



California's large and leading, specialized bioscience industry continues to grow. Since 2014, state bioscience firms have increase employment by 7 percent, outpacing national growth and reaching nearly 268,000 industry jobs by 2016. All five major subsectors added jobs during this period. California is 31 percent more concentrated in bioscience industry employment compared with the national average (location quotient is 1.31) and its industry strengths are diverse, with specialized employment concentrations in three of the five major subsectors—medical devices; research, testing and medical labs; and drugs and pharmaceuticals. In addition to industry strengths, California is among the top tier of states in several measures of the industry's innovation ecosystem including academic R&D expenditures, NIH funding, venture capital investments, and patent awards.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	California	United States	Quintile
Bioscience Industry, 2016			
Bioscience Industry Employment	267,844	1,743,639	I
Bioscience Industry Location Quotient	1.31	n/a	I
Bioscience Industry Establishments	9,924	85,702	I
Academic Bioscience R&D Expenditures, FY 2016			
Bioscience R&D (\$ thousands)	\$5,539,463	\$41,972,205	I
Bioscience Share of Total R&D	65%	62%	II
Bioscience R&D Per Capita	\$141	\$130	II
NIH Funding, FY 2017			
Funding (\$ thousands)	\$3,946,355	\$26,150,485	I
Funding Per Capita	\$100	\$80	II
Bioscience Venture Capital Investments, 2014-17 (\$ millions)			
	\$28,582.18	\$66,168.62	I
Bioscience and Related Patents, 2014-17			
	30,386	102,862	I

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	California		United States	
	2016	2014-2016 Change	2016	2014-2016 Change
Agricultural Feedstock and Industrial Biosciences				
Establishments	132	12.8%	1,709	-3.2%
Employment	3,278	5.2%	68,027	-1.2%
Location Quotient	0.41		n/a	
Direct-Effect Employment Multiplier	6.89			
Total Employment Impact	22,586			
Average Annual Wage	\$68,843	3.0%	\$80,961	2.7%
Bioscience-Related Distribution				
Establishments	3,858	2.9%	39,149	3.8%
Employment	57,076	5.8%	469,640	3.7%
Location Quotient	1.04		n/a	
Direct-Effect Employment Multiplier	2.23			
Total Employment Impact	127,433			
Average Annual Wage	\$98,365	0.7%	\$93,677	2.7%
Drugs and Pharmaceuticals				
Establishments	531	10.4%	3,754	13.7%
Employment	50,456	7.0%	299,113	2.0%
Location Quotient	1.44		n/a	
Direct-Effect Employment Multiplier	6.38			
Total Employment Impact	322,061			
Average Annual Wage	\$152,703	-3.2%	\$113,815	-3.2%
Medical Devices and Equipment				
Establishments	1,183	3.0%	8,083	5.9%
Employment	62,686	3.3%	359,293	2.9%
Location Quotient	1.49		n/a	
Direct-Effect Employment Multiplier	3.23			
Total Employment Impact	202,543			
Average Annual Wage	\$103,860	4.1%	\$84,746	6.5%
Research, Testing and Medical Laboratories				
Establishments	4,221	6.2%	33,007	13.1%
Employment	94,348	10.6%	547,566	8.2%
Location Quotient	1.47		n/a	
Direct-Effect Employment Multiplier	2.70			
Total Employment Impact	254,639			
Average Annual Wage	\$144,491	4.9%	\$106,942	5.5%
Total Bioscience Industry				
Establishments	9,924	4.8%	85,702	7.7%
Employment	267,844	7.0%	1,743,639	4.4%
Location Quotient	1.31		n/a	
Direct-Effect Employment Multiplier	3.47			
Total Employment Impact	929,262			
Average Annual Wage	\$125,773	2.4%	\$98,961	3.1%
Total Private Sector				
Establishments	1,357,811	4.7%	9,243,034	3.4%
Employment	14,191,824	5.6%	120,884,570	4.2%
Average Annual Wage	\$62,518	6.8%	\$53,354	4.3%

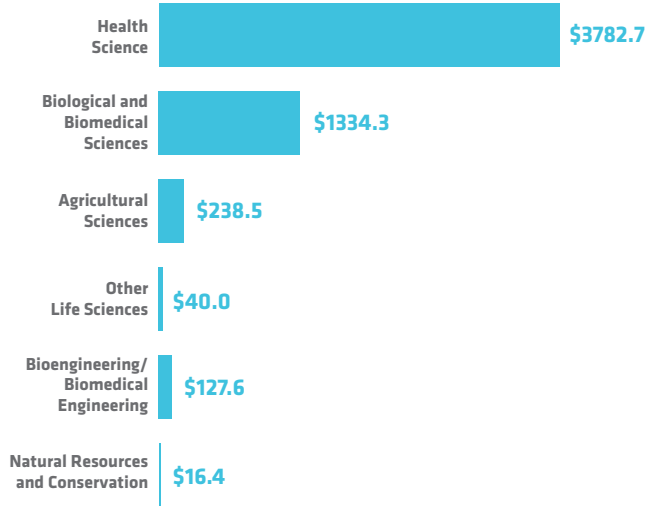
Note: U.S. employment metrics include Puerto Rico.

Bioscience Research in California

Bioscience Academic R&D Expenditures

\$ Millions

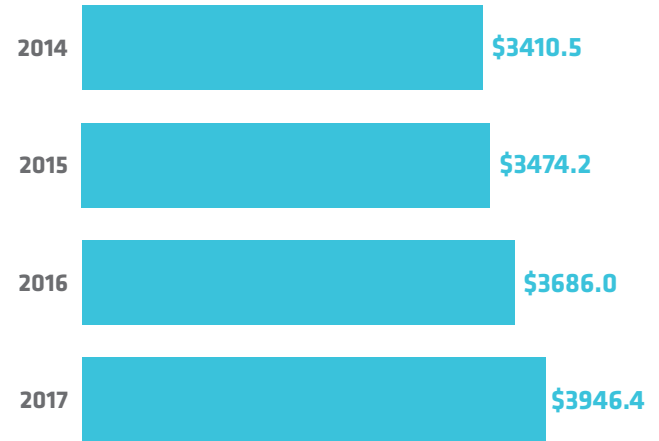
FY 2016



NIH Awards

\$ Millions

FY 2014-2017

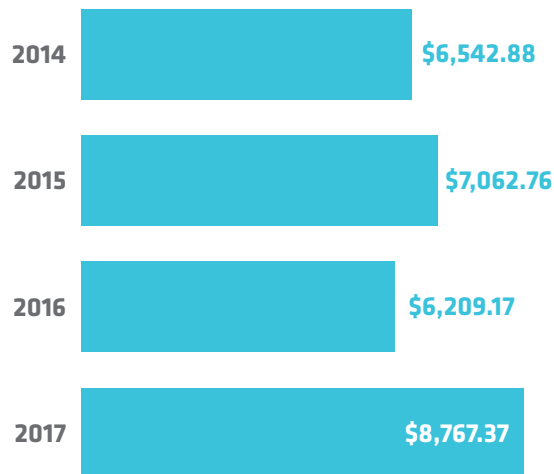


Bioscience Venture Capital in California

Bioscience-Related Venture Capital Investments

\$ Millions

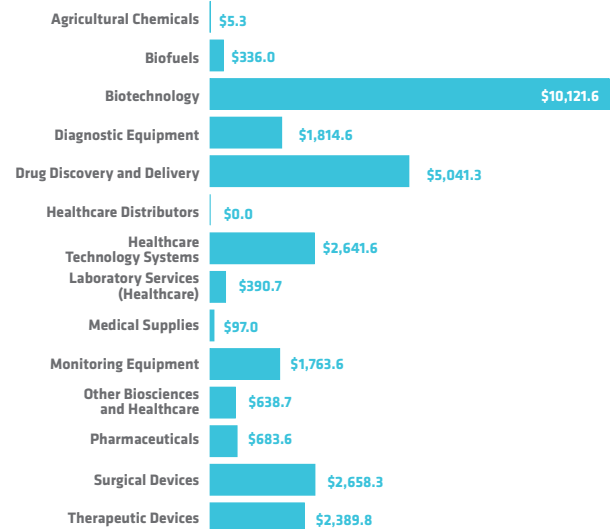
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Bioscience-Related Venture Capital Investments by Segment

\$ Millions

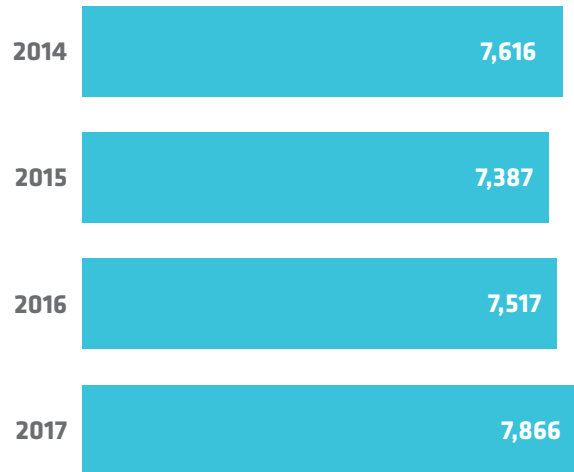
2014-2017



Bioscience Patents in California

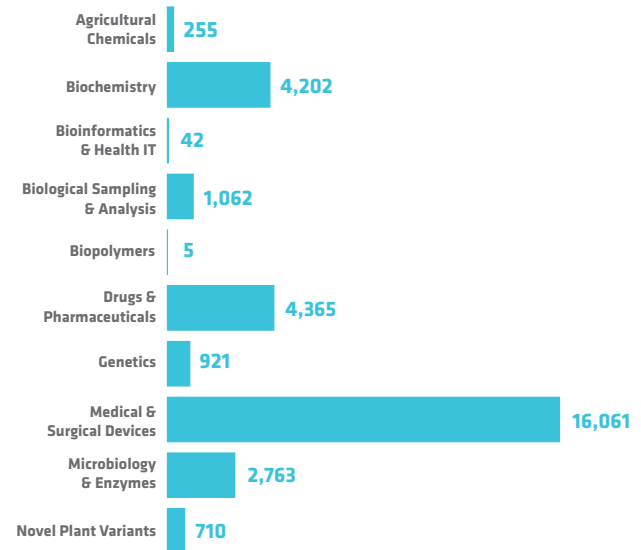
Bioscience-Related U.S. Patents

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.