



# Missouri

TECONOMY/BIO

The Bioscience Economy: Propelling Life-Saving Treatments, Supporting State & Local Communities

Missouri’s bioscience industry has grown since 2016, increasing employment by 8 percent to reach more than 31,000 jobs in 2018 across nearly 2,000 state business establishments. Four of the state’s five industry subsectors contributed to the overall job gains. Missouri has a specialized employment concentration in the agricultural feedstock and industrial biosciences subsector, where it is nearly two times more concentrated than the national average (location quotient is 1.99). The state’s research universities conducted \$998 million in bioscience-related R&D in 2018—Missouri has a particularly strong focus on biosciences research across its universities, accounting for 84 percent of all academic R&D. Funding for academic research is being bolstered by steady increases in federal NIH awards to Missouri institutions, which reached nearly \$656 million in 2019.

## Bioscience Performance Metrics

### Summary of State Performance in Selected Bioscience-related Metrics

Metric	Missouri	United States	Quintile
<b>Bioscience Industry, 2018</b>			
Bioscience Industry Employment	31,378	1,869,955	III
Bioscience Industry Location Quotient	0.88	n/a	III
Bioscience Industry Establishments	1,988	101,143	II
<b>Academic Bioscience R&amp;D Expenditures, FY 2018</b>			
Academic Bioscience R&D (\$ thousands)	\$998,394	\$47,183,197	II
Bioscience Share of Total Academic R&D	84%	63%	I
Academic Bioscience R&D Per Capita	\$163	\$144	II
<b>NIH Funding, FY 2019</b>			
Funding (\$ thousands)	\$655,608	\$30,886,675	II
Funding Per Capita	\$107	\$94	II
<b>Bioscience Venture Capital Investments, 2016-19 (\$ millions)</b>	\$717.11	\$102,728.33	II
<b>Bioscience-Related Patents, 2016-19</b>	2,241	108,438	II

State ranking figures for bioscience performance metrics are calculated as quintiles, where I = top quintile, III = middle quintile, and V = bottom quintile. For source notes, see end of State Profile.



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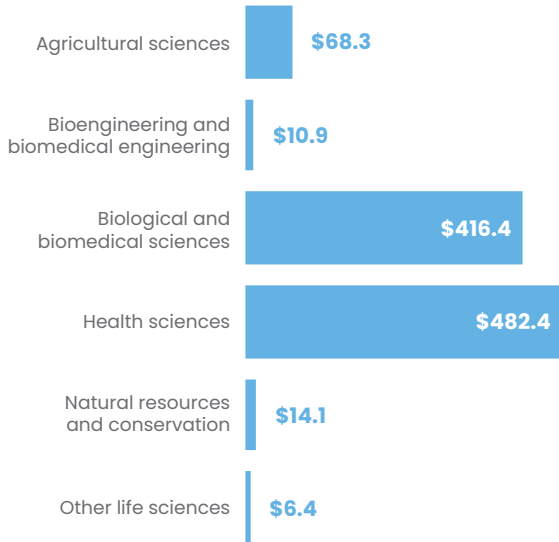
Industry Subsector	Missouri		United States	
	2018	2016–2018 Change	2018	2016–2018 Change
<b>Agricultural Feedstock and Industrial Biosciences</b>				
Establishments	66	-1.5%	1,785	4.4%
Employment	2,598	6.1%	68,642	0.9%
Location Quotient	1.99		n/a	
Direct-Effect Employment Multiplier	8.03			
Total Employment Impact	20,861			
Average Annual Wage	\$68,610	3.1%	\$83,151	2.7%
<b>Bioscience-Related Distribution</b>				
Establishments	1,159	89.0%	51,582	31.8%
Employment	11,365	41.3%	545,055	16.1%
Location Quotient	1.10		n/a	
Direct-Effect Employment Multiplier	3.95			
Total Employment Impact	44,874			
Average Annual Wage	\$99,966	38.6%	\$105,905	13.1%
<b>Drugs and Pharmaceuticals</b>				
Establishments	79	3.9%	4,451	18.6%
Employment	5,617	0.3%	308,357	3.1%
Location Quotient	0.96		n/a	
Direct-Effect Employment Multiplier	4.62			
Total Employment Impact	25,936			
Average Annual Wage	\$87,819	3.6%	\$113,544	-0.2%
<b>Medical Devices and Equipment</b>				
Establishments	114	16.3%	8,753	8.3%
Employment	3,007	1.8%	378,431	5.3%
Location Quotient	0.42		n/a	
Direct-Effect Employment Multiplier	2.69			
Total Employment Impact	8,086			
Average Annual Wage	\$66,830	8.6%	\$90,541	6.8%
<b>Research, Testing, and Medical Laboratories</b>				
Establishments	569	7.9%	34,572	4.7%
Employment	8,791	-12.1%	569,470	4.0%
Location Quotient	0.81		n/a	
Direct-Effect Employment Multiplier	2.49			
Total Employment Impact	21,852			
Average Annual Wage	\$82,670	2.4%	\$120,320	12.5%
<b>Total Bioscience Industry</b>				
Establishments	1,988	43.8%	101,143	18.0%
Employment	31,378	8.0%	1,869,955	7.2%
Location Quotient	0.88		n/a	
Direct-Effect Employment Multiplier	3.88			
Total Employment Impact	121,609			
Average Annual Wage	\$87,174	14.8%	\$107,610	8.7%
<b>Total Private Sector</b>				
Establishments	192,945	4.5%	9,776,674	3.1%
Employment	2,381,513	1.8%	125,195,944	3.3%
Average Annual Wage	\$49,586	6.5%	\$57,043	6.9%

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

## Bioscience Research in Missouri

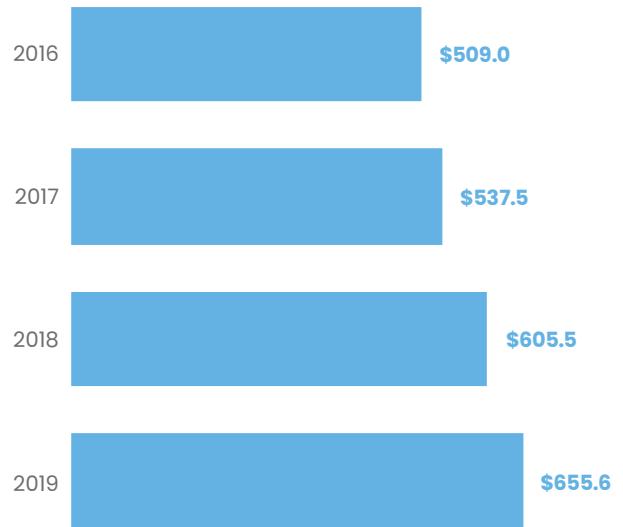
### Bioscience Academic R&D Expenditures

\$ Millions, FY 2018



### NIH Awards

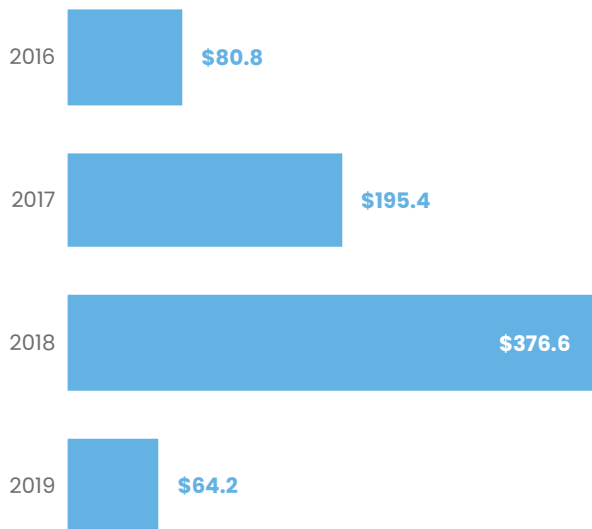
\$ Millions, FY 2016-2019



## Bioscience Venture Capital in Missouri

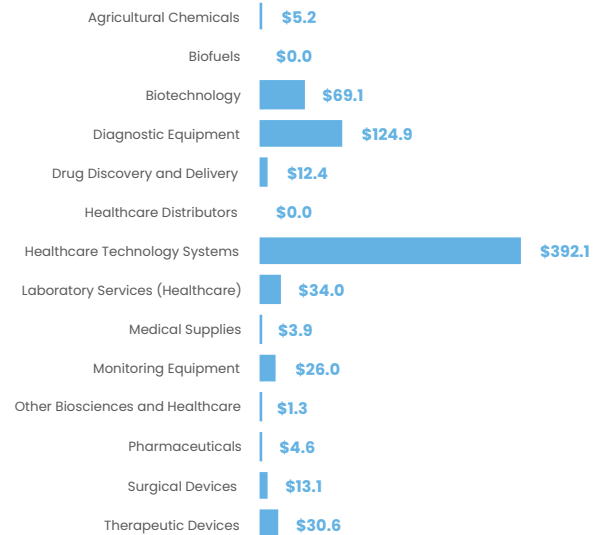
### Bioscience-Related Venture Capital Investments

\$ Millions, 2016-2019



### Bioscience-Related Venture Capital Investments by Segment

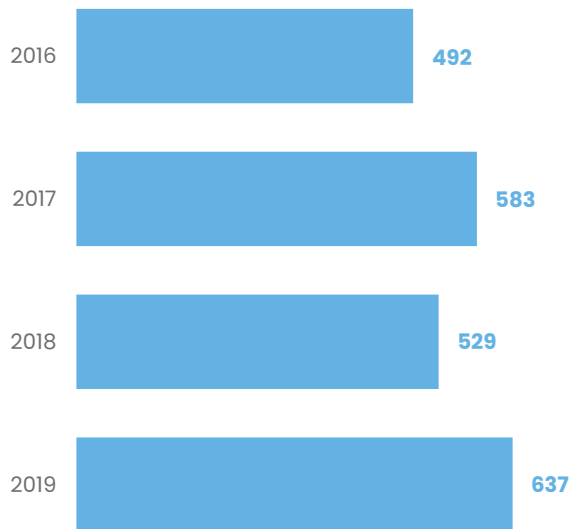
\$ Millions, 2016-2019



## Bioscience Patents in Missouri

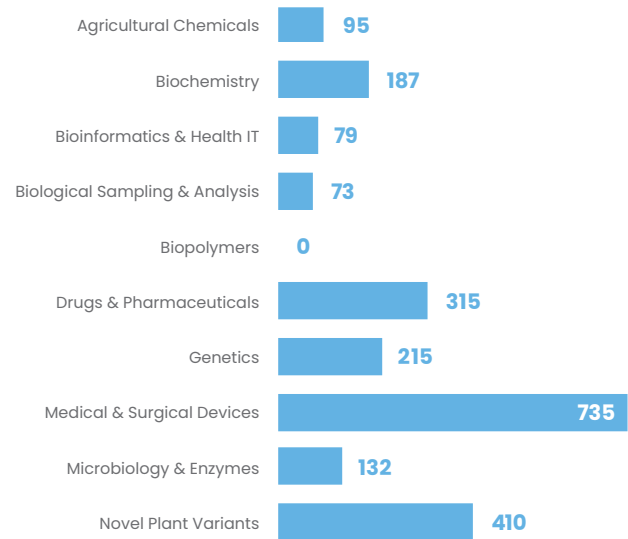
### Bioscience-Related U.S. Patents

2016-2019



### Bioscience-Related U.S. Patents by Segment

2016-2019



## Source Notes

Employment, Establishments and Wages: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), enhanced file from IMPLAN Group, LLC.

Employment Multipliers: state-level Input/Output models from IMPLAN Group, LLC.

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: PitchBook Data, Inc.

Patents: U.S. Patent & Trademark Office data from Clarivate Analytics' Derwent Innovation patent analysis database.

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