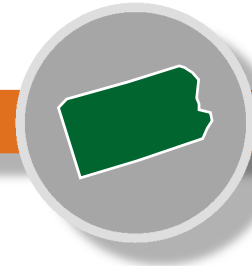


Pennsylvania



Pennsylvania has a leading and highly concentrated bioscience industry with more than 78,000 jobs that span 2,309 individual business establishments in 2012. Its concentration of bioscience employment is 10 percent greater than the national average (location quotient is 1.10) and the state is considered to have a specialized employment base in two of the five major subsectors—drugs and pharmaceuticals and research, testing, and medical labs. Two other subsectors—medical devices and bioscience-related distribution—have a large presence in the state with about 16,000 jobs in each. Pennsylvania is among the top tier across all states in key measures of bioscience R&D and innovation including in academic R&D, NIH research funding, venture capital investments, and patenting. The state’s relatively consistent stream of venture capital has been focused in human biotechnology, therapeutic, and pharmaceuticals.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Pennsylvania	United States	Quintile
Bioscience Industry, 2012			
Bioscience Industry Employment	78,294	1,619,746	I
Bioscience Industry Location Quotient	1.10	n/a	II
Bioscience Industry Establishments	2,309	73,088	I
Academic Bioscience R&D Expenditures, FY 2012			
Bioscience R&D (\$ thousands)	\$2,007,079	\$38,139,876	I
Bioscience Share of Total R&D	64%	61%	III
Bioscience R&D Per Capita	\$157	\$119	I
NIH Funding, FY 2013			
Funding (\$ thousands)	\$1,387,998	\$22,293,255	I
Funding Per Capita	\$109	\$70	I
Bioscience Venture Capital Investments, 2009–13 (\$ millions)	\$1,761.8	\$49,401.7	I
Bioscience and Related Patents, 2009–13	6,512	100,238	I

State ranking figures for bioscience performance metrics are calculated as quintiles, where I = top quintile, III = middle quintile, and V = bottom quintile.

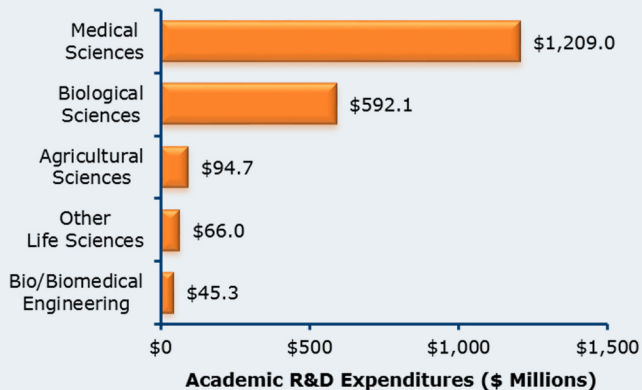
For source notes, see end of State Profile.

Industry Subsector	Pennsylvania		United States	
	2012	2007-2012 Change	2012	2007-2012 Change
Agricultural Feedstock & Chemicals				
Establishments	37	-9.8%	1,772	5.2%
Employment	747	-48.5%	76,404	-1.0%
Location Quotient	0.22		n/a	
Direct-Effect Employment Multiplier	15.6		18.1	
Total Employment Impact	11,686		1,382,637	
Average Annual Wage	\$56,006	8.0%	\$75,828	14.2%
Bioscience-Related Distribution				
Establishments	816	-15.8%	36,793	1.4%
Employment	16,167	-7.3%	442,016	-3.9%
Location Quotient	0.86		n/a	
Direct-Effect Employment Multiplier	2.8		2.7	
Total Employment Impact	45,128		1,199,015	
Average Annual Wage	\$104,028	24.5%	\$85,188	11.5%
Drugs and Pharmaceuticals				
Establishments	116	-1.7%	3,057	12.0%
Employment	19,170	-13.3%	284,331	-10.9%
Location Quotient	1.53		n/a	
Direct-Effect Employment Multiplier	10.5		9.9	
Total Employment Impact	200,746		2,673,265	
Average Annual Wage	\$115,174	16.1%	\$106,576	13.9%
Medical Devices and Equipment				
Establishments	286	-10.6%	7,235	12.0%
Employment	15,958	-10.1%	349,432	1.4%
Location Quotient	1.04		n/a	
Direct-Effect Employment Multiplier	3.7		3.9	
Total Employment Impact	58,798		1,318,459	
Average Annual Wage	\$65,128	12.8%	\$75,695	10.7%
Research, Testing, and Medical Laboratories				
Establishments	1,055	40.3%	24,231	31.0%
Employment	26,252	-9.8%	467,563	9.7%
Location Quotient	1.28		n/a	
Direct-Effect Employment Multiplier	3.0		2.7	
Total Employment Impact	78,498		1,284,196	
Average Annual Wage	\$101,017	15.5%	\$91,248	15.9%
Total Bioscience Industry				
Establishments	2,309	5.0%	73,088	11.4%
Employment	78,294	-10.9%	1,619,746	-0.4%
Location Quotient	1.10		n/a	
Direct-Effect Employment Multiplier	5.2		4.9	
Total Employment Impact	410,695		7,857,572	
Average Annual Wage	\$97,360	17.2%	\$88,202	12.8%
Total Private Sector				
Establishments	336,617	3.6%	8,699,564	-0.5%
Employment	4,887,679	-1.0%	111,137,206	-3.1%
Average Annual Wage	\$48,135	12.1%	\$49,130	11.1%

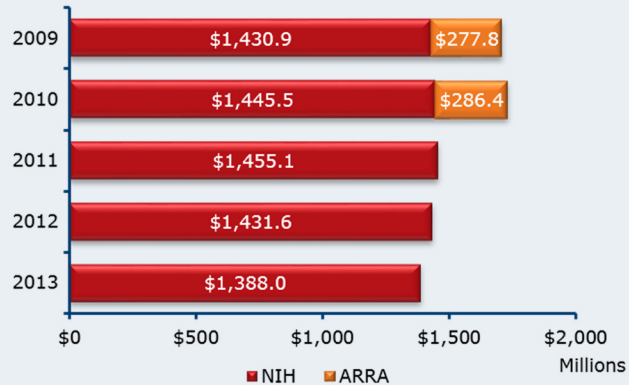
Note: U.S. employment metrics include Puerto Rico. Estimates of total impacts do not include Puerto Rico.

Bioscience Research in Pennsylvania

Bioscience Academic R&D Expenditures, FY 2012



NIH Awards, 2009–2013

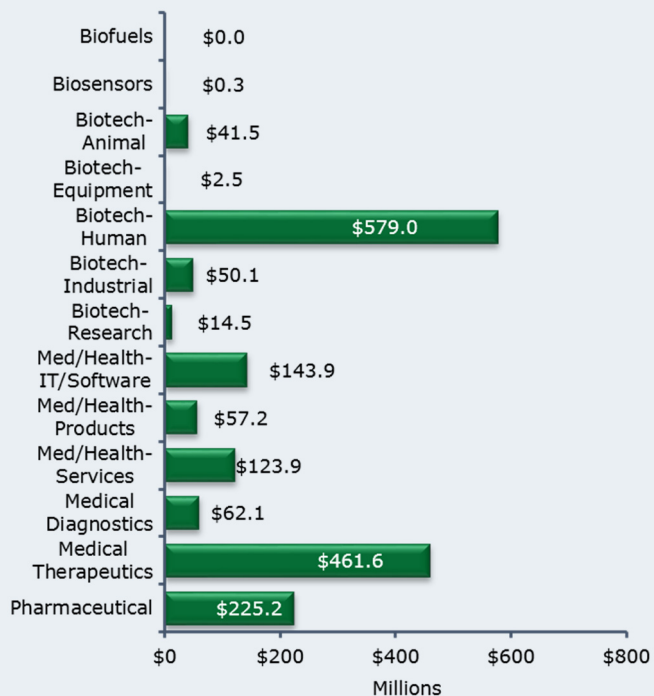


Bioscience Venture Capital in Pennsylvania

Bioscience-Related Venture Capital Investments, 2009–2013

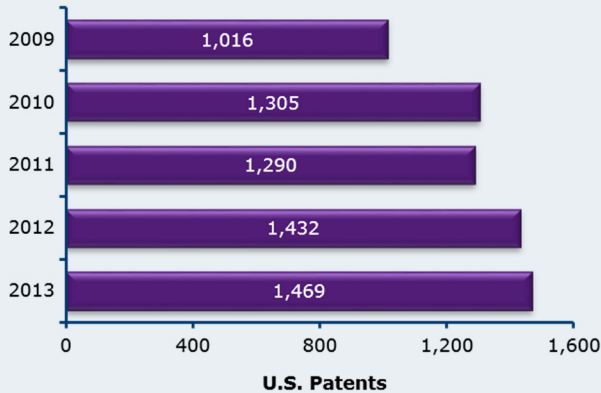


Bioscience-Related Venture Capital Investments by Segment, 2009–2013

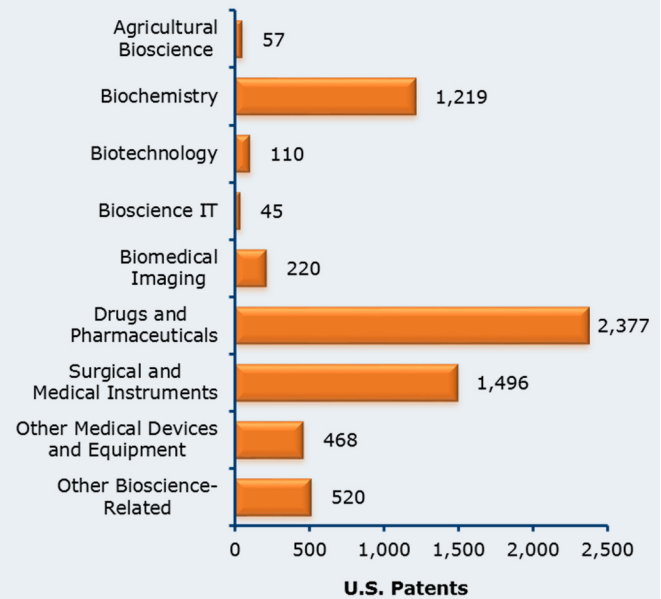


Bioscience Patents in Pennsylvania

Bioscience-Related Patents, 2009–2013



Bioscience-Related Patents by Segment, 2009–2013



Source Notes

Employment, Establishments, and Wages: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), enhanced file from the IMPLAN Group, LLC.

Employment Multipliers: IMPLAN Group, LLC state-level Input/Output models.

Academic R&D Expenditures: National Science Foundation (NSF) Higher Education Research and Development (HERD) Survey.

NIH Funding: National Institutes of Health, *NIH Awards by Location & Organization* (summary information within RePORT database), and NIH-managed funding for FY 2009 and FY 2010 from the American Recovery and Reinvestment Act (ARRA) website.

Venture Capital: Thomson Reuters Thomson ONE venture capital database.

Patents: U.S. Patent & Trademark Office data from Thomson Reuters Delphion Patent Analysis Database.

For a more detailed discussion of the data and methodology used, please see the Appendix to the full national report.