TEConomy/BIO

The Value of Bioscience Innovation in Growing Jobs and Improving Quality of Life 2016

California

California has the nation's largest bioscience industry employment base, with more than 242,000 jobs which account for nearly 15 percent of the U.S. total. The state has a specialized concentration in the biosciences with a 26 percent greater concentration of industry jobs relative to the national average. The industry strengths in California are diverse, with a specialization in three of the five major subsectors including: medical devices and equipment; research, testing, and medical labs; and drugs and pharmaceuticals. State industry employment has grown by 2.8 percent since 2012, outpacing national job growth and includes gains in four of the five major subsectors. California is a national leader in several other performance metrics including bioscience venture capital investments at more than $19 billion since 2012; NIH funding awarded to state institutions at $3.5 billion; and academic bioscience R&D expenditures at $5.1 billion. California's large and leading bioscience research infrastructure has yielded nearly 30,000 patents since 2012.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	California	United States	Quintile
Bioscience Industry, 2014			
Bioscience Industry Employment	242,557	1,655,680	I
Bioscience Industry Location Quotient	1.26	n/a	II
Bioscience Industry Establishments	8,762	77,283	I
Academic Bioscience R&D Expenditures, FY 2014			
Bioscience R&D ($ thousands)	$5,119,062	$38,873,926	I
Bioscience Share of Total R&D	63%	61%	III
Bioscience R&D Per Capita	$132	$122	II
NIH Funding, FY 2015			
Funding ($ thousands)	$3,474,161	$22,869,746	I
Funding Per Capita	$89	$71	II
Bioscience Venture Capital Investments, 2012–15 ($ millions)	$19,161.2	$48,742.10	I
Bioscience and Related Patents, 2012–15	29,992	101,026	I

State ranking figures for bioscience performance metrics are calculated as quintiles, where:
top quintile — I II III IV V — bottom quintile

For source notes, see end of State Profile.

California

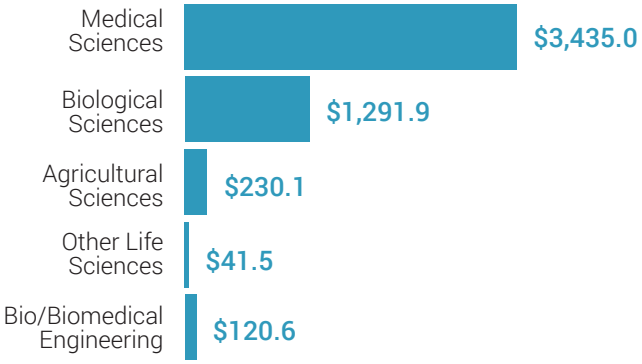
Industry Subsector	California		United States	
	2014	2012–2014 Change	2014	2012–2014 Change
Agricultural Feedstock and Chemicals				
Establishments	121	3.5%	1,811	2.2%
Employment	3,157	6.9%	77,545	1.5%
Location Quotient	0.35		n/a	
Direct-Effect Employment Multiplier	18.8		18.4	
Total Employment Impact	59,434		1,432,125	
Average Annual Wage	$66,447	-11.2%	$80,640	6.3%
Bioscience-Related Distribution				
Establishments	3,494	13.0%	37,833	2.8%
Employment	50,233	5.8%	452,325	2.3%
Location Quotient	0.96		n/a	
Direct-Effect Employment Multiplier	3.1		3.0	
Total Employment Impact	153,683		1,358,820	
Average Annual Wage	$97,338	8.0%	$90,458	6.2%
Drugs and Pharmaceuticals				
Establishments	481	-3.8%	3,301	8.0%
Employment	47,163	6.6%	293,353	3.2%
Location Quotient	1.39		n/a	
Direct-Effect Employment Multiplier	12.3		11.0	
Total Employment Impact	582,124		3,242,627	
Average Annual Wage	$157,714	16.7%	$117,524	10.3%
Medical Devices and Equipment				
Establishments	1,149	10.6%	7,636	5.5%
Employment	60,669	-1.7%	349,045	-0.1%
Location Quotient	1.50		n/a	
Direct-Effect Employment Multiplier	5.0		4.6	
Total Employment Impact	303,816		1,596,802	
Average Annual Wage	$99,806	8.4%	$79,537	5.1%
Research, Testing, and Medical Laboratories				
Establishments	3,517	7.5%	26,702	10.2%
Employment	81,336	2.3%	483,412	3.4%
Location Quotient	1.45		n/a	
Direct-Effect Employment Multiplier	3.6		3.1	
Total Employment Impact	290,990		1,554,719	
Average Annual Wage	$135,377	17.6%	$97,485	6.8%
Total Bioscience Industry				
Establishments	8,762	9.3%	77,283	5.7%
Employment	242,557	2.8%	1,655,680	2.2%
Location Quotient	1.26		n/a	
Direct-Effect Employment Multiplier	5.9		5.5	
Total Employment Impact	1,439,874		9,185,094	
Average Annual Wage	$122,048	13.7%	$94,543	7.2%
Total Private Sector				
Establishments	1,296,301	5.1%	8,937,672	2.7%
Employment	13,439,465	6.4%	116,018,300	4.4%
Average Annual Wage	$58,551	4.1%	$51,148	4.3%

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

California

Bioscience Research in California

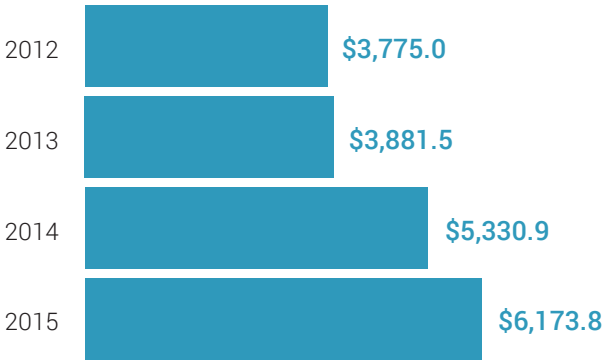
Bioscience Academic R&D Expenditures
$ Millions
FY 2014



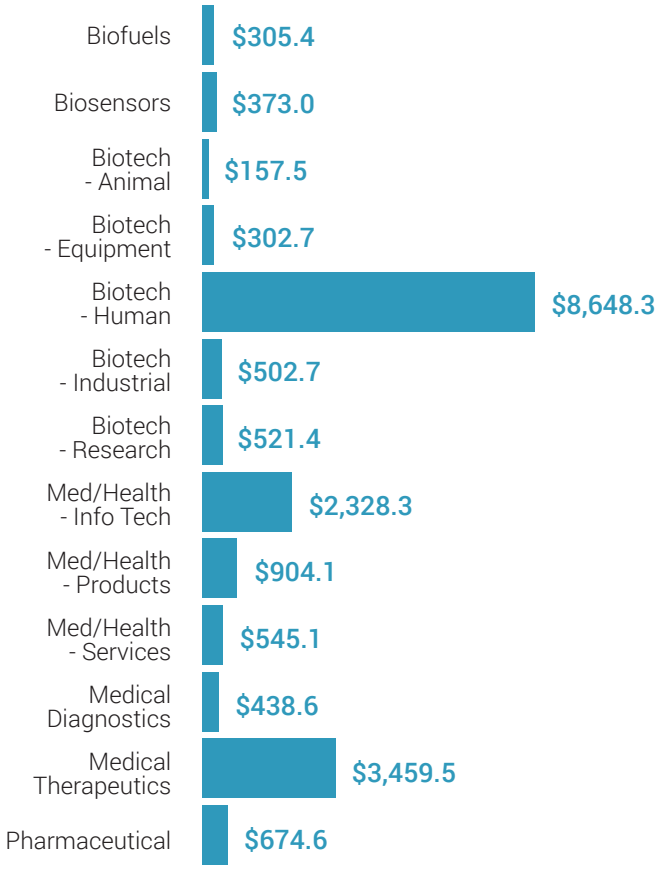
NIH Awards
$ Millions
FY 2012-2015

Bioscience Venture Capital in California

Bioscience-Related Venture Capital Investments
$ Millions
2012-2015

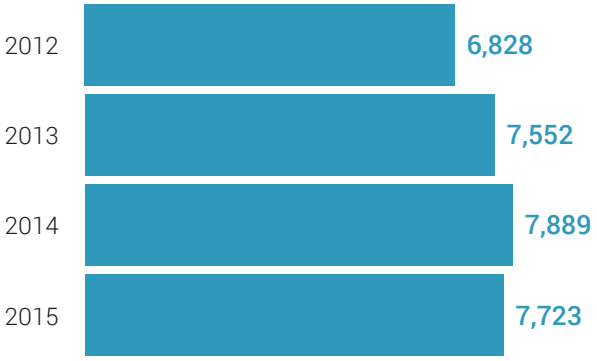


Bioscience-Related Venture Capital Investments by Segment
$ Millions
2012-2015

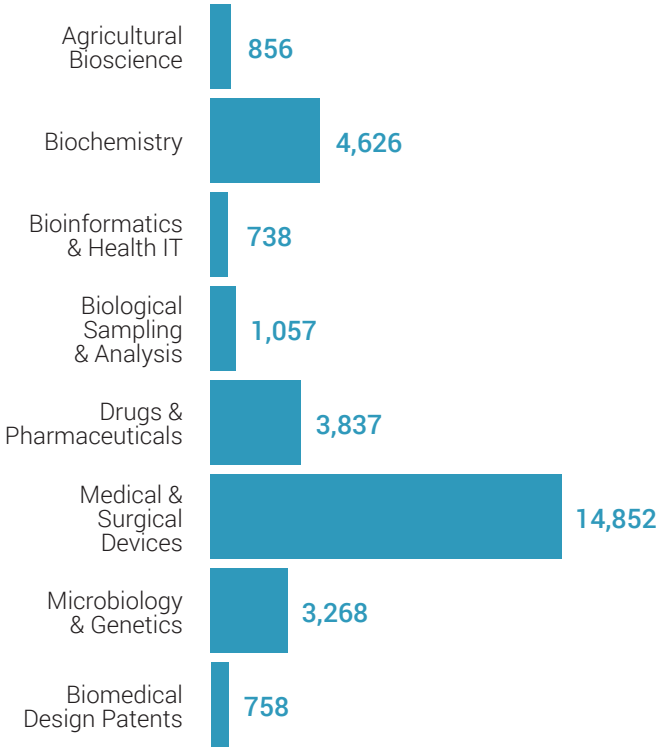


Bioscience Patents in California

Bioscience-Related U.S. Patents
2012-2015



Bioscience-Related U.S. Patents by Segment
2012-2015



Source Notes

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

Employment Multipliers: IMPLAN Group, LLC 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: Thomson Reuters Thomson ONE venture capital database.

Patents: U.S. Patent & Trademark Office data from Thomson Reuters Thomson Innovation patent analysis database.

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

TECONOMY PARTNERS LLC
Innovating Tomorrow's Economic Landscape

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