



TEconomy/BIO

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

**Maryland**

Maryland’s large and highly concentrated bioscience industry employed more than 34,000 in 2014 across just over 2,000 business establishments. Employment has edged up since 2012, increasing by nearly 1 percent with job growth contributed by three of the five industry subsectors including strong growth in medical devices. Maryland has a specialized employment concentration in two bioscience subsectors—research, testing, and medical labs and drugs and pharmaceuticals. Maryland is among the top tier of states in the size and concentration of its bioscience and biomedical research complex. The state’s research universities conducted nearly \$1.7 billion in bioscience academic R&D in 2014. Likewise, Maryland institutions received nearly \$1.3 billion in funding from NIH in 2015. State bioscience companies have received \$1.3 billion in venture capital since 2012, again among the top tier of states, with the majority invested in human biotechnology and pharmaceutical companies.

**Bioscience Performance Metrics**

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Maryland	United States	Quintile
<b>Bioscience Industry, 2014</b>			
Bioscience Industry Employment	34,284	1,655,680	II
Bioscience Industry Location Quotient	1.16	n/a	II
Bioscience Industry Establishments	2,030	77,283	II
<b>Academic Bioscience R&amp;D Expenditures, FY 2014</b>			
Bioscience R&D (\$ thousands)	\$1,668,335	\$38,873,926	I
Bioscience Share of Total R&D	47%	61%	IV
Bioscience R&D Per Capita	\$279	\$122	I
<b>NIH Funding, FY 2015</b>			
Funding (\$ thousands)	\$1,292,800	\$22,869,746	I
Funding Per Capita	\$215	\$71	I
<b>Bioscience Venture Capital Investments, 2012–15 (\$ millions)</b>	\$1,292.5	\$48,742.10	I
<b>Bioscience and Related Patents, 2012–15</b>	3,530	101,026	II

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.



**Maryland**

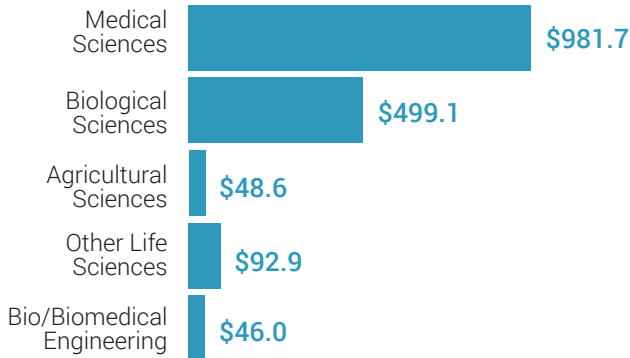
Industry Subsector	Maryland		United States	
	2014	2012–2014 Change	2014	2012–2014 Change
<b>Agricultural Feedstock and Chemicals</b>				
Establishments	17	30.8%	1,811	2.2%
Employment	343	60.6%	77,545	1.5%
Location Quotient	0.25		n/a	
Direct-Effect Employment Multiplier	16.9		18.4	
Total Employment Impact	5,792		1,432,125	
Average Annual Wage	\$64,599	11.5%	\$80,640	6.3%
<b>Bioscience-Related Distribution</b>				
Establishments	732	-2.8%	37,833	2.8%
Employment	5,838	-8.8%	452,325	2.3%
Location Quotient	0.72		n/a	
Direct-Effect Employment Multiplier	2.9		3.0	
Total Employment Impact	16,783		1,358,820	
Average Annual Wage	\$96,086	8.3%	\$90,458	6.2%
<b>Drugs and Pharmaceuticals</b>				
Establishments	83	18.6%	3,301	8.0%
Employment	6,969	-1.3%	293,353	3.2%
Location Quotient	1.33		n/a	
Direct-Effect Employment Multiplier	8.7		11.0	
Total Employment Impact	60,550		3,242,627	
Average Annual Wage	\$130,650	19.2%	\$117,524	10.3%
<b>Medical Devices and Equipment</b>				
Establishments	100	1.0%	7,636	5.5%
Employment	2,412	28.3%	349,045	-0.1%
Location Quotient	0.39		n/a	
Direct-Effect Employment Multiplier	4.2		4.6	
Total Employment Impact	10,126		1,596,802	
Average Annual Wage	\$79,227	14.8%	\$79,537	5.1%
<b>Research, Testing, and Medical Laboratories</b>				
Establishments	1,099	6.8%	26,702	10.2%
Employment	18,722	1.6%	483,412	3.4%
Location Quotient	2.17		n/a	
Direct-Effect Employment Multiplier	3.3		3.1	
Total Employment Impact	62,599		1,554,719	
Average Annual Wage	\$94,347	-1.6%	\$97,485	6.8%
<b>Total Bioscience Industry</b>				
Establishments	2,030	3.4%	77,283	5.7%
Employment	34,284	0.9%	1,655,680	2.2%
Location Quotient	1.16		n/a	
Direct-Effect Employment Multiplier	4.9		5.5	
Total Employment Impact	168,369		9,185,094	
Average Annual Wage	\$100,661	5.2%	\$94,543	7.2%
<b>Total Private Sector</b>				
Establishments	163,494	-0.3%	8,937,672	2.7%
Employment	2,066,288	2.1%	116,018,300	4.4%
Average Annual Wage	\$53,136	2.3%	\$51,148	4.3%

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

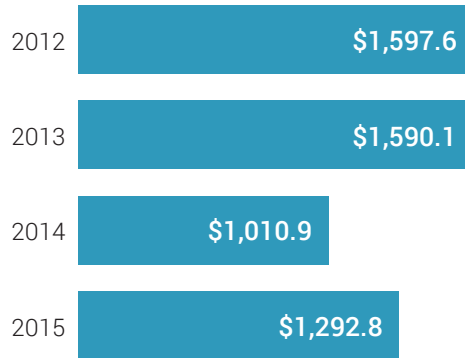


### Bioscience Research in Maryland

Bioscience Academic R&D Expenditures  
\$ Millions  
FY 2014

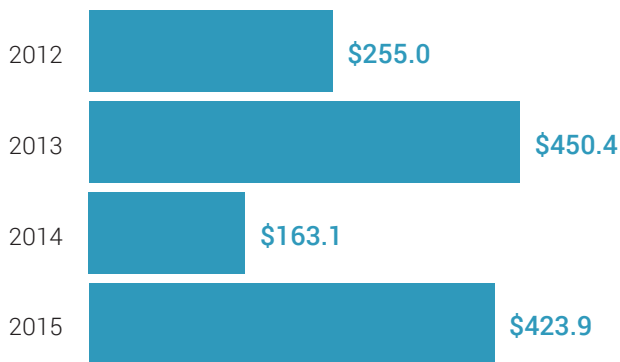


NIH Awards  
\$ Millions  
FY 2012-2015

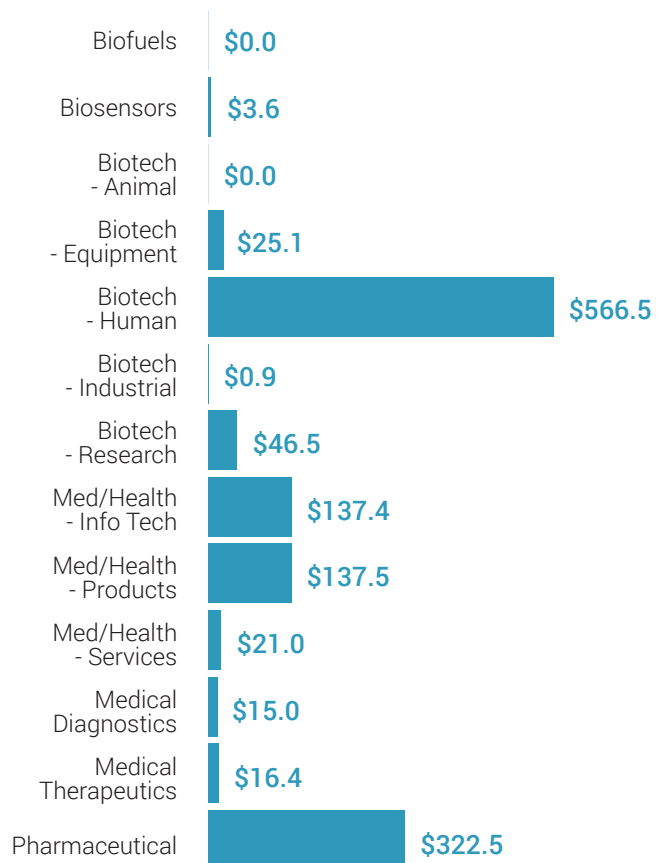


### Bioscience Venture Capital in Maryland

Bioscience-Related Venture Capital Investments  
\$ Millions  
2012-2015



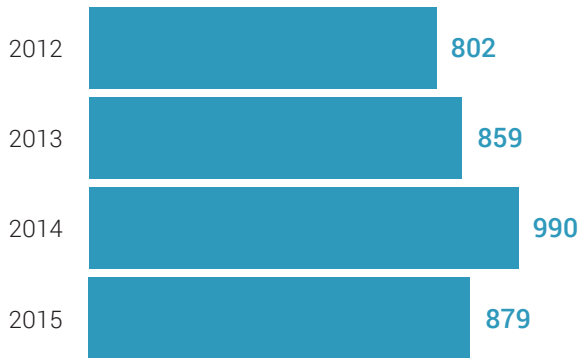
Bioscience-Related Venture Capital Investments by Segment  
\$ Millions  
2012-2015



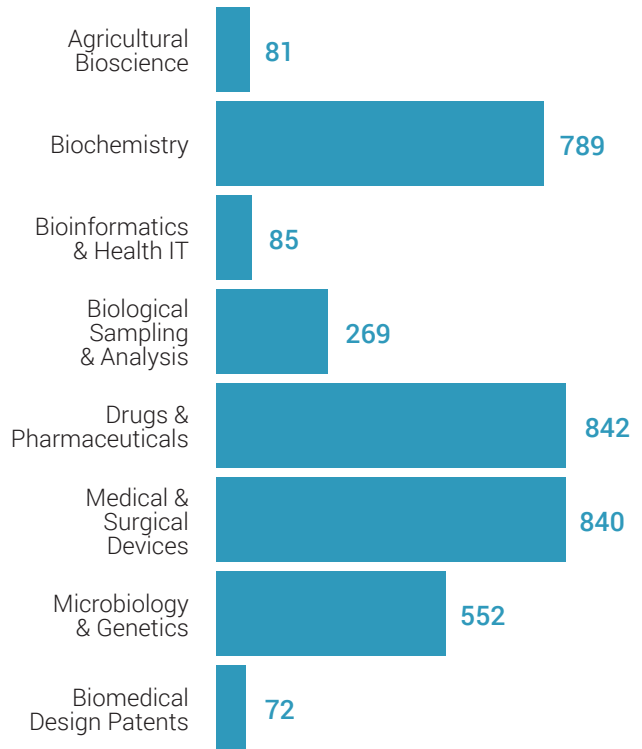


### Bioscience Patents in Maryland

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.

