



TEconomy/BIO

The Value of Bioscience Innovation in Growing Jobs and Improving Quality of Life 2016

Ohio

Ohio has a sizable bioscience industry with employment totaling more than 48,000 in 2014 and spanning 2,696 business establishments across the state. While bioscience industry employment has been flat in Ohio since 2012, two industry subsectors have added jobs—research, testing, and medical labs and bioscience-related distribution. Ohio is among the top tier of states in key measures of bioscience R&D and innovation including in academic R&D, NIH research funding, and patenting. The state’s research universities had \$1.3 billion in bioscience-related R&D expenditures in 2014. Among the 4,438 bioscience patents issued since 2012 to Ohio inventors, key technology focus areas include medical and surgical devices, drugs and pharmaceuticals, agricultural bioscience, and biochemistry.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Ohio	United States	Quintile
Bioscience Industry, 2014			
Bioscience Industry Employment	48,102	1,655,680	II
Bioscience Industry Location Quotient	0.75	n/a	III
Bioscience Industry Establishments	2,696	77,283	I
Academic Bioscience R&D Expenditures, FY 2014			
Bioscience R&D (\$ thousands)	\$1,318,183	\$38,873,926	I
Bioscience Share of Total R&D	64%	61%	II
Bioscience R&D Per Capita	\$114	\$122	III
NIH Funding, FY 2015			
Funding (\$ thousands)	\$670,052	\$22,869,746	I
Funding Per Capita	\$58	\$71	II
Bioscience Venture Capital Investments, 2012–15 (\$ millions)	\$637.5	\$48,742.10	II
Bioscience and Related Patents, 2012–15	4,438	101,026	I

State ranking figures for bioscience performance metrics are calculated as quintiles, where:

top quintile – I II III IV V – bottom quintile

For source notes, see end of State Profile.



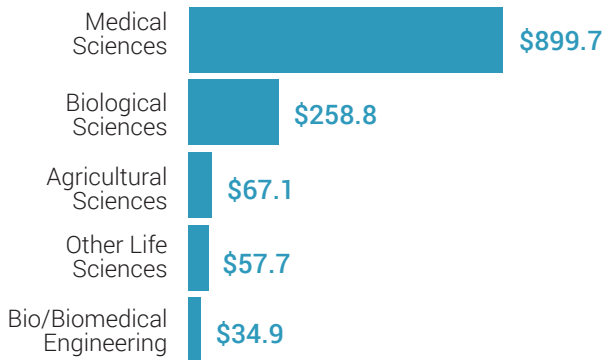
Industry Subsector	Ohio		United States	
	2014	2012–2014 Change	2014	2012–2014 Change
Agricultural Feedstock and Chemicals				
Establishments	69	3.6%	1,811	2.2%
Employment	2,935	-8.4%	77,545	1.5%
Location Quotient	0.98		n/a	
Direct-Effect Employment Multiplier	18.2		18.4	
Total Employment Impact	53,469		1,432,125	
Average Annual Wage	\$83,702	16.8%	\$80,640	6.3%
Bioscience-Related Distribution				
Establishments	1,441	1.2%	37,833	2.8%
Employment	17,974	2.4%	452,325	2.3%
Location Quotient	1.03		n/a	
Direct-Effect Employment Multiplier	3.1		3.0	
Total Employment Impact	55,120		1,358,820	
Average Annual Wage	\$82,603	11.0%	\$90,458	6.2%
Drugs and Pharmaceuticals				
Establishments	45	2.3%	3,301	8.0%
Employment	4,984	-10.7%	293,353	3.2%
Location Quotient	0.44		n/a	
Direct-Effect Employment Multiplier	12.5		11.0	
Total Employment Impact	62,105		3,242,627	
Average Annual Wage	\$90,603	24.3%	\$117,524	10.3%
Medical Devices and Equipment				
Establishments	210	-7.5%	7,636	5.5%
Employment	8,694	-4.7%	349,045	-0.1%
Location Quotient	0.65		n/a	
Direct-Effect Employment Multiplier	4.5		4.6	
Total Employment Impact	39,387		1,596,802	
Average Annual Wage	\$54,523	1.3%	\$79,537	5.1%
Research, Testing, and Medical Laboratories				
Establishments	931	11.9%	26,702	10.2%
Employment	13,514	5.2%	483,412	3.4%
Location Quotient	0.72		n/a	
Direct-Effect Employment Multiplier	3.1		3.1	
Total Employment Impact	42,357		1,554,719	
Average Annual Wage	\$74,402	7.2%	\$97,485	6.8%
Total Bioscience Industry				
Establishments	2,696	3.9%	77,283	5.7%
Employment	48,102	-0.4%	1,655,680	2.2%
Location Quotient	0.75		n/a	
Direct-Effect Employment Multiplier	5.4		5.5	
Total Employment Impact	260,750		9,185,094	
Average Annual Wage	\$76,119	10.6%	\$94,543	7.2%
Total Private Sector				
Establishments	273,477	0.6%	8,937,672	2.7%
Employment	4,476,161	3.3%	116,018,300	4.4%
Average Annual Wage	\$45,488	4.3%	\$51,148	4.3%

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

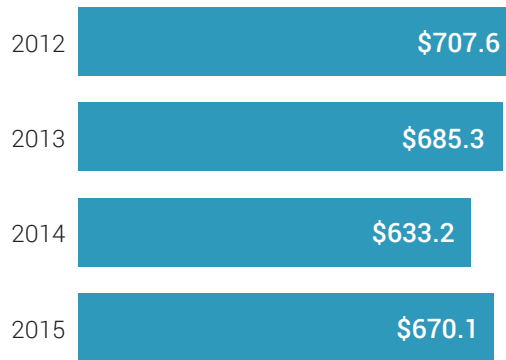


Bioscience Research in Ohio

Bioscience Academic R&D Expenditures
\$ Millions
FY 2014

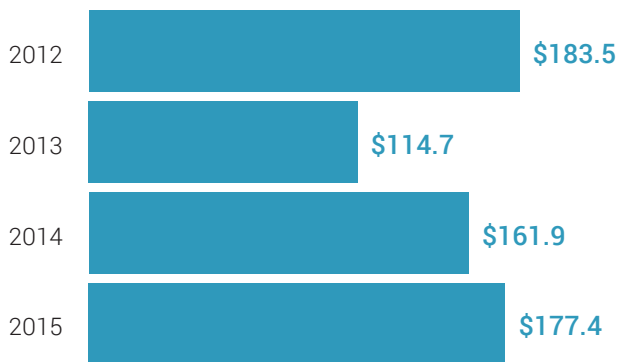


NIH Awards
\$ Millions
FY 2012-2015

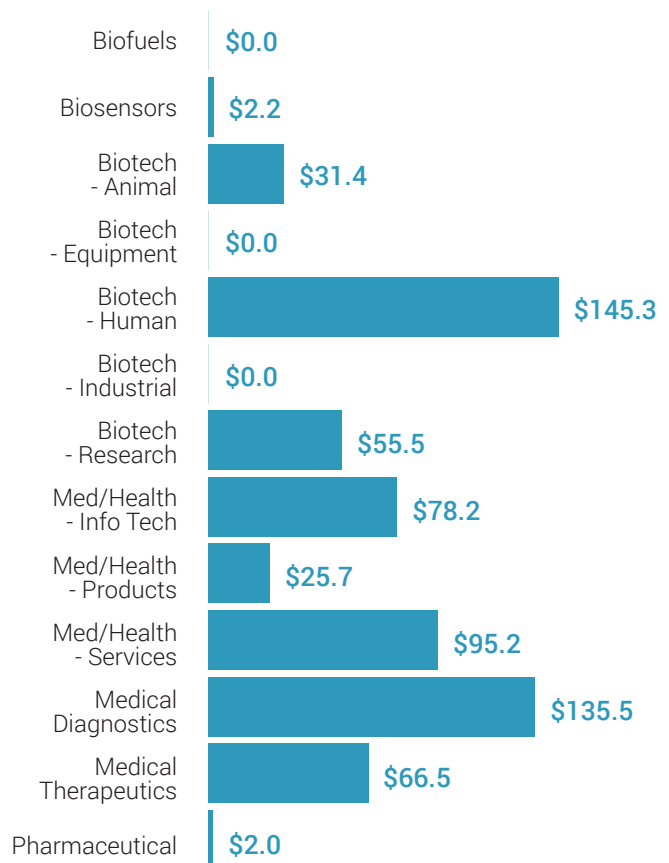


Bioscience Venture Capital in Ohio

Bioscience-Related Venture Capital Investments
\$ Millions
2012-2015



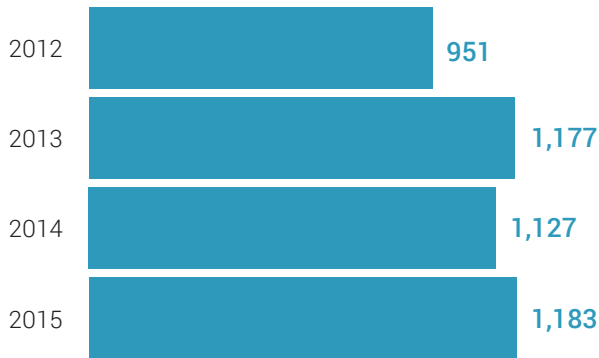
Bioscience-Related Venture Capital Investments by Segment
\$ Millions
2012-2015



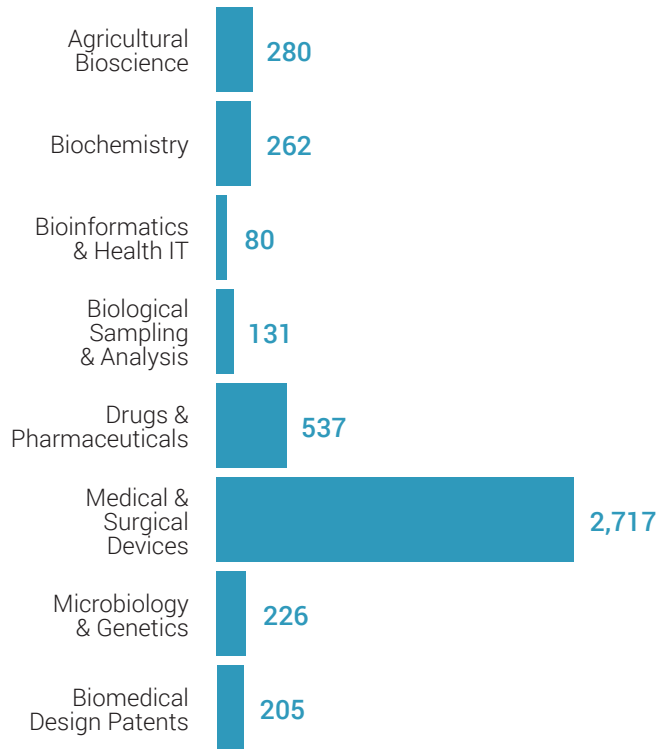


Bioscience Patents in Ohio

Bioscience-Related U.S. Patents 2012-2015



Bioscience-Related U.S. Patents by Segment 2012-2015



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).

Venture Capital: Thomson Reuters Thomson ONE venture capital database.

Patents: U.S. Patent & Trademark Office data from Thomson Reuters Thomson Innovation patent analysis database.

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

