



TEconomy/BIO

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

West Virginia

West Virginia's bioscience industry employed more than 6,400 in 2014 across 419 business establishments. The state industry has seen a slight increase in its employment base by 0.6 percent since 2012. Employment in drugs and pharmaceuticals in West Virginia is considered to be specialized and is 93 percent more concentrated in the state economy relative to the national average (location quotient is 1.93). Annual wages for state bioscience workers exceed \$71,000, on average, and are 76 percent more than the overall private sector average. State patenting in the biosciences totaled 184 patents issued from 2012 through 2015 with a focus in medical and surgical devices, biochemistry, and drugs and pharmaceuticals. While modest in number, the state's patent totals have increased in recent years.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	West Virginia	United States	Quintile
Bioscience Industry, 2014			
Bioscience Industry Employment	6,429	1,655,680	IV
Bioscience Industry Location Quotient	0.80	n/a	III
Bioscience Industry Establishments	419	77,283	V
Academic Bioscience R&D Expenditures, FY 2014			
Bioscience R&D (\$ thousands)	\$114,507	\$38,873,926	IV
Bioscience Share of Total R&D	62%	61%	III
Bioscience R&D Per Capita	\$62	\$122	IV
NIH Funding, FY 2015			
Funding (\$ thousands)	\$20,975	\$22,869,746	V
Funding Per Capita	\$11	\$71	V
Bioscience Venture Capital Investments, 2012–15 (\$ millions)	\$0.0	\$48,742.10	V
Bioscience and Related Patents, 2012–15	184	101,026	V

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.



West Virginia

Industry Subsector	West Virginia		United States	
	2014	2012–2014 Change	2014	2012–2014 Change
Agricultural Feedstock and Chemicals				
Establishments	3	0.0%	1,811	2.2%
Employment	234	411.1%	77,545	1.5%
Location Quotient	0.62		n/a	
Direct-Effect Employment Multiplier	12.9		18.4	
Total Employment Impact	3,013		1,432,125	
Average Annual Wage	\$80,940	4.9%	\$80,640	6.3%
Bioscience-Related Distribution				
Establishments	198	18.0%	37,833	2.8%
Employment	1,422	4.3%	452,325	2.3%
Location Quotient	0.65		n/a	
Direct-Effect Employment Multiplier	2.6		3.0	
Total Employment Impact	3,739		1,358,820	
Average Annual Wage	\$76,191	9.6%	\$90,458	6.2%
Drugs and Pharmaceuticals				
Establishments	3	0.0%	3,301	8.0%
Employment	2,753	-4.3%	293,353	3.2%
Location Quotient	1.93		n/a	
Direct-Effect Employment Multiplier	9.5		11.0	
Total Employment Impact	26,274		3,242,627	
Average Annual Wage	\$81,152	1.3%	\$117,524	10.3%
Medical Devices and Equipment				
Establishments	11	10.0%	7,636	5.5%
Employment	703	-14.1%	349,045	-0.1%
Location Quotient	0.42		n/a	
Direct-Effect Employment Multiplier	3.9		4.6	
Total Employment Impact	2,775		1,596,802	
Average Annual Wage	\$55,188	-7.1%	\$79,537	5.1%
Research, Testing, and Medical Laboratories				
Establishments	205	28.5%	26,702	10.2%
Employment	1,317	2.6%	483,412	3.4%
Location Quotient	0.56		n/a	
Direct-Effect Employment Multiplier	2.7		3.1	
Total Employment Impact	3,602		1,554,719	
Average Annual Wage	\$52,527	-0.2%	\$97,485	6.8%
Total Bioscience Industry				
Establishments	419	22.3%	77,283	5.7%
Employment	6,429	0.6%	1,655,680	2.2%
Location Quotient	0.80		n/a	
Direct-Effect Employment Multiplier	5.3		5.5	
Total Employment Impact	34,341		9,185,094	
Average Annual Wage	\$71,343	2.4%	\$94,543	7.2%
Total Private Sector				
Establishments	45,763	1.0%	8,937,672	2.7%
Employment	562,687	-0.8%	116,018,300	4.4%
Average Annual Wage	\$40,490	3.2%	\$51,148	4.3%

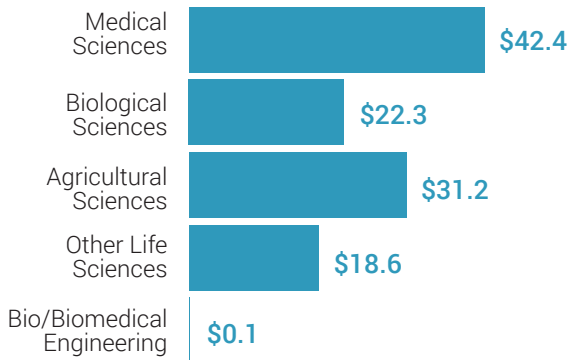
Note: U.S. employment metrics include Puerto Rico.



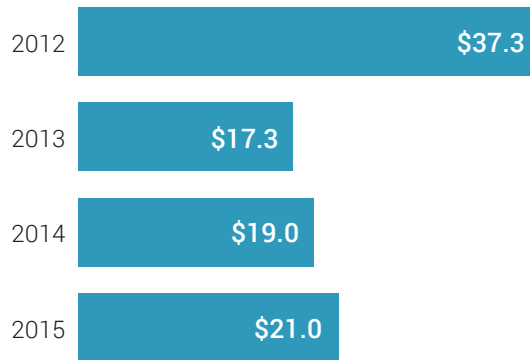
West Virginia

Bioscience Research in West Virginia

Bioscience Academic R&D Expenditures
\$ Millions
FY 2014



NIH Awards
\$ Millions
FY 2012-2015

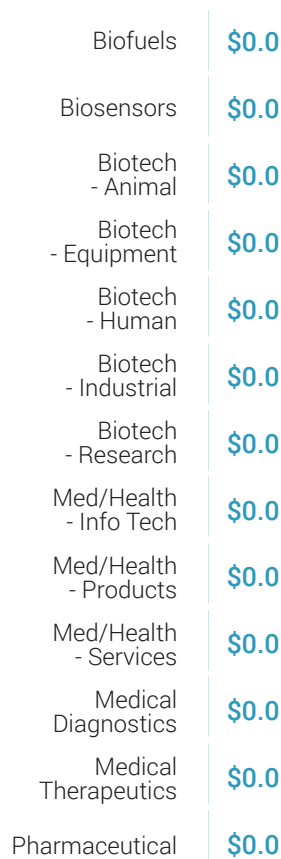


Bioscience Venture Capital in West Virginia

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



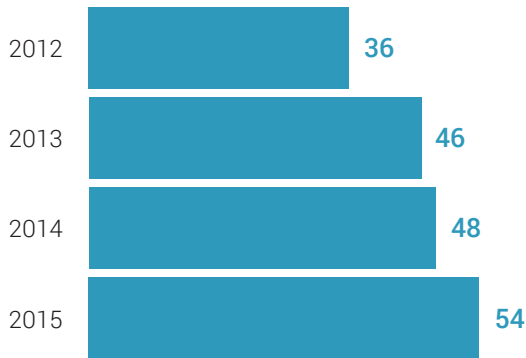
Bioscience-Related Venture
Capital Investments by Segment
\$ Millions
2012-2015



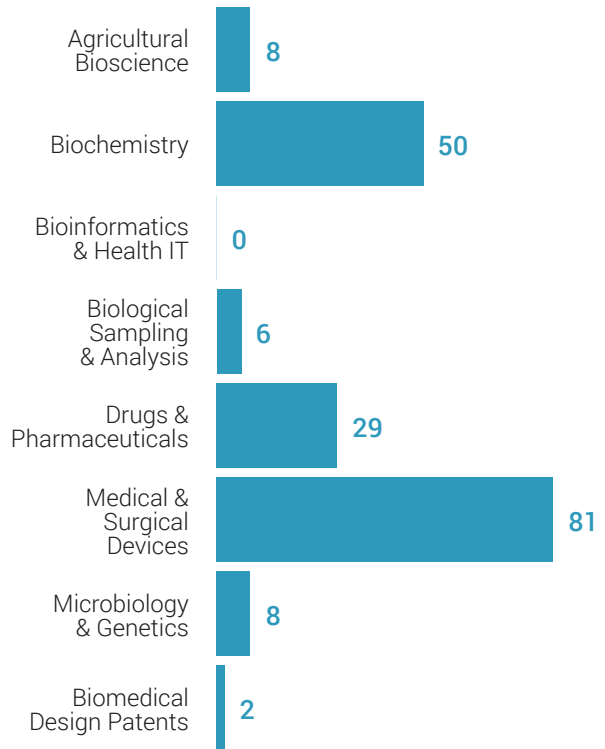


Bioscience Patents in West Virginia

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.

