



Pennsylvania

The U.S. Bioscience Industry: Fostering Innovation and Driving America's Economy Forward

Pennsylvania's bioscience industry is among the national leaders in its size, and state employers have grown their payrolls by 7 percent since 2018 to reach more than 93,000 jobs that span 3,123 business establishments. Four of the state's five bioscience industry subsectors contributed to the overall employment gains. The state's bioscience industry employment is highly concentrated, measuring 8 percent above the national average (location quotient is 1.08). The state has a specialized concentration in two subsectors—pharmaceuticals and research, testing, and medical labs. Pennsylvania is among the top tier of states in key measures of the biosciences innovation ecosystem including in academic R&D expenditures which exceeded \$3 billion in 2020; NIH funding to its institutions; venture capital investments; and in patents awarded to state inventors. Venture capital investments in Pennsylvania bioscience companies increased in 2021 and totaled nearly \$1.5 billion.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Pennsylvania	United States	Quintile
Bioscience Industry, 2021			
Bioscience Industry Employment	93,105	2,135,704	I
Bioscience Industry Location Quotient	1.08	n/a	II
Bioscience Industry Establishments	3,123	127,389	II
Academic Bioscience R&D Expenditures, FY 2020			
Bioscience R&D (\$ thousands)	\$3,030,937	\$51,108,737	I
Bioscience Share of Total R&D	66%	63%	II
Bioscience R&D Per Capita	\$233	\$154	I
NIH Funding, FY 2021			
Funding (\$ thousands)	\$2,045,125	\$34,751,109	I
Funding Per Capita	\$158	\$105	I
Bioscience Venture Capital Investments, 2018-21 (\$ millions)			
	\$5,330.85	\$197,674.54	I
Bioscience-Related Patents, 2018-21			
	7,298	153,072	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.

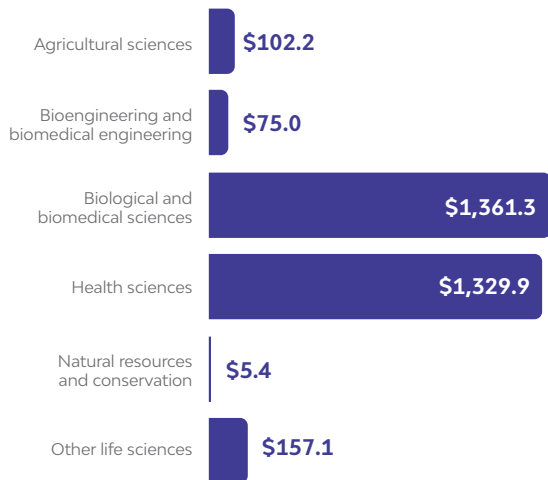
Industry Subsector		Pennsylvania		United States	
		2021	2018–2021 Change	2021	2018–2021 Change
Agricultural Feedstock and Industrial Biosciences	Establishments	38	7.0%	1,948	10.0%
	Employment	876	7.3%	69,573	1.9%
	<i>Location Quotient</i>	0.31		n/a	
	Average Annual Wage	\$73,269	10.8%	\$91,989	13.1%
Bioscience-Related Distribution	Establishments	813	-3.4%	62,697	14.7%
	Employment	17,652	-6.8%	602,589	6.6%
	<i>Location Quotient</i>	0.72		n/a	
	Average Annual Wage	\$119,375	8.7%	\$121,606	15.0%
Medical Devices and Equipment	Establishments	281	6.1%	10,268	17.4%
	Employment	17,067	2.8%	398,847	5.5%
	<i>Location Quotient</i>	1.06		n/a	
	Average Annual Wage	\$78,146	6.9%	\$98,481	8.7%
Pharmaceuticals	Establishments	151	9.0%	5,973	34.7%
	Employment	20,317	12.5%	344,839	11.9%
	<i>Location Quotient</i>	1.45		n/a	
	Average Annual Wage	\$142,954	10.1%	\$126,153	10.3%
Research, Testing, and Medical Laboratories	Establishments	1,841	34.5%	46,503	34.5%
	Employment	37,193	14.6%	719,856	19.3%
	<i>Location Quotient</i>	1.28		n/a	
	Average Annual Wage	\$143,816	15.3%	\$147,396	22.0%
Total Bioscience Industry	Establishments	3,123	18.0%	127,389	22.3%
	Employment	93,105	7.2%	2,135,704	11.0%
	<i>Location Quotient</i>	1.08		n/a	
	Average Annual Wage	\$126,292	12.6%	\$125,750	16.4%
Total Private Sector	Establishments	357,315	4.3%	10,665,643	9.3%
	Employment	4,997,664	-3.8%	123,376,557	-1.5%
	<i>Location Quotient</i>	1.00		n/a	
	Average Annual Wage	\$64,750	17.1%	\$67,826	18.9%

Note: U.S. employment metrics include Puerto Rico.

Bioscience Research in Pennsylvania

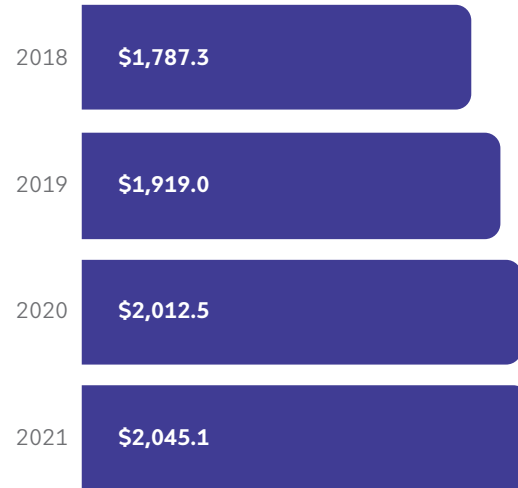
Bioscience Academic R&D Expenditures

\$ Millions, FY 2020



NIH Awards

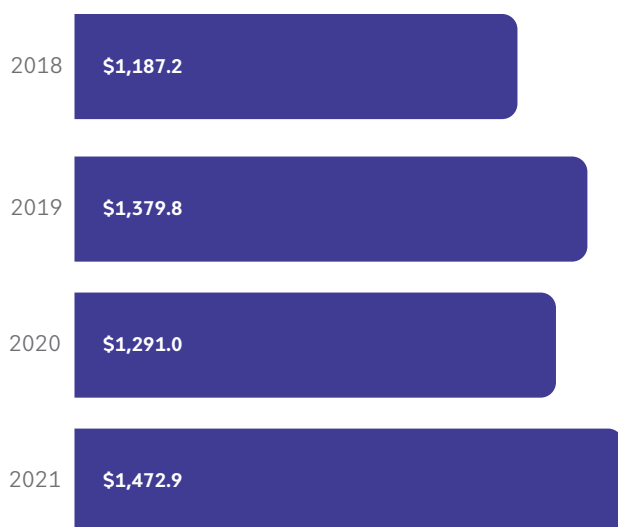
\$ Millions, FY 2018-2021



Bioscience Venture Capital in Pennsylvania

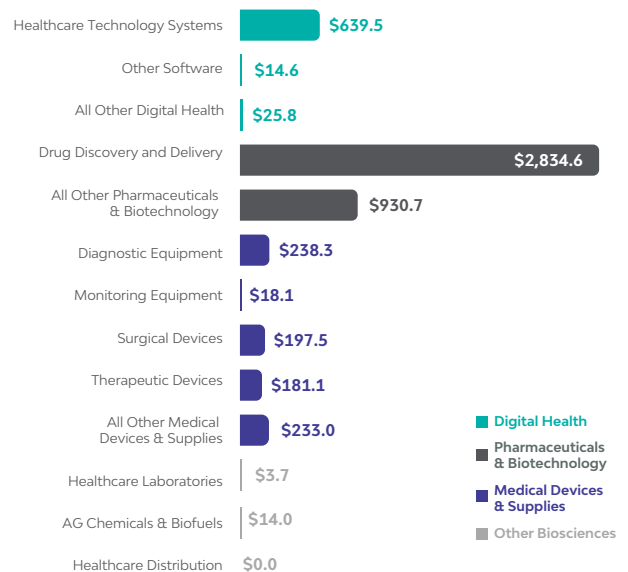
Bioscience-Related Venture Capital Investments

\$ Millions, 2018-2021



Bioscience-Related Venture Capital Investments by Segment

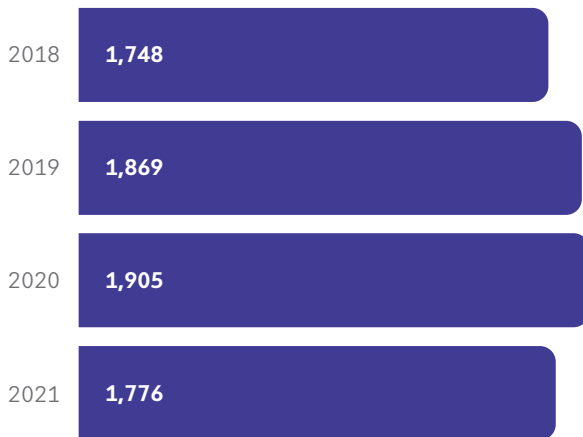
\$ Millions, 2018-2021



Bioscience Patents in Pennsylvania

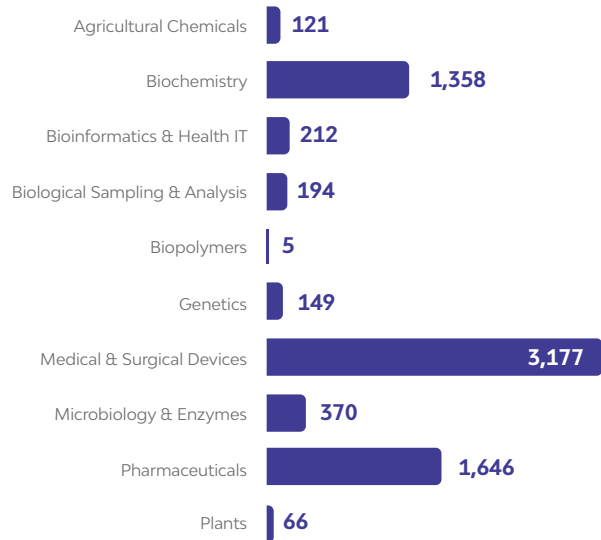
Bioscience-Related U.S. Patents

2018-2021



Bioscience-Related U.S. Patents by Segment

2018-2021



Source Notes

Employment, Establishments and Wages: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), enhanced by Lightcast (Datarun 2022.3).

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).

Venture Capital: PitchBook Data, Inc.

Patents: U.S. Patent & Trademark Office data from Clarivate Analytics’ Derwent Innovation patent analysis database.

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