



Edinboro University's
**WORKFORCE
CHARACTERISTICS
TECHNICAL REPORT**

A report for Pennsylvania's
State System of Higher Education

2016



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GLOSSARY OF TERMS

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

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

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

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

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

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

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

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

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

ACRONYMS USED

ACS: American Community Survey

BLS: Bureau of Labor Statistics

EMSI: Economic Modeling Specialists International

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

IPEDS: Integrated Postsecondary Education Data System

LAUS: Local Area Unemployment Statistics

LEHD: Longitudinal Employment and Housing Dynamics

NCES: National Center for Education Statistics

OES: Occupational Employment Statistics

O*NET: Occupational Network

PUMS: Public Use Microdata Sample

QCEW: Quarterly Census of Employment and Wages

SAIPE: Small Area Income and Poverty Estimates

USDOE: US Department of Education

USDOL: US Department of Labor

1. INTRODUCTION

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

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

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

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

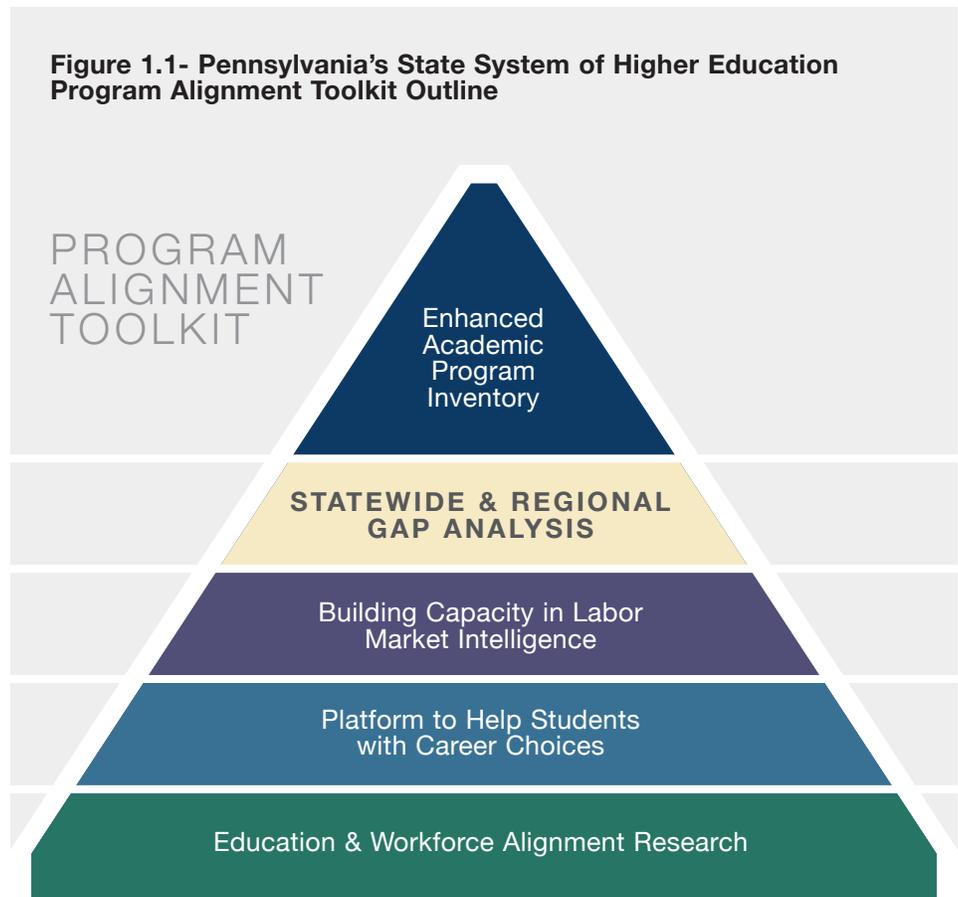
2 Source: The State System’s Economic and Employment Impact on the Commonwealth of Pennsylvania – released April 15, 2015.

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

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

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

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



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

1.2 Goal of the Workforce Characteristics Report

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

The intentions of this Workforce Characteristics Report are fourfold.

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

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

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

2. PENNSYLVANIA'S STATE SYSTEM LEARNER ORIGIN

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

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

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

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

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

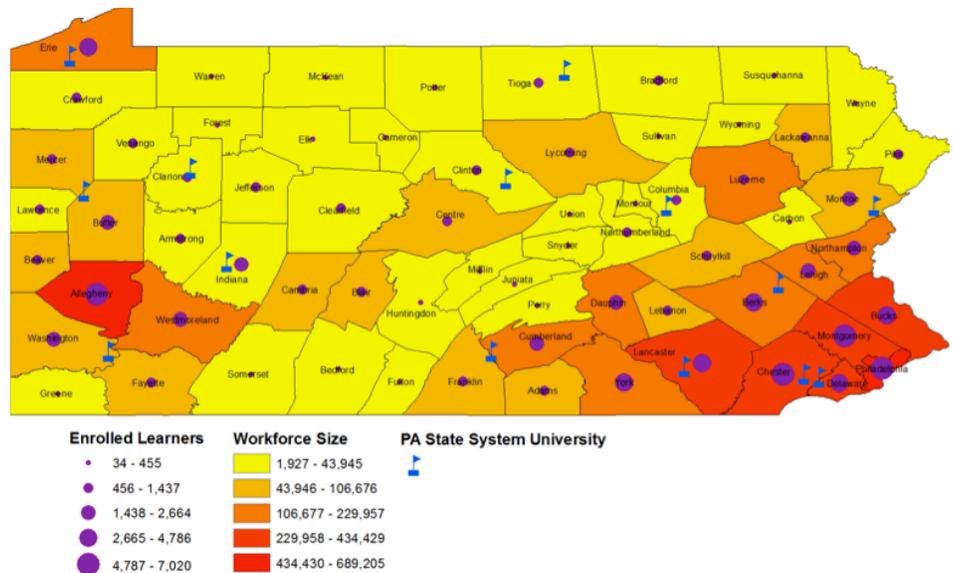
³ Based on Fall 2013 enrollment.

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

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

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

Figure 2.1 – State System Learner Origin and Workforce Size County

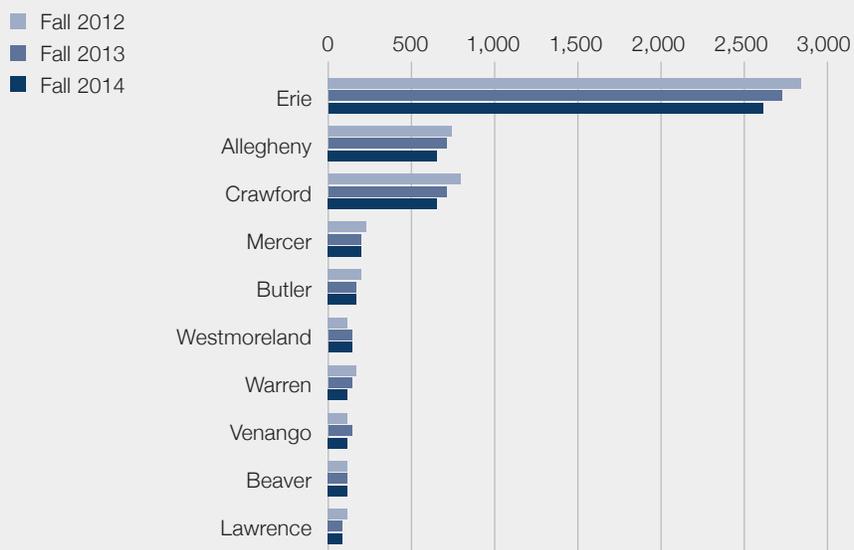


Source: Pennsylvania's State System of Higher Education, Oxford Economics mapping

2.1 Edinboro University's Learner Origin

Edinboro University learners, originally from Pennsylvania, come from nearly every county in the state. The vast majority of learners, however, come from counties that are in the northwest region. The top 10 learner enrollment counties account for about 85% of resident enrollment in Edinboro University. Figure 2.2 shows the Pennsylvania resident fall enrollment numbers between 2012 and 2014 for the top 10 counties. Table 2.3 provides enrollment detail for the top 10 counties.

Figure 2.2 – Edinboro University Learner Enrollment by County



Source: Pennsylvania's State System of Higher Education

Table 2.3 Edinboro University Learner Enrollment by County

County	Fall 2012	Fall 2013	Fall 2014
Erie	2,831	2,708	2,616
Allegheny	732	700	656
Crawford	801	709	637
Mercer	240	209	196
Butler	184	170	166
Westmoreland	125	131	128
Warren	172	150	126
Venango	121	145	125
Beaver	123	125	110
Lawrence	101	89	94

Source: Pennsylvania's State System of Higher Education

3. SUMMARY OF EDINBORO UNIVERSITY WORKFORCE REGION

Located in Erie County, Pennsylvania, Edinboro University (EU) supports the northwestern region of Pennsylvania’s State System of Higher Education. It provides a breadth of degree programs and serves a student population of about 7,100 learners, of which about 82% are Pennsylvania residents.⁴

The following sections outline the supporting data used to select EU’s Pennsylvania workforce region—defined as Erie, Crawford, McKean, and Warren counties. Subsequent sections provide a brief analysis of economic, workforce, demographic and socio-economic information. The purpose of providing this analysis is to gain better insight into how the workforce region has changed over the past several years, as well as projections of how the area will continue to change over the next several years.

A BRIEF NOTE ON DEVELOPING THE WORKFORCE REGION

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

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

⁴ Based on Average Fall Enrollment 2012-2014.

3.1 Defining Edinboro University’s Workforce Region

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

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

When taken in the context of regional economic activity, about 46% of regional demand for goods and services are produced by businesses located within the region. This indicates that regional business activity is locally contained. Similarly, 86% of household demand is satisfied by local production, meaning that households are not traveling outside the region to purchase goods or services to consume.

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

County Combination	Job Share of People Living in the Region	Job Share of People Employed in the Region	Business Demand	Household Demand	Learner Capture Rate
Erie, Crawford	0.85	0.85	0.48	0.88	0.56
Erie, Crawford, McKean, Warren	0.85	0.87	0.46	0.86	0.60

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

The majority of EU workforce region residents also work in the region (85%). This reflects a very strong centralized connection between workers and economic activity in a region that has 189,000 jobs. Additionally, learners at EU originate from nearby surrounding counties. When looking at the percentage

⁵ Bureau of Labor Statistics: Labor Market Area.

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

4. LABOR MARKET OF EDINBORO UNIVERSITY'S WORKFORCE REGION

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

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

Workforce Characteristic	Edinboro Workforce Region	Pennsylvania	Source
Population	452,000	12.7 million	2009-2013 American Community Survey 5-Year Estimates
Employed	189,000	5.6 million	2014 BLS Quarterly Census of Employment and Wages
Unemployed	12,800	370,000	2014 BLS Local Area Unemployment Statistics
Unemployment Rate	6.0%	5.8%	2014 BLS Local Area Unemployment Statistics
Poverty Rate	17.0%	13.7%	2013 Census Small Area Income and Poverty Estimates
Business Establishments	11,700	347,000	2014 BLS Quarterly Census of Employment and Wages
Educational Attainment (25+ Population with Bachelor's or Higher)	21.9%	27.4%	2009-2013 American Community Survey 5-Year Estimates
Bachelor's or Higher Completions	5,500	137,000	Integrated Postsecondary Education Data System 3-Year Average AY2010-11 to AY2012-13
Projected Jobs 2024	203,000	6.2 million	Oxford Economics Projections 2024

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

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

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

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

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

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

4.1 Employment Projections

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

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

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

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

5. INDUSTRIES IN EDINBORO UNIVERSITY'S WORKFORCE REGION

Over the five years of 2009 to 2014, Edinboro University's (EU) workforce region experienced job growth in both goods-producing and service-based sectors. Sectors such as manufacturing; trade, transportation and utilities; and leisure and hospitality added a combined 4,600 new jobs between 2009 and 2014. Government experienced the largest nominal employment loss, while other job losses occurred within information and professional and business services. 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 percent change.

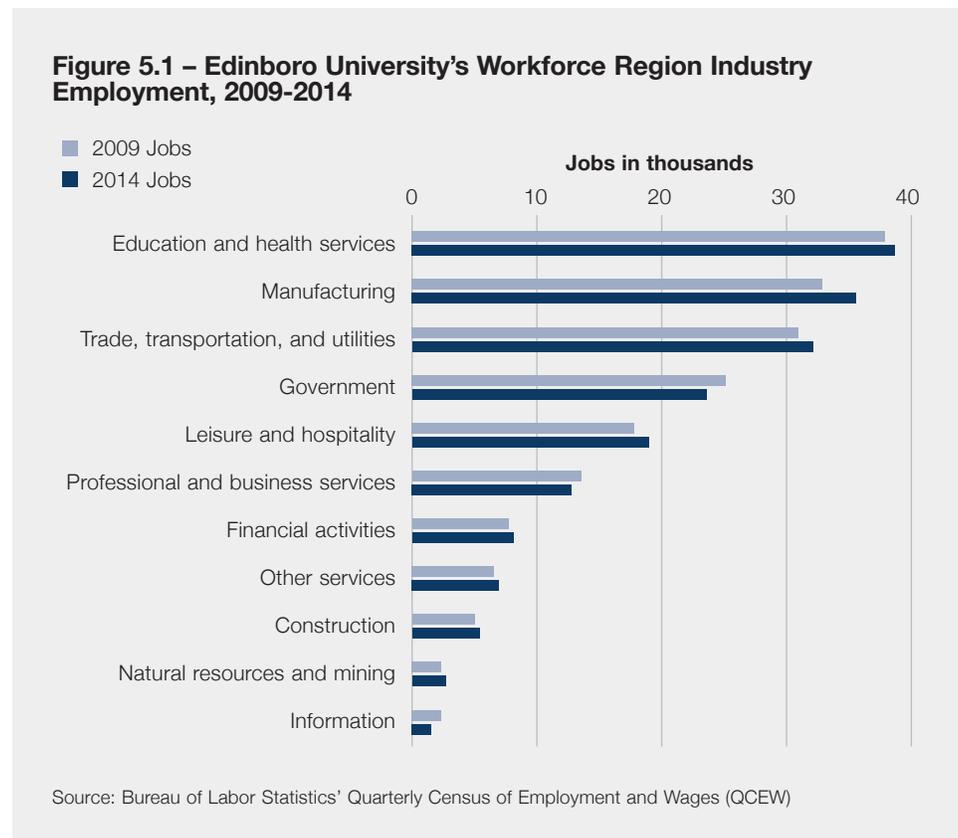


Table 5.1 – Edinboro University’s Workforce Region Industry Employment, 2009-2014

Industry Employment	2009 Jobs	2014 Jobs	Absolute Change 09-14	% Change 09-14
Total, all industries	182,313	186,009	3,696	2.0%
Education and health services	37,931	38,592	661	1.7%
Manufacturing	32,878	35,417	2,539	7.7%
Trade, transportation, and utilities	30,998	32,117	1,119	3.6%
Government	25,086	23,606	-1,480	-5.9%
Leisure and hospitality	17,918	18,890	972	5.4%
Professional and business services	13,345	12,742	-603	-4.5%
Financial activities	7,799	8,159	360	4.6%
Other services	6,733	6,877	144	2.1%
Construction	5,158	5,404	246	4.8%
Natural resources and mining	2,172	2,552	380	17.5%
Information	2,297	1,658	-639	-27.8%

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

5.1 Top Employers in Edinboro University’s Workforce Region

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

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

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

Table 5.2: Top Employers in Edinboro University's Workforce Region

Establishment Name
Allegheny College
American Refining Group
Blair Payroll
Bradford Area School District
Bradford Regional Medical Center
Crawford Central School District
Crawford County
Dr Gertrude A Barber Center
Erie County
Erie Indemnity Company
Federal Government
General Electric
Meadville Medical Center
Northwest Bancshares
Saint Vincent Health Center
School District of the City of Erie
State Government
United Refining Company
University of Pittsburgh
UPMC Hamot
Wal-Mart
Warren County School District
Warren General Hospital
Whirley Industries
Zippo Manufacturing

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

6. OCCUPATIONS IN EDINBORO UNIVERSITY'S WORKFORCE REGION

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

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

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

6.1 Skilled Occupations

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

For this analysis a "skilled" occupation is defined as an occupation in O*NET Job Zones 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.⁸

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

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

⁸ <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 Edinboro University's Workforce Region

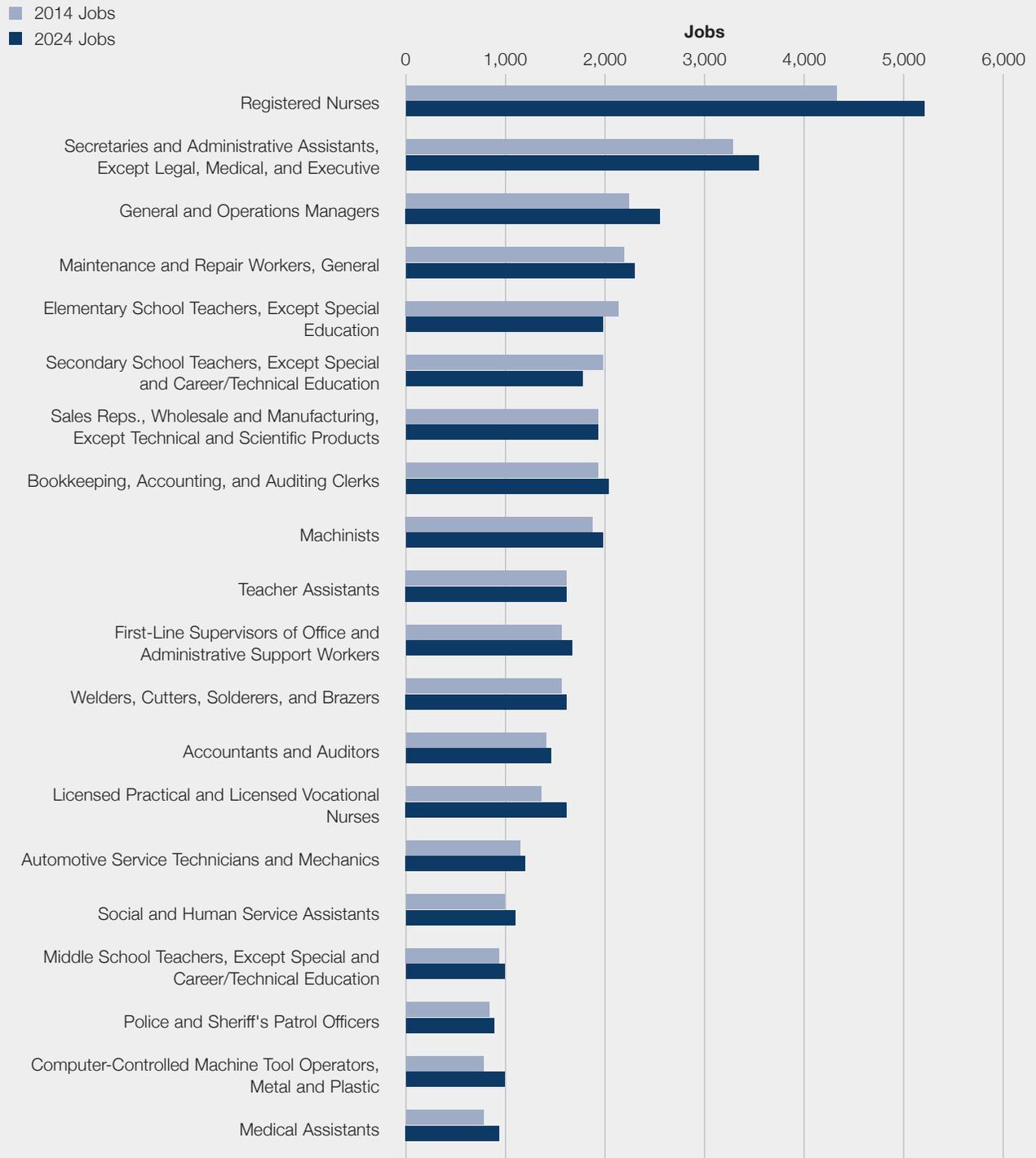
Top skilled occupations in the region are driven by industry composition. Medical centers employ a cadre of health professionals, while enterprise management companies employ a range of business professionals. Given the dominating presence of education and health services; manufacturing; and trade, transportation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

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

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

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

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



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

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

SOC Code	Occupation Title	2014 Jobs	2024 Jobs	10-year New and Replacement Demand
29-1141	Registered Nurses	4,341	5,179	1,717
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	3,276	3,545	695
11-1021	General and Operations Managers	2,249	2,549	701
49-9071	Maintenance and Repair Workers, General	2,166	2,279	590
25-2021	Elementary School Teachers, Except Special Education	2,130	1,998	404
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	1,959	1,748	456
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,944	1,911	419
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1,903	2,008	293
51-4041	Machinists	1,883	1,994	666
25-9041	Teacher Assistants	1,605	1,605	398
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1,584	1,667	462
51-4121	Welders, Cutters, Solderers, and Brazers	1,541	1,594	554
13-2011	Accountants and Auditors	1,412	1,481	539
29-2061	Licensed Practical and Licensed Vocational Nurses	1,347	1,596	605
49-3023	Automotive Service Technicians and Mechanics	1,152	1,190	373
21-1093	Social and Human Service Assistants	986	1,078	387
25-2022	Middle School Teachers, Except Special and Career/Technical Education	915	995	309
33-3051	Police and Sheriff's Patrol Officers	835	859	324
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	797	1,008	488
31-9092	Medical Assistants	781	941	317

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

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

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

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

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

6.3.1 New and Replacement Demand for Key Skilled High Demand Occupations

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

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

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

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

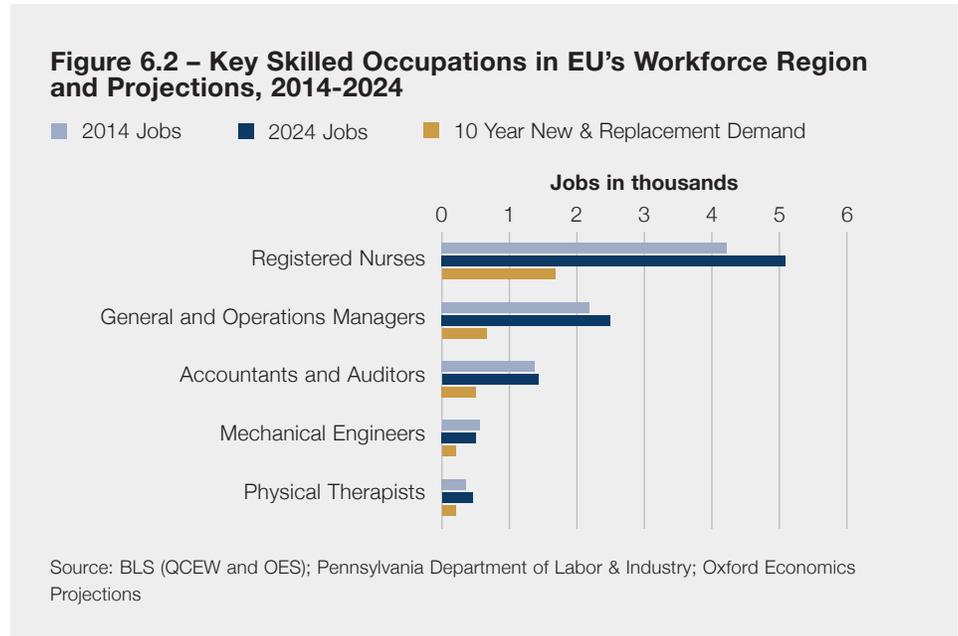


Table 6.2 – Key Skilled Occupations in EU’s Workforce Region and Projections, 2014-2024

SOC Code	Occupation Title	2014 Jobs	2024 Jobs	10 Year New & Replacement Demand
29-1141	Registered Nurses	4,341	5,179	1,717
11-1021	General and Operations Managers	2,249	2,549	701
13-2011	Accountants and Auditors	1,412	1,481	539
17-2141	Mechanical Engineers	550	537	195
29-1123	Physical Therapists	352	482	230

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 400 unique (de-duplicated) job postings appeared in EU’s Workforce Region for the top five key skilled high demand occupations (registered nurses, accountants and auditors, general and operations managers, mechanical engineers, and physical therapists). Sizable job postings include: registered nurses (164 unique postings per month), and accountants and auditors (75 unique postings per month).

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

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

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

Occupation	Average Monthly Postings (Jul 2014 - Jul 2015)	Estimated Average Monthly Hires (Jul 2014 - Jul 2015)	Ratio of Postings to Hires
Registered Nurses	164	145	1.1
Accountants and Auditors	75	68	1.1
Physical Therapists	54	17	3.2
General and Operations Managers	52	112	0.5
Mechanical Engineers	43	15	2.9

Source: Economic Modeling Specialists International (EMSI)

Registered Nurses

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

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

Accountants and Auditors

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

Certifications: Certified Public Accountant (CPA)

General and Operations Managers

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

Certifications: Six Sigma, Project Management Professional (PMP)

Physical Therapists

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

Certifications: accreditation, licenses to practice, current CPR certification

Mechanical Engineers

Unique skills: mechanical design, mechanical engineering, SolidWorks, CAD,
structural analysis

Certifications: Professional Engineer (PE), ABET accreditation, LEED AP

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

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

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

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

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

- The number of the occupation jobs in each respective industry in 2014 (e.g. general medical and surgical hospitals employ 2,335 registered nurses);
- The percent of the occupation's employment in the region that is employed in the industry (e.g. the 2,335 registered nurses employed in general medical and surgical hospitals represent nearly 54% of the total registered nurse workforce in the region);
- The percent of the industry sector's employment that is made up of the occupation (e.g. the 2,335 registered nurses make up about 27% of employment within general medical and surgical hospitals).

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

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
General Medical and Surgical Hospitals	2,335	53.8%	27.2%
Nursing Care Facilities (Skilled Nursing Facilities)	424	9.8%	9.9%
Offices of Physicians	334	7.7%	9.4%
Home Health Care Services	279	6.4%	21.0%
Outpatient Care Centers	256	5.9%	15.9%

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

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

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Railroad Rolling Stock Manufacturing	76	3.4%	3.0%
Metalworking Machinery Manufacturing	70	3.1%	2.8%
Individual and Family Services	70	3.1%	1.2%
Plastics Product Manufacturing	69	3.1%	1.5%
Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	63	2.8%	2.7%

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

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

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Accounting, Tax Preparation, Bookkeeping, and Payroll Services	260	18.4%	38.6%
Management of Companies and Enterprises	70	5.0%	5.0%
Insurance Carriers	70	5.0%	2.4%
Plastics Product Manufacturing	47	3.4%	1.0%
Railroad Rolling Stock Manufacturing	37	2.6%	1.4%

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

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

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Offices of Other Health Practitioners	156	44.3%	10.4%
General Medical and Surgical Hospitals	76	21.5%	0.9%
Home Health Care Services	39	11.0%	2.9%
Nursing Care Facilities (Skilled Nursing Facilities)	32	9.0%	0.7%
Offices of Physicians	13	3.8%	0.4%

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

Staffing Patterns for Mechanical Engineers Employed in EU's Workforce Region

Industry	Occupation Jobs in Industry (2014)	% of Occupation in Industry (2014)	% of Total Jobs in Industry (2014)
Railroad Rolling Stock Manufacturing	100	18.1%	3.9%
Metalworking Machinery Manufacturing	42	7.6%	1.7%
Other General Purpose Machinery Manufacturing	36	6.5%	4.0%
Rubber Product Manufacturing	34	6.2%	3.4%
Aerospace Product and Parts Manufacturing	33	5.9%	2.4%

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

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

6.5 Key Skilled High Demand Occupational Profiles

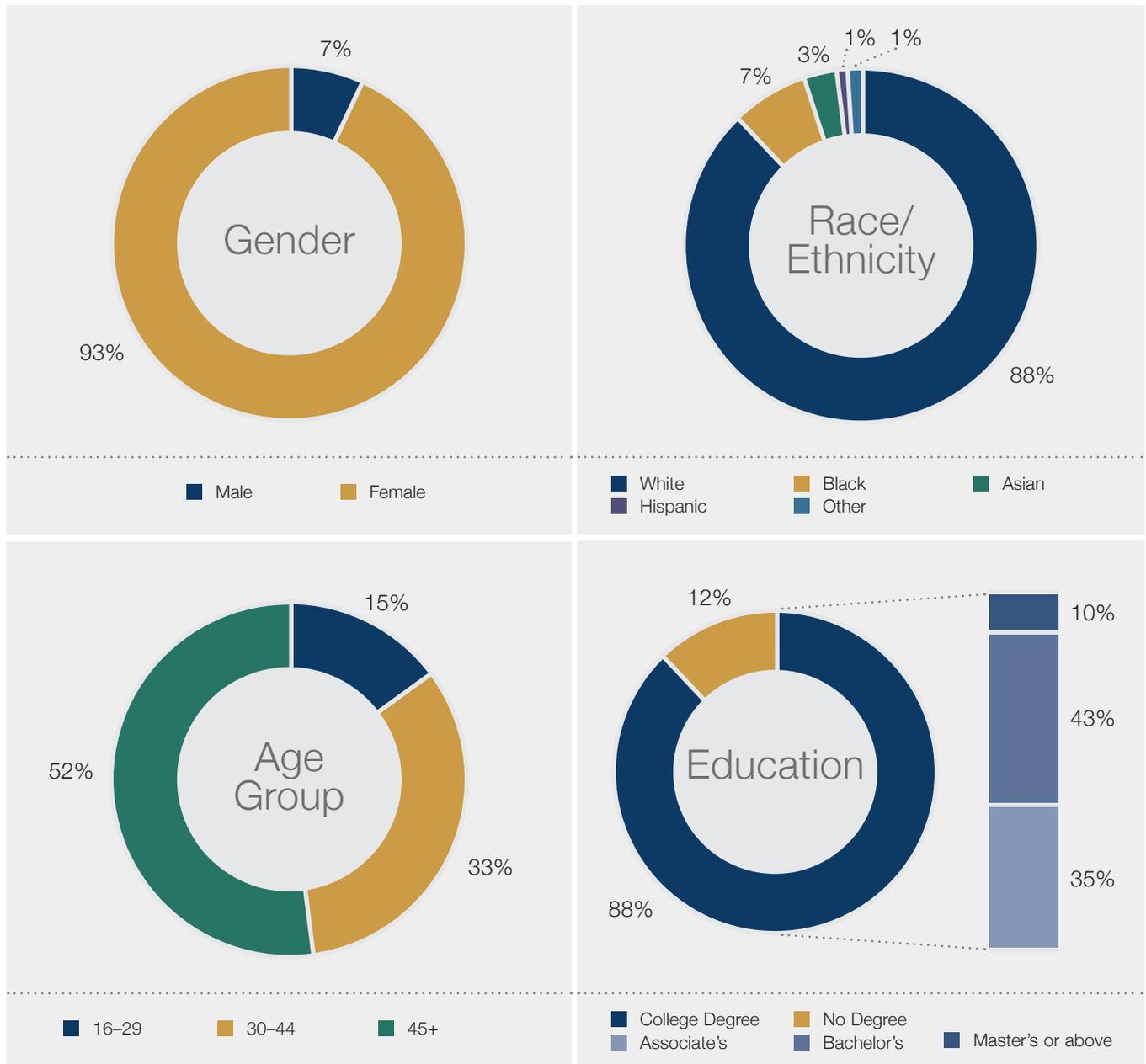
In addition to understanding the industries that employ key skilled high demand occupations, another lens to view key skilled high demand occupations focuses on the characteristics of those employed. The following section outlines the demographics for people from Pennsylvania who work in these key skilled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

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

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

REGISTERED NURSES IN PENNSYLVANIA

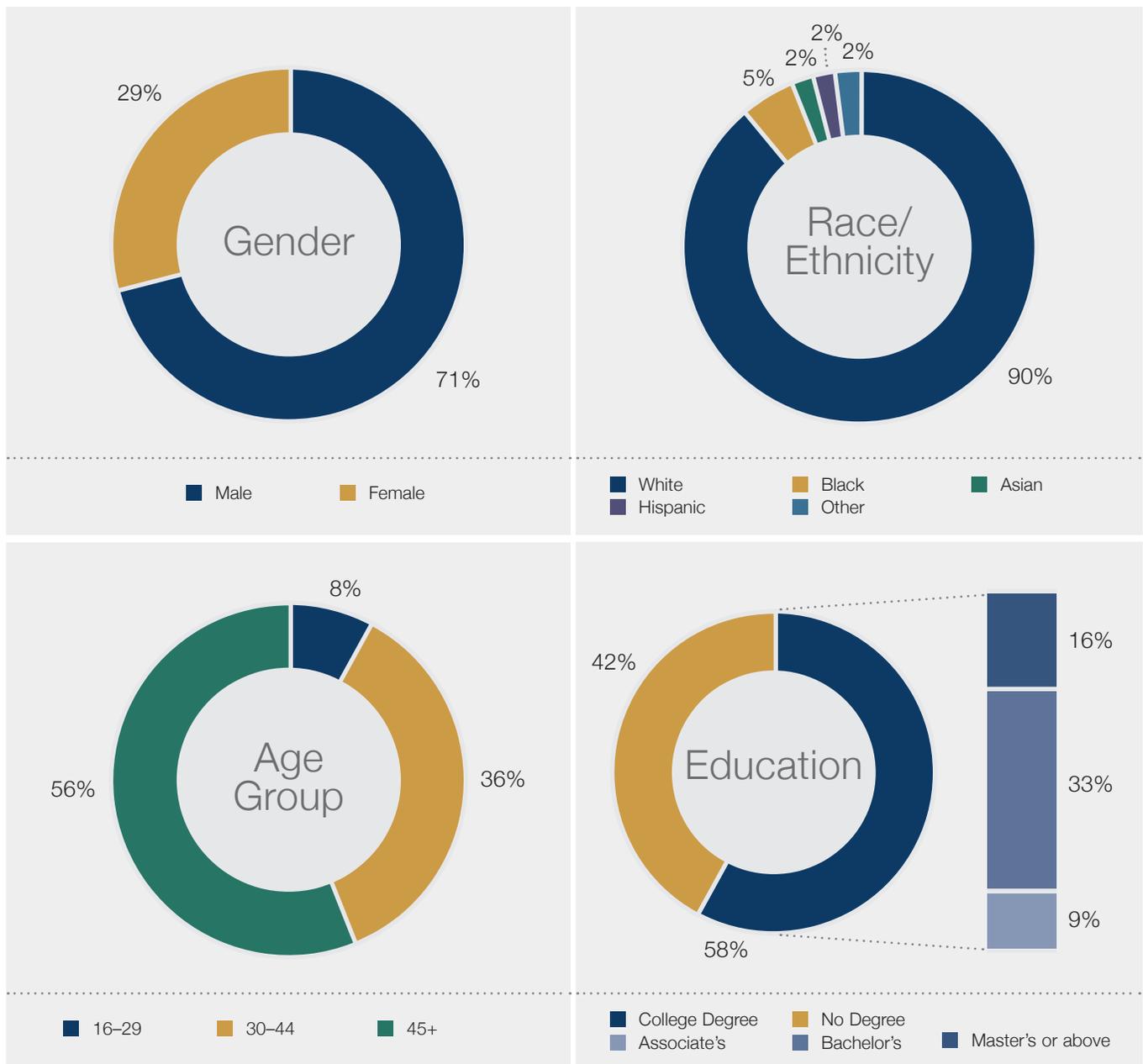
The demographic profile of registered nurses is largely dominated by white females. Age distribution indicates that registered nurses are a more mature cohort of workers (45 years and older), which can put increasing pressure on replacement jobs due to retirements over the next 10 years. Nearly 90% of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



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

GENERAL AND OPERATIONS MANAGERS IN PENNSYLVANIA

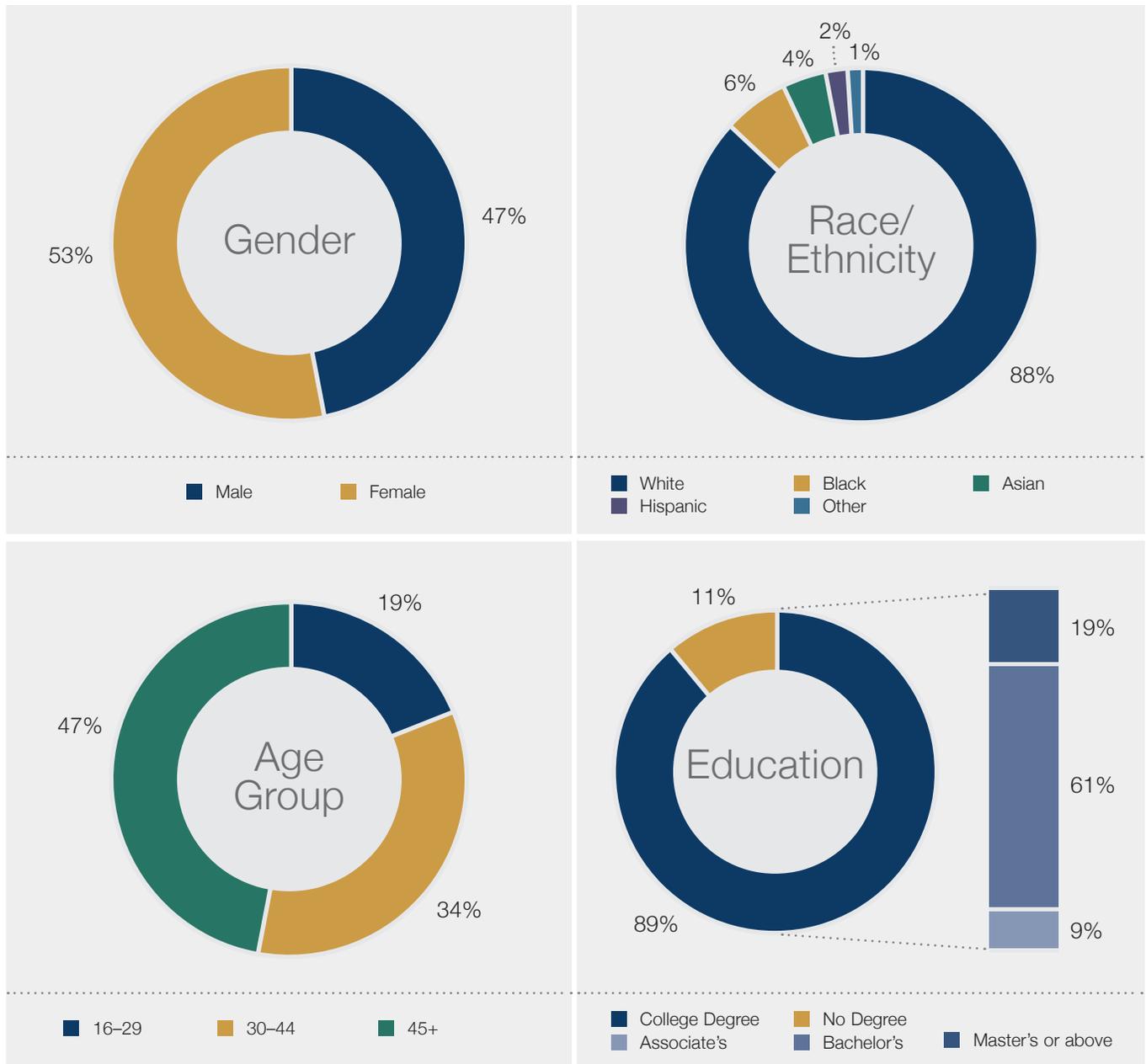
General and operations managers are typically male, though females occupy almost 30% of the employed population. The majority of those in this occupation are white. This occupation is represented by a more mature cohort of workers (45 years and older), though mid-career workers also occupy a significant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



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

ACCOUNTANTS AND AUDITORS IN PENNSYLVANIA

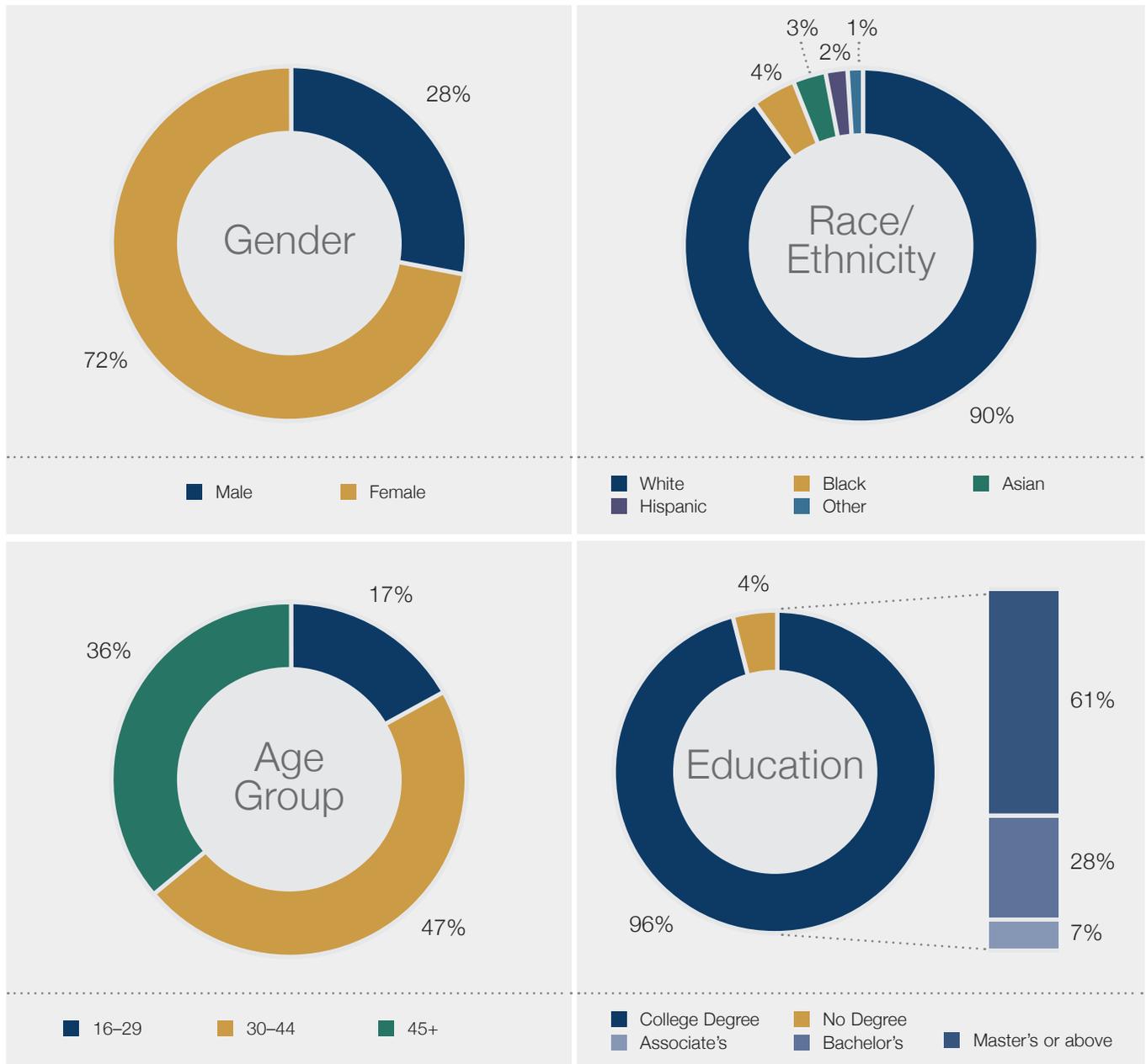
Accountants and auditors are fairly equally split between male and female, though a slightly higher percent of employed accountants and auditors are female. A high proportion of white individuals are found in the occupation. Additionally, the age distribution is fairly even between entry-level and mature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



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

PHYSICAL THERAPISTS IN PENNSYLVANIA

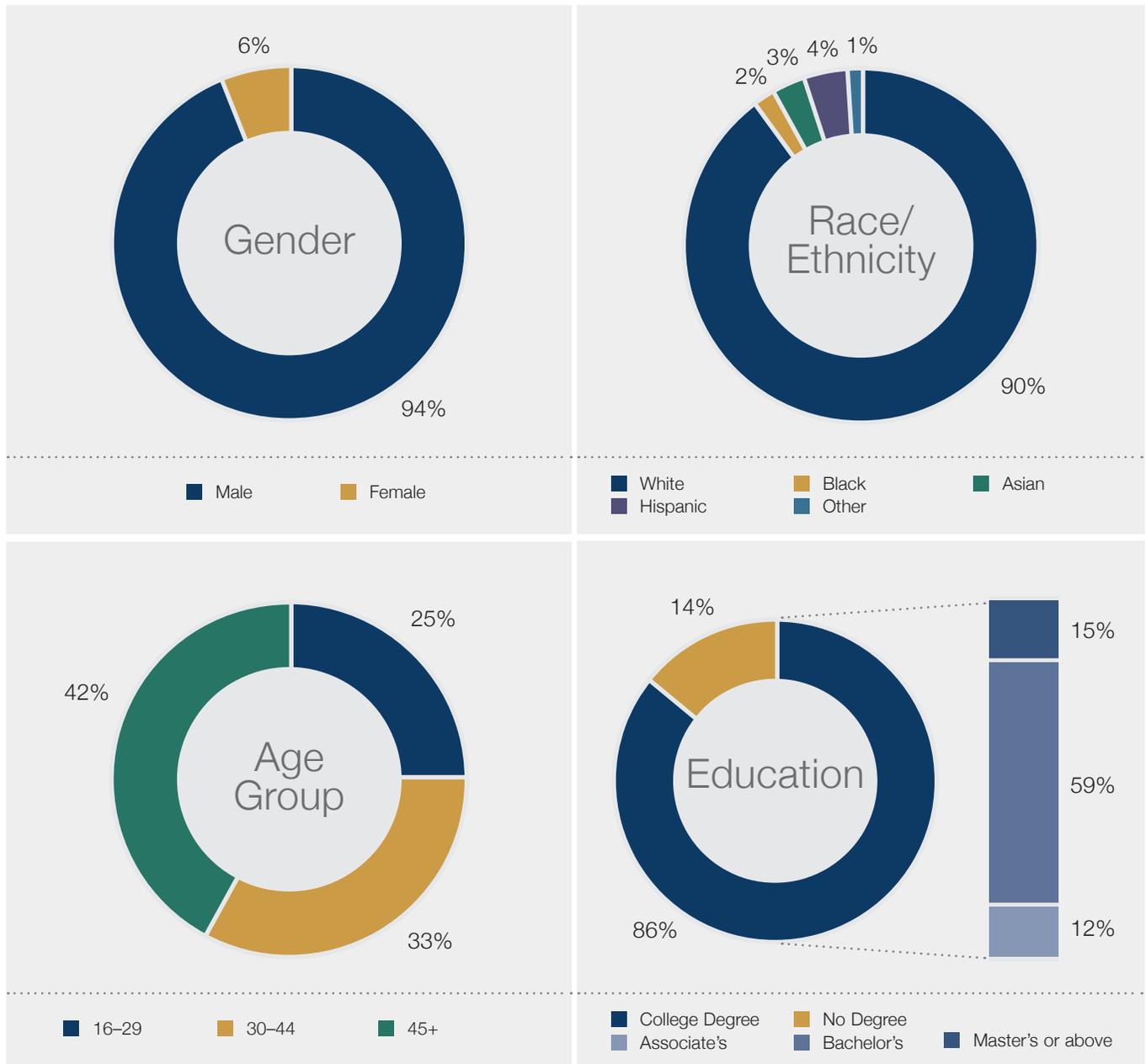
Physical therapists are typically female, though males make up almost 30% of the employed population. The majority of those in this occupation are white. The age distribution of this occupation is represented by mostly mid-career workers (ages 30-44), though older workers also make up a large portion of the occupation. Over 95% of physical therapists have an associate's degree or higher indicating that this is a highly educated occupation.



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

MECHANICAL ENGINEERS IN PENNSYLVANIA

Mechanical engineers indicate a larger proportion of males within the occupation. The race/ethnicity distribution within the occupation is predominately white. Additionally, the age distribution of the occupation, tends to favor a younger demographic. One quarter of the employed mechanical engineers is under 30 years old indicating that the occupation provides good opportunities for first destinations of recent college graduates. Over 85% of Mechanical engineers have an associate's degree or higher indicating that this is a highly educated occupation.



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

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

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

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

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

7.1 Demographics of Edinboro University's Workforce Region

The EU workforce region has a population of about 452,000 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.

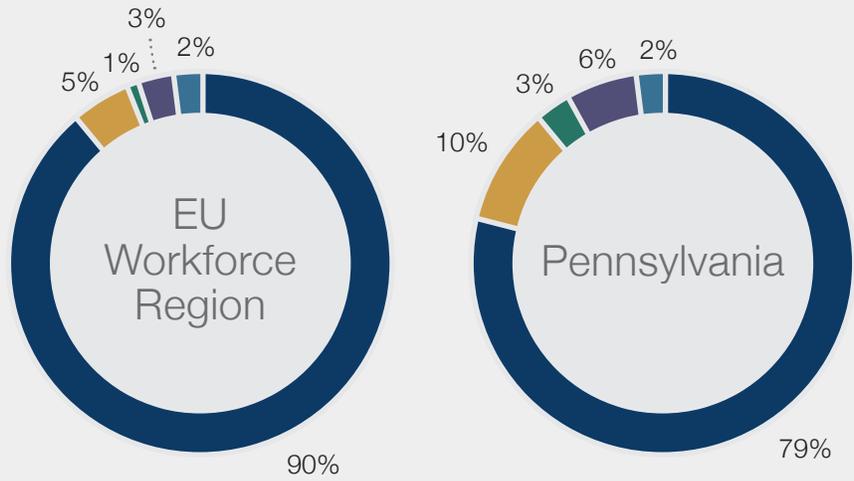
Fall 2014 data from the State System Research Office indicates that approximately 83% (90,966) of learners within the State System are traditional students—ages 18- to 22-year-old high school graduates—and 17% (18,640) are adult learners. A view of the change in population by age demographic indicates a diminishing number in the traditional age cohort and a growing rate of adults aged 25 to 34 years old. As illustrated in figure 7.3, the 10 to 19 year old cohort population declined by nearly 4,500 people between 2010 and 2014—a 7% decline. Conversely, the 25-34 year old cohort increased nearly 5%, or 2,400 people, over the same time period. This demographic shift presents an opportunity to incorporate a broader university recruitment strategy.

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



Source: U.S. Census - ACS

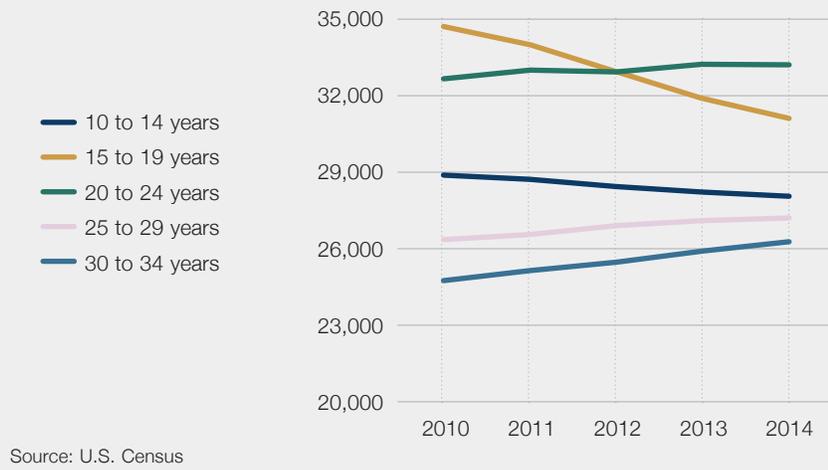
Figure 7.2 – Edinboro University’s Workforce Region Race/Ethnicity Composition



■ White ■ Black ■ Asian ■ Hispanic ■ Other

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

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



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

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

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

7.2.1 Educational Attainment in Edinboro University’s Workforce Region

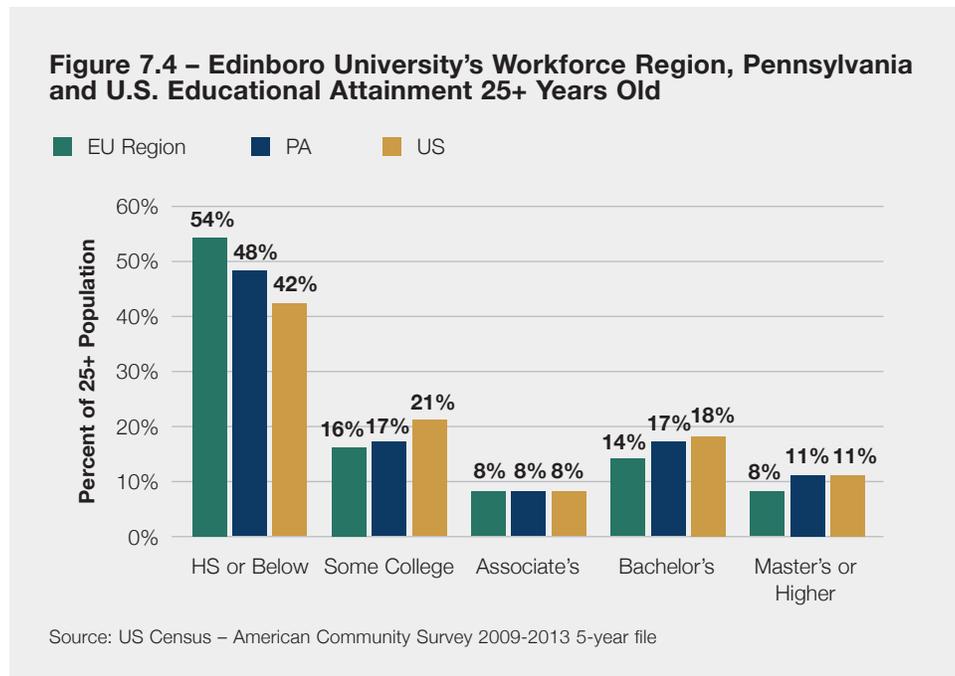
The levels of educational attainment of a population indicate several characteristics in an economy. Areas with better educated workers earn higher wages, are more productive and can typically adjust more quickly to changing economic conditions. Additionally, an educated workforce is less likely to be

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

A view of educational attainment in EU’s workforce region indicates that less than half (46%) of those over 25 years old have had some post-secondary education or higher. Some college is defined by ACS as having some college, but less than one year or one or more years of college credit, but no degree. This is the below the national average of 58% of the population having had at least some post-secondary education or higher.

When comparing degree completion, EU’s workforce region is near the national average for the proportion of the population with an associate’s degree and 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 EU’s workforce region.



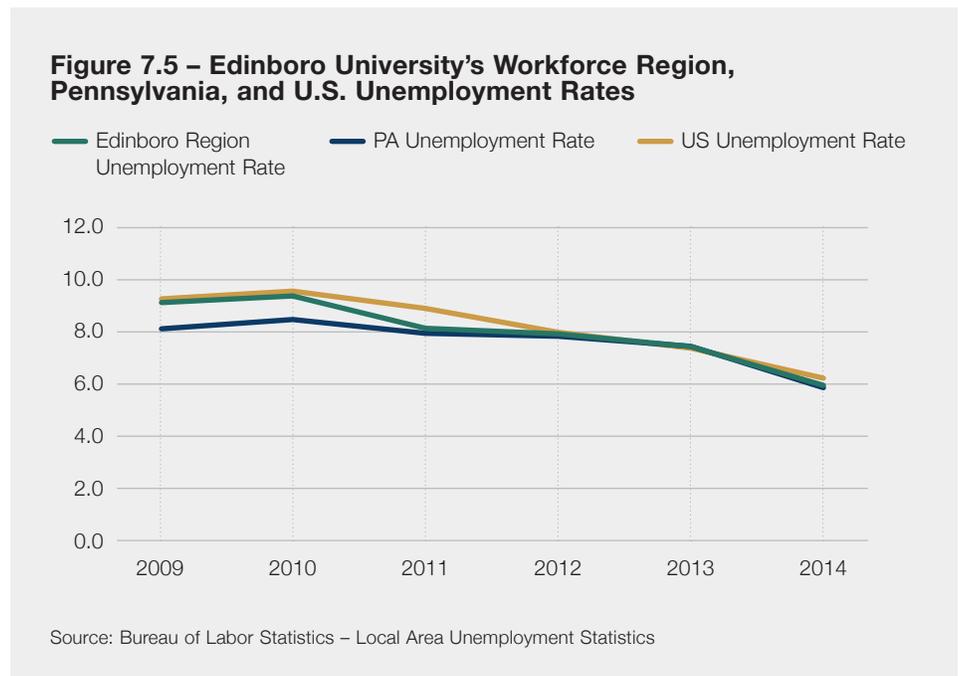
13 Feinstein et. al. (2006), “The effects of education on health: Concepts, evidence and policy implications: A review for the OECD Center for Educational Research and Innovation (CERI)”, unpublished manuscript, OECD, Paris.

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

7.2.2 Unemployment and Poverty in Edinboro University's Workforce Region

EU's workforce region unemployment rate—6.0% in 2014—has trended closely with the state and national unemployment rate since 2012. This suggests that opportunities for dislocated workers on average are roughly the same compared to the rest of the nation.

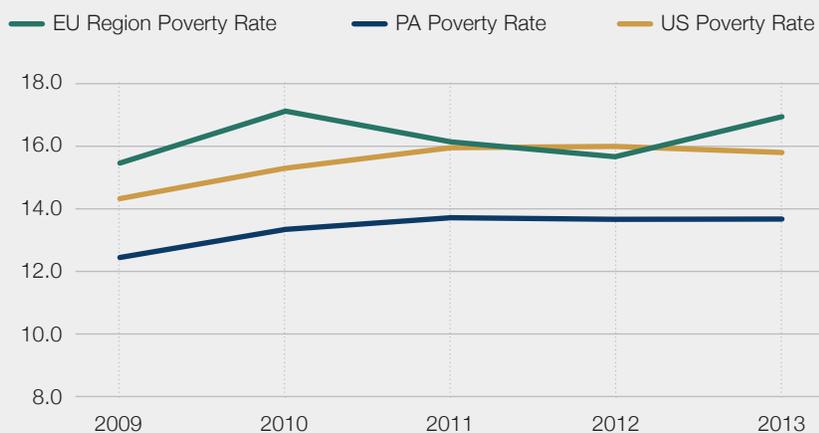
Figure 7.5 shows the convergence of the unemployment rates of EU's workforce region, Pennsylvania, and the U.S. from 2009 to 2014.



In EU's workforce region, the poverty rate trended upward since 2009 but declined slightly from 2010 to 2012. The region's poverty rate is above the state poverty rate and the U.S. average.¹⁵ Given the higher poverty rate compared with the nation, there is an underlying assumption that the compensation associated with the jobs in EU's workforce region may be lower than the national average.

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

Figure 7.6 – Edinboro University’s Workforce Region, Pennsylvania, and U.S. Poverty Rates



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

Figure 7.6 compares the poverty rates of EU's workforce region, 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.

8. NEXT STEPS

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

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

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

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

DATA SOURCES

Bureau of Labor Statistics (BLS):

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

U.S. Census Bureau (Census):

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

National Center for Education Statistics (NCES):

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

Pennsylvania Department of Labor and Industry (PADLI):

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

O*NET Resource Center (O*NET)

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

Economic Modeling Specialists International (EMSI)

APPENDIX A: METHODOLOGY FOR IDENTIFYING STATE SYSTEM UNIVERSITY WORKFORCE REGIONS

Introduction

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

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

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

¹⁶ Bureau of Labor Statistics: Labor Market Area.

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

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

Further information on each of the measurements is detailed later.

Geographic Consideration

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

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

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

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

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

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

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

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

Process

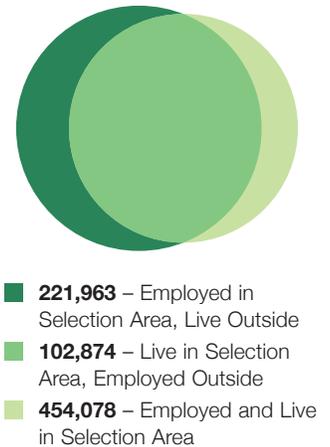
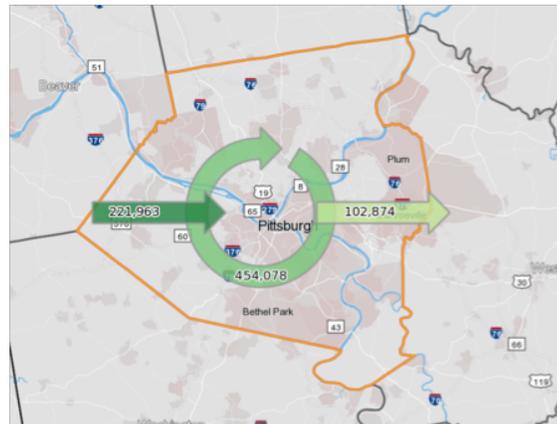
Given the workforce/commute, learner and economic variances that exist within the different geographies across Pennsylvania, an iterative process is used to define the workforce region. This multiple step, iterative process seeks to maximize the primary driver value (workforce flows), while adhering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

Workforce Flows:

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

When these numbers are converted into percentages, we find that

Inflow/Outflow Job Counts in 2013



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

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

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

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

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

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

Learner Capture Rates and Inclusiveness:

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

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

Economic Activity and Concentration:

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

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

Table A.1 – State System Workforce Region by University

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

Source: Oxford Economics modeling and tabulations

APPENDIX B: PENNSYLVANIA STATE AND COUNTY ENROLLMENT AND EMPLOYMENT

County	Fall 2014 Enrollment in Edinboro University	2014 QCEW Employment
Adams	5	34,139
Allegheny	656	683,111
Armstrong	42	17,582
Beaver	110	52,811
Bedford	2	15,397
Berks	13	166,792
Blair	24	58,233
Bradford	17	24,568
Bucks	22	250,889
Butler	166	84,472
Cambria	32	53,915
Cameron	4	2,015
Carbon	3	16,974
Centre	28	67,147
Chester	13	240,469
Clarion	29	13,586
Clearfield	49	29,938
Clinton	5	13,043
Columbia	4	24,974
Crawford	637	31,113
Cumberland	25	126,939
Dauphin	17	176,004
Delaware	10	216,261
Elk	71	14,994
Erie	2,616	124,095
Fayette	20	39,979
Forest	11	2,053
Franklin	6	56,715
Fulton	0	4,807
Greene	6	14,844
Huntingdon	3	12,343

County	Fall 2014 Enrollment in Edinboro University	2014 QCEW Employment
Indiana	27	32,653
Jefferson	48	15,435
Juniata	3	6,146
Lackawanna	8	97,259
Lancaster	33	225,673
Lawrence	94	29,500
Lebanon	7	48,869
Lehigh	18	180,757
Luzerne	12	140,329
Lycoming	15	53,197
McKean	80	15,770
Mercer	196	48,028
Mifflin	8	15,544
Monroe	13	52,933
Montgomery	23	472,655
Montour	4	15,578
Northampton	7	105,825
Northumberland	5	27,985
Perry	6	7,661
Philadelphia	58	640,987
Pike	5	10,748
Potter	9	5,291
Schuylkill	10	50,049
Snyder	2	15,522
Somerset	11	24,398
Sullivan	0	1,772
Susquehanna	0	9,281
Tioga	13	12,973
Union	4	16,597
Venango	125	19,251
Warren	126	15,031
Washington	83	86,961
Wayne	5	14,651
Westmoreland	128	132,312
Wyoming	1	10,181
York	31	172,145
Total Pennsylvania	5,864	5,643,676

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

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

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

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

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
Total	All Industries	189,294	203,474	7.5%	1.0
1111	Oilseed and Grain Farming	34	41	20.6%	0.5
1112	Vegetable and Melon Farming	72	80	11.1%	0.5
1113	Fruit and Tree Nut Farming	78	90	15.4%	0.3
1114	Greenhouse, Nursery, and Floriculture Production	188	194	3.2%	0.9
1119	Other Crop Farming	12	13	8.3%	0.1
1121	Cattle Ranching and Farming	134	160	19.4%	0.7
1123	Poultry and Egg Production	39	41	5.1%	0.7
1125	Aquaculture	71	85	19.7%	7.9
1129	Other Animal Production	26	23	-11.5%	1.0
1131	Timber Tract Operations	19	22	15.8%	2.0
1132	Forest Nurseries and Gathering of Forest Products	4	5	25.0%	1.3
1133	Logging	158	146	-7.6%	2.2
1141	Fishing	4	4	0.0%	0.4
1142	Hunting and Trapping	3	3	0.0%	1.1
1151	Support Activities for Crop Production	18	16	-11.1%	0.0
1152	Support Activities for Animal Production	7	6	-14.3%	0.2
1153	Support Activities for Forestry	44	58	31.8%	1.9
2111	Oil and Gas Extraction	708	810	14.4%	2.6
2123	Nonmetallic Mineral Mining and Quarrying	74	60	-18.9%	0.6
2131	Support Activities for Mining	1,167	1,145	-1.9%	1.9
2211	Electric Power Generation, Transmission and Distribution	239	232	-2.9%	0.4
2212	Natural Gas Distribution	405	468	15.6%	2.5
2213	Water, Sewage and Other Systems	339	346	2.1%	1.2
2361	Residential Building Construction	580	671	15.7%	0.6
2362	Nonresidential Building Construction	726	762	5.0%	0.8
2371	Utility System Construction	350	438	25.1%	0.5
2372	Land Subdivision	13	17	30.8%	0.2
2373	Highway, Street, and Bridge Construction	577	706	22.4%	1.1
2379	Other Heavy and Civil Engineering Construction	100	123	23.0%	0.7
2381	Foundation, Structure, and Building Exterior Contractors	535	482	-9.9%	0.5
2382	Building Equipment Contractors	1,832	1,944	6.1%	0.7
2383	Building Finishing Contractors	653	711	8.9%	0.7
2389	Other Specialty Trade Contractors	710	826	16.3%	0.9
3111	Animal Food Manufacturing	309	370	19.7%	4.1
3113	Sugar and Confectionery Product Manufacturing	87	97	11.5%	0.9
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing	691	736	6.5%	2.9

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
3115	Dairy Product Manufacturing	168	196	16.7%	0.9
3116	Animal Slaughtering and Processing	258	248	-3.9%	0.4
3118	Bakeries and Tortilla Manufacturing	347	417	20.2%	0.9
3119	Other Food Manufacturing	246	299	21.5%	0.9
3121	Beverage Manufacturing	316	392	24.1%	1.2
3132	Fabric Mills	62	75	21.0%	0.8
3133	Textile and Fabric Finishing and Fabric Coating Mills	26	25	-3.8%	0.6
3141	Textile Furnishings Mills	5	6	20.0%	0.1
3149	Other Textile Product Mills	67	75	11.9%	0.8
3211	Sawmills and Wood Preservation	311	362	16.4%	2.5
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	185	201	8.6%	1.9
3219	Other Wood Product Manufacturing	877	1,163	32.6%	3.0
3222	Converted Paper Product Manufacturing	676	581	-14.1%	1.8
3231	Printing and Related Support Activities	631	603	-4.4%	1.0
3241	Petroleum and Coal Products Manufacturing	508	601	18.3%	3.3
3251	Basic Chemical Manufacturing	203	192	-5.4%	1.0
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing	188	206	9.6%	1.5
3255	Paint, Coating, and Adhesive Manufacturing	333	291	-12.6%	4.0
3259	Other Chemical Product and Preparation Manufacturing	148	148	0.0%	1.3
3261	Plastics Product Manufacturing	4,595	4,792	4.3%	6.1
3262	Rubber Product Manufacturing	986	1,101	11.7%	5.4
3271	Clay Product and Refractory Manufacturing	83	68	-18.1%	1.5
3272	Glass and Glass Product Manufacturing	384	314	-18.2%	3.4
3273	Cement and Concrete Product Manufacturing	274	261	-4.7%	1.1
3279	Other Nonmetallic Mineral Product Manufacturing	21	17	-19.0%	0.2
3311	Iron and Steel Mills and Ferroalloy Manufacturing	375	389	3.7%	3.0
3312	Steel Product Manufacturing from Purchased Steel	53	51	-3.8%	0.6
3314	Nonferrous Metal (except Aluminum) Production and Processing	26	31	19.2%	0.3
3315	Foundries	1,044	1,072	2.7%	6.0
3321	Forging and Stamping	1,157	1,191	2.9%	8.3
3322	Cutlery and Handtool Manufacturing	770	761	-1.2%	14.3
3323	Architectural and Structural Metals Manufacturing	1,318	1,415	7.4%	2.7
3324	Boiler, Tank, and Shipping Container Manufacturing	289	324	12.1%	2.1
3325	Hardware Manufacturing	25	31	24.0%	0.8
3326	Spring and Wire Product Manufacturing	211	186	-11.8%	3.5
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	2,335	2,457	5.2%	4.5

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
3328	Coating, Engraving, Heat Treating, and Allied Activities	588	606	3.1%	3.1
3329	Other Fabricated Metal Product Manufacturing	1,545	1,788	15.7%	4.0
3331	Agriculture, Construction, and Mining Machinery Manufacturing	101	81	-19.8%	0.3
3332	Industrial Machinery Manufacturing	216	238	10.2%	1.4
3333	Commercial and Service Industry Machinery Manufacturing	14	17	21.4%	0.1
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	73	84	15.1%	0.4
3335	Metalworking Machinery Manufacturing	2,479	2,472	-0.3%	9.8
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	166	146	-12.0%	1.2
3339	Other General Purpose Machinery Manufacturing	886	887	0.1%	2.4
3341	Computer and Peripheral Equipment Manufacturing	20	15	-25.0%	0.1
3344	Semiconductor and Other Electronic Component Manufacturing	649	504	-22.3%	1.3
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	714	813	13.9%	1.3
3351	Electric Lighting Equipment Manufacturing	74	61	-17.6%	1.1
3353	Electrical Equipment Manufacturing	315	327	3.8%	1.6
3359	Other Electrical Equipment and Component Manufacturing	204	177	-13.2%	1.2
3362	Motor Vehicle Body and Trailer Manufacturing	453	545	20.3%	2.3
3363	Motor Vehicle Parts Manufacturing	927	1,090	17.6%	1.2
3364	Aerospace Product and Parts Manufacturing	1,381	1,664	20.5%	2.0
3365	Railroad Rolling Stock Manufacturing	2,575	2,073	-19.5%	68.1
3366	Ship and Boat Building	258	284	10.1%	1.1
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing	90	87	-3.3%	0.3
3372	Office Furniture (including Fixtures) Manufacturing	370	463	25.1%	2.6
3379	Other Furniture Related Product Manufacturing	7	7	0.0%	0.1
3391	Medical Equipment and Supplies Manufacturing	80	77	-3.8%	0.2
3399	Other Miscellaneous Manufacturing	642	641	-0.2%	1.7
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	535	561	4.9%	1.2
4232	Furniture and Home Furnishing Merchant Wholesalers	47	60	27.7%	0.3
4233	Lumber and Other Construction Materials Merchant Wholesalers	360	466	29.4%	1.3
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	164	125	-23.8%	0.2
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	94	107	13.8%	0.5
4236	Household Appliances and Electrical and Electronic Goods Merchant Wholesalers	371	421	13.5%	0.8
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	232	278	19.8%	0.7
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	907	961	6.0%	1.0

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
4239	Miscellaneous Durable Goods Merchant Wholesalers	236	236	0.0%	0.6
4241	Paper and Paper Product Merchant Wholesalers	81	77	-4.9%	0.5
4242	Drugs and Druggists' Sundries Merchant Wholesalers	38	45	18.4%	0.1
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	2	3	50.0%	0.0
4244	Grocery and Related Product Merchant Wholesalers	510	558	9.4%	0.5
4245	Farm Product Raw Material Merchant Wholesalers	6	5	-16.7%	0.1
4246	Chemical and Allied Products Merchant Wholesalers	93	88	-5.4%	0.5
4247	Petroleum and Petroleum Products Merchant Wholesalers	77	73	-5.2%	0.6
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	190	206	8.4%	0.7
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	291	336	15.5%	0.6
4251	Wholesale Electronic Markets and Agents and Brokers	803	843	5.0%	0.6
4411	Automobile Dealers	2,092	2,209	5.6%	1.3
4412	Other Motor Vehicle Dealers	236	288	22.0%	1.2
4413	Automotive Parts, Accessories, and Tire Stores	740	788	6.5%	1.0
4421	Furniture Stores	249	266	6.8%	0.8
4422	Home Furnishings Stores	194	190	-2.1%	0.6
4431	Electronics and Appliance Stores	522	473	-9.4%	0.8
4441	Building Material and Supplies Dealers	1,445	1,548	7.1%	1.0
4442	Lawn and Garden Equipment and Supplies Stores	295	287	-2.7%	1.5
4451	Grocery Stores	3,541	3,401	-4.0%	1.0
4452	Specialty Food Stores	118	95	-19.5%	0.4
4453	Beer, Wine, and Liquor Stores	412	486	18.0%	1.9
4461	Health and Personal Care Stores	1,461	1,345	-7.9%	1.0
4471	Gasoline Stations	2,228	2,336	4.8%	1.8
4481	Clothing Stores	1,052	987	-6.2%	0.7
4482	Shoe Stores	165	176	6.7%	0.6
4483	Jewelry, Luggage, and Leather Goods Stores	186	199	7.0%	1.0
4511	Sporting Goods, Hobby, and Musical Instrument Stores	720	771	7.1%	1.0
4512	Book Stores and News Dealers	107	92	-14.0%	0.9
4521	Department Stores	1,281	1,063	-17.0%	0.7
4529	Other General Merchandise Stores	3,476	4,120	18.5%	1.4
4531	Florists	89	90	1.1%	1.0
4532	Office Supplies, Stationery, and Gift Stores	313	263	-16.0%	0.8
4533	Used Merchandise Stores	191	193	1.0%	0.8
4539	Other Miscellaneous Store Retailers	399	415	4.0%	1.0
4541	Electronic Shopping and Mail-Order Houses	601	584	-2.8%	1.3
4542	Vending Machine Operators	12	10	-16.7%	0.2

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
4543	Direct Selling Establishments	245	253	3.3%	1.3
4811	Scheduled Air Transportation	29	36	24.1%	0.1
4812	Nonscheduled Air Transportation	44	56	27.3%	0.8
4841	General Freight Trucking	1,043	1,157	10.9%	0.8
4842	Specialized Freight Trucking	649	702	8.2%	1.0
4851	Urban Transit Systems	212	234	10.4%	0.7
4852	Interurban and Rural Bus Transportation	29	25	-13.8%	0.9
4853	Taxi and Limousine Service	43	46	7.0%	0.4
4854	School and Employee Bus Transportation	1,178	1,297	10.1%	3.4
4855	Charter Bus Industry	51	47	-7.8%	1.2
4859	Other Transit and Ground Passenger Transportation	93	111	19.4%	0.7
4862	Pipeline Transportation of Natural Gas	191	220	15.2%	4.7
4872	Scenic and Sightseeing Transportation, Water	40	36	-10.0%	1.9
4881	Support Activities for Air Transportation	98	84	-14.3%	0.3
4882	Support Activities for Rail Transportation	142	208	46.5%	3.2
4884	Support Activities for Road Transportation	164	284	73.2%	1.1
4885	Freight Transportation Arrangement	44	61	38.6%	0.2
4889	Other Support Activities for Transportation	16	17	6.3%	0.4
4911	Postal Service	809	619	-23.5%	1.0
4921	Couriers and Express Delivery Services	359	338	-5.8%	0.5
4922	Local Messengers and Local Delivery	39	41	5.1%	0.5
4931	Warehousing and Storage	874	867	-0.8%	0.8
5111	Newspaper, Periodical, Book, and Directory Publishers	481	452	-6.0%	0.8
5112	Software Publishers	33	25	-24.2%	0.1
5121	Motion Picture and Video Industries	175	144	-17.7%	0.3
5151	Radio and Television Broadcasting	293	348	18.8%	1.0
5152	Cable and Other Subscription Programming	17	15	-11.8%	0.2
5171	Wired Telecommunications Carriers	450	379	-15.8%	0.5
5172	Wireless Telecommunications Carriers (except Satellite)	74	87	17.6%	0.3
5179	Other Telecommunications	91	75	-17.6%	0.8
5182	Data Processing, Hosting, and Related Services	50	54	8.0%	0.1
5191	Other Information Services	185	251	35.7%	0.4
5221	Depository Credit Intermediation	2,431	2,379	-2.1%	1.0
5222	Nondepository Credit Intermediation	279	290	3.9%	0.3
5223	Activities Related to Credit Intermediation	92	95	3.3%	0.2
5231	Securities and Commodity Contracts Intermediation and Brokerage	147	182	23.8%	0.2
5239	Other Financial Investment Activities	140	177	26.4%	0.2

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
5241	Insurance Carriers	2,945	3,548	20.5%	1.8
5242	Agencies, Brokerages, and Other Insurance Related Activities	1,263	1,174	-7.0%	0.9
5311	Lessors of Real Estate	451	519	15.1%	0.5
5312	Offices of Real Estate Agents and Brokers	131	156	19.1%	0.3
5313	Activities Related to Real Estate	281	333	18.5%	0.3
5321	Automotive Equipment Rental and Leasing	96	111	15.6%	0.4
5322	Consumer Goods Rental	325	379	16.6%	1.5
5323	General Rental Centers	36	38	5.6%	0.7
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	16	18	12.5%	0.1
5331	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	9	11	22.2%	0.3
5411	Legal Services	802	816	1.7%	0.5
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	674	683	1.3%	0.5
5413	Architectural, Engineering, and Related Services	676	705	4.3%	0.3
5414	Specialized Design Services	83	82	-1.2%	0.5
5415	Computer Systems Design and Related Services	592	835	41.0%	0.2
5416	Management, Scientific, and Technical Consulting Services	492	401	-18.5%	0.3
5417	Scientific Research and Development Services	67	83	23.9%	0.1
5418	Advertising, Public Relations, and Related Services	297	318	7.1%	0.5
5419	Other Professional, Scientific, and Technical Services	786	1,000	27.2%	0.9
5511	Management of Companies and Enterprises	1,401	1,435	2.4%	0.5
5611	Office Administrative Services	53	43	-18.9%	0.1
5612	Facilities Support Services	195	267	36.9%	1.0
5613	Employment Services	3,360	4,135	23.1%	0.7
5614	Business Support Services	571	588	3.0%	0.5
5615	Travel Arrangement and Reservation Services	78	74	-5.1%	0.3
5616	Investigation and Security Services	701	838	19.5%	0.6
5617	Services to Buildings and Dwellings	2,673	3,115	16.5%	1.0
5619	Other Support Services	294	412	40.1%	0.7
5621	Waste Collection	113	159	40.7%	0.5
5622	Waste Treatment and Disposal	95	140	47.4%	0.6
5629	Remediation and Other Waste Management Services	80	106	32.5%	0.4
6111	Elementary and Secondary Schools	11,377	10,749	-5.5%	1.0
6112	Junior Colleges	365	323	-11.5%	0.4
6113	Colleges, Universities, and Professional Schools	4,393	4,171	-5.1%	1.1
6114	Business Schools and Computer and Management Training	1	1	0.0%	0.0
6115	Technical and Trade Schools	61	60	-1.6%	0.3

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
6116	Other Schools and Instruction	256	317	23.8%	0.5
6117	Educational Support Services	32	40	25.0%	0.2
6211	Offices of Physicians	3,532	3,742	5.9%	1.0
6212	Offices of Dentists	1,006	1,198	19.1%	0.8
6213	Offices of Other Health Practitioners	1,498	1,989	32.8%	1.4
6214	Outpatient Care Centers	1,605	1,968	22.6%	1.5
6215	Medical and Diagnostic Laboratories	464	490	5.6%	1.3
6216	Home Health Care Services	1,333	2,084	56.3%	0.8
6219	Other Ambulatory Health Care Services	504	588	16.7%	1.2
6221	General Medical and Surgical Hospitals	8,588	9,550	11.2%	1.1
6222	Psychiatric and Substance Abuse Hospitals	399	369	-7.5%	1.2
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	294	362	23.1%	0.9
6231	Nursing Care Facilities (Skilled Nursing Facilities)	4,269	4,690	9.9%	1.8
6232	Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	3,108	3,663	17.9%	3.2
6233	Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	1,610	1,923	19.4%	1.4
6239	Other Residential Care Facilities	297	268	-9.8%	1.2
6241	Individual and Family Services	5,638	7,083	25.6%	1.9
6242	Community Food and Housing, and Emergency and Other Relief Services	71	68	-4.2%	0.3
6243	Vocational Rehabilitation Services	549	617	12.4%	1.1
6244	Child Day Care Services	924	1,115	20.7%	0.8
7111	Performing Arts Companies	103	126	22.3%	0.6
7112	Spectator Sports	160	181	13.1%	0.8
7113	Promoters of Performing Arts, Sports, and Similar Events	399	489	22.6%	2.3
7115	Independent Artists, Writers, and Performers	3	3	0.0%	0.0
7121	Museums, Historical Sites, and Similar Institutions	156	168	7.7%	0.5
7131	Amusement Parks and Arcades	727	622	-14.4%	2.7
7132	Gambling Industries	614	753	22.6%	1.7
7139	Other Amusement and Recreation Industries	1,540	1,588	3.1%	0.8
7211	Traveler Accommodation	1,500	1,672	11.5%	0.6
7212	RV (Recreational Vehicle) Parks and Recreational Camps	179	211	17.9%	2.2
7213	Rooming and Boarding Houses	24	29	20.8%	1.3
7223	Special Food Services	1,146	1,336	16.6%	1.3
7224	Drinking Places (Alcoholic Beverages)	1,052	980	-6.8%	2.1
7225	Restaurants and Other Eating Places	11,847	13,149	11.0%	0.9
8111	Automotive Repair and Maintenance	999	1,009	1.0%	0.8

NAICS Code	Industry Title	2014 Jobs	2024 Jobs	% Change 2014-2024	2014 LQ
8112	Electronic and Precision Equipment Repair and Maintenance	119	112	-5.9%	0.8
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	393	462	17.6%	1.4
8114	Personal and Household Goods Repair and Maintenance	54	56	3.7%	0.5
8121	Personal Care Services	1,054	1,168	10.8%	1.2
8122	Death Care Services	334	363	8.7%	1.8
8123	Drycleaning and Laundry Services	350	331	-5.4%	0.8
8129	Other Personal Services	178	228	28.1%	0.4
8131	Religious Organizations	254	269	5.9%	1.0
8132	Grantmaking and Giving Services	159	141	-11.3%	0.8
8133	Social Advocacy Organizations	250	293	17.2%	0.9
8134	Civic and Social Organizations	2,458	2,632	7.1%	4.5
8139	Business, Professional, Labor, Political, and Similar Organizations	339	322	-5.0%	0.6
8141	Private Households	118	117	-0.8%	0.3
9211	Executive, Legislative, and Other General Government Support	4,225	4,251	0.6%	1.0
9221	Justice, Public Order, and Safety Activities	1,905	2,002	5.1%	0.7
9231	Administration of Human Resource Programs	76	80	5.3%	0.1
9241	Administration of Environmental Quality Programs	529	565	6.8%	1.2
9251	Administration of Housing Programs, Urban Planning, and Community Development	173	161	-6.9%	1.5
9261	Administration of Economic Programs	128	118	-7.8%	0.2
9281	National Security and International Affairs	109	110	0.9%	0.1

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

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

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

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

JOB ZONE ONE: Little or No Preparation Needed

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

JOB ZONE TWO: Some Preparation Needed

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

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

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

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

JOB ZONE THREE: Medium Preparation Needed

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

JOB ZONE FOUR: Considerable Preparation Needed

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

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

JOB ZONE FIVE: Extensive Preparation Needed

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

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
Total	All Occupations	NA	189,293	203,473	7.5%	68,551
11-1011	Chief Executives	5	386	375	-2.8%	81
11-1021	General and Operations Managers	4	2,249	2,549	13.3%	701
11-1031	Legislators	4	62	51	-17.7%	5
11-2011	Advertising and Promotions Managers	4	15	13	-13.3%	3
11-2021	Marketing Managers	4	104	113	8.7%	31
11-2022	Sales Managers	4	288	290	0.7%	64
11-2031	Public Relations and Fundraising Managers	4	41	40	-2.4%	7
11-3011	Administrative Services Managers	3	208	202	-2.9%	26
11-3021	Computer and Information Systems Managers	4	202	241	19.3%	69
11-3031	Financial Managers	4	370	370	0.0%	68
11-3051	Industrial Production Managers	4	379	382	0.8%	90
11-3061	Purchasing Managers	4	44	45	2.3%	11
11-3071	Transportation, Storage, and Distribution Managers	4	63	63	0.0%	15
11-3111	Compensation and Benefits Managers	4	13	12	-7.7%	3
11-3121	Human Resources Managers	4	79	97	22.8%	38
11-3131	Training and Development Managers	4	18	20	11.1%	7
11-9021	Construction Managers	4	163	194	19.0%	55
11-9031	Education Administrators, Preschool and Childcare Center/Program	4	59	64	8.5%	21
11-9032	Education Administrators, Elementary and Secondary School	5	299	269	-10.0%	69
11-9033	Education Administrators, Postsecondary	5	145	123	-15.2%	19
11-9039	Education Administrators, All Other	5	16	18	12.5%	6
11-9041	Architectural and Engineering Managers	5	153	163	6.5%	50
11-9051	Food Service Managers	3	187	200	7.0%	50
11-9061	Funeral Service Managers	3	25	24	-4.0%	7
11-9071	Gaming Managers	3	10	13	30.0%	5
11-9081	Lodging Managers	3	30	35	16.7%	18
11-9111	Medical and Health Services Managers	5	439	464	5.7%	132
11-9121	Natural Sciences Managers	5	13	13	0.0%	3
11-9131	Postmasters and Mail Superintendents	3	31	21	-32.3%	3
11-9141	Property, Real Estate, and Community Association Managers	4	65	82	26.2%	33
11-9151	Social and Community Service Managers	4	227	258	13.7%	83
11-9161	Emergency Management Directors	4	12	10	-16.7%	0
11-9199	Managers, All Other	4	187	192	2.7%	46

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
13-1021	Buyers and Purchasing Agents, Farm Products	4	9	9	0.0%	2
13-1022	Wholesale and Retail Buyers, Except Farm Products	3	108	101	-6.5%	23
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	4	662	667	0.8%	146
13-1031	Claims Adjusters, Examiners, and Investigators	4	479	540	12.7%	203
13-1032	Insurance Appraisers, Auto Damage	3	28	36	28.6%	17
13-1041	Compliance Officers	4	259	301	16.2%	95
13-1051	Cost Estimators	4	337	365	8.3%	143
13-1071	Human Resources Specialists	4	559	663	18.6%	223
13-1075	Labor Relations Specialists	4	100	73	-27.0%	3
13-1081	Logisticians	4	210	264	25.7%	82
13-1111	Management Analysts	4	370	405	9.5%	96
13-1121	Meeting, Convention, and Event Planners	4	83	111	33.7%	41
13-1131	Fundraisers	4	81	91	12.3%	28
13-1141	Compensation, Benefits, and Job Analysis Specialists	4	84	72	-14.3%	7
13-1151	Training and Development Specialists	4	245	263	7.3%	67
13-1161	Market Research Analysts and Marketing Specialists	4	493	620	25.8%	206
13-1199	Business Operations Specialists, All Other	4	500	507	1.4%	68
13-2011	Accountants and Auditors	4	1,412	1,481	4.9%	539
13-2021	Appraisers and Assessors of Real Estate	4	34	35	2.9%	6
13-2031	Budget Analysts	4	81	116	43.2%	69
13-2041	Credit Analysts	4	47	50	6.4%	17
13-2051	Financial Analysts	4	212	235	10.8%	78
13-2052	Personal Financial Advisors	4	105	138	31.4%	52
13-2053	Insurance Underwriters	4	194	236	21.6%	117
13-2061	Financial Examiners	4	29	29	0.0%	9
13-2071	Credit Counselors	4	46	55	19.6%	19
13-2072	Loan Officers	3	313	351	12.1%	124
13-2081	Tax Examiners and Collectors, and Revenue Agents	3	122	111	-9.0%	38
13-2082	Tax Preparers	3	41	34	-17.1%	5
13-2099	Financial Specialists, All Other	4	83	71	-14.5%	0
15-1111	Computer and Information Research Scientists	5	3	3	0.0%	0
15-1121	Computer Systems Analysts	4	391	508	29.9%	186
15-1122	Information Security Analysts	4	49	61	24.5%	20
15-1131	Computer Programmers	4	253	291	15.0%	121
15-1132	Software Developers, Applications	4	388	494	27.3%	161
15-1133	Software Developers, Systems Software	4	141	140	-0.7%	16

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
15-1134	Web Developers	3	73	80	9.6%	20
15-1141	Database Administrators	4	114	132	15.8%	42
15-1142	Network and Computer Systems Administrators	4	352	331	-6.0%	39
15-1143	Computer Network Architects	4	66	71	7.6%	16
15-1151	Computer User Support Specialists	3	516	636	23.3%	213
15-1152	Computer Network Support Specialists	4	96	101	5.2%	23
15-1199	Computer Occupations, All Other	4	159	194	22.0%	63
15-2011	Actuaries	4	46	57	23.9%	26
15-2031	Operations Research Analysts	5	66	73	10.6%	23
15-2041	Statisticians	5	35	45	28.6%	22
17-1011	Architects, Except Landscape and Naval	4	33	40	21.2%	18
17-1012	Landscape Architects	4	13	18	38.5%	9
17-1021	Cartographers and Photogrammetrists	4	4	5	25.0%	1
17-1022	Surveyors	4	21	27	28.6%	11
17-2011	Aerospace Engineers	4	10	13	30.0%	5
17-2021	Agricultural Engineers	4	1	1	0.0%	0
17-2031	Biomedical Engineers	4	13	12	-7.7%	2
17-2041	Chemical Engineers	4	68	67	-1.5%	19
17-2051	Civil Engineers	4	199	220	10.6%	75
17-2061	Computer Hardware Engineers	4	14	12	-14.3%	2
17-2071	Electrical Engineers	4	157	171	8.9%	52
17-2072	Electronics Engineers, Except Computer	4	82	75	-8.5%	14
17-2081	Environmental Engineers	5	45	46	2.2%	14
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	4	25	26	4.0%	10
17-2112	Industrial Engineers	4	613	582	-5.1%	177
17-2131	Materials Engineers	4	34	40	17.6%	19
17-2141	Mechanical Engineers	4	550	537	-2.4%	195
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	4	4	4	0.0%	1
17-2161	Nuclear Engineers	4	25	29	16.0%	12
17-2171	Petroleum Engineers	4	81	113	39.5%	61
17-2199	Engineers, All Other	4	143	192	34.3%	78
17-3011	Architectural and Civil Drafters	4	72	77	6.9%	23
17-3012	Electrical and Electronics Drafters	3	30	26	-13.3%	1
17-3013	Mechanical Drafters	3	204	185	-9.3%	26
17-3019	Drafters, All Other	3	3	3	0.0%	1
17-3021	Aerospace Engineering and Operations Technicians	4	14	16	14.3%	5

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
17-3022	Civil Engineering Technicians	3	30	43	43.3%	20
17-3023	Electrical and Electronics Engineering Technicians	3	138	114	-17.4%	10
17-3024	Electro-Mechanical Technicians	3	17	16	-5.9%	4
17-3025	Environmental Engineering Technicians	4	16	16	0.0%	4
17-3026	Industrial Engineering Technicians	3	100	104	4.0%	29
17-3027	Mechanical Engineering Technicians	3	60	65	8.3%	19
17-3029	Engineering Technicians, Except Drafters, All Other	3	79	109	38.0%	50
17-3031	Surveying and Mapping Technicians	3	26	30	15.4%	9
19-1012	Food Scientists and Technologists	4	6	7	16.7%	3
19-1013	Soil and Plant Scientists	5	2	2	0.0%	1
19-1021	Biochemists and Biophysicists	5	4	6	50.0%	3
19-1022	Microbiologists	5	12	15	25.0%	7
19-1023	Zoologists and Wildlife Biologists	5	6	5	-16.7%	1
19-1029	Biological Scientists, All Other	5	9	9	0.0%	3
19-1031	Conservation Scientists	4	18	20	11.1%	8
19-1032	Foresters	4	19	20	5.3%	7
19-1041	Epidemiologists	5	4	4	0.0%	0
19-1042	Medical Scientists, Except Epidemiologists	5	50	59	18.0%	21
19-1099	Life Scientists, All Other	5	5	6	20.0%	2
19-2012	Physicists	5	6	5	-16.7%	0
19-2021	Atmospheric and Space Scientists	4	3	3	0.0%	0
19-2031	Chemists	4	115	127	10.4%	49
19-2032	Materials Scientists	5	8	7	-12.5%	2
19-2041	Environmental Scientists and Specialists, Including Health	4	63	70	11.1%	27
19-2042	Geoscientists, Except Hydrologists and Geographers	4	41	42	2.4%	15
19-2043	Hydrologists	4	3	2	-33.3%	0
19-2099	Physical Scientists, All Other	5	9	7	-22.2%	0
19-3011	Economists	5	9	10	11.1%	4
19-3022	Survey Researchers	5	73	82	12.3%	33
19-3031	Clinical, Counseling, and School Psychologists	5	204	202	-1.0%	59
19-3039	Psychologists, All Other	5	13	15	15.4%	6
19-3041	Sociologists	5	3	2	-33.3%	1
19-3051	Urban and Regional Planners	5	42	47	11.9%	25
19-3093	Historians	5	3	2	-33.3%	0
19-3099	Social Scientists and Related Workers, All Other	4	14	15	7.1%	4

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
19-4011	Agricultural and Food Science Technicians	3	11	9	-18.2%	3
19-4021	Biological Technicians	4	43	44	2.3%	15
19-4031	Chemical Technicians	3	80	85	6.3%	31
19-4041	Geological and Petroleum Technicians	4	40	49	22.5%	29
19-4051	Nuclear Technicians	3	18	19	5.6%	9
19-4061	Social Science Research Assistants	4	17	19	11.8%	10
19-4091	Environmental Science and Protection Technicians, Including Health	4	25	28	12.0%	14
19-4092	Forensic Science Technicians	4	5	4	-20.0%	2
19-4093	Forest and Conservation Technicians	3	11	13	18.2%	7
19-4099	Life, Physical, and Social Science Technicians, All Other	3	59	59	0.0%	25
21-1011	Substance Abuse and Behavioral Disorder Counselors	5	350	334	-4.6%	84
21-1012	Educational, Guidance, School, and Vocational Counselors	5	404	404	0.0%	94
21-1013	Marriage and Family Therapists	5	54	61	13.0%	19
21-1014	Mental Health Counselors	5	466	497	6.7%	158
21-1015	Rehabilitation Counselors	5	310	375	21.0%	152
21-1019	Counselors, All Other	5	38	40	5.3%	11
21-1021	Child, Family, and School Social Workers	4	667	707	6.0%	197
21-1022	Healthcare Social Workers	5	298	379	27.2%	150
21-1023	Mental Health and Substance Abuse Social Workers	5	442	531	20.1%	213
21-1029	Social Workers, All Other	5	39	41	5.1%	11
21-1091	Health Educators	4	92	101	9.8%	34
21-1092	Probation Officers and Correctional Treatment Specialists	4	124	128	3.2%	44
21-1093	Social and Human Service Assistants	4	986	1,078	9.3%	387
21-1094	Community Health Workers	4	42	45	7.1%	14
21-1099	Community and Social Service Specialists, All Other	4	46	53	15.2%	18
21-2011	Clergy	5	57	67	17.5%	24
21-2021	Directors, Religious Activities and Education	4	48	56	16.7%	30
21-2099	Religious Workers, All Other	4	12	10	-16.7%	2
23-1011	Lawyers	5	461	499	8.2%	117
23-1012	Judicial Law Clerks	5	35	49	40.0%	21
23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers	5	22	20	-9.1%	2
23-1022	Arbitrators, Mediators, and Conciliators	5	7	9	28.6%	3
23-1023	Judges, Magistrate Judges, and Magistrates	5	8	7	-12.5%	1

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
23-2011	Paralegals and Legal Assistants	3	186	217	16.7%	62
23-2091	Court Reporters	3	23	23	0.0%	6
23-2093	Title Examiners, Abstractors, and Searchers	3	64	69	7.8%	20
23-2099	Legal Support Workers, All Other	3	22	22	0.0%	5
25-1011	Business Teachers, Postsecondary	5	138	148	7.2%	30
25-1021	Computer Science Teachers, Postsecondary	5	58	61	5.2%	12
25-1022	Mathematical Science Teachers, Postsecondary	5	82	79	-3.7%	10
25-1031	Architecture Teachers, Postsecondary	5	14	17	21.4%	5
25-1032	Engineering Teachers, Postsecondary	5	86	101	17.4%	28
25-1041	Agricultural Sciences Teachers, Postsecondary	5	11	9	-18.2%	0
25-1042	Biological Science Teachers, Postsecondary	5	111	109	-1.8%	15
25-1043	Forestry and Conservation Science Teachers, Postsecondary	5	4	4	0.0%	0
25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	5	26	27	3.8%	5
25-1052	Chemistry Teachers, Postsecondary	5	46	50	8.7%	10
25-1053	Environmental Science Teachers, Postsecondary	5	10	9	-10.0%	0
25-1054	Physics Teachers, Postsecondary	5	32	42	31.3%	14
25-1061	Anthropology and Archeology Teachers, Postsecondary	5	10	8	-20.0%	0
25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	5	15	15	0.0%	2
25-1063	Economics Teachers, Postsecondary	5	34	34	0.0%	5
25-1064	Geography Teachers, Postsecondary	5	11	11	0.0%	2
25-1065	Political Science Teachers, Postsecondary	5	36	32	-11.1%	2
25-1066	Psychology Teachers, Postsecondary	5	69	69	0.0%	10
25-1067	Sociology Teachers, Postsecondary	5	46	48	4.3%	9
25-1069	Social Sciences Teachers, Postsecondary, All Other	5	15	18	20.0%	5
25-1071	Health Specialties Teachers, Postsecondary	5	201	183	-9.0%	12
25-1072	Nursing Instructors and Teachers, Postsecondary	5	89	84	-5.6%	9
25-1081	Education Teachers, Postsecondary	5	108	101	-6.5%	9
25-1082	Library Science Teachers, Postsecondary	5	11	12	9.1%	2
25-1111	Criminal Justice and Law Enforcement Teachers, Postsecondary	5	15	15	0.0%	2
25-1112	Law Teachers, Postsecondary	5	16	17	6.3%	3
25-1113	Social Work Teachers, Postsecondary	5	19	16	-15.8%	1
25-1121	Art, Drama, and Music Teachers, Postsecondary	5	147	182	23.8%	58
25-1122	Communications Teachers, Postsecondary	5	48	50	4.2%	9

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
25-1123	English Language and Literature Teachers, Postsecondary	5	124	118	-4.8%	12
25-1124	Foreign Language and Literature Teachers, Postsecondary	5	53	52	-1.9%	7
25-1125	History Teachers, Postsecondary	5	43	41	-4.7%	4
25-1126	Philosophy and Religion Teachers, Postsecondary	5	47	45	-4.3%	5
25-1191	Graduate Teaching Assistants	5	47	50	6.4%	11
25-1192	Home Economics Teachers, Postsecondary	5	4	3	-25.0%	0
25-1193	Recreation and Fitness Studies Teachers, Postsecondary	5	29	27	-6.9%	2
25-1194	Vocational Education Teachers, Postsecondary	3	90	73	-18.9%	0
25-1199	Postsecondary Teachers, All Other	5	129	150	16.3%	40
25-2011	Preschool Teachers, Except Special Education	3	396	515	30.1%	232
25-2012	Kindergarten Teachers, Except Special Education	4	221	204	-7.7%	51
25-2021	Elementary School Teachers, Except Special Education	4	2,130	1,998	-6.2%	404
25-2022	Middle School Teachers, Except Special and Career/Technical Education	4	915	995	8.7%	309
25-2023	Career/Technical Education Teachers, Middle School	4	24	28	16.7%	11
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	4	1,959	1,748	-10.8%	456
25-2032	Career/Technical Education Teachers, Secondary School	4	174	151	-13.2%	34
25-2051	Special Education Teachers, Preschool	4	26	29	11.5%	8
25-2052	Special Education Teachers, Kindergarten and Elementary School	4	413	404	-2.2%	85
25-2053	Special Education Teachers, Middle School	4	144	143	-0.7%	31
25-2054	Special Education Teachers, Secondary School	4	312	318	1.9%	82
25-2059	Special Education Teachers, All Other	4	10	11	10.0%	3
25-3011	Adult Basic and Secondary Education and Literacy Teachers and Instructors	4	55	48	-12.7%	4
25-3021	Self-Enrichment Education Teachers	3	235	226	-3.8%	41
25-3097	Teachers and Instructors, All Other, Except Substitute Teachers	3	133	157	18.0%	46
25-3098	Substitute Teachers	3	609	517	-15.1%	35
25-4011	Archivists	5	8	8	0.0%	2
25-4012	Curators	5	10	12	20.0%	4
25-4013	Museum Technicians and Conservators	4	10	13	30.0%	5
25-4021	Librarians	5	160	151	-5.6%	31
25-4031	Library Technicians	4	78	82	5.1%	48

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
25-9011	Audio-Visual and Multimedia Collections Specialists	4	8	8	0.0%	2
25-9021	Farm and Home Management Advisors	5	1	1	0.0%	0
25-9031	Instructional Coordinators	5	106	104	-1.9%	7
25-9041	Teacher Assistants	3	1,605	1,605	0.0%	398
25-9099	Education, Training, and Library Workers, All Other	4	24	23	-4.2%	1
27-1011	Art Directors	4	24	25	4.2%	8
27-1012	Craft Artists	2	1	1	0.0%	0
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	3	11	11	0.0%	4
27-1014	Multimedia Artists and Animators	4	8	9	12.5%	3
27-1019	Artists and Related Workers, All Other	4	3	3	0.0%	0
27-1021	Commercial and Industrial Designers	4	36	28	-22.2%	3
27-1022	Fashion Designers	3	4	4	0.0%	2
27-1023	Floral Designers	2	60	48	-20.0%	19
27-1024	Graphic Designers	4	198	196	-1.0%	61
27-1025	Interior Designers	4	28	29	3.6%	12
27-1026	Merchandise Displayers and Window Trimmers	3	71	83	16.9%	33
27-1027	Set and Exhibit Designers	5	7	8	14.3%	3
27-2011	Actors	2	35	40	14.3%	19
27-2012	Producers and Directors	4	87	109	25.3%	60
27-2021	Athletes and Sports Competitors	2	25	30	20.0%	14
27-2022	Coaches and Scouts	4	269	249	-7.4%	65
27-2023	Umpires, Referees, and Other Sports Officials	3	10	9	-10.0%	2
27-2031	Dancers	3	3	3	0.0%	1
27-2032	Choreographers	4	4	5	25.0%	3
27-2041	Music Directors and Composers	3	34	26	-23.5%	5
27-2042	Musicians and Singers	3	28	27	-3.6%	10
27-2099	Entertainers and Performers, Sports and Related Workers, All Other	3	3	2	-33.3%	0
27-3011	Radio and Television Announcers	3	51	57	11.8%	30
27-3012	Public Address System and Other Announcers	2	1	1	0.0%	0
27-3022	Reporters and Correspondents	4	39	36	-7.7%	17
27-3031	Public Relations Specialists	4	229	218	-4.8%	24
27-3041	Editors	4	76	77	1.3%	26
27-3042	Technical Writers	4	51	58	13.7%	22
27-3043	Writers and Authors	4	33	33	0.0%	8
27-3091	Interpreters and Translators	4	31	28	-9.7%	1

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
27-3099	Media and Communication Workers, All Other	4	9	7	-22.2%	0
27-4011	Audio and Video Equipment Technicians	3	49	56	14.3%	18
27-4012	Broadcast Technicians	3	24	27	12.5%	9
27-4014	Sound Engineering Technicians	3	11	12	9.1%	3
27-4021	Photographers	3	60	61	1.7%	19
27-4031	Camera Operators, Television, Video, and Motion Picture	3	15	15	0.0%	2
27-4032	Film and Video Editors	3	9	8	-11.1%	0
27-4099	Media and Communication Equipment Workers, All Other	3	6	5	-16.7%	0
29-1011	Chiropractors	5	47	66	40.4%	29
29-1021	Dentists, General	5	111	128	15.3%	45
29-1022	Oral and Maxillofacial Surgeons	5	4	5	25.0%	2
29-1023	Orthodontists	5	3	4	33.3%	2
29-1029	Dentists, All Other Specialists	5	3	3	0.0%	1
29-1031	Dietitians and Nutritionists	5	116	120	3.4%	19
29-1041	Optometrists	5	47	62	31.9%	30
29-1051	Pharmacists	5	386	372	-3.6%	88
29-1061	Anesthesiologists	5	50	45	-10.0%	9
29-1062	Family and General Practitioners	5	213	235	10.3%	81
29-1063	Internists, General	5	33	32	-3.0%	7
29-1064	Obstetricians and Gynecologists	5	11	14	27.3%	6
29-1065	Pediatricians, General	5	12	16	33.3%	6
29-1066	Psychiatrists	5	35	30	-14.3%	4
29-1067	Surgeons	5	69	90	30.4%	39
29-1069	Physicians and Surgeons, All Other	5	482	514	6.6%	159
29-1071	Physician Assistants	5	161	176	9.3%	47
29-1081	Podiatrists	5	18	25	38.9%	14
29-1122	Occupational Therapists	5	207	278	34.3%	103
29-1123	Physical Therapists	5	352	482	36.9%	230
29-1124	Radiation Therapists	3	27	34	25.9%	12
29-1125	Recreational Therapists	4	53	51	-3.8%	12
29-1126	Respiratory Therapists	3	168	193	14.9%	49
29-1127	Speech-Language Pathologists	5	165	201	21.8%	61
29-1128	Exercise Physiologists	5	11	15	36.4%	5
29-1129	Therapists, All Other	4	14	20	42.9%	7
29-1131	Veterinarians	5	80	110	37.5%	58
29-1141	Registered Nurses	3	4,341	5,179	19.3%	1,717

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
29-1151	Nurse Anesthetists	5	67	73	9.0%	20
29-1161	Nurse Midwives	5	5	7	40.0%	3
29-1171	Nurse Practitioners	5	126	162	28.6%	60
29-1181	Audiologists	5	19	22	15.8%	7
29-1199	Health Diagnosing and Treating Practitioners, All Other	5	16	15	-6.3%	3
29-2011	Medical and Clinical Laboratory Technologists	4	299	318	6.4%	109
29-2012	Medical and Clinical Laboratory Technicians	3	331	368	11.2%	132
29-2021	Dental Hygienists	3	276	357	29.3%	156
29-2031	Cardiovascular Technologists and Technicians	3	99	124	25.3%	40
29-2032	Diagnostic Medical Sonographers	3	85	105	23.5%	33
29-2033	Nuclear Medicine Technologists	3	35	40	14.3%	10
29-2034	Radiologic Technologists	3	333	389	16.8%	107
29-2035	Magnetic Resonance Imaging Technologists	3	47	56	19.1%	16
29-2041	Emergency Medical Technicians and Paramedics	3	339	381	12.4%	154
29-2051	Dietetic Technicians	2	116	159	37.1%	57
29-2052	Pharmacy Technicians	3	452	463	2.4%	63
29-2053	Psychiatric Technicians	3	51	57	11.8%	16
29-2054	Respiratory Therapy Technicians	3	17	20	17.6%	5
29-2055	Surgical Technologists	3	120	156	30.0%	48
29-2056	Veterinary Technologists and Technicians	3	123	178	44.7%	67
29-2057	Ophthalmic Medical Technicians	3	37	49	32.4%	16
29-2061	Licensed Practical and Licensed Vocational Nurses	3	1,347	1,596	18.5%	605
29-2071	Medical Records and Health Information Technicians	3	259	308	18.9%	119
29-2081	Opticians, Dispensing	3	105	129	22.9%	60
29-2091	Orthotists and Prosthetists	5	3	4	33.3%	1
29-2092	Hearing Aid Specialists	3	5	5	0.0%	1
29-2099	Health Technologists and Technicians, All Other	3	81	105	29.6%	31
29-9011	Occupational Health and Safety Specialists	4	65	71	9.2%	25
29-9012	Occupational Health and Safety Technicians	3	25	24	-4.0%	7
29-9091	Athletic Trainers	5	43	58	34.9%	27
29-9099	Healthcare Practitioners and Technical Workers, All Other	4	28	27	-3.6%	6
31-1011	Home Health Aides	2	2,223	2,780	25.1%	1,169
31-1013	Psychiatric Aides	2	68	65	-4.4%	14
31-1014	Nursing Assistants	2	2,890	3,255	12.6%	949
31-1015	Orderlies	2	78	89	14.1%	27

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
31-2011	Occupational Therapy Assistants	3	87	119	36.8%	59
31-2012	Occupational Therapy Aides	3	19	28	47.4%	15
31-2021	Physical Therapist Assistants	3	159	232	45.9%	116
31-2022	Physical Therapist Aides	2	74	100	35.1%	44
31-9011	Massage Therapists	3	71	99	39.4%	35
31-9091	Dental Assistants	3	379	446	17.7%	150
31-9092	Medical Assistants	3	781	941	20.5%	317
31-9093	Medical Equipment Preparers	2	63	74	17.5%	23
31-9094	Medical Transcriptionists	3	123	109	-11.4%	20
31-9095	Pharmacy Aides	2	46	36	-21.7%	1
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	3	74	80	8.1%	22
31-9097	Phlebotomists	3	171	215	25.7%	84
31-9099	Healthcare Support Workers, All Other	3	48	46	-4.2%	6
33-1011	First-Line Supervisors of Correctional Officers	3	40	45	12.5%	20
33-1012	First-Line Supervisors of Police and Detectives	3	89	101	13.5%	42
33-1021	First-Line Supervisors of Fire Fighting and Prevention Workers	3	24	28	16.7%	15
33-1099	First-Line Supervisors of Protective Service Workers, All Other	3	52	61	17.3%	25
33-2011	Firefighters	3	148	162	9.5%	58
33-2021	Fire Inspectors and Investigators	3	7	7	0.0%	2
33-3011	Bailiffs	2	6	5	-16.7%	1
33-3012	Correctional Officers and Jailers	3	491	482	-1.8%	143
33-3021	Detectives and Criminal Investigators	3	82	84	2.4%	23
33-3041	Parking Enforcement Workers	2	14	16	14.3%	8
33-3051	Police and Sheriff's Patrol Officers	3	835	859	2.9%	324
33-3052	Transit and Railroad Police	3	2	2	0.0%	0
33-9011	Animal Control Workers	2	8	9	12.5%	3
33-9021	Private Detectives and Investigators	3	33	30	-9.1%	10
33-9031	Gaming Surveillance Officers and Gaming Investigators	2	33	42	27.3%	24
33-9032	Security Guards	2	1,072	1,206	12.5%	434
33-9091	Crossing Guards	1	120	97	-19.2%	6
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	2	297	326	9.8%	244
33-9093	Transportation Security Screeners	2	38	41	7.9%	13
33-9099	Protective Service Workers, All Other	2	112	133	18.8%	101
35-1011	Chefs and Head Cooks	3	161	166	3.1%	37

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	2	1,079	1,211	12.2%	463
35-2011	Cooks, Fast Food	1	306	271	-11.4%	31
35-2012	Cooks, Institution and Cafeteria	2	656	639	-2.6%	119
35-2014	Cooks, Restaurant	2	1,507	1,946	29.1%	790
35-2015	Cooks, Short Order	1	307	354	15.3%	123
35-2021	Food Preparation Workers	1	1,206	1,085	-10.0%	260
35-3011	Bartenders	2	1,549	1,630	5.2%	734
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	1	4,781	5,508	15.2%	2,781
35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	1	362	353	-2.5%	225
35-3031	Waiters and Waitresses	1	3,515	3,958	12.6%	2,303
35-3041	Food Servers, Nonrestaurant	1	417	482	15.6%	200
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	1	524	539	2.9%	268
35-9021	Dishwashers	1	760	726	-4.5%	334
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	1	519	561	8.1%	461
35-9099	Food Preparation and Serving Related Workers, All Other	1	39	49	25.6%	32
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	2	215	230	7.0%	74
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	3	96	102	6.3%	18
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2	3,137	3,288	4.8%	870
37-2012	Maids and Housekeeping Cleaners	2	1,174	1,284	9.4%	410
37-2019	Building Cleaning Workers, All Other	2	13	12	-7.7%	2
37-2021	Pest Control Workers	2	60	78	30.0%	37
37-3011	Landscaping and Groundskeeping Workers	1	1,158	1,317	13.7%	496
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	2	17	16	-5.9%	4
37-3013	Tree Trimmers and Pruners	2	102	141	38.2%	74
37-3019	Grounds Maintenance Workers, All Other	2	3	2	-33.3%	0
39-1011	Gaming Supervisors	2	71	94	32.4%	61
39-1012	Slot Supervisors	2	4	5	25.0%	2
39-1021	First-Line Supervisors of Personal Service Workers	3	309	382	23.6%	134
39-2011	Animal Trainers	2	5	5	0.0%	2
39-2021	Nonfarm Animal Caretakers	1	124	148	19.4%	44
39-3011	Gaming Dealers	2	308	394	27.9%	240

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39-3012	Gaming and Sports Book Writers and Runners	2	6	7	16.7%	4
39-3019	Gaming Service Workers, All Other	2	5	6	20.0%	1
39-3021	Motion Picture Projectionists	2	7	6	-14.3%	3
39-3031	Ushers, Lobby Attendants, and Ticket Takers	2	190	207	8.9%	134
39-3091	Amusement and Recreation Attendants	1	660	638	-3.3%	353
39-3092	Costume Attendants	2	3	4	33.3%	3
39-3093	Locker Room, Coatroom, and Dressing Room Attendants	2	25	21	-16.0%	9
39-3099	Entertainment Attendants and Related Workers, All Other	2	20	18	-10.0%	10
39-4021	Funeral Attendants	2	91	107	17.6%	45
39-4031	Morticians, Undertakers, and Funeral Directors	3	55	68	23.6%	30
39-5011	Barbers	3	20	20	0.0%	6
39-5012	Hairdressers, Hairstylists, and Cosmetologists	3	700	772	10.3%	270
39-5092	Manicurists and Pedicurists	2	96	107	11.5%	21
39-5093	Shampooers	2	41	42	2.4%	8
39-5094	Skincare Specialists	3	33	30	-9.1%	0
39-6011	Baggage Porters and Bellhops	2	29	32	10.3%	14
39-6012	Concierges	3	18	24	33.3%	11
39-7011	Tour Guides and Escorts	3	20	20	0.0%	11
39-7012	Travel Guides	3	1	1	0.0%	0
39-9011	Childcare Workers	3	754	694	-8.0%	165
39-9021	Personal Care Aides	2	2,810	4,337	54.3%	1,902
39-9031	Fitness Trainers and Aerobics Instructors	3	451	496	10.0%	123
39-9032	Recreation Workers	4	553	688	24.4%	201
39-9041	Residential Advisors	3	332	387	16.6%	222
39-9099	Personal Care and Service Workers, All Other	3	44	34	-22.7%	3
41-1011	First-Line Supervisors of Retail Sales Workers	2	1,525	1,602	5.0%	421
41-1012	First-Line Supervisors of Non-Retail Sales Workers	4	223	211	-5.4%	21
41-2011	Cashiers	1	5,583	5,379	-3.7%	2,422
41-2012	Gaming Change Persons and Booth Cashiers	2	19	23	21.1%	21
41-2021	Counter and Rental Clerks	1	457	470	2.8%	148
41-2022	Parts Salespersons	2	363	404	11.3%	150
41-2031	Retail Salespersons	2	6,480	6,892	6.4%	2,765
41-3011	Advertising Sales Agents	3	132	128	-3.0%	50
41-3021	Insurance Sales Agents	4	517	489	-5.4%	129
41-3031	Securities, Commodities, and Financial Services Sales Agents	4	197	204	3.6%	62
41-3041	Travel Agents	3	27	23	-14.8%	10

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
41-3099	Sales Representatives, Services, All Other	4	610	750	23.0%	315
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	4	189	175	-7.4%	28
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	4	1,944	1,911	-1.7%	419
41-9011	Demonstrators and Product Promoters	2	42	39	-7.1%	10
41-9012	Models	1	4	4	0.0%	2
41-9021	Real Estate Brokers	4	19	17	-10.5%	1
41-9022	Real Estate Sales Agents	3	174	201	15.5%	57
41-9031	Sales Engineers	4	80	82	2.5%	19
41-9041	Telemarketers	2	153	129	-15.7%	49
41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	2	3	2	-33.3%	0
41-9099	Sales and Related Workers, All Other	3	45	44	-2.2%	7
43-1011	First-Line Supervisors of Office and Administrative Support Workers	3	1,584	1,667	5.2%	462
43-2011	Switchboard Operators, Including Answering Service	2	156	131	-16.0%	30
43-2021	Telephone Operators	2	6	4	-33.3%	0
43-3011	Bill and Account Collectors	2	293	280	-4.4%	86
43-3021	Billing and Posting Clerks	2	745	820	10.1%	226
43-3031	Bookkeeping, Accounting, and Auditing Clerks	3	1,903	2,008	5.5%	293
43-3041	Gaming Cage Workers	2	20	25	25.0%	16
43-3051	Payroll and Timekeeping Clerks	2	233	227	-2.6%	50
43-3061	Procurement Clerks	3	78	73	-6.4%	25
43-3071	Tellers	2	735	653	-11.2%	350
43-3099	Financial Clerks, All Other	2	20	22	10.0%	8
43-4011	Brokerage Clerks	3	38	43	13.2%	19
43-4021	Correspondence Clerks	2	17	18	5.9%	6
43-4031	Court, Municipal, and License Clerks	3	73	80	9.6%	19
43-4041	Credit Authorizers, Checkers, and Clerks	3	33	26	-21.2%	0
43-4051	Customer Service Representatives	2	3,064	3,353	9.4%	1,215
43-4061	Eligibility Interviewers, Government Programs	3	261	270	3.4%	65
43-4071	File Clerks	2	146	130	-11.0%	26
43-4081	Hotel, Motel, and Resort Desk Clerks	2	231	248	7.4%	157
43-4111	Interviewers, Except Eligibility and Loan	2	263	289	9.9%	84
43-4121	Library Assistants, Clerical	2	117	123	5.1%	59
43-4131	Loan Interviewers and Clerks	3	161	175	8.7%	38
43-4141	New Accounts Clerks	2	34	37	8.8%	16

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
43-4151	Order Clerks	2	270	236	-12.6%	63
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	3	192	174	-9.4%	40
43-4171	Receptionists and Information Clerks	2	1,289	1,272	-1.3%	340
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	2	11	11	0.0%	4
43-4199	Information and Record Clerks, All Other	2	83	57	-31.3%	1
43-5011	Cargo and Freight Agents	2	16	16	0.0%	6
43-5021	Couriers and Messengers	2	73	64	-12.3%	8
43-5031	Police, Fire, and Ambulance Dispatchers	2	93	99	6.5%	35
43-5032	Dispatchers, Except Police, Fire, and Ambulance	2	171	188	9.9%	71
43-5041	Meter Readers, Utilities	2	47	41	-12.8%	13
43-5051	Postal Service Clerks	2	101	78	-22.8%	21
43-5052	Postal Service Mail Carriers	2	398	318	-20.1%	149
43-5053	Postal Service Mail Sorters, Processors, and Processing Machine Operators	2	185	119	-35.7%	3
43-5061	Production, Planning, and Expediting Clerks	3	579	606	4.7%	190
43-5071	Shipping, Receiving, and Traffic Clerks	2	1,037	1,009	-2.7%	281
43-5081	Stock Clerks and Order Fillers	2	2,520	2,601	3.2%	962
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	2	60	62	3.3%	17
43-6011	Executive Secretaries and Executive Administrative Assistants	3	616	560	-9.1%	44
43-6012	Legal Secretaries	3	207	224	8.2%	58
43-6013	Medical Secretaries	3	721	953	32.2%	316
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	3	3,276	3,545	8.2%	695
43-9011	Computer Operators	3	67	56	-16.4%	8
43-9021	Data Entry Keyers	2	243	190	-21.8%	31
43-9022	Word Processors and Typists	2	200	153	-23.5%	8
43-9031	Desktop Publishers	3	16	16	0.0%	4
43-9041	Insurance Claims and Policy Processing Clerks	3	414	441	6.5%	162
43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service	2	145	118	-18.6%	30
43-9061	Office Clerks, General	2	3,862	3,683	-4.6%	711
43-9071	Office Machine Operators, Except Computer	2	62	55	-11.3%	18
43-9081	Proofreaders and Copy Markers	4	10	8	-20.0%	1
43-9111	Statistical Assistants	4	17	17	0.0%	6
43-9199	Office and Administrative Support Workers, All Other	3	145	179	23.4%	77

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	3	16	15	-6.3%	4
45-2011	Agricultural Inspectors	2	11	10	-9.1%	4
45-2041	Graders and Sorters, Agricultural Products	1	9	10	11.1%	4
45-2091	Agricultural Equipment Operators	2	13	15	15.4%	6
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	1	64	59	-7.8%	21
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	1	35	39	11.4%	18
45-4011	Forest and Conservation Workers	3	5	6	20.0%	2
45-4021	Fallers	1	4	3	-25.0%	0
45-4022	Logging Equipment Operators	1	36	41	13.9%	20
45-4023	Log Graders and Scalers	3	7	6	-14.3%	1
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	3	543	606	11.6%	130
47-2011	Boilermakers	3	16	19	18.8%	12
47-2021	Brickmasons and Blockmasons	2	64	58	-9.4%	3
47-2022	Stonemasons	3	9	7	-22.2%	0
47-2031	Carpenters	2	890	952	7.0%	193
47-2041	Carpet Installers	2	49	55	12.2%	19
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	2	13	11	-15.4%	1
47-2044	Tile and Marble Setters	2	23	27	17.4%	9
47-2051	Cement Masons and Concrete Finishers	2	128	122	-4.7%	9
47-2053	Terrazzo Workers and Finishers	2	3	2	-33.3%	0
47-2061	Construction Laborers	2	840	991	18.0%	355
47-2071	Paving, Surfacing, and Tamping Equipment Operators	2	65	64	-1.5%	13
47-2072	Pile-Driver Operators	2	1	1	0.0%	0
47-2073	Operating Engineers and Other Construction Equipment Operators	2	518	539	4.1%	171
47-2081	Drywall and Ceiling Tile Installers	2	50	44	-12.0%	4
47-2082	Tapers	2	15	18	20.0%	5
47-2111	Electricians	3	682	745	9.2%	249
47-2121	Glaziers	2	34	34	0.0%	11
47-2131	Insulation Workers, Floor, Ceiling, and Wall	2	19	21	10.5%	6
47-2132	Insulation Workers, Mechanical	2	11	14	27.3%	5
47-2141	Painters, Construction and Maintenance	2	162	189	16.7%	61
47-2142	Paperhangers	2	4	3	-25.0%	0
47-2151	Pipelayers	2	31	27	-12.9%	5
47-2152	Plumbers, Pipefitters, and Steamfitters	3	456	438	-3.9%	65

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
47-2161	Plasterers and Stucco Masons	1	12	14	16.7%	2
47-2171	Reinforcing Iron and Rebar Workers	2	7	7	0.0%	1
47-2181	Roofers	2	88	70	-20.5%	16
47-2211	Sheet Metal Workers	2	149	143	-4.0%	25
47-2221	Structural Iron and Steel Workers	2	45	41	-8.9%	13
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	2	22	20	-9.1%	0
47-3012	Helpers--Carpenters	2	24	26	8.3%	5
47-3013	Helpers--Electricians	2	40	52	30.0%	20
47-3014	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	1	6	5	-16.7%	0
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	2	31	25	-19.4%	0
47-3016	Helpers--Roofers	2	8	10	25.0%	4
47-3019	Helpers, Construction Trades, All Other	2	8	8	0.0%	0
47-4011	Construction and Building Inspectors	3	99	122	23.2%	51
47-4021	Elevator Installers and Repairers	3	11	9	-18.2%	2
47-4031	Fence Erectors	2	23	23	0.0%	7
47-4041	Hazardous Materials Removal Workers	3	33	44	33.3%	23
47-4051	Highway Maintenance Workers	2	336	352	4.8%	81
47-4061	Rail-Track Laying and Maintenance Equipment Operators	2	13	17	30.8%	6
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	1	23	26	13.0%	11
47-4099	Construction and Related Workers, All Other	3	11	10	-9.1%	0
47-5011	Derrick Operators, Oil and Gas	1	42	36	-14.3%	17
47-5012	Rotary Drill Operators, Oil and Gas	2	170	170	0.0%	126
47-5013	Service Unit Operators, Oil, Gas, and Mining	2	85	83	-2.4%	53
47-5021	Earth Drillers, Except Oil and Gas	2	34	36	5.9%	17
47-5031	Explosives Workers, Ordnance Handling Experts, and Blasters	2	4	4	0.0%	1
47-5041	Continuous Mining Machine Operators	1	1	1	0.0%	0
47-5042	Mine Cutting and Channeling Machine Operators	2	2	2	0.0%	0
47-5051	Rock Splitters, Quarry	1	7	6	-14.3%	1
47-5071	Roustabouts, Oil and Gas	1	122	136	11.5%	71
47-5081	Helpers--Extraction Workers	2	63	63	0.0%	32
47-5099	Extraction Workers, All Other	2	13	11	-15.4%	1
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	3	506	573	13.2%	211
49-2011	Computer, Automated Teller, and Office Machine Repairers	3	97	97	0.0%	30

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairers	3	6	6	0.0%	1
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	3	115	116	0.9%	31
49-2091	Avionics Technicians	3	33	38	15.2%	15
49-2092	Electric Motor, Power Tool, and Related Repairers	3	31	36	16.1%	14
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	3	5	5	0.0%	1
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	3	115	103	-10.4%	20
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	3	23	26	13.0%	9
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	3	4	5	25.0%	1
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	3	18	15	-16.7%	6
49-2098	Security and Fire Alarm Systems Installers	3	63	74	17.5%	26
49-3011	Aircraft Mechanics and Service Technicians	3	35	40	14.3%	20
49-3021	Automotive Body and Related Repairers	2	211	230	9.0%	74
49-3022	Automotive Glass Installers and Repairers	2	26	27	3.8%	10
49-3023	Automotive Service Technicians and Mechanics	3	1,152	1,190	3.3%	373
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	3	322	377	17.1%	137
49-3041	Farm Equipment Mechanics and Service Technicians	3	30	26	-13.3%	7
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	3	104	113	8.7%	46
49-3043	Rail Car Repairers	2	53	74	39.6%	43
49-3051	Motorboat Mechanics and Service Technicians	3	10	10	0.0%	2
49-3052	Motorcycle Mechanics	3	51	78	52.9%	45
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	2	55	60	9.1%	19
49-3091	Bicycle Repairers	2	14	11	-21.4%	4
49-3092	Recreational Vehicle Service Technicians	2	18	18	0.0%	8
49-3093	Tire Repairers and Changers	2	121	123	1.7%	50
49-9011	Mechanical Door Repairers	2	15	17	13.3%	8
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	3	47	58	23.4%	28
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	3	347	386	11.2%	145
49-9031	Home Appliance Repairers	3	44	39	-11.4%	15
49-9041	Industrial Machinery Mechanics	3	697	795	14.1%	325
49-9043	Maintenance Workers, Machinery	3	264	296	12.1%	80
49-9044	Millwrights	3	36	46	27.8%	19

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
49-9045	Refractory Materials Repairers, Except Brickmasons	2	5	4	-20.0%	1
49-9051	Electrical Power-Line Installers and Repairers	3	70	89	27.1%	49
49-9052	Telecommunications Line Installers and Repairers	2	148	146	-1.4%	57
49-9062	Medical Equipment Repairers	3	71	83	16.9%	37
49-9063	Musical Instrument Repairers and Tuners	3	15	14	-6.7%	5
49-9064	Watch Repairers	3	2	2	0.0%	0
49-9069	Precision Instrument and Equipment Repairers, All Other	3	6	5	-16.7%	1
49-9071	Maintenance and Repair Workers, General	3	2,166	2,279	5.2%	590
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	2	34	29	-14.7%	4
49-9092	Commercial Divers	3	9	9	0.0%	4
49-9094	Locksmiths and Safe Repairers	2	8	7	-12.5%	1
49-9095	Manufactured Building and Mobile Home Installers	2	5	7	40.0%	4
49-9096	Riggers	2	9	11	22.2%	5
49-9098	Helpers--Installation, Maintenance, and Repair Workers	2	136	140	2.9%	47
49-9099	Installation, Maintenance, and Repair Workers, All Other	2	84	101	20.2%	30
51-1011	First-Line Supervisors of Production and Operating Workers	2	1,653	1,685	1.9%	365
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	2	171	198	15.8%	83
51-2021	Coil Winders, Tapers, and Finishers	2	24	20	-16.7%	2
51-2022	Electrical and Electronic Equipment Assemblers	2	409	377	-7.8%	66
51-2023	Electromechanical Equipment Assemblers	2	178	154	-13.5%	21
51-2031	Engine and Other Machine Assemblers	2	152	153	0.7%	58
51-2041	Structural Metal Fabricators and Fitters	3	353	355	0.6%	176
51-2091	Fiberglass Laminators and Fabricators	2	61	64	4.9%	21
51-2092	Team Assemblers	2	2,334	2,322	-0.5%	529
51-2099	Assemblers and Fabricators, All Other	2	211	296	40.3%	124
51-3011	Bakers	2	261	274	5.0%	96
51-3021	Butchers and Meat Cutters	2	158	128	-19.0%	16
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	1	43	34	-20.9%	4
51-3023	Slaughterers and Meat Packers	1	48	45	-6.3%	15
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	2	9	10	11.1%	5
51-3092	Food Batchmakers	2	195	219	12.3%	106
51-3093	Food Cooking Machine Operators and Tenders	2	64	74	15.6%	31
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	3	797	1,008	26.5%	488

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	3	96	99	3.1%	33
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	2	450	460	2.2%	173
51-4022	Forging Machine Setters, Operators, and Tenders, Metal and Plastic	2	146	142	-2.7%	48
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	2	110	98	-10.9%	23
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	2	732	697	-4.8%	106
51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	102	68	-33.3%	5
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	592	621	4.9%	259
51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	265	242	-8.7%	73
51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	3	122	123	0.8%	44
51-4041	Machinists	3	1,883	1,994	5.9%	666
51-4051	Metal-Refining Furnace Operators and Tenders	2	60	58	-3.3%	16
51-4052	Pourers and Casters, Metal	2	53	54	1.9%	21
51-4061	Model Makers, Metal and Plastic	3	54	45	-16.7%	4
51-4062	Patternmakers, Metal and Plastic	3	43	50	16.3%	25
51-4071	Foundry Mold and Coremakers	2	76	60	-21.1%	8
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	2	653	636	-2.6%	149
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2	727	790	8.7%	320
51-4111	Tool and Die Makers	3	593	633	6.7%	151
51-4121	Welders, Cutters, Solderers, and Brazers	3	1,541	1,594	3.4%	554
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	2	100	117	17.0%	57
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	2	127	107	-15.7%	20
51-4192	Layout Workers, Metal and Plastic	2	17	16	-5.9%	3
51-4193	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	2	167	157	-6.0%	48
51-4194	Tool Grinders, Filers, and Sharpeners	2	81	65	-19.8%	8
51-4199	Metal Workers and Plastic Workers, All Other	2	41	47	14.6%	15
51-5111	Prepress Technicians and Workers	3	52	39	-25.0%	9
51-5112	Printing Press Operators	3	259	227	-12.4%	52
51-5113	Print Binding and Finishing Workers	2	79	74	-6.3%	22
51-6011	Laundry and Dry-Cleaning Workers	1	273	296	8.4%	121

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
51-6021	Pressers, Textile, Garment, and Related Materials	1	42	42	0.0%	9
51-6031	Sewing Machine Operators	1	70	77	10.0%	40
51-6051	Sewers, Hand	2	62	73	17.7%	18
51-6052	Tailors, Dressmakers, and Custom Sewers	3	24	29	20.8%	11
51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders	2	10	10	0.0%	8
51-6062	Textile Cutting Machine Setters, Operators, and Tenders	2	14	18	28.6%	12
51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders	2	16	19	18.8%	15
51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	2	4	4	0.0%	3
51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	2	57	49	-14.0%	12
51-6092	Fabric and Apparel Patternmakers	3	2	2	0.0%	1
51-6093	Upholsterers	2	17	19	11.8%	11
51-6099	Textile, Apparel, and Furnishings Workers, All Other	2	16	18	12.5%	5
51-7011	Cabinetmakers and Bench Carpenters	2	129	158	22.5%	83
51-7021	Furniture Finishers	1	34	43	26.5%	29
51-7031	Model Makers, Wood	3	6	7	16.7%	1
51-7032	Patternmakers, Wood	3	10	13	30.0%	4
51-7041	Sawing Machine Setters, Operators, and Tenders, Wood	2	191	262	37.2%	158
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	2	242	336	38.8%	148
51-7099	Woodworkers, All Other	2	3	3	0.0%	0
51-8011	Nuclear Power Reactor Operators	3	6	6	0.0%	3
51-8012	Power Distributors and Dispatchers	3	11	12	9.1%	6
51-8013	Power Plant Operators	2	35	35	0.0%	16
51-8021	Stationary Engineers and Boiler Operators	3	111	124	11.7%	61
51-8031	Water and Wastewater Treatment Plant and System Operators	3	175	185	5.7%	84
51-8091	Chemical Plant and System Operators	2	63	64	1.6%	39
51-8092	Gas Plant Operators	3	112	136	21.4%	86
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	2	77	92	19.5%	56
51-8099	Plant and System Operators, All Other	2	19	21	10.5%	10
51-9011	Chemical Equipment Operators and Tenders	2	161	167	3.7%	93
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	2	43	52	20.9%	28
51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	2	36	28	-22.2%	7

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
51-9022	Grinding and Polishing Workers, Hand	1	89	93	4.5%	37
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	2	281	307	9.3%	136
51-9031	Cutters and Trimmers, Hand	2	30	20	-33.3%	1
51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders	2	111	92	-17.1%	12
51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	2	205	187	-8.8%	64
51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	2	34	34	0.0%	15
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	2	1,165	1,191	2.2%	329
51-9071	Jewelers and Precious Stone and Metal Workers	3	20	17	-15.0%	3
51-9081	Dental Laboratory Technicians	2	12	15	25.0%	9
51-9082	Medical Appliance Technicians	3	9	8	-11.1%	4
51-9083	Ophthalmic Laboratory Technicians	2	27	27	0.0%	12
51-9111	Packaging and Filling Machine Operators and Tenders	2	556	572	2.9%	185
51-9121	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	2	254	303	19.3%	116
51-9122	Painters, Transportation Equipment	2	274	235	-14.2%	41
51-9123	Painting, Coating, and Decorating Workers	2	37	34	-8.1%	8
51-9141	Semiconductor Processors	2	26	22	-15.4%	7
51-9151	Photographic Process Workers and Processing Machine Operators	2	31	25	-19.4%	7
51-9191	Adhesive Bonding Machine Operators and Tenders	2	25	26	4.0%	9
51-9192	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	2	24	34	41.7%	17
51-9193	Cooling and Freezing Equipment Operators and Tenders	2	18	21	16.7%	9
51-9194	Etchers and Engravers	2	14	15	7.1%	6
51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	2	111	98	-11.7%	37
51-9196	Paper Goods Machine Setters, Operators, and Tenders	2	210	180	-14.3%	32
51-9197	Tire Builders	2	93	112	20.4%	57
51-9198	Helpers--Production Workers	2	1,154	1,174	1.7%	315
51-9199	Production Workers, All Other	2	94	109	16.0%	38
53-1011	Aircraft Cargo Handling Supervisors	2	4	3	-25.0%	1
53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	2	153	160	4.6%	55
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	2	225	243	8.0%	85
53-2012	Commercial Pilots	3	37	45	21.6%	22

SOC Code	Occupation Title	Job Zone	2014	2024	% Change 2014-2024	New and Replacement Jobs
53-2021	Air Traffic Controllers	3	13	13	0.0%	6
53-2022	Airfield Operations Specialists	3	1	1	0.0%	1
53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	2	47	61	29.8%	24
53-3021	Bus Drivers, Transit and Intercity	2	212	234	10.4%	81
53-3022	Bus Drivers, School or Special Client	2	1,229	1,385	12.7%	467
53-3031	Driver/Sales Workers	2	530	558	5.3%	130
53-3032	Heavy and Tractor-Trailer Truck Drivers	2	2,072	2,368	14.3%	732
53-3033	Light Truck or Delivery Services Drivers	2	896	854	-4.7%	128
53-3041	Taxi Drivers and Chauffeurs	1	223	235	5.4%	57
53-3099	Motor Vehicle Operators, All Other	2	30	36	20.0%	14
53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers	2	14	16	14.3%	6
53-5021	Captains, Mates, and Pilots of Water Vessels	3	40	36	-10.0%	21
53-6011	Bridge and Lock Tenders	1	4	3	-25.0%	1
53-6021	Parking Lot Attendants	2	132	177	34.1%	122
53-6031	Automotive and Watercraft Service Attendants	1	92	100	8.7%	37
53-6041	Traffic Technicians	3	2	2	0.0%	1
53-6051	Transportation Inspectors	3	7	5	-28.6%	1
53-6061	Transportation Attendants, Except Flight Attendants	2	37	33	-10.8%	6
53-6099	Transportation Workers, All Other	2	8	9	12.5%	5
53-7011	Conveyor Operators and Tenders	2	46	43	-6.5%	14
53-7021	Crane and Tower Operators	3	48	54	12.5%	25
53-7032	Excavating and Loading Machine and Dragline Operators	2	28	31	10.7%	8
53-7051	Industrial Truck and Tractor Operators	2	831	936	12.6%	377
53-7061	Cleaners of Vehicles and Equipment	2	359	375	4.5%	133
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	2	3,138	3,681	17.3%	1,674
53-7063	Machine Feeders and Offbearers	2	220	214	-2.7%	51
53-7064	Packers and Packagers, Hand	2	1,127	1,255	11.4%	483
53-7071	Gas Compressor and Gas Pumping Station Operators	2	84	91	8.3%	58
53-7072	Pump Operators, Except Wellhead Pumps	2	67	62	-7.5%	33
53-7073	Wellhead Pumps	2	84	90	7.1%	68
53-7081	Refuse and Recyclable Material Collectors	2	93	118	26.9%	55
53-7121	Tank Car, Truck, and Ship Loaders	2	29	32	10.3%	14
53-7199	Material Moving Workers, All Other	2	6	8	33.3%	4

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

ABOUT THE STATE SYSTEM'S GAP ANALYSIS PROJECT

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

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

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