APPENDIX

NJMEP

State of New Jersey Manufacturing Industry 2018

NJMEP

Helping New Jersey Manufacture Success

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Helping New Jersey Manufacture Success

PARTNERS

NJBIA New Jersey Business & Industry Association www.njbia.org

CIANJ Celebrating 90 years of service to business and free enterprise

MORRIS COUNTY CHAMBER OF COMMERCE

ROI roi-nj.com

NRBP NEWARK REGIONAL BUSINESS PARTNERSHIP

Somerset County Business Partnership *Your Chamber of Commerce and more*

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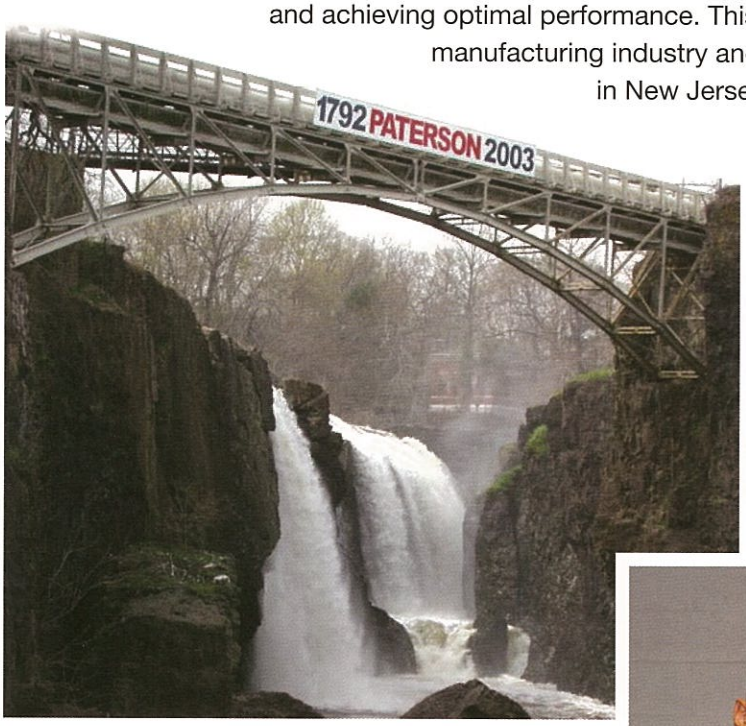
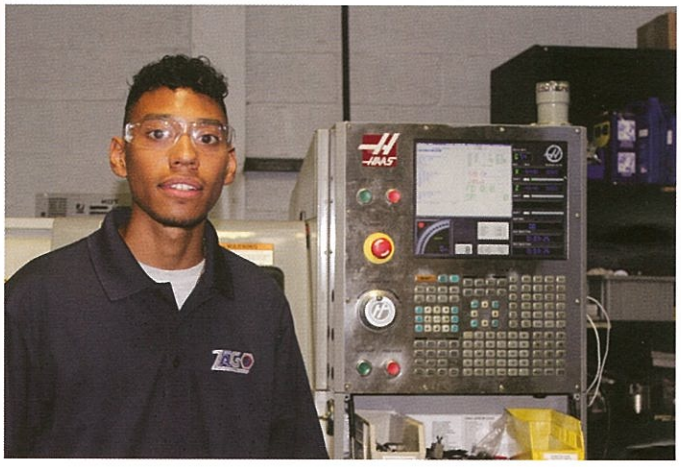
EXECUTIVE SUMMARY

Considered the birthplace of the Industrial Revolution, New Jersey's manufacturing roots are steeped in tradition. Since the creation of the original Society of Establishing Useful Manufacturers, co-founded by Alexander Hamilton in 1792 in Paterson, the state has harnessed resources to grow industry. Hamilton believed a strong industrial system was the best method for the United States to sustain itself and become a global leader. That philosophy translated into productive manufacturing mills.

Today, New Jersey remains prominent in the manufacturing industry. While systems have changed over the years, the state remains a leading player in the worldwide supply chain. Traditional production systems have shifted to technologically advanced ('lean') manufacturing processes, maximizing efficiency and achieving optimal performance. This level of modernization strongly supports the manufacturing industry and makes for a more robust business climate in New Jersey.



Since the creation of the original Society of Establishing Useful Manufacturers, co-founded by Alexander Hamilton in 1792 in Paterson, the state has harnessed resources to grow industry.



Though the implementation of such optimally lean manufacturing has impacted the industry's demand for workers, New Jersey manufacturers directly employ thousands[1] of individuals in Manufacturing, Life Sciences, STEM/Technology and Transportation, Logistics & Distribution.

[1] *NJ Dept. of Labor & Workforce Development, US Bureau of Economic Analysis, US Bureau & NAICS Code Analysis*

The manufacturing sector in New Jersey is particularly strong and provides high value output. Eighty-two percent of manufacturing GDP in New Jersey is derived from advanced manufacturing industries, which includes food preparation and packaging, chemicals and pharmaceuticals, machinery, fabricated metal, and computers and electronics[2]. Every $1 spent on manufacturing adds another $1.81 to the state's economy, the highest multiplier effect of any economic sector.

The state approaches manufacturing from a position of natural strength. Combined with an unrivaled density, New Jersey occupies an enviable location with direct access to surrounding states and cities with sizeable populations and high commercial activity. Moreover, New Jersey houses the largest seaport on the East Coast, along with the rail, road, air and industrial infrastructure necessary to deliver goods to domestic and international markets at a pace with modern demands.

The state also features a network of engaged partners, such as the New Jersey Manufacturing Extension Program (NJMEP), New Jersey Business & Industry Association (NJBIA), Commerce and Industry Association of New Jersey (CIANJ) and the New Jersey Manufacturing Caucus focused on nurturing, expanding the industry and addressing/implementing policy changes.

[2] NJBIA Press Release *NJBIA Eager to Work with Legislature's New Manufacturing Caucus* August 2017

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New Jersey manufacturers and state legislators have been working vigorously to strengthen New Jersey manufacturing. From putting New Jerseyans back to work, to gaining a deeper understanding of what manufacturers need in order to thrive, government officials and businesses within the state are collaborating to improve the business climate. State legislators have renewed their mission by establishing the bipartisan, Manufacturing Caucus.

Legislators, educators and manufacturers need to work closely together to create career pathways and a solid living wage for our citizens.

The goal of the Bipartisan Manufacturing Caucus is to find out how manufacturers can improve productivity, enhance capacity and increase the competitiveness of New Jersey manufacturing. The Caucus will work on policies that include improving partnerships between education and manufacturing, research and development and job creation and retention.

Excessive taxes, over regulation, the skills gap and workforce development, innovation and collaboration are just a few of the policy issues. The Caucus aims at addressing these constraints.

NJMEP has taken an active role in helping to close the skills gap. They have also been an advocate and supporter of the New Jersey Manufacturing Caucus from its initial formation to working closely with Senate President Stephen Sweeney, Senator Bob Gordon (Caucus Chairman), other members of the Caucus, numerous Congressmen/Congresswomen and Senators on issues that impact manufacturers.

Two key areas for Legislators, educators and manufacturers to collaborate on are creating career pathways and a solid living wage for our citizens. Through solid career paths we can maximize workers earning potential, and provide our manufacturing companies with the workforce they need to grow and succeed.

NEW JERSEY MANUFACTURING AT A GLANCE

Manufacturing Output ($billions, 2015) –
$44.52

Percent Share of Total Gross State Product –
7.8%

Manufacturing and STEM-Support Firms in NJ –
15,000 +

Based on NAICS Codes approved by NIST-MEP (National Institute of Standards & Technologies)

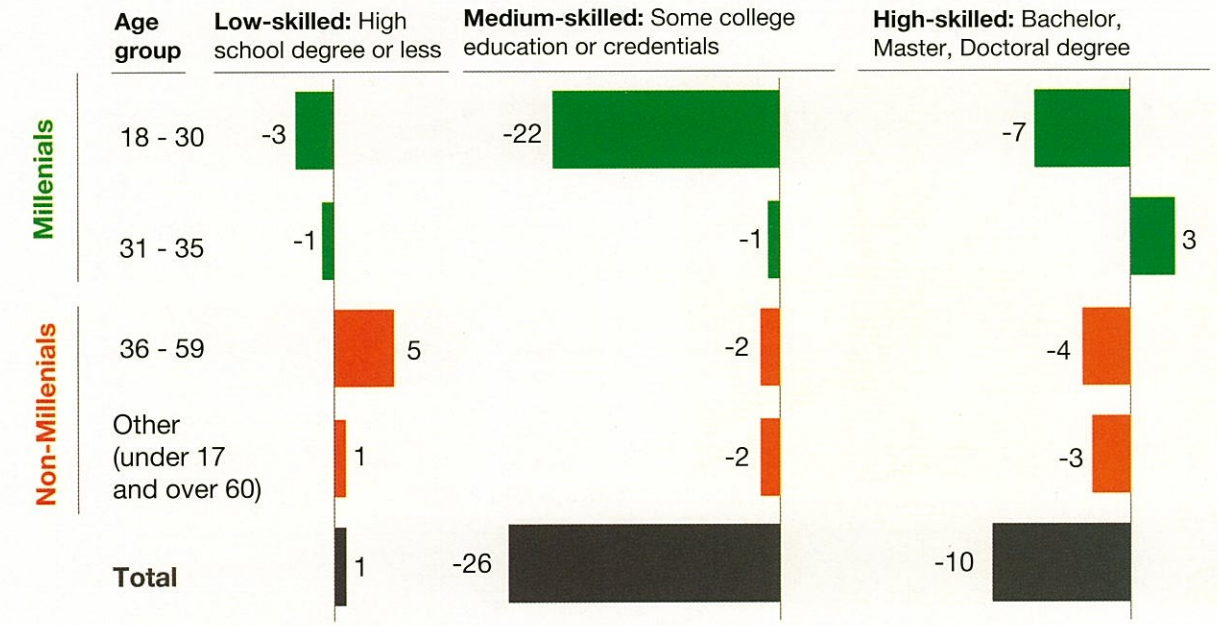
EMPLOYMENT AND COMPENSATION

Traditional Manufacturing Employment (2016) – 240,500*
Average Annual Compensation - $90,540

US Bureau of Economic Analysis, US Census Bureau and NACIS Code Analysis **Does not include Life Sciences*

The majority of millenials leaving NJ are middle- or high- skilled

Net migration of people in NJ that changed states/counties in 2015, 000s by age and education attainment
Negative values represents a net out-migration (more people leave than enter the state)



1 includes middle-skilled workers with Associates credentials, GED or alternative credentials or 1 year or more of college education
SOURCE: Census, American Community Survey

U.S. COMPETITIVENESS AT A GLANCE

In the 2016 GMCI, CEO survey recipients were asked to rank nations in terms of current and future manufacturing competitiveness. Top performing nations have each demonstrated strengths across multiple drivers of manufacturing excellence. They clearly illustrate the close tie that exists between manufacturing competitiveness and innovation.

2016 (Current)		
Rank	Country	Index Score (100 = High) (10 = Low)
1	China	100.0
2	United States	99.5
3	Germany	93.9
4	Japan	80.4
5	South Korea	76.7
6	United Kingdom	75.8
7	Taiwan	72.9
8	Mexico	69.5
9	Canada	68.7
10	Singapore	68.4
11	India	67.2
12	Switzerland	63.6
13	Sweden	62.1
14	Thailand	60.4
15	Poland	59.1
16	Turkey	59.0
17	Malaysia	59.0
18	Vietnam	56.5
19	Indonesia	55.8
20	Netherlands	55.7
21	Australia	55.5
22	France	55.5
23	Czech Republic	55.3
24	Finland	52.5
25	Spain	50.6
26	Belgium	48.3
27	South Africa	48.1
28	Italy	46.5
29	Brazil	46.2
30	United Arab Emirates	45.4
31	Ireland	44.7
32	Russia	43.9
33	Romania	42.8
34	Saudi Arabia	39.2
35	Portugal	37.9
36	Colombia	35.7
37	Egypt	29.2
38	Nigeria	23.1
39	Argentina	22.9
40	Greece	10.0

2020 (Projected)			
Rank	2016 vs. 2020	Country	Index Score (100 = High) (10 = Low)
1	(▲+1)	United States	100.0
2	(▼-1)	China	93.5
3	(⟷)	Germany	90.8
4	(⟷)	Japan	78.0
5	(▲+6)	India	77.5
6	(▼-1)	South Korea	77.0
7	(▲+1)	Mexico	75.9
8	(▼-2)	United Kingdom	73.8
9	(▼-2)	Taiwan	72.1
10	(▼-1)	Canada	68.1
11	(▼-1)	Singapore	67.6
12	(▲+6)	Vietnam	65.5
13	(▲+4)	Malaysia	62.1
14	(⟷)	Thailand	62.0
15	(▲+4)	Indonesia	61.9
16	(▼-1)	Poland	61.9
17	(▼-1)	Turkey	60.8
18	(▼-5)	Sweden	59.7
19	(▼-7)	Switzerland	59.1
20	(▲+3)	Czech Republic	57.4
21	(▼-1)	Netherlands	56.5
22	(▼-1)	Australia	53.4
23	(▲+6)	Brazil	52.9
24	(⟷)	Finland	49.7
25	(▲+2)	South Africa	49.3
26	(▼-4)	France	49.1
27	(▼-2)	Spain	48.4
28	(▲+5)	Romania	45.9
29	(▼-3)	Belgium	45.8
30	(▼-2)	Italy	45.0
31	(⟷)	Ireland	43.7
32	(⟷)	Russia	43.6
33	(▼-3)	United Arab Emirates	42.6
34	(▲+2)	Colombia	40.9
35	(⟷)	Portugal	40.1
36	(▼-2)	Saudi Arabia	36.1
37	(⟷)	Egypt	28.3
38	(⟷)	Nigeria	25.4
39	(⟷)	Argentina	24.6
40	(⟷)	Greece	10.0

Source: Deloitte Touche Tohmatsu Limited and US Council on Competitiveness, 2016 Global Manufacturing Competitiveness Index

NEW JERSEY MANUFACTURERS BY STATE DISTRICT - NAICS CODES

District	Senate	Assembly	Assembly	# of Manufacturers	Main Counties	Employees-EST Per Entity
1	Jeff Van Drew	Bob Andrzejczak	R. Bruce Land	301	Atlantic, Cape May, Cumberland	10,234
2	Chris A. Brown	John Armato	Vincent Mazzeo	207	Atlantic	7,038
3	Stephen M. Sweeney	John J. Burzichelli	Adam J. Taliaferro	279	Cumberland, Gloucester, Salem	9,486
4	Fred H. Madden	Paul D. Moriarty	Gabriela M. Mosquera	142	Camden, Gloucester	4,828
5	Nilsa Cruz-Perez	Arthur Barclay	Patricia Egan Jones	122	Camden, Gloucester	4,148
6	James Beach	Louis D. Greenwald	Pamela R. Lampitt	404	Burlington, Camden	13,736
7	Troy Singleton	Herb Conaway	Carol A. Murphy	322	Burlington	10,948
8	Dawn Marie Addiego	Joe Howarth	Ryan Peters	166	Atlantic, Burlington, Camden	5,644
9	Christopher J. Connors	Dianne C. Gove	Brian E. Rumpf	171	Atlantic, Burlington, Ocean	5,814
10	James W. Holzapfel	Gregory P. McGuckin	David W. Wolfe	88	Ocean	2,992
11	Vin Gopal	Joanne Downey	Eric Houghtaling	320	Monmouth	10,880
12	Samuel D. Thompson	Robert D. Clifton	Ronald S. Dancer	213	Burlington, Middlesex, Monmouth, Ocean	7,242
13	Declan J. O'Scanlon	Amy H. Handlin	Serena Dimaso	130	Monmouth	4,420
14	Linda R. Greenstein	Daniel R. Benson	Wayne P. DeAngelo	127	Mercer, Middlesex	4,318
15	Shirley Turner	Vacancy	Verlina Reynolds-Jackson	268	Hunterdon, Mercer	9,112
16	Christopher Bateman	Roy Freiman	Andrew Zwicker	398	Hunterdon, Mercer, Middlesex, Somerset	13,532
17	Bob Smith	Joe Danielsen	Joseph V. Egan	246	Middlesex, Somerset	8,364
18	Patrick J. Diegnan	Robert J. Karabinchak	Nancy J. Pinkin	421	Middlesex	14,314
19	Joseph F. Vitale	Craig J. Coughlin	Yvonne Lopez	184	Middlesex	6,256
20	Joseph Cryan	James C. Holley	Annette Quijano	309	Union	10,506
21	Thomas Kean, Jr.	Jon M. Bramnick	Nancy F. Munoz	374	Morris, Somerset, Union	12,716
22	Nicholas P. Scutari	Linda Carter	James J. Kennedy	300	Middlesex, Union, Somerset	10,200
23	Michael J. Doherty	John DiMaio	Erik Peterson	445	Hunterdon, Somerset, Warren	15,130
24	Steve V. Oroho	Harold Wirths	Parker Space	244	Morris, Sussex, Union	8,296
25	Anthony R.Bucco	Anthony M. Bucco	Michael Patrick Carroll	385	Morris, Somerset	13,090
26	Joseph Pennacchio	BettyLou DeCroce	Jay Webber	524	Essex, Morris, Passaic	17,816
27	Richard J. Codey	Mila Jasey	John F. McKeon	220	Essex, Morris	7,480
28	Ronald L. Rice	Ralph R. Caputo	Cleopatra G. Tucker	267	Essex	9,078
29	M. Teresa Ruiz	Eliana Pintor Marin	Shanique Speight	178	Essex	6,052
30	Robert W. Singer	Sean T. Kean	Edward H. Thompson	279	Monmouth, Ocean	9,486
31	Sandra Bolden Cunningham	Nicholas Chiaravalloti	Angela McKnight	35	Hudson	1,190
32	Nicholas J. Sacco	Angelica M. Jimenez	Pedro Meja	262	Bergen, Hudson	8,908
33	Brian P. Stack	Annette Chaparro	Raj Mukherji	188	Hudson	6,392
34	Nia H. Gill	Thomas P. Giblin	Britnee N. Timberlake	260	Essex, Passaic	8,840
35	Nellie Pou	Shavonda E. Sumter	Benjie E. Wimberly	357	Bergen, Passaic	12,138
36	Paul A. Sarlo	Clinton Calabrese	Gary S. Schaer	602	Bergen, Passaic	20,468
37	Loretta Weinberg	Gordon M. Johnson	Vainieri Huttle	377	Bergen	12,818
38	Joseph A. Lagana	P. Christopher Tulley	Lisa Swain	308	Bergen, Passaic	10,472
39	Gerald Cardinale	Robert Auth	Holly Schepisi	312	Bergen, Passaic	10,608
40	Kristin Corrado	Kevin Rooney	Christopher DePhillips	395	Bergen, Essex, Morris, Passaic	13,430
				11,130	Direct Employment *	378,420

1 Manufacturing Job Creates 4 Others - **1,513,680**

Confirmed by several sources including NIST & NAM

Total Manufacturing – **1,892,100**

** An estimate supported by data from NIST & NAM - 34 employees per firm in NJ*

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NEW JERSEY MANUFACTURERS BY FEDERAL DISTRICT - NAICS CODES

District	Senate	House	# of Manufacturers	Main Counties	Employees-EST Per Entity
State	Robert Menendez		11,130		
State	Cory Booker		11,130		
1		Donald Norcross	831	Gloucester, Camden, Burlington	28,254
2		Frank LoBiondo	644	Atlantic, Cape May, Cumerland, Salem, Ocean	21,896
3		Tom MacArthur	631	Burlington, Ocean	21,454
4		Christopher Smith	803	Ocean, Monmouth, Mercer	27,302
5		Josh Gottheimer	1,078	Sussex, Passaic, Bergen, Warren	36,652
6		Frank Pallone	863	Monmouth, Middlesex	29,342
7		Leonard Lance	1,115	Warren, Hunterdon, Somerset, Union, Morris	37,910
8		Albio Sires	703	Union, Essex, Hudson, Bergen	23,902
9		Bill Pascrell Jr.	1,440	Bergen, Hudson, Passaic	48,960
10		Donald Payne Jr.	655	Union, Essex, Hudson	22,270
11		Rodney Frelinghuysen	1,426	Morris, Sussex, Essex, Passaic	48,484
12		Bonnie Watson Coleman	941	Middlesex, Mercer, Somerset, Union	31,994
			11,130	Direct Employment *	378,420

1 Manufacturing Job Creates 4 Others -

1,513,680

Confirmed by several sources including NIST & NAM

** An estimate supported by data from NIST & NAM - 34 employees per firm in NJ*

Total Manufacturing – **1,892,100**

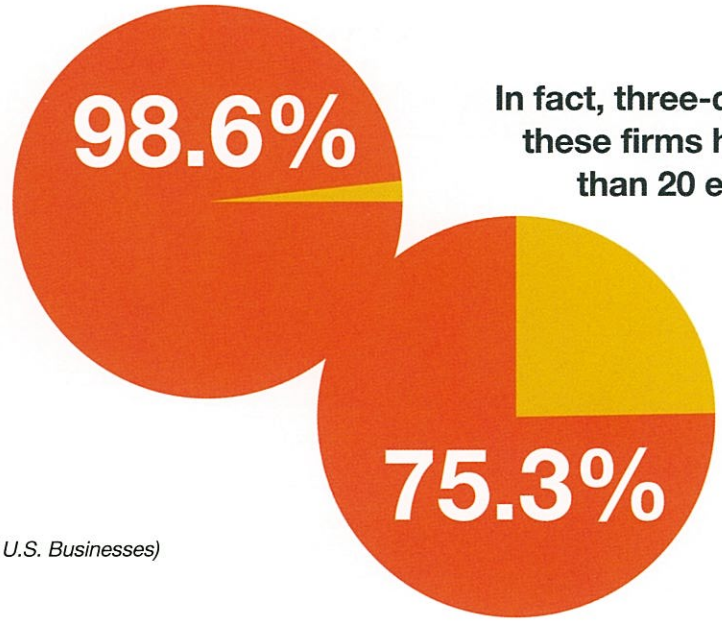
NJ MANUFACTURERS - COUNTY TOTALS - RANKED BY # OF FIRMS

	NJ County	MFG'g Firms	STEM Firms	Total Firms
1	Bergen	1674	589	2263
2	Middlesex	1113	550	1663
3	Morris	874	472	1346
4	Essex	951	324	1275
5	Monmouth	708	457	1165
6	Union	905	253	1158
7	Passaic	825	244	1069
8	Camden	597	278	875
9	Burlington	502	315	817
10	Mercer	426	255	681
11	Somerset	419	248	667
12	Ocean	371	256	627
13	Hudson	441	132	573
14	Gloucester	297	140	437
15	Atlantic	174	141	315
16	Hunterdon	174	138	312
17	Cumberland	222	72	294
18	Sussex	169	111	280
19	Warren	157	84	241
20	Cape May	87	61	148
21	Salem	44	29	73
		11,130	5,149	16,279

The vast majority of manufacturing firms in the United States are quite small.

In 2014, there were 251,901 firms in the manufacturing sector, with all but 3,749 firms considered to be small (i.e., having fewer than 500 employees).

(Source: U.S. Census Bureau, Statistics of U.S. Businesses)



In fact, three-quarters of these firms have fewer than 20 employees.

NEW JERSEY KEY INDUSTRY CLUSTERS

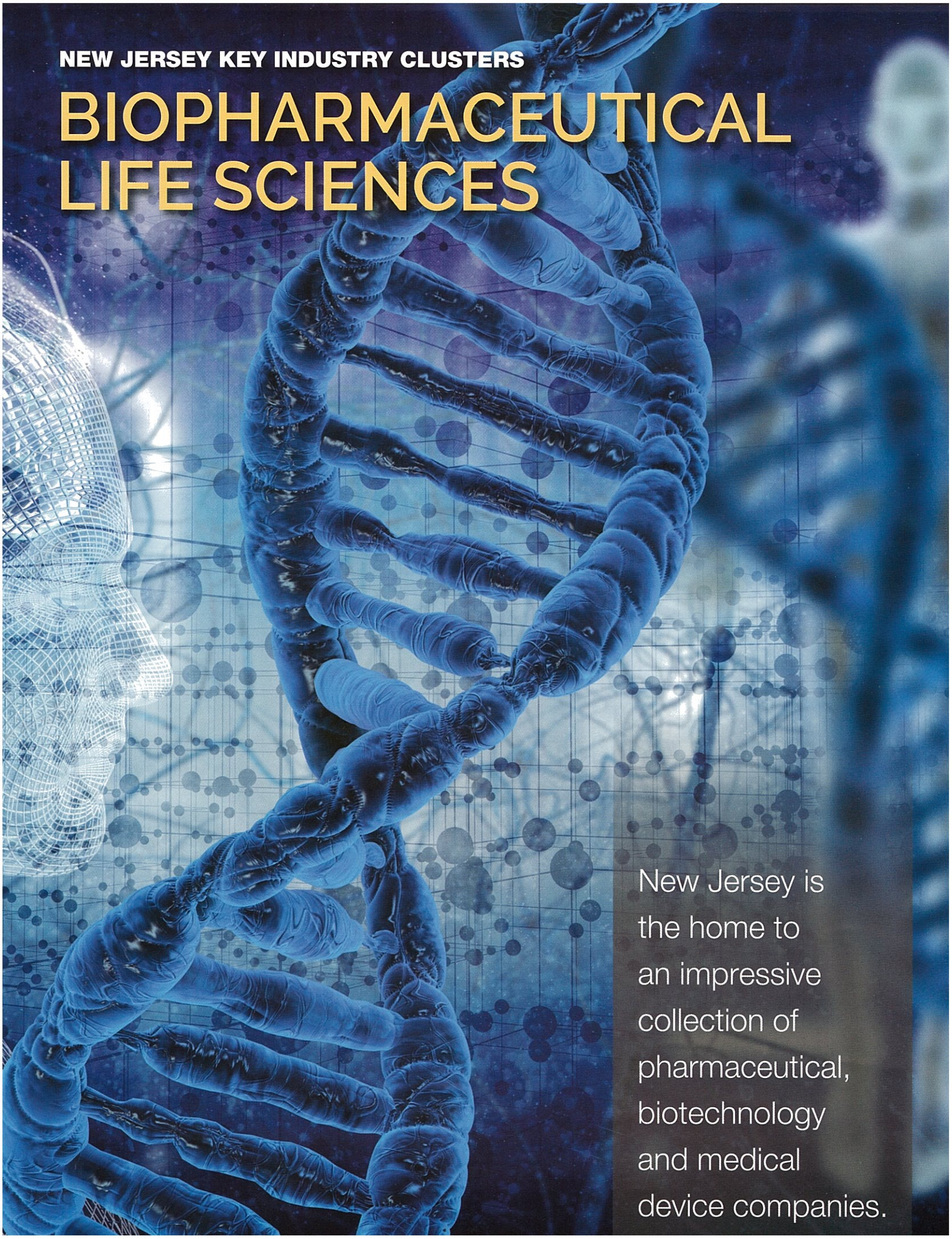
New Jersey manufacturers have a competitive edge over companies outside the region: access to one of the most concentrated and affluent consumer markets in the world.

In a single day's drive, producers located here can reach nearly 40% of the U.S. population. A distribution center in central New Jersey can serve more than 22 million consumers with collectively nearly $800 billion in disposable income, within a 2-hour drive. The same manufacturers are in close proximity to thousands of retailers and suppliers.

Situated in the heart of the U.S. Northeast Corridor, the State's manufacturers also benefit from access to the world's trade and financial centers, including New York and Washington D.C. Plus, New Jersey provides entree to national and international markets worldwide via road, rail, air and sea. New Jersey's strategic location and world-class transportation infrastructure has made the state a desired location for the manufacturing industry and specifically key industry clusters.

New Jersey Manufacturing – Impact by Cluster

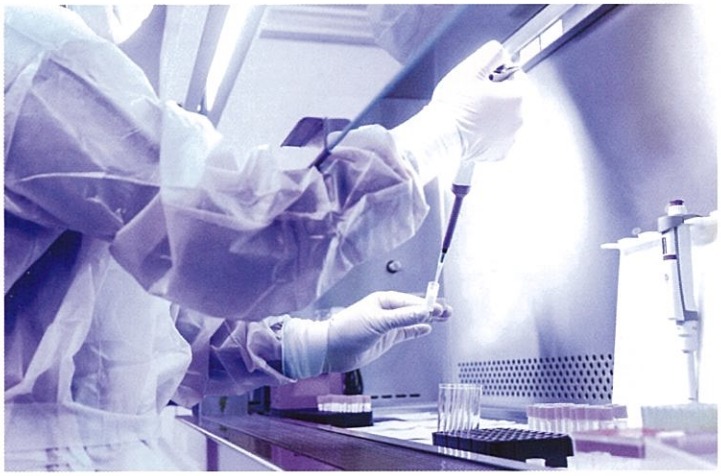
	FIRMS	EMPLOYEES	$$ IMPACTS	AVG. WAGE
Manufacturing	7,222	240,500	$44.52B	$90,540
Life Sciences	3200	117,260	$16.5B	$137,109
STEM/Technology	27,550	366,330	N/A	$118,210
Transportation Logistics & Distribution (TLD)	24,243	382,228	$58.4B	$72,569


NEW JERSEY KEY INDUSTRY CLUSTERS
BIOPHARMACEUTICAL LIFE SCIENCES
New Jersey is the home to an impressive collection of pharmaceutical, biotechnology and medical device companies.

BIOPHARMACEUTICAL LIFE SCIENCES

As a result of New Jersey's strategic location, world-class transportation, an experienced workforce, a dense network of specialized services, financial resources and effective supply chain infrastructure in the middle of the largest healthcare market in the U.S., the Global life science and health care industry has flourished.

Hailed as a life science hub, New Jersey is the home to an impressive collection of pharmaceutical, biotechnology and medical device companies; many of which are industry leaders, including BristolMyers Squibb, Novartis, Merck and Johnson & Johnson and smaller companies such as Amicus Therapeutics, Chromocell, Celgene, Soligenix, Vicus, Roka Biosciences and PTC Therapeutics. In 2015, 50% of new FDA approvals came from companies that have a base in New Jersey. With the highest concentration of scientists and engineers in the world, as well as leading clinical research and contract manufacturing organizations, New Jersey boasts a collaborative network of technology incubators.



In 2015, 50% of new FDA approvals came from companies that have a base in New Jersey.

Biopharmaceutical Life Sciences Industry Cluster

- New Jersey's biopharmaceutical and life sciences cluster employment is comprised of three primary components: pharmaceutical sector (40.8%), biotechnology (38.5%) and medical device manufacturing (20.7%). In 2016, the state's pharmaceuticals employment accounted for 8.1% of pharmaceuticals jobholding in the U.S.

- Establishments totaled over 3,200 in 2016. Despite recent reorganizations by pharmaceutical firms, the drug and pharmaceutical component's establishment count increased between 2011 and 2016 by 10.5 percent, slightly slower than the nation (+15.0%) over the period.

- The state's highly educated workforce is seen in this cluster as nearly half (41.3%) of its workers statewide hold a Bachelor's degree or higher: Bachelor's (37%), Master's/Doctoral (4.3%) degree.

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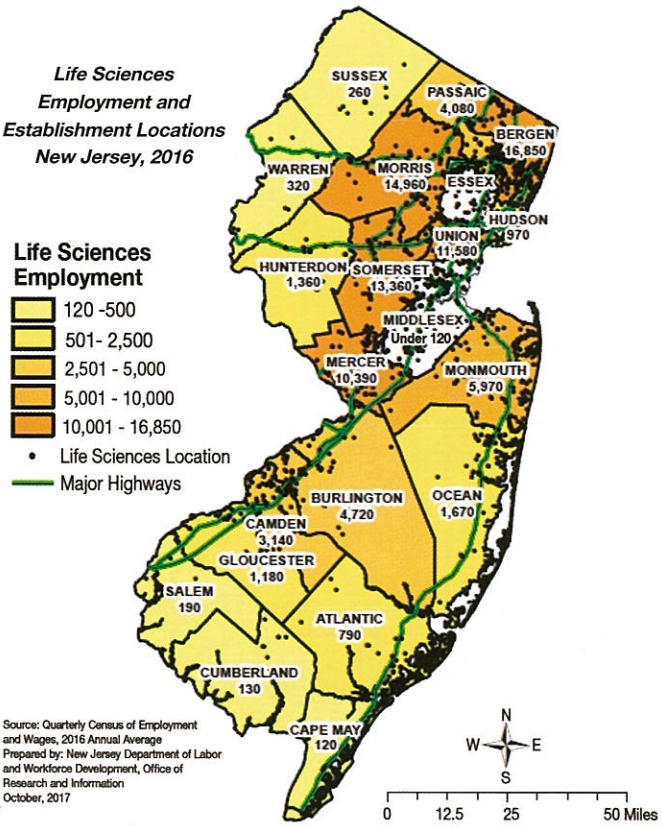
OVERALL STATE IMPACT

The Life Sciences Cluster has an enormous impact on providing high-quality jobs and adding significant value to the State's economic activities. Recent New Jersey highlights included:

- **Employment Total:** averaged 117,260 or 3.5 percent of all private sector workers in the state for 2016. Nationally, the proportion was just 1.9 percent.
- **Well-paying Jobs:** Paid over $16.5 billion in 2016 annual payrolls; 7.8 percent of the state's total wages.
- **Establishments Total:** over 3,200 in 2016. Over a five year period (2011-2016) – even with numerous industry related reorganizations – New Jersey's drug & pharmaceutical component still grew (by +10.5%).

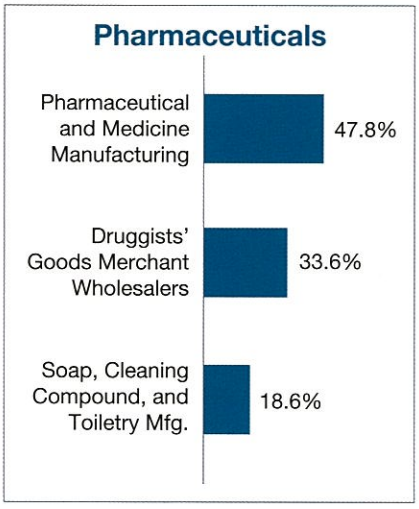
Life Sciences Employment and Establishment Locations New Jersey, 2016



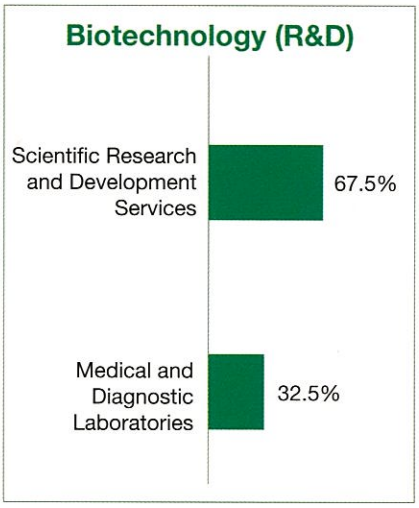
Source: Quarterly Census of Employment and Wages, 2016 Annual Average
Prepared by: New Jersey Department of Labor and Workforce Development, Office of Research and Information
October, 2017

SUB SECTOR EMPLOYMENT

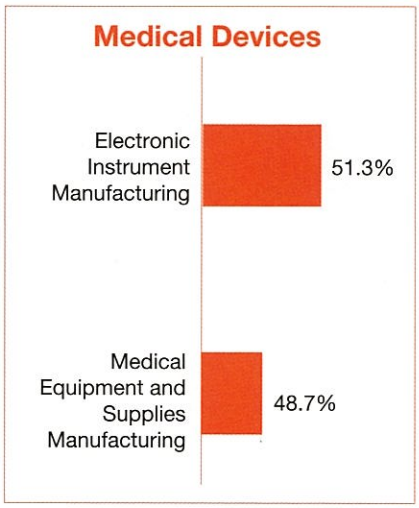
In 2016, the 117,260 jobs within this New Jersey cluster were concentrated in:



- 47,820 jobs
- The pharmaceuticals component accounted for 40.8 percent of the life sciences industry

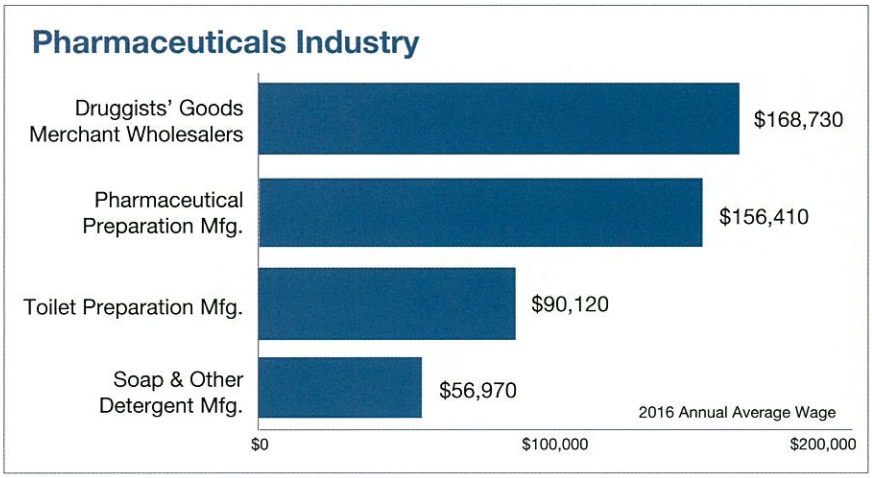


- 45,120 jobs
- Scientific research and development services accounted for more than 30,440 employment.



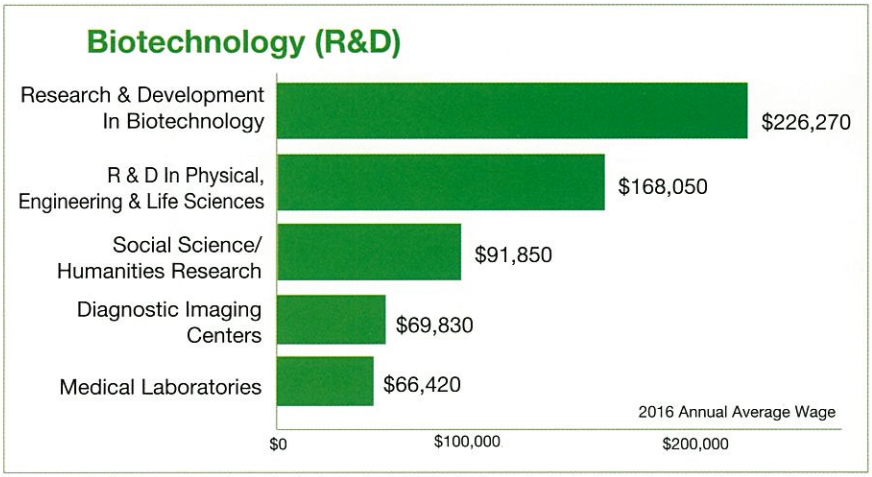
- 24,320 jobs
- Medical devices is the smallest of the three components and makes up 20.7 percent of the life sciences industry.

PHARMACEUTICALS INDUSTRY TOP ANNUAL AVERAGE WAGE, 2016



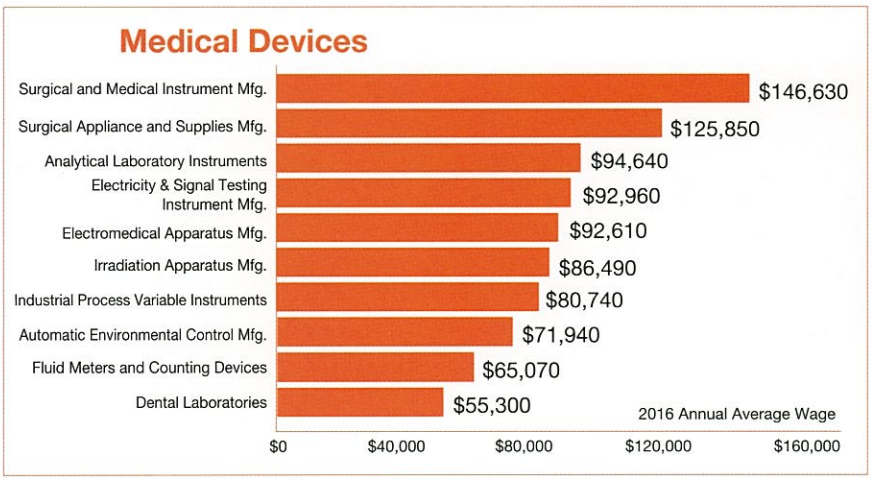
- Annual average wages increased $12,721 (or +9.4%), from $134,720 in 2011 to $147,440 in 2016.
- Increases in the industry sectors ranged from soap, cleaning, compound, toiletry and pharmaceutical manufacturing (+8.1%) to druggists' goods merchants wholesalers (+14.7%) in annual average wages from 2011 to 2016

BIOTECHNOLOGY INDUSTRY TOP ANNUAL AVERAGE WAGE, 2016



- Annual average wages were $151,165 in 2016, up +30.3 percent from $116,031 in 2011.
- The industry sectors experienced increases ranged from medical & diagnostic laboratories (+0.8%) to scientific R&D services (+40.4) over the same 5-year period.

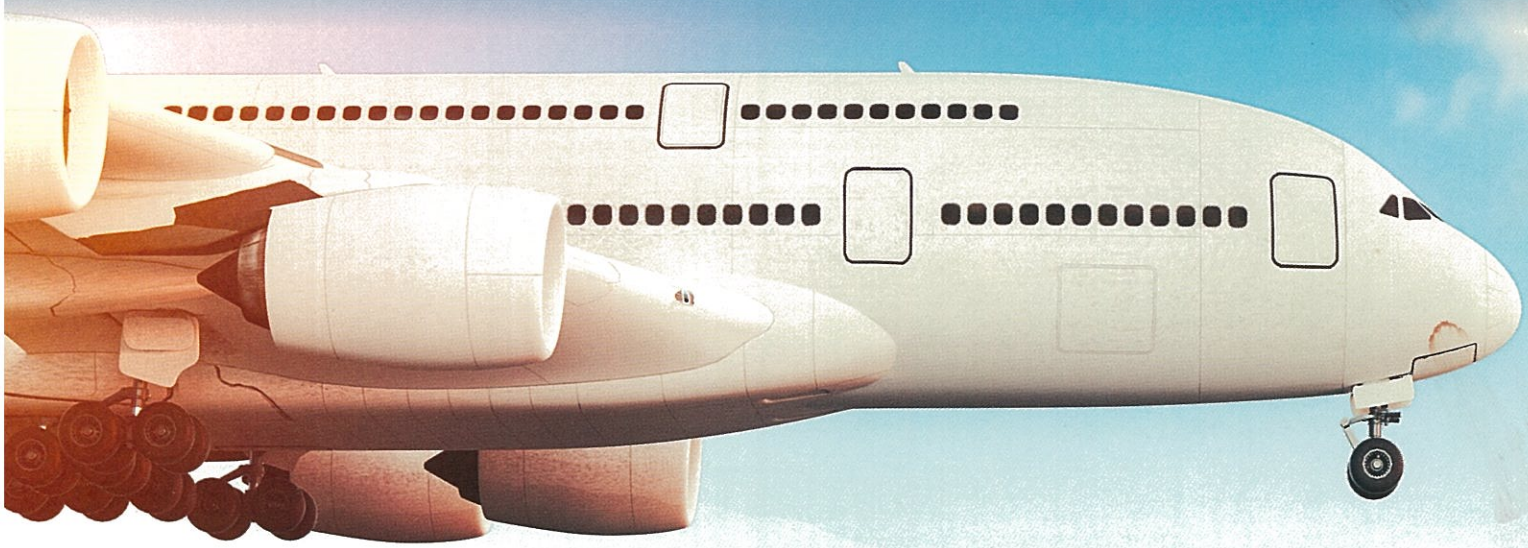
MEDICAL DEVICES INDUSTRY TOP ANNUAL AVERAGE WAGE, 2016

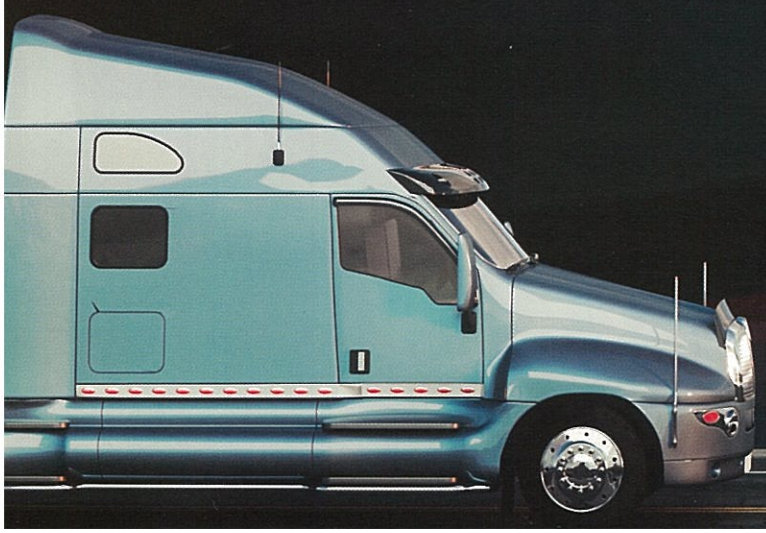


- Annual average wages were $112,722 in 2016, up +16.2% from $97,026 in 2011.
- Growth for the industry sectors ranged from +10.9% (electronic instrument manufacturing) to +18.6% (medical equipment and supplies manufacturing) over the 5-year period.

NEW JERSEY KEY INDUSTRY CLUSTERS

TRANSPORTATION, LOGISTICS AND DISTRIBUTION





New Jersey is the ideal location and has the transportation infrastructure that makes it easy to move products throughout the region and around the world.

TRANSPORTATION, LOGISTICS AND DISTRIBUTION

New Jersey has the transportation infrastructure that makes it easy to move products throughout the region and around the world.

This fact is why the number of logistics and distribution centers moving to or expanding in New Jersey is no accident, it's strategic. Companies like Amazon, Goya Foods, Destination Maternity, Williams-Sonoma, Volkswagen, Barnes & Noble, Coca Cola, The Home Depot, IKEA, W.W. Grainger, Hyundai, Crate & Barrel, Five Below, Toys R Us and Wakefern Food Corporation, the largest retailer-owned cooperative in the U.S., all have major distribution centers here.

New Jersey's transportation and distribution sector contributed more than $58.4 billion to the State's Real Gross Domestic Product in 2016, the fourth highest dollar amount per state in the US. In the last year alone, New Jersey gained 7,300 jobs in the sector. A number expected to increase, driven by the growth of e-commerce and international trade.

Transportation, Logistics, Distribution Industry Cluster

- TLD contributed more than $58.4 billion to the state's Real Gross Domestic Product in 2016.
- New Jersey offers access to the nation's freight rail network and is also home to several key transportation facilities necessary for a strong TLD industry cluster, including three major seaports and a large international airport.

CONSISTS OF TWO MAJOR COMPONENTS

TRANSPORTATION

- Air Transportation
- Rail Transportation
- Water Transportation
- Truck Transportation
- Transit and Ground Passenger Transportation
- Pipeline Transportation
- Scenic & Sightseeing Transportation
- Support Activities For Transportation
- Couriers & Messengers

DISTRIBUTION/LOGISTICS

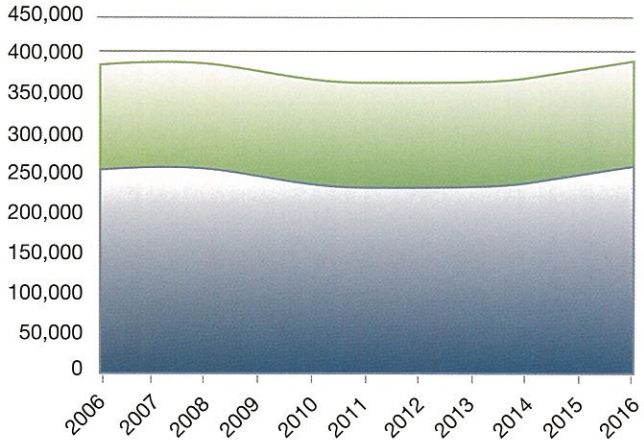
- Durable Goods Merchant Wholesalers
- Nondurable Goods Merchant Wholesalers
- Agents, Brokers and Wholesale Electronic Markets
- Warehousing and Storage

17x

2006 – 2016 EMPLOYMENT TREND BY TWO MAJOR COMPONENTS

TLD Industry Divided into Two Major Components

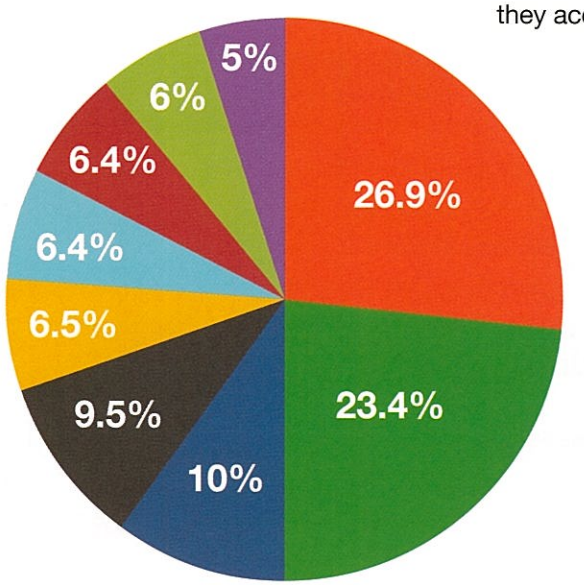
- The industry sector is composed of approximately two-thirds Distribution/Logistics employment and one third Transportation, and has remained that way consistently for many years.
- Private sector jobholding in TLD as a whole reached a high of 389,521 in 2007.
- As a result of the recession (December, 2007 through June, 2009), jobholding in the sector trended down for three years to a low of 354,616 in 2010.
- The cluster improved only slightly over the following years, adding a little more than 6,000 jobs through 2014 before spiking in 2015 and 2016 with a two year gain of 21,600 new jobs.



TOP INDUSTRY SUBSECTORS BY EMPLOYMENT

In 2016, TLD's three top-ranking industry subsectors accounted for 61.3 percent of total jobs

Wholesalers of Durable Goods and Wholesalers of Nondurable Goods are TLD's largest industries. Combined, they account for 50.3 percent of TLD employment.

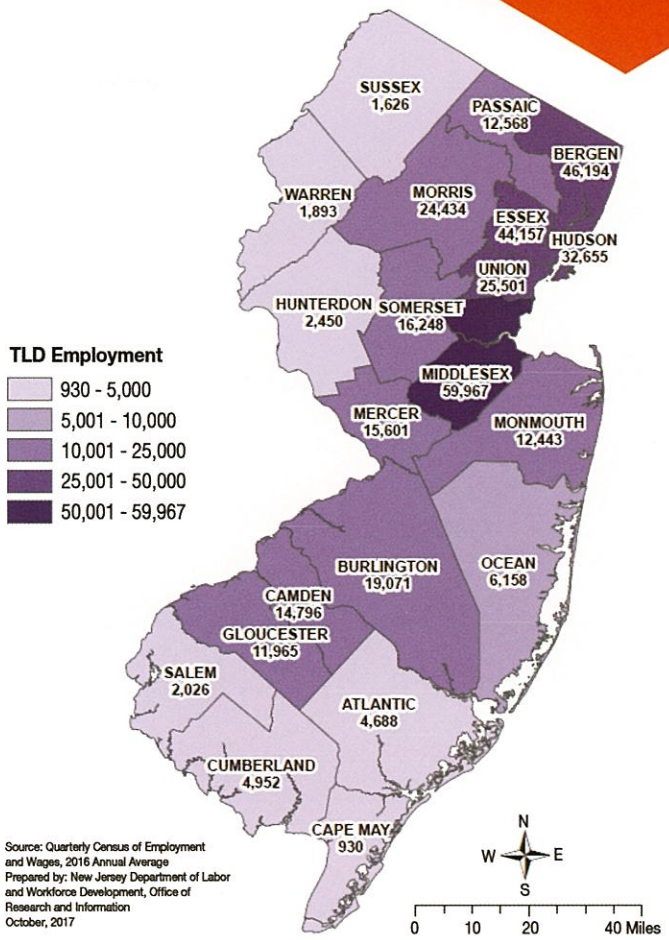


With its recent explosive growth in New Jersey, Warehousing and Storage has overtaken Truck Transportation as the third largest industry subsector, accounting for 10.0 percent of New Jersey's TLD employment.

- 423 Merchant Wholesalers, Durable Goods - 26.9%
- 424 Merchant Wholesalers, Nondurable Goods - 23.4%
- 493 Warehousing and Storage - 10%
- 484 Truck Transportation - 9.5%
- 485 Transit and Ground Passenger Transportation - 6.5%
- 488 Support Activities for Transportation - 6.4%
- 492 Couriers and Messengers - 6.4%
- 425 Electronic Markets - 6%
- All Other - 5%

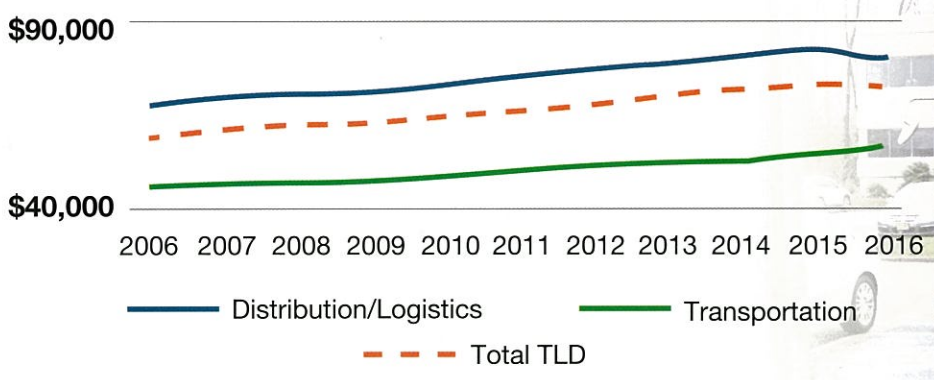
Transportation, Logistics & Distribution (TLD) Employment - New Jersey, 2016

- Middlesex, Bergen, Essex, Hudson, Morris and Union counties account for 60.9 percent of New Jersey's TLD jobs. These counties are situated near the ports of Newark and Elizabeth and are located along the New Jersey Turnpike.
- Other areas in the state that have substantial concentrations of TLD businesses include Burlington, Camden and Gloucester counties located along the New Jersey Turnpike and I-295. These counties line the Delaware River, the Ports of Camden and Gloucester, and the City of Philadelphia. Combined, they comprise another 12.0 percent of the state's TLD employment.
- Mercer County is becoming more prominent as a center of TLD employment. Jobholding has risen 82.8 percent in the county since the end of the recession



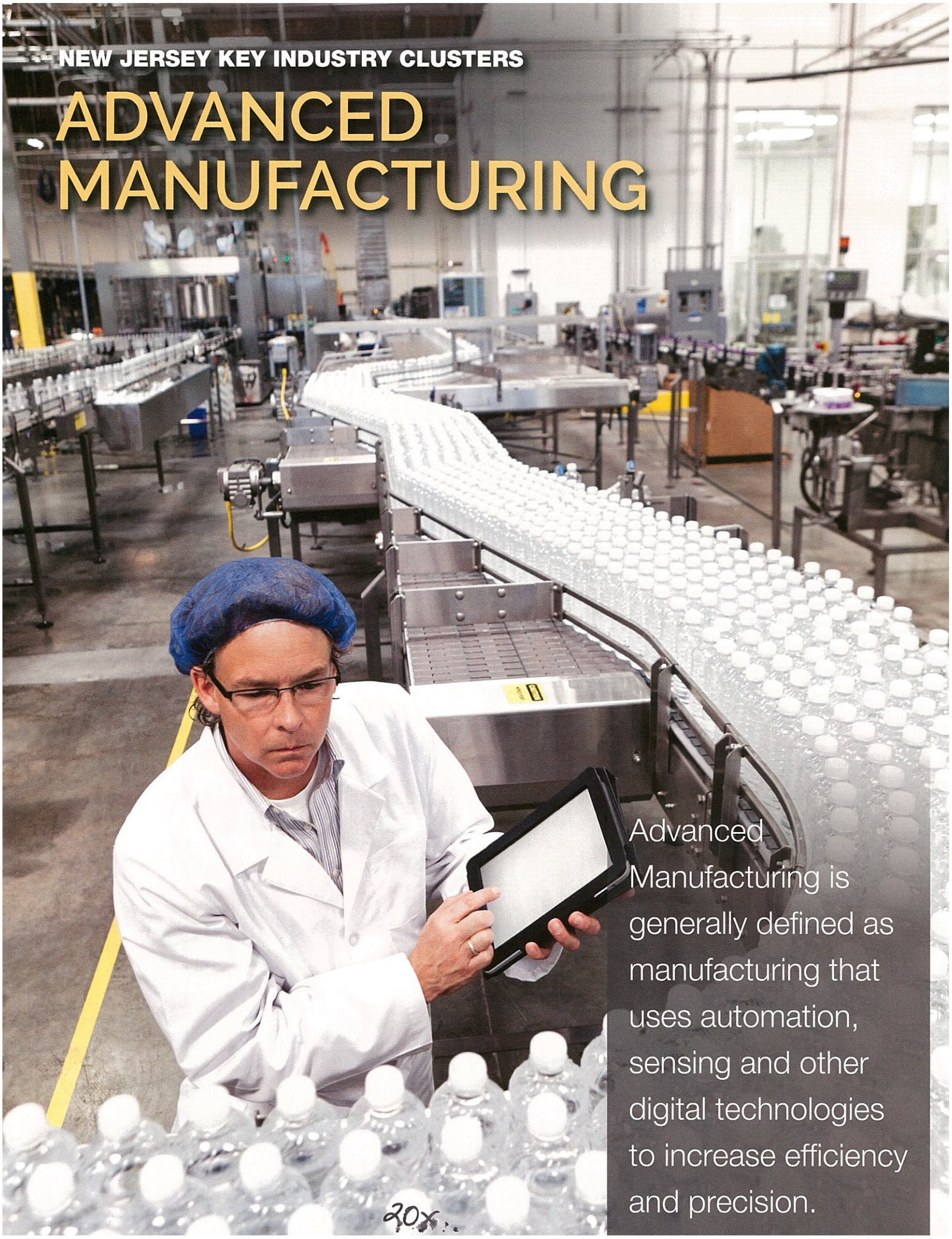
WAGES 2006-2016 DISTRIBUTION/LOGISTICS VS. TRANSPORTATION

Average annual wages for workers in the distribution/logistics component ranged anywhere from 43 percent to 55 percent higher than those for transportation segment workers over the period 2006 – 2016. Overall, total TLD wages increased at an average of 2.1 percent year to year during the same period.



NEW JERSEY KEY INDUSTRY CLUSTERS

ADVANCED MANUFACTURING



Advanced Manufacturing is generally defined as manufacturing that uses automation, sensing and other digital technologies to increase efficiency and precision.

ADVANCED MANUFACTURING

Advanced manufacturing is not a new sector or industry but rather a set of digital tools and conceptual frameworks that can be woven into any manufacturing process. It is a broad term encompassing every modernizing section of the manufacturing industry. Generally it is defined as manufacturing that includes automation, sensing and other digital technologies to increase efficiency and precision.

There is not yet a global center for advanced manufacturing in high value industries, such as consumer electronics and medical devices, and because new skills are needed in these fields, training can make a significant impact on the employment base. Through training and judicious use of its design and engineering talent, New Jersey can cultivate a new workforce opportunity in this sector.

Advanced Manufacturing Industry Cluster

- The advanced manufacturing industry cluster contributed nearly $30.9 billion to New Jersey's Real Gross Domestic Product in 2015, or about 6.1 percent of all state output (latest available from the U.S. Bureau of Economic Analysis).
- Advanced manufacturing employment is primarily comprised of five industry groups: chemical manufacturing (27%), food manufacturing (21%), computer and electronic product manufacturing (14%), fabricated metal manufacturing (13%) and machinery manufacturing (9%). The remaining 16 percent is made up of selected detailed industries.
- The state's advanced manufacturing industry establishments paid a total of more than $13.4 billion in wages in 2015, or roughly 6.5 percent of New Jersey's total wages.

The five primary components of the advanced manufacturing sector with some examples of industries classified within them

FOOD MANUFACTURING
- Bakeries
- Dairy Products
- Fruit & Vegetable Preserving
- Seafood Product Preperation & Packaging
- Flavoring/Spices

CHEMICAL MANUFACTURING
- Basic Chemical
- Pharaceutical & Medicine
- Cleaning Compound and Toiletry
- Paint, Coating & Adhesive

MACHINERY MANUFACTURING
- Industrial Machinery
- HVAC and Commercial Refrigeration Equipment
- Commercial and Service Industy Machinery
- Turbine and Power Transmission

FABRICATED METAL MANUFACTURING
- Architectural and Structural Metals
- Machine Shops and Threaded Product
- Forging and Stamping
- Coating, Engraving and Heat Treating Metals

COMPUTER AND ELECTRONIC PRODUCT MANUFACTURING
- Computers and Peripheral Equipment
- Communications Equipment
- Audio and Visual Equipment
- Semiconductors and Other Electronic Components

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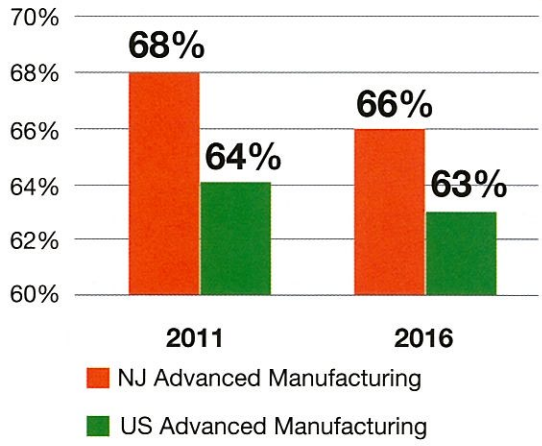
The New Jersey Department of Labor and Workforce Development has classified 209 out of 362 NAICS-based manufacturing industries as advanced.

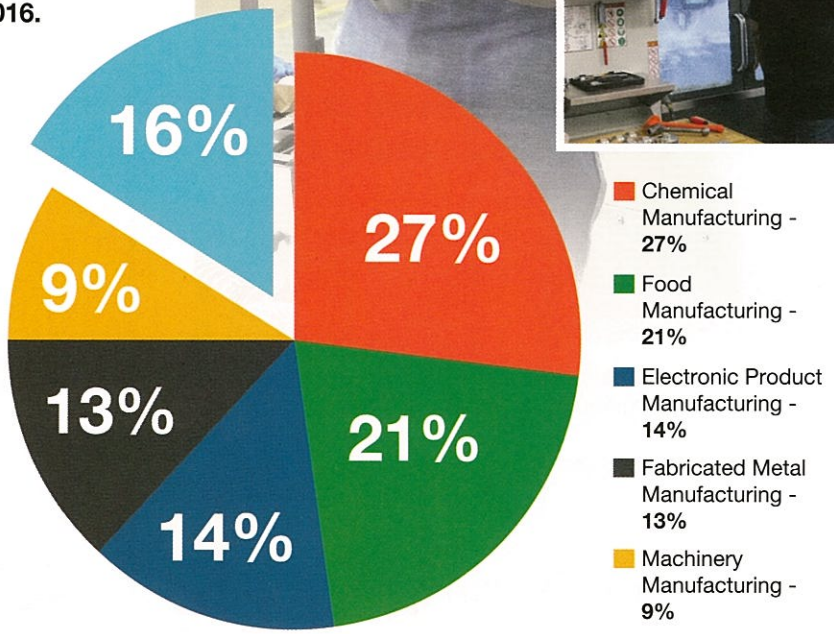
Percentage of Manufacturing Employment Classified as Advanced New Jersey and United States: 2011 & 2016



- Employment in advanced manufacturing industries declined at a faster rate than non-advanced industries in New Jersey from 2011 to 2016, averaging a 1.4 percent loss per year
- In 2016, there were nearly 159,500 people employed in industries classified as advanced manufacturing in New Jersey
- Roughly 66 percent of all manufacturing employment in New Jersey occurred in advanced industries in 2016 versus only 63 percent nationwide

The five major components of advanced manufacturing accounted for nearly 84 percent of its employment in New Jersey in 2016.

- Chemical manufacturing, which includes pharmaceuticals and medicine, employed nearly 43,900 in 2016, which is about 18 percent of all manufacturing in the state
- Food manufacturing is the second largest segment and employed more than 33,300 in 2016
- Computer and electronic product and fabricated metal product manufacturing together employed nearly 43,300 in 2016
- The remaining 16 percent of advanced manufacturing employment is comprised of a group of industries producing goods such as glass and glass products, electrical equipment, transportation equipment, and medical instruments and devices



Employment Distribution of Advanced Manufacturing New Jersey, 2016

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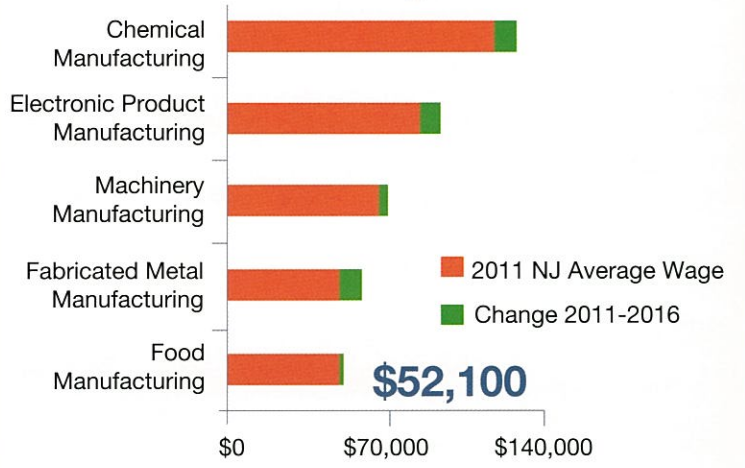
Annual average wages in New Jersey among the five main components of advanced manufacturing have averaged 0.6 percent annual growth from 2011 to 2016.

Annual Average Wage of Major Components of Advanced Manufacturing
New Jersey, 2016

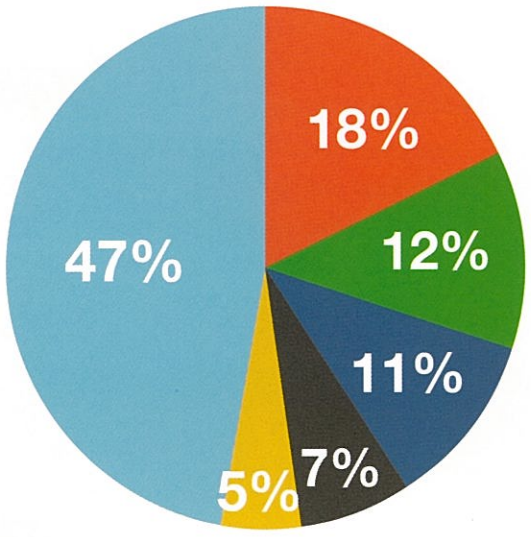


- The chemical manufacturing industry earned nearly twice as much as the private sector state average in 2016, and averaged annual increases of 0.9 percent from 2011 to 2016
- The higher annual average wages paid in both chemical and computer and electronic product manufacturing are reflective of the greater composition of jobs requiring higher educational levels
- The skill requirements at machinery and fabricated metal product manufacturing establishments are increasing quickly, and wages should reflect that over time

These detailed industries make up the roughly 25,520 workers employed in the "other" advanced manufacturing component.

- Nearly half of these "other" workers are employed in the medical equipment and supplies manufacturing industry, which tends to have very high annual average wages and are primarily located in northeast New Jersey
- Glass and glass product manufacturing is a vital industry in New Jersey unique mainly to its southern counties

Breakdown of Employment of "Other" Advanced Manufacturing
New Jersey, 2016



- Glass and Glass Product Manufacturing - **18%**
- Petroleum and Coal Products Manufacturing - **12%**
- Other Motor Vehicle Manufacturing - **11%**
- Electrical Equipment Manufacturing - **7%**
- Aerospace Product and Parts Manufacturing - **5%**
- Medical Equipment and Supplies Manufacturing - **47%**

NJMEP

Helping New Jersey Manufacture Success

NJMEP

NJMEP is a private, not–for-profit organization that improves the profitability and competitiveness of New Jersey's manufacturers. Backed by the National Institute of Standards and Technology (NIST), NJMEP enables organizations to enhance their productivity and efficiencies, reduce costs, and improve employee performance.

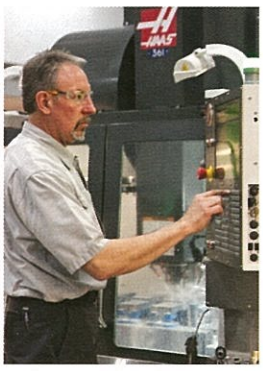
Through assessments and analysis, NJMEP is able to provide business owners an in depth view of their own organization that often exposes vulnerabilities that management is not aware of. Simple Tools identify areas where improvements in manufacturing procedures can be accomplished in order to reduce costs, increase sales, or expand into new markets. Graphs, mapping or cost studies help explain the assessment analysis to the manufacturer.

SINCE 2000, NJMEP HAS HELPED MANUFACTURERS REALIZE MORE THAN $3.7 BILLION IN VALUE.

$2.69 Billion	$380 Million	$627 Million	31,963 Jobs	$3.7 Billion
increased sales/revenue	in process savings	in capital investments	created and retained	in realized value

Some of the recommendations made by NJMEP might include:

- Employee and management training
- Structural reorganization
- Change in the corporate image
- Working on organizational communication
- Modification in processes to avoid redundancy
- Design more efficient factories layout
- Improvement in the production capacity
- Reduction of lead times



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PRO-ACTION EDUCATION NETWORK™ BY NJMEP

A model to scale industry-responsive education and training

The ***Pro-Action Education Network***™ represents a statewide, scalable platform to: 1) prepare students and workers to fill open positions that affect the profitability and growth of companies; 2) refresh the skills of incumbent workers to remain globally competitive; 3) assess and pool the demand for education and training across geographic and institutional boundaries; and 4) facilitate collaboration between education and workforce development stakeholders that advances the 65 by '25 Many Paths, One Future campaign.

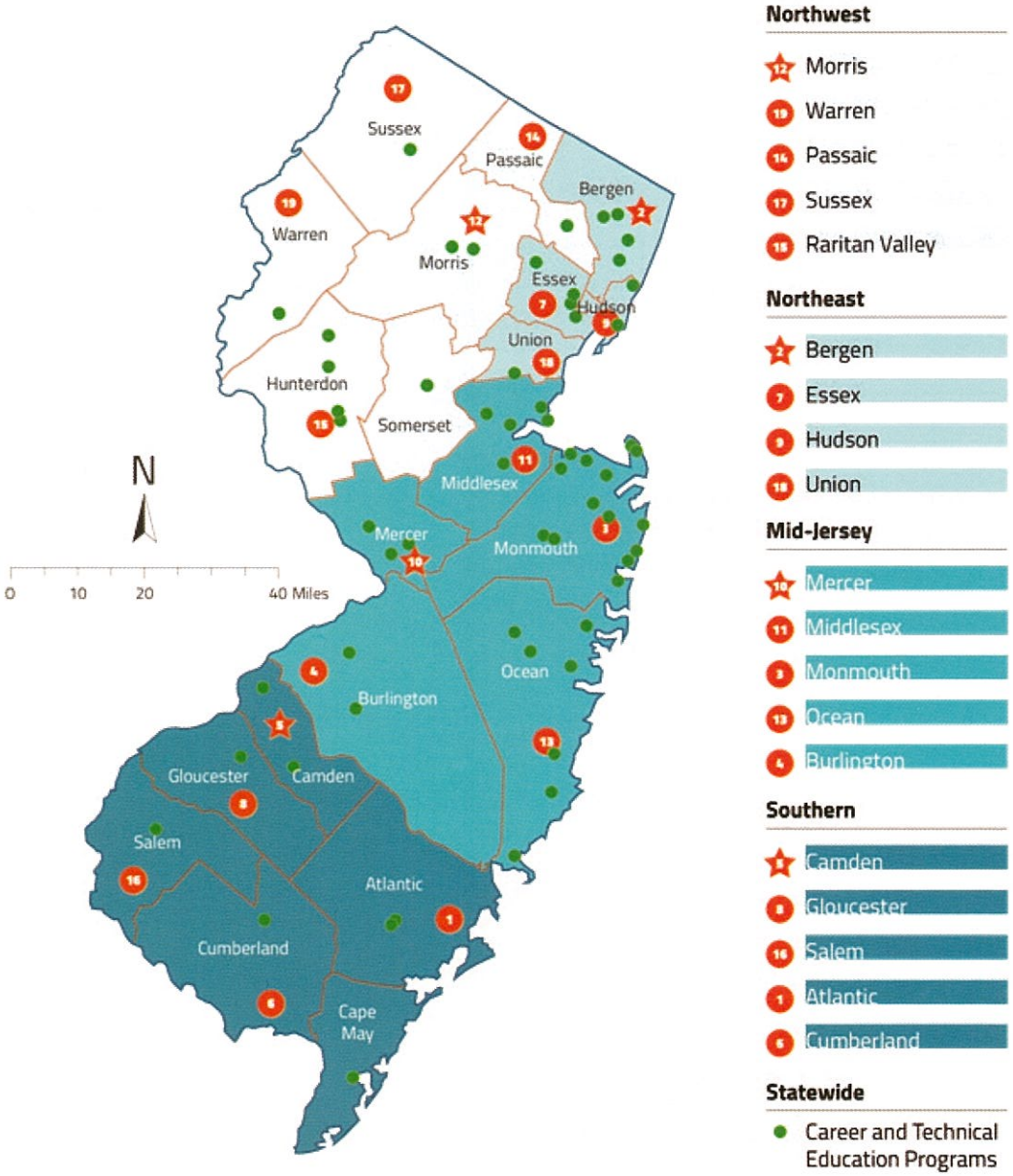
The ***Pro-Action Education Network***™ involves reconfiguring a collaborative partnership between and among diverse resource partners all attempting to help employers address workforce needs. NJMEP holds a unique position to facilitate this effort. NJMEP, an intermediary organization, provides direct service to companies - including training - and connects these companies to resource partners and initiatives that accelerate technology transfer, innovation, growth and profitability.

Plan Highlights

- Creates Working Relationships between:
  - Industry
  - CTE Schools (Vo-Techs)
  - County Colleges
  - Universities
  - Private Industrial Schools
- By developing a Business Structure that provides for:
  - Program Management
  - Business Development w/ an Industry Focus
  - Regional Hubs for WFD & Higher Education
  - Existing Program Usage & New Program Development
  - Resource Leveling
  - Program Validation
  - Data Collection
- Provides actual Career Pathways for all, but with an initial focus on the Underserved – including Urban, Re-Entry, & Alternate Career options.
- The Pro-Action Program is both scalable and re-useable in other industries as Health Care, Tourism, Retail, etc.
- Implements current National Credentialing Programs (MSSC, NIMS, MHI, etc), and works w/ partners (like TESU) to create 'Stackable' Collegiate Credits to provide for educational growth.
- Combines successful educational offerings that would (also) include Internships, Apprenticeships & OJT efforts that build towards additional Industry Investment.
- Makes the current NJ-DOL programs – Talent Networks (TN's) and Talent Development Centers (TDC's) and make them immediately more effective.

New Jersey career connections

Increasing the synergy of education and training assets in regional clusters will increase access for jobseekers and employers. The work will build upon investments of Talent Networks and Talent Development Centers and connect with Career Centers.



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'MADE IN NEW JERSEY' MANUFACTURING DAY 2017

HIGHLIGHTS FROM MANUFACTURING DAY

Five companies and one individual, out of 24 finalists, were recognized for their contributions to the state's $44.5 billion manufacturing industry at NJMEP's Manufacturing Day celebration held at the Bridgewater Marriott. The annual event, which coincides with National Manufacturing Day and Manufacturing Week, was organized in conjunction with partners *New Jersey Business* magazine, NJBIA and the accounting firm of CohnReznick as the awards sponsor.

The winners included:

- **Jim Placa of Davion:** The Raymond Hopp Award for Excellence
- **Easterseals:** Innovator of the Year Award
- **Sock Gang LLC:** Manufacturer of the Year (Best Start-up/Young Manufacturing Company)
- **ZaGO Manufacturing:** Manufacturer of the Year (Small Manufacturer)
- **Demountable Concepts, Inc. (DCI):** Manufacturer of the Year (Medium Manufacturer)
- **GGB Bearing Technology:** Manufacturer of the Year (Large Manufacturer)

The daylong celebration featured guest speakers who discussed an array of triumphs and challenges for the manufacturing climate in both the state and nation.

United States Congressman Donald Norcross, for his part, told the audience how he now lives in the Victor condominiums in Camden (once owned by recording industry giant RCA Victor Company). While the recording industry may have evolved, Camden is now a location for new corporate residents, including, but not limited to, Holtec International, a cutting-edge company that is involved with commercial nuclear power, and that hires trained workers such as nuclear certified welders.

Next at the event, a panel discussion, moderated by Anthony Russo, President of the Commerce & Industry Association of New Jersey (CIANJ), featured four state lawmakers who are part of the recently formed bipartisan New Jersey Legislative Manufacturing Caucus.

With a mission to develop strategies to increase manufacturing jobs and make the state more competitive to expand and locate manufacturing companies in the Garden State, the unified theme of the panel was that manufacturers must make their needs, issues and challenges known to the Caucus so it can develop incentives, revise regulations and be mindful of legislation that negatively impacts the industry.

The Legislative Manufacturing Caucus will continue to have panel discussions with manufacturers throughout the state.

Three people and two state organizations were named to the Made in New Jersey Honor Roll for Manufacturing & Stem at the event, receiving plaques for their support of manufacturing. They are: Sivaraman Anbarasan, executive director and CEO of the New Jersey Community College Consortium for Workforce & Economic Development; Judy Savage, executive director of the New Jersey Council of County Vocational-Technical Schools; Ralph Tillinghast, lab director, Picatinny Arsenal Collaboration Innovation Lab, ARDEC, US Army; the New Jersey Department of Labor & Workforce Development Customized Training Team, including Patti Moran and Howard Miller; and the team members of the New Jersey Business Action Center (BAC).

Breakout sessions included topics such as: Disaster Recovery, Business Continuity, Cyber Security: What every company needs to know; Effects of current tax proposals plus bonus topic on new trends in Internet of things manufacturing; Help with recruitment and retention policies for Manufacturing firms; Women in Manufacturing – A Roundtable Discussion regarding Leadership, Developing Your Personal Brand; The Scary Truth About Ghost Assets – How much is your fully depreciated equipment worth?; and Learn how to pass your D.O.L. 401-k Audit with flying colors — and why most companies fail.

28x

MANUFACTURING DAY 2017 WINNERS

The Raymond Hopp Award for Excellence:
Jim Placa of Davion

Innovator of the Year Award:
Easterseals

MFG DAY

Manufacturer of the Year (Best Start-up/Young Manufacturing Company):
Sock Gang LLC

MANUFACTURING DAY 2017 WINNERS

Manufacturer of the Year
(Small Manufacturer):
ZaGO Manufacturing

MFG DAY

Manufacturer of the Year
(Medium Manufacturer):
Demountable Concepts, Inc. (DCI)

Manufacturer of the Year
(Large Manufacturer):
GGB Bearing Technology

NJMEP

Helping New Jersey Manufacture Success

PARTNERS

NJBIA New Jersey Business & Industry Association www.njbia.org

CIANJ Celebrating 90 years of service to business and free enterprise

MORRIS COUNTY CHAMBER OF COMMERCE

ROI roi-nj.com

NRBP NEWARK REGIONAL BUSINESS PARTNERSHIP

Somerset County Business Partnership
Your Chamber of Commerce and more

Remarks of Martin K. Behr III, Esq., CHB before NJMEP Bipartisan Legislative Manufacturing Caucus Hearing at SPEX CertiPrep, 203 Norcross Avenue, Metuchen, NJ, on Tuesday, August 14, 2018

Topic

Tariffs

Issue

U.S. Customs and Border Protection (CBP) at the Port of New York/Newark (4601) and other ports injuring importers of honey by the agency's wrongful determinations via laboratory testing that the country of origin of imported honey shipments is the People's Republic of China (PRC), determinations that cause CBP to apply harsh anti-dumping duties to import shipments, all of which result in the loss of badly needed foreign honey shipments for American food processors, distributors, retailers, and American consumers, along with the financial ruination of many honey importers.

I. Honey Production and International Trade

Today, honey is one of the last untreated natural foods. At present the annual world honey production is estimated at about 1.66 million tons, which is less than 1% of the total sugar production.

The People's Republic of China (PRC) is the leader in honey production and honey export.

The United States and Germany are the biggest honey importers. Germany is importing three (3) times more than it is producing. However, it re-exports a good part of the imported raw honey as conditioned or packed honey. Other big honey importers are the United Kingdom and Japan. Japan is importing fifteen (15) times the quantity of honey it produces.

Like the United States, many western European countries have a low degree of honey self- sufficiency and must import most of their honeys. In Europe, Greece and Hungary have a high self-sufficiency. They are net exporters of honey.

The important honey export countries like Argentina, PRC, Mexico and Australia all have a high degree of self-sufficiency, but their consumption of honey per capita is very low.

II. Honey

Honey is a high-value-added product, mostly for its valuable nutritional and medicinal qualities. These properties are determined, among others, by mineral components which

depend on type and origin, thus attracting the interest of researchers (and CBP) in addressing its geographical origin.

It is well known that some of the components of honey are due to maturation. Others are added by the bees and some of them are derived from plants. One of the difficulties in analyzing honey is that it can come from different floral sources and that mixtures are not always well known. Also, honey samples from the same floral source can vary due to seasonal climatic variations.

On of the main methods of adulterating honey consists of diluting honey with water and adding sugars and syrups. In recent years, however, there has been a rising presence of mono-floral honeys in markets. These are more expensive than multi-floral honeys, so the possible adulteration by honey mixtures must be controlled. As a result, there have been many attempts at using trace-element methods in order to examine and understand the mineral profile of honey for the purpose of authenticating its country of origin.

III. Food Origin

This refers to the place or origin in which food (like honey) or its ingredients were produced. It also refers to the botanical species and/or raw materials used. A tool for covering these prerequisites is traceability. Traceability in most developed countries is a legal obligation of production and marketing. Traceability is also a legal obligation of U.S. food importers.

Traceability means the path that led the product and its ingredients from its initial origin to the point that it becomes available to the final consumer, aka the ultimate purchaser.

However, the systems involved in defining traceability are only as strong as their weakest link. While most U.S. food importers of honey can and do establish traceability via invoices, packing lists, bills of lading and air waybills, certificates of origin, laboratory certificates (say, from Intertek), banking records etc., CBP now often claims that these proofs are insufficient. CBP claims that it can establish the country of origin of an imported honey shipment via a scientific method that establishes fool-proof country-of-origin determinations. This is done via trace-metal analysis. This involves the use of ICP-MS.

IV. How Honey is Handled by CBP

The proper classification of the multi-flora (aka polyflora honey) is in subheading 0409.00.0045 of the Harmonized Tariff Schedule of the United States (HTSUS), which carries a duty rate of 0.019 a kilogram. While imported honey is also subject to a Honey Fee of 0.033069 a kilogram, imported honey is subject to U.S. Department of Commerce Anti-Dumping (ADD) Order A-570-863 if the country of origin of the honey is the PRC.

Honey, c/o PRC, is subject to ADD, which results in the application of harsh additional duties on honey. c/o PRC. The additional duty is $2.63 per kilogram.

An anti-dumping duty is a protectionist tariff that a domestic government imposes on foreign imports that it believes are priced below fair market value. Dumping is a process where a company exports a product at a price lower than the price it normally charges in its own home market.

Unfortunately, many honey importers have and continue to have their honey tested by CBP for determining the country of origin of the honey. For obvious reasons, CBP ordinarily finds via use of ICP-MS that the trace metals found in the sampled honey means that the country of origin is the PRC. This means that ADD Order A-570-863 is applicable.

V. ICP-MS and Honey

Inductively coupled plasma mass spectrometry (ICP-MS) is a powerful tool for the quantitative determination of a range of metal and non-metal elements. CBP claims that ICP-MS trace metal analysis can prove the geographical origin of mono- and poly-flora honey. In a nutshell, CBP contends that plants draw up through their roots metal and non-metal elements that are expressed in the pollen collected by honey bees, which is then expressed again in the honey made by the bees, which can be sampled and analyzed by the agency. The types and degrees of metal found in the sampled honey are contrasted against some sort of sample database that CBP claims to possess. Contrast yields a conclusive determination, one that is almost always at odds with the importer's claim, which is supported by all kinds of records that the agency ignores.

In recent years, the ICP-MS technique, used for food analytical traceability has been successfully applied to food products such as onions, nuts, tomatoes, beverages, and certain oils to determine their geographical or country of origin.

There is no scientific evidence to support CBP's claim that poly-flora honey can be determined via ICP-MS trace metal analysis.

VII. ICP-MS Issues

This technique yields incorrect results because but not limited to the following factors:

1. Clean-lab conditions, reagents, chemicals and all required accessories for clean room and chemical lab must be accurately evaluated, chosen, acquired and used in connection with the testing of honey.

2. The set-up and optimization of the ICP-MS Lab must include the validation of the analytical methods for elemental analysis based on Linearity, Accuracy, Precision, Limit of detection, Limit of quantification, Repeatability and Reproducibility determinations.

3. Soil Sampling:

35x

a. Location of sampling (e.g., reference to grid location, maps, photographs, location in a room);
b. Date and time of sample collection;
c. Sample matrix (e.g., surface water, soil, sediment, sludge, etc.);
d. Suspected radionuclide constituents;
e. Sample-specific ID;
f. Sample volume, weight, depth;
g. Sample type (e.g., grab, composite);
h. Sample preparation used (e.g., removal of extraneous matter);
i. Sample preservation used;
j. Requested analyses to be performed (e.g., gross beta/gamma, gamma spectroscopy for a specific radionuclide, radiochemical analysis);
k. Sample destination, including name and address of analytical laboratory
l. Sample chain of custody
m. Sample equipment
n. Sample equipment decontamination

4. Plant Sampling: Questions of all types abound regarding the plants (the nectar sources) foraged by the bees.

5. Honey Sampling: Questions of all types abound regarding honey samples collected, preserved, and analyzed.

6. Qualifications of the CBP lab technician.

VIII. CBP Lab Reports

CBP, through its Laboratory and Scientific Services, fails to provide needed laboratory information, which will only be provided to a honey importer upon a Freedom of Information Act (FOIA) Request. The problem with a FOIA Request is that CBP does nor act quickly enough for an importer to make much use of the agency-provide information before the importer has to file a protest (a written objection) with CBP challenging the agency's determination that the country of origin of the honey is the PRC. The importer has 180 days from the day CBP "liquidates" (or closes) the import entry file (that now indicates that the honey is subject to ADD) to file a protest.

IX. What CBP Should Do -- Possible Solutions

- Not require an aggrieved importer to file a FOIA Request for the laboratory report concerning the honey that CBP claims is subject to ADD because trace metal analysis indicates that PRC is the country of origin.

- Laboratory reports should be provided to aggrieved importers as soon as CBP determines that the declared country of origin is the PRC.

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- CBP should test honey samples as per the declared country of origin and not just the country chosen by the agency.

- Issued laboratory reports should have affixed to them necessary certificates pertaining to clean lab conditions, soil samples, plant samples, functionality of ICP-MS etc.

- Provide appropriate trace metal profiles to aggrieved importers without delay

- Provide complete CV or resume of laboratory specialist(s) involved to aggrieved importer.

- Provide an opportunity for aggrieved importer to challenge laboratory findings without having to resort to the courts.

About Martin Behr

Mr. Behr is a customs and international trade lawyer admitted to practice in New Jersey, New York and Pennsylvania, and before the U.S. District Court for the District of New Jersey and the U.S. Court of International Trade. He received a bachelor of arts degree from Rutgers University, a master of public administration degree from Fairleigh Dickinson University, and law degree from Rutgers School of Law - Newark. He is also a licensed U.S. Customs Broker.

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Mr. Behr is also a former special agent with the U.S. Department of Defense, assistant prosecutor with the Office of Hudson County (NJ) Prosecutor, and executive with a global FMC-licensed Ocean Transportation Intermediary (NVOCC). Mr. Behr is also a member of Accord Import Export Solutions LLC, an international trade consulting group of which Libra Technical Center LLC, an FDA-registered analytical, testing, and development laboratory, is a member. Both Accord and Libra are located in Piscataway, NJ.