

## Arizona



Arizona’s bioscience industry continues to experience rapid job growth, increasing employment by nearly 22 percent since 2007, a period which includes the deep national recession and overall declines for the state’s private sector. State bioscience firms employed 23,545 in nearly 1,300 establishments in 2012. Arizona’s bioscience job growth has been widespread with all five major subsectors seeing gains over the 2007 to 2012 period. State academic institutions accounted for \$409 million in bioscience-related R&D expenditures in 2012 and NIH funding to these and other non-academic institutions totaled \$182 million in 2013. Arizona inventors have had more than 1,400 patents issued in bioscience-related classes since 2009 and they span a variety of areas in medical devices and drugs and pharmaceuticals.

### Bioscience Performance Metrics

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

Metric	Arizona	United States	Quintile
<b>Bioscience Industry, 2012</b>			
Bioscience Industry Employment	23,545	1,619,746	III
Bioscience Industry Location Quotient	0.79	n/a	III
Bioscience Industry Establishments	1,266	73,088	II
<b>Academic Bioscience R&amp;D Expenditures, FY 2012</b>			
Bioscience R&D (\$ thousands)	\$409,241	\$38,139,876	III
Bioscience Share of Total R&D	41%	61%	V
Bioscience R&D Per Capita	\$62	\$119	V
<b>NIH Funding, FY 2013</b>			
Funding (\$ thousands)	\$181,995	\$22,293,255	III
Funding Per Capita	\$27	\$70	IV
<b>Bioscience Venture Capital Investments, 2009–13 (\$ millions)</b>	\$180.0	\$49,401.7	III
<b>Bioscience and Related Patents, 2009–13</b>	1,413	100,238	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.

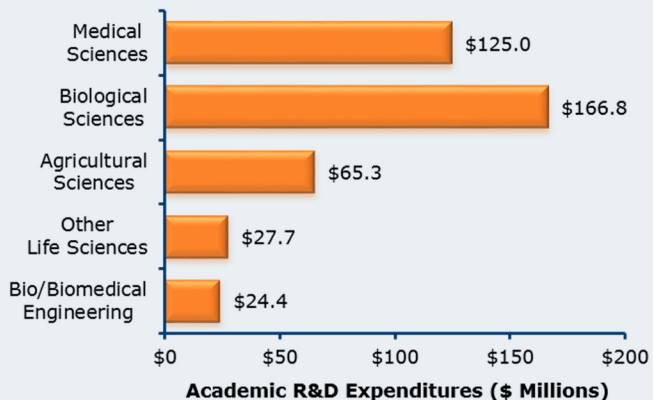
## Battelle/BIO State Biosciences Jobs, Investments and Innovation 2014

Industry Subsector	Arizona		United States	
	2012	2007–2012 Change	2012	2007–2012 Change
<b>Agricultural Feedstock &amp; Chemicals</b>				
Establishments	16	-5.9%	1,772	5.2%
Employment	592	7.0%	76,404	-1.0%
Location Quotient	0.42		n/a	
Direct-Effect Employment Multiplier	15.2		18.1	
Total Employment Impact	9,014		1,382,637	
Average Annual Wage	\$45,003	11.8%	\$75,828	14.2%
<b>Bioscience-Related Distribution</b>				
Establishments	771	-8.0%	36,793	1.4%
Employment	8,429	2.1%	442,016	-3.9%
Location Quotient	1.10		n/a	
Direct-Effect Employment Multiplier	2.9		2.7	
Total Employment Impact	24,608		1,199,015	
Average Annual Wage	\$128,507	25.4%	\$85,188	11.5%
<b>Drugs and Pharmaceuticals</b>				
Establishments	41	13.9%	3,057	12.0%
Employment	1,822	64.4%	284,331	-10.9%
Location Quotient	0.35		n/a	
Direct-Effect Employment Multiplier	9.4		9.9	
Total Employment Impact	17,169		2,673,265	
Average Annual Wage	\$51,491	-17.7%	\$106,576	13.9%
<b>Medical Devices and Equipment</b>				
Establishments	91	-3.2%	7,235	12.0%
Employment	5,475	40.2%	349,432	1.4%
Location Quotient	0.85		n/a	
Direct-Effect Employment Multiplier	3.5		3.9	
Total Employment Impact	19,397		1,318,459	
Average Annual Wage	\$64,569	16.2%	\$75,695	10.7%
<b>Research, Testing, and Medical Laboratories</b>				
Establishments	347	33.8%	24,231	31.0%
Employment	7,227	30.5%	467,563	9.7%
Location Quotient	0.84		n/a	
Direct-Effect Employment Multiplier	2.6		2.7	
Total Employment Impact	18,455		1,284,196	
Average Annual Wage	\$63,316	9.1%	\$91,248	15.9%
<b>Total Bioscience Industry</b>				
Establishments	1,266	1.8%	73,088	11.4%
Employment	23,545	21.6%	1,619,746	-0.4%
Location Quotient	0.79		n/a	
Direct-Effect Employment Multiplier	4.1		4.9	
Total Employment Impact	95,517		7,857,572	
Average Annual Wage	\$85,571	12.3%	\$88,202	12.8%
<b>Total Private Sector</b>				
Establishments	139,480	-10.8%	8,699,564	-0.5%
Employment	2,040,499	-9.2%	111,137,206	-3.1%
Average Annual Wage	\$45,234	10.2%	\$49,130	11.1%

Note: U.S. employment metrics include Puerto Rico. Estimates of total impacts do not include Puerto Rico.

## Bioscience Research in Arizona

**Bioscience Academic R&D Expenditures, FY 2012**



**NIH Awards, 2009–2013**

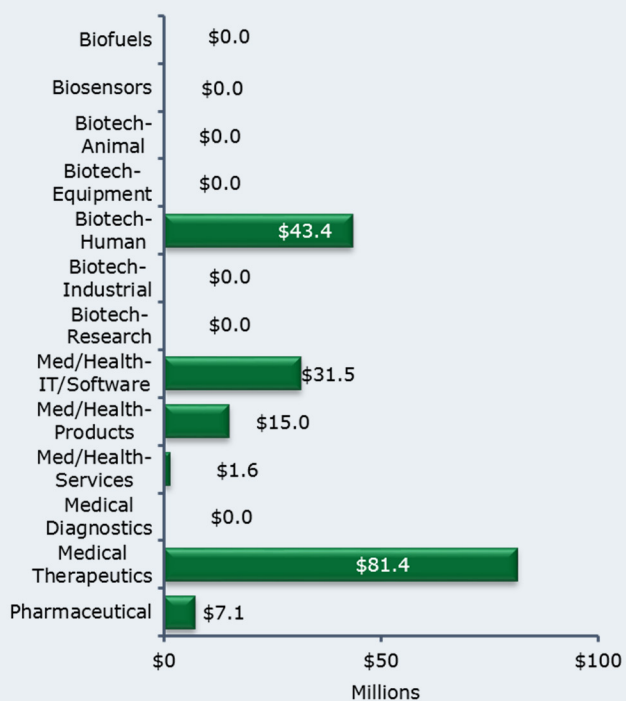


## Bioscience Venture Capital in Arizona

**Bioscience-Related Venture Capital Investments, 2009–2013**

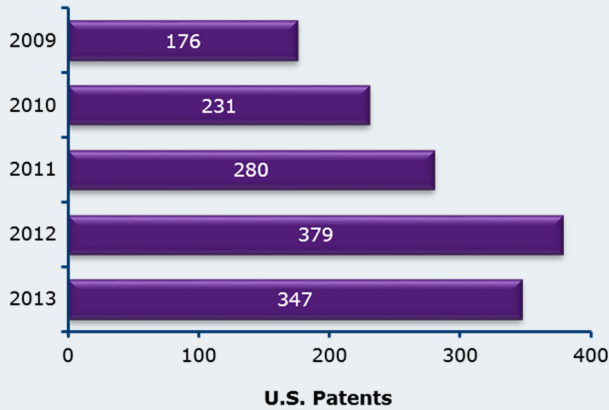


**Bioscience-Related Venture Capital Investments by Segment, 2009–2013**

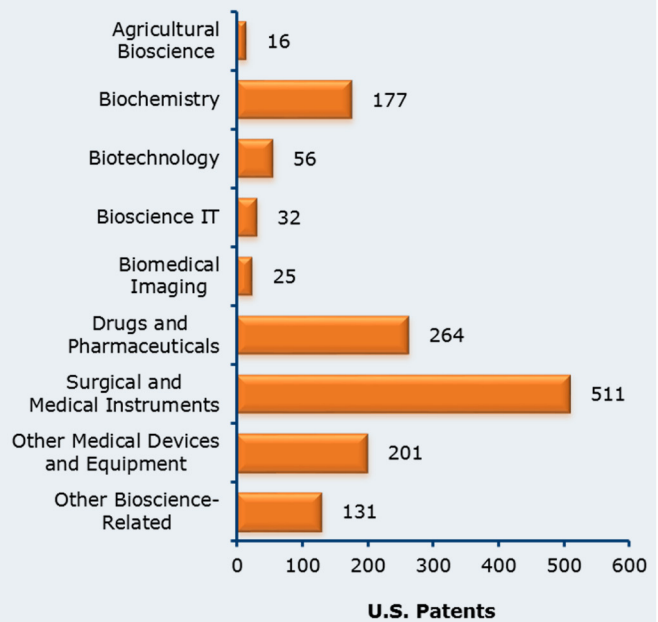


## Bioscience Patents in Arizona

### Bioscience-Related Patents, 2009–2013



### Bioscience-Related Patents by Segment, 2009–2013



## 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), and NIH-managed funding for FY 2009 and FY 2010 from the American Recovery and Reinvestment Act (ARRA) website.

**Venture Capital:** Thomson Reuters Thomson ONE venture capital database.

**Patents:** U.S. Patent & Trademark Office data from Thomson Reuters Delphion Patent Analysis Database.

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