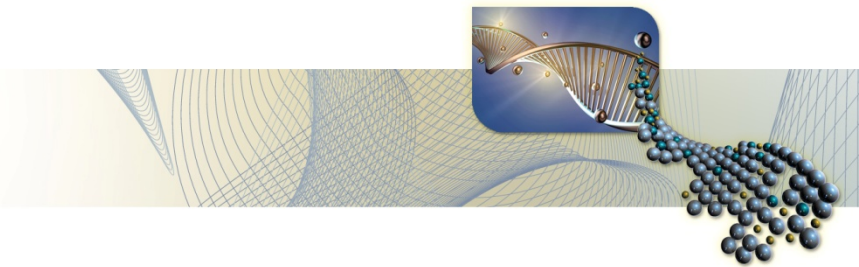


VIRGINIA



Virginia's largest bioscience subsector is research, testing, and medical laboratories (10,396 jobs), where it has outpaced the nation in subsector job growth since 2001. Total academic bioscience research and development expenditures in Virginia have grown by 23 percent since 2004 and reached \$550 million in 2008, led by medical and biological sciences. The State's biomedical institutions participated in 408 active clinical trials in 2009. Its higher education institutions play a key role in developing talent with 4,146 students graduating with degrees in bioscience-related fields. In the last six years, venture capital invested in bioscience companies in Virginia totaled \$406 million, with a peak in 2008. Most VC funding went to companies engaged in medical/health information technology, human biotechnology, and medical/health products. The 1,038 bioscience patents issued to Virginia inventors over the same six-year period were led by drugs and pharmaceuticals, surgical and medical instruments, and biochemistry.

●●● Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metrics	Virginia	United States	Rank*
Bioscience Industry, 2008			
Total Bioscience Industry Employment, 2008	20,257	1,420,324	III
Bioscience Industry Location Quotient, 2008	0.54	n/a	IV
Biosciences Industry Establishments, 2008	981	47,593	II
Academic R&D Expenditures, FY 2008			
Bioscience R&D (\$ thousands)	\$549,990	\$31,818,810	17
Bioscience Share of Total R&D	52.3%	61.3%	37
Bioscience R&D Per Capita	\$70.55	\$104.54	38
Change in Bioscience R&D, FY 2004–08	23.4%	22.3%	18
NIH Funding, FY 2009			
Total, Including ARRA Funds (\$ thousands)	\$380,289	\$25,837,590	19
Per Capita Funding	\$48.24	\$84.16	32
Change in Baseline Funding, FY 2004–09**	-34.8%	-4.7%	52
Change in Total Funding, FY 2004–09	-21.1%	14.6%	52
Clinical Trials, Initiated 2009	408	5,299	18
Higher Education Degrees in Bioscience Fields, AY 2008	4,146	161,811	11
Employment in Bioscience-related Occupations, 2008	15,280	717,510	17
Bioscience Venture Capital Investments, 2004–09 (\$ millions)	\$405.9	\$60,099	19
Bioscience and Related Patents, 2004–09	1,038	75,593	23

*State ranking figures for bioscience industry employment metrics are calculated as quintiles (I=Top Quintile; V=Bottom Quintile). All other metrics are ranked 1-52.

**Baseline Funding does not include American Recovery and Reinvestment Act (ARRA) funds for 2009.

For source notes, see end of State Profile.

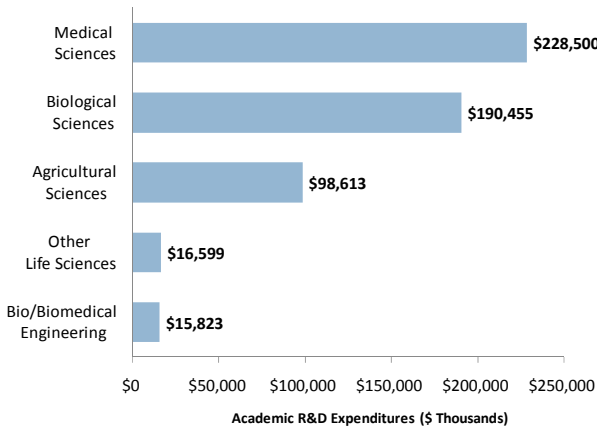
●●● Bioscience Industry Base, 2008

INDUSTRY SUBSECTOR	Virginia		United States	
	2008	2001-08 Change	2008	2001-08 Change
AGRICULTURAL FEEDSTOCK & CHEMICALS				
Establishments	34	5.4%	2,440	16.0%
Employment	2,621	-9.3%	114,793	1.9%
Location Quotient	0.87		n/a	
Direct-Effect Employment Multiplier	5.08		11.33	
Total Employment Impact	13,314		1,284,650	
Average Annual Wage	\$81,647		\$72,279	
DRUGS & PHARMACEUTICALS				
Establishments	30	15.4%	2,771	6.4%
Employment	3,606	-2.6%	311,882	2.3%
Location Quotient	0.44		n/a	
Direct-Effect Employment Multiplier	5.33		9.92	
Total Employment Impact	19,218		2,873,278	
Average Annual Wage	\$76,471		\$93,378	
MEDICAL DEVICES & EQUIPMENT				
Establishments	333	23.8%	15,227	0.4%
Employment	3,634	-14.0%	435,509	2.0%
Location Quotient	0.32		n/a	
Direct-Effect Employment Multiplier	2.37		4.87	
Total Employment Impact	8,621		2,029,581	
Average Annual Wage	\$43,198		\$63,606	
RESEARCH, TESTING, & MEDICAL LABORATORIES				
Establishments	584	91.7%	27,154	57.7%
Employment	10,396	82.4%	558,140	46.1%
Location Quotient	0.71		n/a	
Direct-Effect Employment Multiplier	2.39		3.30	
Total Employment Impact	24,868		1,853,127	
Average Annual Wage	\$68,453		\$80,785	
TOTAL BIOSCIENCES INDUSTRY				
Establishments	981	55.2%	47,593	28.3%
Employment	20,257	22.7%	1,420,324	15.8%
Location Quotient	0.54		n/a	
Direct-Effect Employment Multiplier	3.26		5.82	
Total Employment Impact	66,021		8,040,636	
Average Annual Wage	\$67,058		\$77,595	
TOTAL PRIVATE SECTOR				
Establishments	223,390	17.6%	8,860,956	13.8%
Employment	2,990,515	5.8%	113,917,377	3.5%
Average Annual Wage	\$46,703		\$45,229	

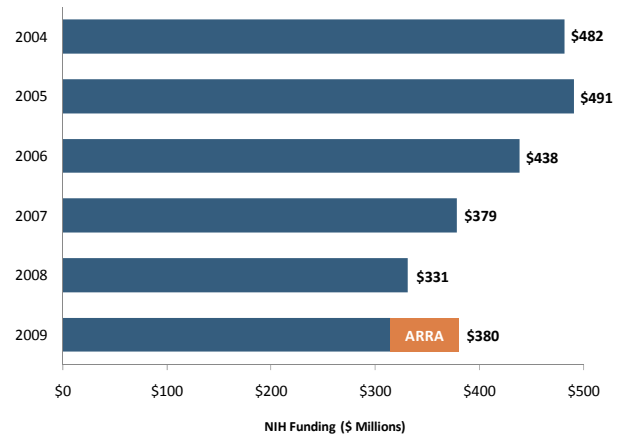
Note: U.S. employment metrics include Puerto Rico. Estimates of total employment impacts do not include Puerto Rico.

●●● Bioscience Performance Metrics

Bioscience Academic R&D Expenditures in Virginia, FY 2008

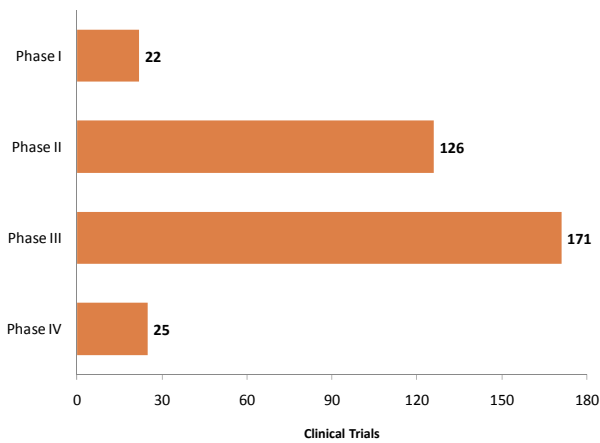


NIH Awards in Virginia, 2004–2009

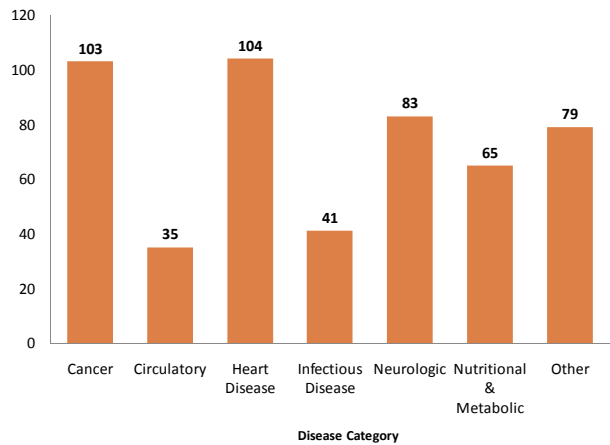


●●● Recent Clinical Trial Activities

Clinical Trials by Phase in Virginia, 2009

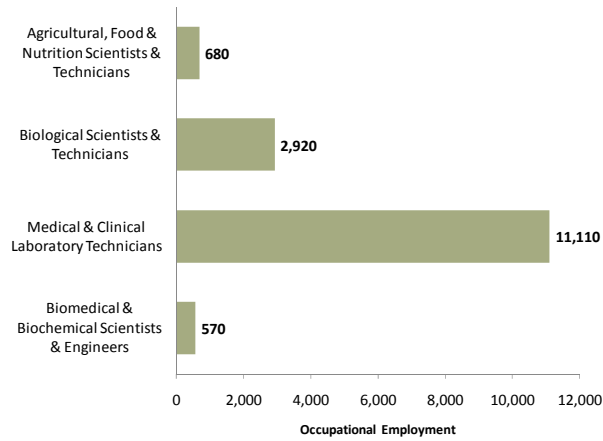


Clinical Trials by Major Disease Category in Virginia, 2009

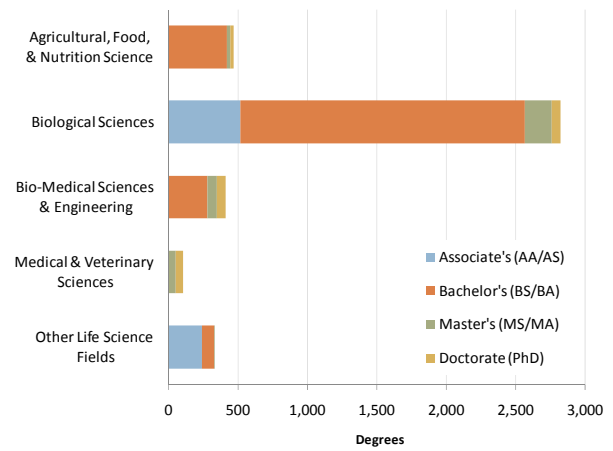


Bioscience Talent Base

Bioscience-related Occupational Employment in Virginia, 2008

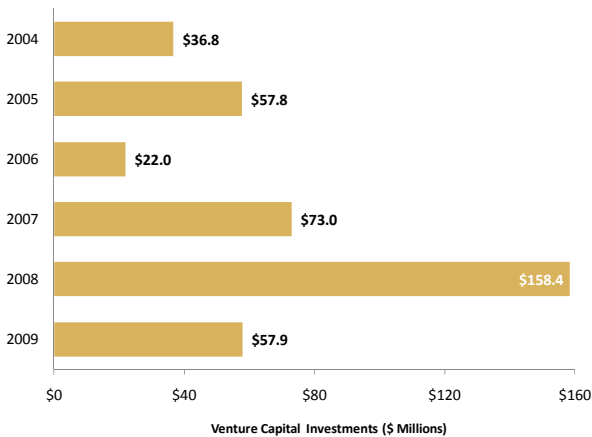


Bioscience-related Degrees in Virginia, AY 2008

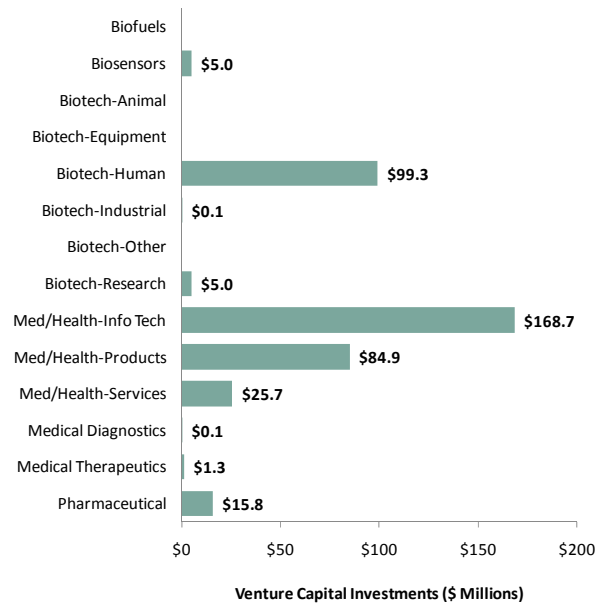


Bioscience Venture Capital

Bioscience-related Venture Capital Investments in Virginia, 2004–2009

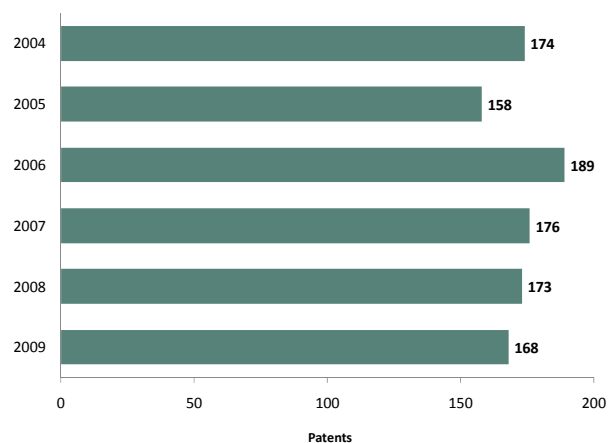


Bioscience-related Venture Capital Investments in Virginia by Segment, 2004–2009

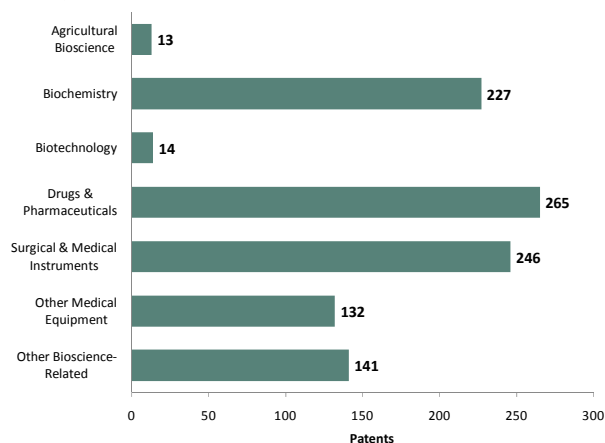


●●● Bioscience Patents

Bioscience-related Patents in Virginia, 2004–2009



Bioscience-related Patents by Classification Group in Virginia, 2004–2009



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Source Notes:

Employment, Establishment, and Wage Data: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW) industry data provided by the Minnesota IMPLAN Group, 2001 and 2008.

Employment Multipliers: U.S. Bureau of Economic Analysis RIMS II Employment Multipliers, 2006 (most currently available).

Academic R&D Expenditures: National Science Foundation (NSF) Survey of Research and Development Expenditures at Universities and Colleges, 2004 and 2008.

NIH Funding: National Institutes of Health, Office of Extramural Research, Award Trends, Dollars Awarded by State, 2004 and 2009.

Clinical Trials: National Institutes of Health, Clinicaltrials.gov, trials that were initiated in 2009.

Higher Education Degrees: National Center for Educational Statistics, Integrated Postsecondary Education Data System (IPEDS), 2008.

Occupational Employment: U.S. Bureau of Labor Statistics, Occupational Employment Statistics (OES) survey data, 2008.

Venture Capital: Thomson Reuters' VentureXpert Database, 2004–2009, as of January 15, 2010.

Patents: U.S. Patent & Trademark Office data as available from the Thomson Reuters' Delphion Patent Analysis Database, 2004–2009, as of January 15, 2010.

For a more detailed discussion of the data and methodology used, please see the Appendix to the full national report. ©2010