New Jersey’s
Life Sciences Industry Cluster

Prepared by:
New Jersey Department of Labor & Workforce Development
Office of Research & Information
Bureau of Labor Market Information
Fall 2018
THE GOAL OF THIS REPORT IS TO GET AN “IDEA” OF WHAT LIFE SCIENCES MEANS TO NEW JERSEY

**Identify** the types of industries and establishments that make up the life sciences industry cluster based on a standard industry classification system.

**Describe** any similarities and differences among its components with regard to such variables as employment, wage, occupation type, education, and demographic characteristics.

**Examine** any present distinctions within the cluster and its components that give New Jersey a competitive advantage compared to neighboring states, regions or the nation, or show areas where New Jersey could improve to add to the state’s economy.

**Analyze** the current state of the life sciences industry cluster and provide an outlook for employment into the future.
LIFE SCIENCES INDUSTRY CLUSTER: OVERVIEW
New Jersey’s Life Sciences employment in 2016 was identified within three primary components: pharmaceuticals (40.8%), biotechnology-R&D (38.1%) and medical device manufacturing (21.1%). The breakdown of the major segments are:

**Pharmaceuticals**
- Pharmaceutical and medicine manufacturing
- Soap, cleaning compound, and toiletry manufacturing
- Druggists' goods merchant wholesalers

**Biotechnology (R&D)**
- Scientific research and development services
- Medical and diagnostic laboratories

**Medical Devices**
- Electronic instrument manufacturing
- Medical equipment and supplies manufacturing

Establishments that are primarily engaged in manufacturing or distribution of drug related products.

Consists of services related establishments primarily engaged in scientific research, development, analytic and/or diagnostics.

Establishments primarily engaged in manufacturing medical equipment and supplies.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
MAJOR NEW JERSEY EMPLOYERS

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

<table>
<thead>
<tr>
<th>Pharmaceuticals</th>
<th>Biotechnology (R&amp;D)</th>
<th>Medical Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bayer HealthCare Pharmaceutical</td>
<td>Celerion, Inc.</td>
<td>Abbott Laboratories</td>
</tr>
<tr>
<td>Bristol-Myers Squibb Co.</td>
<td>Chugai Pharma USA</td>
<td>Becton Dickinson &amp; Co.</td>
</tr>
<tr>
<td>Daiichi Sankyo</td>
<td>Community Medical Center</td>
<td>C. R. Bard, Inc.</td>
</tr>
<tr>
<td>Glaxosmithkline</td>
<td>Covance, Inc.</td>
<td>Integra Life Sciences</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>Immunomedics, Inc.</td>
<td>Micro Corporation</td>
</tr>
<tr>
<td>Merck &amp; Co. Inc.</td>
<td>Lab Corp</td>
<td>Ortho McNeil Pharma</td>
</tr>
<tr>
<td>Novartis Pharmaceuticals</td>
<td>PAREXEL International</td>
<td>Oticon, Inc.</td>
</tr>
<tr>
<td>Pfizer, Inc.</td>
<td>Progenitor Cell Therapy</td>
<td>Roche Molecular Systems, Inc.</td>
</tr>
<tr>
<td>Sanofi, U.S.</td>
<td>PTC Therapeutics, Inc.</td>
<td>Safilo USA, Inc.</td>
</tr>
<tr>
<td>Teva Pharmaceuticals</td>
<td>Quest Diagnostics</td>
<td>Sivantos, Inc.</td>
</tr>
<tr>
<td>West-Ward Pharmaceuticals</td>
<td>Raritan Bay Medical</td>
<td>Stryker Orthopedics</td>
</tr>
<tr>
<td></td>
<td>Sandoz, Inc.</td>
<td></td>
</tr>
</tbody>
</table>

Source: 2016 InfoUSA
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
The Life Sciences Cluster has an enormous impact on providing high quality jobs and adding significant value to the State’s economic activities. Recent New Jersey highlights included:

- **Employment Total:** averaged 112,320 or 3.3 percent of all private sector workers in the state for 2017. Nationally, the proportion was just 1.8 percent.

- **Well-paying Jobs:** Paid over $15.5 billion in 2017 annual payrolls; 7.1 percent of the state’s total wages.

- **Establishments total:** nearly 3,200 in 2017. Over a five year period (2012-2017) – even with numerous industry related reorganizations – New Jersey’s drug & pharmaceutical component still grew (by +18%).
The NJ life sciences industry experienced a steady decline from 2007 to 2013 (-13.4%), flattened out from 2013 to 2014 (+0.1%), increased from 2014 to 2016 (+1.6%), and is currently below the 2007 employment level (-15.4%).

Total statewide private sector employment has led life sciences employment from 2010 to 2017 and is currently above the 2007 employment level by 2.5 percent.
The above bubble graph has four elements:
1. Total 2017 employment - represented by the size of the bubble.
3. 2017 annual average wages - shown on the X-axis, or horizontal position.
4. Location quotient - indicated by the color of the bubble. The location quotient compares the concentration of the industry subsectors in the state to those of the nation. Industries with a location quotient above 1 are known as “basic industries” which (in theory) export a good or service from the state and in return, bring in wealth.
LIFE SCIENCES INDUSTRY CLUSTER: EMPLOYMENT ANALYSIS
• With an average of 112,320 workers employed in this NJ cluster in 2017, the employment over the 5-year period experienced a decline of 3.6 percent.

• The pharmaceutical component experienced the largest total percent loss over the 5-year period (-8.2%).

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 - 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
SUB-SECTOR EMPLOYMENT

In 2017, the 112,320 jobs within this New Jersey cluster were concentrated in:

**Pharmaceuticals**
- Pharmaceutical and medicine manufacturing: 48.6%
- Druggists' goods merchant wholesalers: 30.7%
- Soap, cleaning compound, and toiletry mfg.: 20.7%
- 45,800 jobs
- The pharmaceuticals component accounted for 40.8 percent of the life sciences industry cluster employment.

**Biotechnology (R&D)**
- Scientific research and development services: 65.9%
- Medical and diagnostic laboratories: 34.1%
- 42,840 jobs
- Scientific research and development services accounted for more than 28,220 employment.

**Medical Devices**
- Electronic instrument manufacturing: 51.4%
- Medical equipment and supplies manufacturing: 48.6%
- 23,680 jobs
- Medical devices is the smallest of the three components and makes up 21.1 percent of the life sciences industry.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER

PHARMACEUTICALS INDUSTRY TOP EMPLOYMENT, 2017

Pharmaceuticals Industry

- Pharmaceutical Preparation Manufacturing: 15,210
- Druggists’ Goods Merchant Wholesalers: 14,050
- Toilet Preparation Manufacturing: 6,700
- Soap & Other Detergent Manufacturing: 1,150

2017 Employment

Due to disclosure issues, medicinal and botanical mfg., surface active agent mfg., other biological product mfg., in-vitro diagnostic substance mfg., and polish and sanitation good manufacturing are not included in the chart above.

Made up 40.8 percent of the life sciences industry cluster’s employment in 2017.

- Pharmaceutical & medicine manufacturing (-24.2%) and soap, cleaning compound, and toiletry manufacturing (-11.4%) both encountered a decline from 2012 to 2017 while druggists’ goods merchant wholesalers (+1.4%) and toilet preparation manufacturing (+1%) experienced a slight growth during the same period.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 - 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
BIOTECHNOLOGY INDUSTRY TOP EMPLOYMENT, 2017

- Accounted for 38.1 percent of life sciences industry cluster’s employment in 2017.

- Scientific R&D industry service sectors declined (-2.2%) over the 5-year period from 2012 to 2017.

- Medical and diagnostic laboratories experienced significant growth over the same period (+12.9%).

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 - 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
MEDICAL DEVICES INDUSTRY TOP EMPLOYMENT, 2017

- Electronic instrument manufacturing (+1.6%) and medical equipment & supplies manufacturing (+9.8%) both experienced growth over the 5-year period from 2012 to 2017.

**Due to disclosure issues, search, detection & navigation instruments, other measuring & controlling devices, surgical and medical instrument mfg., and ophthalmic goods mfg. are not included in the chart above.**

**Medical Devices**

- Surgical Appliance and Supplies Mfg: 6,880
- Electromedical Apparatus Manufacturing: 1,870
- Electricity & Signal Testing Instrument Mfg: 1,240
- Dental Laboratories: 930
- Analytical Laboratory Instruments: 850
- Industrial Process Variable Instruments: 850
- Dental Equipment and Supplies Mfg: 750
- Automatic Environmental Control Mfg: 240
- Fluid Meters and Counting Devices: 70
- Irradiation Apparatus Manufacturing: 60

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 - 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
LIFE SCIENCES INDUSTRY CLUSTER: ESTABLISHMENT ANALYSIS
Establishments in this cluster totaled 3,190 in 2017 after experiencing a notable growth (+4.6%) from 2012 – 2017.

Pharmaceuticals has seen an upward trend from 2012 to 2017, adding an additional 170 establishments.
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER SUB-SECTOR ESTABLISHMENTS

In 2017, New Jersey had 3,190 establishments in this cluster engaged in:

<table>
<thead>
<tr>
<th>Pharmaceuticals</th>
<th>Biotechnology (R&amp;D)</th>
<th>Medical Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Druggists' goods merchant wholesalers</td>
<td>Medical and diagnostic laboratories</td>
<td>Medical equipment and supplies manufacturing</td>
</tr>
<tr>
<td>55.6%</td>
<td>51.0%</td>
<td>55.9%</td>
</tr>
<tr>
<td>Pharmaceutical and medicine manufacturing</td>
<td>27.2%</td>
<td>Electronic instrument manufacturing</td>
</tr>
<tr>
<td>27.2%</td>
<td>Scientific research and development services</td>
<td>44.1%</td>
</tr>
<tr>
<td>Soap, cleaning compound, and toiletry mfg.</td>
<td>17.2%</td>
<td></td>
</tr>
<tr>
<td>17.2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 1,120 establishments
- The pharmaceutical component accounts for 1/3 of all life sciences industry establishments.
- 1,410 establishments
- R&D related sub-sectors accounted for 44.2% of all life sciences establishments.
- 660 establishments
- The medical devices component has the least establishments of all three life sciences industry components.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
PHARMACEUTICALS INDUSTRY TOP ESTABLISHMENTS, 2017

- Accounted for 35 percent of the life sciences industry cluster’s establishments in 2017.

- Establishments in the soap, cleaning compound, and toiletry manufacturing industries (-6.0%) declined from 2012 to 2017, while pharmaceutical & medicine manufacturing (+35.3%) and druggists’ goods merchant wholesalers (+20.3%) realized growth.

Due to disclosure issues, medicinal and botanical mfg., surface active agent mfg., in-vitro diagnostic substances mfg., other biological product mfg., and polish and sanitation good manufacturing are not included in the chart above.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 - 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
BIOTECHNOLOGY INDUSTRY TOP ESTABLISHMENTS, 2017

• Made up 44.2 percent of all establishments in the life sciences industry cluster in 2017 with 1,410 establishments.

• Scientific R&D industry service sectors (-1%) slightly declined from 2012 to 2017, while medical diagnostic laboratoribes (+8.1%) experienced growth during the same period.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 - 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
Represented 20.8 percent of the life sciences industry cluster’s establishments in 2017 (660).

Electronic instrument manufacturing (-3.3%) and medical equipment and supplies manufacturing (-12.5%) both declined from 2012 to 2017.

Due to disclosure issues, search, detection & navigation instruments, fluid meters and counting devices, other measuring & controlling devices, surgical and medical instrument mfg., dental equipment and supplies mfg., and ophthalmic goods mfg. are not included in the chart above.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 - 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
Wages in the life sciences cluster have averaged 214% of the statewide annual average wage since 2007.

Annual average wages for the cluster have risen 33% over the ten year period from 2007 to 2017.
This cluster’s average annual wage was $138,720 in 2017, which was 117.6 percent higher than the state’s total private sector’s average annual wage of $63,740.

All three of this cluster’s components had 2017 wages that were significantly higher than the state’s total average annual wage.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 - 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
Annual average wages decreased $4,909 (or -3.5%), from $137,950 in 2012 to $133,041 in 2017.

Changes in this industry ranged from soap, cleaning, compound, toiletry and pharmaceutical manufacturing (-3.4%) to druggists’ goods merchants wholesalers (+0.1%) in annual average wages from 2012 to 2017.

Due to disclosure issues, medicinal and botanical mfg., surface active agent mfg., other biological product mfg., in-vitro diagnostic substance mfg., and polish and sanitation good manufacturing are not included in the chart above.
Annual average wages were $157,727 in 2017, up +18.9 percent from $132,577 in 2012.

The medical and diagnostic laboratories sector experienced a slight decrease (-4.0%) while the scientific research and development services increased (+27.2) over the same 5-year period.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 - 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
Annual average wages were $115,335 in 2017, up +21.8% from $94,656 in 2012.

Growth for the industry sectors ranged from +7.8% in electronic instrument manufacturing to +36.7% in medical equipment and supplies manufacturing over the 5-year period.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 - 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
LIFE SCIENCES INDUSTRY CLUSTER: REGIONAL AND COUNTY ANALYSIS
In 2017, more than one-third of Bergen County’s employment was found in medical and diagnostic laboratories (5,650).

33.70 percent of the employment found in Middlesex County was in pharmaceutical and medicine manufacturing (5,410).
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
LIFE SCIENCES ANNUAL AVERAGE WAGE BY REGION 5-YEAR TREND

• Northern Region - (Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex, Union, and Warren Counties) – Annual average wage increased 11.1 percent from 2012 - 2017.

• Central Region – (Mercer, Middlesex, Monmouth, and Ocean Counties) – Smallest annual average wage increase over the period amongst the regions (+1.5%).

• Southern Region – (Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, and Salem Counties) – Annual average wage experienced a 10.9 percent growth over the five-year period.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2012 - 2017 Annual Averages
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
The highlighted region to the left consists of Essex, Passaic, Morris, Somerset, Union, Hudson, and Bergen Counties.

- **Establishments** – A majority of the Life Sciences industry related establishments can be found along major highways in NJ within a close proximity to New York, NY.

- **Employment** – Represent more than half of the life sciences employment in New Jersey in 2017.

- **Average Wage** – The average wage for these counties in life sciences related industries is comparatively above the statewide total average in this cluster ($151,350 vs. $138,720).
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER COUNTIES IN THE CENTRAL REGION

The highlighted region to the left consists of Mercer, Middlesex, Monmouth, and Ocean Counties.

- **Establishments** - These counties account for more than a quarter of all establishments in the life sciences industry cluster in New Jersey.

- **Employment** – Employment for these five counties makes up nearly one third of employment in the life sciences industry cluster.

- **Average Wage** – The average wage for these counties in life sciences related industries is relatively below the statewide total average in this cluster ($123,210 vs. $138,720).
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
COUNTIES IN THE SOUTHERN REGION

The highlighted region to the left consists of Burlington, Camden, and Gloucester Counties.

- **Establishments** – Having a close proximity to Philadelphia, PA these three counties account for eight percent of all life sciences industry establishments in New Jersey.

- **Employment** – The three counties have nearly 9,100 employment.

- **Average Wage** – The average wage for these counties in life sciences related industries is below the statewide total average in this cluster ($96,150 vs. $138,720). These counties also account for 5.9 percent of total life sciences annual average wages paid in 2017.
LIFE SCIENCES INDUSTRY CLUSTER: OCCUPATIONAL ANALYSIS
### NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
### TOP OCCUPATIONAL GROUPS, 2017

#### Occupational Title

<table>
<thead>
<tr>
<th>Occupational Title</th>
<th>2017 Employment</th>
<th>2017 Average Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Life Sciences Occupations</td>
<td>121,140</td>
<td>$83,320</td>
</tr>
<tr>
<td>Production</td>
<td>23,040</td>
<td>$41,830</td>
</tr>
<tr>
<td>Office and Administrative Support</td>
<td>16,350</td>
<td>$44,780</td>
</tr>
<tr>
<td>Life, Physical, and Social Science</td>
<td>15,740</td>
<td>$111,100</td>
</tr>
<tr>
<td>Management</td>
<td>12,920</td>
<td>$179,630</td>
</tr>
<tr>
<td>Business and Financial Operations</td>
<td>10,290</td>
<td>$95,810</td>
</tr>
<tr>
<td>Architecture and Engineering</td>
<td>7,320</td>
<td>$104,970</td>
</tr>
<tr>
<td>Healthcare Practitioners and Technical</td>
<td>7,090</td>
<td>$73,690</td>
</tr>
<tr>
<td>Sales and Related</td>
<td>6,900</td>
<td>$93,180</td>
</tr>
<tr>
<td>Computer and Mathematical</td>
<td>5,930</td>
<td>$112,310</td>
</tr>
<tr>
<td>Healthcare Support</td>
<td>4,110</td>
<td>$36,060</td>
</tr>
<tr>
<td>Transportation and Material Moving</td>
<td>3,780</td>
<td>$34,200</td>
</tr>
<tr>
<td>Installation, Maintenance, and Repair</td>
<td>2,570</td>
<td>$59,790</td>
</tr>
</tbody>
</table>

#### Life Sciences Industry Cluster

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>19.5%</td>
</tr>
<tr>
<td>Office and Administrative Support</td>
<td>13.8%</td>
</tr>
<tr>
<td>Life, Physical, and Social Science</td>
<td>13.3%</td>
</tr>
<tr>
<td>Management</td>
<td>10.9%</td>
</tr>
<tr>
<td>Business and Financial Operations</td>
<td>8.7%</td>
</tr>
<tr>
<td>Architecture and Engineering</td>
<td>6.2%</td>
</tr>
<tr>
<td>Healthcare Practitioners and Technical</td>
<td>6.0%</td>
</tr>
<tr>
<td>Sales and Related</td>
<td>5.8%</td>
</tr>
<tr>
<td>Computer and Mathematical</td>
<td>5.0%</td>
</tr>
<tr>
<td>Other</td>
<td>10.7%</td>
</tr>
</tbody>
</table>

Note: Due to disclosure issues, of the total 121,140 jobs identified, only 97.6% could be used for this occupational analysis.

Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
## New Jersey Life Sciences Cluster's Top 20 Occupations

<table>
<thead>
<tr>
<th>NAICS and Occupational Title</th>
<th>2017 Employment</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-2031 Chemists</td>
<td>4,920</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>19-1021 Biochemists and Biophysicists</td>
<td>4,600</td>
<td>Doctoral or professional degree</td>
</tr>
<tr>
<td>51-9111 Packaging and Filling Machine Operators and Tenders</td>
<td>4,320</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>41-4012 Sales Rep., Wholesale and Manufacturing, Except Technical and Scientific Products</td>
<td>3,780</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>51-9061 Inspectors, Testers, Sorters, Samplers, and Weighers</td>
<td>3,200</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>43-4051 Customer Service Representatives</td>
<td>3,180</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>29-2010 Clinical Laboratory Technologists and Technicians</td>
<td>2,560</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>31-9097 Phlebotomists</td>
<td>2,370</td>
<td>Postsecondary non-degree award</td>
</tr>
<tr>
<td>19-4031 Chemical Technicians</td>
<td>2,230</td>
<td>Associate's degree</td>
</tr>
<tr>
<td>53-7062 Laborers and Freight, Stock, and Material Movers, Hand</td>
<td>2,220</td>
<td>No formal educational credential</td>
</tr>
<tr>
<td>11-9121 Natural Sciences Managers</td>
<td>2,190</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>51-9023 Mixing and Blending Machine Setters, Operators, and Tenders</td>
<td>1,970</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>51-9011 Chemical Equipment Operators and Tenders</td>
<td>1,940</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>53-7064 Packers and Packagers, Hand</td>
<td>1,810</td>
<td>No formal educational credential</td>
</tr>
<tr>
<td>51-2028 Electrical, electronic, &amp; electromechanical assemblers, except coil winders, tapers, &amp; finishers</td>
<td>1,790</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>51-1011 First-Line Supervisors of Production and Operating Workers</td>
<td>1,740</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>11-1021 General and Operations Managers</td>
<td>1,730</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>11-2021 Marketing Managers</td>
<td>1,520</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>43-4171 Receptionists and Information Clerks</td>
<td>1,490</td>
<td>High school diploma or equivalent</td>
</tr>
<tr>
<td>13-1161 Market Research Analysts and Marketing Specialists</td>
<td>1,480</td>
<td>Bachelor's degree</td>
</tr>
</tbody>
</table>

Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
An occupational analysis of 52,630 jobs revealed that five major occupational groups in this component accounted for nearly three-fourths (74.4%) of the employment.

Sales and related and transportation and material occupational groups are in the top seven components for the pharmaceuticals subsector and not for the total industry cluster.

Note: Due to disclosure issues, of the total 55,030 jobs identified, only 52,630 could be used for this occupational analysis.
In all three industry groups, office & administrative support workers account for a significant portion of the employment.

A majority of occupations in pharmaceutical and medicine manufacturing and soap, cleaning compound, and toilet preparation manufacturing are production related while occupations in drugs & druggists sundries merchant wholesalers are sales and related occupations.

Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
An occupational analysis of 42,020 jobs revealed that five major occupational groups in this component accounted for nearly three-fourth (70.5%) of the employment.

Life, physical, and social science occupations employed the most in this component with approximately 8,770 jobs, and accounted for more than one-fifth of the component.

Note: Due to disclosure issues, of the total 42,510 jobs identified, only 42,020 could be used for this occupational analysis.

Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
BIOTECHNOLOGY (R&D) MAJOR OCCUPATIONAL GROUPS, 2017

Biotech’s occupational groups show that these industry groups utilize a significant portion of professional, scientific, and technical workers with in-depth skills and knowledge related to science and healthcare.

Nearly 90% of occupations found in the medical and diagnostic laboratories can be found in three major occupational groups: office and administrative support, healthcare support, and healthcare practitioners and technical.

Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
TOP BIOTECHNOLOGY (R&D) OCCUPATIONS, 2017

Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
An occupational analysis of 23,540 jobs revealed that five major occupational groups in this component accounted for more than three-fourths of the employment (80.3%).

Production occupations employed the most in this component with 8,140 jobs, and accounted for more than one-third of the component (34.6%).

Note: Due to disclosure issues, of the total 23,600 jobs identified, only 23,540 could be used for this occupational analysis.
While the percentages differ, the top occupational groups reveal that these two industry groups both have a need for many of the same type of workers.

Occupations found in the medical devices component are production and architecture and engineering based, but other occupational family groups that make up a significant percentage are office and administrative support, and business and financial operations.

Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
TOP MEDICAL DEVICE OCCUPATIONS, 2017

Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
LIFE SCIENCES INDUSTRY CLUSTER: DEMOGRAPHIC OVERVIEW
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER EDUCATION CHARACTERISTICS

Educational Breakdown

- Bachelor's degree: 33.6%
- Some college/Associates degree: 19.6%
- Master's/Professional degree: 22.5%
- High School or less: 18.3%
- Doctoral degree: 5.9%

It is 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.

Nearly two-thirds of New Jersey’s workforce employed in this cluster hold at least a Bachelor’s degree, many holding even more advanced degrees.

Source: U.S. Census Bureau, 2016 American Community Survey
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
NJ RESIDENTS IN LIFE SCIENCES INDUSTRY CLUSTER WORKFORCE

- Females outnumber males by 2.6% in this cluster.
- The life sciences workforce has a greater proportion of NJ residents who are Asian (16.8%).
- The life sciences workforce has fewer Hispanics than average.

Source: U.S. Census Bureau, 2016 American Community Survey
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The workforce of the life sciences industry is older than average with 54.2 percent aged 45 and up compared to only 47 percent overall.

The largest disparity among age cohorts occurs in the 45-54 year old age group, where 30 percent of the life sciences industry cluster is found.

4.2 percent of the current NJ resident life sciences workforce is aged 65 and older.

Source: U.S. Census Bureau, 2016 American Community Survey
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NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
NJ RESIDENTS PERSONAL EARNINGS

Personal Earnings in New Jersey, 2016

- Nearly two-thirds of the worker (66%) in this cluster earned over $50,000, whereas 56.4% of all workers (in all industries combined) earned less than $50,000.

- The percentage of workers making $150,000 or greater is almost a 3:1 ratio in favor of this cluster.

Source: U.S. Census Bureau, 2016 American Community Survey
Prepared by: New Jersey Department of Labor and Workforce Development, October 2018
LIFE SCIENCES INDUSTRY CLUSTER: TOP OCCUPATIONS OUTLOOK
### NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
#### TOP LIFE SCIENCES OCCUPATIONS OUTLOOK ACROSS ALL INDUSTRIES

<table>
<thead>
<tr>
<th>Occupation Title</th>
<th>Employment</th>
<th>Annual Average</th>
<th>Job Openings</th>
<th>Change 2016-2026</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual 2016</td>
<td>Projected 2026</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Phlebotomists</td>
<td>4,700</td>
<td>5,600</td>
<td>900</td>
<td><strong>19.5</strong></td>
</tr>
<tr>
<td>Laborers and Freight, Stock, and Material Movers, Hand</td>
<td>120,400</td>
<td>138,300</td>
<td>17,900</td>
<td><strong>14.9</strong></td>
</tr>
<tr>
<td>Receptionists and Information Clerks</td>
<td>54,000</td>
<td>60,050</td>
<td>6,050</td>
<td><strong>11.2</strong></td>
</tr>
<tr>
<td>Packers and Packagers, Hand</td>
<td>31,600</td>
<td>34,950</td>
<td>3,350</td>
<td><strong>10.7</strong></td>
</tr>
<tr>
<td>Chemists</td>
<td>7,350</td>
<td>8,100</td>
<td>750</td>
<td><strong>10.3</strong></td>
</tr>
<tr>
<td>Biochemists and Biophysicists</td>
<td>5,650</td>
<td>6,250</td>
<td>600</td>
<td><strong>10.3</strong></td>
</tr>
<tr>
<td>Chemical Technicians</td>
<td>4,200</td>
<td>4,650</td>
<td>450</td>
<td><strong>9.9</strong></td>
</tr>
<tr>
<td>General and Operations Managers</td>
<td>44,800</td>
<td>49,100</td>
<td>4,300</td>
<td><strong>9.5</strong></td>
</tr>
<tr>
<td>Natural Sciences Managers</td>
<td>4,300</td>
<td>4,650</td>
<td>350</td>
<td><strong>9.0</strong></td>
</tr>
<tr>
<td>Pharmacy Technicians</td>
<td>10,200</td>
<td>11,100</td>
<td>900</td>
<td><strong>8.7</strong></td>
</tr>
<tr>
<td>Packaging and Filling Machine Operators and Tenders</td>
<td>15,550</td>
<td>16,900</td>
<td>1,350</td>
<td><strong>8.4</strong></td>
</tr>
<tr>
<td>Sales Reps., Wholesale and Mfg., Except Tech and Scientific Products</td>
<td>46,950</td>
<td>49,800</td>
<td>2,850</td>
<td><strong>6.1</strong></td>
</tr>
<tr>
<td>Compliance Officers</td>
<td>11,200</td>
<td>11,800</td>
<td>600</td>
<td><strong>5.6</strong></td>
</tr>
<tr>
<td>Customer Service Representatives</td>
<td>70,750</td>
<td>74,350</td>
<td>3,600</td>
<td><strong>5.1</strong></td>
</tr>
<tr>
<td>First-Line Supervisors of Production and Operating Workers</td>
<td>13,000</td>
<td>13,600</td>
<td>600</td>
<td><strong>4.9</strong></td>
</tr>
<tr>
<td>Mixing and Blending Machine Setters, Operators, and Tenders</td>
<td>4,050</td>
<td>4,150</td>
<td>100</td>
<td><strong>2.9</strong></td>
</tr>
<tr>
<td>Chemical Equipment Operators and Tenders</td>
<td>3,550</td>
<td>3,650</td>
<td>100</td>
<td><strong>2.7</strong></td>
</tr>
<tr>
<td>Inspectors, Testers, Sorters, Samplers, and Weighers</td>
<td>13,250</td>
<td>13,050</td>
<td>-200</td>
<td><strong>-1.9</strong></td>
</tr>
<tr>
<td>Office Clerks, General</td>
<td>73,450</td>
<td>72,050</td>
<td>-1,400</td>
<td><strong>-1.9</strong></td>
</tr>
<tr>
<td>Secretaries and Adm. Assistants, Except Legal, Medical, and Executive</td>
<td>68,150</td>
<td>62,950</td>
<td>-5,200</td>
<td><strong>-7.6</strong></td>
</tr>
</tbody>
</table>

NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
PROJECTED ANNUAL AVERAGE OPENINGS FOR TOP OCCUPATIONS

<table>
<thead>
<tr>
<th>Occupation</th>
<th>2016-2026 Projected Annual Average Job Openings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laborers and Freight, Stock, and Material Movers, Hand</td>
<td>19,260</td>
</tr>
<tr>
<td>Customer Service Representatives</td>
<td>9,510</td>
</tr>
<tr>
<td>Office Clerks, General</td>
<td>8,290</td>
</tr>
<tr>
<td>Receptionists and Information Clerks</td>
<td>7,930</td>
</tr>
<tr>
<td>Secretaries and Administrative Assistants, Except Legal, Medical, and Executive</td>
<td>6,450</td>
</tr>
<tr>
<td>Packers and Packagers, Hand</td>
<td>5,310</td>
</tr>
<tr>
<td>Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products</td>
<td>5,120</td>
</tr>
<tr>
<td>General and Operations Managers</td>
<td>4,200</td>
</tr>
<tr>
<td>Packaging and Filling Machine Operators and Tenders</td>
<td>1,970</td>
</tr>
<tr>
<td>Inspectors, Testers, Sorters, Samplers, and Weighers</td>
<td>1,530</td>
</tr>
</tbody>
</table>

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NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER
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