



NJ's Changing Biopharma/Life Sciences Industry Reaches Beyond Traditional Pharmaceuticals

by John Ehret, Labor Market Analyst

New Jersey has a long tradition of scientific and business innovation. Today, tradition and innovation are creating a vital synergy in the Garden State's biopharmaceutical and life-science industry cluster. This industry cluster includes long-established pharmaceutical businesses and relatively new and emerging health-related enterprises. The three key industry components of the cluster include pharmaceutical businesses (drug manufacturers & wholesalers), medical device businesses (medical equipment and supply manufacturers) and biotechnology (scientific research & development services and medical & diagnostic laboratories).

The vitality of the biopharmaceutical and life-sciences cluster in New Jersey is fundamental to the state's economic health with its well-paying jobs and with the potential for crucial leadership in the growing global innovation economy. In New Jersey, in 2009, the biopharmaceutical life-sciences cluster:

- Paid \$14 billion in annual payroll.
- Accounted for \$23 billion or nearly 5.0 percent of New Jersey's gross domestic product.
- Invested nearly \$20 billion in research and development, the 3rd most among the 50 states.



- Exported more than \$4.8 billion in manufactured goods worldwide.

Separately, the cluster's components have been recognized as national leaders. New Jersey's pharmaceutical industry has earned the state the distinct honor of being widely known as the

"The Medicine Chest of the Nation," while the strength of state's medical device industry is so powerful that the Biotechnology Industry Organization refers to New

Jersey as *"the epicenter of the global pharmaceutical and medical technology industry."* Also, New Jersey's long-standing strength in advanced research and development has helped serve as a foundation for the innovative biotechnology sector, which continuously ranks among the best in the nation. As technology has evolved and economic conditions changed, these traditional stand-alone industries have increasingly merged paths to come together to support and augment each other's strengths and develop into a powerful economic engine.

Overall employment in the cluster was lower over the most recent 5-year period, however, the number of companies has expanded by 15.9 percent, mainly due to relocated businesses and start-ups that chose to launch operations in New Jersey.

Industry Components

A little less than one-third of the establishments in the cluster primarily are engaged in the pharmaceutical component. These businesses accounted for more than 55,700 jobs. The medical device portion of the cluster comprised more than 780 establishments in New Jersey employing about 27,200 workers while the biotech component employed

New Jersey's Biopharmaceutical and Life-Sciences Cluster (2009)

Industry Components	Employment	Establishments	Total Wages (\$) (000)	Average Annual Wage (\$)
Biopharma & Life-Sciences Cluster	125,965	3,108	14,033,317	111,406
Pharmaceuticals	55,732	942	6,937,528	124,480
Pharmaceutical & Medicine Mfg.	33,993	256	4,608,866	135,582
Compounds & Toilet Prep Mfg.	9,373	208	685,916	73,179
Drug Sundries Wholesalers	12,366	478	1,642,746	132,842
Medical Devices	27,236	781	2,368,488	86,962
Electromedical & Control Inst. Mfg.	14,810	320	1,292,469	87,272
Medical Equipment & Supplies Mfg.	12,426	461	1,076,019	86,592
Biotech	42,997	1,385	4,727,301	109,945
Scientific R&D Services	30,665	709	3,921,261	127,873
Medical & Diagnostic Labs	12,332	676	806,040	65,364
Private Sector Employment, NJ Total	3,158,235	259,906	172,260,237	54,543

Source: NJ Dept of Labor & Workforce's Quarterly Census of Employment and Wages, 2009 Annual

Note: Due to industry classification methodology, figures do not include employment data from establishments primarily engaged in administering, overseeing, and/or managing the activities of a company. It is estimated that the inclusion of company headquarters would add nearly 20,400 to total employment in the biopharma & life-sciences cluster.

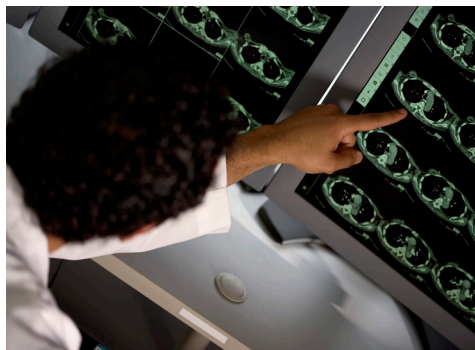
43,000 workers at nearly 1,400 industry establishments.

Industry Performance

Like the national trend, jobholding in New Jersey's pharmaceutical sector dropped by about 13 percent between 2004 and 2009. In addition to the effects of the great recession, businesses in the pharmaceutical sector sought to cut costs to address industry challenges such as development costs for new drugs, patent expirations and increased global competition from generic drugs. Additionally, businesses in the industry undertook mergers and reorganizations including Pfizer's \$68 billion acquisition of Morris County's Wyeth, Merck & Co.'s \$41 billion purchase of Schering-Plough, which was based in Union County; and Genentech's \$47 billion takeover of Roche, which had its U.S. headquarters in Essex County. Mergers often resulted in workforce reductions to eliminate duplicate operations in the new company.

Employment in New Jersey's medical device component declined by 1,000 jobs (-3.7%) between 2004 and 2009. Jobholding was down nationally over the five-year period (-1.1%), however, the employment patterns differed. New Jersey's trend fluctuated each year

while the nation experienced sluggish growth (about 0.7% per year) until 2008, followed in 2009 by a steep one-year employment loss of 3.7 percent.



Meanwhile, the biotech component, which employed almost 43,000 workers in 2009, experienced employment growth from 2004 to 2009 of 4,300 jobs (+11.1%). The upward trend was similar to the nation (+13.2%). Much of New Jersey's increase can be attributed to the state's labor force of well-educated workers with the specific and unique talents sought by these employers. For example, the number of scientists and engineers holding doctorate degrees makes New Jersey attractive to technology-driven employers. With more than 20,000 residents holding these

high-level degrees in 2006, New Jersey consistently ranked among the states with the highest level of these workers in the nation.

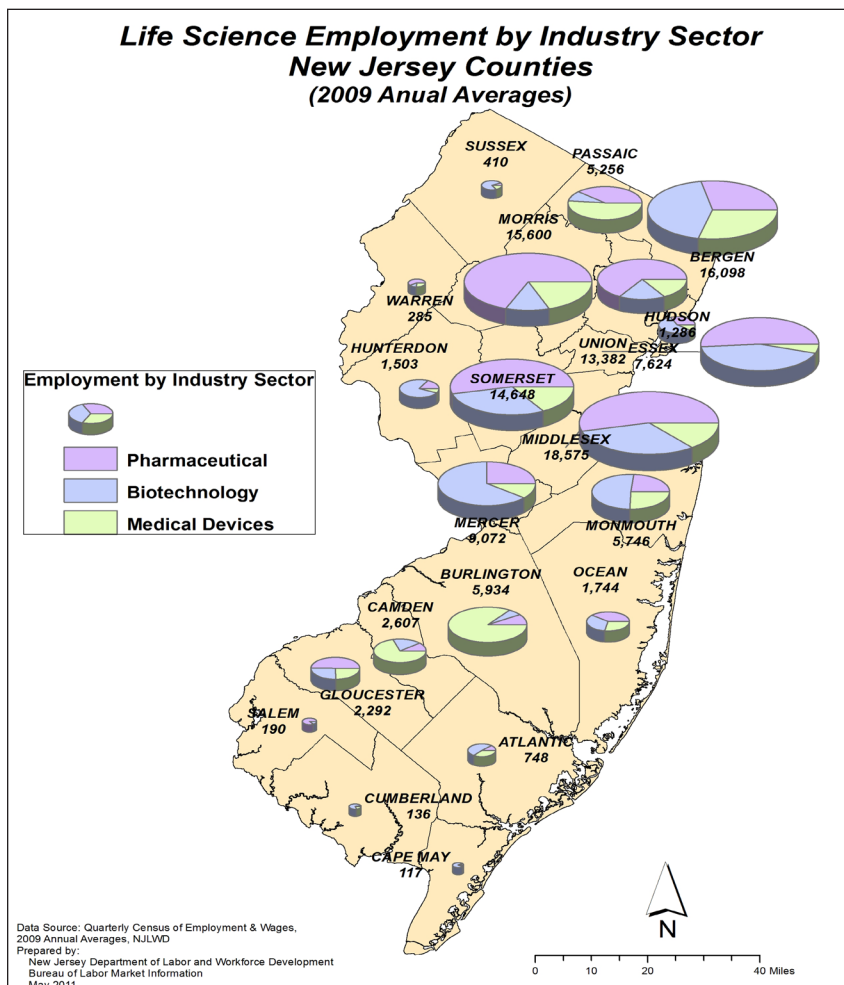
Establishments Set the Ground Work for Growth

New Jersey's biopharmaceutical & life-science cluster of 3,108 establishments in 2009 was up from 2,682 in 2004. This five-year period of growth outpaced the nation (15.9% vs. 9.9%, respectively). Despite large-scale mergers, reorganizations, and the weak economy, factors that caused many companies to consolidate; establishments in this cluster were still growing strong in New Jersey. In fact, over the five-year period, New Jersey's pharmaceutical component experienced a

growth of 21.9 percent, a much healthier pace than the nation (4.3%) and New Jersey's medical device establishments grew (+4.4%) while employment in this



industry declined nationally (-0.1%). Additionally, in 2009 during the peak of the great recession, the cluster's overall number of establishments grew statewide by 2.1 percent since 2008. Taken as a whole, this suggests that the small-to-mid-sized companies in this cluster, which require state-of-the-art facilities, were taking advantage of available space in New Jersey, at reduced rates. This also could indicate that these establishments are poised for growth, and, as the economy recovers New Jersey's related employment will likely benefit.



Employment Impact

With more than 3,100 establishments directly engaged within New Jersey's biopharmaceutical life-science cluster, employment accounted for 4.0 percent of the state's employment base or nearly 126,000 jobs. Total wages of \$14 billion, however, accounted for 8.1 percent of the state's total private sector payroll. For the most part, these industries require a workforce with high levels of education, experience, and unique talents and, as a result, the industries pay substantially

higher wages than the state's annual average private sector wage of \$54,543. At \$111,406, the 2009 annual average wage in the biopharmaceutical life-science cluster was \$56,863, or 104.3 percent greater than the state's private sector average wage.

Outlook

New Jersey's traditional pharmaceutical, medical device and biotechnology stand-alone industries have been undergoing structural change by collaborating to become a cohesive cluster. This future for the biopharmaceutical and life-sciences cluster is being viewed with optimism because this clustered approach has led to cohesive focus on many of the interrelated issues and challenges. Business space, vacated by larger

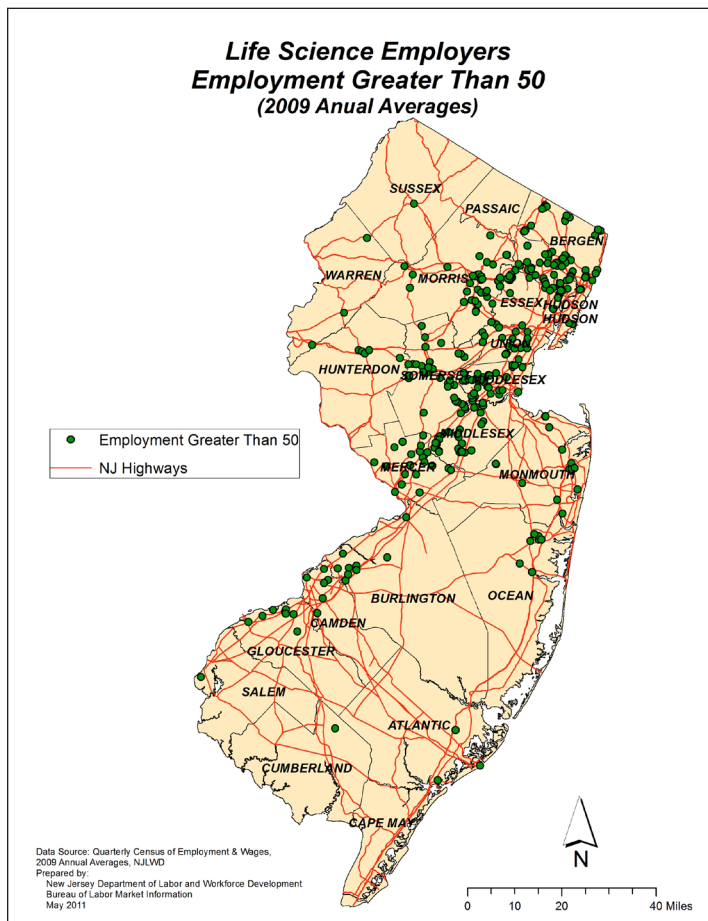
pharmaceutical companies when they reorganize and consolidate, provides state-of-the-art facilities for small to mid-sized related companies. In addition, seeking new alliances is helping the component industries to support each other and grow through maximizing technology. As the pharmaceutical companies partner with medical device companies, they are able to jointly produce and deliver their products in a more efficient manner.

Biotech partnerships are helping companies remain focused on R&D interests while easing financial pressures. In due course, New Jersey's clustered approach will work as an industry support system for each other. At the end of the day, this should lead to a path of employment expansion as companies grow in the Garden State.

Major Biopharmaceutical Life-Sciences

Companies in New Jersey

Bayer HealthCare Pharmaceuticals
 Becton Dickinson
 Bristol-Myers Squibb Co.
 Celgene
 Johnson & Johnson
 L'Oreal USA
 Merck & Co.
 Novartis AG
 Novo Nordisk
 Quest Diagnostics



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