



Overview and Summary of Recent Initiatives

Biotechnology and medical devices are among the three sectors that have been targeted for development by Utah, which has a long-standing focus on genetics. Since the last BIO report, Utah has engaged in an industry-led process (including the Utah Life Science Association, the Salt Lake Chamber of Commerce, and the IT association) to define what is being called the **Utah Science, Technology and Research (USTAR) Economic Development Initiative (EDI)**.

Seed funding for facilities and recruitment at both public universities was appropriated in 2005 (SB 192). The Huntsman administration has a pending proposal (see below) to add a formal oversight structure and provide substantially increased funding for recruitment, facilities, and commercialization activities across multiple sectors, statewide. USTAR EDI will attempt to fill the innovation pipeline with new facilities and researchers, building on the widely perceived success of the **Utah Centers of Excellence (COE)**, a long-standing program of targeted research and commercialization funding operated by what is now the **Governor's Office of Economic Development (GOED)**, which replaced the Department of Community and Economic Development and absorbed the multisector Utah Technology Industry Council.

If the full USTAR EDI program is enacted, based on experience with the COEs, the state projects an incremental \$4.9 billion in external research funding levered, creation of 422 companies, 123,000 new jobs, and \$5 billion in tax revenues over an extended period. Since the last BIO report, voters also approved by 57.5 percent Constitutional Amendment 2 of 2004, which authorizes the state's public institutions to acquire equity interests in private businesses in exchange for intellectual property.

Building Bioscience R&D Capacity

Recent state investments in facilities

SB 192 provided \$3 million in seed funding to the University of Utah for research equipment and \$4 million to Utah State University for faculty recruitment. Significantly increased investment levels at the public universities for facilities and faculty recruitment are contemplated in SB 75 (see below under "Pending Proposals").

Moving Technology into the Marketplace

Commercializing university technology

The **Utah Centers of Excellence Program** received a one-time budget boost to \$3 million and ongoing appropriation of \$2.5 million (up from \$2 million) to continue its program. The COE program attempts to identify university-based research programs with strong commercial potential, and then supports them with targeted funding over 3 to 5 years with the goal of attracting commercialization partners. The COE program provides \$25,000 to each project on top of research costs to retain “serial entrepreneurs” and other consultants to write a commercialization plan for the technology and, if appropriate, to help foster a start-up. This function was separately budgeted at \$500,000 for the year. About a third of the spin-offs created through the COE are bioscience based. The state calculates a 3.8:1 return on investment for this program.

Separate from the COE program, the University of Utah offers grants for commercialization research from a Technology Commercialization Project funded by its research park. Projects may be funded at up to \$35,000 a year for 2 years, and the goal is to have the technology ready for licensing by the end of the grant. The Technology Commercialization Office, formerly the licensing office, now reports to the Dean of the Business School, in which is also lodged the **Lassonde Center for New Venture Development** (see below).

Supporting bioscience entrepreneurs and emerging companies

Utah is home to the **Wayne Brown institute**, one of the early programs aimed at mentoring entrepreneurs and preparing them for presenting their business plans at formal venture-capital conferences. Also, the **Mountain West Capital Group** offers monthly networking meetings for entrepreneurs across multiple sectors.

Army Dugway Proving Ground is also creating a federally funded commercialization center for chemical and biological defense technology.

Making Capital Available

Pre-seed and seed capital

With encouragement from GOED, a private-sector **Life Sciences Angel Network** is being formed.

Venture capital

With leadership from industry groups including Utah Life Science Association, the Utah Venture Capital Enhancement Act of 2003 was created. The state authority created under this law will back a **Utah Fund of Funds** with \$100 million in contingent tax credits. The first investments are expected in April. The board of the nonprofit that serves as general partner has announced that it will give preference to out-of-state and newly created venture funds that plan to domicile in Utah, followed by pre-existing venture funds in Utah. It will also give priority to venture funds that have demonstrated commitment to investment in Utah-based entities. The fund of funds will invest in venture funds at all stages from seed through late and mezzanine. Investee funds will work across multiple fields including the life sciences.

Providing Space for Bioscience Companies

Incubators

The **Miller Business Innovation** center is a 30,000-square-foot office incubator at Salt Lake Community College (SLCC) with substantial bioscience presence including **Innovabio**, a student-run start-up contract research organization (CRO) that works with the college's biotechnology programs (see below).

Bioscience research parks

Both public universities operate research parks with significant bioscience tenancy:

- **University of Utah Research Park** in Salt Lake City is a 320-acre mature park across the street from the campus, with 40 commercial tenants and 36 university departments as well as a hotel/conference center.
- **Innovation Campus** at Utah State University in Logan has 22 tenants and six university affiliates in 10 privately developed buildings. It recently expanded to 38 acres and will be building out in seven "neighborhoods" including one each for "genomics" and "pharmaceutical R&D," with the ultimate target of 135 acres.

Because the University of Utah Research Park is full, the GOED is planning to support a new university-related park at a location yet to be determined in the Salt Lake Valley, targeting 3 million square feet on 250 acres. The park will target multiple sectors including the biosciences. There is also early-stage planning for research parks at **Hill Air Force Base** near Ogden, in Utah County (Provo), and Washington County.

Addressing Talent Needs

Recruiting management talent

The GOED sponsors a **Talent Access Program** to publicize high-skill career opportunities in Utah.

The **Lassonde New Venture Development Center** at the University of Utah offers opportunities for graduate and undergraduate students in engineering, science, and business to become involved in early-stage business development, including opportunities spinning off from the university's Technology Commercialization Office. Many of its early activities have been in the biosciences.

Specialized postsecondary programs

Innovabio is a student-run CRO that spun out of SLCC's biotechnology training program. With support from the NIH, Innovabio seeks industry contracts that will provide hands-on experience for students in collaboration with industry. The SLCC also refers students to on-site projects at Army Dugway Proving Ground.

K-12 outreach programs

Utah created **Itineris**, a magnet school dedicated to teaching biotechnology skills to qualified 11th and 12th graders with preference to nontraditional students who can succeed in the sciences.

The SLCC has partnered with Granite School District to bring a program on biomanufacturing and regulatory compliance into the high schools with articulation into the community college and 4-year institutions.

The GOED is initiating informal education programs such as a science summer camp. These will complement existing private-sector efforts such as the Leonardo outreach program of the Utah Science Center museum.

Pending Proposals

SB 75 of 2006, which enjoys the backing of both the administration and the business community and passed the state senate unanimously, calls for the following:

- \$50 million in planning funds for a **Neuroscience and Biomedical Technology Research Building** at the University of Utah and a **Bio Innovations Research Institute** at Utah State University
- \$111 million in bonding authority to fund construction
- \$19.5 million for faculty recruitment and retention.

A joint executive legislative oversight committee would supervise USTAR under this bill.

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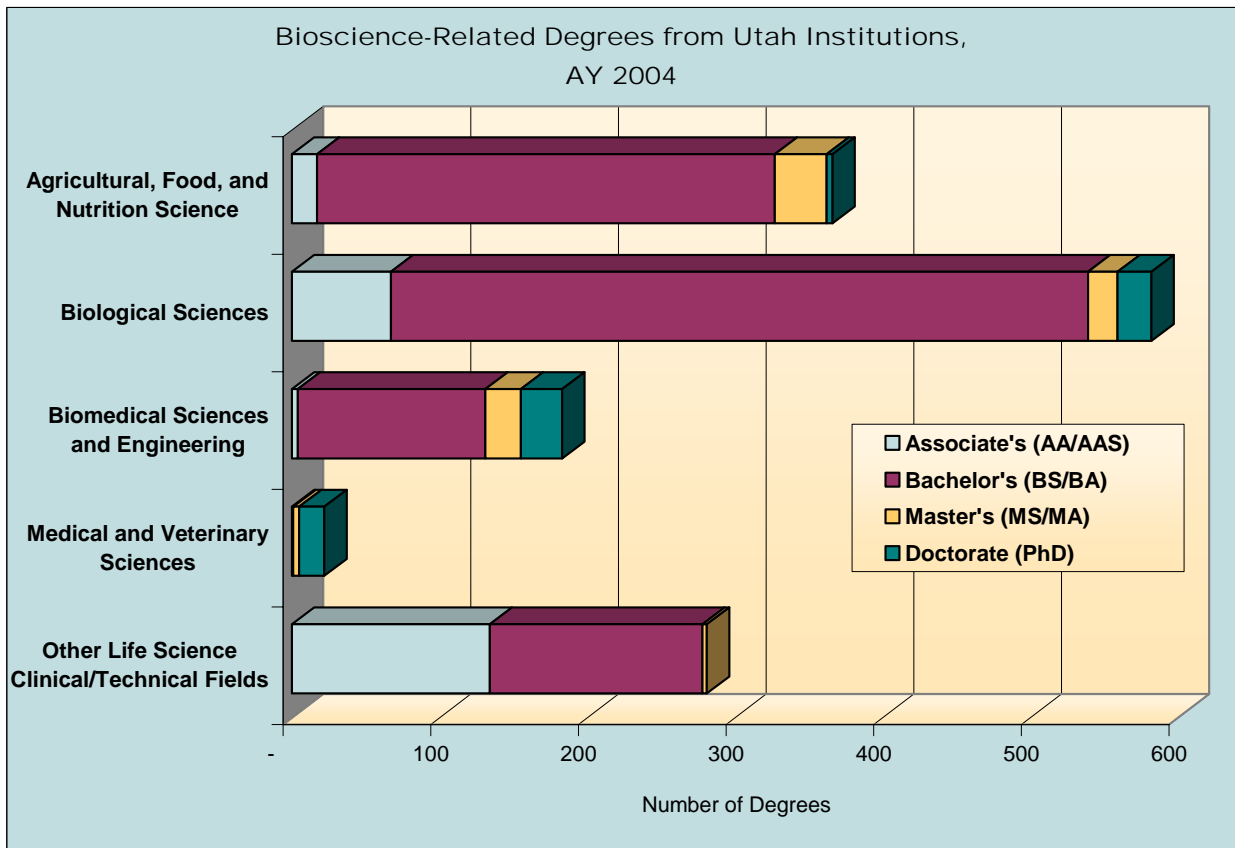
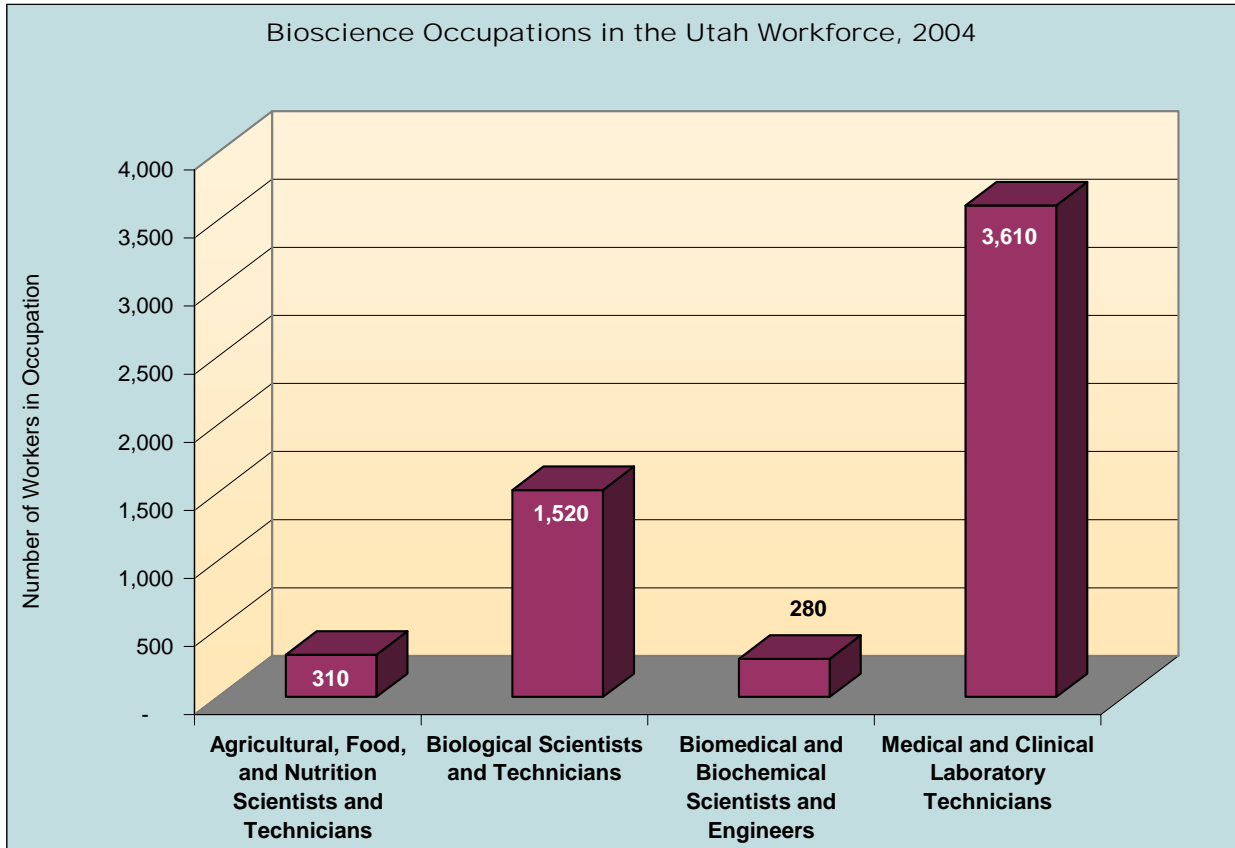
The Utah Life Science Association's mission is to develop and promote life science industries by bringing members together in partnership to foster education at all levels; to facilitate innovation, excellence, and international competitiveness in our products and services; to gain consensus for action; and to be proactive in matters relating to policy formation, legislation, and regulation.

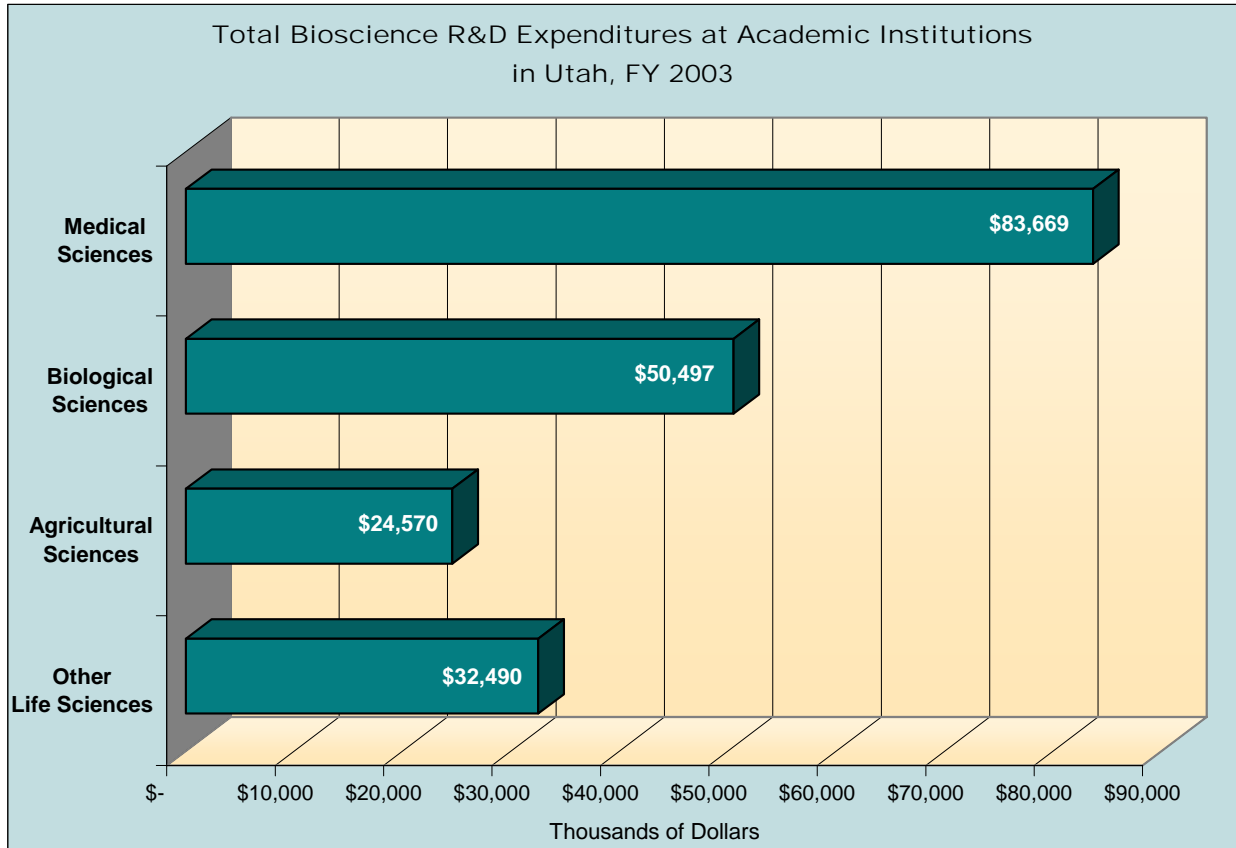
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Industry Subsector	Utah	United States
Agricultural Feedstock & Chemicals		
Establishments 2004	10	2,111
2001-2004 Establishment % Change	-1.7%	0.4%
Employment 2004	200	104,893
2001-2004 Employment % Change	29.0%	-6.9%
Share of U.S. Employment	0.2%	100.0%
Location Quotient	0.23	n.a.
Average Annual Wage 2004	\$42,840	\$63,383
Direct-Effect Employment Multiplier	3.83	10.91
Total Employment Impact	763	1,212,094
Drugs & Pharmaceuticals		
Establishments 2004	63	2,589
2001-2004 Establishment % Change	14.5%	-0.6%
Employment 2004	4,401	313,207
2001-2004 Employment % Change	15.0%	2.7%
Share of U.S. Employment	1.4%	100.0%
Location Quotient	1.73	n.a.
Average Annual Wage 2004	\$42,980	\$79,303
Direct-Effect Employment Multiplier	5.28	9.51
Total Employment Impact	23,239	2,731,321
Medical Devices & Equipment		
Establishments 2004	219	15,190
2001-2004 Establishment % Change	7.0%	0.2%
Employment 2004	9,305	411,460
2001-2004 Employment % Change	2.2%	-3.6%
Share of U.S. Employment	2.3%	100.0%
Location Quotient	2.79	n.a.
Average Annual Wage 2004	\$43,375	\$56,449
Direct-Effect Employment Multiplier	3.17	4.56
Total Employment Impact	29,489	1,817,705
Research, Testing, & Medical Laboratories		
Establishments 2004	202	20,565
2001-2004 Establishment % Change	17.8%	19.4%
Employment 2004	3,891	413,550
2001-2004 Employment % Change	20.0%	8.2%
Share of U.S. Employment	0.9%	100.0%
Location Quotient	1.16	n.a.
Average Annual Wage 2004	\$46,100	\$65,414
Direct-Effect Employment Multiplier	2.35	3.15
Total Employment Impact	9,132	1,272,936
TOTAL PRIVATE SECTOR		
Establishments 2004	73,143	8,156,137
2001-2004 Establishment % Change	11.8%	4.8%
Employment 2004	885,116	109,249,195
2001-2004 Employment % Change	1.5%	-0.7%
Share of U.S. Employment	0.8%	100.0%
Location Quotient	n.a.	n.a.
Average Annual Wage 2004	\$31,588	\$39,003

Source: Battelle calculations -- based on Bureau of Labor Statistics QCEW data from the Minnesota Implan Group, RIMS II Employment Multipliers from the Bureau of Economic Analysis, and the Census Bureau's Economic Census.

Note: n.a. = metric is not applicable.





	Utah	United States	Rank
University R&D Expenditures, FY 2003			
Total (\$ thousands)	\$385,158	\$40,104,621	29
Life Science R&D (\$ thousands)	\$195,472	\$24,062,088	31
Percent of Total R&D	50.8%	60.0%	
Life Sciences Per Capita	\$83.13	\$82.74	
Change in Life Sciences FY 1999–2003	42.0%	52.7%	
NIH Support to Institutions, FY 2004			
Total (\$ thousands)	\$151,954	\$22,556,459	29
Per Capita Expenditures	\$64.62	\$77.56	
Change in Expenditures FY 2000–2004	32.9%	53.2%	
Higher Education Degrees in Bioscience Fields, AY 2004	1,434	111,329	31
Bioscience Occupations in the Workforce, 2004	5,720	616,140	31