



Tennessee

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

Tennessee's bioscience industry has grown its employment base by 7 percent since 2018 and reached more than 44,000 total jobs in 2021 across 2,899 state business establishments. Four of the five industry subsectors in the state have increased employment and contributed to the overall job gains. Tennessee has a specialized employment concentration in bioscience-related distribution, which is 33 percent more concentrated in the state compared with the national average (location quotient is 1.33). In addition, Tennessee has an above-average employment concentration in medical device manufacturing. Tennessee's research universities conducted \$888 million in bioscience-related academic R&D in 2020; funded, in part, by a growing level of NIH awards that reached \$672 million in 2021. Patent awards to state inventors in bioscience-related technology areas have risen in recent years and totaled 528 in 2021.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Tennessee	United States	Quintile
Bioscience Industry, 2021			
Bioscience Industry Employment	44,375	2,135,704	II
Bioscience Industry Location Quotient	0.98	n/a	II
Bioscience Industry Establishments	2,899	127,389	II
Academic Bioscience R&D Expenditures, FY 2020			
Bioscience R&D (\$ thousands)	\$887,855	\$51,108,737	II
Bioscience Share of Total R&D	68%	63%	II
Bioscience R&D Per Capita	\$128	\$154	III
NIH Funding, FY 2021			
Funding (\$ thousands)	\$672,229	\$34,751,109	II
Funding Per Capita	\$96	\$105	II
Bioscience Venture Capital Investments, 2018-21 (\$ millions)			
	\$1,763.40	\$197,674.54	II
Bioscience-Related Patents, 2018-21			
	1,954	153,072	III

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.

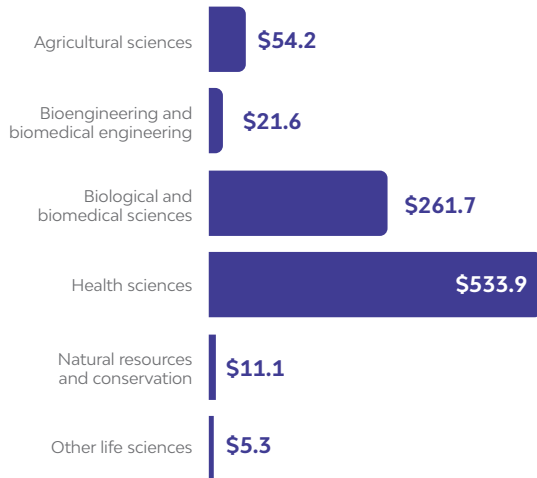
Industry Subsector		Tennessee		United States	
		2021	2018–2021 Change	2021	2018–2021 Change
Agricultural Feedstock and Industrial Biosciences	Establishments	37	36.7%	1,948	10.0%
	Employment	1,113	-7.3%	69,573	1.9%
	<i>Location Quotient</i>	0.76		n/a	
	Average Annual Wage	\$123,959	36.6%	\$91,989	13.1%
Bioscience- Related Distribution	Establishments	1,765	14.9%	62,697	14.7%
	Employment	16,919	2.6%	602,589	6.6%
	<i>Location Quotient</i>	1.33		n/a	
	Average Annual Wage	\$117,339	19.0%	\$121,606	15.0%
Medical Devices and Equipment	Establishments	276	65.9%	10,268	17.4%
	Employment	9,243	1.5%	398,847	5.5%
	<i>Location Quotient</i>	1.10		n/a	
	Average Annual Wage	\$96,231	2.6%	\$98,481	8.7%
Pharmaceuticals	Establishments	131	106.3%	5,973	34.7%
	Employment	2,275	5.2%	344,839	11.9%
	<i>Location Quotient</i>	0.31		n/a	
	Average Annual Wage	\$94,788	15.1%	\$126,153	10.3%
Research, Testing, and Medical Laboratories	Establishments	690	41.6%	46,503	34.5%
	Employment	14,826	19.2%	719,856	19.3%
	<i>Location Quotient</i>	0.97		n/a	
	Average Annual Wage	\$94,794	13.1%	\$147,396	22.0%
Total Bioscience Industry	Establishments	2,899	27.1%	127,389	22.3%
	Employment	44,375	7.2%	2,135,704	11.0%
	<i>Location Quotient</i>	0.98		n/a	
	Average Annual Wage	\$104,420	13.5%	\$125,750	16.4%
Total Private Sector	Establishments	180,621	14.8%	10,665,643	9.3%
	Employment	2,608,825	1.9%	123,376,557	-1.5%
	<i>Location Quotient</i>	1.00		n/a	
	Average Annual Wage	\$59,739	17.9%	\$67,826	18.9%

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

Bioscience Research in Tennessee

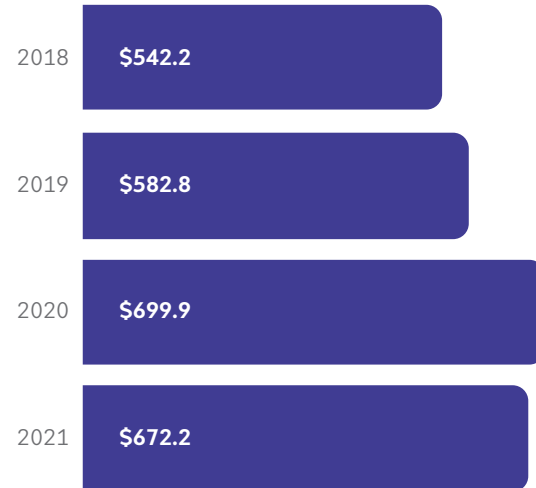
Bioscience Academic R&D Expenditures

\$ Millions, FY 2020



NIH Awards

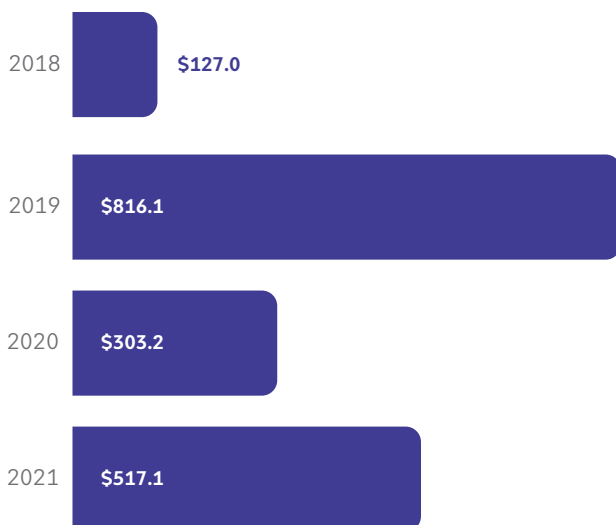
\$ Millions, FY 2018-2021



Bioscience Venture Capital in Tennessee

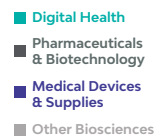
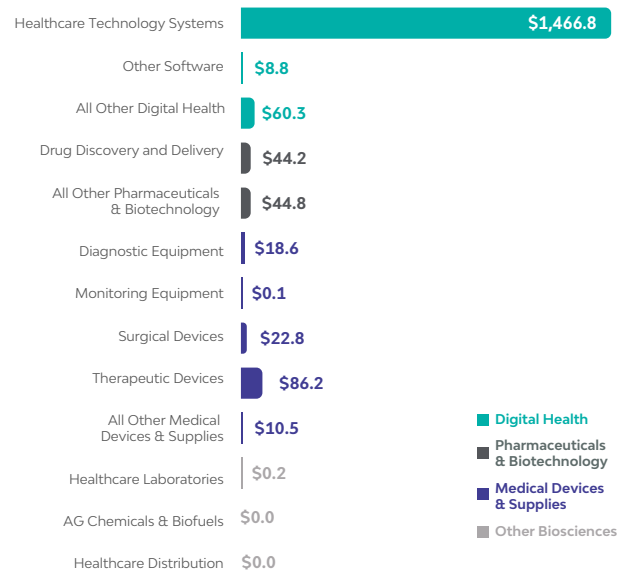
Bioscience-Related Venture Capital Investments

\$ Millions, 2018-2021



Bioscience-Related Venture Capital Investments by Segment

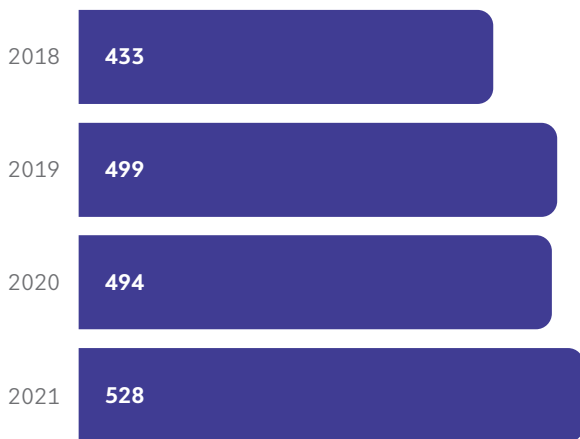
\$ Millions, 2018-2021



Bioscience Patents in Tennessee

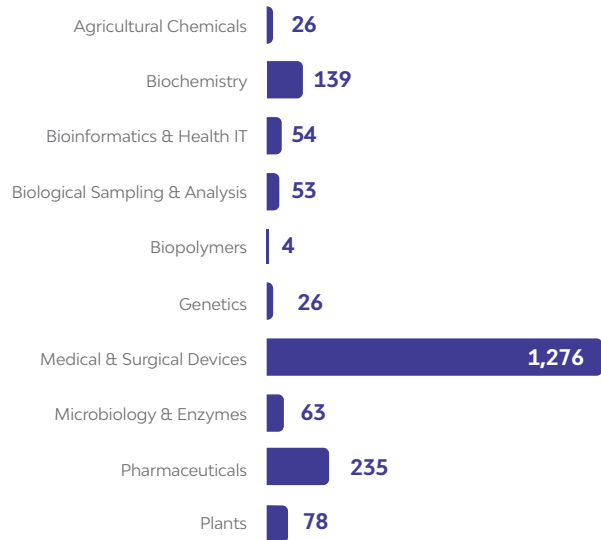
Bioscience-Related U.S. Patents

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.