



TEconomy/BIO

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

Minnesota

Minnesota has a sizable, highly specialized, and growing bioscience industry and is a national leader in medical device manufacturing. The state’s bioscience industry employed nearly 50,000 in 2014 in 1,734 statewide business establishments. More than half of Minnesota’s bioscience industry jobs are in its specialized medical device and equipment subsector where the state is nearly four times more concentrated relative to the national average. While it is led by medical devices, the state bioscience industry is also highly concentrated in bioscience-related distribution and in agricultural feedstock and chemicals. The industry grew its employment base by 3.5 percent from 2012 to 2014. Minnesota’s research universities are especially focused in the biosciences relative to other fields with their \$620 million in bioscience academic R&D in 2014 accounting for 70 percent of all academic research compared with 61 percent for the national average. The state’s bioscience patenting activities place it among the top tier of states with 7,064 issued to state inventors since 2012.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Minnesota	United States	Quintile
Bioscience Industry, 2014			
Bioscience Industry Employment	49,658	1,655,680	II
Bioscience Industry Location Quotient	1.48	n/a	I
Bioscience Industry Establishments	1,734	77,283	II
Academic Bioscience R&D Expenditures, FY 2014			
Bioscience R&D (\$ thousands)	\$620,384	\$38,873,926	II
Bioscience Share of Total R&D	70%	61%	I
Bioscience R&D Per Capita	\$114	\$122	III
NIH Funding, FY 2015			
Funding (\$ thousands)	\$496,711	\$22,869,746	II
Funding Per Capita	\$90	\$71	I
Bioscience Venture Capital Investments, 2012–15 (\$ millions)	\$971.1	\$48,742.10	II
Bioscience and Related Patents, 2012–15	7,064	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.



Minnesota

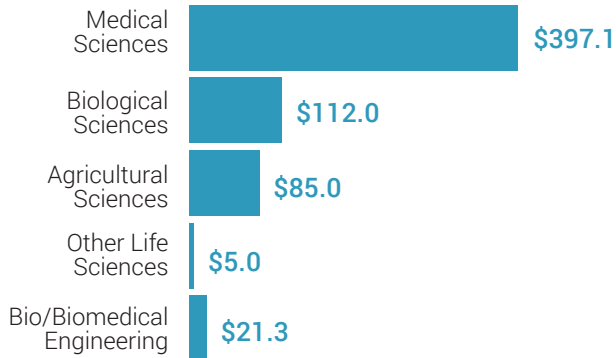
Industry Subsector	Minnesota		United States	
	2014	2012–2014 Change	2014	2012–2014 Change
Agricultural Feedstock and Chemicals				
Establishments	53	-8.6%	1,811	2.2%
Employment	1,760	8.6%	77,545	1.5%
Location Quotient	1.12		n/a	
Direct-Effect Employment Multiplier	22.7		18.4	
Total Employment Impact	40,035		1,432,125	
Average Annual Wage	\$66,450	9.3%	\$80,640	6.3%
Bioscience-Related Distribution				
Establishments	899	-1.4%	37,833	2.8%
Employment	10,698	9.3%	452,325	2.3%
Location Quotient	1.16		n/a	
Direct-Effect Employment Multiplier	3.2		3.0	
Total Employment Impact	33,848		1,358,820	
Average Annual Wage	\$89,018	2.9%	\$90,458	6.2%
Drugs and Pharmaceuticals				
Establishments	52	0.0%	3,301	8.0%
Employment	3,267	-4.8%	293,353	3.2%
Location Quotient	0.55		n/a	
Direct-Effect Employment Multiplier	9.8		11.0	
Total Employment Impact	32,045		3,242,627	
Average Annual Wage	\$75,613	2.3%	\$117,524	10.3%
Medical Devices and Equipment				
Establishments	321	4.2%	7,636	5.5%
Employment	26,455	-0.8%	349,045	-0.1%
Location Quotient	3.73		n/a	
Direct-Effect Employment Multiplier	5.0		4.6	
Total Employment Impact	132,448		1,596,802	
Average Annual Wage	\$97,516	9.9%	\$79,537	5.1%
Research, Testing, and Medical Laboratories				
Establishments	408	10.9%	26,702	10.2%
Employment	7,478	15.5%	483,412	3.4%
Location Quotient	0.76		n/a	
Direct-Effect Employment Multiplier	3.4		3.1	
Total Employment Impact	25,317		1,554,719	
Average Annual Wage	\$100,839	10.7%	\$97,485	6.8%
Total Bioscience Industry				
Establishments	1,734	2.1%	77,283	5.7%
Employment	49,658	3.5%	1,655,680	2.2%
Location Quotient	1.48		n/a	
Direct-Effect Employment Multiplier	5.5		5.5	
Total Employment Impact	274,543		9,185,094	
Average Annual Wage	\$93,644	8.1%	\$94,543	7.2%
Total Private Sector				
Establishments	157,912	-1.2%	8,937,672	2.7%
Employment	2,358,058	3.6%	116,018,300	4.4%
Average Annual Wage	\$51,954	4.4%	\$51,148	4.3%

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



Bioscience Research in Minnesota

Bioscience Academic R&D Expenditures
\$ Millions
FY 2014

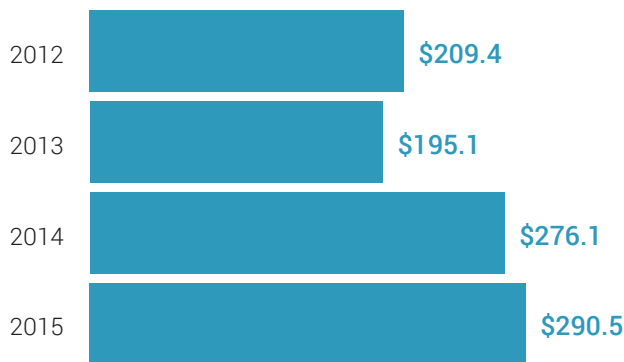


NIH Awards
\$ Millions
FY 2012-2015

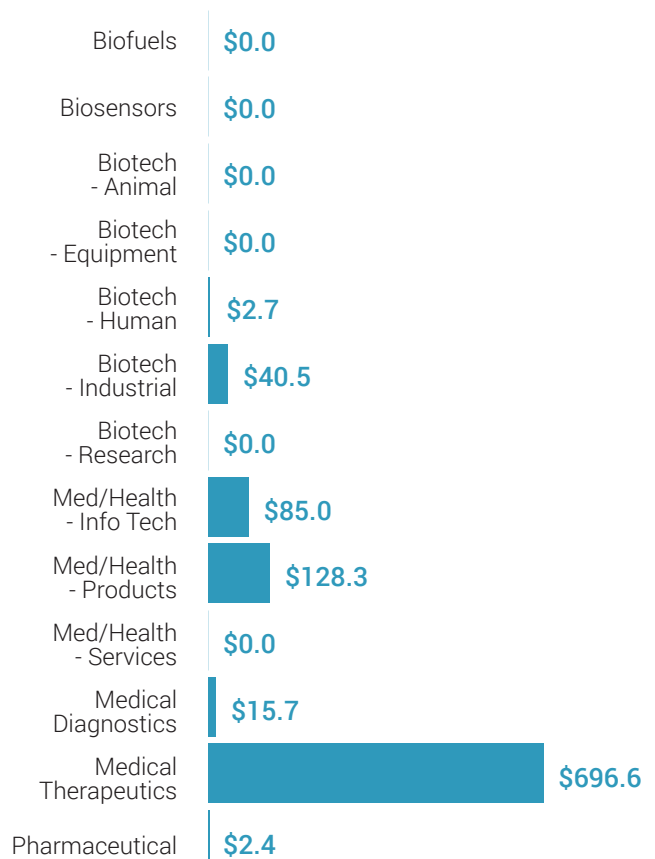


Bioscience Venture Capital in Minnesota

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



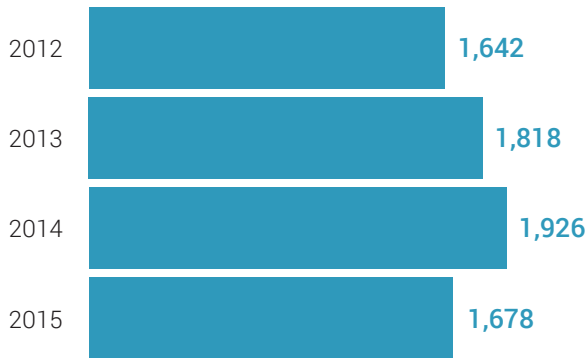
Bioscience-Related Venture
Capital Investments by Segment
\$ Millions
2012-2015



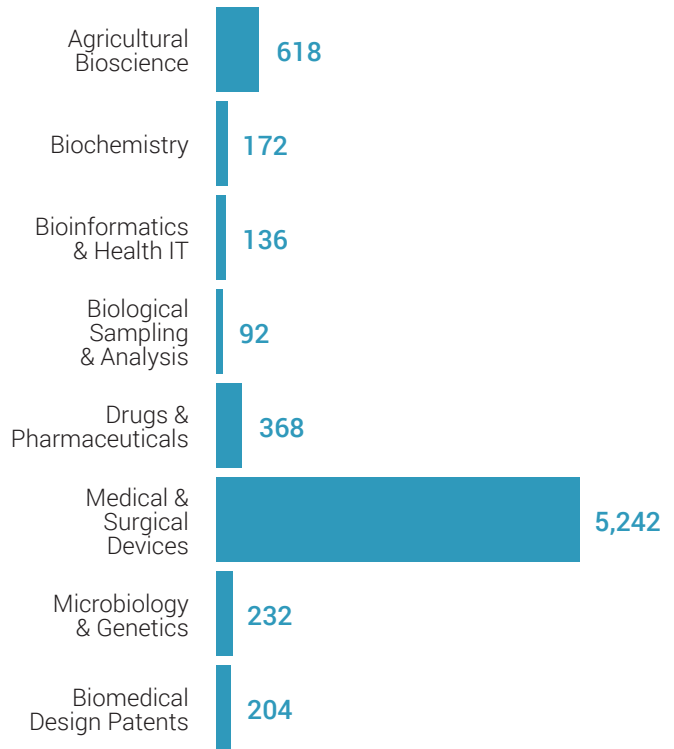


Bioscience Patents in Minnesota

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.

