

Utah has a specialized and growing bioscience industry. The State has outpaced national job growth in each of the four subsectors and has a specialized employment concentration in medical devices and equipment (location quotient of 2.52) and in drugs and pharmaceuticals (1.67) and a lesser, though still high concentration in research, testing and medical laboratories (1.13). Total academic bioscience research and development expenditures were \$244 million in 2008, with a diversified composition led by medical sciences and followed by biological and agricultural sciences. Venture capital invested in Utah’s bioscience companies during the last six years totaled \$287 million. Most VC funds were invested in medical therapeutics and human biotechnology. The 1,028 bioscience patents issued to Utah inventors during the same six-year period were led by surgical and medical instruments and generally well distributed across other categories.

## ●●● Bioscience Performance Metrics

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

Metrics	Utah	United States	Rank*
<b>Bioscience Industry, 2008</b>			
Total Bioscience Industry Employment, 2008	20,418	1,420,324	III
Bioscience Industry Location Quotient, 2008	1.60	n/a	I
Biosciences Industry Establishments, 2008	598	47,593	III
<b>Academic R&amp;D Expenditures, FY 2008</b>			
Bioscience R&D (\$ thousands)	\$243,771	\$31,818,810	32
Bioscience Share of Total R&D	57.3%	61.3%	28
Bioscience R&D Per Capita	\$89.38	\$104.54	27
Change in Bioscience R&D, FY 2004–08	13.3%	22.3%	36
<b>NIH Funding, FY 2009</b>			
Total, Including ARRA Funds (\$ thousands)	\$176,337	\$25,837,590	31
Per Capita Funding	\$63.33	\$84.16	25
Change in Baseline Funding, FY 2004–09**	-6.0%	-4.7%	34
Change in Total Funding, FY 2004–09	16.4%	14.6%	30
<b>Clinical Trials, Initiated 2009</b>	271	5,299	28
<b>Higher Education Degrees in Bioscience Fields, AY 2008</b>	1,967	161,811	28
<b>Employment in Bioscience-related Occupations, 2008</b>	9,170	717,510	25
<b>Bioscience Venture Capital Investments, 2004–09 (\$ millions)</b>	\$287.2	\$60,099	23
<b>Bioscience and Related Patents, 2004–09</b>	1,028	75,593	24

\*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.

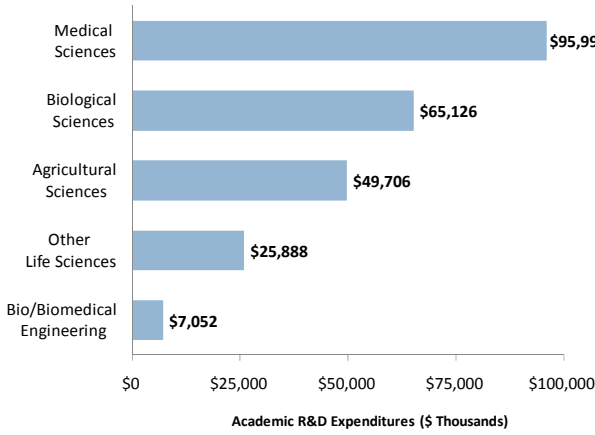
## ●●● Bioscience Industry Base, 2008

INDUSTRY SUBSECTOR	Utah		United States	
	2008	2001–08 Change	2008	2001–08 Change
<b>AGRICULTURAL FEEDSTOCK &amp; CHEMICALS</b>				
Establishments	15	47.5%	2,440	16.0%
Employment	264	70.8%	114,793	1.9%
Location Quotient	0.26		n/a	
Direct-Effect Employment Multiplier	5.05		11.33	
Total Employment Impact	1,333		1,284,650	
Average Annual Wage	\$51,658		\$72,279	
<b>DRUGS &amp; PHARMACEUTICALS</b>				
Establishments	76	38.2%	2,771	6.4%
Employment	4,671	22.1%	311,882	2.3%
Location Quotient	1.67		n/a	
Direct-Effect Employment Multiplier	5.43		9.92	
Total Employment Impact	25,354		2,873,278	
Average Annual Wage	\$50,700		\$93,378	
<b>MEDICAL DEVICES &amp; EQUIPMENT</b>				
Establishments	251	22.6%	15,227	0.4%
Employment	9,838	8.1%	435,509	2.0%
Location Quotient	2.52		n/a	
Direct-Effect Employment Multiplier	3.43		4.87	
Total Employment Impact	33,718		2,029,581	
Average Annual Wage	\$52,702		\$63,606	
<b>RESEARCH, TESTING, &amp; MEDICAL LABORATORIES</b>				
Establishments	256	49.2%	27,154	57.7%
Employment	5,645	74.1%	558,140	46.1%
Location Quotient	1.13		n/a	
Direct-Effect Employment Multiplier	2.43		3.30	
Total Employment Impact	13,745		1,853,127	
Average Annual Wage	\$62,544		\$80,785	
<b>TOTAL BIOSCIENCES INDUSTRY</b>				
Establishments	598	35.4%	47,593	28.3%
Employment	20,418	25.1%	1,420,324	15.8%
Location Quotient	1.60		n/a	
Direct-Effect Employment Multiplier	3.63		5.82	
Total Employment Impact	74,150		8,040,636	
Average Annual Wage	\$54,952		\$77,595	
<b>TOTAL PRIVATE SECTOR</b>				
Establishments	83,618	27.9%	8,860,956	13.8%
Employment	1,021,933	17.2%	113,917,377	3.5%
Average Annual Wage	\$37,491		\$45,229	

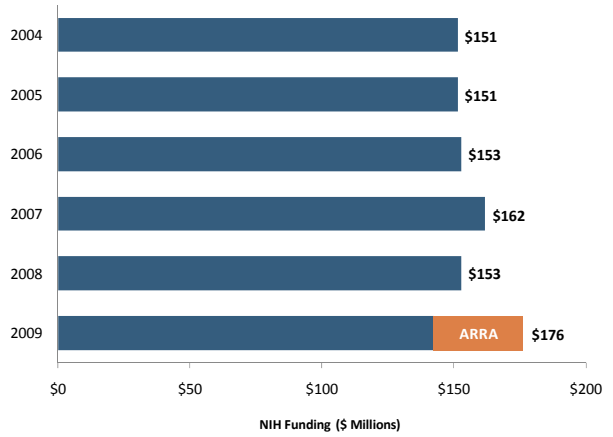
Note: U.S. employment metrics include Puerto Rico. Estimates of total employment impacts do not include Puerto Rico.

## ●●● Bioscience Performance Metrics

**Bioscience Academic R&D Expenditures in Utah, FY 2008**

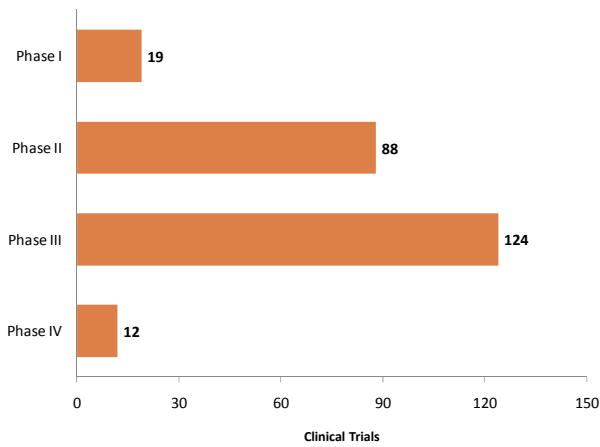


**NIH Awards in Utah, 2004–2009**

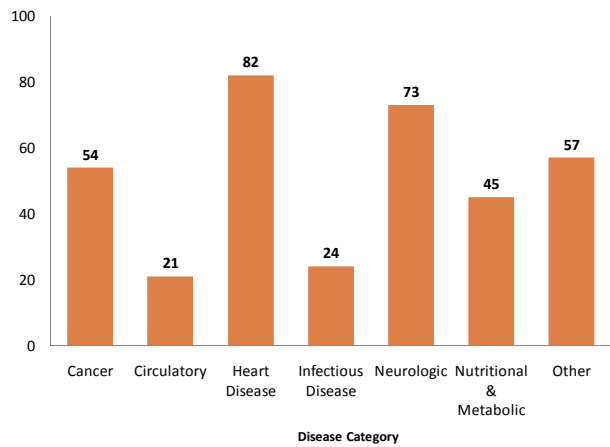


## ●●● Recent Clinical Trial Activities

**Clinical Trials by Phase in Utah, 2009**

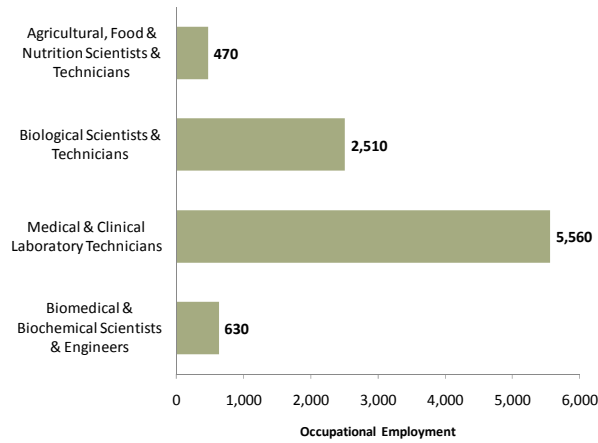


**Clinical Trials by Major Disease Category in Utah, 2009**

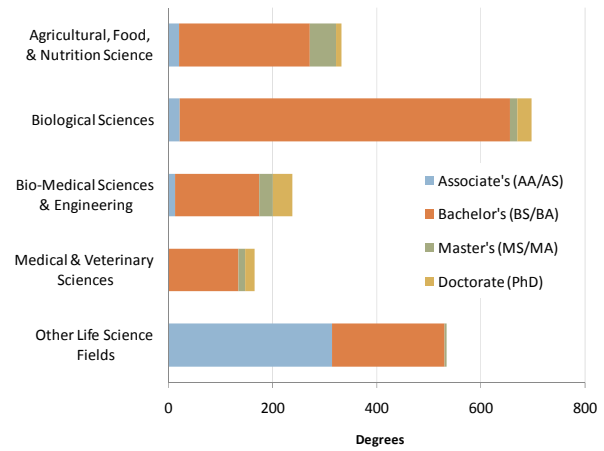


## Bioscience Talent Base

### Bioscience-related Occupational Employment in Utah, 2008

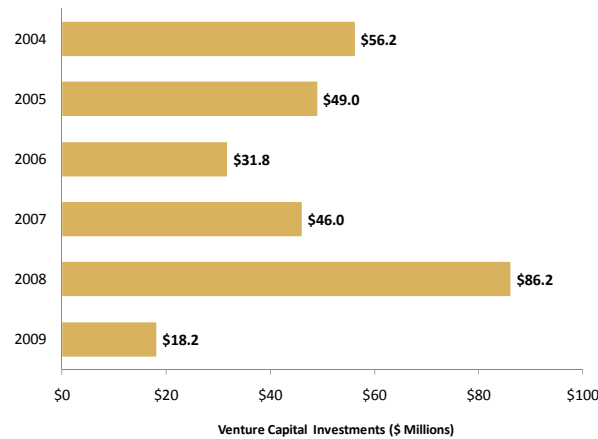


### Bioscience-related Degrees in Utah, AY 2008

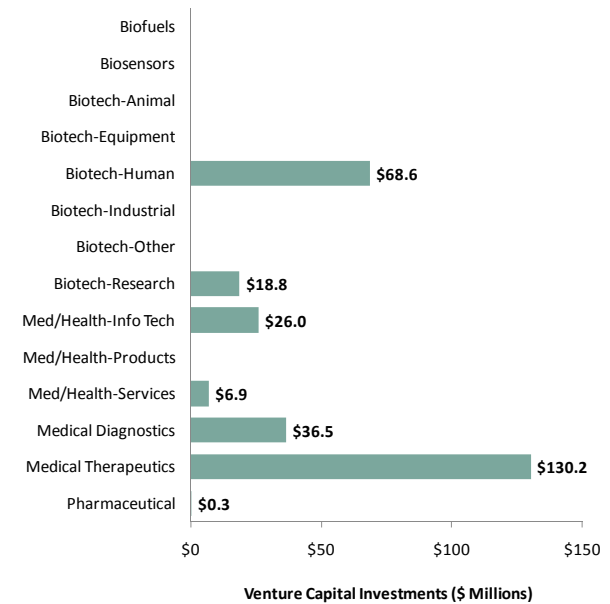


## Bioscience Venture Capital

### Bioscience-related Venture Capital Investments in Utah, 2004–2009

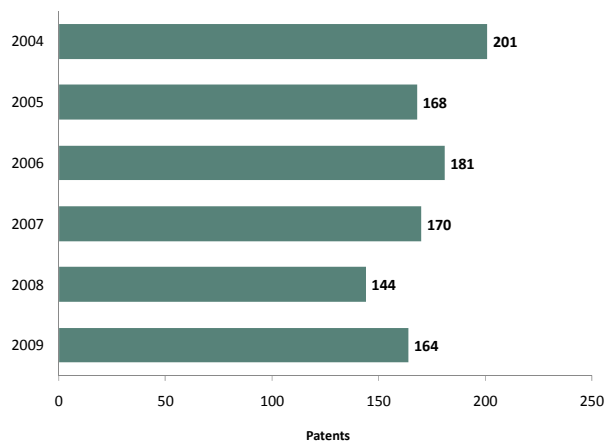


### Bioscience-related Venture Capital Investments in Utah by Segment, 2004–2009

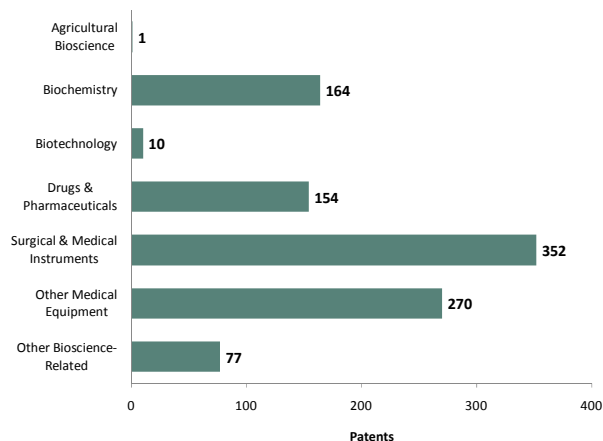


## ●●● Bioscience Patents

**Bioscience-related Patents in Utah, 2004–2009**



**Bioscience-related Patents by Classification Group in Utah, 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](http://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