



TEconomy/BIO

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

**Missouri**

Missouri’s nearly 27,000 bioscience industry jobs in 2014 were spread across a diverse set of industry subsectors and 1,355 business establishments. The state has a specialization in agricultural feedstock and chemicals with a location quotient of 1.61—a 61 percent greater concentration in agbioscience employment relative to the national average. While bioscience employment has declined in the state, three industry subsectors have added jobs since 2012 with more significant gains in bioscience-related distribution and in drugs and pharmaceuticals which grew by nearly 7 percent and 5 percent, respectively. The state’s research universities are especially focused in the biosciences relative to other fields with their nearly \$845 million in bioscience academic R&D in 2014 accounting for 83 percent of all academic research compared with 61 percent for the national average. Venture capital investments in Missouri’s bioscience companies have increased sharply since 2012, with the \$347 million in venture capital invested since 2012 being well distributed across several technology segments including human biotechnology and health information technology.

**Bioscience Performance Metrics**

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Missouri	United States	Quintile
<b>Bioscience Industry, 2014</b>			
Bioscience Industry Employment	26,857	1,655,680	III
Bioscience Industry Location Quotient	0.84	n/a	III
Bioscience Industry Establishments	1,355	77,283	II
<b>Academic Bioscience R&amp;D Expenditures, FY 2014</b>			
Bioscience R&D (\$ thousands)	\$844,781	\$38,873,926	II
Bioscience Share of Total R&D	83%	61%	I
Bioscience R&D Per Capita	\$139	\$122	II
<b>NIH Funding, FY 2015</b>			
Funding (\$ thousands)	\$471,597	\$22,869,746	II
Funding Per Capita	\$78	\$71	II
<b>Bioscience Venture Capital Investments, 2012–15 (\$ millions)</b>	\$347.1	\$48,742.10	II
<b>Bioscience and Related Patents, 2012–15</b>	2,171	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.



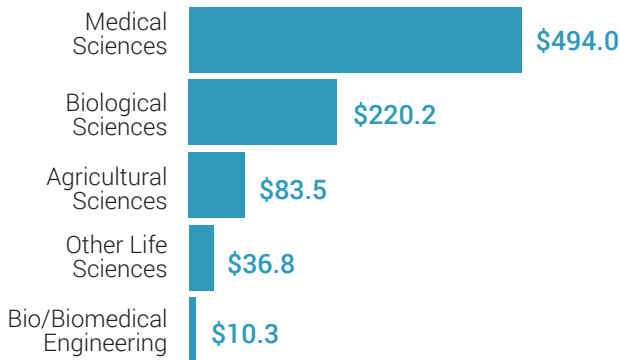
Industry Subsector	Missouri		United States	
	2014	2012–2014 Change	2014	2012–2014 Change
<b>Agricultural Feedstock and Chemicals</b>				
Establishments	74	-6.3%	1,811	2.2%
Employment	2,418	-2.6%	77,545	1.5%
Location Quotient	1.61		n/a	
Direct-Effect Employment Multiplier	18.9		18.4	
Total Employment Impact	45,582		1,432,125	
Average Annual Wage	\$66,029	-1.0%	\$80,640	6.3%
<b>Bioscience-Related Distribution</b>				
Establishments	652	0.4%	37,833	2.8%
Employment	8,646	6.9%	452,325	2.3%
Location Quotient	0.99		n/a	
Direct-Effect Employment Multiplier	3.0		3.0	
Total Employment Impact	26,183		1,358,820	
Average Annual Wage	\$67,190	-4.7%	\$90,458	6.2%
<b>Drugs and Pharmaceuticals</b>				
Establishments	76	24.6%	3,301	8.0%
Employment	5,292	4.8%	293,353	3.2%
Location Quotient	0.93		n/a	
Direct-Effect Employment Multiplier	11.0		11.0	
Total Employment Impact	57,969		3,242,627	
Average Annual Wage	\$88,693	15.0%	\$117,524	10.3%
<b>Medical Devices and Equipment</b>				
Establishments	95	-6.9%	7,636	5.5%
Employment	2,726	0.8%	349,045	-0.1%
Location Quotient	0.40		n/a	
Direct-Effect Employment Multiplier	4.4		4.6	
Total Employment Impact	11,891		1,596,802	
Average Annual Wage	\$56,698	5.2%	\$79,537	5.1%
<b>Research, Testing, and Medical Laboratories</b>				
Establishments	458	4.4%	26,702	10.2%
Employment	7,776	-20.5%	483,412	3.4%
Location Quotient	0.83		n/a	
Direct-Effect Employment Multiplier	3.1		3.1	
Total Employment Impact	23,895		1,554,719	
Average Annual Wage	\$72,110	-0.6%	\$97,485	6.8%
<b>Total Bioscience Industry</b>				
Establishments	1,355	1.9%	77,283	5.7%
Employment	26,857	-4.5%	1,655,680	2.2%
Location Quotient	0.84		n/a	
Direct-Effect Employment Multiplier	5.8		5.5	
Total Employment Impact	154,795		9,185,094	
Average Annual Wage	\$71,682	1.7%	\$94,543	7.2%
<b>Total Private Sector</b>				
Establishments	175,270	4.6%	8,937,672	2.7%
Employment	2,250,961	2.8%	116,018,300	4.4%
Average Annual Wage	\$44,697	3.6%	\$51,148	4.3%

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

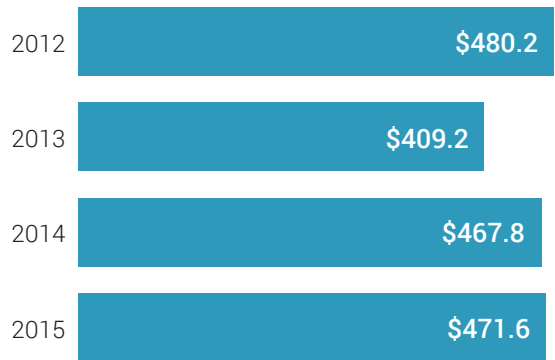


Bioscience Research in Missouri

Bioscience Academic R&D Expenditures  
\$ Millions  
FY 2014

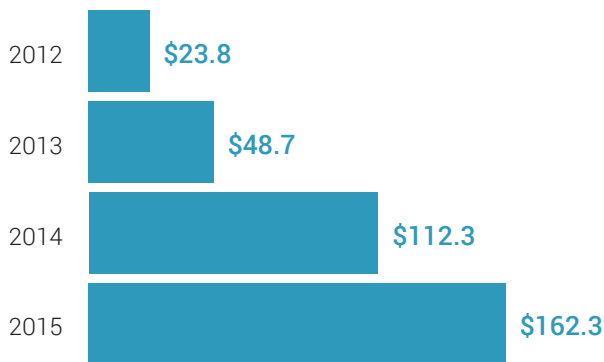


NIH Awards  
\$ Millions  
FY 2012-2015

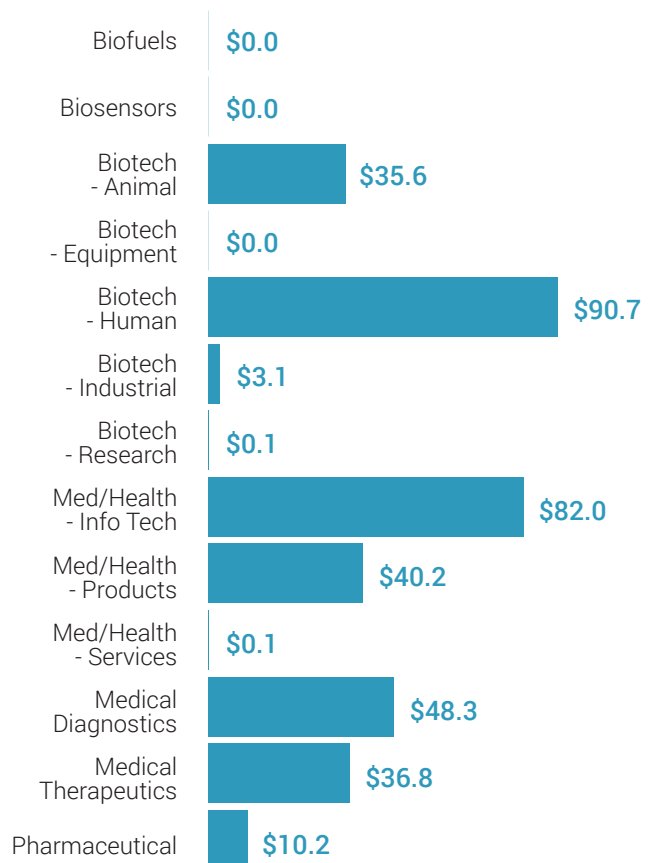


Bioscience Venture Capital in Missouri

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



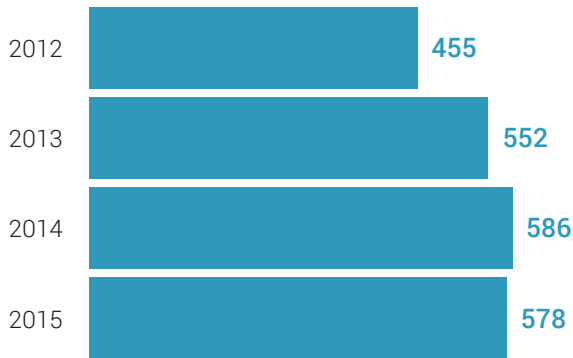
Bioscience-Related Venture  
Capital Investments by Segment  
\$ Millions  
2012-2015



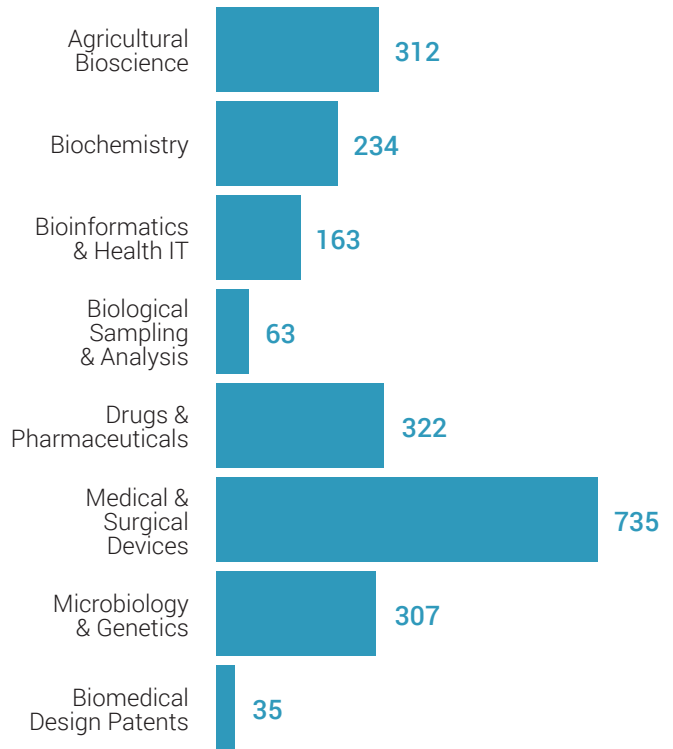


Bioscience Patents in Missouri

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.

