



Alabama’s bioscience industry employed 13,100 in 2016 across just over 1,000 individual state business establishments. The state’s bioscience firms have increased employment by 2.3 percent since 2014 with jobs gains from three of the five major industry subsectors. Alabama has a specialized employment concentration in agricultural feedstock and industrial biosciences (location quotient is 1.58). State universities spent \$631 million on R&D activities in biosciences fields, equivalent to 69 percent of all academic R&D, a concentration that is well above the national average. NIH awards to Alabama institutions have been on a steady rise, reaching \$298 million in FY 2017.

## Bioscience Performance Metrics

### Summary of State Performance in Selected Bioscience-related Metrics

Metric	Alabama	United States	Quintile
<b>Bioscience Industry, 2016</b>			
Bioscience Industry Employment	13,100	1,743,639	III
Bioscience Industry Location Quotient	0.59	n/a	IV
Bioscience Industry Establishments	1,014	85,702	III
<b>Academic Bioscience R&amp;D Expenditures, FY 2016</b>			
Bioscience R&D (\$ thousands)	\$631,049	\$41,972,205	II
Bioscience Share of Total R&D	69%	62%	II
Bioscience R&D Per Capita	\$130	\$130	II
<b>NIH Funding, FY 2017</b>			
Funding (\$ thousands)	\$298,160	\$26,150,485	III
Funding Per Capita	\$61	\$80	III
<b>Bioscience Venture Capital Investments, 2014-17 (\$ millions)</b>	\$33.77	\$66,168.62	IV
<b>Bioscience and Related Patents, 2014-17</b>	603	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	Alabama		United States	
	2016	2014-2016 Change	2016	2014-2016 Change
<b>Agricultural Feedstock and Industrial Biosciences</b>				
Establishments	27	0.0%	1,709	-3.2%
Employment	1,381	-4.4%	68,027	-1.2%
Location Quotient	1.58		n/a	
Direct-Effect Employment Multiplier	5.50			
Total Employment Impact	7,592			
Average Annual Wage	\$79,972	4.5%	\$80,961	2.7%
<b>Bioscience-Related Distribution</b>				
Establishments	327	3.8%	39,149	3.8%
Employment	4,216	-1.6%	469,640	3.7%
Location Quotient	0.70		n/a	
Direct-Effect Employment Multiplier	2.06			
Total Employment Impact	8,699			
Average Annual Wage	\$72,349	-2.6%	\$93,677	2.7%
<b>Drugs and Pharmaceuticals</b>				
Establishments	28	21.7%	3,754	13.7%
Employment	1,644	1.4%	299,113	2.0%
Location Quotient	0.43		n/a	
Direct-Effect Employment Multiplier	4.38			
Total Employment Impact	7,198			
Average Annual Wage	\$64,435	8.4%	\$113,815	-3.2%
<b>Medical Devices and Equipment</b>				
Establishments	69	16.9%	8,083	5.9%
Employment	2,101	-0.3%	359,293	2.9%
Location Quotient	0.45		n/a	
Direct-Effect Employment Multiplier	2.33			
Total Employment Impact	4,893			
Average Annual Wage	\$47,685	1.8%	\$84,746	6.5%
<b>Research, Testing and Medical Laboratories</b>				
Establishments	562	30.1%	33,007	13.1%
Employment	3,759	12.5%	547,566	8.2%
Location Quotient	0.53		n/a	
Direct-Effect Employment Multiplier	1.88			
Total Employment Impact	7,062			
Average Annual Wage	\$59,293	1.5%	\$106,942	5.5%
<b>Total Bioscience Industry</b>				
Establishments	1,014	18.3%	85,702	7.7%
Employment	13,100	2.3%	1,743,639	4.4%
Location Quotient	0.58		n/a	
Direct-Effect Employment Multiplier	2.71			
Total Employment Impact	35,444			
Average Annual Wage	\$64,458	0.7%	\$98,961	3.1%
<b>Total Private Sector</b>				
Establishments	115,916	4.5%	9,243,034	3.4%
Employment	1,555,538	3.4%	120,884,570	4.2%
Average Annual Wage	\$43,897	3.6%	\$53,354	4.3%

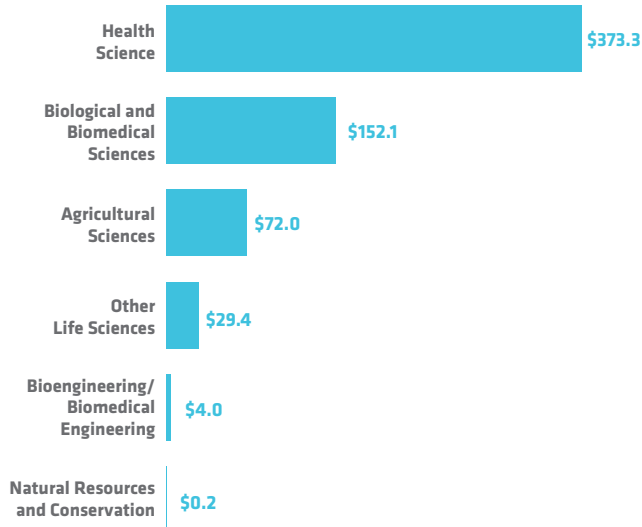
Note: U.S. employment metrics include Puerto Rico.

## Bioscience Research in Alabama

### Bioscience Academic R&D Expenditures

\$ Millions

FY 2016



### NIH Awards

\$ Millions

FY 2014-2017

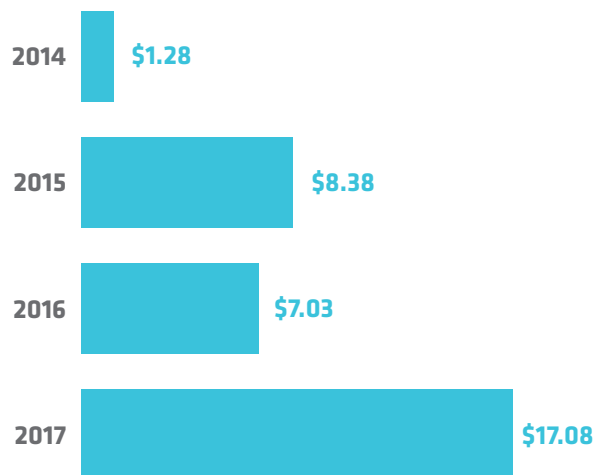


## Bioscience Venture Capital in Alabama

### Bioscience-Related Venture Capital Investments

\$ Millions

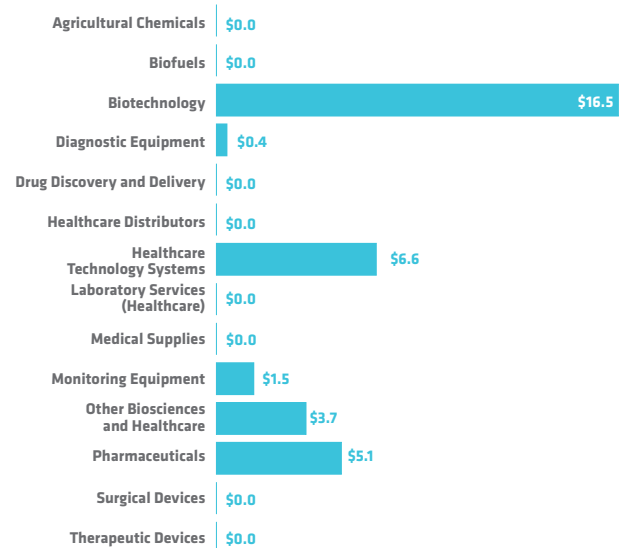
2014-2017



### Bioscience-Related Venture Capital Investments by Segment

\$ Millions

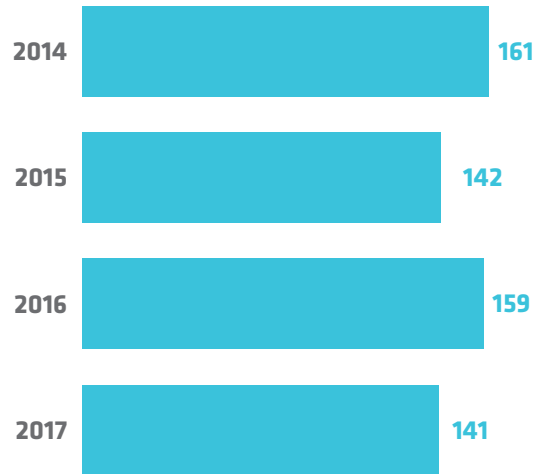
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## Bioscience Patents in Alabama

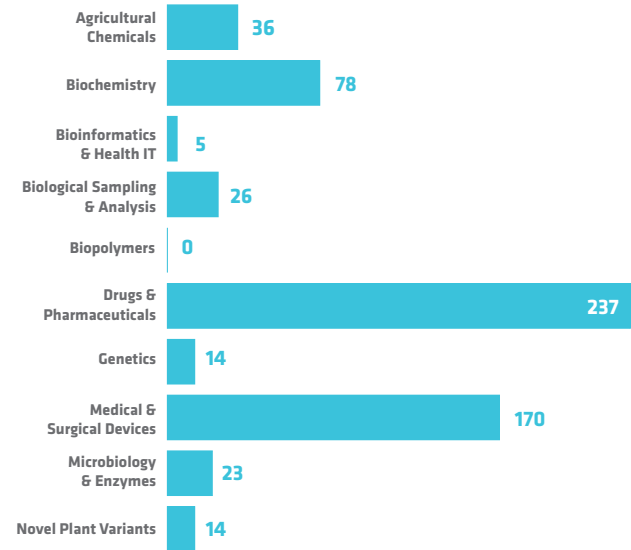
Bioscience-Related U.S. Patents

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.