



New Jersey's Biopharmaceutical Life Sciences Cluster

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NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Analysis



This presentation provides information about New Jersey's *"Biopharmaceutical Life Sciences"* Cluster. It includes:

- The overall impact.
- An introduction & methodology.
- Statewide employment, establishment, concentration, wage & trend analysis.
- Staffing patterns.
- Regional employment, establishment, wage data, and occupation & skills in demand.
- Regional economic developments.
- New Jersey challenges and outlook.
- Resources and fast facts.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Overview



**What does the
Biopharmaceutical
Life Sciences
Cluster
offer New Jersey ?**

Lets take a look!!



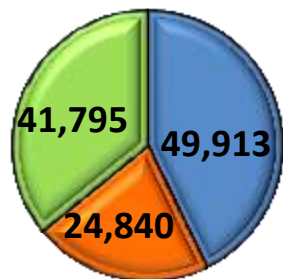
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Overall State Impact



The Biopharmaceutical Life Sciences Cluster has had an enormous impact on providing high quality jobs and adding significant value to the State's economic activities. Highlights (in 2012) included:

Employment

- Pharmaceuticals
- Medical Devices
- BioTech R&D



Employment total averaged 116,548; (3.6%) of all private sector workers in the state. *Nationally*, the proportion was just 1.9 percent!

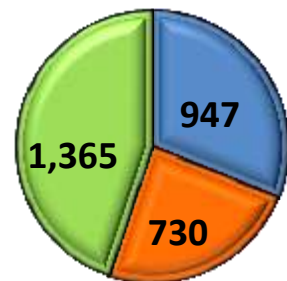
□ **Well-paying Jobs:** Paid nearly \$14.8 billion in annual payroll; 8.0 percent of the state's total wages.

Establishments over the past five years (2007-2012) increased by 181 (or 6.3%) with R&D / medical labs and drugs & pharmaceuticals leading the way increasing 10.3% & 9.1%, respectively.

□ **Investment Added Value:** Industry R&D was \$18.4 billion, ranked 2nd most among the 50 states. (NSF, 2009)

Establishments

- Pharmaceuticals
- Medical Devices
- BioTech R&D



❖ **Added to Export Opportunities:** New Jersey's Biopharmaceutical Life Sciences exported over \$5.2 billion in manufactured goods worldwide in 2012. (U.S.Census, Foreign.Trade.Div.)

❖ **Added to Growing the State's Economy:** This cluster accounted for \$23 billion (nearly 5.0%) of New Jersey's gross domestic product. (Source: Rutgers, 2009)



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Major Industry Components



NJ's Biopharmaceutical Life Sciences employment in 2012 was identified within three primary components: pharmaceuticals (42.8%), biotechnology-R&D (35.9%) and medical device manufacturing (21.3%). The breakdown of the major segments are:

PHARMACEUTICALS

- Pharmaceutical & Medicine Mfg.
- Soap & Cleaning Compound & Toilet Preparation Mfg.
- Drugs & Druggists Sundries Wholesalers

Pharmaceutical component: Establishments that are primarily engaged in manufacturing or distribution of drug related products. It accounted for 31.1 percent of New Jersey's establishments in this cluster in 2012. It also accounted directly for 49,913 high quality jobs throughout the State.

Biotechnology (R&D) component: Consists of services related establishments primarily engaged in scientific research, development, analytic and/or diagnostics. In 2012, it averaged 1,365 establishments with 41,795 workers.

BIOTECHNOLOGY (R&D)

- Research & Development (R&D) in Physical, Engineering, Life Science & Social Science.
- Medical & Diagnostic Labs.

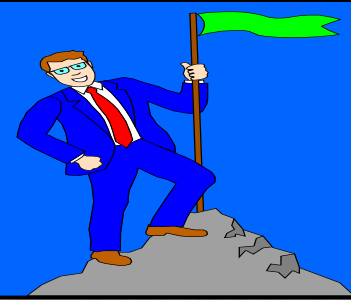
MEDICAL DEVICES

- Navigational, Measuring, Electromedical & Control Instruments Mfg.
- Medical Equipment & Supplies Mfg.

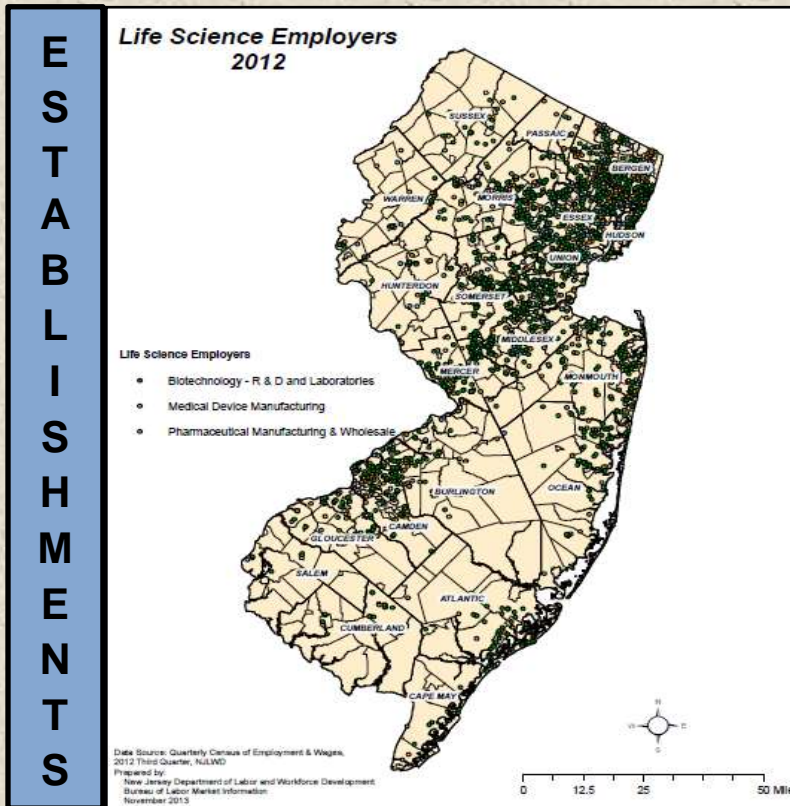
Medical device component: Establishments primarily engaged in manufacturing medical equipment and supplies. In 2012, this component consisted of an average 730 establishments in New Jersey employing 24,840 workers.



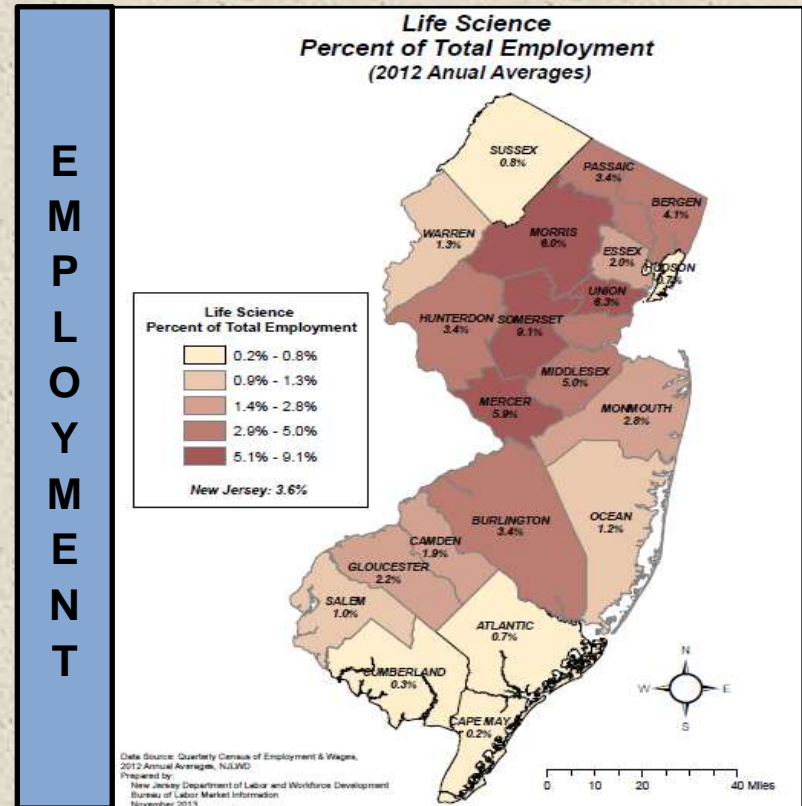
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Concentration



New Jersey had over 3,000 establishments directly engaged in it's highly concentrated Biopharmaceutical Life Sciences Cluster employing more than 116,500 workers in 2012.



This cluster accounted for 1.2 percent of the total share of all the private sector establishments in New Jersey.



Employment in this cluster accounted for 3.6 percent of the State's workforce averaging 116,548 jobs.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Analysis



Analysis of New Jersey's Biopharmaceutical Life Sciences Cluster

Most data sets analyzed for this presentation are available on [New Jersey Department of Labor & Development's website](#) located under [Labor Market Information](#).



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Introduction



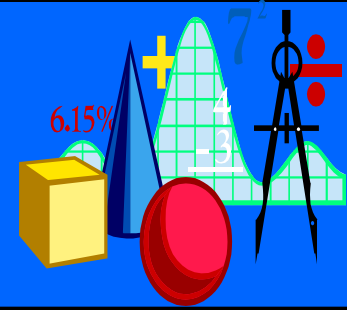
Over the past three years, New Jersey has been engaged in bringing together its pharmaceutical, medical device and biotechnology industries, along with related organizations, to develop and support the “*New Jersey Biopharmaceutical Life Sciences Cluster.*” This ‘cluster’ initiative provides a interconnected approach to draw upon each of the industry sector’s strengths, while at the same time jointly confronting many of the same interrelated issues and challenges. The concept serves to empower each industry group as a whole, while developing like-minded strategies in a unified manner to help companies grow their core business, along with related jobs, in the State.

❖ New Jersey's Biopharmaceutical Life Sciences Cluster consists of three key industry components; **pharmaceutical** (drug manufacturers & wholesalers), **medical devices** (medical equipment and supplies manufacturers), and **biotech** (scientific research & development (R&D) services and medical & diagnostic laboratories).

This overall approach has been maximizing and strengthening these related industries by using collaboration of the group’s combined (‘cluster’) energies to highlight and fortify points of related interest. Working together, the development of partnerships and alliances has helped in providing increased value to companies and organizations associated with this cluster. The results from this concept has been positive. It has helped to generate jobs, along with new employment opportunities, for New Jersey’s workforce. The outcome has also contributed significantly towards growing New Jersey’s economy!



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Methodology



The information presented within this presentation was compiled mostly by utilizing various government data sets. *For consistency*, the data has been filtered using the North American Industrial Classification System (NAICS) for the purpose of analyzing this cluster and (when available and/or applicable) the sectors and industries.

New Jersey's Biopharmaceutical Life Sciences Cluster is structured using three (color highlighted) components: **pharmaceuticals**, **medical devices**, and **biotech**. Each component is comprised of industry *groups* (based upon 4-digits NAICS). The groups are each comprised of industry *sectors* (5-digits). Within each sector are industry *subsectors* (6-digit). *(Due to disclosure issues, some drilled down data cannot be released nor discussed in detail.)*

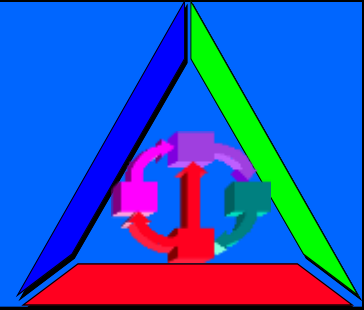
*Note: **Life science** is not an industry, rather, it is a term used to capture companies that are focused on 'life-processes.' Traditionally, these companies could have been categorized within one of the aforementioned components, however, many are changing their focus to adjust to the evolving business environment. As a result, companies are crossing the typical industry boundaries, making it increasingly unclear as to which component they belong too. Therefore, to ensure continuity, as well as exclude assumptions, company data used was based upon its establishment's primary NAICS Code. And therefore, the term 'life-science' will not be explicitly emphasized.*

Additional information about the North American Industrial Classification System (NAICS) is available at: <http://www.census.gov/eos/www/naics/>



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Synergy



New Jersey's unique and vast concentration of biotechnology, medical device, and pharmaceutical companies, along with its highly-educated and talented labor force, contributes immensely towards positioning the Garden State as a leader in the Biopharmaceutical Life Sciences Cluster. The synergy of each adds enormous value:

BIOTECHNOLOGY: New Jersey has a long tradition of advanced scientific research and developments, along with countless innovative breakthroughs and discoveries. This has been achieved largely because New Jersey has had, and continue to have, some of the greatest scientist including: Albert Einstein, Thomas Edison, Lloyd H. Conover, Sol J. Barer, Ph.D. and Julie J. Brown, Ph.D. As a result of the Garden State's well-educated and highly-skilled workforce, the State's biotechnology industry continues to rank among the best in the nation. This sector has contributed towards earning New Jersey the distinct honor of being known as *"The Innovation State"* and *"Einstein's Alley."*

MEDICAL DEVICE: Part of the State's Life Sciences group, this segment contributes towards New Jersey being *"home to more pharmaceutical and medical device companies than any other state in the country, or any other country in the world."*¹ Its no wonder the Biotechnology Industry Organization (BIO) refers to the state as *"the epicenter of the global pharmaceutical and medical technology industry."*²

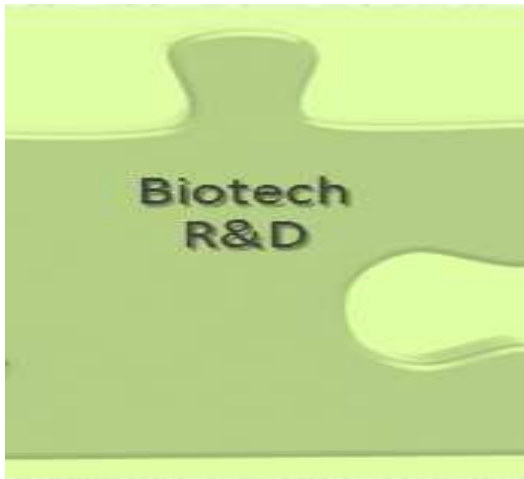
PHARMACEUTICAL: New Jersey's highly revered drug industry, with an exceptionally highly-educated and well-developed workforce, has earned the State the distant honor of being globally known as the *"Medicine Chest of the Nation."*



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER



Over *the years*, as New Jersey's pharmaceutical, biotechnology and medical device industry groups have each established an outstanding reputation for the State...



“The Innovation State” and
“Einstein's Alley”



“Medicine Chest of the Nation”



“The epicenter of the global pharmaceutical & medical technology industry”

... New Jersey has traditionally supported the growth of these industries as stand-alone groups!



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER



...But now a more effective method has been implemented!!!

New Jersey is linking the analogous relationships and attributes of the related industry groups through a cluster initiative. It is building upon the strength and fortitude of each of the three components. Combined, it strengthens the sectors by setting a stronger foundation to build upon. This, in turn, is helping to create and expand business opportunities. The ripple effect is generating tremendous opportunities for New Jersey's labor force, as well as the State's economy.





NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Major New Jersey Employers



Some of New Jersey's well-known employers in this cluster include:

New Jersey: Home of Pharmaceutical Industry

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> • Pharmaceutical & Medicine Mfg. • Soap & Cleaning Compound & Toilet Preparation Manufacturing. • Drugs & Druggists Sundries Wholesalers. | <ul style="list-style-type: none"> • Bayer HealthCare Pharmaceutical • Bristol-Myers Squibb Co. • Daiichi Sankyo • Ethicon, Inc. • Johnson & Johnson | <ul style="list-style-type: none"> • L'Oreal, USA, Inc. • Merck & Co. Inc. • Novartis Pharmaceuticals • Pfizer, Inc. • Sanofi-Aventis, U.S., Inc. |
|---|---|--|

New Jersey: Home of Biotech (R&D) Industry

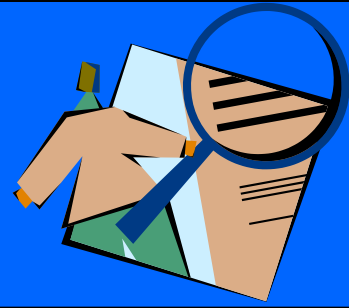
- | | | |
|---|---|---|
| <ul style="list-style-type: none"> • Research & Development (R&D) in Physical, Engineering, Life Science & Social Science. • Medical & Diagnostic Laboratories. | <ul style="list-style-type: none"> • Celgene Corp. • DSM North America • Enzon Pharmaceuticals, Inc. • GE Healthcare Bio-Sciences Corp. • Ikaria | <ul style="list-style-type: none"> • ImClone System • LifeCell Corp. • PTC Therapeutics Inc. • Quest Diagnostics • Siemens, Corp. Research |
|---|---|---|

New Jersey: Home of Medical Device Industry

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> • Navigational, Measuring, Electromedical & Control Instrument Manufacturing. • Medical Equipment & Surgical Supplies Manufacturing. | <ul style="list-style-type: none"> • Becton Dickinson & Co. • C. R. Bard, Inc. • Integra Life Sciences • Micro Surgical Components • Novo Nordisk, Inc. | <ul style="list-style-type: none"> • Ortho-McNeil-Janssen • Oticon, Inc. • Roche Molecular Systems • Siemens Medical Solutions • Stryker Orthopaedics |
|---|--|--|

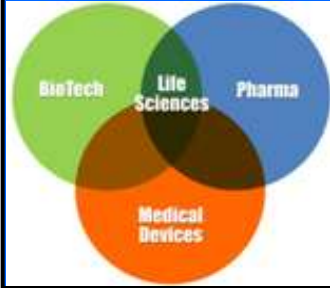


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

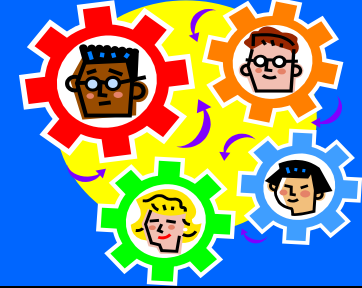


Analysis: Industry Details

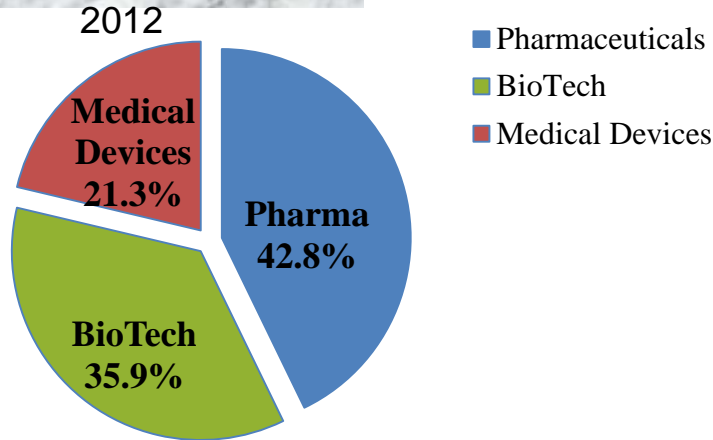
New Jersey's Biopharmaceutical Life Sciences Cluster



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Employment

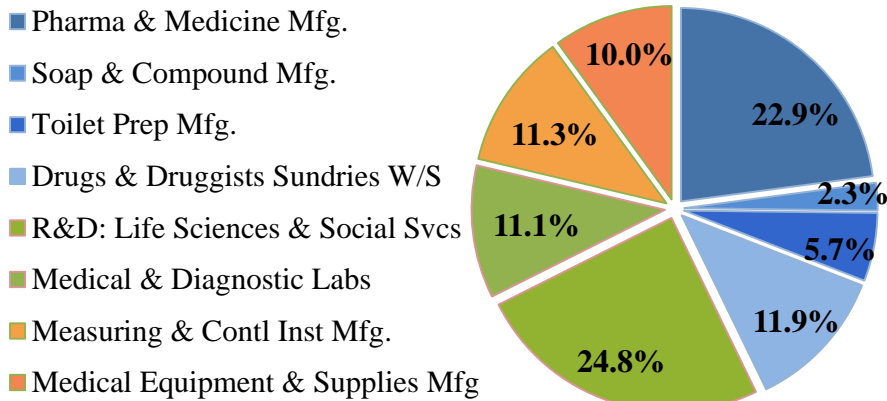


Cluster Employment



(SOURCE: New Jersey Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 Annual Averages: 4-digits NAICS)

Sector Employment



(SOURCE: New Jersey Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 Annual Averages: 5-digits NAICS)

In 2012, there was an average of 116,548 jobs in this New Jersey cluster. The concentration was as follows:

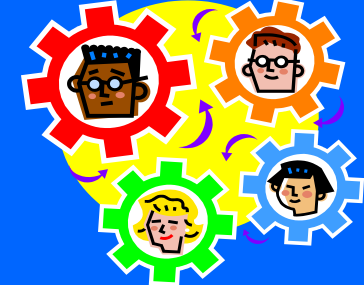
Pharmaceuticals: Two sectors accounted for most of the (81.2%) employment within this component: pharmaceutical preparation manufacturing (53.5%) and drugs & druggists sundries wholesales (27.7%).

BioTech: R&D bio-life sciences related employment accounted for an average of 28,800 of the nearly 42,000 jobs within this component. R&D in physical, engineering & life science led the sector's employment (66.8%) followed by jobs in medical & diagnostic labs (31.0%).

Medical Devices: Employment was closely divided in this component between navigational, measuring, electromedical & controlling instruments manufacturing (53.2%) and medical equipment & supplies manufacturing (46.8%).

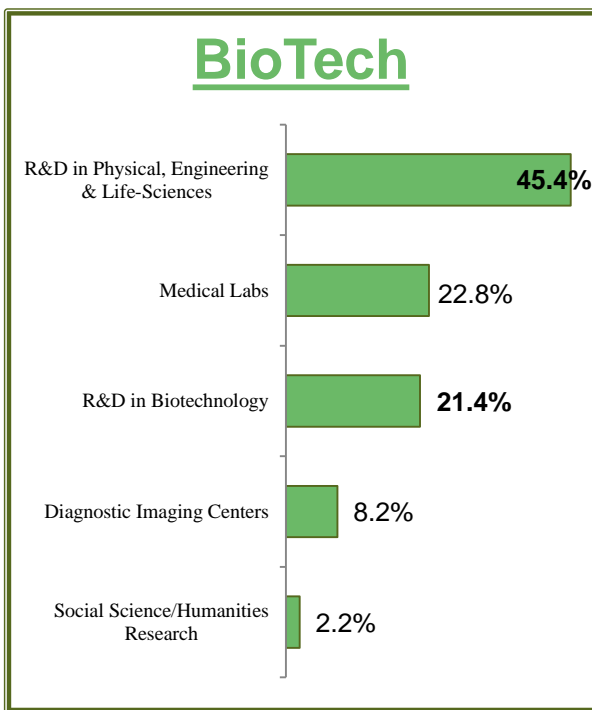
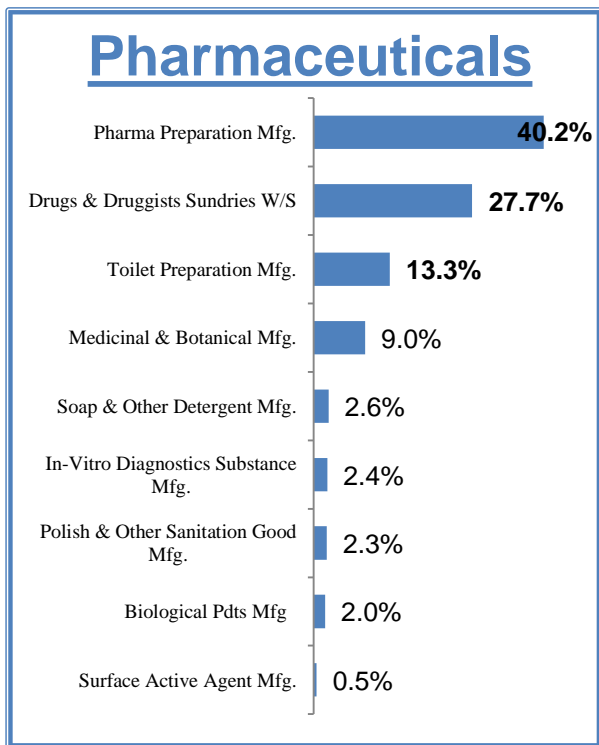


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Sub-sector Employment



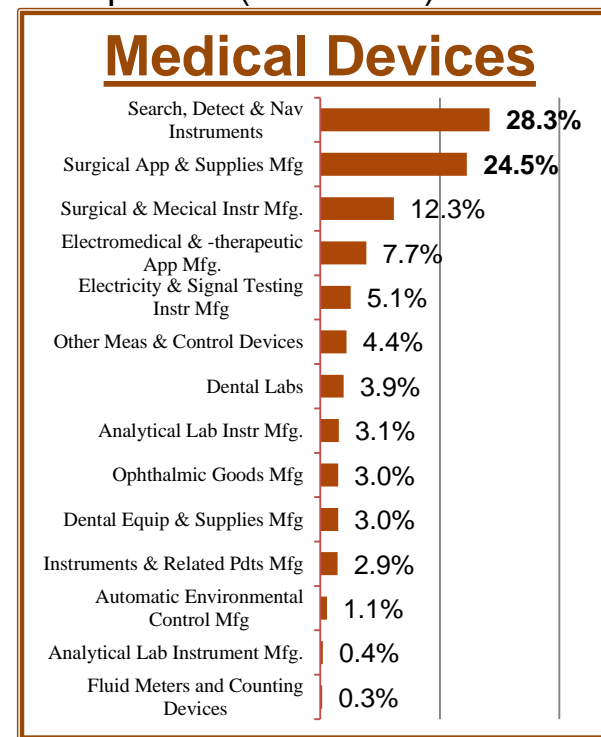
In 2012, the 116,548 jobs within this New Jersey cluster were concentrated in:

Pharmaceuticals: Of the nearly 50,000 jobs in this component, NJ's top three sub-sectors accounted for 81.2% of its average employment (see below):



BioTech: New Jersey's R&D in bio-life sciences related sub-sector employment accounted for nearly 28,000 (66.8%) of the 41,800 jobs within this component (see above).

Medical Devices: Of the nearly 25,000 jobs in this component, more than half (52.8%) were in the top two sub-sectors of this component (see below):



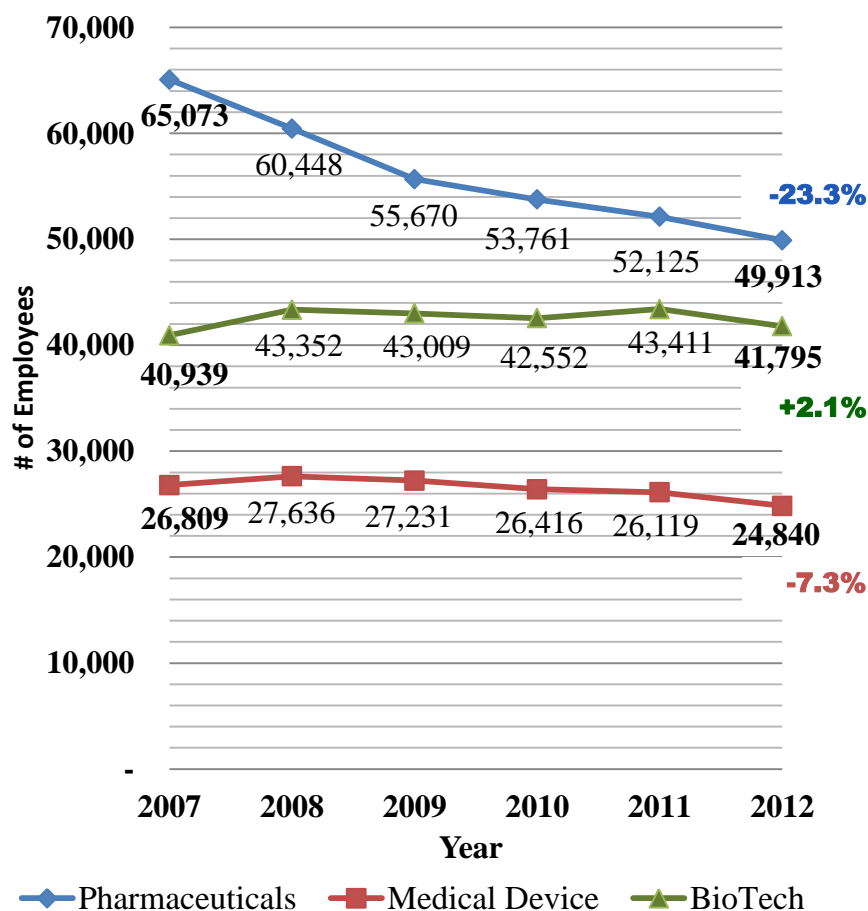


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER 5-Year Employment Trend



5-Year Employment Trend

2007 – 2012



With an average of 116,548 workers employed in this NJ cluster in 2012, the employment over the 5-year period experienced a decline of 12.3 percent.

Pharmaceutical component in 2012 accounted for about 42.8% of this cluster's employment, down from 49.0% in 2007. Net loss of jobs were experienced in the pharmaceutical & medicine manufacturing (-36.8%), along with the soap manufacturing (-14.5%) & toilet preparation manufacturing (-13.5%) sectors. The drugs & druggists sundries wholesalers employment continued to realize a net gain (+15.6%).

BioTech component, which accounted for 35.9% of the cluster's employment in 2012, is up from 2007 (+30.8%). Employment growth was mixed in the R&D industry sectors while medical and diagnostic laboratories grew (+11.5%) over this same period.

Medical Device component accounted for 21.3% of this cluster's jobs in 2012, up from 20.2% in 2007. As employment declined in navigation, measuring, electromedical & control instrument manufacturing over this 5-year period, the medical equipment & supplies manufacturing increased.

(SOURCE: New Jersey Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2007-12 Annual Averages: 5-digits NAICS)

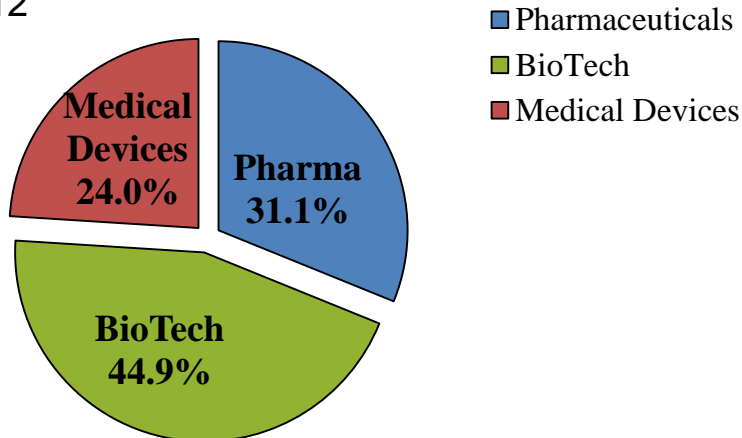


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Establishments



Cluster Establishment

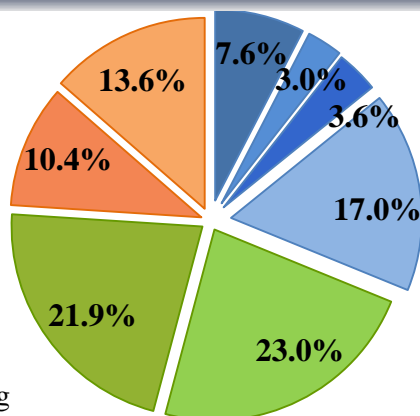
2012



(SOURCE: New Jersey Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 Annual Averages: 4-digits NAICS)

Sector Establishments

- Pharma & Medicine Mfg.
- Soap Compounds Mfg.
- Toilet Prep Mfg.
- Drugs & Druggists Sundries W/S
- Scientific R&D Services
- Medical & Diagnostic Labs
- Measuring & Cont'l Inst Mfg.
- Medical Equipment & Supplies Mfg



(SOURCE: New Jersey Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 Annual Averages: 5-digits NAICS)

New Jersey's 3,042 biopharmaceutical life sciences establishments in 2012 were primarily involved in:

Pharmaceuticals: This component, with 947 establishments, was primarily engaged in two sectors: drugs & druggists sundries wholesalers (54.4%) and pharmaceutical preparation manufacturing (17.6%). (Note: Two of this component's sub-sectors; pharmaceutical & medicine manufacturers and toiletry preparation accounted for 7.7% and 7.3%, respectively, of the nation's establishments.)

BioTech: The 1,365 establishments in this component's sectors were primarily engaged in R&D related bio-life science services (51.3%).

Medical Devices: This component's two sectors consisting of 730 establishments were split between being engaged in medical equipment & supplies manufacturing (56.5%) and navigational, measuring, electromedical & controlling instruments manufacturing (43.5%).



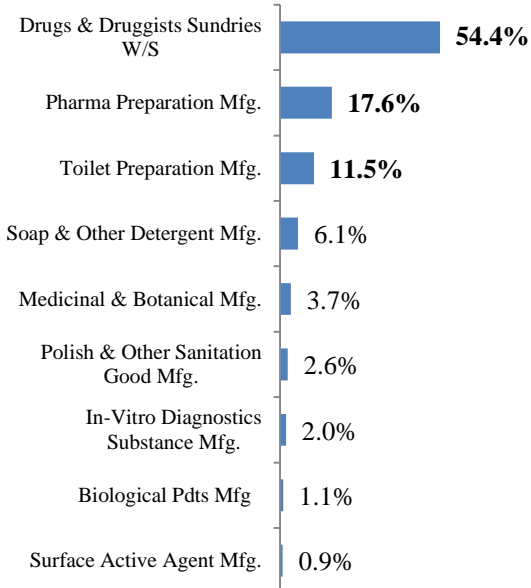
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Sub-Sector Establishments



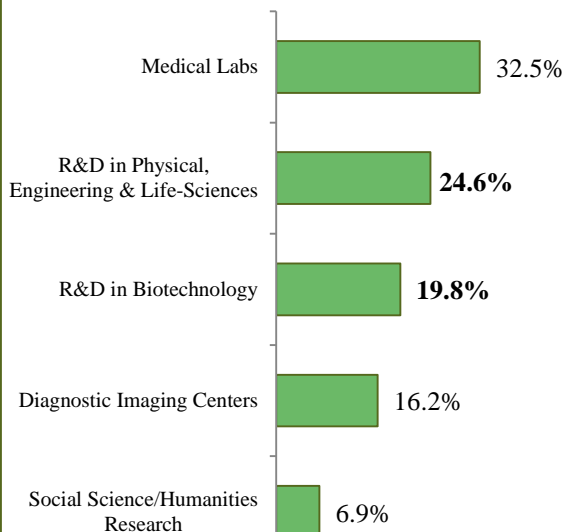
In 2012, New Jersey had 3,042 establishments in this cluster engaged in:

Pharmaceuticals: Consisting of 947 establishments, three sub-sectors accounted for 83.5% of this cluster's activities in New Jersey. (See below)

Pharmaceuticals



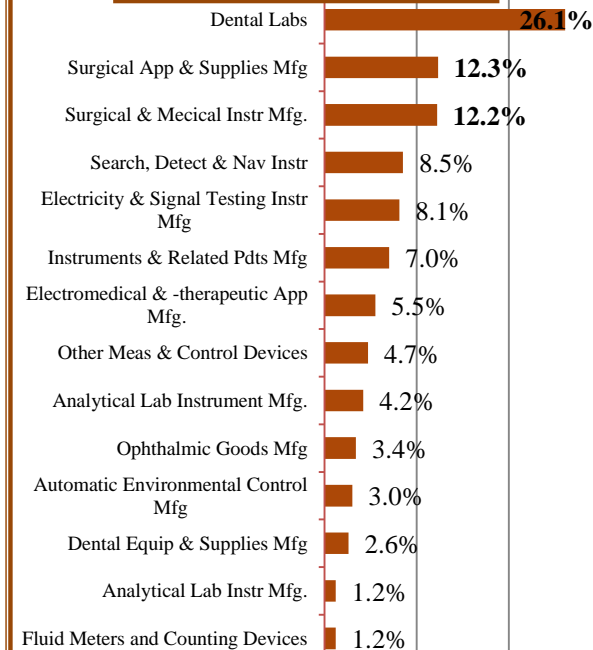
BioTech



BioTech: R&D related bio-life science related service sub-sectors accounted for 44.4% of the 1,365 establishments in this component followed by medical laboratories (32.5%). (See above)

Medical Devices: The majority of the 730 establishments in this sub-sector were engaged in dental labs (26.1%) and surgical & supply related mfg. (24.5%). (See below)

Medical Devices





NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Establishment Concentration

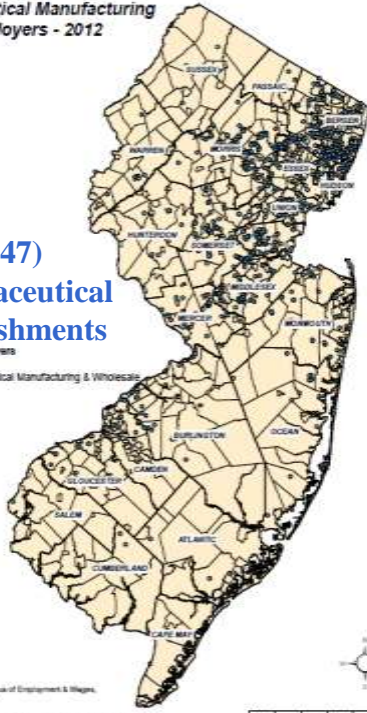


Life Science
Pharmaceutical Manufacturing
Employers - 2012

(947)

**Pharmaceutical
Establishments**
Life Science Employers

- Pharmaceutical Manufacturing & Wholesale



Date Source: Quarterly Census of Employment & Wages,
2012 Third Quarter, NLSUD
Prepared by:
New Jersey Department of Labor and Workforce Development
Bureau of Labor Market Information
November 2013

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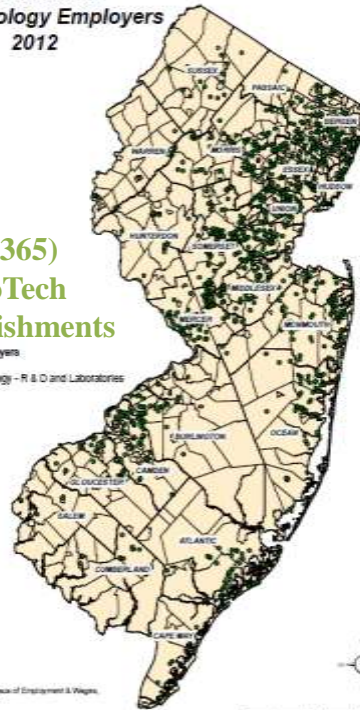
Pharmaceutical establishments have a powerful presence in northern New Jersey - attracted by an excellent labor pool, major universities and access to all modes of superior transportation.

BioTech establishments have a strong presence in New Jersey, especially within the “*Einstein Alley Corridor*” area. Nearby universities and incubators are a significant contributing factor.

Life Science
Biotechnology Employers
2012

(1,365)
**BioTech
Establishments**
Life Science Employers

- Biotechnology - R & D and Laboratories



Date Source: Quarterly Census of Employment & Wages,
2012 Third Quarter, NLSUD
Prepared by:
New Jersey Department of Labor and Workforce Development
Bureau of Labor Market Information
November 2013

0 12.5 25 50 Miles

Life Science
Medical Device Employers
2012

(730)
**Medical Device
Establishments**
Life Science Employers

- Medical Device Manufacturing



Date Source: Quarterly Census of Employment & Wages,
2012 Third Quarter, NLSUD
Prepared by:
New Jersey Department of Labor and Workforce Development
Bureau of Labor Market Information
November 2013

0 12.5 25 50 Miles

Medical Device establishments have a forceful presence in New Jersey, especially located in the northeastern section of the state in the heart of the manufacturing area, adjoining ‘Pharma’ country.

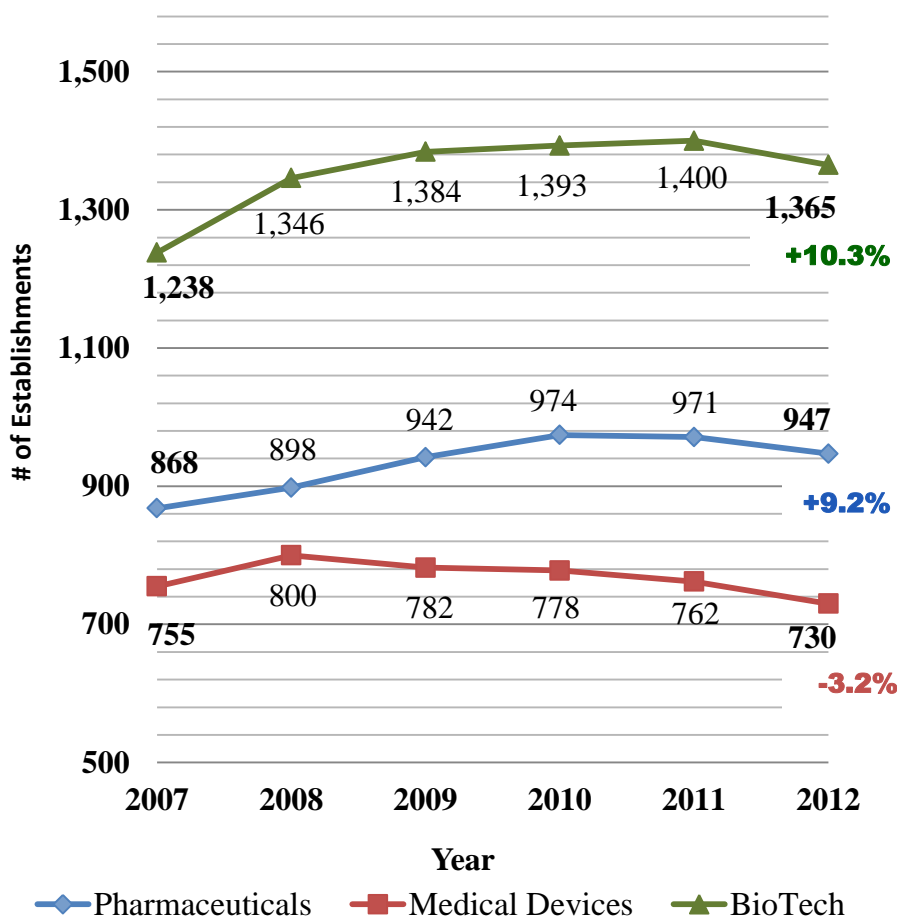


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER 5-Year Establishment Trend



5-Year Establishment Trend

2007 – 2012



There were 3,042 establishments in this cluster in 2012, up from 2,861 in 2007. Over the 5-year period, the cluster's total establishments rose by 6.3 percent.

Pharmaceuticals accounted for 31.1% of the cluster's establishments in 2012, up from 30.3% in 2007. While pharma & medicine manufacturing declined (-5.7%) over this 5-year period, drug wholesaler and toiletry preparation manufacturing realized an increase, 21.4% & 1.0%, respectively.

BioTech accounted for 44.9% of the establishments in this cluster in 2012, up from 43.3% in 2007. All industry sectors realized gains: medical & diagnostic labs (+10.5%); R&D in physical, engineering & life science (+10.1%) and R&D in the social sciences (+8.0%).

Medical Devices averaged 730 establishments in 2012 and accounted for 24.0% of the cluster. Over the 5-year period, this component's 3.3% loss was mainly due to declines in the medical equipment & supplies manufacturers (-7.6%).



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Total Wage Impact



- ❖ While New Jersey's Biopharmaceutical Life Sciences Cluster accounted for only 3.6% of the employment in 2012, wages accounted for 8.0% of the state's total wages.
- ❖ This cluster's total wages from 2007 to 2012, increased by 6.7% or \$923 million, notably adding to the state's economy.
- ❖ Five out of the seven industry groups experienced total wage growth that ranged from +9.8% to an astonishing +51.1%. The top three were: drugs & druggists sundries wholesalers (51.1%), followed by scientific research & development services (30.5%) and medical & diagnostic laboratories. (+21.6%).

(SOURCE: New Jersey Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 Annual Averages: 5-digits NAICS)

Note: Total wages is an important factor to consider because it can be used to:

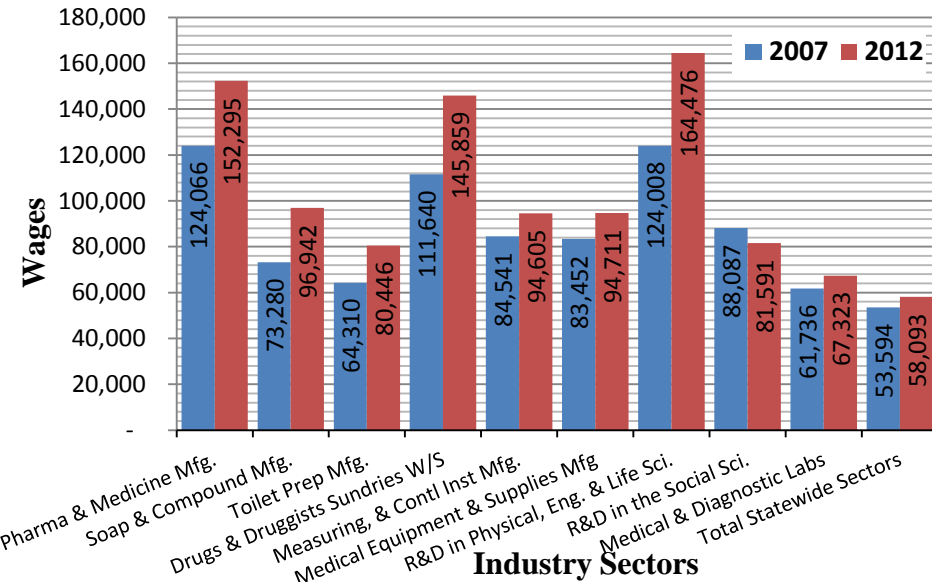
- Determine the value a cluster or industry has in relationship to high paying jobs.
- Anticipate projected state revenues from payroll taxes.
- Help policy makers determine:
 - Type of industries to focus on for attracting and retaining quality jobs;
 - ❖ Type of jobs that likely will be created, expanded and/or retained.
 - Where and how to invest for economic development, education, training programs, etc.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Average Annual Wages



This cluster's average annual wage was \$126,794 in 2012, which was 118.3% higher than the state's total private sector's annual average wage of \$58,093. Independently, all three of this cluster's components had 2012 wages that were significantly higher than the state's total annual average wage; ranging from **62.9% (medical devices)** and **128.2% (biotech)** to **137.5% (pharmaceuticals)**.



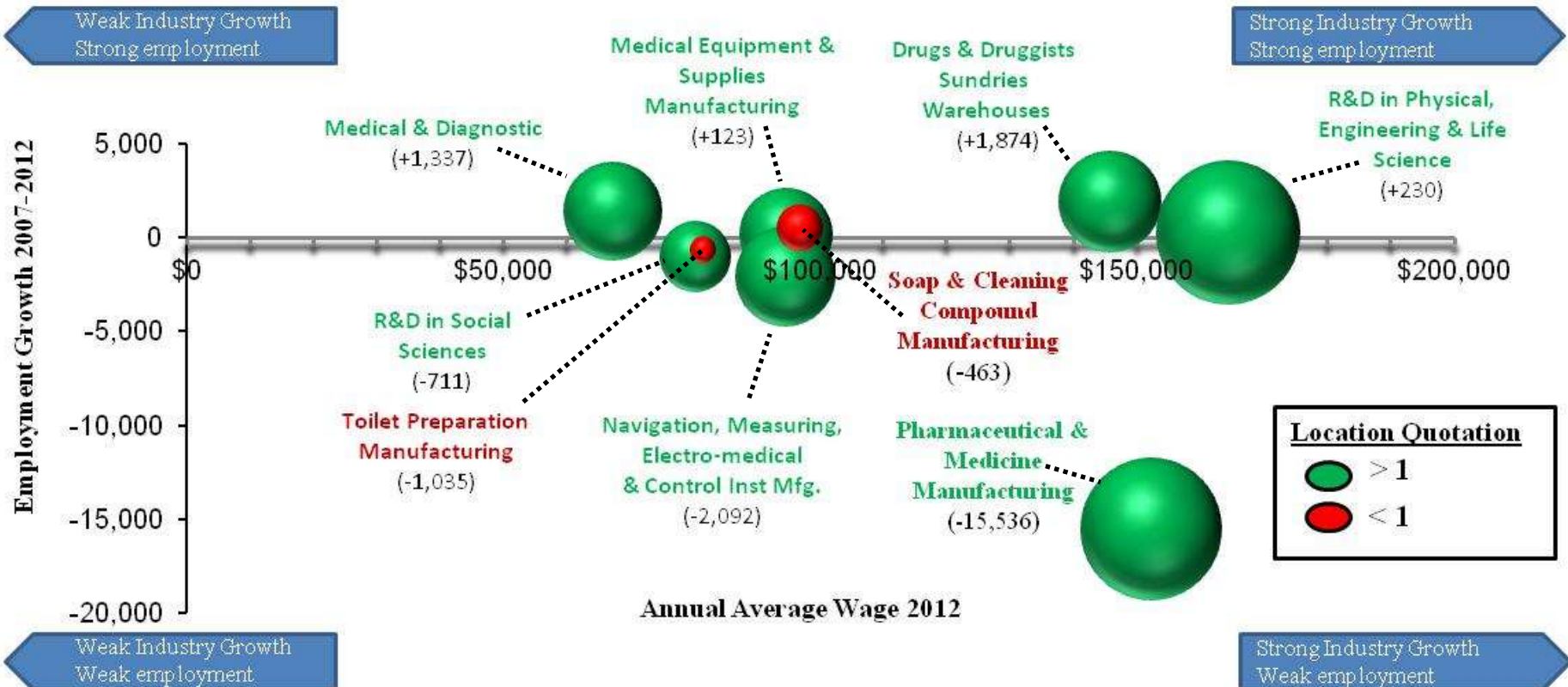
Pharmaceuticals: This component saw annual wages average \$137,949 in 2012. Over the 5-year (2007-2012) period, it increased \$25,691 (or +22.9%). The increases in these industry sectors ranged from +22.8% (pharma & medicine manufacturing) to 30.7% (drugs sundries wholesalers).

BioTech: This component's 2012 annual average wage was \$132,576, up from \$104,922 in 2007. Over the 5-year (2007-2012) period, it increased 26.4%. The industry sectors that grew over this time period ranged from +9.0% (medical & diagnostic labs) to +32.6% (R&D in physical, engineering & life science).

Medical Devices: This component's annual average wage was \$94,652 in 2012, up from \$84,073 in 2007. Over the 5-year (2007-2012) period, it increased 12.6%. The industry sector increases ranged from +11.6% (measuring & control instrument manufacturing) to +13.5% (medical equipment manufacturing).



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Location Quotation



This Location Quotient graph quantifies the concentration of the sectors of New Jersey's Biopharmaceutical & Life Sciences Cluster as compared to the nation. The nine industry sectors above illustrate the ratio between the percentage of industry employment found in each sector in New Jersey as it compares to the same industry sectors nationally. The chart acts as a barometer to show the concentration value; greater than 1 indicates that NJ's industry employment is greater than the nation. The theory is that greater (or stronger) concentration means that the area's employment is an exporter of goods and/or services for that industry.

(SOURCE: New Jersey Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 Annual Averages: 5-digits NAICS)



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

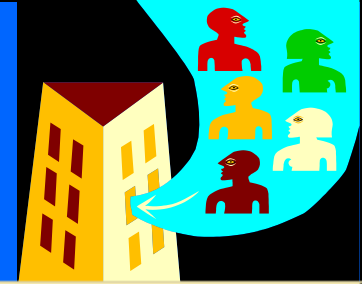


Analysis: Staffing Patterns

New Jersey's Biopharmaceutical Life Sciences Cluster

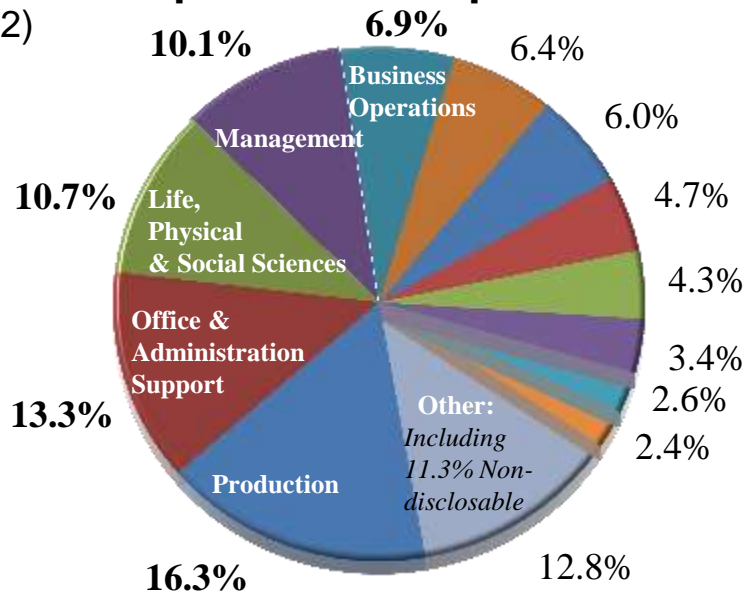


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Staffing Patterns



Overall Cluster

Major Occupational Group Breakdown (2012)



- Production
- Life, Physical, and Social Sci
- Business and Financial Ops
- Computer and Math
- Sales
- Healthcare Support
- Others (incl non-discloseable)
- Office & Adm Support
- Management
- Architecture and Engineering
- Healthcare Practitioners & Tech
- Material Moving
- Maintenance

There were 296 occupational titles in New Jersey's Biopharmaceutical Life Sciences cluster that were identified from 2012's estimated employment data.

An occupational analysis of 103,630* jobs revealed that five major occupational groups in this cluster accounted for 57.4 percent of the jobs. They included:

- Production
- Office & administrative support
- Life, physical, and social sciences
- Management
- Business & Financial Operations.

(SOURCE: New Jersey Department of Labor & Workforce Development, Bureau of Occupational Research, Occupational Employment Statistics, May 2012)

* NOTE: Due to disclosure issues, of the total 116,800 jobs identified, only 88.7 percent of the estimates could be used for this occupational analysis.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Occupations within Cluster



NJ Biopharmaceutical Life Sciences Cluster's Top 20 Occupations

Occupational Title	2012 Employment	Typical <i>Minimum</i> Requirements		
		<i>Education</i>	<i>Work Experience</i>	<i>Job Training</i>
Packaging and Filling Machine Operators and Tenders	4,352	High school diploma or equivalent	None	Moderate-term on-the-job training
Chemists	2,854	Bachelor's degree	None	None
Healthcare Support Workers, All Other	2,760	High school diploma or equivalent	None	Short-term on-the-job training
Inspectors, Testers, Sorters, Samplers, and Weighers	2,391	High school diploma or equivalent	None	Moderate-term on-the-job training
Chemical Technicians	2,377	Associate's degree	None	Moderate-term on-the-job training
Sales Reps	2,270	Bachelor's degree	None	Moderate-term on-the-job training
Business Operations Specialists, All Other	2,196	High school diploma or equivalent	Less than 1 year	Long-term on-the-job training
Mixing and Blending Machine Setters, Operators, and Tenders	2,135	High school diploma or equivalent	None	Moderate-term on-the-job training
Production First-Line Supervisors/Managers	2,107	Postsecondary non-degree award	1 to 5 years	None
Biochemists and Biophysicists	1,982	Doctoral or professional degree	None	None
Customer Service Representatives	1,929	High school diploma or equivalent	None	Short-term on-the-job training
Laborers and Freight, Stock, and Material Movers, Hand	1,870	Less than high school	None	Short-term on-the-job training
General and Operations Managers	1,786	Associate's degree	1 to 5 years	None
Sales Reps (Except Technical & Scientific Pdts)	1,739	High school diploma or equivalent	None	Moderate-term on-the-job training
Stock Clerks and Order Fillers	1,713	Less than high school	None	Short-term on-the-job training
Office Clerks, General	1,610	High school diploma or equivalent	None	Short-term on-the-job training
Assemblers and Fabricators, All Other	1,599	High school diploma or equivalent	None	Moderate-term on-the-job training
Natural Sciences Managers	1,592	Bachelor's degree	More than 5 years	None
Chemical Equipment Operators and Tenders	1,521	High school diploma or equivalent	None	Moderate-term on-the-job training
Biological Technicians	1,483	Bachelor's degree	None	None

(SOURCE: New Jersey Department of Labor & Workforce Development,
Bureau of Occupational Research, Occupational Employment Statistics, May 2012)

There were 296 occupational titles identified from the 103,630 jobs analyzed for this cluster.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER NJ's Occupational Ranking



In 2012, in terms of employment, the occupations below were among the most prevalent nationally within certain industries - including life sciences. (The column to the right of each occupation below identifies only the industries related to this cluster. The column to the immediate left of each occupation provides the total occupational employment (including industries outside this cluster), in New Jersey. The ranking to the far left is New Jersey's standing in comparison to all state's total employment for the occupation.)

NJ's Ranking	* Total NJ Employment	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest employment levels for this occupation included:
2	2,990	<u>Natural Sciences Managers</u> Plan, direct, or coordinate activities in such fields as life sciences, physical sciences, and research & development	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing
2	150	<u>Mathematical Science Occupations, All Other</u> Solve problems using mathematical methods.	Scientific Research and Development Services
2	3,890	<u>Biochemists and Biophysicists</u> Study the chemical composition or physical principles of living cells and organisms and related phenomena. May conduct research to further understanding of the complex issues.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing Drugs and Druggists' Sundries Merchant Wholesalers
2	5,770	<u>Chemists</u> Conduct qualitative and quantitative chemical analyses or experiments in laboratories.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing
3	4,570	<u>Chemical Technicians</u> Conduct laboratory tests to assist scientists in making qualitative and quantitative analyses.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing
3	140	<u>Mathematical Technicians</u> Apply standardized mathematics to technological problems.	Scientific Research and Development Services
4	3,000	<u>Chemical Equipment Operators and Tenders</u> Operate or tend equipment to control chemical changes or reactions in the processing of industrial or consumer products.	Pharmaceutical and Medicine Manufacturing Soap, Cleaning Compound, and Toilet Preparation Mfg.

(SOURCE: U. S. Bureau of Labor Statistics, May 2012)

* Total employment for the applicable occupation including employment in industries outside this cluster.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Metropolitan Division Occupational Ranking



In 2012, in terms of employment, the occupations below were among the most prevalent nationally within certain industries - including life sciences. (The column to the right of each occupation below identifies only the industries related to this cluster. The column to the immediate left of each occupation provides the total occupational employment (including industries outside this cluster), within the metropolitan division. The ranking to the far left is the metro's standing in comparison to all metro's total employment for the occupation.)

Edison-New Brunswick, NJ Metropolitan Division			
Comprised of Middlesex, Monmouth, Ocean, & Somerset Counties			
Metro Div. Ranking	* Total NJ Employment	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest employment levels for this occupation included:
2	40	<u>Mathematical Science Occupations, All Other</u> Solve problems using mathematical methods.	Scientific Research and Development Services
3	1,470	<u>Biochemists and Biophysicists</u> Study the chemical composition or physical principles of living cells and organisms and related phenomena. May also conduct research to further understanding of the complex issues.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing Drugs and Druggists' Sundries Merchant Wholesalers
6	2,030	<u>Chemists</u> Conduct qualitative and quantitative chemical analyses or experiments in laboratories.	Pharmaceutical and Medicine Manufacturing Scientific Research and Development Services
7	5,290	<u>Packaging and Filling Machine Operators and Tenders</u> Operate or tend machines to prepare products for storage or shipment.	Pharmaceutical and Medicine Manufacturing
7	1,080	<u>Chemical Technicians</u> Conduct laboratory tests to assist scientists in making qualitative and quantitative analyses.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing
8	1,000	<u>Natural Sciences Managers</u> Plan, direct, or coordinate activities in such fields as life sciences, physical sciences, and R&D.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing
8	990	<u>Chemical Equipment Operators and Tenders</u> Operate or tend equipment to control chemical changes or reactions in the processing of industrial or consumer products.	Pharmaceutical and Medicine Manufacturing Soap, Cleaning Compound, and Toilet Preparation Mfg.

(SOURCE: U. S. Bureau of Labor Statistics, May 2012)

* Total employment for the applicable occupation including employment in industries outside this cluster.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Metropolitan Division Occupational Ranking



In 2012, in terms of employment, the occupations below were among the most prevalent nationally within certain industries - including life sciences. (The column to the right of each occupation below identifies only the industries related to this cluster. The column to the immediate left of each occupation provides the total occupational employment (including industries outside this cluster), within the metropolitan division. The ranking to the far left is the metro's standing in comparison to all metro's total employment for the occupation.)

<u>New York-White Plains-Wayne, NY-NJ Metropolitan Division</u> From New Jersey this includes: Bergen, Hudson, and Passaic Counties			
Metro Div. Ranking	* Total NJ Employment	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest employment levels for this occupation included:
1	2,720	<u>Chemical Technicians</u> Conduct laboratory tests to assist scientists in making qualitative and quantitative analyses.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing
3	3,020	<u>Chemists</u> Conduct qualitative and quantitative chemical analyses or experiments in laboratories.	Pharmaceutical and Medicine Manufacturing Scientific Research and Development Services
4	7,050	<u>Packaging and Filling Machine Operators and Tenders</u> Operate or tend machines to prepare pdts. for storage/shipment.	Pharmaceutical and Medicine Manufacturing
4	1,250	<u>Biochemists and Biophysicists</u> Study the chemical composition or physical principles of living cells and organisms and related phenomena. May conduct research to further understanding of the complex issues.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing Drugs and Druggists' Sundries Merchant Wholesalers
5	1,310	<u>Natural Sciences Managers</u> Plan, direct, or coordinate activities in such fields as life sciences, physical sciences, and R&D.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing

(SOURCE: U. S. Bureau of Labor Statistics, May 2012)

* Total employment for the applicable occupation including employment in industries outside this cluster.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Metropolitan Division Occupational Ranking



In 2012, in terms of employment, the occupations below were among the most prevalent nationally within certain industries - including life sciences. (The column to the right of each occupation below identifies only the industries related to this cluster. The column to the immediate left of each occupation provides the total occupational employment (including industries outside this cluster), within the metropolitan division. The ranking to the far left is the metro's standing in comparison to all metro's total employment for the occupation.)

<u>Newark-Union, NJ-PA Metropolitan Division</u>			
From New Jersey this includes: Essex, Hunterdon, Morris, Sussex & Union Counties			
Metro Div. Ranking	* Total NJ Employment	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest employment levels for this occupation included:
2	40	<u>Mathematical Technicians</u> Apply standardized mathematics to technological problems.	Scientific Research and Development Services

<u>Wilmington, DE-MD-NJ Metropolitan Division</u>			
From New Jersey this includes: Salem County			
Metro Div. Ranking	* Total NJ Employment	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest employment levels for this occupation included:
1	3,210	<u>Chemists</u> Conduct qualitative and quantitative chemical analyses or experiments in laboratories.	Pharmaceutical and Medicine Manufacturing Scientific Research and Development Services
9	980	<u>Chemical Technicians</u> Conduct laboratory tests to assist scientists in making qualitative and quantitative analyses.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing
10	890	<u>Chemical Equipment Operators and Tenders</u> Operate or tend equipment to control chemical changes or reactions in the processing of industrial or consumer products.	Pharmaceutical and Medicine Manufacturing Soap, Cleaning Compound, and Toilet Preparation Mfg.
10	140	<u>Materials Scientists</u> Research and study the structures and chemical properties of various materials and determine alternative ways.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing

(SOURCE: U. S. Bureau of Labor Statistics, May 2012)

* Total employment for the applicable occupation including employment in industries outside this cluster.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER NJ's Occupational Ranking



In 2012, in terms of concentration of employment, the occupations below were among the most prevalent nationally within certain industries - including life sciences. (The column to the right of each occupation below identifies only the industries related to this cluster. The column to the immediate left of each occupation indicates the concentration of the occupational employment (including industries outside this cluster), in New Jersey. The ranking to the far left is New Jersey's standing in comparison to all state's concentration of employment for the occupation.)

NJ's Ranking	* Location Quotation	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest concentration levels for this occupation included:
1	5.05	<u>Biochemists and Biophysicists</u> Study the chemical composition or physical principles of living cells and organisms and related phenomena. May conduct research to further understanding of the complex issues.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing Drugs and Druggists' Sundries Merchant Wholesalers
2	4.15	<u>Mathematical Technicians</u> Apply standardized mathematics to technological problems.	Scientific Research and Development Services
2	4.11	<u>Mathematical Science Occupations, All Other</u> Solve problems using mathematical methods.	Scientific Research and Development Services
2	2.56	<u>Chemical Technicians</u> Conduct laboratory tests to assist scientists with analyses.	Pharmaceutical and Medicine Manufacturing
2	2.33	<u>Chemists</u> Conduct qualitative and quantitative chemical analyses or experiments in laboratories for quality or process control or to develop new products or knowledge.	Pharmaceutical and Medicine Manufacturing Scientific Research and Development Services Soap, Cleaning Compound, and Toilet Preparation Mfg.
3	3.35	<u>Mathematicians</u> Conduct research in fundamental mathematics or in application.	Scientific Research and Development Services
5	1.78	<u>Pharmacy Aides</u> Record drugs delivered/inform the supervisor of stock needs.	Drugs and Druggists' Sundries Merchant Wholesalers

(SOURCE: U. S. Bureau of Labor Statistics, May 2012)

* This accounts for employment for the occupation including industries outside this cluster.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Metropolitan Division Occupational Ranking



In 2012, in terms of concentration of employment, the occupations below were among the most prevalent nationally within certain industries - including life sciences. (The column to the right of each occupation below identifies only the industries related to this cluster. The column to the immediate left of each occupation indicates the concentration of the occupational employment (including industries outside this cluster), for the identified metropolitan division. The ranking to the far left is the metro division's standing in comparison to all metro division's concentration of employment across the nation for that occupation.)

<u>Atlantic City-Hammonton, NJ Metropolitan Division</u>			
Consist of Atlantic County			
Metro Div Ranking	* Location Quotation	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest concentration levels for this occupation included:
3	7.96	<u>Computer and Information Research Scientists</u> Conduct research into fundamental computer & info science.	Scientific Research and Development Services
6	3.01	<u>Pharmacy Aides</u> Record drugs delivered and inform the supervisor of stock needs.	Drugs and Druggists' Sundries Merchant Wholesalers

(SOURCE: U. S. Bureau of Labor Statistics, May 2012)

* This accounts for employment for the occupation including industries outside this cluster.

<u>Camden, NJ Metropolitan Division</u>			
Consist of Burlington, Camden & Gloucester Counties			
Metro Div Ranking	* Location Quotation	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest concentration levels for this occupation included:
9	2.85	<u>Pharmacy Aides</u> Record drugs delivered and inform the supervisor of stock needs.	Drugs and Druggists' Sundries Merchant Wholesalers

(SOURCE: U. S. Bureau of Labor Statistics, May 2012)

* This accounts for employment for the occupation including industries outside this cluster.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Metropolitan Division Occupational Ranking



In 2012, in terms of concentration of employment, the occupations below were among the most prevalent nationally within certain industries - including life sciences. (The column to the right of each occupation below identifies only the industries related to this cluster. The column to the immediate left of each occupation indicates the concentration of the occupational employment (including industries outside this cluster), for the identified metro division. The ranking to the far left is the metro division's standing in comparison to all metro division's concentration of employment across the nation for that occupation.)

Edison-New Brunswick, NJ Metropolitan Division Comprised of Middlesex, Monmouth, Ocean, & Somerset Counties			
Metro Div Ranking	* Location Quotation	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest concentration levels for this occupation included:
1	7.43	<u>Biochemists and Biophysicists</u> Study the chemical composition or physical principles of living cells and organisms and related phenomena. May conduct research to further understanding of issues.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing Drugs and Druggists' Sundries Merchant Wholesalers
3	4.76	<u>Mathematical Science Occupations, All Other</u> Solve problems using mathematical methods.	Scientific Research and Development Services

(SOURCE: U. S. Bureau of Labor Statistics, May 2012)

* This accounts for employment for this occupation including industries outside this cluster.

Newark-Union, NJ-PA Metropolitan Division From New Jersey this includes: Essex, Hunterdon, Morris, Sussex & Union Counties			
Metro Div Ranking	* Location Quotation	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest concentration levels for this occupation included:
2	5.07	<u>Mathematical Technicians</u> Apply standardized mathematics to technological problems.	Scientific Research and Development Services

(SOURCE: U. S. Bureau of Labor Statistics, May 2012)

* This accounts for employment for the occupation including industries outside this cluster.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Metropolitan Division Occupational Ranking



In 2012, in terms of concentration of employment, the occupations below were among the most prevalent nationally within certain industries - including life sciences. (The column to the right of each occupation below identifies only the industries related to this cluster. The column to the immediate left of each occupation indicates the concentration of the occupational employment (including industries outside this cluster), for the identified metro division. The ranking to the far left is the metro division's standing in comparison to all metro division's concentration of employment across the nation for that occupation.)

Trenton-Ewing, NJ Metropolitan Division			
Consist of Mercer County			
Metro Div Ranking	* Location Quotation	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest concentration levels for this occupation included:
7	5.21	<u>Biochemists and Biophysicists</u> Study the chemical composition or physical principles of living cells and organisms and related phenomena. May conduct research to further understanding of the complex issues.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing Drugs and Druggists' Sundries Merchant Wholesalers
7	4.85	<u>Natural Sciences Managers</u> Natural sciences managers supervise the work of scientists, including chemists, physicists, and biologists. They direct research and development projects and coordinate activities.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing Drugs and Druggists' Sundries Merchant Wholesalers

Note: Recently, Trenton, NJ was ranked #5 on the “10 Best U.S. Cities for Science, Math and Tech Grads” by consumer-advocacy website NerdWallet. It identified the area as “home to a high concentration of biotech and pharmaceutical companies. What's more, the local Center for Excellence in STEM Education in the Trenton-Ewing metro area is working to innovate teaching techniques from pre-kindergarten through college. Also, the cost of living in Trenton is comparatively low, a definite plus for recent college grads carrying heavy student loan loads.”.....(SOURCE: Entrepreneur, July 17, 2013)

Vineland-Millville-Bridgeton, NJ Metropolitan Division			
Consist of Cumberland County			
Metro Div Ranking	* Location Quotation	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest concentration levels for this occupation included:
8	2.85	<u>Pharmacy Aides</u> Record drugs delivered and inform the supervisor of stock needs.	Drugs and Druggists' Sundries Merchant Wholesalers

(SOURCE: U. S. Bureau of Labor Statistics, May 2012)

* This accounts for employment for the occupation including industries outside this cluster.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Metropolitan Division Occupational Ranking



In 2012, in terms of concentration of employment, the occupations below were among the most prevalent nationally within certain industries - including life sciences. (The column to the right of each occupation below identifies only the industries related to this cluster. The column to the immediate left of each occupation indicates the concentration of the occupational employment (including industries outside this cluster), for the identified metro division. The ranking to the far left is the metro division's standing in comparison to all metro division's concentration of employment across the nation for that occupation.)

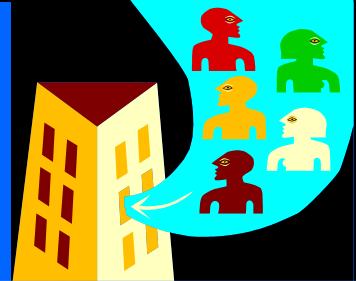
<u>Wilmington, DE-MD-NJ Metropolitan Division</u> From New Jersey this includes: Salem County			
Metro Div Ranking	* Location Quotation	Occupation: Some key occupations that employers in this cluster have great demand for their expertise.	Nationally, industries with the top five highest concentration levels for this occupation included:
1	15.26	<u>Chemists</u> Conduct qualitative and quantitative chemical analyses or experiments in laboratories for quality or process control or to develop new products or knowledge.	Pharmaceutical and Medicine Manufacturing Scientific Research and Development Services Soap, Cleaning Compound, and Toilet Preparation Mfg.
2	6.49	<u>Chemical Technicians</u> Conduct laboratory tests to assist scientists in making qualitative and quantitative analyses.	Pharmaceutical and Medicine Manufacturing
4	7.06	<u>Materials Scientists</u> Research and study the structures and chemical properties of various natural and manmade materials.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing
5	4.91	<u>Natural Sciences Managers</u> Natural sciences managers supervise the work of scientists, including chemists, physicists, and biologists. They direct research and development projects and coordinate activities.	Scientific Research and Development Services Pharmaceutical and Medicine Manufacturing Drugs and Druggists' Sundries Merchant Wholesalers

(SOURCE: U. S. Bureau of Labor Statistics, May 2012)

* This accounts for employment for the occupation including industries outside this cluster.

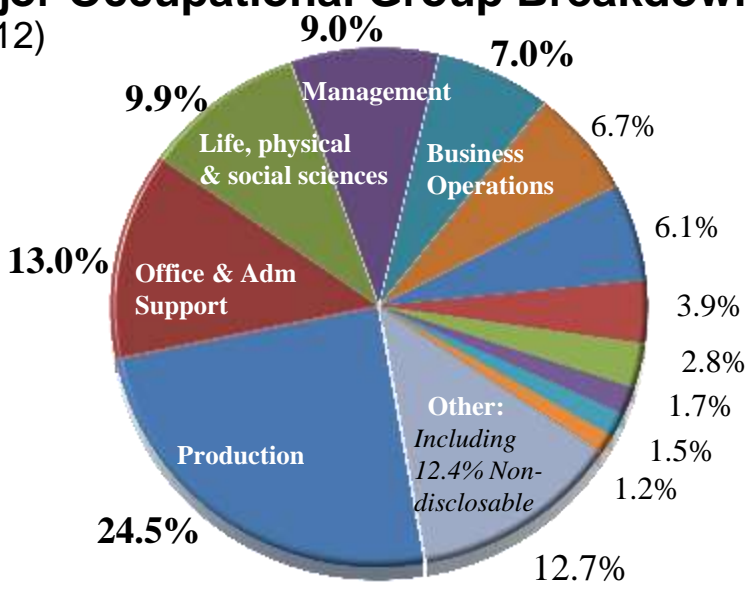


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Staffing Patterns



Pharmaceutical Component

**Major Occupational Group Breakdown
(2012)**



- Production
- Life, Physical, and Social Sci
- Business and Financial Ops
- Computer and Math
- Sales
- Healthcare Support
- Others (incl non-discloseable)
- Office & Adm Support
- Management
- Architecture and Engineering
- Healthcare Practitioners & Tech
- Material Moving
- Maintenance

There were 121 occupational titles in New Jersey's pharmaceutical component that were identified from 2012's estimated employment data.

An occupational analysis of 43,020* jobs revealed that five major occupational groups in this component accounted for 63.4 percent of the jobs. They included:

- Production
- Office & administrative support
- Life, physical, and social sciences
- Management
- Business & Financial Operations.

(SOURCE: New Jersey Department of Labor & Workforce Development, Bureau of Occupational Research, Occupational Employment Statistics, May 2012)

* NOTE: Due to disclosure issues, of the total 49,090 jobs identified, only 87.6 percent of the estimates could be used for this occupational analysis.

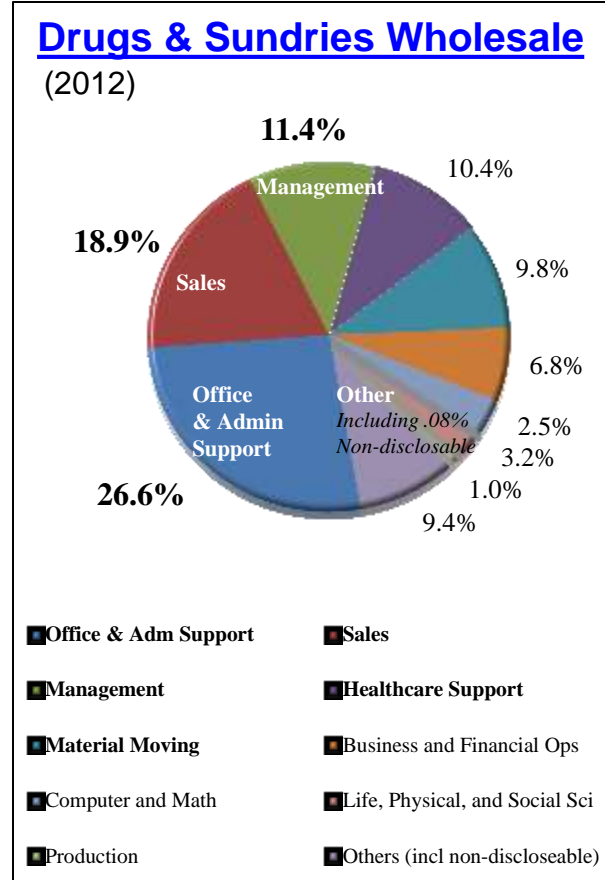
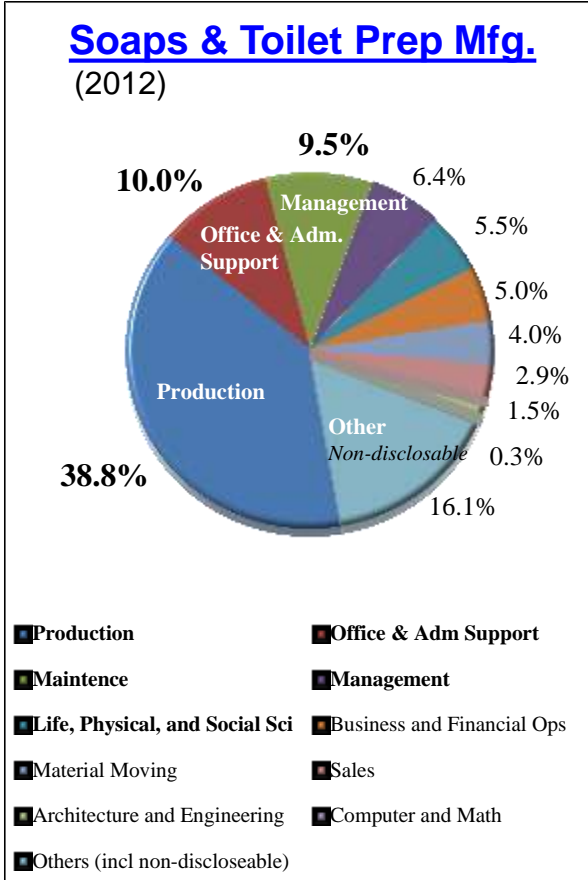
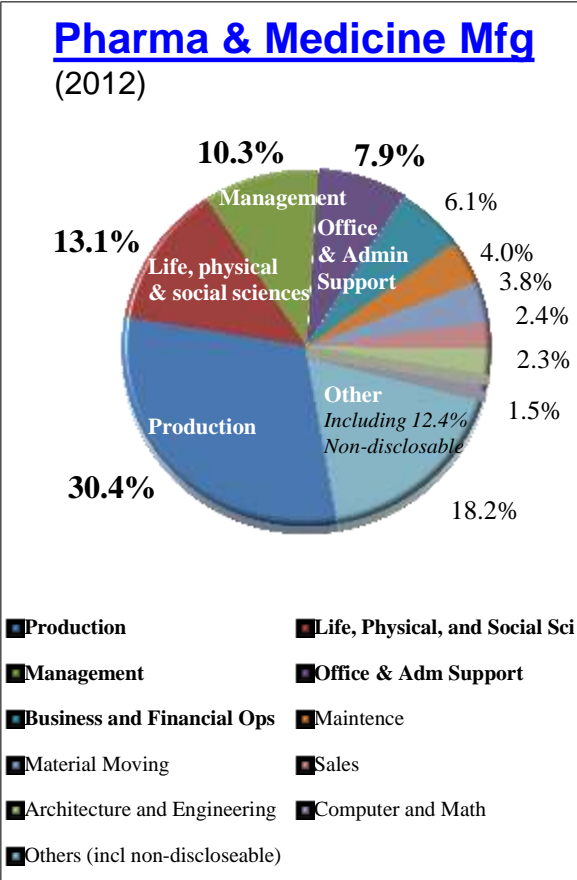


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Staffing Patterns



Pharmaceutical's Major Occupational Groups

In all three industry groups, management and office & administrative support workers account for a significant number of the employment.



(SOURCE: New Jersey Department of Labor & Workforce Development, Bureau of Occupational Research, Occupational Employment Statistics, May 2012)



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Occupations within the Pharma Group



NJ Pharmaceutical Group's Top 20 Occupations

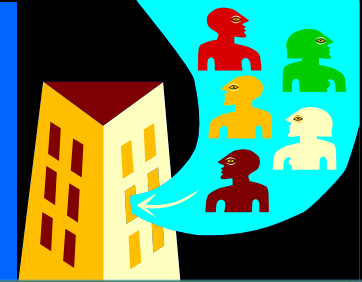
Occupational Title	2012 Employment	Typical <u>Minimum</u> Requirements		
		Education	Work Experience	Job Training
51-9111 Packaging and Filling Machine Operators and Tenders	4,300	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9023 Mixing and Blending Machine Setters, Operators, and Tenders	2,120	High school diploma or equivalent	None	Moderate-term on-the-job training
19-2031 Chemists	1,920	Bachelor's degree	None	None
51-9061 Inspectors, Testers, Sorters, Samplers, and Weighers	1,690	High school diploma or equivalent	None	Moderate-term on-the-job training
53-7062 Laborers and Freight, Stock, and Material Movers, Hand	1,680	Less than high school	None	Short-term on-the-job training
41-4011 Sales Reps, Wholesale & Manufacturing, Tech & Sci. Pdts.	1,630	Bachelor's degree	None	Moderate-term on-the-job training
43-5081 Stock Clerks and Order Fillers	1,460	Less than high school	None	Short-term on-the-job training
51-9011 Chemical Equipment Operators and Tenders	1,450	High school diploma or equivalent	None	Moderate-term on-the-job training
51-1011 First-Line Supervisors/Mgrs. of Production & Operating Workers	1,430	Postsecondary non-degree award	1 to 5 years	None
41-4012 Sales Reps, Wholesale & Manufacturing, Except Tech & Sci. Pdts.	1,250	High school diploma or equivalent	None	Moderate-term on-the-job training
49-9041 Industrial Machinery Mechanics	1,170	High school diploma or equivalent	None	Long-term on-the-job training
19-4031 Chemical Technicians	880	Associate's degree	None	Moderate-term on-the-job training
53-7064 Packers and Packagers, Hand	860	Less than high school	None	Short-term on-the-job training
29-2052 Pharmacy Technicians	840	High school diploma or equivalent	None	Moderate-term on-the-job training
11-1021 General and Operations Managers	820	Associate's degree	1 to 5 years	None
43-5071 Shipping, Receiving, and Traffic Clerks	810	High school diploma or equivalent	None	Short-term on-the-job training
13-1199 Business Operations Specialists, All Other	730	High school diploma or equivalent	Less than 1 year	Long-term on-the-job training
11-9121 Natural Sciences Managers	710	Bachelor's degree	More than 5 years	None
11-3051 Industrial Production Managers	690	Bachelor's degree	1 to 5 years	None
19-1021 Biochemists and Biophysicists	690	Doctoral or professional degree	None	None

(SOURCE: New Jersey Department of Labor & Workforce Development, Bureau of Occupational Research, Occupational Employment Statistics, May 2012)

There were 121 occupational titles identified from 2012's 43,020 jobs analyzed for this industry group.

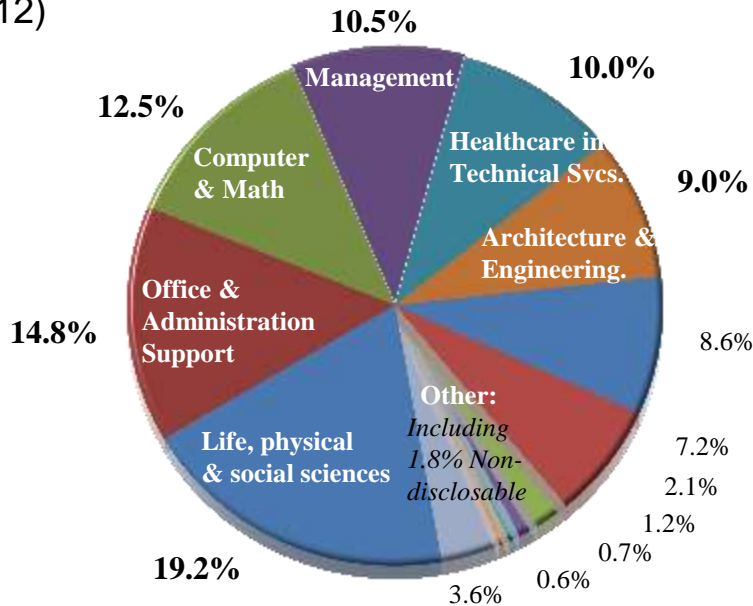


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Staffing Patterns



Biotech (R&D) Component

Major Occupational Group Breakdown (2012)



- Life, Physical, and Social Sci
- Computer and Math
- Healthcare Practitioners & Tech
- Business and Financial Ops
- Sales
- Production
- Others (incl non-discloseable)
- Office & Adm Support
- Management
- Architecture and Engineering
- Healthcare Support
- Maintenance
- Arts, Design, & Media

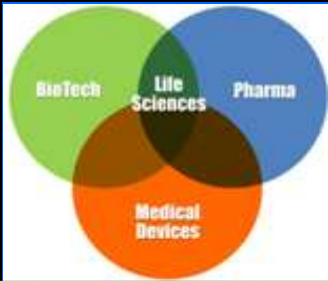
(SOURCE: New Jersey Department of Labor & Workforce Development, Bureau of Occupational Research, Occupational Employment Statistics, May 2012)

There were 261 occupational titles in New Jersey's biotech component that were identified from 2012's estimated employment data.

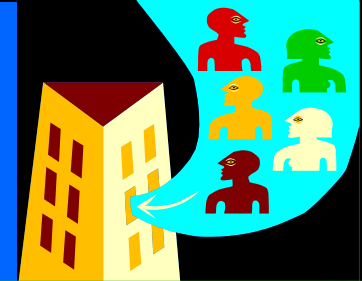
An occupational analysis of 40,770* jobs revealed that six major occupational groups in this component accounted for 76.0 percent of the jobs. They included:

- Life, physical, & social science
- Office & administrative support
- Computers & math
- Management
- Healthcare (including technical)
- Architecture and engineering

* NOTE: Due to disclosure issues, of the total 41,500 jobs identified, only 98.2 percent of the estimates could be used for this occupational analysis.

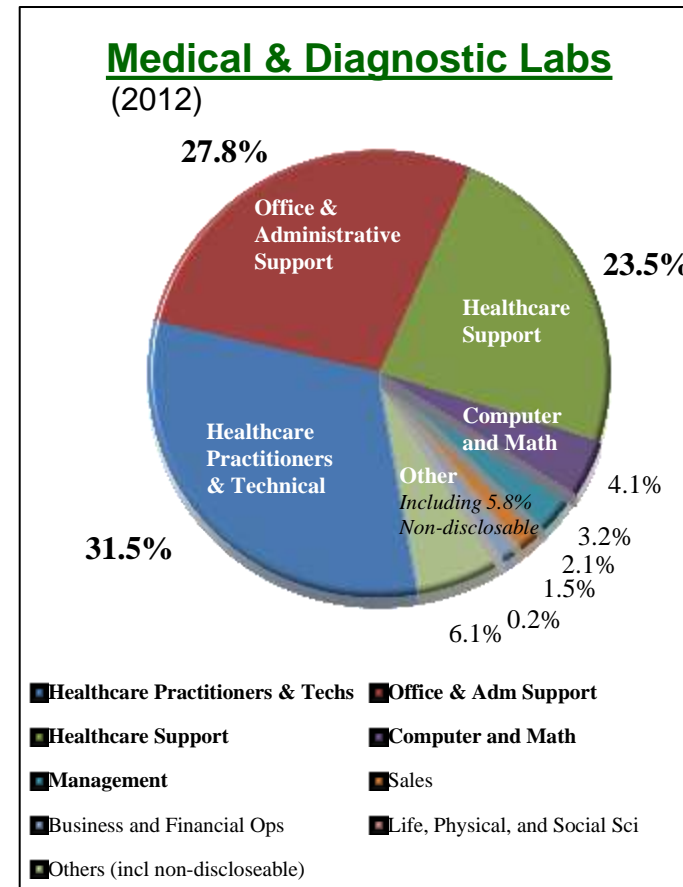
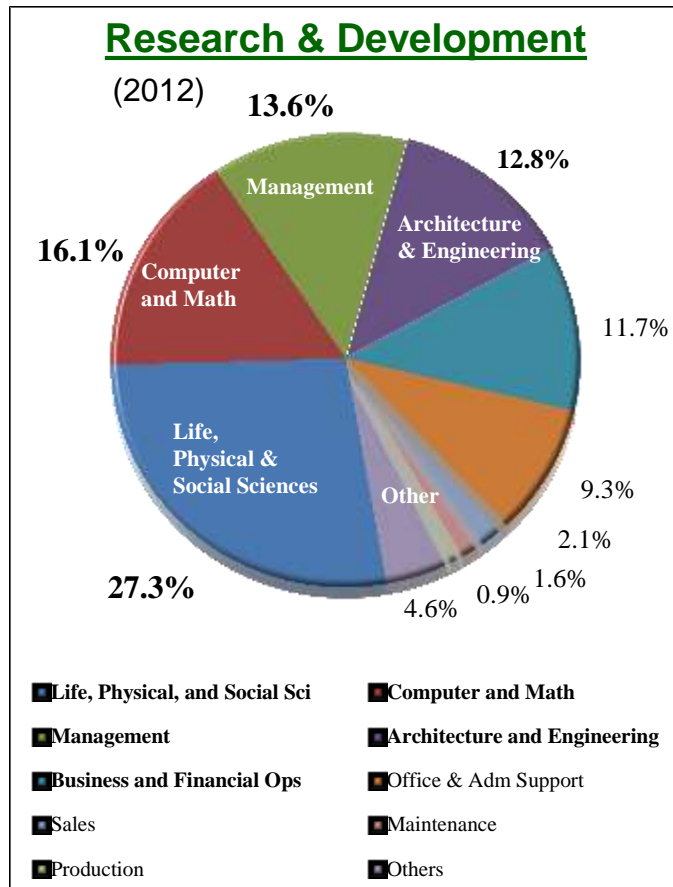


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Staffing Patterns



Biotech (R&D) Component

Biotech's occupational groups show that these industry groups utilize a significant portion of workers with an in-depth knowledge related to computer, math, and science.



(SOURCE: New Jersey Department of Labor & Workforce Development, Bureau of Occupational Research, Occupational Employment Statistics, May 2012)



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Occupations within the Biotech Group



NJ Biotech Group's Top 24 Occupations

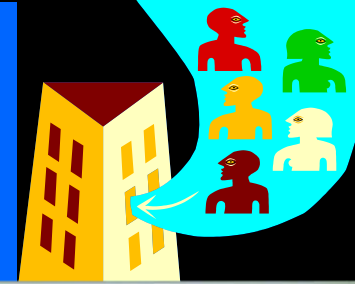
Occupational Title	2012 Employment	Typical <i>Minimum</i> Requirements		
		<i>Education</i>	<i>Work Experience</i>	<i>Job Training</i>
31-9799 Healthcare Support Workers, All Other	2,760	High school diploma or equivalent	None	Short-term on-the-job training
19-4031 Chemical Technicians	1,497	Associate's degree	None	Moderate-term on-the-job training
29-2011 Medical and Clinical Laboratory Technologists	1,432	Bachelor's degree	None	None
19-1021 Biochemists and Biophysicists	1,292	Doctoral or professional degree	None	None
19-4021 Biological Technicians	1,263	Bachelor's degree	None	None
17-2011 Aerospace Engineers	1,191	Bachelor's degree	None	None
13-1199 Business Operations Specialists, All Other	1,156	High school diploma or equivalent	Less than 1 year	Long-term on-the-job training
29-2037 Radiologic Technologists and Technicians	1,100	Associate's degree	None	None
19-2031 Chemists	924	Bachelor's degree	None	None
15-1132 Software Developers, Applications	901	Bachelor's degree	None	None
43-9061 Office Clerks, General	870	High school diploma or equivalent	None	Short-term on-the-job training
29-2012 Medical and Clinical Laboratory Technicians	856	Associate's degree	None	None
43-4171 Receptionists and Information Clerks	854	High school diploma or equivalent	None	Short-term on-the-job training
11-9121 Natural Sciences Managers	822	Bachelor's degree	More than 5 years	None
43-6011 Executive Secretaries & Administrative Assistants	813	High school diploma or equivalent	1 to 5 years	None
15-1142 Network and Computer Systems Administrators	796	Not Available	Not Available	Not Available
19-1042 Medical Scientists, Except Epidemiologists	774	Doctoral or professional degree	None	None
43-4051 Customer Service Representatives	749	High school diploma or equivalent	None	Short-term on-the-job training
15-1131 Computer Programmers	745	Bachelor's degree	None	None
15-1179 Information Security Analysts & Network Architects	744	Bachelor's degree	1 to 5 years	None
43-3021 Billing and Posting Clerks and Machine Operators	670	High school diploma or equivalent	None	Short-term on-the-job training
19-2012 Physicists	659	Doctoral or professional degree	None	None
11-1021 General and Operations Managers	646	Associate's degree	1 to 5 years	None
17-2072 Electronics Engineers, Except Computer	608	Bachelor's degree	None	None

(SOURCE: New Jersey Department of Labor & Workforce Development,
Bureau of Occupational Research, Occupational Employment Statistics, May 2012)

There were 261 occupational titles identified from 2012's 40,770 jobs analyzed for this industry group.

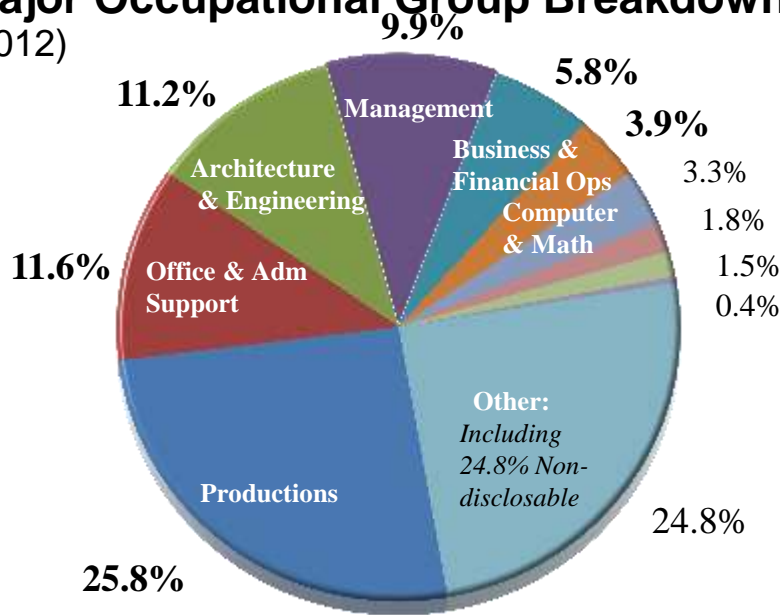


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Staffing Patterns



Medical Device Component

Major Occupational Group Breakdown (2012)



There were 113 occupational titles in New Jersey's medical device component that were identified from 2012's estimated employment data.

An occupational analysis of 19,840* jobs revealed that six major occupational groups in this component accounted for 68.2 percent of the jobs. They included:

- **Productions**
- **Office & administrative support**
- **Architecture & engineering**
- **Management**
- **Business & financial operations**
- **Computer and math**

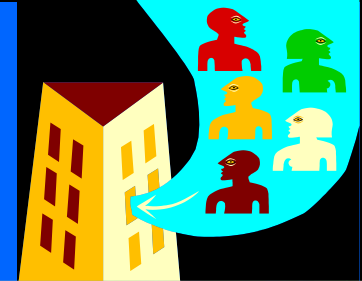
- Production
- Architecture and Engineering
- Business and Financial Ops
- Sales
- Maintenance
- Others (incl non-discloseable)
- Office & Adm Support
- Management
- Computer and Math
- Transportation/Material Moving
- Life, Physical, and Social Sci

(SOURCE: New Jersey Department of Labor & Workforce Development, Bureau of Occupational Research, Occupational Employment Statistics, May 2012)

* NOTE: Due to disclosure issues, of the total 26,210 jobs identified, only 75.2 percent of the estimates could be used for this occupational analysis.

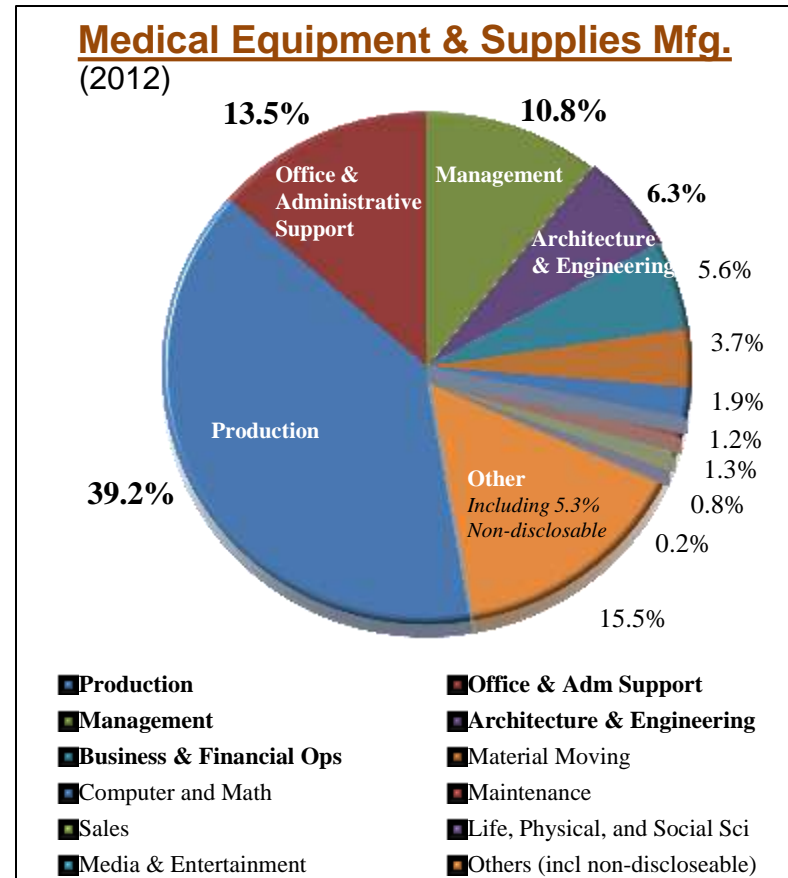
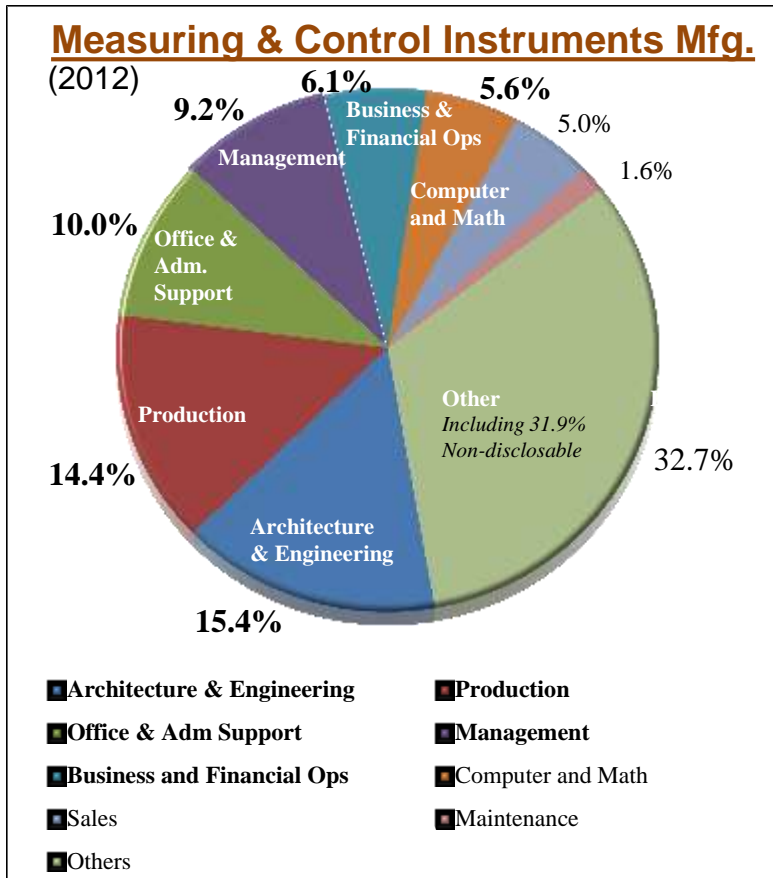


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Staffing Patterns



Medical Device Component

While the percentages differ, the top four occupational groups reveal that these two industry groups both have a need for many of the same type of workers.



(SOURCE: New Jersey Department of Labor & Workforce Development, Bureau of Occupational Research, Occupational Employment Statistics, May 2012)



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Occupations within the Medical Device Group



NJ Medical Device Group's Top 20 Occupations

Occupational Title	2012 Employment	Typical <i>Minimum</i> Requirements		
		<i>Education</i>	<i>Work Experience</i>	<i>Job Training</i>
51-2099 Assemblers and Fabricators, All Other	1,490	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2022 Electrical & Electronic Equipment Assemblers	910	High school diploma or equivalent	None	Short-term on-the-job training
17-2141 Mechanical Engineers	770	Bachelor's degree	None	None
51-9061 Inspectors, Testers, etc.	680	High school diploma or equivalent	None	Moderate-term on-the-job training
51-1011 First-Line Supervisors/Managers	640	Postsecondary non-degree award	1 to 5 years	None
51-9081 Dental Laboratory Technicians	630	High school diploma or equivalent	None	Moderate-term on-the-job training
17-2112 Industrial Engineers	580	Bachelor's degree	None	None
51-2092 Team Assemblers	560	High school diploma or equivalent	None	Moderate-term on-the-job training
43-4051 Customer Service Representatives	550	High school diploma or equivalent	None	Short-term on-the-job training
43-5071 Shipping, Receiving, and Traffic Clerks	500	High school diploma or equivalent	None	Short-term on-the-job training
41-4011 Sales Representatives	490	Bachelor's degree	None	Moderate-term on-the-job training
15-1133 Software Developers, Systems Software	470	Bachelor's degree	None	None
17-2061 Computer Hardware Engineers	450	Bachelor's degree	None	None
51-2023 Electromechanical Equipment Assemblers	440	High school diploma or equivalent	None	Short-term on-the-job training
11-3051 Industrial Production Managers	360	Bachelor's degree	1 to 5 years	None
11-9041 Engineering Managers	330	Bachelor's degree	More than 5 years	None
11-1021 General and Operations Managers	320	Associate's degree	1 to 5 years	None
11-9199 Managers, All Other	320	High school diploma or equivalent	1 to 5 years	None
13-1199 Business Operations Specialists, All Other	310	High school diploma or equivalent	Less than 1 year	Long-term on-the-job training
43-3031 Bookkeeping, Accounting, & Auditing Clerks	310	High school diploma or equivalent	None	Moderate-term on-the-job training

(SOURCE: New Jersey Department of Labor & Workforce Development,
Bureau of Occupational Research, Occupational Employment Statistics, May 2012)

There were 113 occupational titles identified from 2012's 26,210 jobs analyzed for this industry group.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER



Analysis: Characteristics

New Jersey's Biopharmaceutical Life Sciences Cluster



NJ BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Education Characteristics

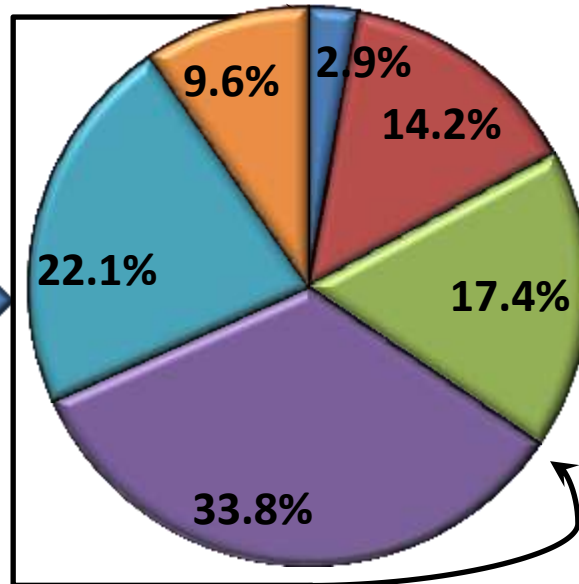


It's often mentioned that life sciences related employers require a well-educated and highly skilled workforce to meet the high level and technical demands of many of the occupations they need to fill.

Educational Breakdown

(2011)

65.5% of this workforce holds at least a Bachelor's Degree.



- Less than High School
- High School diploma
- Some college/Associate degree
- Bachelor's degree
- Master's/Professional degree
- Doctoral degree

This chart highlights the fact that employers in the life sciences related establishments utilized New Jersey's highly well-educated workforce. In fact, nearly *two thirds* of New Jersey's workforce employed in this cluster *holds at least* a bachelor's degree, with many holding even more advanced degrees.

- ❖ Bachelors: 33.8%
- ❖ Master's/Professional: 22.1%
- ❖ Doctoral: 9.6%



NJ BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Education Attainment



In 2011, New Jersey awarded nearly 20,000 certificates/degrees for many of the related occupations employed within Life Sciences including:

CIP	Related Degrees Awarded in 2011 by New Jersey's Institution of Higher Education	Cert	Assoc	Bach	Mast	Doct Research	Doct Prof	TOTAL
11	Computer and Information Sciences and Support Services	40	356	801	572	31	--	1,800
14	Engineering2	2	158	2,015	1,282	224	--	3,681
15	Engineering Technologies & Engineering- Related Fields	67	536	242	182	3	--	1,030
26	Biological and Biomedical Sciences	3	102	2,179	234	173	--	2,691
27	Mathematics & Statistics	--	31	567	202	46	--	846
40	Physical Sciences	--	133	503	189	111	--	936
41	Science Technologies/Technicians	--	50	21	6	--	--	77
51	Health Professions & Related Programs	896	3,361	2,226	1,325	197	863	8,868
	Totals	1,008	4,727	8,554	3,992	785	863	19,929

(SOURCE: New Jersey Commission on Higher Education, 2012)

New Jersey ranks 2nd in the nation with the highest employment, as well as the highest concentration, of chemist. (U.S. Bureau of Labor Statistics, May 2012)

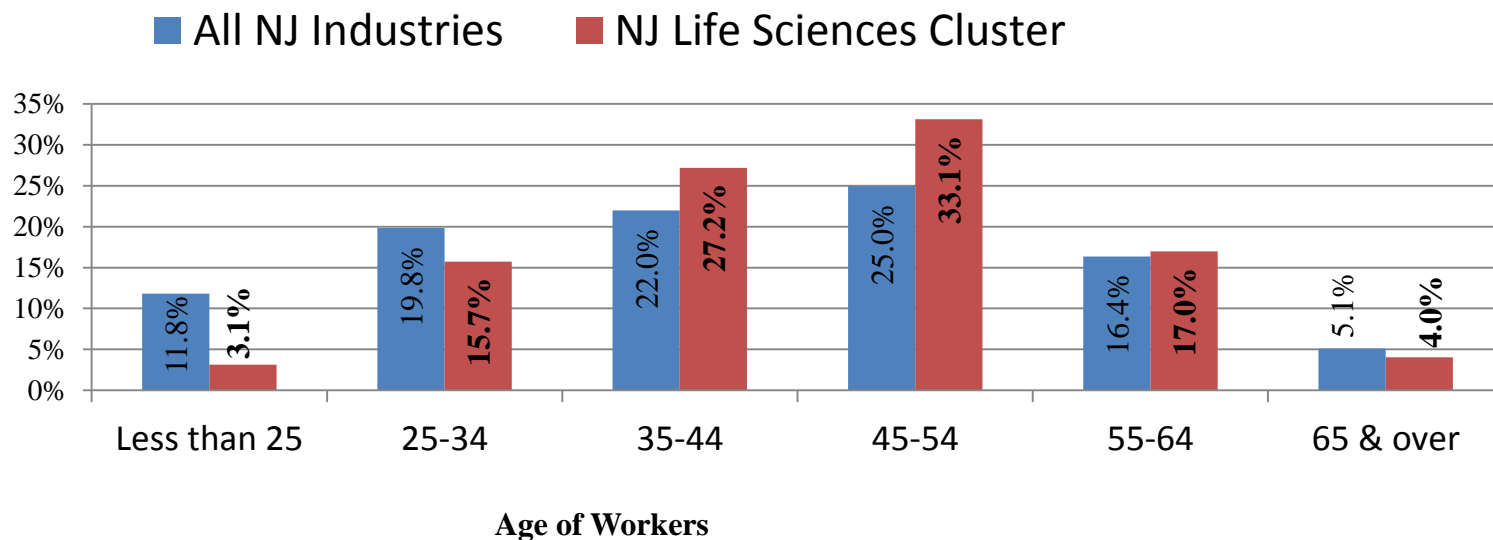


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Characteristics



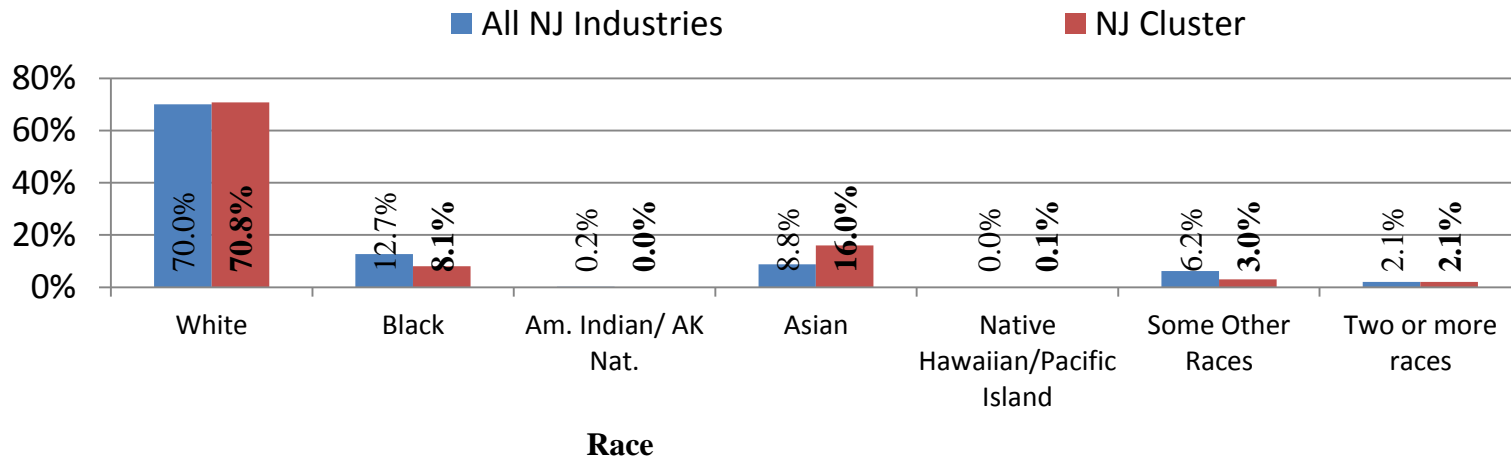
**A
G
E**

% of Workers



**R
A
C
E**

% of Workers



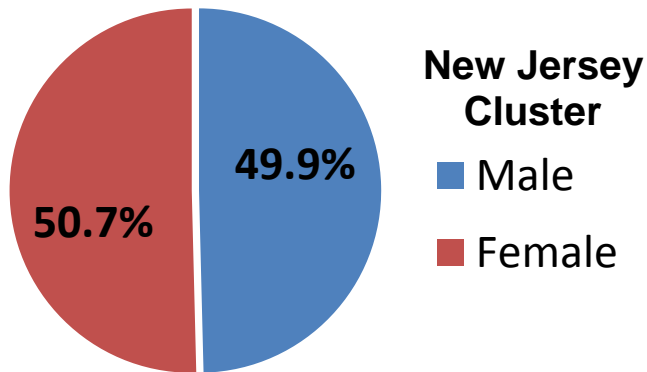
(SOURCE: U.S. Census Bureau, 2011 American Community Survey Public Use Microdata Sample)



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Characteristics



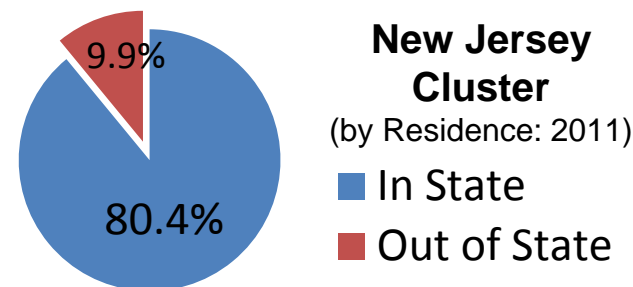
GENDER



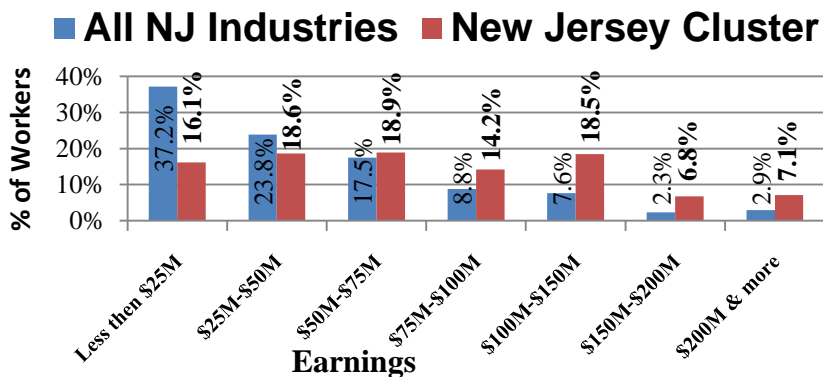
- In 2012, there was a slightly higher number of females employed within this cluster than males.
- This cluster's gender employment gap proportion was different than the state's in 2011, where more males were employed (52.6%) in the (combined) workforce than females (47.4%).

- Overwhelmingly, 80.4% of NJ's residents within this cluster in 2011 worked 'In state'.
- This cluster's 'In State' residence workers in 2011 was considerably greater than NJ's (combined) workforce (75.3%).

PLACE OF WORK



EARNINGS



- Almost two-thirds of the worker in this cluster earned *at least* \$50,000, whereas approximately 60% of all workers (in all industries combined) earned \$50,000 or less.
- The percentage of worker making \$150,000 or greater is almost 3:1 in favor of this cluster.

(SOURCE: U.S. Census Bureau, 2011 American Community Survey Public Use Microdata Sample)

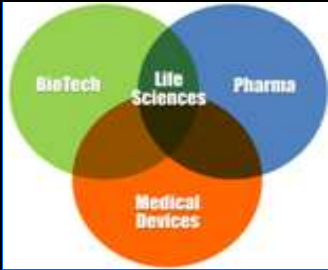


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER



Job Postings (from 2012)

New Jersey's Biopharmaceutical Life Sciences Cluster



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Job Postings



Analyzing job postings is helpful in knowing what type of occupations employers are seeking. It also provides an insight to the related skills and educational attainment employers require (or at least desired). Therefore, the following section was added in order to help identify and provide information about related occupations within New Jersey's bio-pharmaceutical life sciences cluster.

The findings are intended to help identify and increase awareness of what employers in this cluster are seeking from New Jersey's labor force. This information can be useful for a variety of purposes, such as informing job-seeker, economic developers, educational institutions, and many others about:

- ❖ Occupations that are in demand.
- ❖ 'Basic' & 'Technical' skills employers are looking for an applicant to possess.
- ❖ Educational requirements employers require/desire from prospective hires.

The New Jersey Department of Labor and Workforce Development through its agreement with Burning Glass Technologies is able to provide the following labor market information aggregated from 2012 online employer job listings. This data provides valuable insight regarding current employer demand for characteristics such as skills and educational requirements. Note that this data is not meant to represent all available employment opportunities or employer requirements but rather should be viewed in terms of analysis of labor market demand.

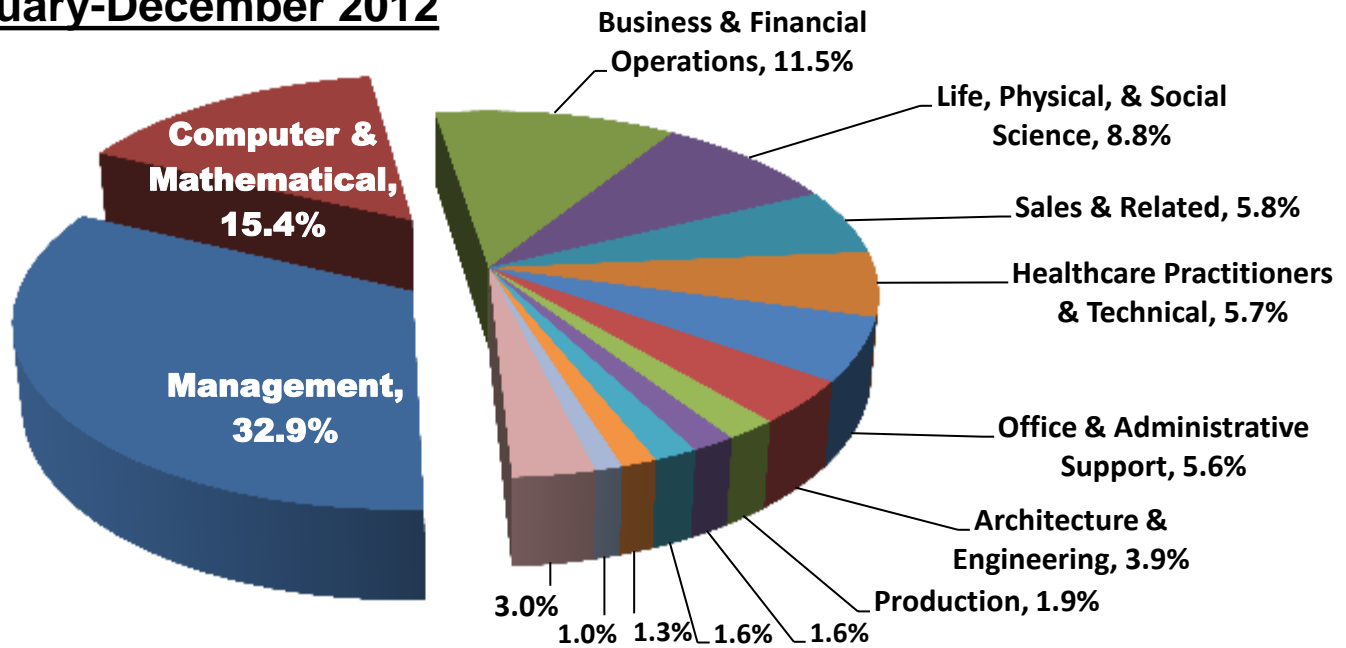


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Occupation Family



Job Postings: January-December 2012

- Management
- Computer & Mathematical
- Business & Financial Operations
- Life, Physical, & Social Science
- Sales & Related
- Healthcare Practitioners & Technical
- Office & Administrative Support
- Architecture & Engineering
- Production
- Arts, Design, Entertainment, Sports, & Media
- Legal
- Healthcare Support
- Installation, Maintenance, & Repair
- Other



In 2012, *Management* (32.9%) and *Computer & Mathematical* (15.4%) listings accounted for 48.8% of the 31,325 job postings for positions within New Jersey's Biopharmaceutical Life Sciences Cluster.

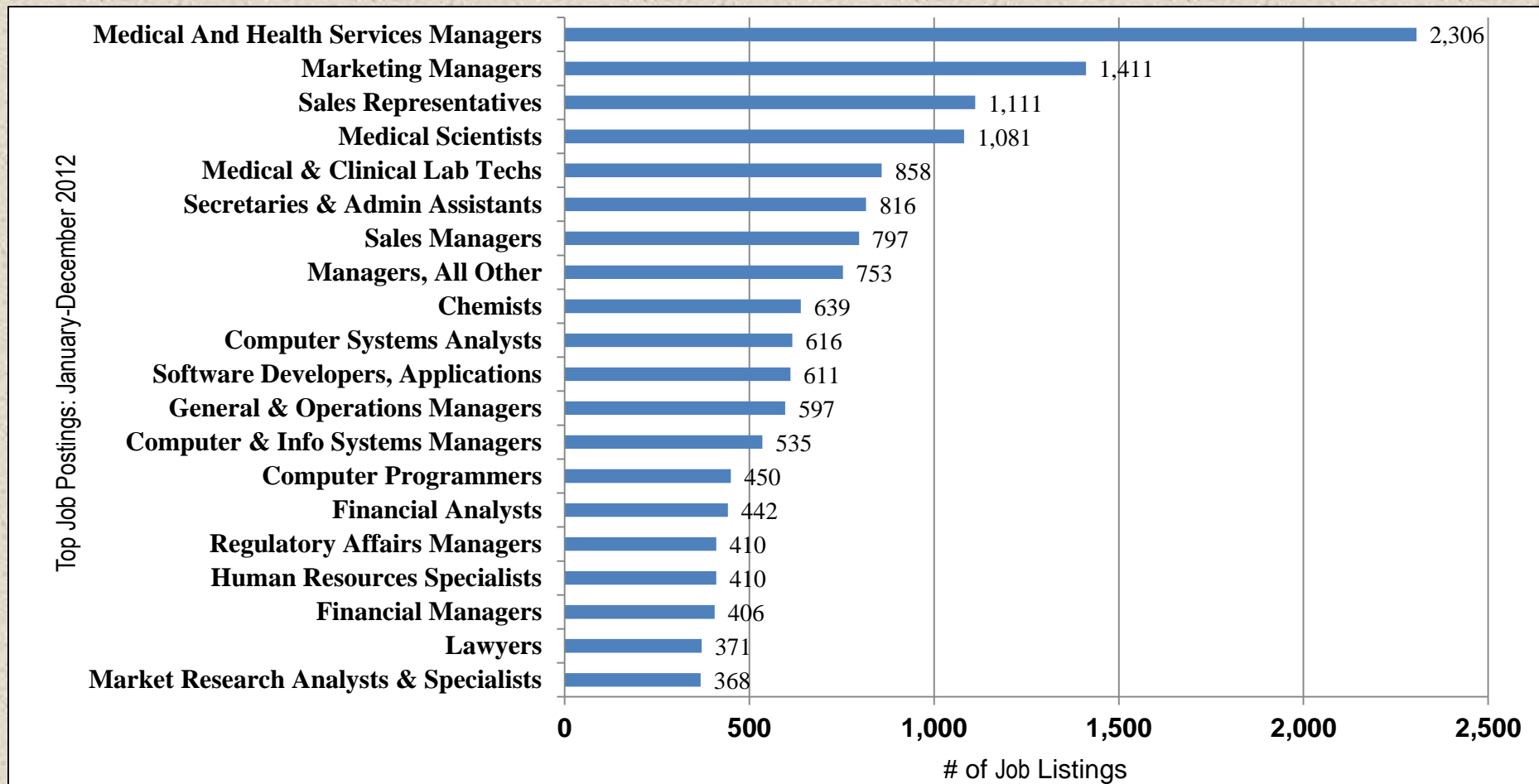


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Cluster's Occupations in Greatest Demand



The following were some of the most frequently listed positions in 2012 by biopharmaceutical life sciences companies for potential employment at a New Jersey location.



NOTE: Total identified postings : 31,325
(SOURCE: Labor Insight-Burning Glass, October 2013)



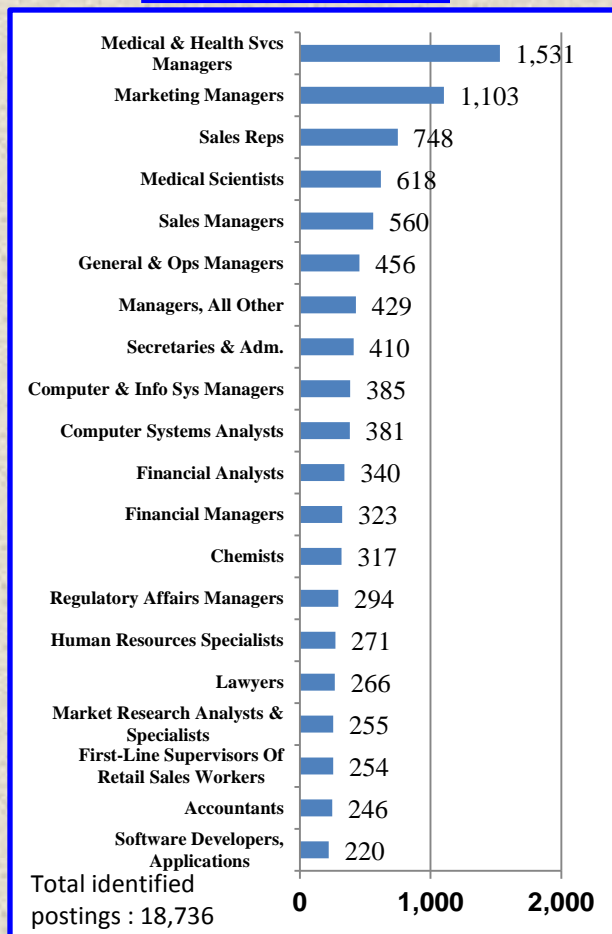
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Sector's Occupations in Greatest Demand



The following were some of the most frequently listed positions in 2012 by companies within this cluster for potential employment at a New Jersey location.

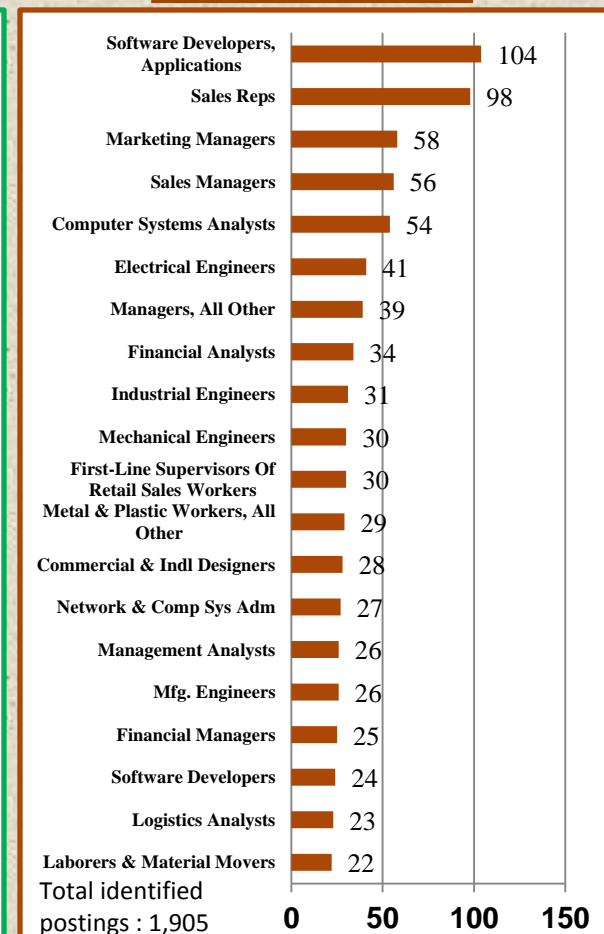
Pharmaceutical



BioTech



Medical Devices



(SOURCE: Labor Insight-Burning Glass, October 2013)

NOTE: Total identified postings : 31,325



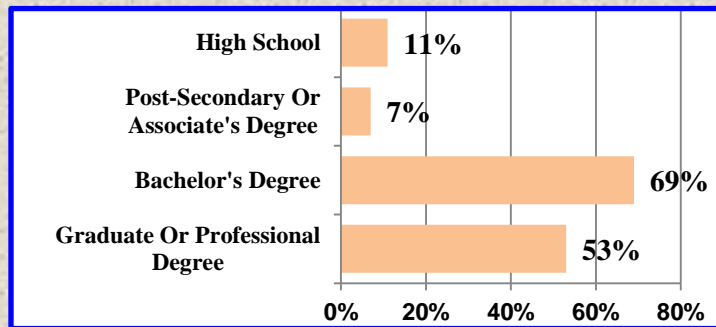
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Cluster 's Top Requirements in Demand



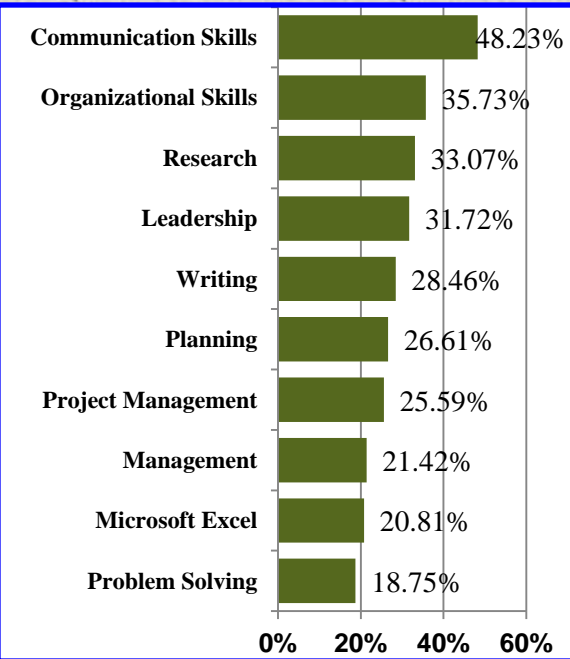
In addition to education...

Educational Attainment

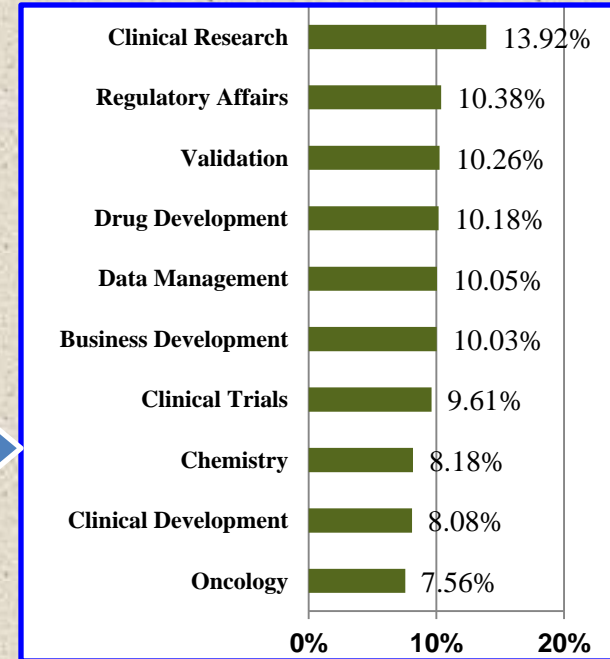
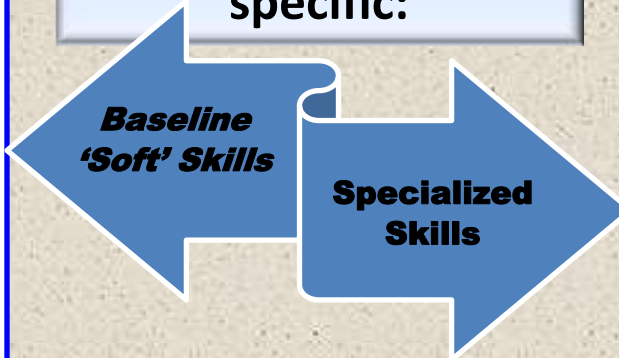


Job Postings: January-December 2012

NOTE: This chart provides information on both the preferred and required education levels listed in job postings. For this reason, a job posting may be counted in more than one of the educational categories shown to the left.



N.J. Employer's are also focused on workers having specific:



(SOURCE: Labor Insight-Burning Glass, October 2013) NOTE: Data was obtained from January-December 2012 filtered job Postings:



NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER



Analysis: Regional Review

New Jersey's Biopharmaceutical Life Sciences Cluster



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Regional Concentration of Employment



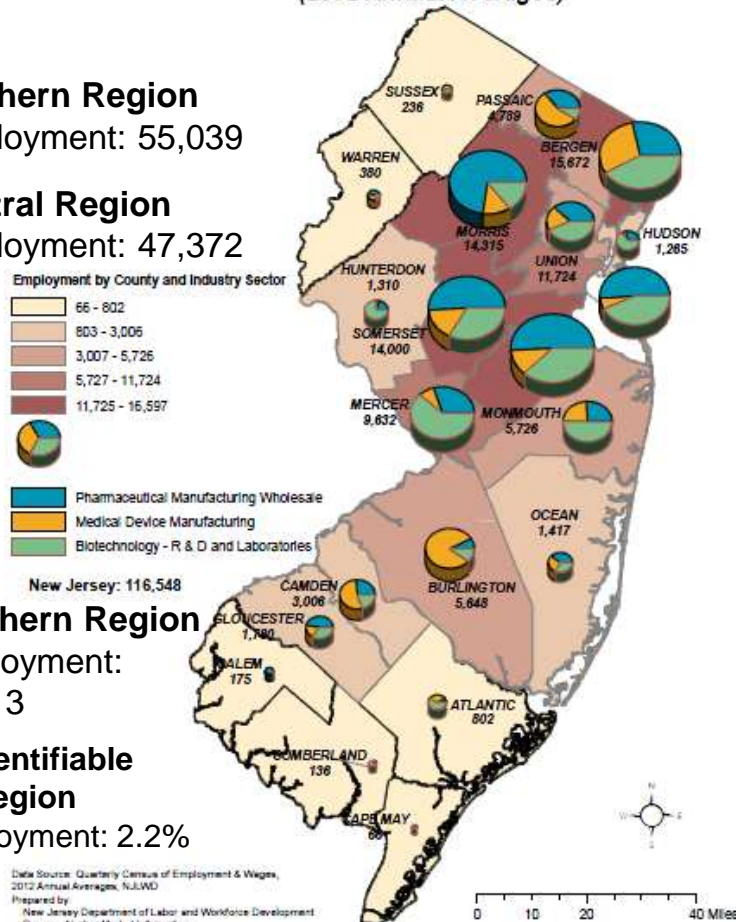
*Life Science Employment and by Industry Sector
New Jersey Counties
(2012 Annual Averages)*

Northern Region
Employment: 55,039

Central Region
Employment: 47,372

Southern Region
Employment:
11,613

**Unidentifiable
by Region**
Employment: 2.2%



New Jersey's Biopharmaceuticals Life Sciences Cluster employed an average of 116,548 workers in 2012. The breakdown of this highly talented workforce – *By region* was as follows:

- ❖ **Northern NJ's** nine counties (Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Sussex, Union, & Warren) accounted for 47.2% of the cluster's employment with the largest share working in **Pharmaceuticals** (46.3%).
- ❖ **Central NJ's** five counties (Mercer, Middlesex, Monmouth, Ocean, & Somerset) accounted for 40.6% of the cluster's employment with the largest share working in **Pharmaceuticals** (43.3%).
- ❖ **Southern NJ's** seven counties (Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester & Salem) accounted for 10.0% of the cluster's employment with the largest share working in **Medical Devices** (59.4%).

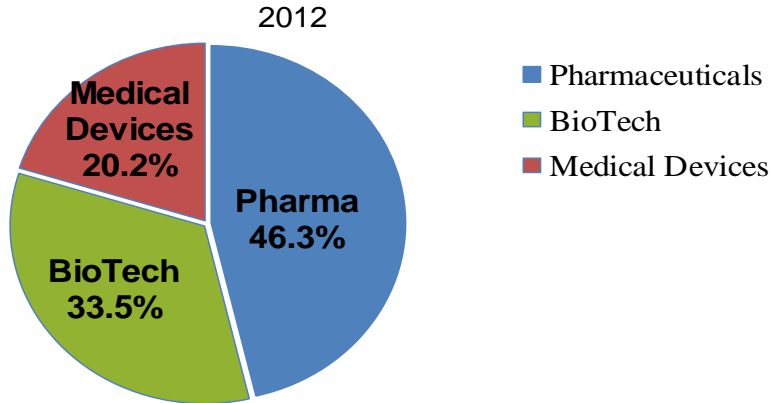


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

- Northern NJ Regional Employment -

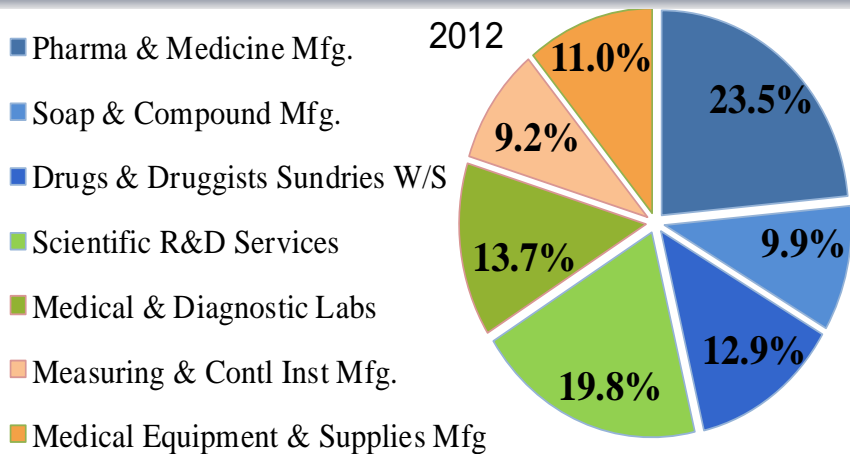


NNJ Regional Employment

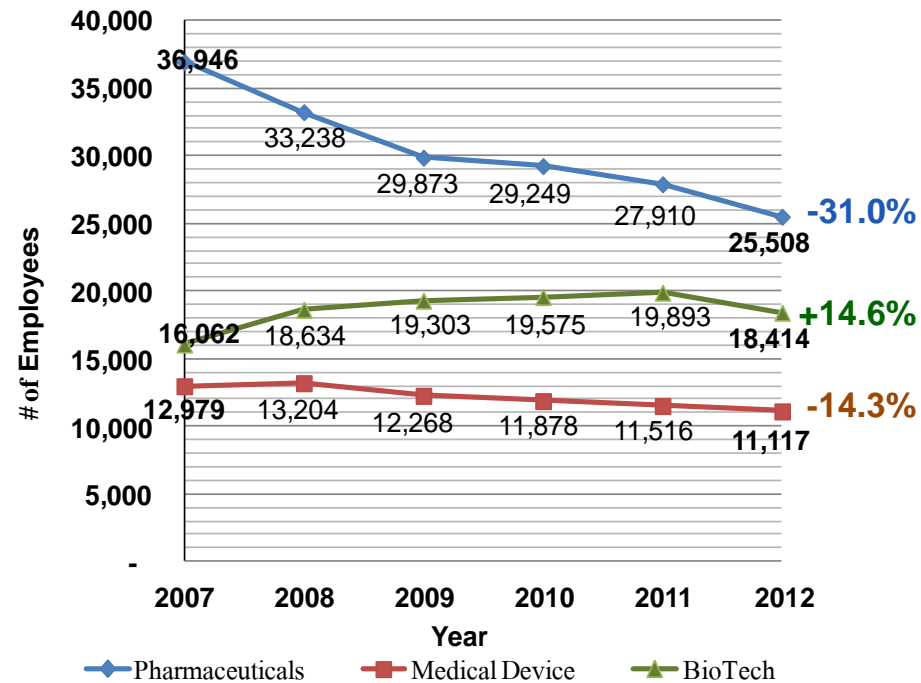


Over 55,000 workers were employed within this cluster in Northern NJ in 2012. The region's cluster employment declined by 16.6% over the 5-year period (2007-2012) period.

NNJ Industry Employment



5-Year Employment Trend

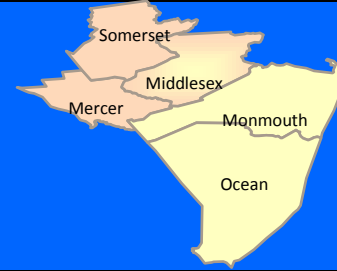


(SOURCE: New Jersey Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2007-12 Annual Averages: 4-digits NAICS)

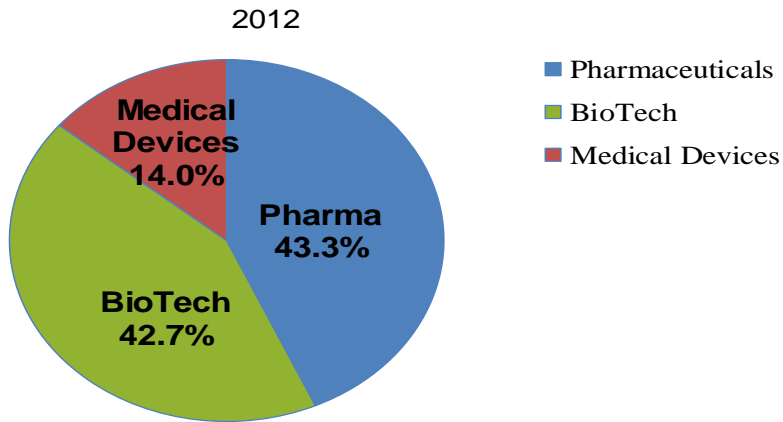


NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

- Central NJ Regional Employment -

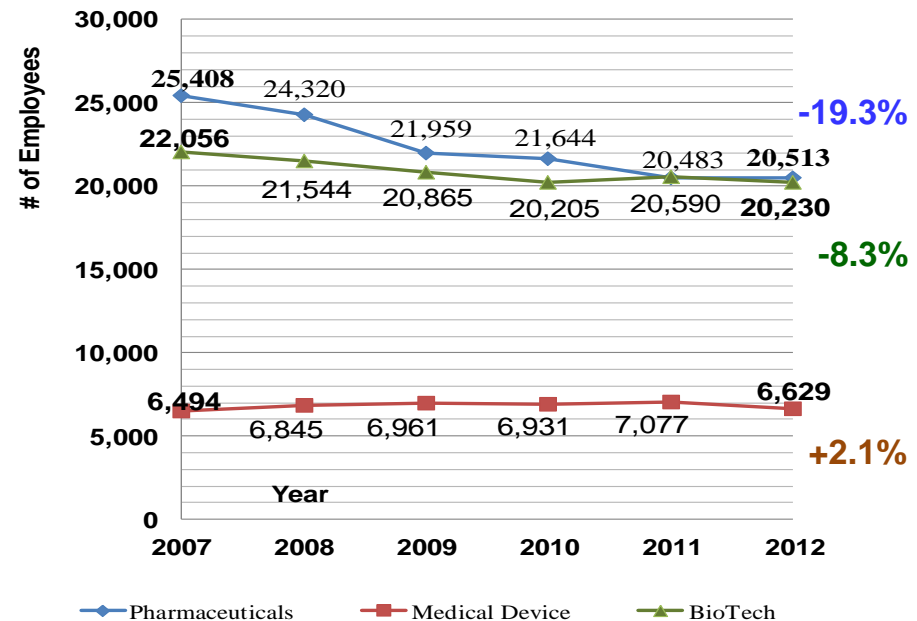


CNJ Regional Employment

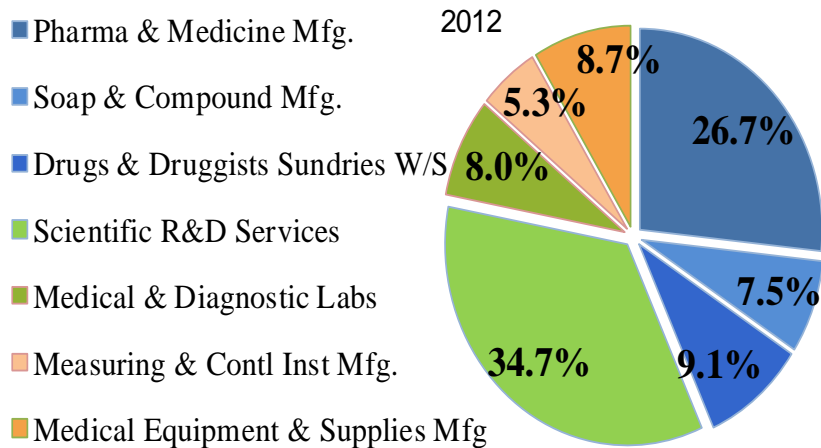


In 2012, Biopharmaceutical Life Sciences employed an average of 47,372 workers in Central NJ. This region's cluster employment declined by 12.2% over the 5-year period (2007-2012) period.

5-Year Employment Trend



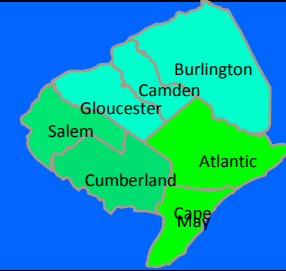
CNJ Industry Employment



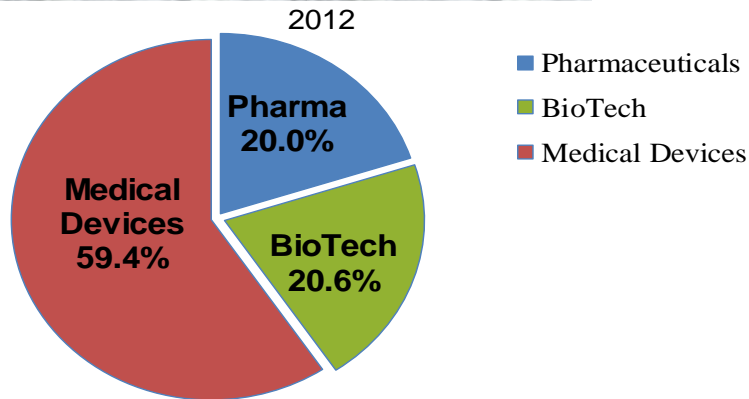
(SOURCE: New Jersey Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2007-12 Annual Averages: 4-digits NAICS)



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER - Southern NJ Regional Employment -

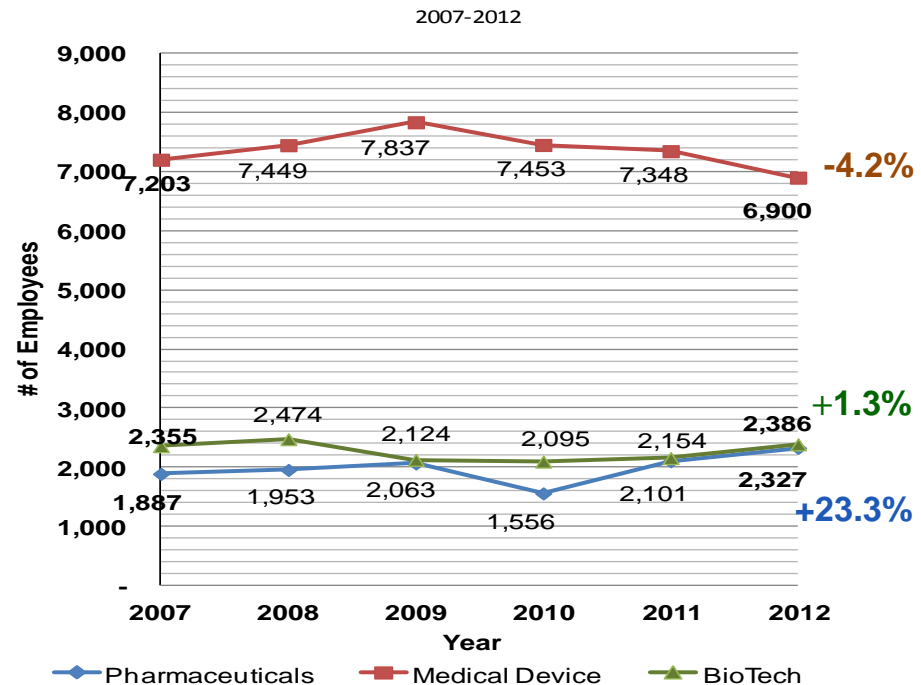


SNJ Regional Employment

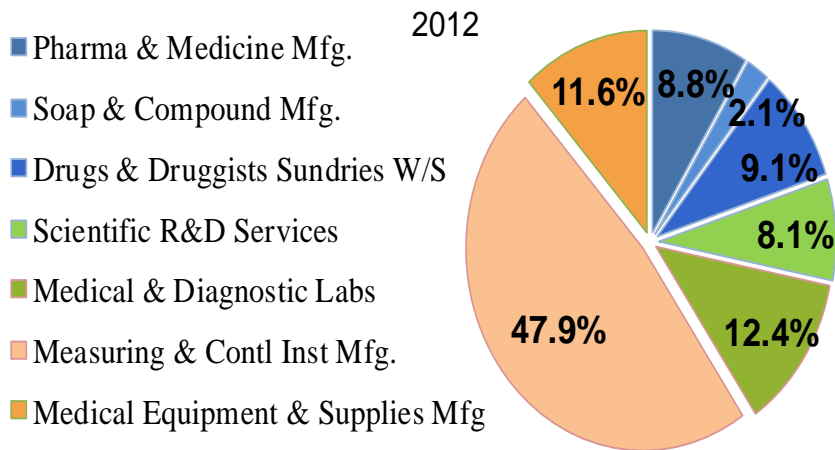


Over 11,600 workers were employed in this cluster in Southern NJ in 2012. The Biopharmaceutical Life Sciences' employment in this region increase by 1.5% over the 5-year period (2007-2012) period.

5-Year Employment Trend



SNJ Industry Employment





NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Concentration of Pharmaceutical Employment



Pharmaceutical Employment - New Jersey Counties
(2012 Annual Averages)

Northern Region

Employment:
25,500 (apx)

Central Region

Employment:
20,500 (apx)

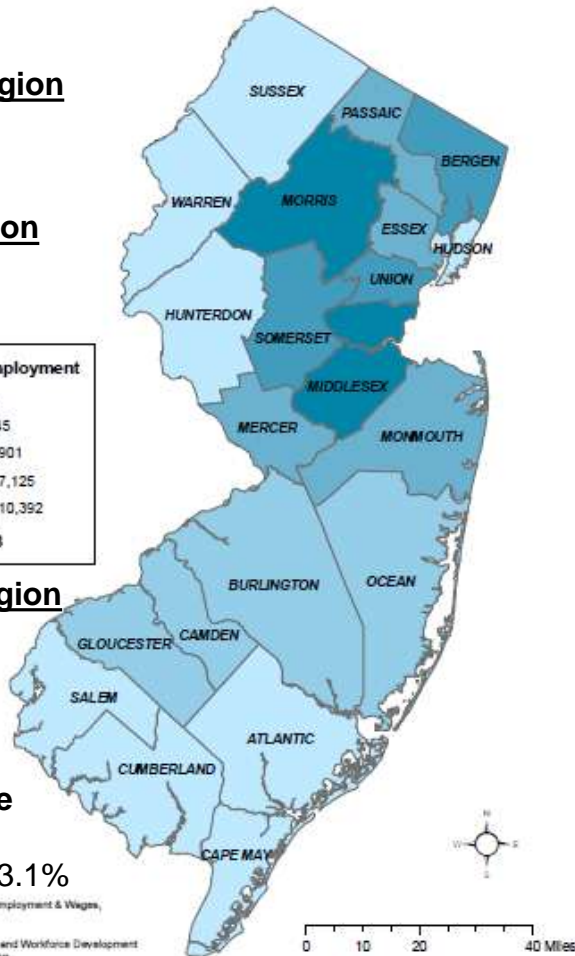


Southern Region

Employment:
2,300 (apx)

Unidentifiable by Region

Employment: 3.1%



Data Source: Quarterly Census of Employment & Wages,
2012 Annual Averages, NJLWD
Prepared by:
New Jersey Department of Labor and Workforce Development
Bureau of Labor Market Information
November 2013

New Jersey's **pharmaceutical** statewide employment averaged 49,915 in 2012. Its employment was mostly concentrated in the **pharmaceutical & medicine manufacturing (53.5%)** industry group.

The breakdown *-by region-* was as follows:

- ❖ **Northern** region accounted for 51.1% of the employment with most jobholders employed in pharmaceutical & medicine manufacturing (50.7%) industry group.
- ❖ **Central** region accounted for 41.1% of the employment with most jobholders employed in pharmaceutical & medicine manufacturing (61.6%) industry group.
- ❖ **Southern** region accounted for 4.7% of the employment with most jobholders employed in the drug & druggists sundries wholesalers (45.6%) industry group.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Concentration of Biotechnology Employment



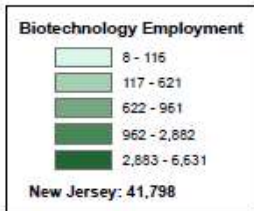
*Biotechnology Employment - New Jersey Counties
(2012 Annual Averages)*

Northern Region

Employment:
18,400 (apx)

Central Region

Employment:
20,200 (apx)

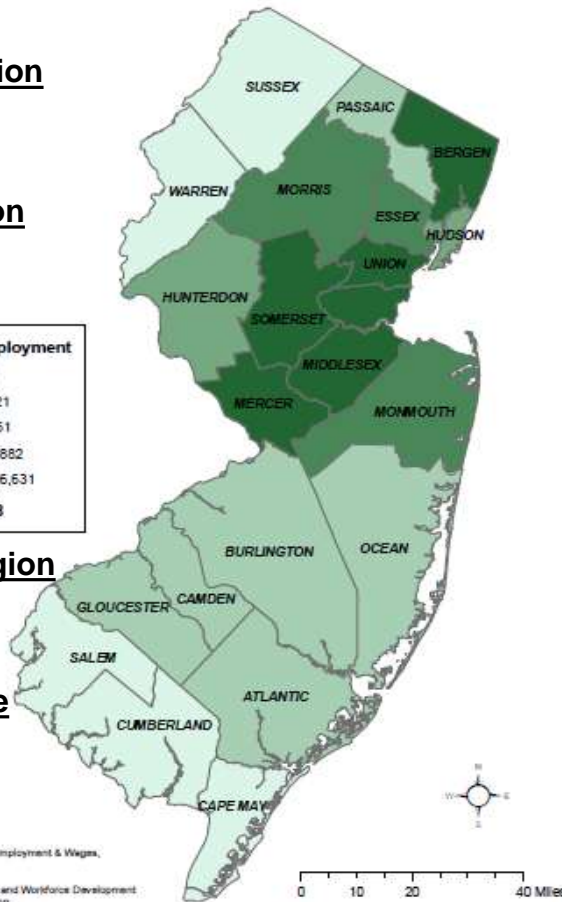


Southern Region

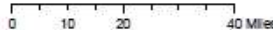
Employment:
2,400 (apx)

Unidentifiable by Region

Employment:
1.8%



Data Source: Quarterly Census of Employment & Wages,
2012 Annual Averages, NJLWD
Prepared by:
New Jersey Department of Labor and Workforce Development
Bureau of Labor Market Information
November 2013



New Jersey's statewide **biotech** employment averaged almost 41,800 in 2012. It was largely concentrated in scientific research & development services (69.0%) industry group.

The breakdown *-by region-* was as follows:

- ❖ **Northern** region accounted for 44.1% of the employment with most jobholders employed in scientific R&D services (59.0%) industry group.
- ❖ **Central** region accounted for 48.4% of the employment with most jobholders employed in scientific R&D services (81.2%) industry group.
- ❖ **Southern** region accounted for 5.7% of the employment with most jobholders employed in medical & diagnostic laboratories (60.4%) industry group.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Concentration of Medical Device Employment



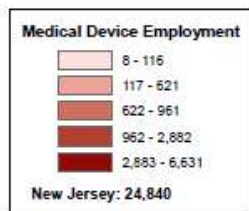
Medical Device Employment - New Jersey Counties
(2012 Annual Averages)

Northern Region

Employment:
11,100 (apx)

Central Region

Employment:
6,600 (apx)

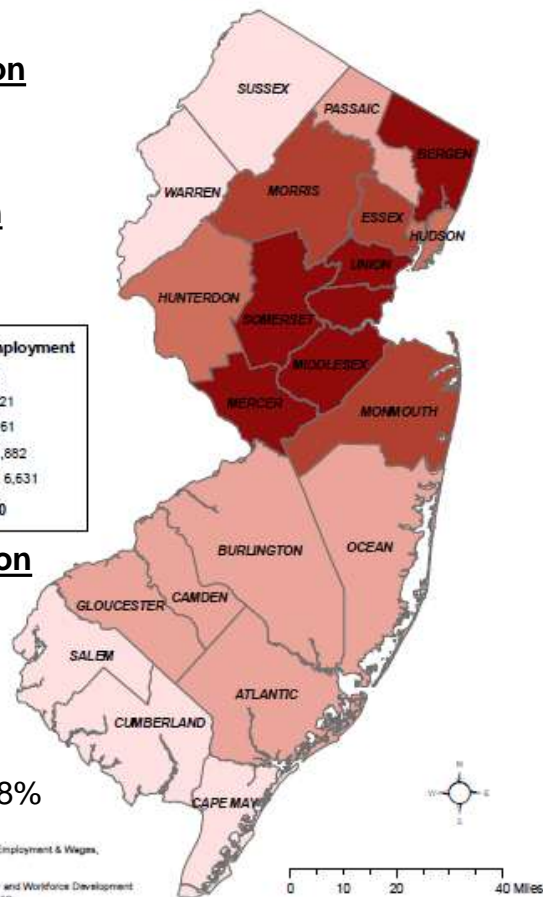


Southern Region

Employment:
6,900 (apx)

Unidentifiable by Region

Employment: 0.8%



Data Source: Quarterly Census of Employment & Wages,
2012 Annual Averages, N.J.LWD
Prepared by:
New Jersey Department of Labor and Workforce Development
Bureau of Labor Market Information
November 2013

New Jersey's statewide **medical device** employment averaged 24,842 in 2012. It was mostly in navigational, measuring, **electro-medical & control instrument manufacturing (53.2%)** industry group.

The breakdown *-by region-* was as follows:

- ❖ **Northern** region accounted for 44.7% of the employment with most jobholders employed in medical equipment & supplies mfg. (54.7%) industry group.
- ❖ **Central** region accounted for 26.7% of the employment with most jobholders employed in medical equipment & supplies mfg. (62.3%) industry group.
- ❖ **Southern** region accounted for 27.8% of the employment with most jobholders employed in navigational, measuring, electro-medical & control instrument manufacturing (22.4%) industry group.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Concentration of Establishments



Life Science Employers
2012

Northern Region

Establishments:
1,296

Central Region

Establishments:
1,010

Life Science Employers

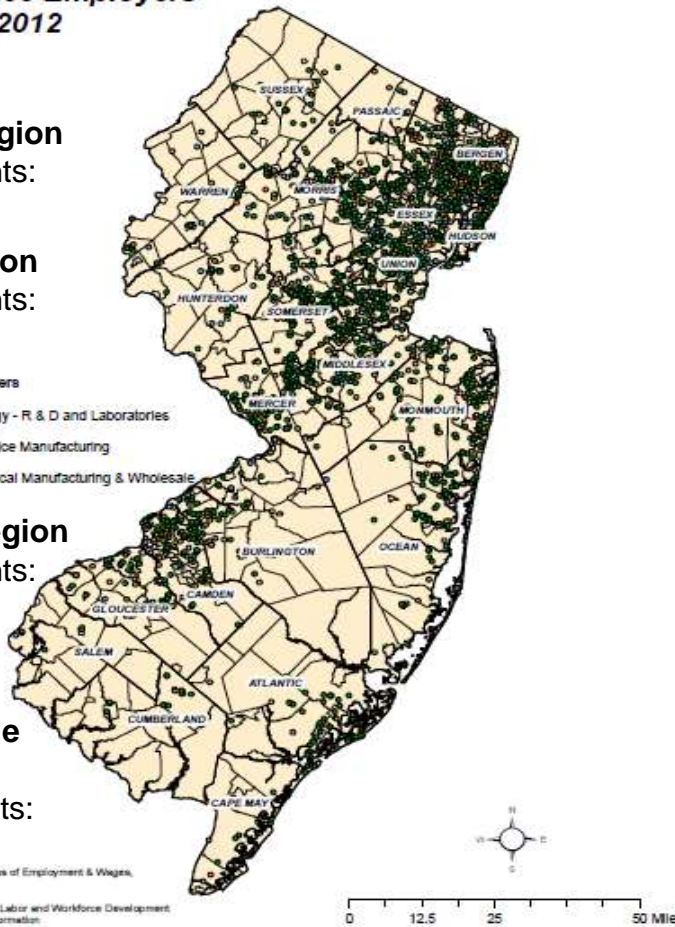
- Biotechnology - R & D and Laboratories
- Medical Device Manufacturing
- Pharmaceutical Manufacturing & Wholesale

Southern Region

Establishments:
334

Unidentifiable by Region:

Establishments:
13.2%



New Jersey had over 3,000 establishments directly engaged in its highly concentrated Biopharmaceutical Life Sciences Cluster in 2012.

The establishment breakdown - *by region* - was as follows:

- ❖ **Northern NJ's** nine counties (Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Sussex, Union, & Warren) accounted for 42.6% of life sciences led by establishments in the **Biotech** component. (39.0%).
- ❖ **Central NJ's** five counties (Mercer, Middlesex, Monmouth, Ocean, & Somerset) accounted for 33.2% of the life sciences establishments led by the **Biotech** component. (49.5%)
- ❖ **Southern NJ's** seven counties (Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester & Salem) accounted for 11.0% of life sciences led by the **Biotech** component. (56.0%)

Data Source: Quarterly Census of Employment & Wages,
2012 Third Quarter, NULLND
Prepared by:
New Jersey Department of Labor and Workforce Development
Bureau of Labor Market Information
November 2013



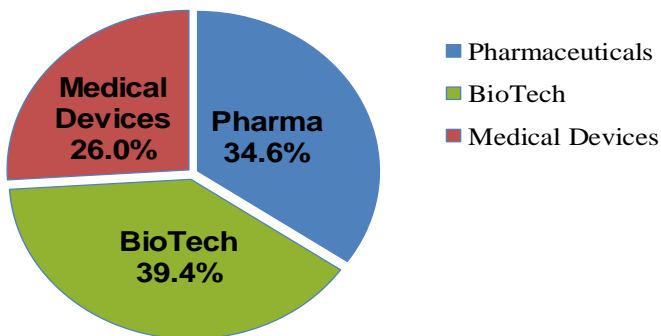
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Northern NJ Regional Establishments



Northern NJ Establishments

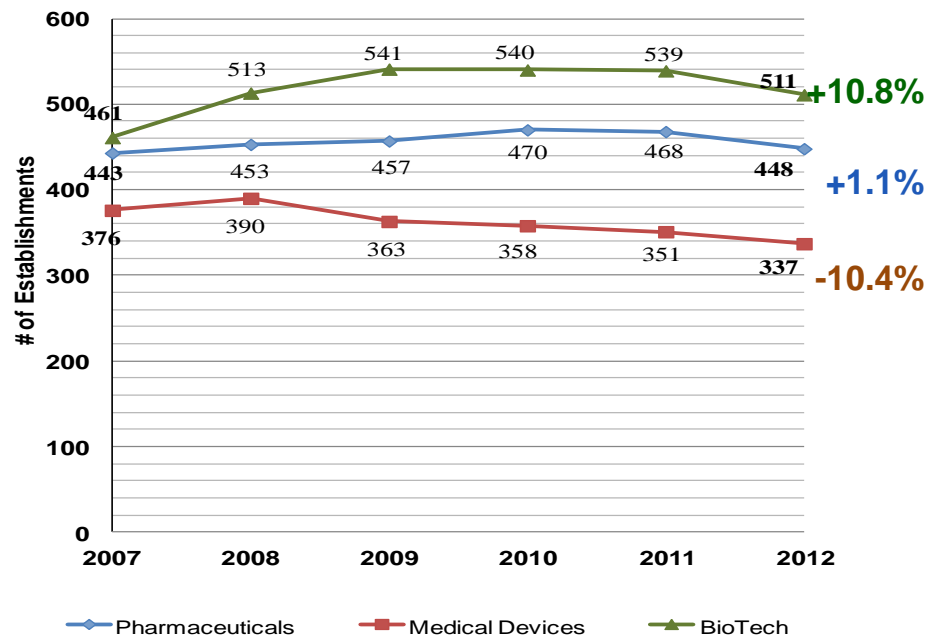
2012



Northern NJ's Biopharmaceutical Life Sciences cluster had an average of 1,296 establishments in 2012. Its establishments gained 1.3% over the 5-year period (2007-2012) period.

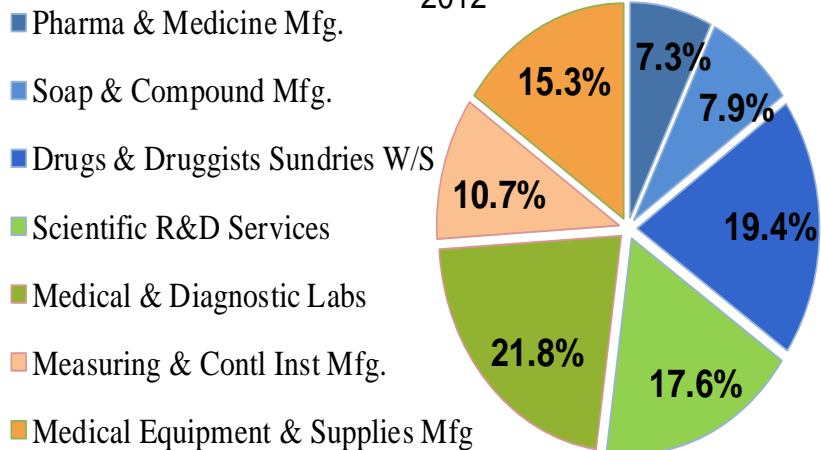
5-Year Establishment Trend

2007 - 2012



NNJ Industry Establishments

2012





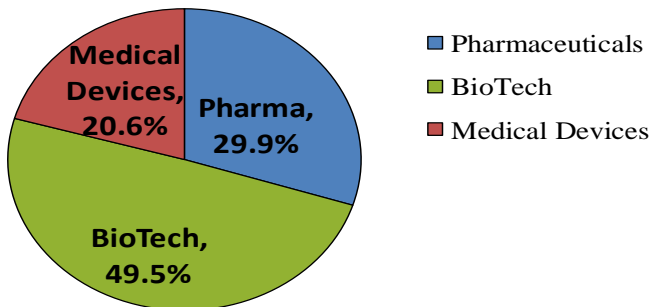
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Central NJ Regional Establishments



Central NJ Establishment

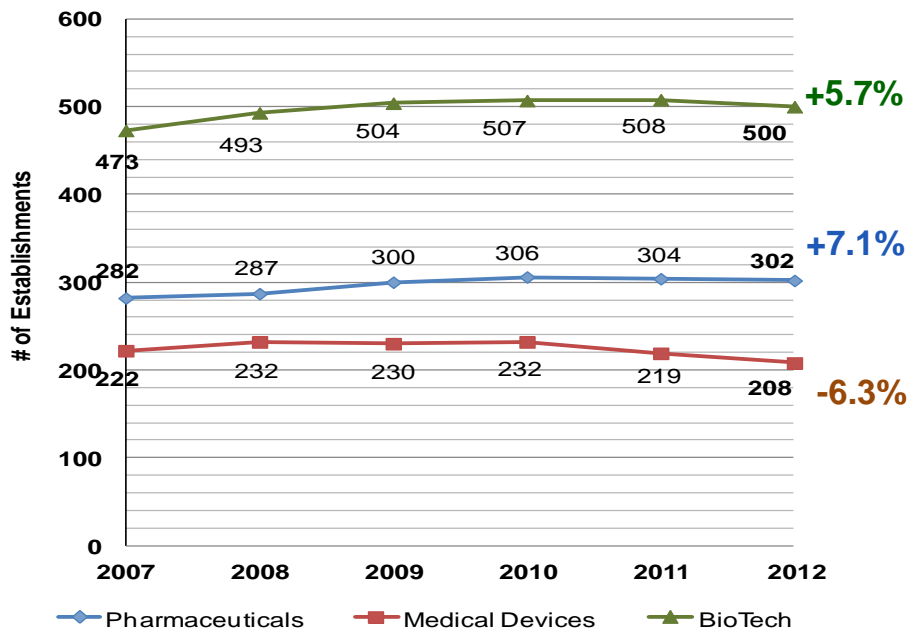
2012



Central NJ had 1,010 establishments within this cluster in 2012. These establishments gained 3.4% over the 5-year period (2007-2012) period.

5-Year Establishment Trend

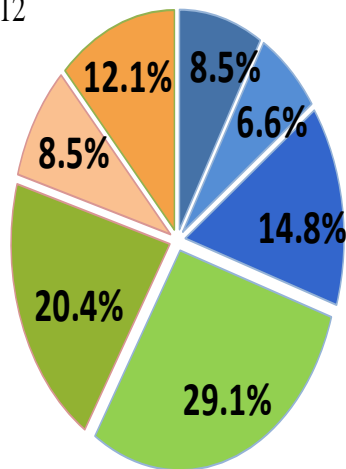
2007-2012



CNJ Industry Establishments

2012

- Pharma & Medicine Mfg.
- Soap & Compound Mfg.
- Drugs & Druggists Sundries W/S
- Scientific R&D Services
- Medical & Diagnostic Labs
- Measuring & Contl Inst Mfg.
- Medical Equipment & Supplies Mfg





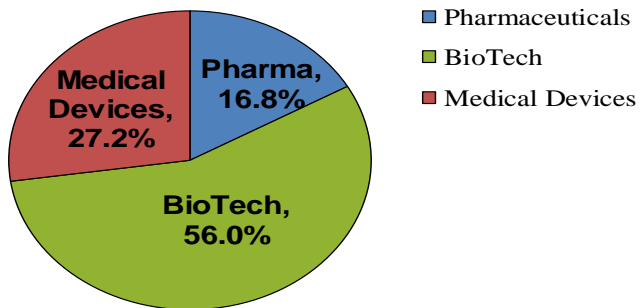
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Southern NJ Regional Establishments



Southern NJ Establishment

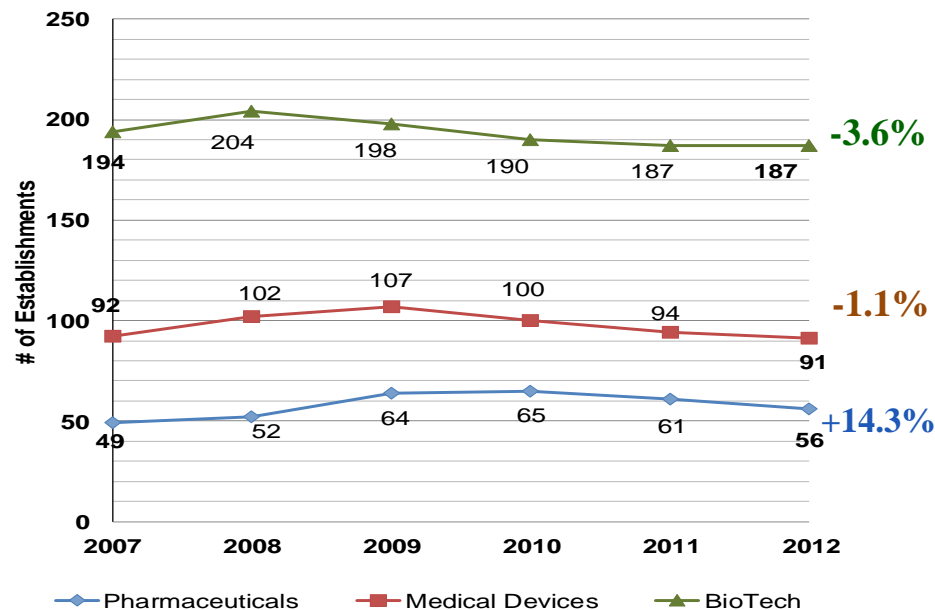
2012



Southern NJ had 334 establishments within this cluster in 2012. These establishments remained flat over the 5-year period (2007-2012) period.

5-Year Establishment Trend

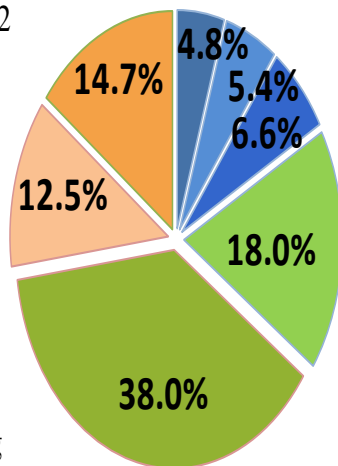
2007 – 2012



SNJ Industry Establishments

2012

- Pharma & Medicine Mfg.
- Soap & Compound Mfg.
- Drugs & Druggists Sundries W/S
- Scientific R&D Services
- Medical & Diagnostic Labs
- Measuring & Cont'l Inst Mfg.
- Medical Equipment & Supplies Mfg





NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Concentration of Pharmaceutical Establishments



Life Science
Pharmaceutical Manufacturing
Employers - 2012

Northern Region

Establishments:
448

Central Region

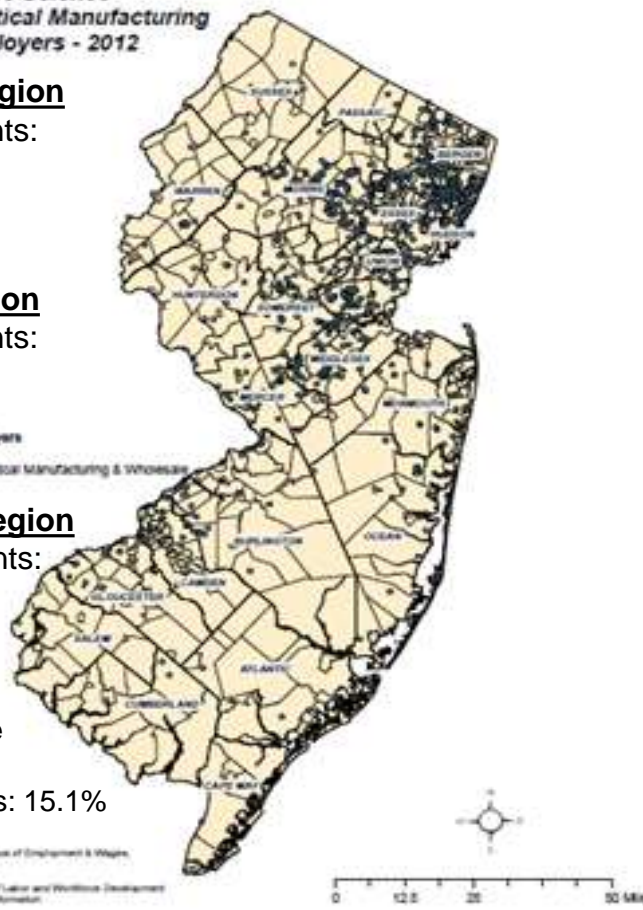
Establishments:
302

Southern Region

Establishments:
56

Unidentifiable by Region :

Establishments: 15.1%



Data Source: Quarterly Census of Employment & Wages,
2012 Third Quarter, NJLMI
Prepared by:
New Jersey Department of Labor and Workforce Development
Bureau of Labor Market Information
November 2013

In 2012, New Jersey had an average of **947 establishments** directly engaged in the **pharmaceutical** industries.

The establishment breakdown *-by region-* was as follows:

- ❖ **Northern Region** accounted for 47.1% of the establishments, led by Bergen, Morris, Essex, & Union counties. Collectively, these 4 counties accounted for 80.6% of NNJ's **pharmaceutical** establishments.
- ❖ **Central Region** accounted for 31.9% of the establishments, led by Middlesex & Somerset counties. Together, these 2 counties accounted for over 70.0% of CNJ's **pharmaceutical** establishments.
- ❖ **Southern Region** accounted for 5.9% of the establishments, led by Burlington, Camden & Gloucester counties. Collectively, these 3 counties accounted for over 75.0% of SNJ's **pharmaceutical** establishments.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Concentration of Biotechnology Establishments



Life Science
Biotechnology Employers
2012

Northern Region

Establishments:
511

Central Region

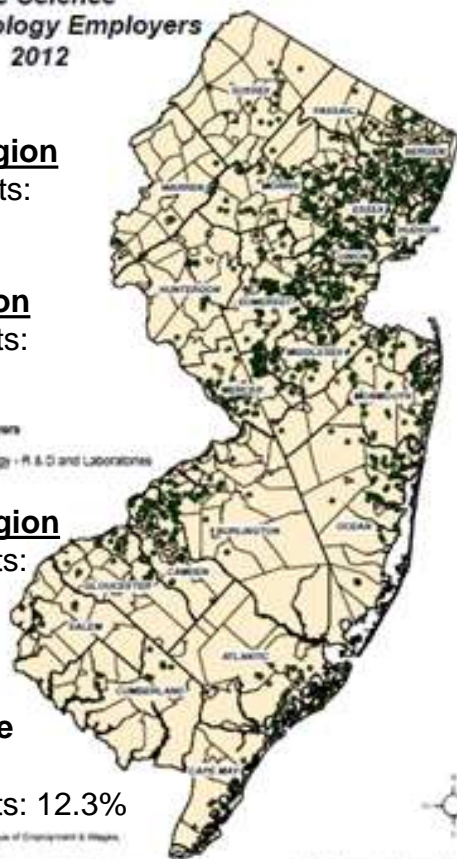
Establishments:
500

Southern Region

Establishments:
187

Unidentifiable by Region :

Establishments: 12.3%



Data Source: Quarterly Census of Employment & Wages,
2012 Third Quarter, NJLMI
Prepared by:
New Jersey Department of Labor and Workforce Development
Bureau of Labor Market Information
November 2012

In 2012, New Jersey had an average of 1,365 establishments directly engaged in the **biotech** industries.

The establishment breakdown *-by region-* was as follows:

- ❖ **Northern Region** accounted for 37.4% of the establishments, led by Bergen, Morris, Essex, & Union counties. Collectively, these 4 counties accounted over 75.0% of NNJ's **biotech** establishments.
- ❖ **Central Region** accounted for 36.6% of the establishments, led by Middlesex, Mercer, & Monmouth counties. Collectively, these 3 counties accounted for over 71.0% of CNJ's **biotech** establishments.
- ❖ **Southern Region** accounted for 13.7% of the establishments, led by Burlington, Camden, & Atlantic counties. Collectively, these 3 counties accounted for over 71.0% of SNJ's **biotech** establishments.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Concentration of Medical Device Establishments



**Life Science
Medical Device Employers
2012**

Northern Region

Establishments:
337

Central Region

Establishments:
208

Life Science Employers

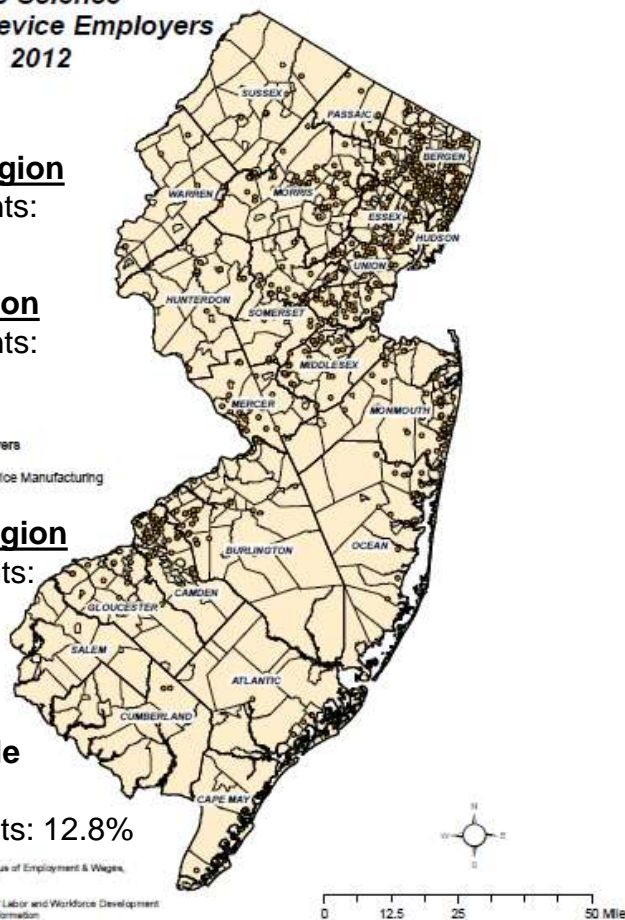
• Medical Device Manufacturing

Southern Region

Establishments:
91

Unidentifiable by Region :

Establishments: 12.8%



Date Source: Quarterly Census of Employment & Wages,
2012 Third Quarter, NJLWD
Prepared by:
New Jersey Department of Labor and Workforce Development
Bureau of Labor Market Information
November 2013

In 2012, New Jersey had an average of 730 establishments directly engaged in the **medical device** industries.

The establishment breakdown *-by region-* was as follows:

- ❖ **Northern Region** accounted for 46.2% of the establishments, led by Bergen, Morris, Essex, & Passaic counties. Collectively, these 4 counties accounted over 75.0% of NNJ's **medical device** establishments.
- ❖ **Central Region** accounted for 28.5% of the establishments, led by Middlesex & Monmouth counties. Combined, these 2 counties accounted for over half of CNJ's **medical device** establishments.
- ❖ **Southern Region** accounted for 12.5% of the establishments, led by Burlington & Camden counties. Combined, these 2 counties accounted for nearly 75.0% of SNJ's **medical device** establishments.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Summary of Employment & Establishments



The following chart provides a geographic summary of Life Sciences' employment & establishments in New Jersey;

Employment *	2012		5-Year (2007-2012) Trend			
	Cluster		Pharmaceutical	Biotech	Medical Device	Overall Cluster
Statewide	116,548		-23.3%	2.1%	-7.3%	-12.3%
Northern New Jersey	55,039	47.2%	-31.0%	14.6%	-14.3%	-16.6%
Central New Jersey	47,372	40.6%	-19.3%	-8.3%	2.1%	-12.2%
Southern New Jersey	11,613	10.0%	23.3%	1.3%	-4.2%	1.5%

Establishments *	2012		5-Year (2007-2012) Trend			
	Cluster		Pharmaceutical	Biotech	Medical Device	Overall Cluster
Statewide	3,054		9.1%	10.3%	-3.3%	6.3%
Northern New Jersey	1,296	42.4%	1.1%	10.8%	-10.4%	1.3%
Central New Jersey	1,010	33.1%	7.1%	5.7%	-6.3%	3.4%
Southern New Jersey	334	10.9%	14.3%	-3.6%	-1.1%	-0.3%

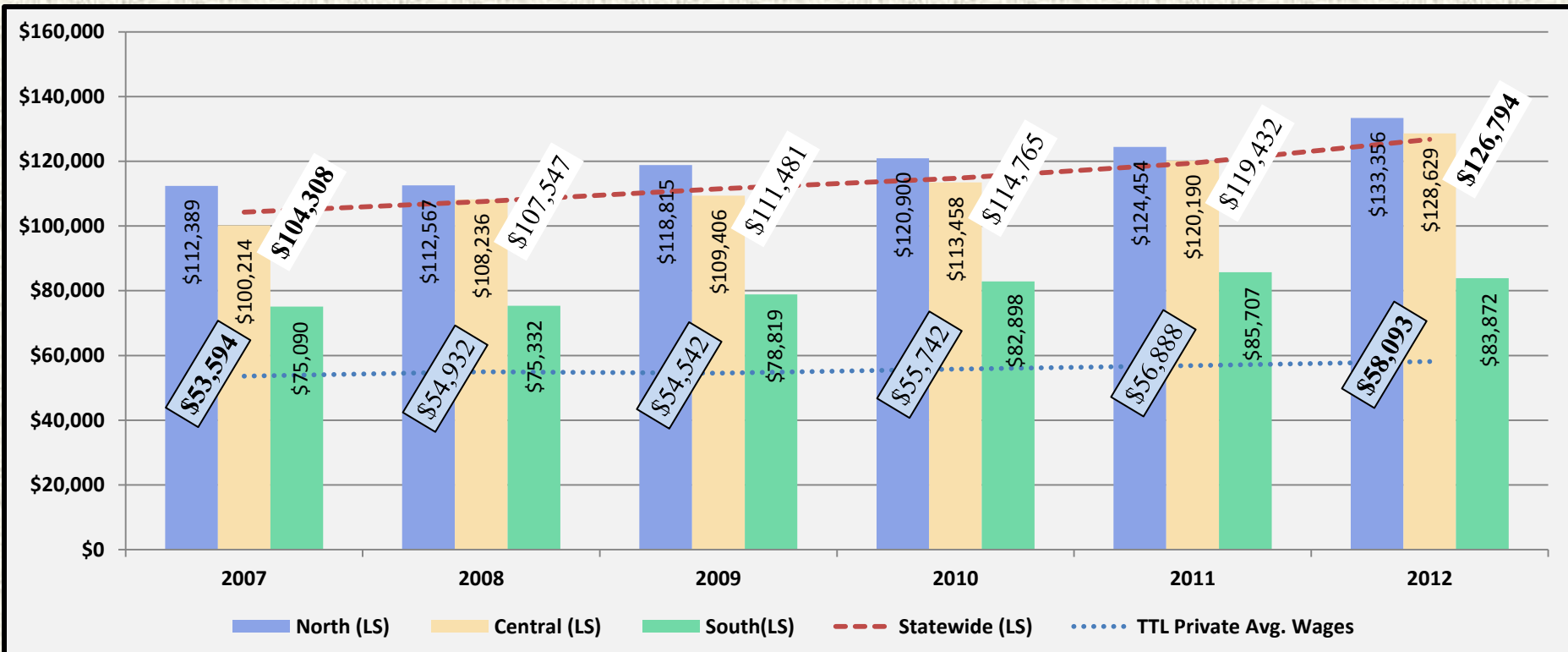
(SOURCE: New Jersey Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2007-12 Annual Averages: 4-digits NAICS)

* Note: Not all data was identifiable by region. Specifically:
Employment: 2.2% *Establishments: 13.6%*



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Average Annual Wages



In 2012, this cluster's statewide annual average wage was \$126,794, which was 118.3% higher than the state's total private sector's average wage of \$58,093. The cluster's three components (*statewide*) all had wages that were significantly higher than the statewide total private average wages; Medical Device \$94,652 (62.9%), Biotech \$132,576 (128.2%) & Pharmaceuticals \$137,949 (137.5%).

(SOURCE: New Jersey Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2007-12 Annual Averages: 4-digits NAICS)



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER



Job Postings in 2012 by Region

New Jersey's
Biopharmaceutical
Life Science
Cluster



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER Job Postings



The following analysis of the job postings is broken down by the State's regions: **north**, **central** and **south**. It provides the same formatted information as previously shown statewide, however this will drill down to a regional level.

Just as employer's needs differ by industry clusters, they can also vary by locality. Therefore, an analysis of job postings by region can help identify certain occupations, skills, as well as educational attainment that local employers are in need of, such as:

- ❖ Specific occupations needed for certain operations in a particular geographic area.
- ❖ Skill requirements (or possible gaps) for a specific location.
- ❖ Educational requirements needed/desired to fill certain local positions.

In addition, this type of information can be used for investment opportunities. That is, by identifying and addressing skill gaps or exploring the types of workforce training needed in order to meet the demands of the business community can in turn help improve and expand employment opportunities.

The New Jersey Department of Labor and Workforce Development through its agreement with Burning Glass Technologies is able to provide the following labor market information aggregated from 2012 online employer job listings. This data provides valuable insight regarding current employer demand for characteristics such as skills and educational requirements. Note that this data is not meant to represent all available employment opportunities or employer requirements but rather should be viewed in terms of analysis of labor market demand.



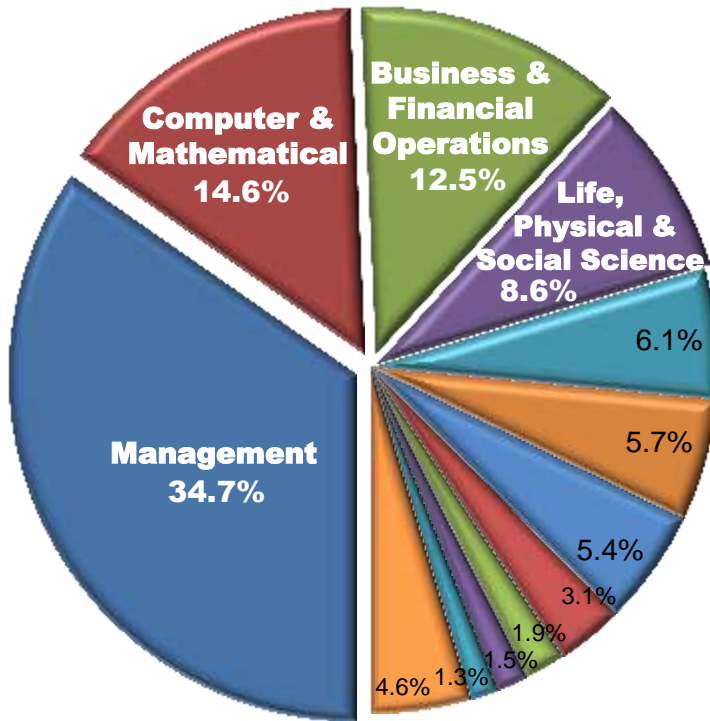
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER NNJ Occupational Postings



Job Postings: January-December 2012

NNJ Occupational Family Postings

- Management
- Computer & Mathematical
- Business & Financial Operations
- Life, Physical, & Social Science
- Office & Admin Support
- Healthcare Practitioners & Technical
- Sales & Related
- Architecture & Engineering
- Legal
- Arts, Design, Entertainment, & Media
- Production
- Other



In 2012, Management (34.7%) and Computer & Mathematical (14.6%) listings accounted for 49.3% of the 14,949 job postings for positions in the Biopharmaceutical Life Sciences Cluster within Northern New Jersey.

Job Postings in Greatest Demand Northern New Jersey: 2012

❖ Medical & Health Services Managers	1,135
❖ Marketing Managers	887
❖ Medical Scientists	543
❖ Sales Representatives	499
❖ Medical & Clinical Lab Techs	409
❖ Sales Managers	383
❖ Secretaries & Administrative Assistants	324
❖ Managers, All Other	315
❖ Chemists	306
❖ Computer Systems Analysts	305
❖ General & Operations Managers	284
❖ Software Developers, Applications	282
❖ Financial Analysts	268
❖ Computer & Info Systems Managers	257
❖ Financial Managers	245
❖ Lawyers	211
❖ Regulatory Affairs Managers	205
❖ Market Research Analysts & Specialists	203
❖ Human Resources Specialists	187
❖ Regulatory Affairs Specialists	181

The occupations above accounted for 49.7% of NNJ's 14,949 Bio-pharmaceutical Life Sciences postings in 2012.



NEW JERSEY BIO-PHARMACEUTICAL LIFE-SCIENCES CLUSTER

Occupations in Greatest Demand in NNJ



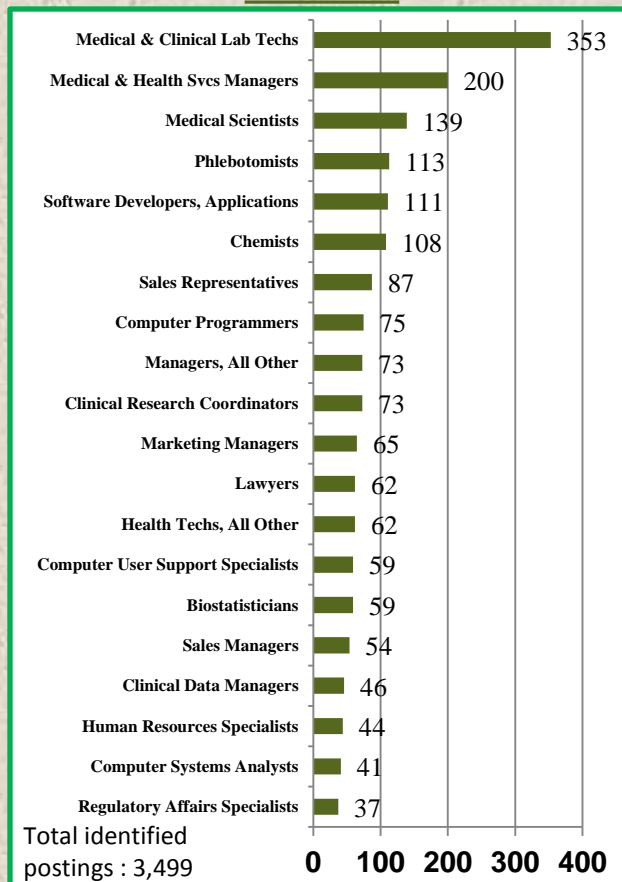
Job Postings: January-December 2012

The following were some of the most frequently listed positions in 2012 by companies within this cluster for potential employment in the Northern New Jersey Region.

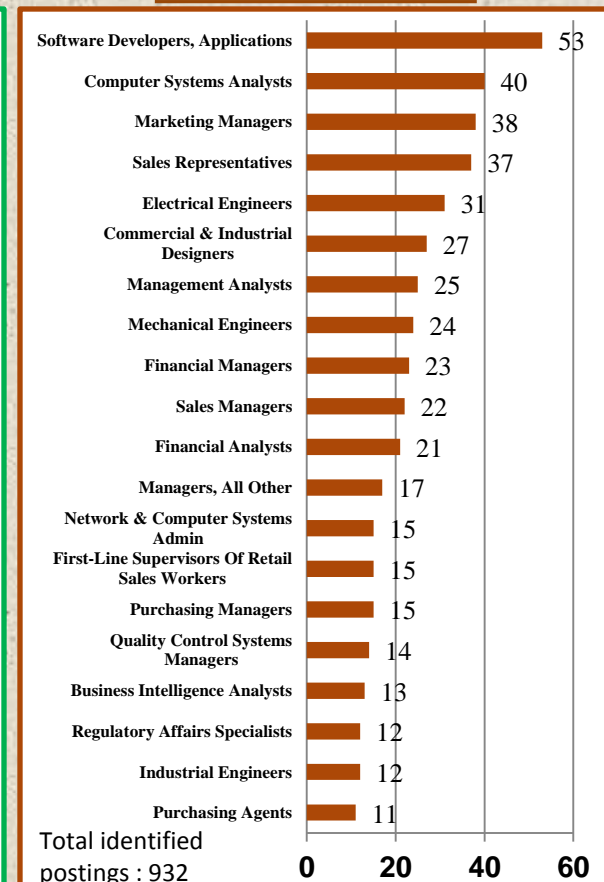
Pharmaceutical



BioTech



Medical Devices



(SOURCE: Labor Insight-Burning Glass, October 2013)

NOTE: Total identified NNJ postings : 14,949



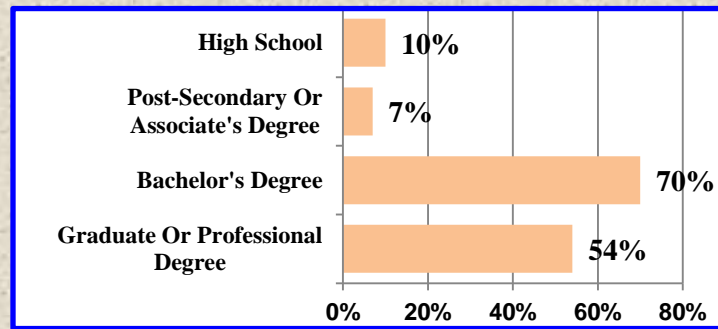
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Cluster Requirements in Demand in NNJ



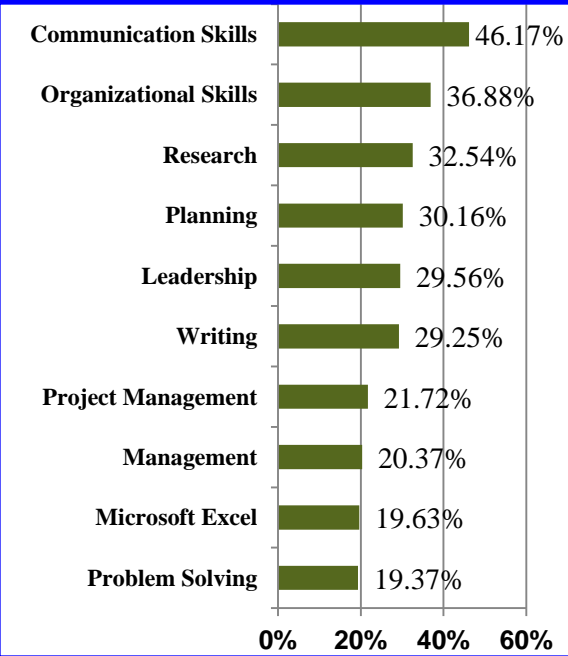
In addition to education...

Educational Attainment

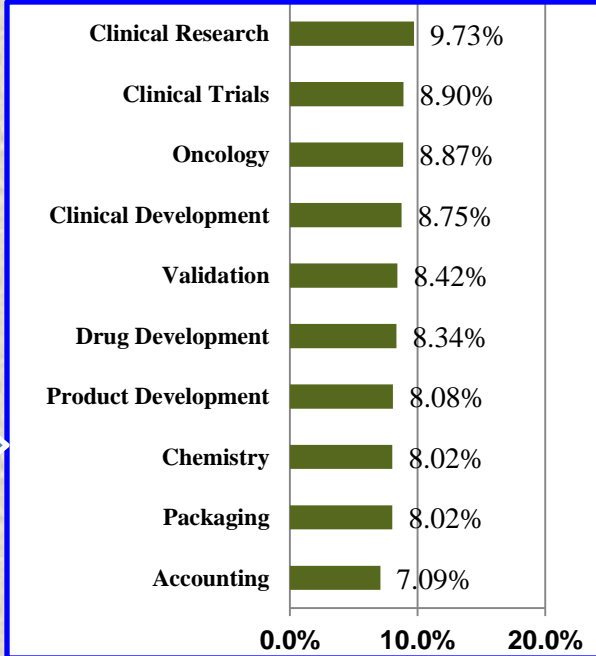
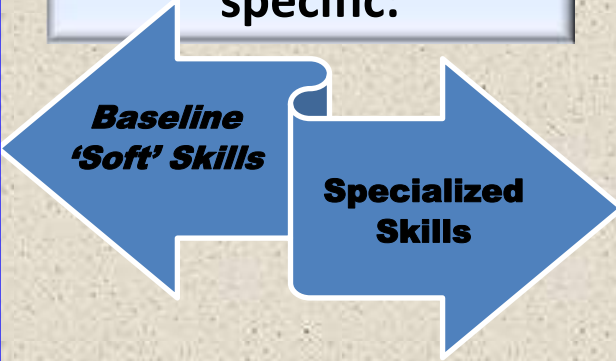


Job Postings: January-December 2012

NOTE: This chart provides information on both the preferred and required education levels listed in job postings. For this reason, a job posting may be counted in more than one of the educational categories shown to the left.



N.J. Employer's are also focused on workers having specific:

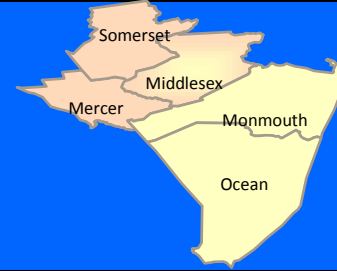


(SOURCE: Labor Insight-Burning Glass, October 2013)

NOTE: Data was obtained from 14,949 filtered job Posting s



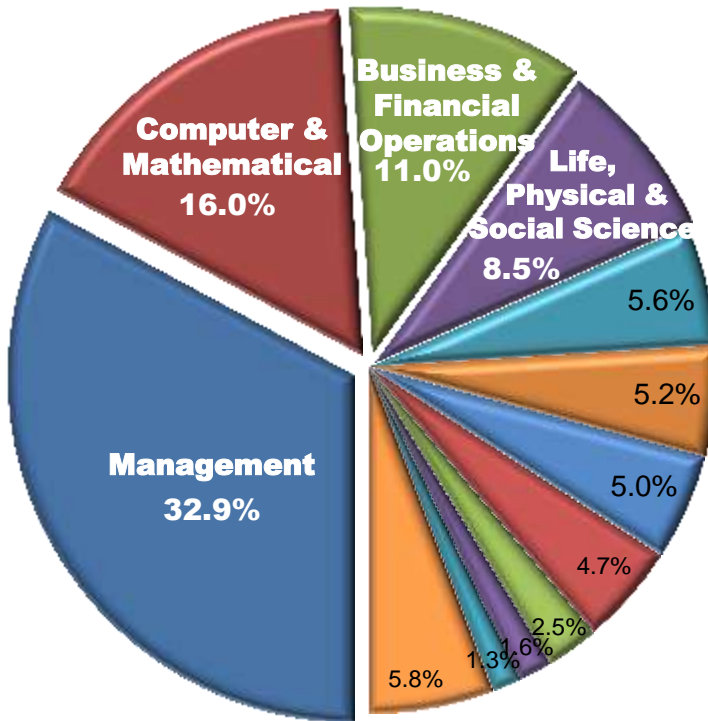
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER CNJ Occupational Postings



Job Postings: January-December 2012

CNJ Occupational Family Postings

- Management
- Computer and Mathematical
- Business and Financial Operations
- Life, Physical, and Social Science
- Sales and Related
- Office and Administrative Support
- Healthcare Practitioners and Technical
- Architecture and Engineering
- Production
- Arts, Design, Entertainment, Sports, and Media
- Legal
- Other



In 2012, Management (32.9%) and Computer & Mathematical (16.0%) listings accounted for 48.9% of the 14,504 job postings for positions in the Biopharmaceutical Life Sciences Cluster within Central New Jersey.

Job Postings in Greatest Demand Central New Jersey: 2012

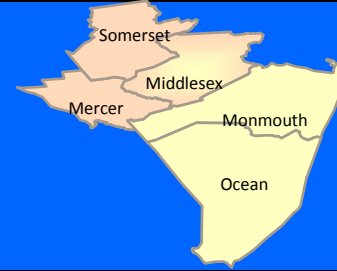
❖ Medical & Health Services Managers	1,107
❖ Medical Scientists	482
❖ Marketing Managers	469
❖ Computer & Info Systems Managers	469
❖ Managers, All Other	414
❖ Sales Managers	381
❖ Medical & Clinical Lab Techs	361
❖ General & Operations Managers	299
❖ Computer Systems Analysts	274
❖ Chemists	270
❖ Sales Representatives	260
❖ Software Developers, Applications	250
❖ Computer Programmers	242
❖ Human Resources Specialists	204
❖ Biostatisticians	199
❖ Regulatory Affairs Managers	196
❖ Financial Analysts	166
❖ Clinical Data Managers	164
❖ Accountants	160
❖ Financial Managers	159

The occupations above accounted for 45.0% of CNJ's 14,504 Bio-pharmaceutical Life Sciences postings in 2012.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Occupations in Greatest Demand in CNJ



Job Postings: January-December 2012

The following were some of the most frequently listed positions in 2012 by companies within this cluster for potential employment in the Central New Jersey Region.

Pharmaceutical



BioTech



Medical Devices



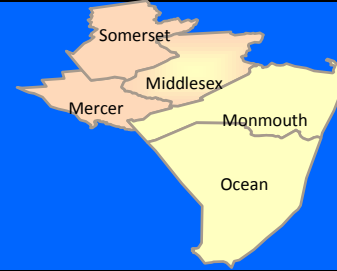
(SOURCE: Labor Insight-Burning Glass, October 2013)

NOTE: Total identified NNJ postings : 14,504



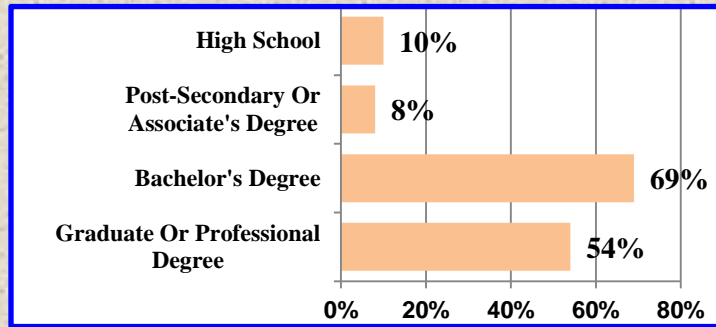
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Cluster Requirements in Demand in CNJ



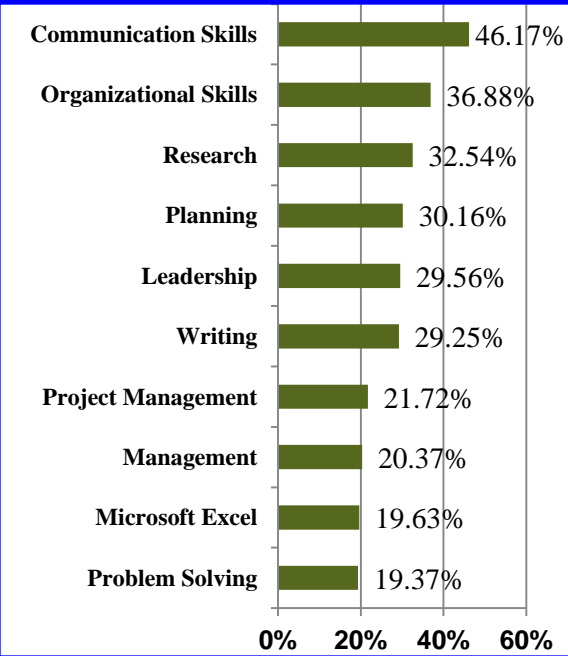
In addition to education...

Educational Attainment

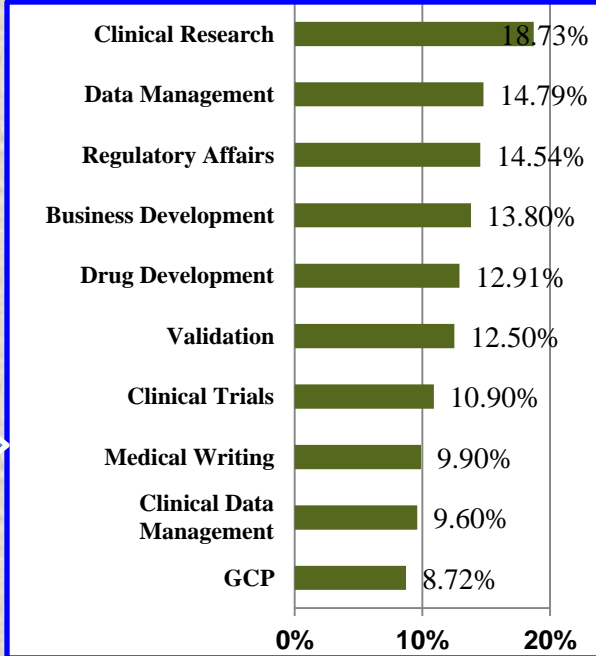
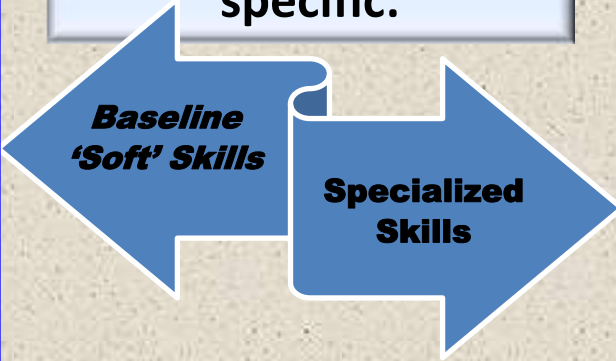


Job Postings: January-December 2012

NOTE: This chart provides information on both the preferred and required education levels listed in job postings. For this reason, a job posting may be counted in more than one of the educational categories shown to the left.



N.J. Employer's are also focused on workers having specific:

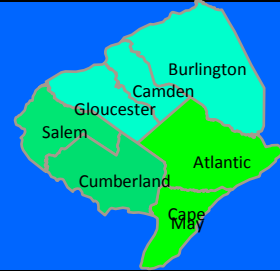


(SOURCE: Labor Insight-Burning Glass, October 2013)

NOTE: Data was obtained from 14,504 filtered job Posting s



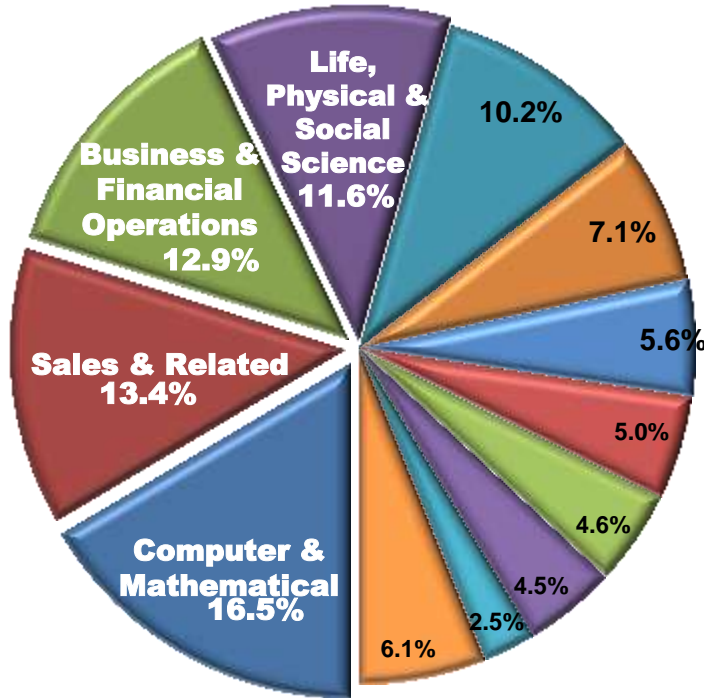
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER SNJ Occupational Postings



Job Postings: January-December 2012

SNJ Occupational Family Postings

- Computer & Mathematical
- Sales and Related
- Healthcare Practitioners & Technical Management
- Life, Physical, and Social Science
- Healthcare Support
- Office & Admin Support
- Architecture & Engineering
- Business & Financial Operations
- Transportation & Material Moving
- Production
- Other



In 2012, Computer & Mathematical (16.5%), Sales & Related (13.4%), Business & Financial Operations (12.9%) and Life, Physical, & Social Sciences (11.6%) listings accounted for 54.4% of the 1,127 job postings for positions in this Cluster within Southern New Jersey.

Job Postings in Greatest Demand Southern New Jersey: 2012

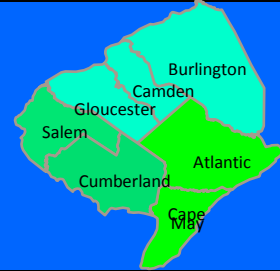
❖ Sales Representatives	115
❖ Phlebotomists	76
❖ Software Developers, Applications	59
❖ Medical & Clinical Lab Techs	59
❖ Marketing Managers	38
❖ Laborers, Freight & Material Movers	34
❖ Chemists	30
❖ Computer Systems Analysts	22
❖ Sales Managers	22
❖ Software Quality Assurance Eng. & Testers	19
❖ Medical Scientists	19
❖ Electrical Engineers	17
❖ Software Developers, Systems Software	17
❖ Computer Programmers	16
❖ Registered Nurses	15
❖ Microbiologists	14
❖ Retail Salespersons	13
❖ Medical And Health Services Managers	12
❖ Market Research Analysts & Specialists	12
❖ Health Technologists And Tech, All Other	12

The occupations above accounted for 55.1% of SNJ's 1,127 Bio-pharmaceutical Life Sciences postings in 2012.



NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

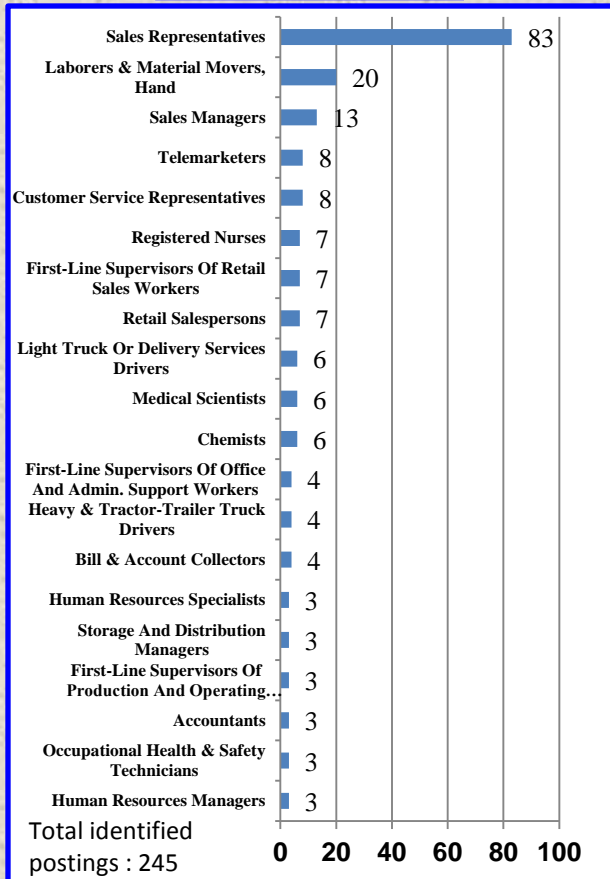
Occupations in Greatest Demand in SNJ



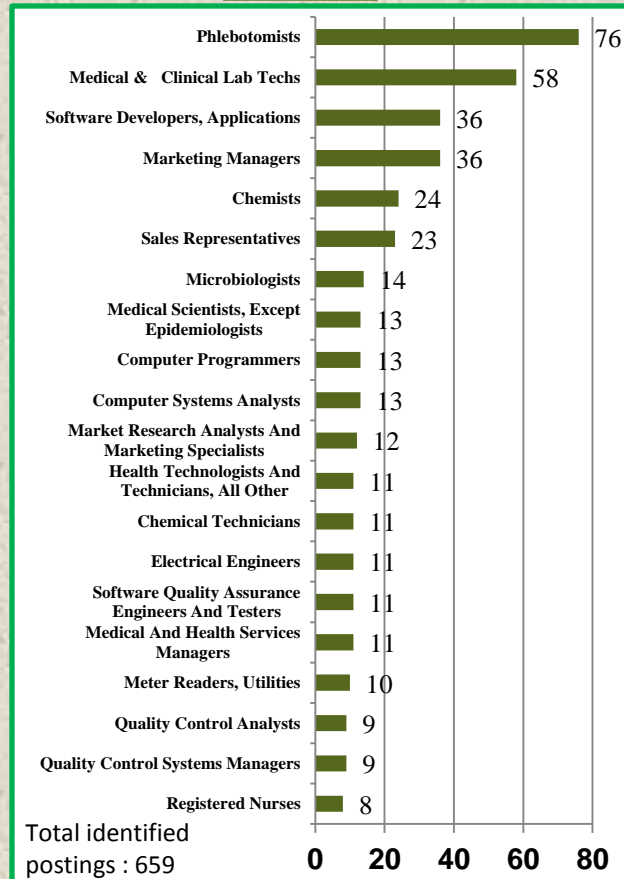
Job Postings: January-December 2012

The following were some of the most frequently listed positions in 2012 by companies within this cluster for potential employment in the Central New Jersey Region.

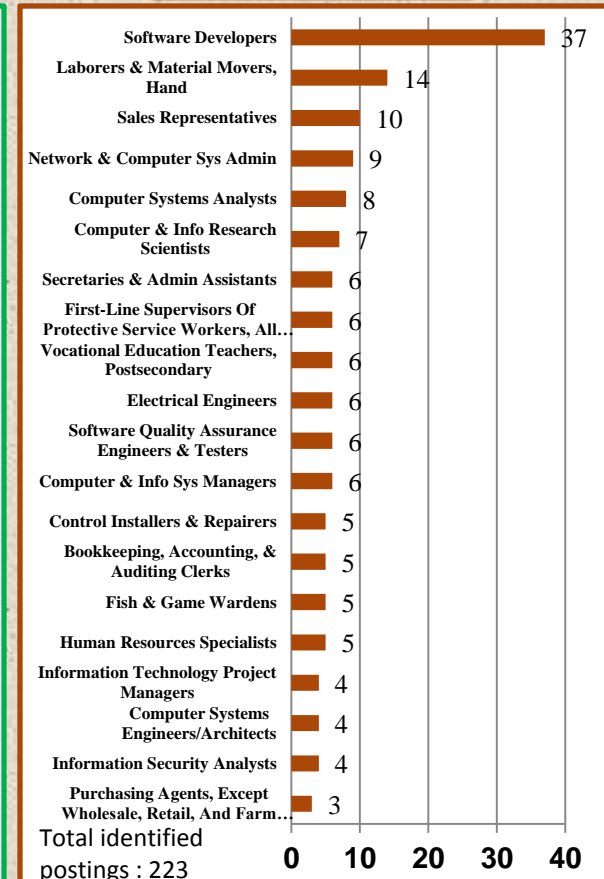
Pharmaceutical



BioTech



Medical Devices



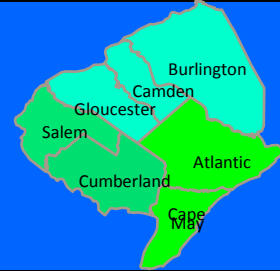
(SOURCE: Labor Insight-Burning Glass, October 2013)

NOTE: Total identified NNJ postings : 1,127



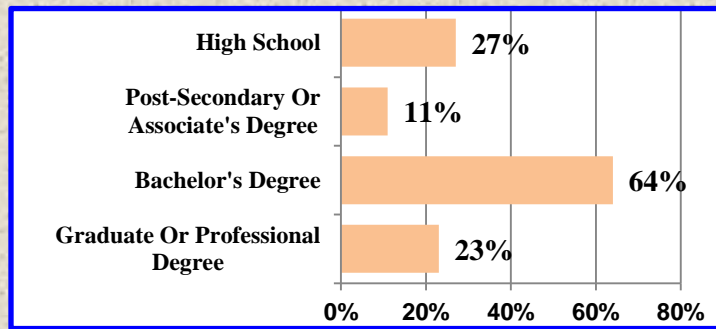
NEW JERSEY BIO-PHARMACEUTICAL LIFE SCIENCES CLUSTER

Cluster Requirements in Demand in SNJ



In addition to education...

Educational Attainment

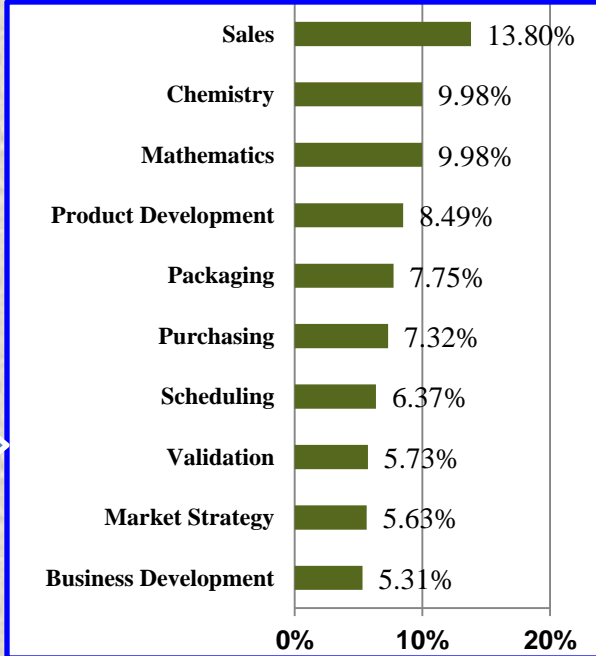
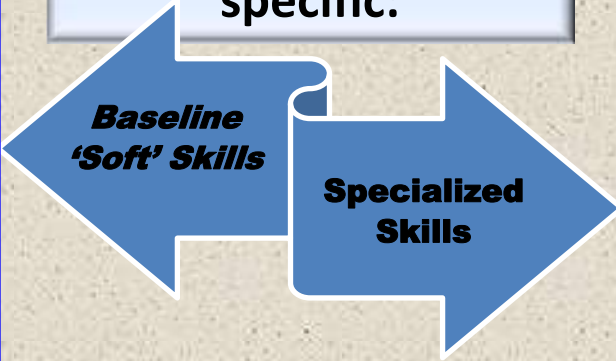


Job Postings: January-December 2012

NOTE: This chart provides information on both the preferred and required education levels listed in job postings. For this reason, a job posting may be counted in more than one of the educational categories shown to the left.

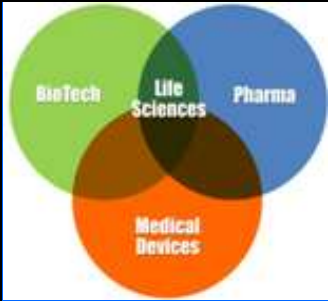


N.J. Employer's are also focused on workers having specific:



(SOURCE: Labor Insight-Burning Glass, October 2013)

NOTE: Data was obtained from 1,127 filtered job Posting s

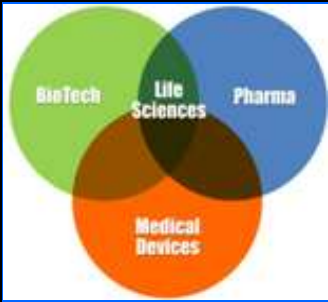


NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER

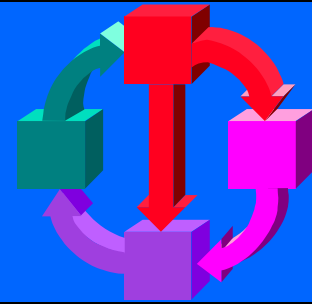


Economic Development Projects

New Jersey's Bio-Pharmaceutical Life Sciences Cluster



NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER DEVELOPMENT UPDATES



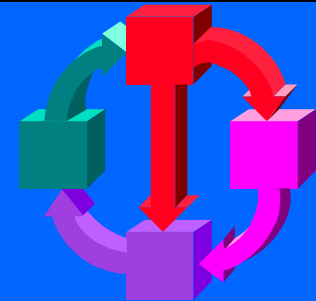
Changing paradigm is effecting the way this cluster's companies are making decisions involving what products/services will be researched and developed. In addition to collaborating more with other pharmaceutical, biotech and medical device companies as a cost cutting measure, the industry overall is adjusting or changing the way they have done business in the past. Examples include:

- **Pharmaceuticals** are changing from being the driving force of drugs it wants to explore to being driven by addressing the concerns of the financial industry along with consumer demands.
- **Biotech** is changing from the “greater the risk, the greater the reward” attitude to a “Play it safe” by investing more in late stage prospects.
- **Medical device** companies are adjusting its focus from developing state of the art technology to using the technology to get to the end user.

Social Media is also effecting the way this cluster's companies operate. While awaiting clearer guidance from government agencies on the acceptable uses of this communication, companies are taking steps to learn from it. That is, these companies are using this technology to learn directly from their customer of what they want or need, collecting information about how doctors and patients are learning about their product/services, and what is being said about it. In turn, the companies are cautiously developing strategies to be able to improve marketing and sales techniques.



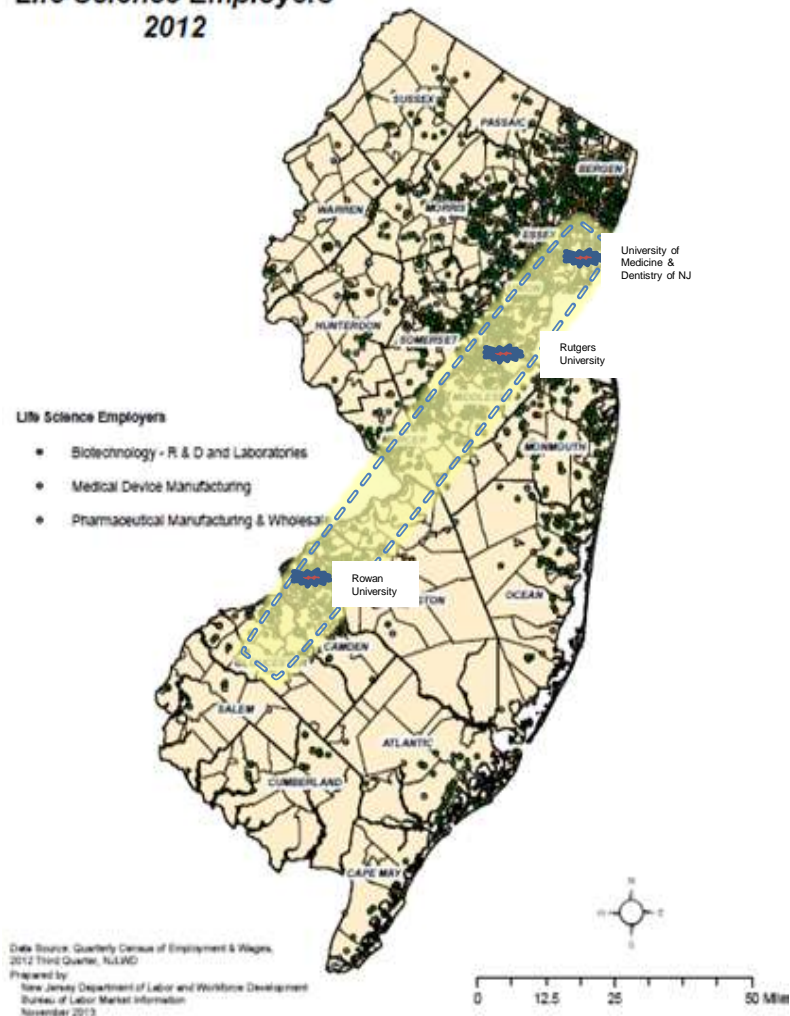
NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER DEVELOPMENT UPDATES



Changing 'cluster' business approach is having a significant influence of where these companies are (re-)locating operations. Once known for being self-reliant and reticent about their operations, as well as projects, this group is rapidly changing its business model (in part due to cost saving measures). As a result, there are more business collaborations taking place including partnering with educational institutions, hospitals, and other companies and associations. In addition, many of the companies are relocating from suburbs to sites in densely populated urban areas that offer accessibility to a skilled workforce, excellent research facilities, and a good transportation system, all within close proximity.

As the business model changes, New Jersey is taking steps to address this transformation. Recent examples include: merging Rutgers' University & the University of Medicine and Dentistry of N.J. as well as including Rowan University as a partner; and establishing a biotech cluster in New Brunswick, NJ.

*Life Science Employers
2012*





NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER NORTHERN NJ DEVELOPMENT PROJECTS



Life Science Employers

ThorLabs, Newton, NJ
The company opened a new 120,000-sq.ft.-three-story facility in Newton. In addition, it intends to expand its facility in Andover Twp.

BAE Systems, Wayne, NJ.
Retention / Investment

Spectra Laboratories, Rockleigh, NJ: Recently renewed and expanded its U.S. headquarters from 107,000-sf to 190,000-sq. ft.

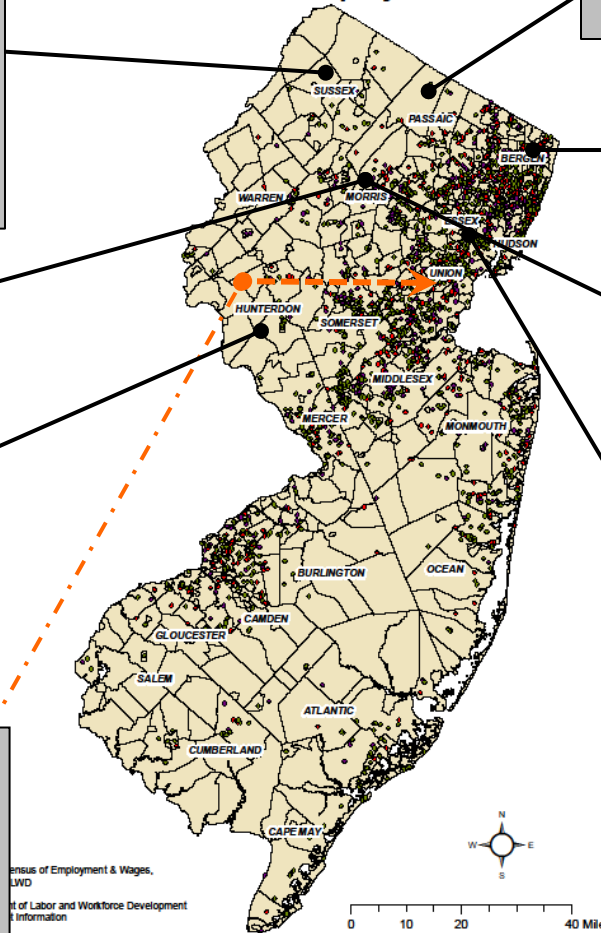
Ferring Pharmaceuticals, Parsippany, NJ
Expansion: Constructing a new, U.S. Operations Center bringing 200 new jobs to the state.

Bayer HealthCare, Whippany, NJ Retention / Expansion
Jobs involved: 1,500 – 2,500

Tekni-Plex Inc., Flemington, NJ
Investment/ Expansion: \$9 million to upgrade and expand its plant.
New Jobs: 60 apx.

Biotrial S.A., Newark, NJ
Purchased apx. 1.2 acres in University Heights Science Park and plans to build its North American headquarters. The project is expected to create 150-200 construction jobs and eventually more than 100 permanent jobs to support this operation.

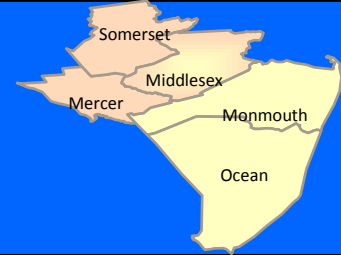
Merck & Co., Kenilworth, NJ
(Relocating from Whitehouse Station, NJ.)
Involves approximately 2,000 jobs. The company recently set up its animal health life sciences company in NJ, which is also expected to move to Kenilworth.



ensus of Employment & Wages,
LWD
t of Labor and Workforce Development
Information



NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER CENTRAL NJ DEVELOPMENT PROJECTS



Ipsen, Basking Ridge, NJ
Established its new North American headquarters
Create new jobs: 100 (apx).

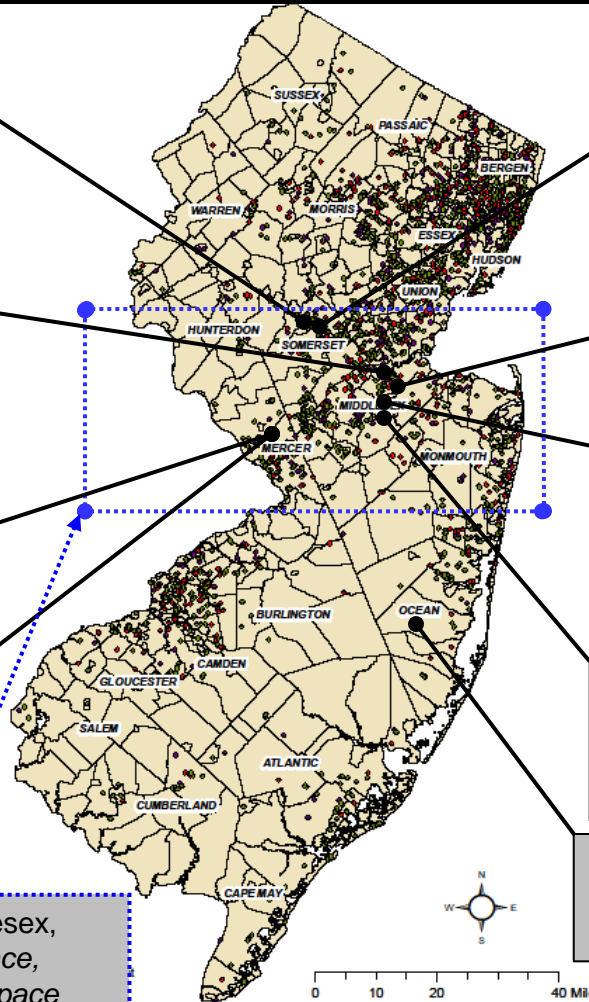
Actavis, Inc., (formerly Watson Pharmaceuticals), North Brunswick, NJ
Invest \$4.5 million to establish a Global R&D Technology Center. About 50 new jobs to include: Scientists, Chemists, Engineers & Support Staff.

Hamilton Clocktower Building, Hamilton, NJ
Development: As construction continues, life sciences companies are a part, such as: Genesis Biotechnology Group, Medical Diagnostics & Princetel.

Church & Dwight, Ewing, NJ
Investment: \$70 million project .
 Opened a new 250,000-sf facility headquarters that is to employ 500 people.

"5 percent of the [Hunterdon, Mercer, Middlesex, Monmouth & Somerset Counties'] office space, about 6.5 million square feet, is laboratory space and other specialized space for biotechnology companies."

NY Times, February 2, 2012.



Valeant Pharmaceuticals, Bridgewater, NJ
 Leased 310,000-sq.ft. of space.
 Retain: 274 & New Jobs: 550 (apx).

Tris, Monmouth Junction, NJ
Expansion: In the past 3-year, employment tripled. Also added a warehouse in Cranbury, where it plans to move its R&D functions.

Oncobiologics, Cranbury, NJ
Expansion: Established in 2011, the company plans to expand by adding 150-200 workers over the next 2 years.

Novo Nordisk, Plainsboro, NJ
Expansion: \$215 million project for its new 770,000-sq.ft. headquarters. + 100 new jobs.

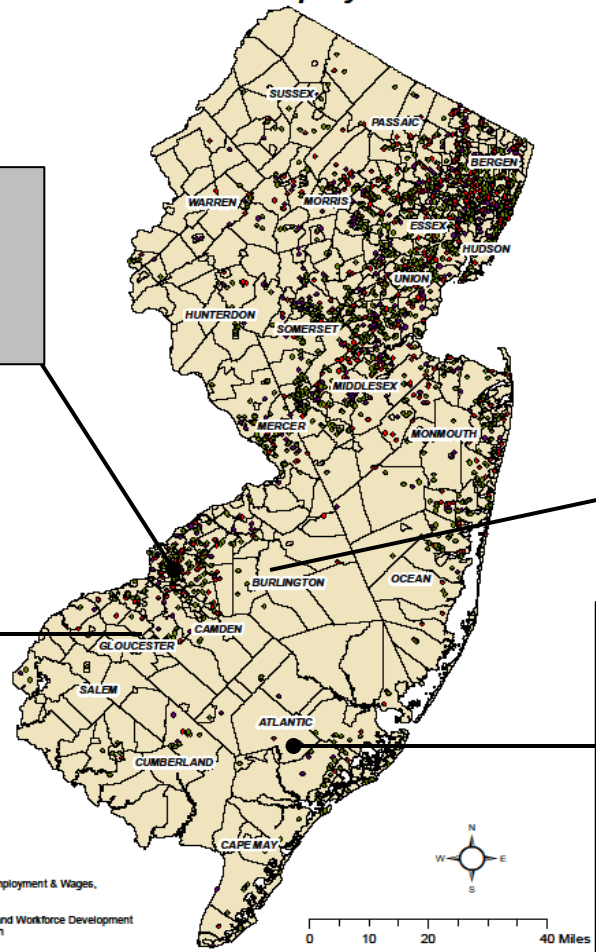
Accupac, Lakewood, NJ
Capital Investment: \$1.7M
New Jobs: +300



NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER SOUTHERN NJ DEVELOPMENT PROJECTS



Life Science Employers



Cooper University Health
Camden, NJ
Partnering with MD Anderson Cancer Center, creating a \$100 million MD Anderson Cancer Center at Cooper in Camden.

Rowan University, Glassboro, NJ
Formed a new school for Biomedical Studies: The School of Biomedical Sciences operates in conjunction with the colleges of Science & Mathematics and Engineering.

It's addressing a growing need in the region for programs that will prepare students for careers in healthcare-related fields, from pharmacy to biomedical engineering.

This school will contribute toward developing the educated workforce that businesses need if they are going to relocate to South Jersey.”

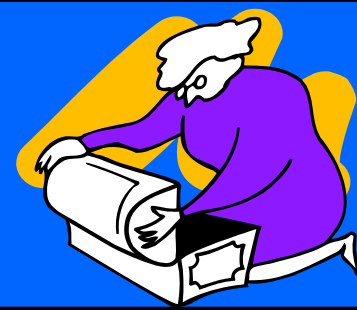
CRI Lifetree, a company specializing in early stage research focused in pain, human abuse liability, psychiatry, neurology and diabetes, opened a new state-of-the-art, early stage research facility in Marlton, N.J.

Atlantic Cape Community College, Newark, NJ
Investment: \$16 Million
Atlantic Cape Community College broke ground on its \$16 million Science, Technology, Engineering and Math (STEM) building. It is considered the centerpiece of the Blueprint 2020 Master Plan, and features five science labs and three computer labs,

by Census of Employment & Wages,
N.J. N.J.LWD
Department of Labor and Workforce Development
Market Information



NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER



Analysis: Summing-up

New Jersey's Biopharmaceutical Life Sciences Cluster



NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER Challenges



Like the state, as well as the nation, this cluster's overall employment was negatively impacted by the recession. However, other challenges facing this cluster are also limiting or hindering employment growth in New Jersey. Noteworthy issues for New Jersey include:

- ❖ Changing the negative perception of New Jersey losing its dominance pertaining to the cluster's related industries. That's because some believe that many of the recent mega-mergers and acquisitions involving several New Jersey companies is causing the state to lose its biopharmaceutical life sciences related industries. However, the statistics clearly show that this cluster's establishments are still in fact growing in the Garden State. The challenge is to dispel this notion before it causes any damaging effects on associated investments.
- ❖ Changing the perception that the State is unable to meet the needs of the changing business model. As previously mentioned, life sciences companies are literally moving towards areas offering research facilities readily available for collaboration with nearby colleges and universities, along with hospitals and related businesses. Not always realized is that New Jersey offers it all: excellent facilities/incubators; outstanding educational institutions; hospitals, and diversified businesses in which to form partnerships. In addition, the State has unique benefits like having various modes of great transportation and being located within close proximity to major financial investment institutions. The challenge is to educate the decision-makers that besides New Jersey becoming 'business friendly,' it has also undertaken several initiatives to ensure the state adapts to the industries changing needs, such as merging major colleges and offering new financial incentives, such as GrowNJ.



NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER OUTLOOK



New Jersey's pharmaceutical, medical device and biotech companies have been a big part of the industry cluster's transformation. As many of these businesses reorganized and regrouped, New Jersey has adapted to the changes and worked to address many of the challenges. Examples include: the implementation of the cluster initiative and the merging of the colleges. The State's efforts will serve to strengthen the relationship it has with its existing in-state companies, as well as attract new ones to relocate here. As a result, the outlook for this cluster's growth in New Jersey is favorable. Other reasons for this optimism include the fact that, in addition to New Jersey still being a major leader in biopharmaceutical life sciences and a place where companies want to be, the business community knows that New Jersey offers what they need in order to succeed. That is:

- ❖ A highly skilled and well educated workforce needed for life sciences operations.
- ❖ Support for this cluster, (which helps companies collaborate and make necessary changes without losing their fundamental distinctiveness).
- ❖ Fundamentals that are in place for establishment growth (which is an encouraging sign for future job opportunities.)
- ❖ An improving "Business Friendly" attitude (which is once again attracting companies).
- ❖ Several major ports, airports, and other transportation alternatives allowing for the Garden State companies to be closely linked to global market activities.
- ❖ A great quality of life for work, home, and recreational activities.
- ❖ Being a key player nationally, as well as globally, which provides tremendous value being located at the epicenter of the cluster's hub!



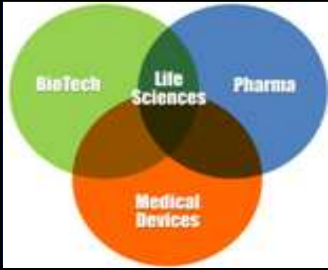
NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER



Resources

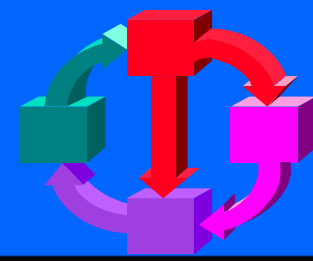
(for additional information about)

New Jersey's Biopharmaceutical Life Sciences Cluster



DATA SOURCES

Labor Market & Demographic Research & Information



Employment & Wages

- Employment and wage data for New Jersey, it's Labor Areas, Counties & Municipalities.
- Estimates of NJ's nonfarm wage & salary employment data by major industry classification & labor areas for the current year and prior.
- Associated maps.

Occupational Information

Industry & occupational employment projections.



Labor Market Analysis

Provide labor market and economic analysis of current conditions within New Jersey, Labor Areas and Industry clusters.

- Publish regional & industry cluster labor views and reports, along with County Community Fact Books and County Fact Sheets.
- Assist & educate with the usage of labor related data/information & tools.

Labor Demand

Training Programs

*Are you looking to identify occupations in demand?
Enhance training skills?
Interested in viewing career opportunities?*

These Demand & Training Program tools identify and provide answers for skills in demand **TODAY!**

DEMOGRAPHICS: Characteristics

- Population & Household Estimates.
- Population & Labor Force Projections.
- Annual Demographic Profile.
- Affirmative Action Data
- Census related data & information.

Data Reports

- Comprehensive labor market information reports for New Jersey; sortable by state, county, & workforce investment board area.
- Publications & Studies pertaining to specific industries and New Jersey regions.



NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER

Resources for Collaboration



Life Sciences Cluster-Specific

Private Sector Industry Groups:

- BioNJ (*formerly known as Biotechnology Council of New Jersey*)
- HealthCare Institute of New Jersey

Private Sector Research Institutes:

- Independent Four-Year Colleges (14)

Joint Private / Public Industry Groups:

- ChooseNJ
- NJ Hospital Associations
- NJ Commission on Science & Technology
- NJ Technology Council's Life Science Industry Network

Joint Private / Public Research Institutes:

- Center for Advanced Biotechnology & Medicine
- Research & Development Council of NJ

General

Private Sector Industry Groups:

- Greater NJ Process Technology Alliance
- The Business Coalition for Educational Excellence
- New Jersey Business / Industry / Science Education Consortium

Informal Networks:

- New Jersey Institute of Technology, UMDNJ, Princeton, Rutgers alumni
- Alumni from other universities
- Angel investor community

Joint Private / Public Industry Groups:

- Commission on Health Science, Education & Training
- New Jersey Technology Council Venture Fund
- New Jersey President's Council



NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER

Resources for Skilled Workers



To ensure New Jersey's Biopharmaceutical Life Sciences Cluster continues to thrive from a well-educated and talented workforce, the State continues to invest in & offer:

An Excellent Education System

- ✓ Access to more than 60 colleges, universities and technology schools including four top ranking engineering schools that are on the 100 National Best Engineering School List: Princeton University (#18); Rutgers, The State University of New Jersey (#58); Stevens Institute of Technology (#77); and New Jersey Institute of Technology (#92).
- ✓ Network of 21 public two-year community colleges with life science career programs.
- ✓ Strong continuing education opportunities including UMDNJ Biopharma and Rutgers MBS programs.
- ✓ University of Medicine & Dentistry (UMDNJ) of New Jersey offers 4 main campuses with 8 schools, plus a University Hospital and University Behavioral HealthCare on 185 acres with 64 buildings making it the largest institution of its kind in the nation.
- ✓ New Jersey maintains a high educational achievement ranking N.J. 6th in the nation with individuals aged 25 or older.

Support for a Talented Workforce

New Jersey's Department of Labor's Talent Network's:

- ❑ Support the efforts of the workforce development system and educational institutions to prepare workers for opportunities in key industry sectors;
- ❑ Serve as the primary workforce contact for the industry sector;
- ❑ Encourage networking between job seekers, employers and education and training providers; and
- ❑ Have developed a Talent Advisory Council to obtain regular feedback on the workforce needs of employers in order to guide future workforce development efforts.

Note: Partnering with BioNJ, a NJ industry association, Labor's Life Science Talent Network has implemented effective programs to connect industry talent with job opportunities, and working to create innovative resources to engage the sector - both professionals and employers. It is the key hub for industry-related talent information and resources for companies doing business in biotechnology, pharmaceuticals, medical devices, diagnostic and clinical operations in New Jersey.



NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER



Fast Facts Related about New Jersey's Biopharmaceutical Life Sciences Cluster



NEW JERSEY BIO-PHARMACEUTICALS LIFE SCIENCES CLUSTER 'Fast Facts Excerpts'

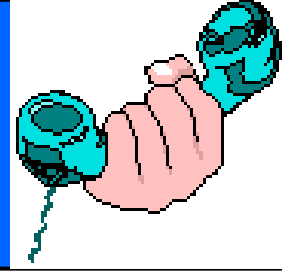


New Jersey's biopharmaceutical life sciences cluster...

- ❖ Had total **employment that averaged 116,500 in 2012**, or 3.6 percent of all private sector workers in the state. -- *Nationally, the proportion was just 1.9 percent!*
- ❖ Realized an **expansion of its establishment from 2007 to 2012 by 6.3 percent**. Even with the mega pharmaceutical mergers, acquisitions, and consolidations, New Jersey's Drugs & Pharmaceutical component grew (+9.1%) still outpacing the nation (+6.6%).
- ❖ Employers paid **nearly \$14.8 billion in wages** during 2012, or 8.0 percent of the state's total wages.
- ❖ Has a **highly well-educated workforce** that consists of **nearly two thirds holding at least a bachelor's (33.8%)** and with many holding even more **advanced degrees: Master's/Professional (22.1%), or Doctoral (9.6%) degree**.
- ❖ *By state, New Jersey* has the **highest concentration of Biochemists & Biophysicists** and **2nd highest concentration & employment of Chemists** in the nation.
- ❖ Has been responsible for contributing towards **4,656 patents in 2012**. Over the 2008-2012 period: 537 in **organic compounds (ranked 2nd)**; 1,848 in **drug, bio-affecting and body treating compositions (ranked 3rd)**; 451 in **image analysis (ranked 4th)**; 326 in **chemistry: molecular biology and microbiology (ranked 6th)**; and **surgery -- 213: medicators and receptors (ranked 6th) & 206: instruments (ranked 10th)**.



Contact Information



New Jersey Department of Labor & Workforce Development

<http://lwd.dol.state.nj.us/>

PO Box 057

Trenton, NJ 08625-0057

Labor Planning & Analysis

http://lwd.dol.state.nj.us/labor/lpa/LMI_index.html

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