



TEconomy/BIO

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

Washington

Washington’s sizable bioscience industry employed more than 29,000 in 2014 while operating 1,421 business establishments across the state. The state industry has seen a modest decline in jobs since 2012, down by 1.9 percent. The state is highly concentrated and nearly specialized in the research, testing, and medical labs industry subsector with a location quotient of 1.19. Washington is among the top tier of states in NIH funding awarded in 2015 with \$885 million, which translates into a well above-average concentration across the state on a per capita basis. After a decline in 2013, NIH research funding to state institutions has been increasing in recent years. Washington’s bioscience companies have received \$1.5 billion in venture capital investments since 2012, also among the leading states in this key measure of access to risk capital. The majority of these investments have been made in companies working in human biotechnologies.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Washington	United States	Quintile
Bioscience Industry, 2014			
Bioscience Industry Employment	29,457	1,655,680	II
Bioscience Industry Location Quotient	0.82	n/a	III
Bioscience Industry Establishments	1,421	77,283	II
Academic Bioscience R&D Expenditures, FY 2014			
Bioscience R&D (\$ thousands)	\$972,860	\$38,873,926	II
Bioscience Share of Total R&D	70%	61%	II
Bioscience R&D Per Capita	\$138	\$122	II
NIH Funding, FY 2015			
Funding (\$ thousands)	\$885,340	\$22,869,746	I
Funding Per Capita	\$123	\$71	I
Bioscience Venture Capital Investments, 2012–15 (\$ millions)	\$1,523.0	\$48,742.10	I
Bioscience and Related Patents, 2012–15	3,185	101,026	II

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.



Washington

Industry Subsector	Washington		United States	
	2014	2012–2014 Change	2014	2012–2014 Change
Agricultural Feedstock and Chemicals				
Establishments	41	13.9%	1,811	2.2%
Employment	826	11.9%	77,545	1.5%
Location Quotient	0.49		n/a	
Direct-Effect Employment Multiplier	19.7		18.4	
Total Employment Impact	16,275		1,432,125	
Average Annual Wage	\$55,381	5.2%	\$80,640	6.3%
Bioscience-Related Distribution				
Establishments	702	6.2%	37,833	2.8%
Employment	8,065	-0.5%	452,325	2.3%
Location Quotient	0.82		n/a	
Direct-Effect Employment Multiplier	2.8		3.0	
Total Employment Impact	22,864		1,358,820	
Average Annual Wage	\$81,684	2.4%	\$90,458	6.2%
Drugs and Pharmaceuticals				
Establishments	57	9.6%	3,301	8.0%
Employment	2,364	-8.4%	293,353	3.2%
Location Quotient	0.37		n/a	
Direct-Effect Employment Multiplier	9.1		11.0	
Total Employment Impact	21,413		3,242,627	
Average Annual Wage	\$54,124	5.3%	\$117,524	10.3%
Medical Devices and Equipment				
Establishments	134	3.1%	7,636	5.5%
Employment	5,706	-1.9%	349,045	-0.1%
Location Quotient	0.75		n/a	
Direct-Effect Employment Multiplier	4.3		4.6	
Total Employment Impact	24,672		1,596,802	
Average Annual Wage	\$80,331	-8.4%	\$79,537	5.1%
Research, Testing, and Medical Laboratories				
Establishments	487	5.9%	26,702	10.2%
Employment	12,497	-2.2%	483,412	3.4%
Location Quotient	1.19		n/a	
Direct-Effect Employment Multiplier	3.1		3.1	
Total Employment Impact	38,728		1,554,719	
Average Annual Wage	\$89,374	6.1%	\$97,485	6.8%
Total Bioscience Industry				
Establishments	1,421	6.1%	77,283	5.7%
Employment	29,457	-1.9%	1,655,680	2.2%
Location Quotient	0.82		n/a	
Direct-Effect Employment Multiplier	4.8		5.5	
Total Employment Impact	140,432		9,185,094	
Average Annual Wage	\$81,735	2.0%	\$94,543	7.2%
Total Private Sector				
Establishments	237,355	2.6%	8,937,672	2.7%
Employment	2,517,303	5.8%	116,018,300	4.4%
Average Annual Wage	\$54,955	6.2%	\$51,148	4.3%

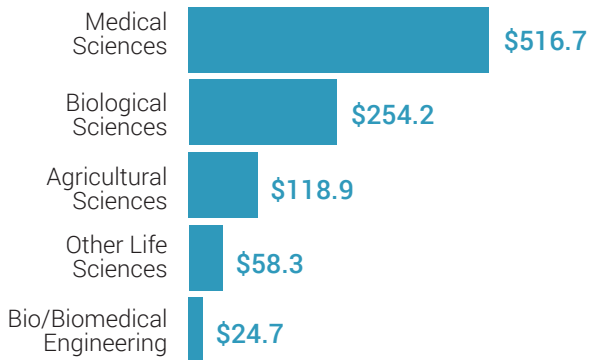
Note: U.S. employment metrics include Puerto Rico.



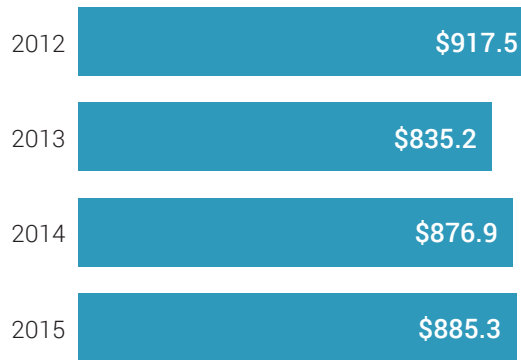
Washington

Bioscience Research in Washington

Bioscience Academic R&D Expenditures
\$ Millions
FY 2014

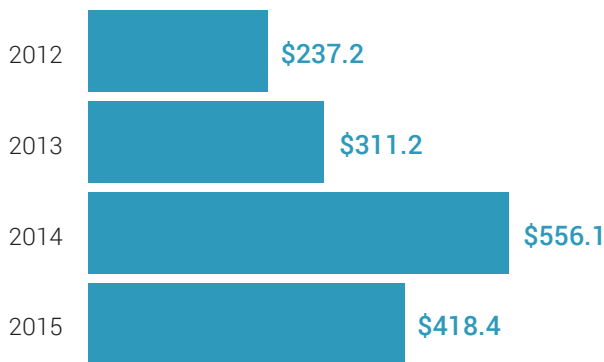


NIH Awards
\$ Millions
FY 2012-2015

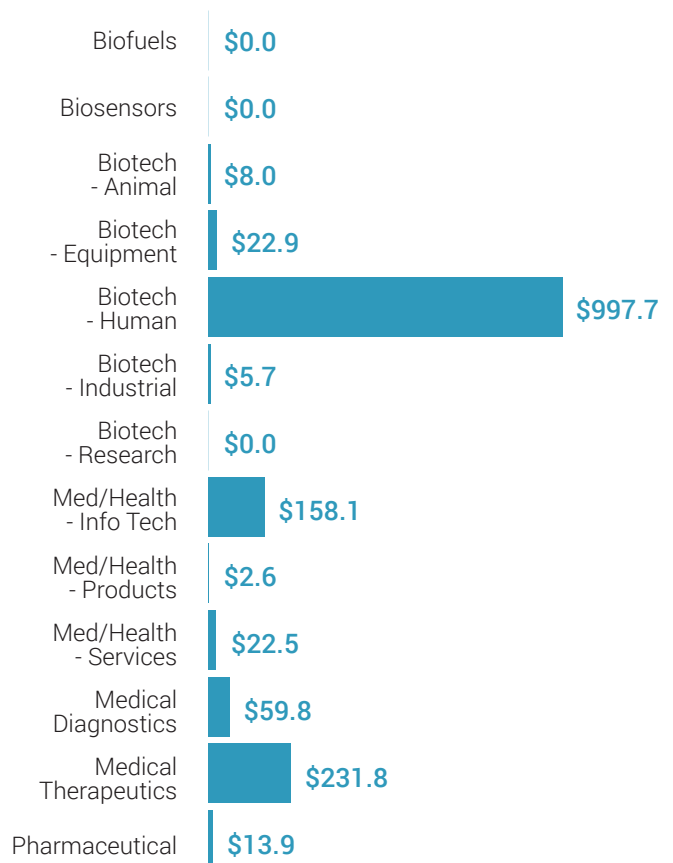


Bioscience Venture Capital in Washington

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



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

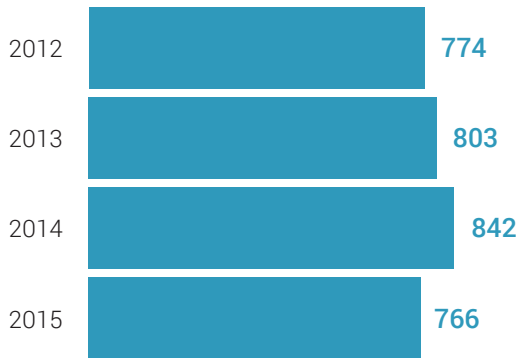




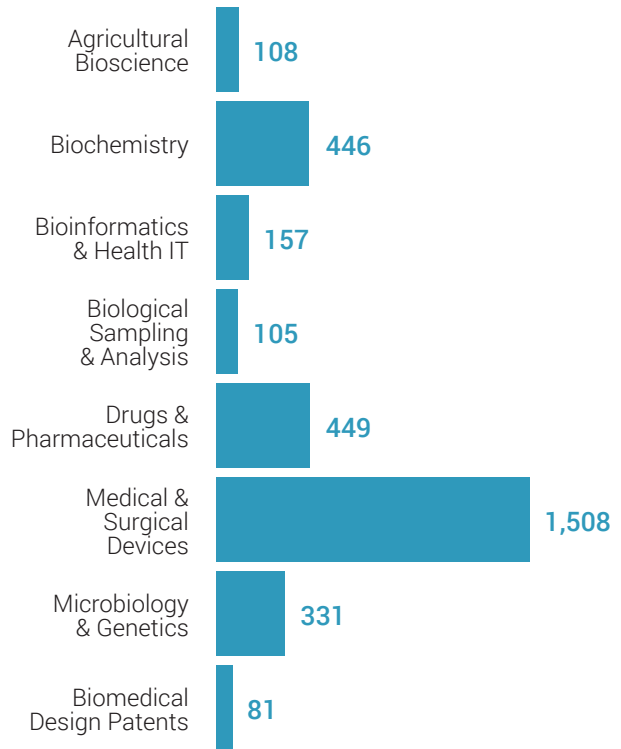
Washington

Bioscience Patents in Washington

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.

