



Michigan

The U.S. Bioscience Industry: Fostering Innovation and Driving America's Economy Forward

Michigan's bioscience industry employment has grown by 5.6 percent since 2018 to reach more than 44,000 jobs in 2,429 business establishments in 2021. Four of the state's five major subsectors contributed to the overall industry growth. Michigan is 3 percent more concentrated in its employment in medical device and equipment manufacturing compared with the national average (location quotient is 1.03). The state is among the top tier in university bioscience-related R&D activities, with more than \$1.6 billion in expenditures in 2020. Venture capital investments in Michigan bioscience firms have increased in recent years, reaching nearly \$362 million in 2021.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Michigan	United States	Quintile
Bioscience Industry, 2021			
Bioscience Industry Employment	44,340	2,135,704	II
Bioscience Industry Location Quotient	0.71	n/a	III
Bioscience Industry Establishments	2,429	127,389	II
Academic Bioscience R&D Expenditures, FY 2020			
Bioscience R&D (\$ thousands)	\$1,618,303	\$51,108,737	I
Bioscience Share of Total R&D	60%	63%	III
Bioscience R&D Per Capita	\$161	\$154	II
NIH Funding, FY 2021			
Funding (\$ thousands)	\$870,237	\$34,751,109	II
Funding Per Capita	\$87	\$105	II
Bioscience Venture Capital Investments, 2018-21 (\$ millions)			
	\$955.92	\$197,674.54	II
Bioscience-Related Patents, 2018-21			
	2,794	153,072	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.

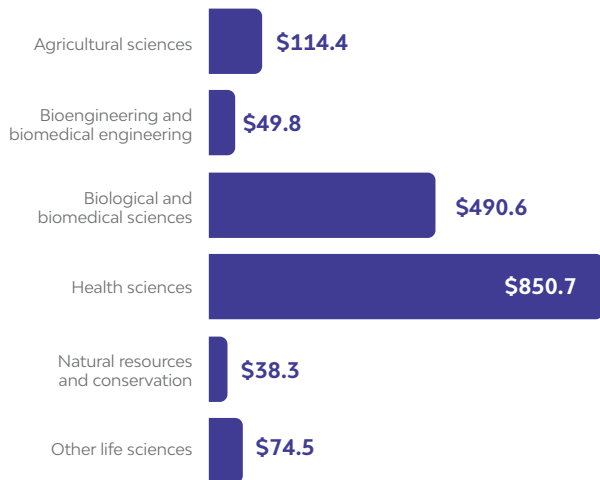
Industry Subsector		Michigan		United States	
		2021	2018–2021 Change	2021	2018–2021 Change
Agricultural Feedstock and Industrial Biosciences	Establishments	50	46.0%	1,948	10.0%
	Employment	599	0.6%	69,573	1.9%
	<i>Location Quotient</i>	0.30		n/a	
	Average Annual Wage	\$83,264	7.4%	\$91,989	13.1%
Bioscience- Related Distribution	Establishments	1,014	2.7%	62,697	14.7%
	Employment	13,612	4.2%	602,589	6.6%
	<i>Location Quotient</i>	0.78		n/a	
	Average Annual Wage	\$112,589	9.9%	\$121,606	15.0%
Medical Devices and Equipment	Establishments	454	34.2%	10,268	17.4%
	Employment	11,924	-1.5%	398,847	5.5%
	<i>Location Quotient</i>	1.03		n/a	
	Average Annual Wage	\$94,717	7.0%	\$98,481	8.7%
Pharmaceuticals	Establishments	184	56.6%	5,973	34.7%
	Employment	9,956	12.8%	344,839	11.9%
	<i>Location Quotient</i>	0.99		n/a	
	Average Annual Wage	\$94,582	7.3%	\$126,153	10.3%
Research, Testing, and Medical Laboratories	Establishments	728	41.8%	46,503	34.5%
	Employment	8,250	11.8%	719,856	19.3%
	<i>Location Quotient</i>	0.39		n/a	
	Average Annual Wage	\$102,004	3.3%	\$147,396	22.0%
Total Bioscience Industry	Establishments	2,429	22.0%	127,389	22.3%
	Employment	44,340	5.6%	2,135,704	11.0%
	<i>Location Quotient</i>	0.71		n/a	
	Average Annual Wage	\$101,374	7.4%	\$125,750	16.4%
Total Private Sector	Establishments	263,901	9.5%	10,665,643	9.3%
	Employment	3,593,558	-4.8%	123,376,557	-1.5%
	<i>Location Quotient</i>	1.00		n/a	
	Average Annual Wage	\$61,706	15.0%	\$67,826	18.9%

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

Bioscience Research in Michigan

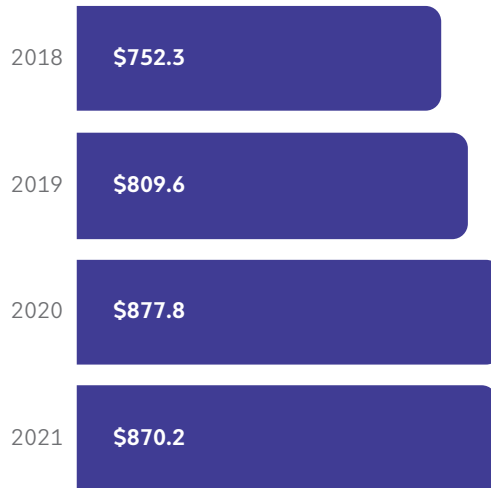
Bioscience Academic R&D Expenditures

\$ Millions, FY 2020



NIH Awards

\$ Millions, FY 2018-2021



Bioscience Venture Capital in Michigan

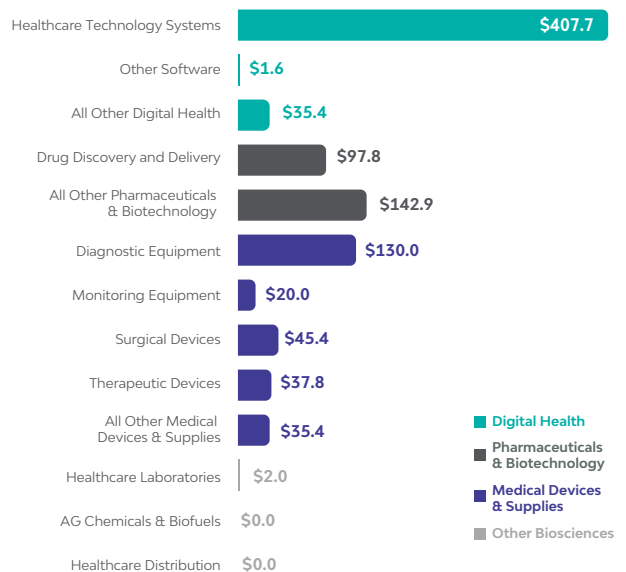
Bioscience-Related Venture Capital Investments

\$ Millions, 2018-2021



Bioscience-Related Venture Capital Investments by Segment

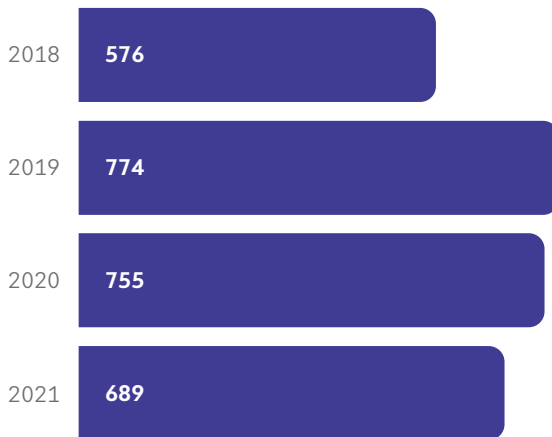
\$ Millions, 2018-2021



Bioscience Patents in Michigan

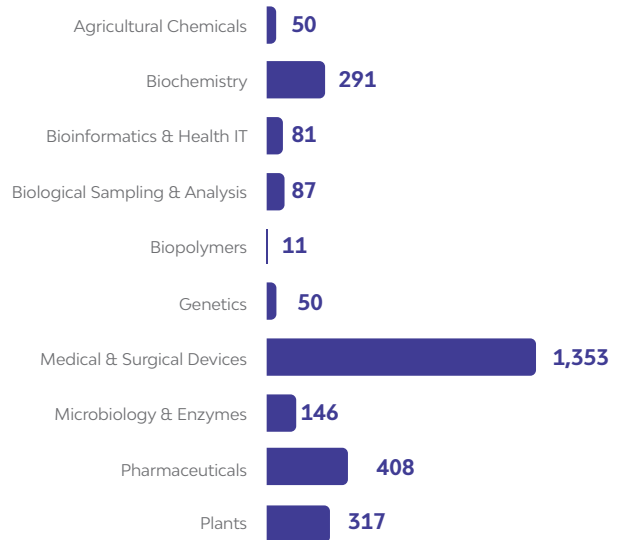
Bioscience-Related U.S. Patents

2018-2021



Bioscience-Related U.S. Patents by Segment

2018-2021



Source Notes

Employment, Establishments and Wages: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), enhanced by Lightcast (Datarun 2022.3).

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.