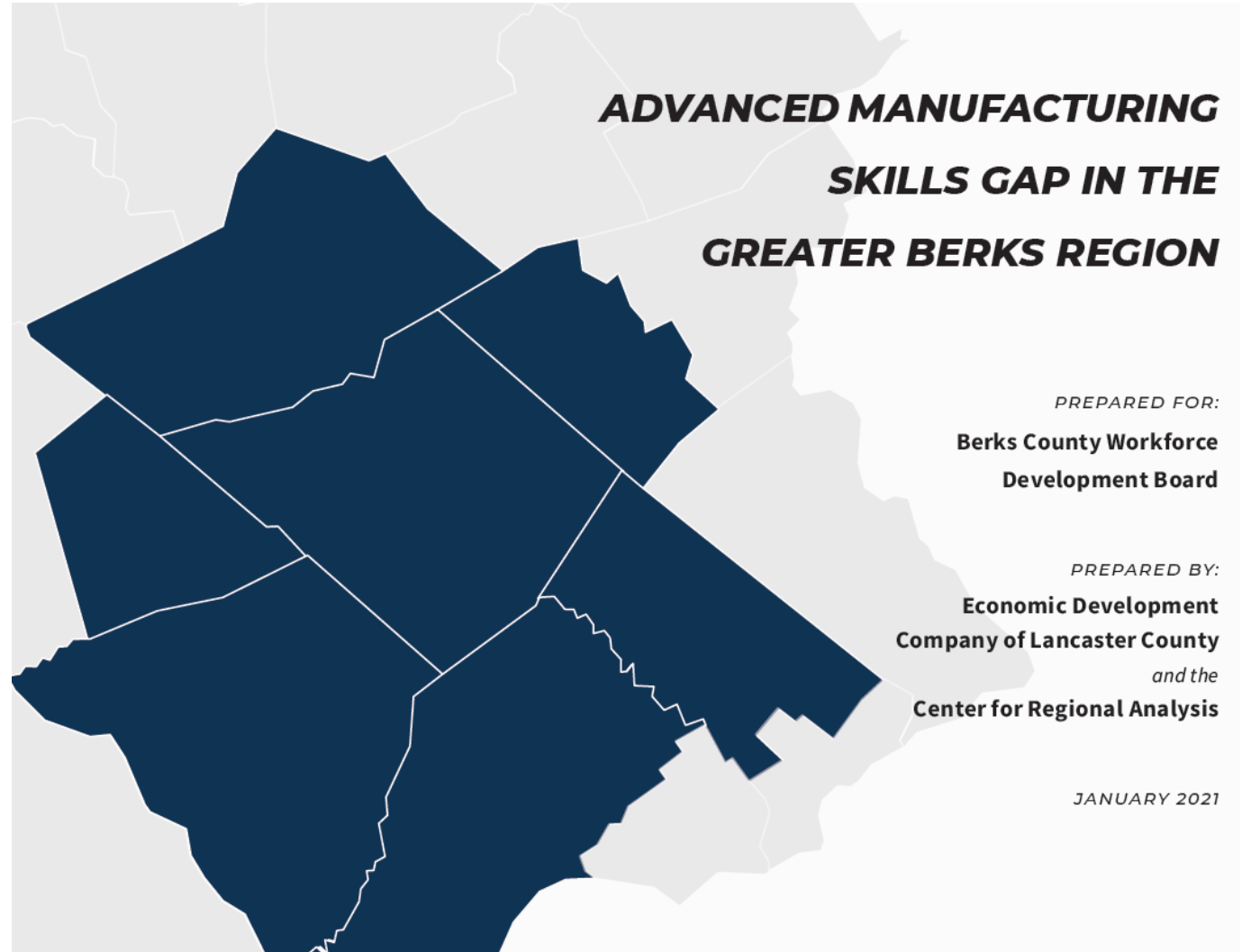


Webinar on Greater Berks Advanced Manufacturing Skills Gap

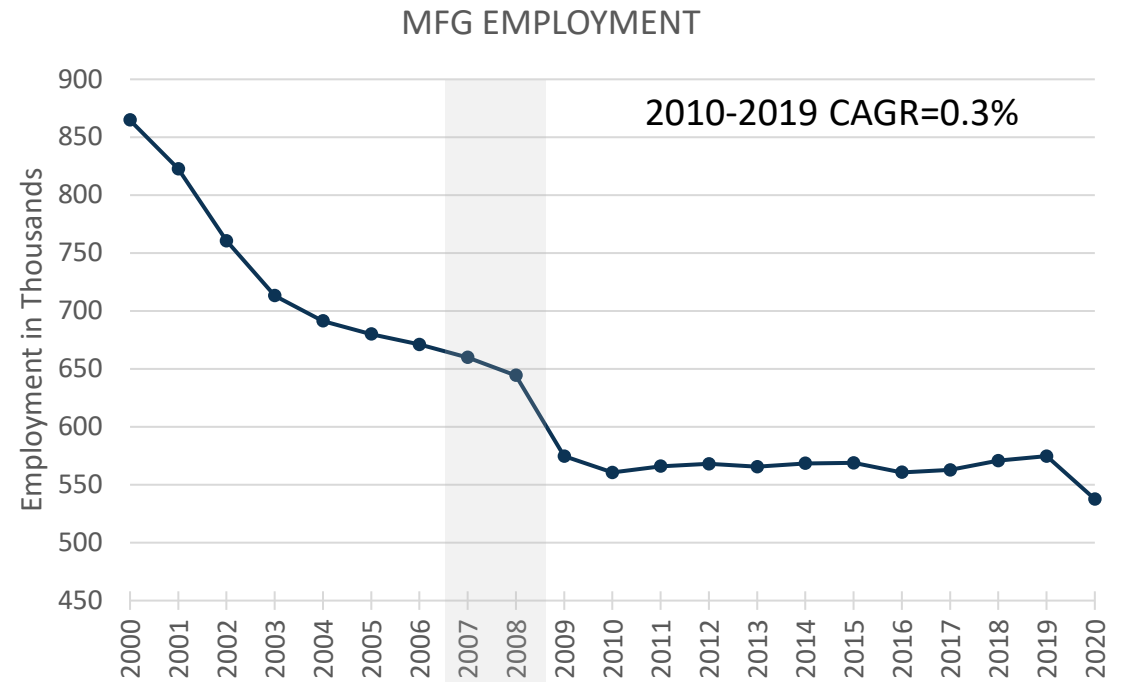
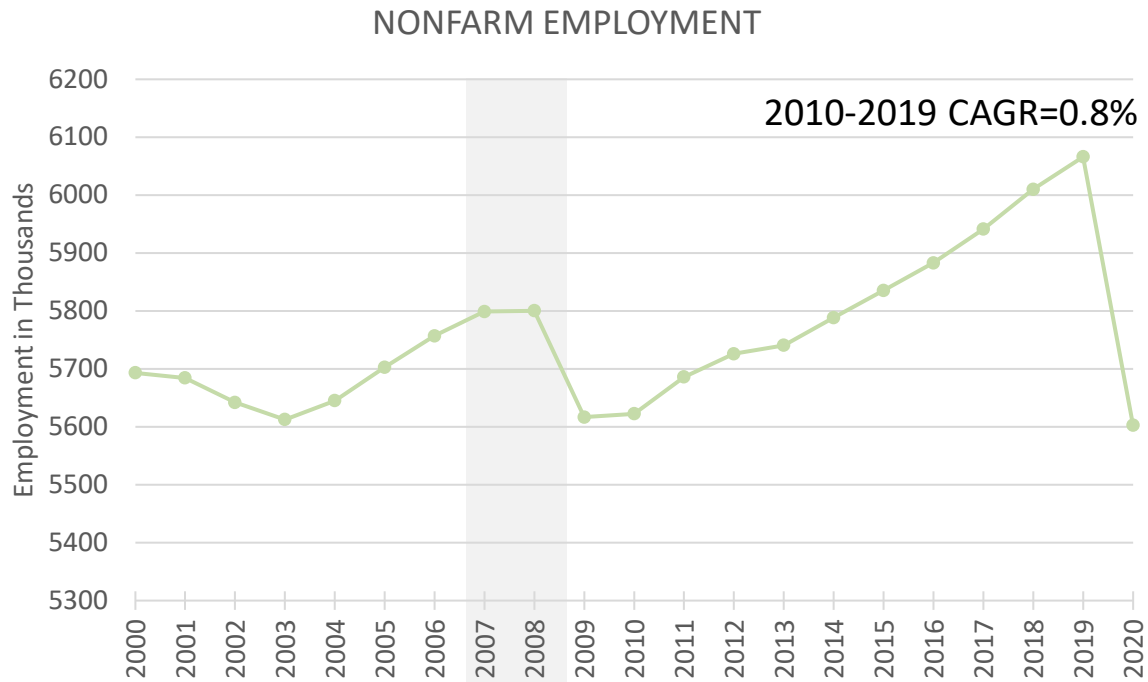
April 20, 2021 &
April 22, 2021



Two Common (Mis)Perceptions of Manufacturing

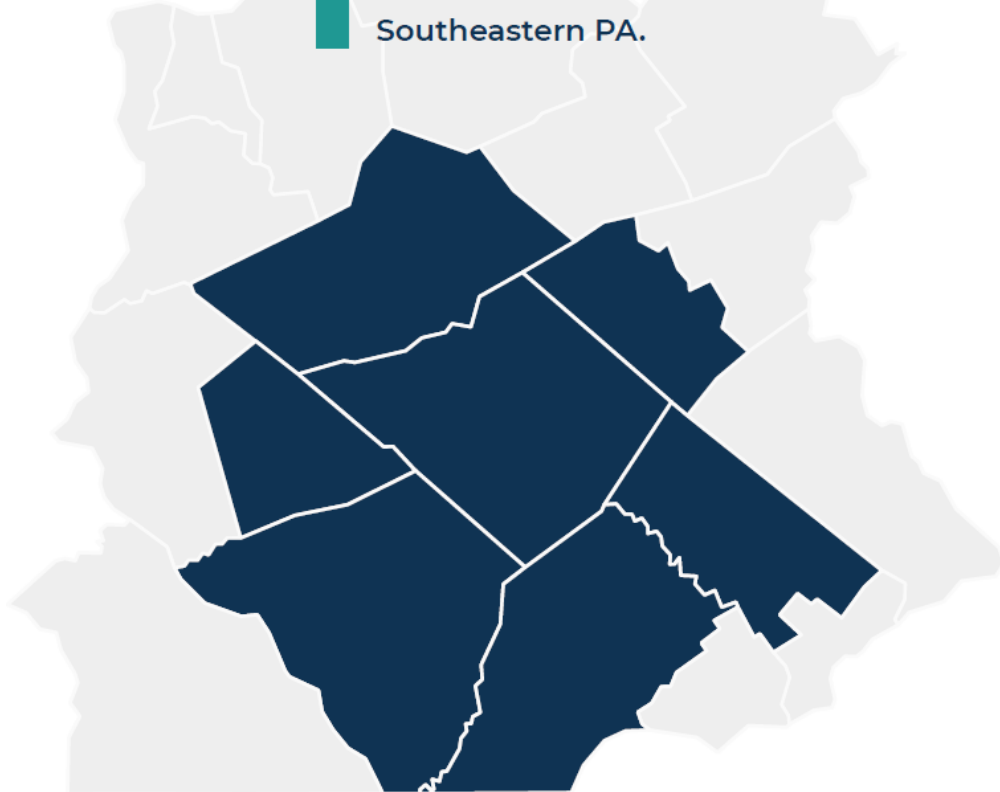
- The industry is contracting – in economic activity and employment
- The workplace is dirty, dull and repetitive – with low-paying careers

PA Employment Trend



Manufacturing in the Greater Berks Region

The "Greater Berks Region" is defined as Berks, Chester, Lancaster, Lebanon, Lehigh, Montgomery and Schuylkill Counties in Southeastern PA.



- 27% of PA's manufacturing establishments
- 30% of PA's workforce in manufacturing
- 81% of PA's job growth in manufacturing
- Expected to grow more strongly than the State or nation – adding between 6500 & 8700 jobs.

MANUFACTURING SUBSECTORS IN GREATER BERKS REGION (2019)

BIG COMPANIES

Few firms & lots of employees

15% of Employees

7% of Establishments

- 322 - Paper
- 331 - Primary metal
- 336 - Transportation equipment

SMALL COMPANIES

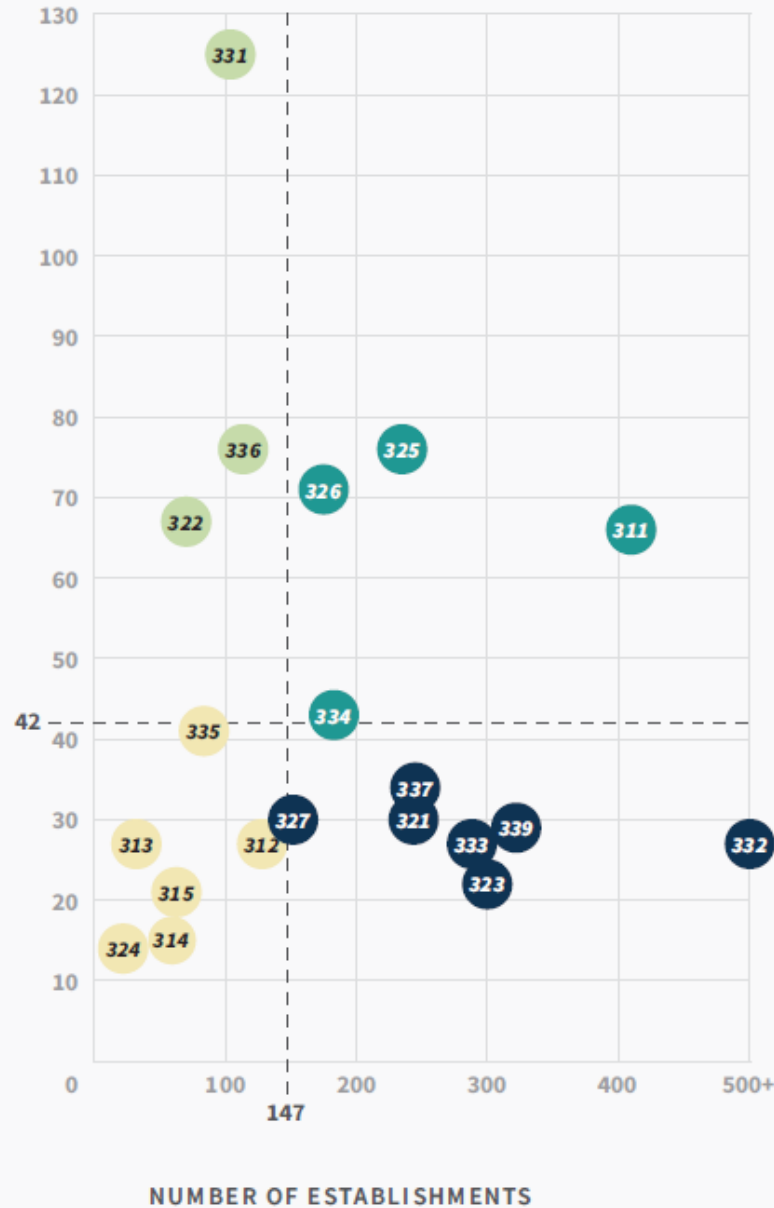
Few firms & few employees

6% of Employees

10% of Establishments

- 312 - Beverage & tobacco products
- 313 - Textile mills
- 314 - Textile product mills
- 315 - Apparel
- 324 - Petroleum & chemical products
- 335 - Electrical equipment & appliances

AVERAGE NUMBER OF EMPLOYEES PER ESTABLISHMENT
Average number of employees per establishments = 42



Average number of establishments per subsector = 147

**MID TO LARGE COMPANIES,
OFTEN WITH MULTIPLE SITES**
Lots of firms & lots of employees

36% of Employees

20% of Establishments

- 311 - Food
- 325 - Chemical
- 326 - Plastics & rubber products
- 334 - Computer & electronic products

**INDUSTRY CLUSTER
OF SMALL COMPANIES**
Lots of firms & few employees

43% of Employees

62% of Establishments

- 321 - Wood product
- 323 - Printing & related products
- 327 - Nonmetallic mineral product
- 332 - Fabricated metal products
- 333 - Machinery
- 337 - Furniture & related products
- 339 - Miscellaneous

Defining Advanced Manufacturing for the Region

- No universal definition, but consistent characteristics:
 - Strategic and cost-effective deployment of IT, technology and automation
 - Innovation and customization
 - Ability to be agile and responsive
 - Targeted to preserve competitive positioning in the market place
- Transformation started in the early 2000s, with impact apparent after 2010
- Integration of technology is evolutionary rather than coming in leaps and bounds

Advanced Manufacturing's Talent Needs

- In advanced manufacturing, the next 10 to 15 years will bring steady, incremental change.
- **Production workers** will need to be life-long learners as they are continuously redeployed within the plant.
- **Maintenance workers** will have strong aptitude combined with formal (postsecondary) training and years of on-the-job training.
- Employers emphasized:
 - importance of basic entry level skills
 - uniformity in the set of knowledge and training
 - balancing technical skills and general management/teamwork aptitude.

Skilled Production

- The region has a larger share of production workers in its workforce
- Demand for skilled occupations is projected to grow
 - Not likely to be replaced with additional automation and technology investment
- General production labor is projected to contract, but still a large part of the production labor

Occupational Demand for Production Workers in the Greater Berks Region				
OCCUPATION	EMPLOYEES IN 2019	PROJECTED DEMAND BY 2029 ^A		
		BLS	LOW	HIGH
Machine Operators & Tenders	13,620	13,360	14,120	21,220
CNC Operators & Machinists	4,670	4,750	5,860	6,240
Welders	4,030	4,160	5,420	6,590
<i>Demand for Advanced Manufacturing Workers</i>	<i>22,320</i>	<i>22,270</i>	<i>25,360</i>	<i>32,510</i>
All Other Production	72,020	67,840	67,190	74,420
All Production	94,340	90,110	92,550	106,930
<i>Manufacturing Sector (all occupations)</i>	<i>174,190</i>	<i>180,650</i>	<i>181,150</i>	<i>182,930</i>

^A Projected demand reflects a range of values, built on BLS occupational projects for the nation and regional specific estimates. The regional estimates form the basis for the “low” and “high” values.

Skilled Maintenance

- 5% of the sector’s workforce
- Concentrated in a few occupations - 63% are industrial machinery mechanics or general maintenance and repair workers
- Demand is projected to grow – nationally and locally with increased use of technology.
- Emerging roles/skills fitted into existing SOC’s.

Occupational Demand for Maintenance Workers in the Greater Berks Region				
OCCUPATION	EMPLOYEES IN 2019	PROJECTED DEMAND BY 2029 ^A		
		BLS	LOW	HIGH
Electrical & Electronic Repairers	275	285	275	285
Industrial Machinery Mechanics	2,935	3,395	3,395	3,430
Millwrights	220	235	235	410
General Maintenance & Repair Workers	2,695	2,805	2,775	2,805
<i>Demand for Advanced Manufacturing Workers</i>	<i>6,125</i>	<i>6,720</i>	<i>6,680</i>	<i>6,930</i>
All Other Maintenance	2,590	2,240	2,280	3,010
All Maintenance	8,710	8,960	8,960	9,930
<i>Manufacturing Sector (all occupations)</i>	<i>174,190</i>	<i>180,650</i>	<i>181,150</i>	<i>182,930</i>

^A Projected demand reflects a range of values, built on BLS occupational projects for the nation and regional specific estimates. The regional estimates form the basis for the “low” and “high” values.

Supply of Talent for Advance Manufacturing

- Struggle to overcome past perceptions of manufacturing jobs as dirty, dull and dangerous and decades-long cultural shift toward emphasizing college education
- CTCs attract 10-15% of HS students but only 1% (250-300 students per year across the region) graduate with training to advanced manufacturing careers
- Need at least 2%, just to offset retiring workers
- Post secondary is important source of talent, but difficult to estimate
 - Advanced preparation for graduating high school students interested in further education and training (associates degree or college credit certificate);
 - Adult learners interested in career changes or credentialing their on-the-job skills (including military veterans); and
 - Incumbent workers (primarily for the purpose of upskilling or cross training).

Net Impact

- Skills gap widens over time
- Demand is growing
- Supply is contracting (aging workforce and fewer entrants)
- By 2029, skill gap ranges from 5,880 and 13,885 workers

Projected Change in Demand and Supply of Advanced Manufacturing Workers in the Greater Berks Region between 2019 and 2029		
	PRODUCTION OCCUPATIONS	MAINTENANCE OCCUPATIONS
2019 Employment	22,320	6,125
2029 Projected Employment	25,360 - 32,510	6,680 - 6,930
Increased demand by 2029	3,040 - 10,190	555 - 805
Net shortage of entry and exits by 2029 ^A	2,070 - 2,670	220
Projected Net Shortage of Advanced Manufacturing Workers by 2029	5,110 - 12,860	770 - 1,025

^A Entry reflects projected number of new workers to advanced manufacturing occupations from secondary and postsecondary education by 2029. For production workers, between 2,700 and 3,300 new workers are estimated to fill production roles, and 5,370 workers are anticipated to retire. For maintenance workers, 1,500 new workers are forecasted and 1,720 are expected to retire.

The Greater Berks Advanced Manufacturing Skills Gap report commissioned by the Berks Workforce Development Board.

Access the report at:

<https://www.co.berks.pa.us/Dept/WDB/Documents/Adv%20MFG%20Skills%20Gap%20in%20Greater%20Berks.pdf>

CENTER FOR REGIONAL ANALYSIS

Data-driven analytics to identify opportunities, illuminate challenges and drive transformation.

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