



# Alabama

TECONOMY/BIO

The Bioscience Economy: Propelling Life-Saving Treatments, Supporting State & Local Communities

Alabama's bioscience industry employed 11,948 in 2018 across 1,092 individual state business establishments. The state has a specialized employment concentration in agricultural feedstock and industrial biosciences (location quotient is 1.59). Average wages in the biosciences, at just over \$69,000 per year, are well above those for the overall private sector (\$46,510). State universities are very active in bioscience-related R&D, with expenditures totaling nearly \$696 million. This level of activity is 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 nearly \$392 million in FY 2019.

## Bioscience Performance Metrics

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

Metric	Alabama	United States	Quintile
<b>Bioscience Industry, 2018</b>			
Bioscience Industry Employment	11,948	1,869,955	III
Bioscience Industry Location Quotient	0.50	n/a	V
Bioscience Industry Establishments	1,092	101,143	IV
<b>Academic Bioscience R&amp;D Expenditures, FY 2018</b>			
Academic Bioscience R&D (\$ thousands)	\$695,961	\$47,183,197	II
Bioscience Share of Total Academic R&D	69%	63%	II
Academic Bioscience R&D Per Capita	\$142	\$144	II
<b>NIH Funding, FY 2019</b>			
Funding (\$ thousands)	\$391,579	\$30,886,675	III
Funding Per Capita	\$80	\$94	II
<b>Bioscience Venture Capital Investments, 2016-19 (\$ millions)</b>	\$70.21	\$102,728.33	IV
<b>Bioscience-Related Patents, 2016-19</b>	576	108,438	IV

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.

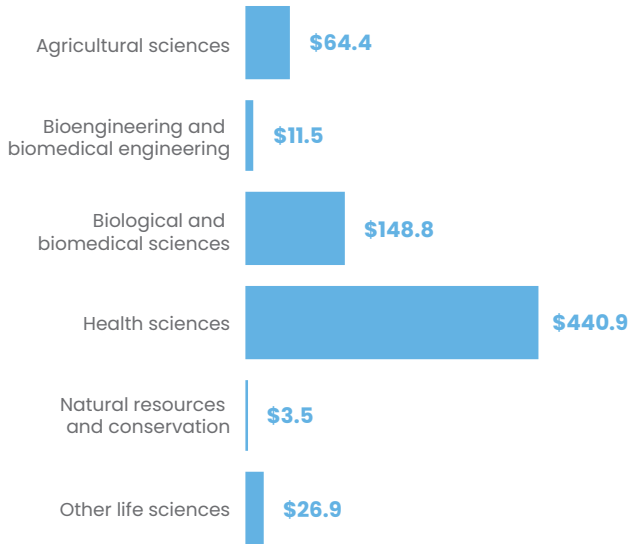
Industry Subsector	Alabama		United States	
	2018	2016–2018 Change	2018	2016–2018 Change
<b>Agricultural Feedstock and Industrial Biosciences</b>				
Establishments	28	3.7%	1,785	4.4%
Employment	1,390	0.7%	68,642	0.9%
Location Quotient	1.59		n/a	
Direct-Effect Employment Multiplier	5.34			
Total Employment Impact	7,428			
Average Annual Wage	\$85,204	6.5%	\$83,151	2.7%
<b>Bioscience-Related Distribution</b>				
Establishments	319	-2.6%	51,582	31.8%
Employment	3,926	-6.9%	545,055	16.1%
Location Quotient	0.56		n/a	
Direct-Effect Employment Multiplier	3.85			
Total Employment Impact	15,101			
Average Annual Wage	\$73,241	1.2%	\$105,905	13.1%
<b>Drugs and Pharmaceuticals</b>				
Establishments	57	103.6%	4,451	18.6%
Employment	1,050	-36.1%	308,357	3.1%
Location Quotient	0.27		n/a	
Direct-Effect Employment Multiplier	3.51			
Total Employment Impact	3,681			
Average Annual Wage	\$99,081	53.8%	\$113,544	-0.2%
<b>Medical Devices and Equipment</b>				
Establishments	86	24.6%	8,753	8.3%
Employment	2,113	0.6%	378,431	5.3%
Location Quotient	0.44		n/a	
Direct-Effect Employment Multiplier	2.24			
Total Employment Impact	4,739			
Average Annual Wage	\$51,416	7.8%	\$90,541	6.8%
<b>Research, Testing, and Medical Laboratories</b>				
Establishments	602	7.1%	34,572	4.7%
Employment	3,468	-7.7%	569,470	4.0%
Location Quotient	0.48		n/a	
Direct-Effect Employment Multiplier	2.00			
Total Employment Impact	6,947			
Average Annual Wage	\$60,513	2.1%	\$120,320	12.5%
<b>Total Bioscience Industry</b>				
Establishments	1,092	7.7%	101,143	18.0%
Employment	11,948	-8.8%	1,869,955	7.2%
Location Quotient	0.50		n/a	
Direct-Effect Employment Multiplier	3.17			
Total Employment Impact	37,896			
Average Annual Wage	\$69,349	7.6%	\$107,610	8.7%
<b>Total Private Sector</b>				
Establishments	120,757	4.3%	9,776,674	3.1%
Employment	1,597,936	2.7%	125,195,944	3.3%
Average Annual Wage	\$46,510	5.9%	\$57,043	6.9%

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

## Bioscience Research in Alabama

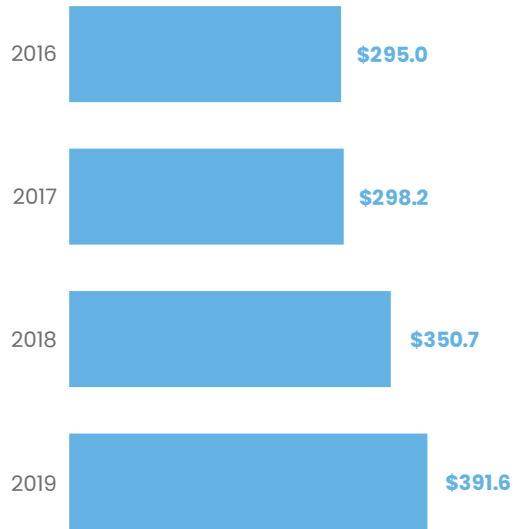
### Bioscience Academic R&D Expenditures

\$ Millions, FY 2018



### NIH Awards

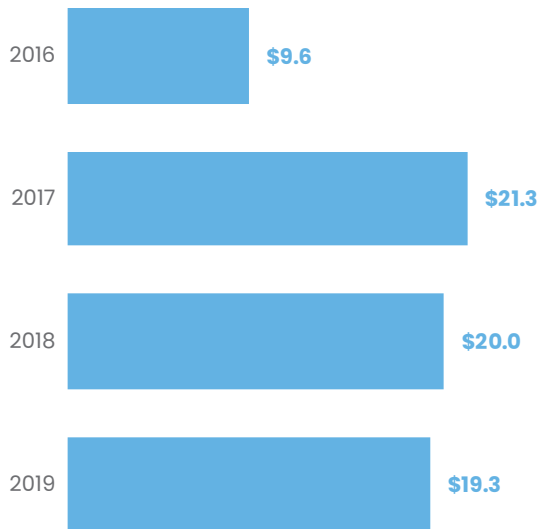
\$ Millions, FY 2016-2019



## Bioscience Venture Capital in Alabama

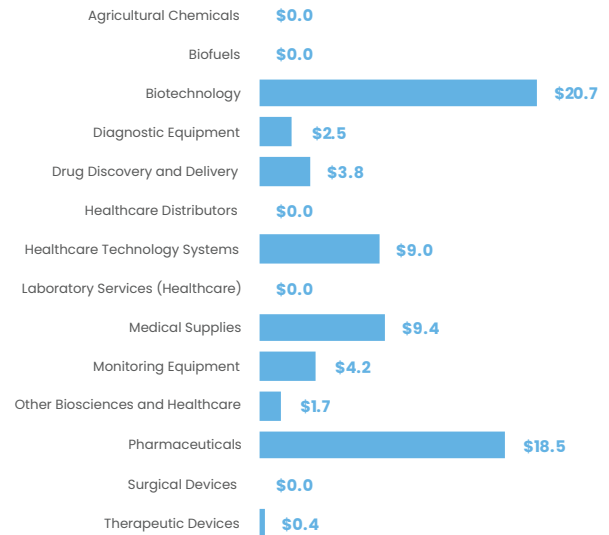
### Bioscience-Related Venture Capital Investments

\$ Millions, 2016-2019



### Bioscience-Related Venture Capital Investments by Segment

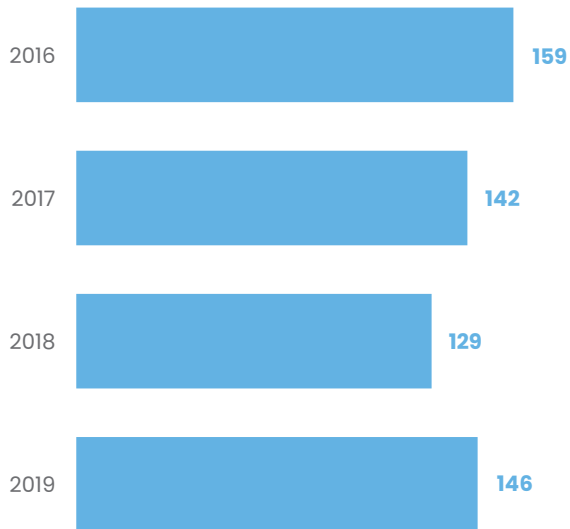
\$ Millions, 2016-2019



## Bioscience Patents in Alabama

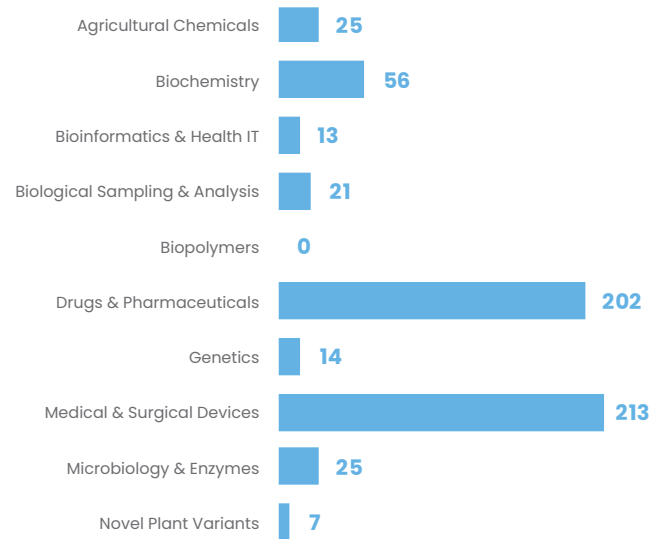
### Bioscience-Related U.S. Patents

2016–2019



### Bioscience-Related U.S. Patents by Segment

2016–2019



## Source Notes

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

Employment Multipliers: state-level Input/Output models from IMPLAN Group, LLC.

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.