-9041	Residential Advisors	3	474	644	35.9%	408
39-9099	Personal Care and Service Workers, All Other	3	91	77	-15.4%	11
41-1011	First-Line Supervisors of Retail Sales Workers	2	3,568	3,564	-0.1%	799
41-1012	First-Line Supervisors of Non-Retail Sales Workers	4	552	501	-9.2%	33
41-2011	Cashiers	1	13,012	11,907	-8.5%	5,015
41-2012	Gaming Change Persons and Booth Cashiers	2	6	5	-16.7%	4
41-2021	Counter and Rental Clerks	1	1,037	1,099	6.0%	368
41-2022	Parts Salespersons	2	819	921	12.5%	347
41-2031	Retail Salespersons	2	15,010	15,520	3.4%	5,960
41-3011	Advertising Sales Agents	3	327	284	-13.1%	90
41-3021	Insurance Sales Agents	4	791	829	4.8%	277

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
41-3031	Securities, Commodities, and Financial Services Sales Agents	4	518	498	-3.9%	124
41-3041	Travel Agents	3	304	238	-21.7%	92
41-3099	Sales Representatives, Services, All Other	4	1,735	2,138	23.2%	901
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	4	498	495	-0.6%	107
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	4	4,153	3,942	-5.1%	754
41-9011	Demonstrators and Product Promoters	2	89	85	-4.5%	23
41-9012	Models	1	6	7	16.7%	3
41-9021	Real Estate Brokers	4	55	50	-9.1%	3
41-9022	Real Estate Sales Agents	3	347	348	0.3%	59
41-9031	Sales Engineers	4	132	140	6.1%	37
41-9041	Telemarketers	2	640	564	-11.9%	230
41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	2	10	8	-20.0%	0
41-9099	Sales and Related Workers, All Other	3	126	99	-21.4%	0
43-1011	First-Line Supervisors of Office and Administrative Support Workers	3	3,795	4,038	6.4%	1,152
43-2011	Switchboard Operators, Including Answering Service	2	381	314	-17.6%	68
43-2021	Telephone Operators	2	20	12	-40.0%	0
43-3011	Bill and Account Collectors	2	908	917	1.0%	315
43-3021	Billing and Posting Clerks	2	1,675	1,885	12.5%	549
43-3031	Bookkeeping, Accounting, and Auditing Clerks	3	4,195	4,534	8.1%	754
43-3041	Gaming Cage Workers	2	17	20	17.6%	11
43-3051	Payroll and Timekeeping Clerks	2	496	503	1.4%	126
43-3061	Procurement Clerks	3	174	149	-14.4%	43
43-3071	Tellers	2	1,790	1,505	-15.9%	765
43-3099	Financial Clerks, All Other	2	52	56	7.7%	22
43-4011	Brokerage Clerks	3	102	115	12.7%	51
43-4021	Correspondence Clerks	2	33	36	9.1%	14
43-4031	Court, Municipal, and License Clerks	3	199	200	0.5%	35
43-4041	Credit Authorizers, Checkers, and Clerks	3	90	66	-26.7%	0
43-4051	Customer Service Representatives	2	7,333	8,216	12.0%	3,099
43-4061	Eligibility Interviewers, Government Programs	3	712	674	-5.3%	117
43-4071	File Clerks	2	328	287	-12.5%	55
43-4081	Hotel, Motel, and Resort Desk Clerks	2	1,416	1,631	15.2%	1,074
43-4111	Interviewers, Except Eligibility and Loan	2	546	634	16.1%	208

<b>SOC Code</b>	<b>Occupation Title</b>	<b>Job Zone</b>	<b>2014</b>	<b>2024</b>	<b>% Change 2014-2024</b>	<b>New and Replacement Jobs</b>
43-4121	Library Assistants, Clerical	2	332	336	1.2%	157
43-4131	Loan Interviewers and Clerks	3	485	549	13.2%	135
43-4141	New Accounts Clerks	2	84	81	-3.6%	31
43-4151	Order Clerks	2	790	824	4.3%	315
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	3	417	378	-9.4%	86
43-4171	Receptionists and Information Clerks	2	2,722	2,772	1.8%	804
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	2	56	58	3.6%	19
43-4199	Information and Record Clerks, All Other	2	226	180	-20.4%	19
43-5011	Cargo and Freight Agents	2	65	56	-13.8%	14
43-5021	Couriers and Messengers	2	181	167	-7.7%	28
43-5031	Police, Fire, and Ambulance Dispatchers	2	266	262	-1.5%	81
43-5032	Dispatchers, Except Police, Fire, and Ambulance	2	560	637	13.8%	253
43-5041	Meter Readers, Utilities	2	134	125	-6.7%	46
43-5051	Postal Service Clerks	2	254	205	-19.3%	61
43-5052	Postal Service Mail Carriers	2	1,004	805	-19.8%	380
43-5053	Postal Service Mail Sorters, Processors, and Processing Machine Operators	2	467	331	-29.1%	54
43-5061	Production, Planning, and Expediting Clerks	3	907	940	3.6%	288
43-5071	Shipping, Receiving, and Traffic Clerks	2	2,212	2,259	2.1%	706
43-5081	Stock Clerks and Order Fillers	2	6,893	6,969	1.1%	2,485
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	2	225	253	12.4%	86
43-6011	Executive Secretaries and Executive Administrative Assistants	3	1,359	1,287	-5.3%	147
43-6012	Legal Secretaries	3	565	632	11.9%	180
43-6013	Medical Secretaries	3	1,482	1,948	31.4%	639
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	3	6,859	7,688	12.1%	1,719
43-9011	Computer Operators	3	266	236	-11.3%	41
43-9021	Data Entry Keyers	2	754	710	-5.8%	219
43-9022	Word Processors and Typists	2	540	444	-17.8%	60
43-9031	Desktop Publishers	3	50	34	-32.0%	2
43-9041	Insurance Claims and Policy Processing Clerks	3	595	628	5.5%	227
43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service	2	383	341	-11.0%	106
43-9061	Office Clerks, General	2	8,579	8,591	0.1%	1,987
43-9071	Office Machine Operators, Except Computer	2	266	222	-16.5%	62
43-9081	Proofreaders and Copy Markers	4	34	28	-17.6%	4

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
43-9111	Statistical Assistants	4	32	32	0.0%	9
43-9199	Office and Administrative Support Workers, All Other	3	290	343	18.3%	137
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	3	19	19	0.0%	5
45-2011	Agricultural Inspectors	2	30	26	-13.3%	8
45-2041	Graders and Sorters, Agricultural Products	1	21	24	14.3%	8
45-2091	Agricultural Equipment Operators	2	11	12	9.1%	5
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	1	70	58	-17.1%	17
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	1	72	80	11.1%	37
45-2099	Agricultural Workers, All Other	1	1	0	-100.0%	0
45-4011	Forest and Conservation Workers	3	14	16	14.3%	4
45-4021	Fallers	1	3	2	-33.3%	0
45-4022	Logging Equipment Operators	1	28	27	-3.6%	11
45-4023	Log Graders and Scalers	3	8	10	25.0%	3
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	3	1,398	1,740	24.5%	514
47-2011	Boilermakers	3	71	98	38.0%	64
47-2021	Brickmasons and Blockmasons	2	160	201	25.6%	57
47-2022	Stonemasons	3	21	20	-4.8%	1
47-2031	Carpenters	2	2,066	2,386	15.5%	624
47-2041	Carpet Installers	2	86	103	19.8%	39
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	2	17	14	-17.6%	2
47-2044	Tile and Marble Setters	2	37	45	21.6%	14
47-2051	Cement Masons and Concrete Finishers	2	343	407	18.7%	105
47-2053	Terrazzo Workers and Finishers	2	3	3	0.0%	0
47-2061	Construction Laborers	2	2,586	3,373	30.4%	1,412
47-2071	Paving, Surfacing, and Tamping Equipment Operators	2	172	195	13.4%	59
47-2072	Pile-Driver Operators	2	3	4	33.3%	1
47-2073	Operating Engineers and Other Construction Equipment Operators	2	1,704	1,869	9.7%	658
47-2081	Drywall and Ceiling Tile Installers	2	67	61	-9.0%	8
47-2082	Tapers	2	20	23	15.0%	6
47-2111	Electricians	3	1,386	1,713	23.6%	705
47-2121	Glaziers	2	76	89	17.1%	38
47-2131	Insulation Workers, Floor, Ceiling, and Wall	2	26	31	19.2%	10
47-2132	Insulation Workers, Mechanical	2	24	34	41.7%	13

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
47-2141	Painters, Construction and Maintenance	2	240	261	8.8%	72
47-2142	Paperhangers	2	5	5	0.0%	0
47-2151	Pipelayers	2	107	115	7.5%	36
47-2152	Plumbers, Pipefitters, and Steamfitters	3	1,033	1,215	17.6%	370
47-2161	Plasterers and Stucco Masons	1	17	20	17.6%	3
47-2171	Reinforcing Iron and Rebar Workers	2	18	20	11.1%	5
47-2181	Roofers	2	216	230	6.5%	97
47-2211	Sheet Metal Workers	2	263	279	6.1%	73
47-2221	Structural Iron and Steel Workers	2	111	135	21.6%	66
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	2	49	55	12.2%	12
47-3012	Helpers--Carpenters	2	55	75	36.4%	28
47-3013	Helpers--Electricians	2	91	135	48.4%	61
47-3014	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	1	7	8	14.3%	2
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	2	75	85	13.3%	22
47-3016	Helpers--Roofers	2	20	29	45.0%	13
47-3019	Helpers, Construction Trades, All Other	2	18	23	27.8%	6
47-4011	Construction and Building Inspectors	3	292	353	20.9%	141
47-4021	Elevator Installers and Repairers	3	23	21	-8.7%	6
47-4031	Fence Erectors	2	80	75	-6.3%	18
47-4041	Hazardous Materials Removal Workers	3	169	228	34.9%	119
47-4051	Highway Maintenance Workers	2	900	891	-1.0%	164
47-4061	Rail-Track Laying and Maintenance Equipment Operators	2	15	14	-6.7%	2
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	1	118	148	25.4%	68
47-4099	Construction and Related Workers, All Other	3	34	31	-8.8%	1
47-5011	Derrick Operators, Oil and Gas	1	93	85	-8.6%	43
47-5012	Rotary Drill Operators, Oil and Gas	2	328	407	24.1%	321
47-5013	Service Unit Operators, Oil, Gas, and Mining	2	202	259	28.2%	187
47-5021	Earth Drillers, Except Oil and Gas	2	137	166	21.2%	90
47-5031	Explosives Workers, Ordnance Handling Experts, and Blasters	2	32	34	6.3%	11
47-5041	Continuous Mining Machine Operators	1	37	32	-13.5%	12
47-5042	Mine Cutting and Channeling Machine Operators	2	43	36	-16.3%	10
47-5049	Mining Machine Operators, All Other	2	5	2	-60.0%	0
47-5051	Rock Splitters, Quarry	1	109	105	-3.7%	39
47-5061	Roof Bolters, Mining	2	23	17	-26.1%	5
47-5071	Roustabouts, Oil and Gas	1	235	295	25.5%	170

<b>SOC Code</b>	<b>Occupation Title</b>	<b>Job Zone</b>	<b>2014</b>	<b>2024</b>	<b>% Change 2014-2024</b>	<b>New and Replacement Jobs</b>
47-5081	Helpers--Extraction Workers	2	170	206	21.2%	121
47-5099	Extraction Workers, All Other	2	33	30	-9.1%	6
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	3	1,169	1,316	12.6%	480
49-2011	Computer, Automated Teller, and Office Machine Repairers	3	233	267	14.6%	108
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairers	3	21	23	9.5%	5
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	3	300	300	0.0%	76
49-2091	Avionics Technicians	3	18	21	16.7%	9
49-2092	Electric Motor, Power Tool, and Related Repairers	3	41	42	2.4%	13
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	3	13	13	0.0%	2
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	3	218	197	-9.6%	40
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	3	95	91	-4.2%	23
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	3	8	9	12.5%	3
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	3	29	28	-3.4%	13
49-2098	Security and Fire Alarm Systems Installers	3	151	173	14.6%	60
49-3011	Aircraft Mechanics and Service Technicians	3	56	55	-1.8%	23
49-3021	Automotive Body and Related Repairers	2	473	542	14.6%	193
49-3022	Automotive Glass Installers and Repairers	2	64	71	10.9%	28
49-3023	Automotive Service Technicians and Mechanics	3	2,527	2,732	8.1%	940
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	3	1,040	1,227	18.0%	451
49-3041	Farm Equipment Mechanics and Service Technicians	3	40	34	-15.0%	9
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	3	286	308	7.7%	121
49-3043	Rail Car Repairers	2	77	89	15.6%	45
49-3051	Motorboat Mechanics and Service Technicians	3	24	28	16.7%	10
49-3052	Motorcycle Mechanics	3	94	108	14.9%	48
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	2	117	130	11.1%	43
49-3091	Bicycle Repairers	2	26	23	-11.5%	9
49-3092	Recreational Vehicle Service Technicians	2	32	32	0.0%	13
49-3093	Tire Repairers and Changers	2	258	243	-5.8%	88
49-9011	Mechanical Door Repairers	2	23	23	0.0%	8

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	3	87	102	17.2%	46
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	3	835	971	16.3%	391
49-9031	Home Appliance Repairers	3	67	66	-1.5%	28
49-9041	Industrial Machinery Mechanics	3	1,183	1,369	15.7%	572
49-9043	Maintenance Workers, Machinery	3	384	442	15.1%	127
49-9044	Millwrights	3	91	122	34.1%	53
49-9045	Refractory Materials Repairers, Except Brickmasons	2	5	7	40.0%	3
49-9051	Electrical Power-Line Installers and Repairers	3	409	505	23.5%	272
49-9052	Telecommunications Line Installers and Repairers	2	541	553	2.2%	228
49-9062	Medical Equipment Repairers	3	145	184	26.9%	89
49-9063	Musical Instrument Repairers and Tuners	3	25	26	4.0%	11
49-9064	Watch Repairers	3	2	2	0.0%	0
49-9069	Precision Instrument and Equipment Repairers, All Other	3	14	13	-7.1%	4
49-9071	Maintenance and Repair Workers, General	3	4,564	5,023	10.1%	1,464
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	2	156	148	-5.1%	35
49-9092	Commercial Divers	3	32	30	-6.3%	11
49-9094	Locksmiths and Safe Repairers	2	20	18	-10.0%	5
49-9095	Manufactured Building and Mobile Home Installers	2	16	20	25.0%	11
49-9096	Riggers	2	20	27	35.0%	12
49-9098	Helpers--Installation, Maintenance, and Repair Workers	2	340	394	15.9%	163
49-9099	Installation, Maintenance, and Repair Workers, All Other	2	202	267	32.2%	97
51-1011	First-Line Supervisors of Production and Operating Workers	2	2,056	2,171	5.6%	528
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	2	57	53	-7.0%	15
51-2021	Coil Winders, Tapers, and Finishers	2	17	12	-29.4%	2
51-2022	Electrical and Electronic Equipment Assemblers	2	451	466	3.3%	122
51-2023	Electromechanical Equipment Assemblers	2	105	96	-8.6%	17
51-2031	Engine and Other Machine Assemblers	2	100	101	1.0%	39
51-2041	Structural Metal Fabricators and Fitters	3	258	258	0.0%	127
51-2091	Fiberglass Laminators and Fabricators	2	53	58	9.4%	21
51-2092	Team Assemblers	2	2,787	2,902	4.1%	762
51-2099	Assemblers and Fabricators, All Other	2	383	530	38.4%	217
51-3011	Bakers	2	862	890	3.2%	302
51-3021	Butchers and Meat Cutters	2	591	549	-7.1%	132

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	1	216	206	-4.6%	52
51-3023	Slaughterers and Meat Packers	1	309	353	14.2%	160
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	2	34	38	11.8%	16
51-3092	Food Batchmakers	2	523	537	2.7%	234
51-3093	Food Cooking Machine Operators and Tenders	2	110	120	9.1%	46
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	3	516	672	30.2%	335
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	3	47	40	-14.9%	8
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	2	497	509	2.4%	191
51-4022	Forging Machine Setters, Operators, and Tenders, Metal and Plastic	2	116	117	0.9%	42
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	2	180	166	-7.8%	45
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	2	656	666	1.5%	136
51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	57	49	-14.0%	14
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	321	309	-3.7%	112
51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	117	112	-4.3%	38
51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	3	85	94	10.6%	39
51-4041	Machinists	3	1,065	1,175	10.3%	423
51-4051	Metal-Refining Furnace Operators and Tenders	2	191	186	-2.6%	53
51-4052	Pourers and Casters, Metal	2	103	110	6.8%	47
51-4061	Model Makers, Metal and Plastic	3	13	12	-7.7%	2
51-4062	Patternmakers, Metal and Plastic	3	40	42	5.0%	18
51-4071	Foundry Mold and Coremakers	2	82	77	-6.1%	20
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	2	606	570	-5.9%	118
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	616	653	6.0%	254
51-4111	Tool and Die Makers	3	254	270	6.3%	64
51-4121	Welders, Cutters, Solderers, and Brazers	3	866	1,049	21.1%	465
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	2	102	109	6.9%	47
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	2	80	72	-10.0%	17
51-4192	Layout Workers, Metal and Plastic	2	15	14	-6.7%	3

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
51-4193	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	2	88	83	-5.7%	26
51-4194	Tool Grinders, Filers, and Sharpeners	2	26	24	-7.7%	6
51-4199	Metal Workers and Plastic Workers, All Other	2	72	99	37.5%	43
51-5111	Prepress Technicians and Workers	3	159	110	-30.8%	20
51-5112	Printing Press Operators	3	681	559	-17.9%	100
51-5113	Print Binding and Finishing Workers	2	206	171	-17.0%	38
51-6011	Laundry and Dry-Cleaning Workers	1	751	856	14.0%	374
51-6021	Pressers, Textile, Garment, and Related Materials	1	109	114	4.6%	29
51-6031	Sewing Machine Operators	1	381	377	-1.0%	178
51-6041	Shoe and Leather Workers and Repairers	2	7	9	28.6%	8
51-6051	Sewers, Hand	2	250	318	27.2%	94
51-6052	Tailors, Dressmakers, and Custom Sewers	3	70	81	15.7%	29
51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders	2	48	43	-10.4%	33
51-6062	Textile Cutting Machine Setters, Operators, and Tenders	2	62	58	-6.5%	34
51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders	2	88	77	-12.5%	52
51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	2	59	36	-39.0%	12
51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	2	66	37	-43.9%	5
51-6092	Fabric and Apparel Patternmakers	3	7	6	-14.3%	1
51-6093	Upholsterers	2	47	50	6.4%	27
51-6099	Textile, Apparel, and Furnishings Workers, All Other	2	65	66	1.5%	12
51-7011	Cabinetmakers and Bench Carpenters	2	171	190	11.1%	91
51-7021	Furniture Finishers	1	49	62	26.5%	41
51-7031	Model Makers, Wood	3	10	11	10.0%	3
51-7032	Patternmakers, Wood	3	5	6	20.0%	2
51-7041	Sawing Machine Setters, Operators, and Tenders, Wood	2	286	401	40.2%	244
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	2	390	529	35.6%	228
51-7099	Woodworkers, All Other	2	6	6	0.0%	1
51-8011	Nuclear Power Reactor Operators	3	40	43	7.5%	19
51-8012	Power Distributors and Dispatchers	3	75	81	8.0%	35
51-8013	Power Plant Operators	2	235	230	-2.1%	105
51-8021	Stationary Engineers and Boiler Operators	3	210	262	24.8%	142
51-8031	Water and Wastewater Treatment Plant and System Operators	3	486	523	7.6%	242

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51-8091	Chemical Plant and System Operators	2	73	78	6.8%	50
51-8092	Gas Plant Operators	3	109	113	3.7%	64
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	2	46	52	13.0%	31
51-8099	Plant and System Operators, All Other	2	24	26	8.3%	12
51-9011	Chemical Equipment Operators and Tenders	2	360	389	8.1%	223
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	2	189	210	11.1%	108
51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	2	164	163	-0.6%	66
51-9022	Grinding and Polishing Workers, Hand	1	83	83	0.0%	31
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	2	458	515	12.4%	235
51-9031	Cutters and Trimmers, Hand	2	24	19	-20.8%	2
51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders	2	270	241	-10.7%	45
51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	2	254	257	1.2%	104
51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	2	58	46	-20.7%	13
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	2	1,517	1,624	7.1%	500
51-9071	Jewelers and Precious Stone and Metal Workers	3	37	31	-16.2%	4
51-9081	Dental Laboratory Technicians	2	153	167	9.2%	97
51-9082	Medical Appliance Technicians	3	148	125	-15.5%	52
51-9083	Ophthalmic Laboratory Technicians	2	105	96	-8.6%	38
51-9111	Packaging and Filling Machine Operators and Tenders	2	1,496	1,605	7.3%	567
51-9121	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	2	232	271	16.8%	99
51-9122	Painters, Transportation Equipment	2	87	83	-4.6%	22
51-9123	Painting, Coating, and Decorating Workers	2	53	50	-5.7%	12
51-9141	Semiconductor Processors	2	19	19	0.0%	9
51-9151	Photographic Process Workers and Processing Machine Operators	2	76	52	-31.6%	7
51-9191	Adhesive Bonding Machine Operators and Tenders	2	56	58	3.6%	21
51-9192	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	2	52	58	11.5%	20
51-9193	Cooling and Freezing Equipment Operators and Tenders	2	42	41	-2.4%	14
51-9194	Etchers and Engravers	2	32	35	9.4%	13
51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	2	161	157	-2.5%	70

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
51-9196	Paper Goods Machine Setters, Operators, and Tenders	2	1,022	1,055	3.2%	278
51-9197	Tire Builders	2	21	26	23.8%	13
51-9198	Helpers--Production Workers	2	1,823	1,930	5.9%	572
51-9199	Production Workers, All Other	2	194	217	11.9%	71
53-1011	Aircraft Cargo Handling Supervisors	2	11	12	9.1%	4
53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	2	597	736	23.3%	326
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	2	733	885	20.7%	371
53-2012	Commercial Pilots	3	19	18	-5.3%	7
53-2021	Air Traffic Controllers	3	36	35	-2.8%	17
53-2022	Airfield Operations Specialists	3	5	6	20.0%	4
53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	2	153	200	30.7%	79
53-3021	Bus Drivers, Transit and Intercity	2	497	620	24.7%	261
53-3022	Bus Drivers, School or Special Client	2	2,110	2,285	8.3%	708
53-3031	Driver/Sales Workers	2	1,489	1,530	2.8%	325
53-3032	Heavy and Tractor-Trailer Truck Drivers	2	6,604	7,680	16.3%	2,467
53-3033	Light Truck or Delivery Services Drivers	2	2,449	2,384	-2.7%	399
53-3041	Taxi Drivers and Chauffeurs	1	500	534	6.8%	134
53-3099	Motor Vehicle Operators, All Other	2	81	100	23.5%	40
53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers	2	22	13	-40.9%	0
53-5011	Sailors and Marine Oilers	2	46	61	32.6%	44
53-6011	Bridge and Lock Tenders	1	10	6	-40.0%	2
53-6021	Parking Lot Attendants	2	289	368	27.3%	247
53-6031	Automotive and Watercraft Service Attendants	1	197	207	5.1%	73
53-6041	Traffic Technicians	3	5	6	20.0%	2
53-6051	Transportation Inspectors	3	20	20	0.0%	7
53-6061	Transportation Attendants, Except Flight Attendants	2	85	82	-3.5%	19
53-6099	Transportation Workers, All Other	2	22	25	13.6%	13
53-7011	Conveyor Operators and Tenders	2	81	84	3.7%	33
53-7021	Crane and Tower Operators	3	118	149	26.3%	77
53-7032	Excavating and Loading Machine and Dragline Operators	2	205	213	3.9%	40
53-7033	Loading Machine Operators, Underground Mining	2	6	5	-16.7%	0
53-7051	Industrial Truck and Tractor Operators	2	2,918	3,700	26.8%	1,740
53-7061	Cleaners of Vehicles and Equipment	2	798	849	6.4%	310
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	2	10,273	13,435	30.8%	6,864

<b>SOC Code</b>	<b>Occupation Title</b>	<b>Job Zone</b>	<b>2014</b>	<b>2024</b>	<b>% Change 2014-2024</b>	<b>New and Replacement Jobs</b>
53-7063	Machine Feeders and Offbearers	2	552	562	1.8%	152
53-7064	Packers and Packagers, Hand	2	2,834	3,254	14.8%	1,313
53-7071	Gas Compressor and Gas Pumping Station Operators	2	82	96	17.1%	63
53-7072	Pump Operators, Except Wellhead Pumpers	2	156	195	25.0%	129
53-7073	Wellhead Pumpers	2	98	117	19.4%	92
53-7081	Refuse and Recyclable Material Collectors	2	461	539	16.9%	226
53-7111	Mine Shuttle Car Operators	2	10	10	0.0%	4
53-7121	Tank Car, Truck, and Ship Loaders	2	43	45	4.7%	19
53-7199	Material Moving Workers, All Other	2	26	39	50.0%	21

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

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# 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.

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