



Bio-Medical

Pennsylvania defines industry clusters to serve as the basis for data-driven workforce development policies. An industry cluster includes industries closely linked by common products, labor pools, technologies, supplier chains and training needs. They take on strategic importance for long-term economic planning as changes that benefit one group member will generally impact other members of the cluster.

Industry clusters are comprised of specific six-digit North American Industry Classification System, or NAICS, codes. They are mutually exclusive, so that no two clusters contain the same NAICS code. Currently, there are 12 clusters identified, along with several critical sub-clusters. Combined, these 12 industry clusters account for nearly 83 percent of all employment in the commonwealth.

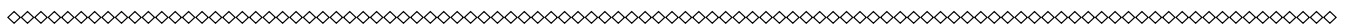
Cluster Summary

The Bio-Medical (BM) cluster includes industries that develop and use technology to enhance life from a health perspective. Industries in this cluster include research laboratories, pharmaceutical manufacturing, surgical and medical equipment manufacturing, and imaging centers. This cluster largely represents industries that employ advanced technology and serve as a foundation for enhanced medical services.

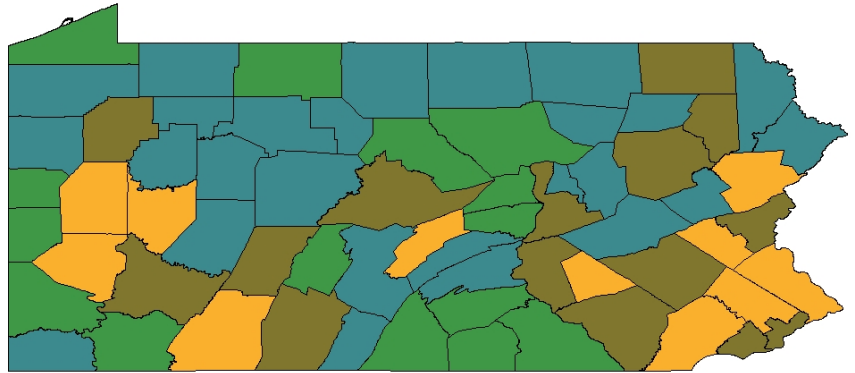
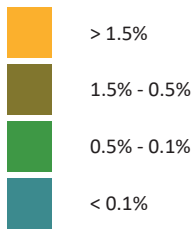
	2017	2022
Employer Units	2,429	3,624
Number of Jobs	79,638	95,764
Percent of Total Pennsylvania Jobs	1.4%	1.6%
Average Annual Wages	\$106,144	\$135,042
Location Quotient (LQ)	1.21	1.24

LQs greater than one suggest a competitive advantage.

Statewide employment within the Bio-Medical cluster has greatly increased over the 2017-2022 time period (20.2%) and it has become the top cluster in the state for its Location Quotient (LQ). This is mostly due to the Montgomery County Workforce Development Area (WDA) LQ of 4.38 (seen on page 3). Much of the employment gain in the cluster appears to have been in higher-paying jobs as the average wage increased considerably (approximately 27 percent) over the same time period.

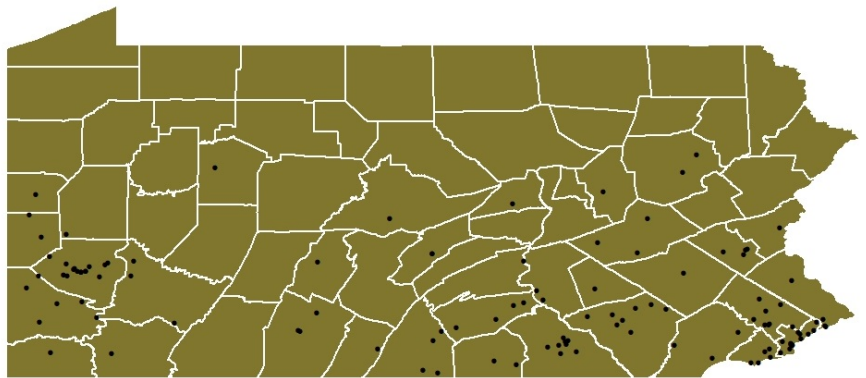


Percent Employment by County



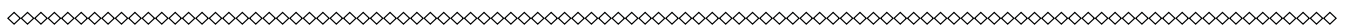
Major Employers

- Merck Sharp & Dohme Corporation
- Smithkline Beecham Corporation
- Fluor Marine Propulsion LLC
- Aventis Pasteur Inc
- Janssen Research & Development LLC
- Wyeth Holdings LLC



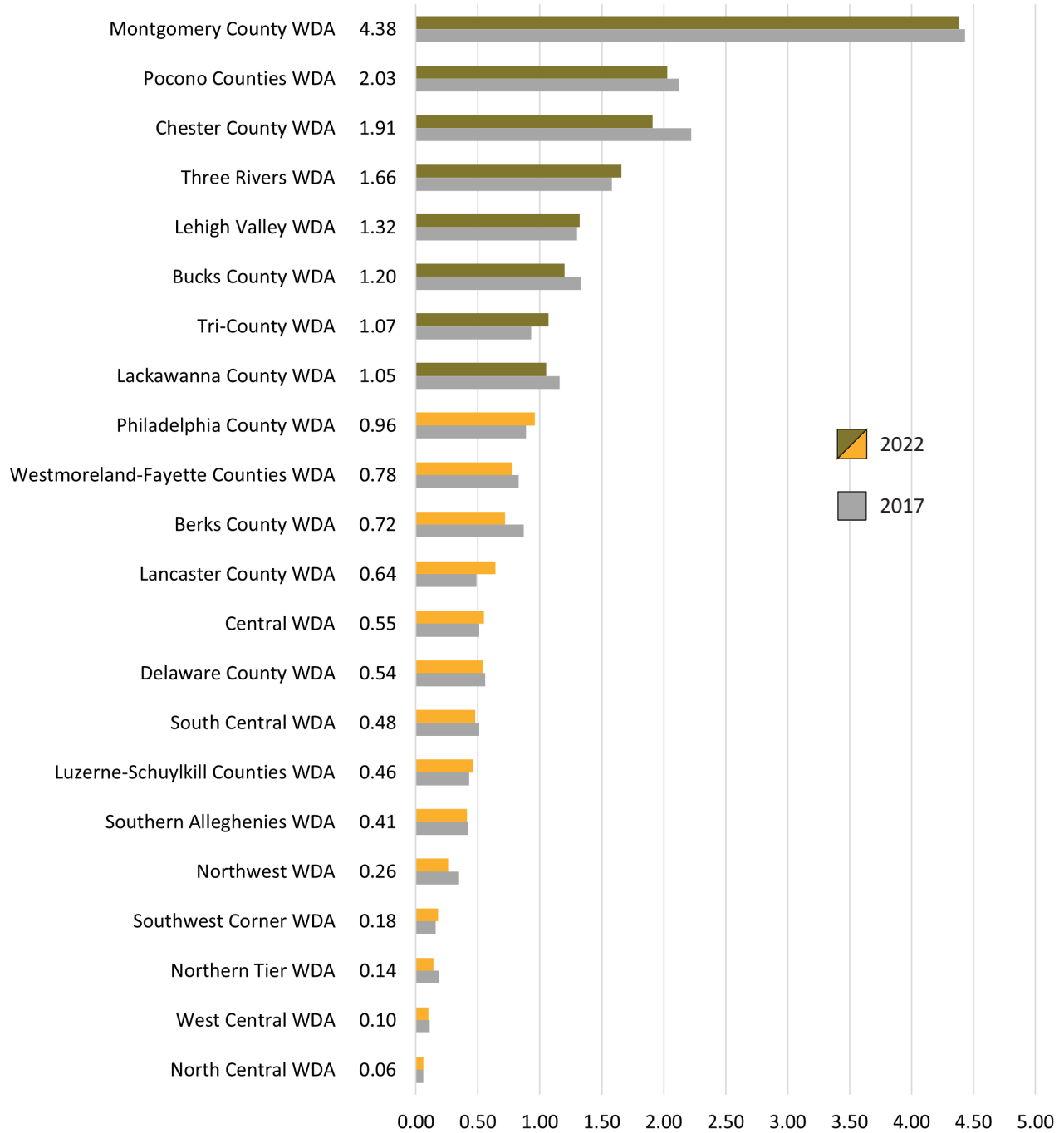
Top Industries Based on Employment

- Physical, Engineering & Biological Research
- Pharmaceutical Preparation Manufacturing
- Surgical & Medical Instrument Manufacturing
- Medical Laboratories
- Other Biological Product Manufacturing
- Surgical Appliance & Supplies Manufacturing
- Electromedical Apparatus Manufacturing
- Diagnostic Imaging Centers
- Social Science & Humanities Research
- Dental Laboratories
- Medicinal & Botanical Manufacturing
- In-Vitro Diagnostic Substance Manufacturing
- Dental Equipment & Supplies Manufacturing
- Ophthalmic Goods Manufacturing
- Optical Instrument & Lens Manufacturing



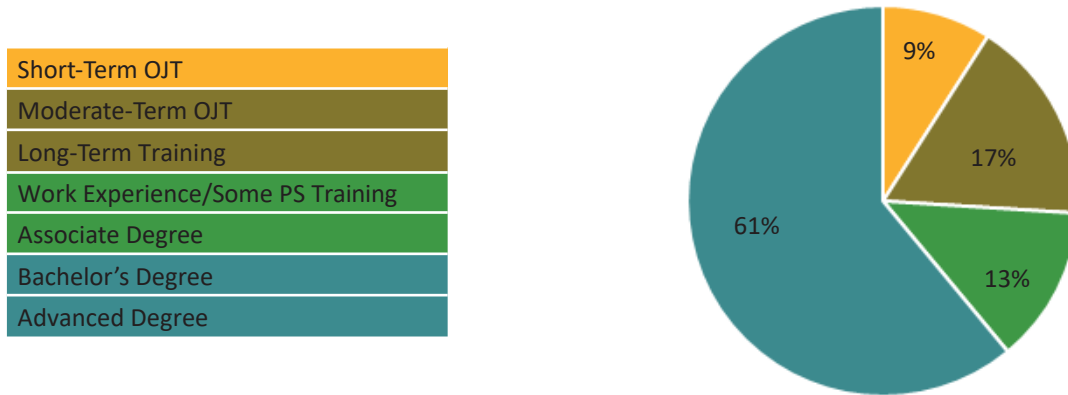
Employment Concentration

A location quotient, or LQ, compares a cluster's share of local employment to its share of national employment. This value can be used when evaluating the strength of an industry cluster within an area. An LQ greater than one indicates that the cluster has, on average, more employees locally than typically expected implying a possible competitive advantage. The Montgomery County Workforce Development Area (WDA) has the highest LQ for the cluster at 4.38, but it slightly decreased since 2017. The only other WDAs that have LQs greater than one and have also increased their competitiveness since 2017 are Three Rivers, Lehigh Valley and Tri-County WDAs.



Educational Requirements

This graph illustrates the minimum educational attainment levels for jobs found in this cluster's various industries. Postsecondary education is very important to this cluster as nearly 74 percent of BM jobs require some formal postsecondary education to enter employment. This cluster offers the fewest opportunities for employment for lower-skilled workers.



Occupations with Significant Employment

The following table lists occupations that employ at least 1,200 people in the BM cluster.

SOC Code	Occupation	Average Wage	Annual Demand	
			All Industries	Industry Cluster
19-1042	Medical Scientists	\$115,130	748	616
41-4011	Sales Representatives, Technical & Scientific Products	\$111,550	1,200	512
19-4021	Biological Technicians	\$60,350	583	337
31-9097	Phlebotomists	\$43,100	889	329
51-2090	Misc. Assemblers & Fabricators	\$41,500	4,434	214
11-9121	Natural Sciences Managers	\$140,410	401	211
43-9061	Office Clerks, General	\$43,230	16,622	208
13-1041	Compliance Officers	\$76,550	1,193	201
29-2010	Clinical Laboratory Techs	\$60,940	1,027	184
51-9081	Dental Laboratory Technicians	\$55,610	217	181
19-2031	Chemists	\$82,250	505	160
43-4051	Customer Service Representatives	\$45,130	15,067	152
15-1256	Software Developers & QA Analysts	N/A	4,323	143
51-9061	Inspectors, Testers, Sorters, Samplers & Weighers	\$49,600	1,938	143
19-1021	Biochemists & Biophysicists	\$121,140	167	141

*The 2023 average annual wage reflects wages across all industries and is not specific to the cluster.