



Kentucky’s bioscience industry is growing, reaching just over 14,000 jobs in 2016 following strong employment growth since 2014. State firms have increased employment by 8.6 percent during this 2-year period, almost twice the national growth rate. All five of Kentucky’s major industry subsectors contributed to the job gains. State bioscience companies operate 1,212 individual business establishments across the state. Kentucky has a specialized employment concentration in bioscience-related distribution, which employs just over half in the state industry. The state’s research universities spent \$418 million in bioscience-related academic R&D in 2016, which represents 78 percent of all university R&D, a very high concentration relative to most other states.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Kentucky	United States	Quintile
Bioscience Industry, 2016			
Bioscience Industry Employment	14,030	1,743,639	III
Bioscience Industry Location Quotient	0.62	n/a	IV
Bioscience Industry Establishments	1,212	85,702	III
Academic Bioscience R&D Expenditures, FY 2016			
Bioscience R&D (\$ thousands)	\$418,452	\$41,972,205	III
Bioscience Share of Total R&D	78%	62%	I
Bioscience R&D Per Capita	\$94	\$130	III
NIH Funding, FY 2017			
Funding (\$ thousands)	\$188,040	\$26,150,485	III
Funding Per Capita	\$42	\$80	III
Bioscience Venture Capital Investments, 2014-17 (\$ millions)	\$169.27	\$66,168.62	III
Bioscience and Related Patents, 2014-17	772	102,862	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	Kentucky		United States	
	2016	2014-2016 Change	2016	2014-2016 Change
Agricultural Feedstock and Industrial Biosciences				
Establishments	21	0.0%	1,709	-3.2%
Employment	435	3.0%	68,027	-1.2%
Location Quotient	0.49		n/a	
Direct-Effect Employment Multiplier	7.08			
Total Employment Impact	3,075			
Average Annual Wage	\$57,912	-1.4%	\$80,961	2.7%
Bioscience-Related Distribution				
Establishments	720	0.1%	39,149	3.8%
Employment	7,475	7.6%	469,640	3.7%
Location Quotient	1.23		n/a	
Direct-Effect Employment Multiplier	2.07			
Total Employment Impact	15,464			
Average Annual Wage	\$79,762	2.6%	\$93,677	2.7%
Drugs and Pharmaceuticals				
Establishments	27	22.7%	3,754	13.7%
Employment	1,470	14.0%	299,113	2.0%
Location Quotient	0.38		n/a	
Direct-Effect Employment Multiplier	3.87			
Total Employment Impact	5,692			
Average Annual Wage	\$80,634	9.8%	\$113,815	-3.2%
Medical Devices and Equipment				
Establishments	73	0.0%	8,083	5.9%
Employment	1,264	4.1%	359,293	2.9%
Location Quotient	0.27		n/a	
Direct-Effect Employment Multiplier	2.37			
Total Employment Impact	2,997			
Average Annual Wage	\$51,064	7.5%	\$84,746	6.5%
Research, Testing and Medical Laboratories				
Establishments	371	10.6%	33,007	13.1%
Employment	3,386	11.2%	547,566	8.2%
Location Quotient	0.48		n/a	
Direct-Effect Employment Multiplier	1.92			
Total Employment Impact	6,508			
Average Annual Wage	\$61,361	8.6%	\$106,942	5.5%
Total Bioscience Industry				
Establishments	1,212	3.5%	85,702	7.7%
Employment	14,030	8.6%	1,743,639	4.4%
Location Quotient	0.62		n/a	
Direct-Effect Employment Multiplier	2.40			
Total Employment Impact	33,736			
Average Annual Wage	\$72,151	4.8%	\$98,961	3.1%
Total Private Sector				
Establishments	117,033	2.2%	9,243,034	3.4%
Employment	1,566,454	3.9%	120,884,570	4.2%
Average Annual Wage	\$43,925	5.1%	\$53,354	4.3%

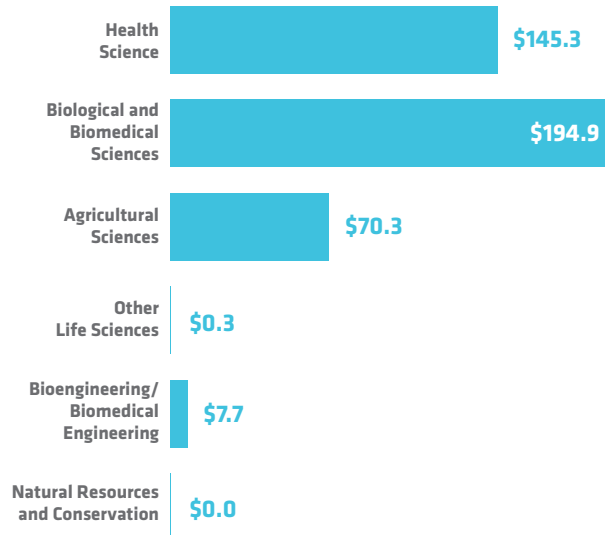
Note: U.S. employment metrics include Puerto Rico.

Bioscience Research in Kentucky

Bioscience Academic R&D Expenditures

\$ Millions

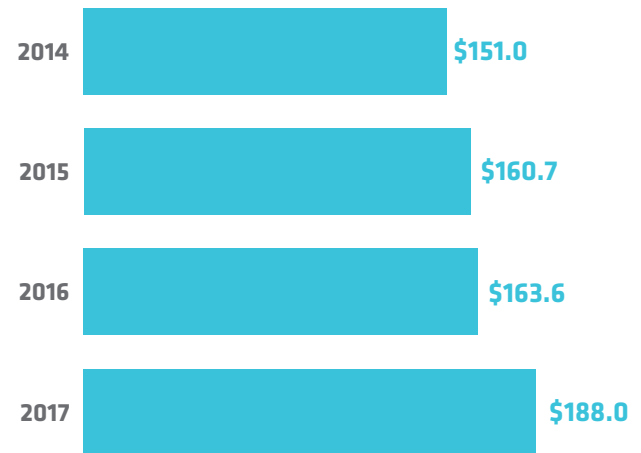
FY 2016



NIH Awards

\$ Millions

FY 2014-2017

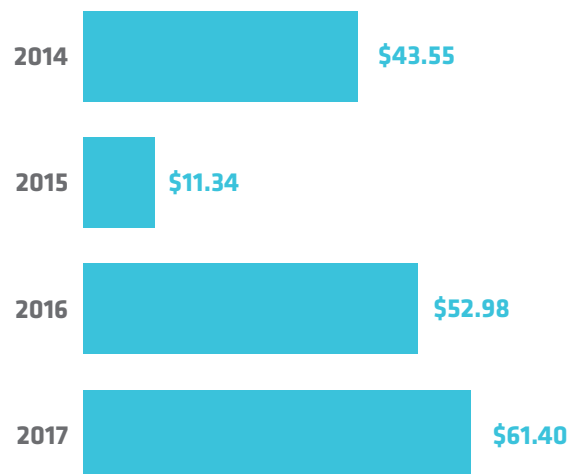


Bioscience Venture Capital in Kentucky

Bioscience-Related Venture Capital Investments

\$ Millions

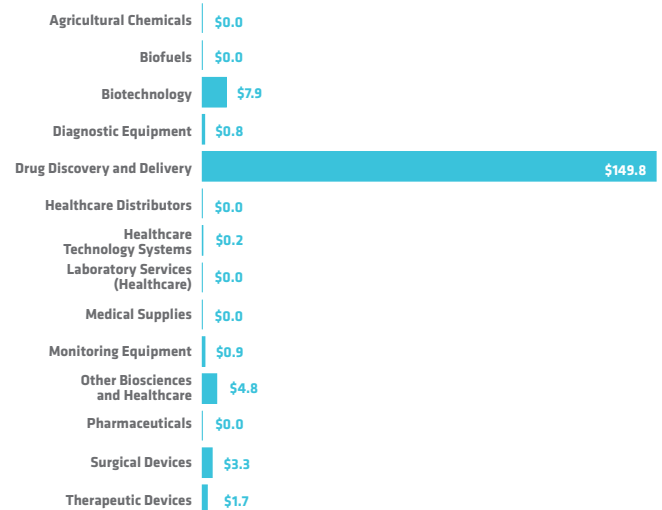
2014-2017



Bioscience-Related Venture Capital Investments by Segment

\$ Millions

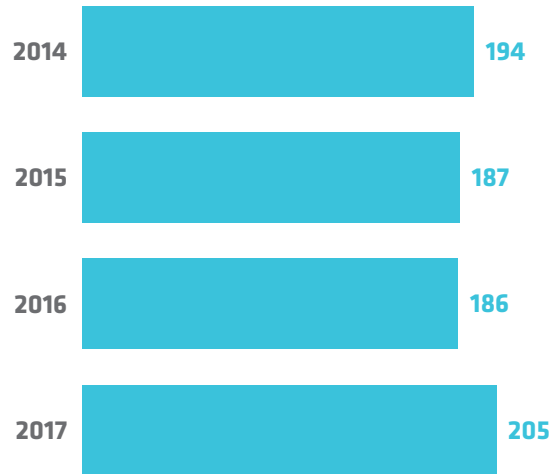
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Bioscience Patents in Kentucky

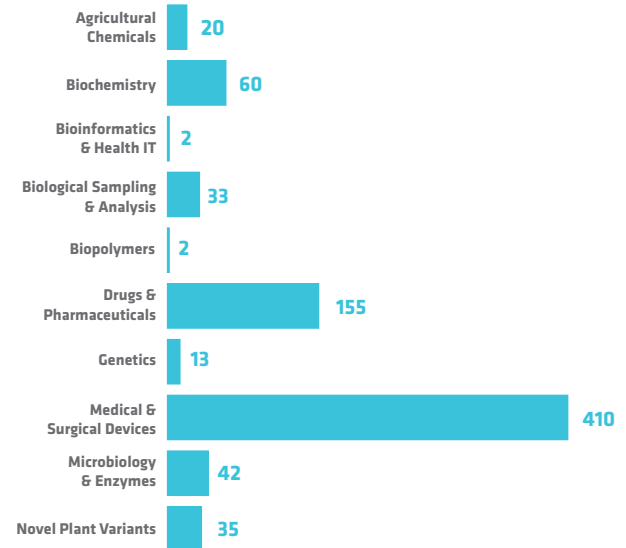
Bioscience-Related U.S. Patents

2014-2017



Bioscience-Related U.S. Patents by Segment

2014-2017



Source Notes

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

Employment Multipliers: IMPLAN 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: 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.