



Overview and Summary of Recent Initiatives

In 2005, Governor Matt Blunt formed the **Advisory Council for Plant Biotechnology**. The advisory council is charged with analyzing the state's current life science environment to determine how the state can better capitalize on the industry's potential, serving as a recruitment committee to attract new life science companies to Missouri and determining whether a state-based regulatory structure is desirable. The council represents all facets of plant biotechnology, including agriculture, government, economics, science, and industry.

Governor Blunt, under his budget recommendation for 2006, has called for \$38.5 million to be allocated for the **Missouri Life Sciences Trust Fund**, administered by the Missouri Life Sciences Research Board. By executive order, the Governor moved the Missouri Life Sciences Research Board operation to the Missouri Department of Economic Development. This move brings the state's life science initiatives together. The Missouri Life Sciences Research Board will assist in the management of the Life Sciences Trust Fund.

In January 2006, Governor Blunt announced the **Lewis and Clark Discovery Initiative (LCDI)** to boost the life science industry across the state. The LCDI is a balanced approach to investing the one-time cash proceeds gleaned from the capitalization of a portion of the Missouri Higher Education Lending Authority's (MOHELA's) assets. This innovative plan to capitalize on existing resources, without decreasing the level of service provided by MOHELA, would generate around \$450 million in one-time money that will be used to improve educational and career opportunities for Missourians. The Governor has proposed using the funds to support university capital improvements, technology commercialization, scholarships, and endowed professorships. A complete list of proposed projects can be found under "Pending Proposals."

At the regional level, the **St. Louis Regional Chamber and Growth Association (RCGA)** and the **Coalition for Plant and Life Sciences** commissioned a report assessing the progress that had been achieved by implementing St. Louis's 1999 regional bioscience strategy and are actively pursuing an updated action plan.

In Kansas City, the **Kansas City Area Life Sciences Institute (KCALS)** continues to coordinate Kansas City's life science R&D strategic efforts. KCALS serves as facilitator, matchmaker, and potential funding organization for collaborative research that may lead to new discoveries to more effectively treat a wide range of diseases, develop new drugs and medical devices, and guide best medical practices.

In addition, KCALS is currently partnering with the Kansas City Area Development Council and the Greater Kansas City Chamber of Commerce on a regional animal health and nutrition initiative to provide

significant emphasis on the animal health and nutrition business area in the future. The initiative will specifically focus on developing and marketing the Kansas City animal health and nutrition “brand”; developing a favorable policy environment that encourages investments in research and innovation; and enhancing research and technology transfer between universities, research institutions, and industry.

Missouri is fortunate to be home to a number of private research organizations involved in the life sciences and related fields, such as the Stowers Institute for Medical Research in Kansas City and the Donald Danforth Plant Science Center in St. Louis, which work closely with higher education. The Stowers Institute, having an endowment valued at approximately \$2 billion, seeks more effective means of preventing and curing disease through basic research on genes and proteins that control fundamental processes of cellular life. The Danforth Center has a global mission to improve human health by conducting research to enhance the nutritional content of plants and increase agricultural production to create a sustainable food supply. Further, Missouri is the home of leading commercial life science firms such as Monsanto and benefits from the major presence of firms such as Pfizer.

Building Bioscience R&D Capacity

Recent state investments in facilities

The **University of Missouri-Columbia** recently opened the Christopher S. Bond Life Sciences Center. The center promotes research aimed at increasing food production and quality, improving human and animal health, and enhancing environmental quality. The building, which includes 67,000 square feet of laboratory space, houses the Proteomics Center, Molecular Cytology Core, and the DNA Core. The cost of the facility was shared by the State of Missouri, which contributed \$30 million; the National Aeronautics and Space Administration, which provided \$30 million; the University of Missouri; and private donors.

Washington University in St. Louis (WU) and its School of Medicine are continuing to implement “BioMed 21,” a strategic research initiative to convert new knowledge of the human genetic blueprint into effective medical treatments. The following BioMed 21 capital projects have been completed:

- Reconstruction of existing space next to the Genome Sequencing Center (GSC) to facilitate interactions between GSC researchers and clinicians. In addition, the Center for Genome Sciences is undergoing an expansion, increasing its laboratory facilities to accommodate additional strategic clusters of scientists with complementary expertise.
- Construction of a new \$150 million, 250,000-square-foot research facility dedicated to bridging basic and clinical sciences. The facility is located in proximity to Barnes Jewish Hospital, St. Louis Children’s Hospital, and the Center for Advanced Medicine and Siteman Cancer Center.
- 40,000-square-foot facility designed to spur development of mouse models.
- A new Center for Clinical Imaging Research about to be opened by WU, within the Imaging component of BioMed 21, inside Barnes-Jewish Hospital. The unit will include the full spectrum of state-of-the-art imaging devices wholly dedicated to research, yet located within a hospital for more convenient access to patients and study participants. It will provide new opportunities for partnership with companies that develop imaging technology.

St. Louis University (SLU) is constructing a multidisciplinary research center designed to conduct basic and clinical research of new vaccines and biologics. The Center for Vaccine Development is a \$67 million research building, part of an \$80.5 million project also including renovation of existing laboratory space that will take place after the new building opens in fall 2007.

The **University of Missouri-Kansas City (UMKC)** is completing a new Health Sciences building on the Hospital Hill campus. This facility is the future home of the Schools of Pharmacy and Nursing. The current construction of the \$50 million facility and \$16 million parking structure is scheduled for completion in 2007. UMKC is also planning for a second research building to be located across from this Health Sciences building, the School of Medicine, and near Truman Medical Center and Children's Mercy Hospital.

The \$15 million, 4,500-square-foot Dybedal Center for Biosciences Research of the **Kansas City University of Medicine and Biosciences** houses a 7,300-square-foot adult academic clinical research center. Since its opening in 2005, the Dybedal Center has hosted 10 clinical trials.

Faculty development programs

The **Missouri State-Matched Endowed Chairs and Professorships Program** is a faculty development program through the University of Missouri System that is supported through an annual \$4 million state appropriation. Professorships are created when private donations to the university are matched by \$550,000 in state appropriations. Similarly, endowed chairs are created when private donations to the university are matched by \$1.1 million in state appropriations. Each campus provides a tenured faculty line and salary for the position.

Since the program began in 1995, Missouri has established 121 state-matched endowed chairs and professorships. There are 23 professorships and 16 chairs on the Columbia campus, 17 professorships and 27 chairs on the Kansas City campus, nine professorships and two chairs on the Rolla campus, and 27 professorships on the St. Louis campus. Nineteen of the positions are in the life sciences. (Please see "Pending Proposals" and the list of projects proposed under the Governor's LCDI.)

The **Missouri Endowed Professorship Initiative** will be established as part of the LCDI. This \$20 million fund will create endowed professorships for research scientists at Missouri's public colleges and universities. The state would match private donations of \$500,000 to create 40 endowed professorships. For their part, the public institutions would commit to paying the salaries associated with these leading professionals. The funds realized from the endowment would serve as the financing to attract top scientists to our research institutions.

Encouraging Academic/Industrial Interaction

The **Research Alliance of Missouri (RAM)** is an affiliate of the Missouri Technology Corporation (MTC) established to help expand Missouri's economy through better collaboration among Missouri's research institutions. RAM was created in 2003 to foster public and private collaborations to attract research funding to Missouri and speed the translation of technologies into commercial opportunities and jobs. Since that time, the members of RAM have adopted a strategic plan, built new collaborative research initiatives among the institutions; initiated a process to streamline technology transfer from inventions in member university laboratories to commercial products; and assisted Missouri businesses in addressing technological problems through collaborative research projects. Under Governor Blunt's LCDI, the MTC and RAM would be merged into a new Missouri Discovery Alliance. The purpose of the

Discovery Alliance is to “mine” technologies out of the state’s research institutions to turn research into businesses and to assist the entrepreneur in finding the right services they need to prosper.

The **Scientific Partnership and Resource Connection** is a quarterly networking event hosted by the University of Missouri-Columbia’s Christopher S. Bond Life Sciences Center. It is designed to build relationships between scientists and the business community to facilitate technology transfer, foster entrepreneurship, and, provide career opportunities for students. Additionally, the University of Missouri-Columbia, through the leadership of Senator Christopher S. Bond, was recently designated by the United States Congress as the site for the new National Center for Soybean Biotechnology.

The UMKC Bloch School is stepping up its support of entrepreneurship through the creation of the **Institute for Entrepreneurship and Innovation**. The institute’s vision is to become the world’s leading research and education institute that fosters discovery and learning in entrepreneurship and innovation. As part of the institute, the new Enterprise Development Laboratory provides an infrastructure that expedites the transfer and commercialization of new technologies. Multidisciplinary teams of faculty, students, and experts from the community evaluate innovations and work toward the creation and management of high-growth new enterprises.

Moving Technology into the Marketplace

Commercializing university technology

Both WU and SLU have made funds available to support commercialization activities. Wash U’s Bear Cub Fund, which was created in 2002, provides small grants of \$20,000 to \$50,000 that can be used by faculty and students to move promising ideas from the drawing board to the marketplace. Between 2003 and 2005, 13 grants totaling \$488,000 were awarded. Four companies have gone on to raise \$6 million in investment capital. SLU has created a similar small proof-of-concept fund that makes grants of \$15,000 to \$20,000. Approximately \$100,000 to \$200,000 has been allocated for this effort annually.

Supporting bioscience entrepreneurs and emerging companies

The **Missouri Innovation Centers** provide a range of management and technical assistance during the early stages of development for new technology-based business ventures. Services include market research and strategies, technology assessment, business planning, financial packaging, research and development, business management, patent and licensing consulting, preliminary patent searches, and prototype development. Some centers also provide physical space with necessary support in their business incubators (see below). These Innovation Centers have a combined state budget of \$1.106 million.

The five state-supported Innovation Centers are as follows:

- Missouri Enterprise Center in Rolla
- Center for Emerging Technologies (CET) in St. Louis
- Missouri Innovation Center in Columbia
- Missouri Research Corporation in Cape Girardeau
- Joseph Newman Business and Technology Innovation Center in Joplin.

The Coalition for Plant and Life Sciences brought together WU, SLU, the Nidus Center for Scientific Enterprise, and CET to form the **BioGenerator**, a not-for-profit entity, whose mission is to accelerate the commercialization of plant and life science technologies within the St. Louis region by providing funding and management support to precompany innovations and pre-seed and seed-stage companies. The BioGenerator is designed to bridge the gap between research universities and venture capital funds investors, thereby assuring the transfer of new technologies to the marketplace. In its first year of operation, the BioGenerator evaluated 47 technologies, initiated due diligence on 30 of them, and approved investments in three companies. Several additional investments are pending board approval.

KCSOURCELINK, a program of the Institute for Entrepreneurship and Innovation at UMKC, connects a network of 140 nonprofit resource organizations that provide business-building services for small businesses in the Kansas City region. KCSOURCELINK facilitates the linking of these resource organizations to one another and to established, emerging, and start-up small businesses throughout the region, providing access to education, technical assistance, new markets, and capital.

Making Capital Available

Pre-seed and seed capital

The **New Enterprise Creation Act**, passed in 1999, has helped generate investment for new businesses starting up in Missouri. Through legislative statute, the Missouri Department of Economic Development (DED) issues a tax credit equal to 100 percent of the investment in a qualified fund to any accredited individual, corporation, partnership, or financial institution that makes a qualified investment. The Missouri Seed Capital Investment Board selected Prolog Ventures, LLC (Prolog) as the Fund Manager to manage the investments of the fund. Currently, Prolog manages 14 portfolio companies and has approximately \$100 million under management specializing in the life sciences and related information technologies.

In addition, the Coalition for Plant and Life Sciences is establishing a **\$7.5 million Pre-seed Fund**, to be managed as part of a Prolog II venture fund (see details below), to be closely affiliated with the BioGenerator described above. The fund will be used to invest in very early-stage companies, with an emphasis on newly created companies that have successfully emerged from the BioGenerator project.

Venture capital

The Missouri **Certified Capital Company Program** encourages the creation of Missouri-only venture-capital funds by offering tax credits to insurance companies that invest in these funds. Since 1997, six participating venture funds have invested more than \$95 million in 33 Missouri small businesses in a variety of industries, including biotechnology and the life sciences. These investments have attracted at least \$2.1 billion in syndicated co-investment or follow-on investment.

Additionally, in the past 5 years, more than \$565 million has been invested in locally managed venture capital funds specializing in investing in plant and life sciences in the St. Louis region. Prolog Ventures, which, as stated above, specializes in life science, health care, and related IT companies, raised its first fund in 2001 and has just closed on \$68 million for a Prolog II fund. RiverVest Partners, a local venture capital firm focused on seed, early-, and later-stage life-science investments is headquartered in St. Louis and has invested in three St. Louis companies. Triathlon Medical Ventures, based out of Cincinnati, has opened an office at the Nidus Center in St. Louis. Oakwood Medical Ventures, which invests in mid-stage companies, has raised a fourth fund. Ascension Health Ventures, investing in medical device, technology,

and service deals since 2001, has raised more than \$125 million. The St. Louis Arch Angels, established in January 2005, provide seed and early-stage capital in the range of \$250,000 to \$2.5 million. Arch currently has 49 members and has made investments in two companies totaling \$1.5 million. Lastly, a fund of funds, the Vectis Life Science Fund, has raised \$82 million to invest in venture funds both on the East and West Coasts as well as in St. Louis.

Prairie Wind Angels in Kansas City is a vehicle formed to invest in local technology and life-science start-ups. Prairie Wind Angels typically will make \$250,000 to \$500,000 investments in start-ups, but will have the capacity to make a \$5 million investment in capital-intensive life-science firms.

Mid-America Angels investor network facilitates introduction of entrepreneurs (within a 150-mile radius of Kansas City) needing funding for their businesses to potential investors through presentations and other mechanisms. The network consists of individual investors interested in financially rapidly growing, privately held companies in an early stage of development.

Providing Space for Bioscience Companies

Incubators

Currently, Missouri has incubators represented in the St. Louis region. Under Governor Blunt's LCDI, additional space will be available in St. Louis, Kansas City, Columbia, Cape Girardeau, and Springfield, more than doubling incubator resources currently available to Missouri businesses.

The **CET** in St. Louis, also a Missouri Innovation Center, is an incubator servicing primarily bioscience and medical-related start-up companies. CET operates a two-building complex totaling 92,000 square feet and contains wet and dry labs and DNA labs, among other biotechnology-related necessities. It is a public and private partnership financially supported by the University of Missouri-St. Louis and DED.

The **Nidus Center for Scientific Enterprise** in St. Louis is a nonprofit, 40,000-square-foot plant and life science incubator consisting of a mix of wet-lab, dry-lab, and office suite space. The Nidus Center serves entrepreneurial clients who are refining and preparing new technology for market. The incubator does not receive state funding. Instead, it is part of the investment Monsanto and others have made to help promote the St. Louis region as a world center in biotechnology and the plant sciences.

The mission of the **Jordan Valley Innovation Center (JVIC)** is to support advanced materials and biotechnology industries in Missouri. Focus areas include medical instruments and materials, bio-processing techniques and equipment, agribusiness research and development, and chemical and biological sensors and systems. JVIC has leased facilities to four tenants, and another three companies are corporate affiliates of JVIC. The facilities are operated by Missouri State University, and researchers at JVIC have acquired more than \$30 million in federal funding since 2003. The State of Missouri has proposed investing \$7 million as part of a \$14 million investment in construction of a new Bio-technology Research and Manufacturing Facility to complement the Advanced Devices Research and Development Laboratory Building currently under construction.

Soon the University of Missouri-Columbia will open the **Mid-Missouri Business Incubator**. The 52,000-square-foot facility will provide laboratories and office space for 10 to 14 companies utilizing research from the campus. Start-up companies will be supported in their earliest stages by Centennial Investors, a funding entity created under the aegis of the Columbia Chamber of Commerce. Governor Blunt has earmarked \$2 million from the LCDI to build the incubator. Combined with nearly \$1 million

from mid-Missouri businesses and \$5.6 million from federal and university sources, construction costs will be met without any borrowing.

Facilities financing

The State of Missouri is providing tax incentives authorized under the Missouri Quality Jobs Act to assist companies with new ventures. For example, Pfizer is building a \$200 million research facility in St. Louis.

Bioscience research parks

Missouri Research Park is owned and managed by the University of Missouri System. Officially opened in 1985, the park now has more than 130 acres developed for high-tech and research facilities and houses 17 tenant companies that employ more than 2,000 people. The park is located along the Highway 40/61 corridor in St. Charles County.

The **University of Missouri Technology Park at Fort Leonard Wood** is located on an active Army post. The 62-acre park was developed by the University of Missouri and DED, with the backing of Fort Leonard Wood. The Tech Park collaborates with the University of Missouri on technology transfer and is focused on biochemical, homeland security, and geographic information system projects.

The **Center of Research, Technology, and Entrepreneurial Exchange (CORTEX)** in mid-town St. Louis will enable collaboration between all the area research institutions. The institutions involved have collectively committed \$29 million over 5 years, and the State of Missouri has awarded \$12 million in tax credits (50 percent contribution credits over 5 years) for land acquisition. CORTEX is intended to house companies graduating from the incubator and companies attracted to the region because of the proximity to the research institutions. To date, CORTEX has purchased several properties and, in December 2005, completed "CORTEX I," a 170,000-square-foot office/wet-lab facility. In 2006, the St. Louis Board of Aldermen approved CORTEX's 175-acre redevelopment plan. In January 2006, Stereotaxis graduated from CET's incubation program and located in the new facility.

The Midwest Research Institute (MRI), headquartered in Kansas City, recently established a 160-acre research farm near Butler. The new facility serves as an extension of MRI's field station in Grandview and supports the expansion in the research of new technologies in crops, farming practices, agriculture products, and the growing interest in improved nutrition and natural products. MRI is a key partner in the development of the proposed incubator in Kansas City under Governor Blunt's LCDI.

Under development

Discovery Ridge is a new research park that is being planned to be located at the University of Missouri College of Agriculture, Food and Natural Resources' South Farm. Discovery Ridge will focus on leveraging the University of Missouri's resources in the life sciences, in the areas of agriculture, health, veterinary medicine, bioengineering, nutrition, biology, and environmental services.

Also under development in the St. Louis region is the "North Eight" bioscience research park. Plans for the 8-acre development, adjacent to the Donald Danforth Plant Science Center, the Nidus Center, and Monsanto, include a three-phase development of multitenant buildings designed to support businesses graduating from incubators. A letter of intent for the purchase of the land has been signed with a national developer of similar facilities that has successfully completed like projects on the East and West Coasts.

Addressing Talent Needs

Recruiting management talent

Both the Nidus Center and the CET, both in St. Louis, have CEO-in-residence programs.

Specialized postsecondary programs

The **St. Louis Community College-Florissant Valley** bioscience initiative is a program that was initiated to allow students to receive a specialization in biotechnology at the community-college level. The associate's degree in applied science in biotechnology is providing a larger pool of qualified laboratory technicians and research assistants for Missouri companies and research universities. The community college has also cooperated with the University of Missouri-Columbia and Southeast Missouri State University to offer combined courses that lead to bachelor of science degrees in biotechnology.

Webster University in St. Louis responds to the educational needs of the BioBelt region by offering a new emphasis area in biotechnology for undergraduate biology majors, a new and first-of-its-kind master's degree in patent agency, and a new master's degree in professional science management and leadership. Webster's 4-year bachelor of science degree in biology, with an emphasis in biotechnology, nurtures undergraduate students' interests and experiences in scientific research. The master of arts degree in patent agency engages individuals with engineering and science degrees with the growing area of intellectual property. The master of arts degree in professional science management and leadership prepares scientists and engineers who are already working in the industry to become effective managers and leaders.

The Kansas City region was recently awarded a \$15 million grant from the U.S. Department of Labor for career training in high-growth industries. The grant, **OneKC WIRED**—Workforce Innovation in Regional Economic Development—will focus on meeting the needs of the health care, biotechnology, and advanced manufacturing industries. WIRED funds will be used to support

- A systemic science reform initiative aimed at elementary schools;
- Biotechnology workforce development initiatives across the educational continuum, including elementary, secondary, and continuing adult education;
- Student internships and teacher externships in biotechnology, health care, and manufacturing; and
- Partnerships between biotechnology, health care, and manufacturing.

K-12 outreach programs

Kansas City Science Initiative (KCSI) works to implement a National Science Education Standards–based science learning and teaching program that provides two key components—ongoing professional development for teachers and an inquiry-based, hands-on curriculum—that will allow students to learn science the way scientists do, by doing it, rather than just reading about it. Bayer Corporation has awarded two grants through its Making Science Make Sense® program that will enable KCSI to expand into all 46 Kansas City Missouri School District elementary schools. KCALS will house the reform program's headquarters and help galvanize support from other local corporations, foundations, and individuals.

Pending Proposals

The Governor's proposed LCDI would fund the following bioscience-related capital projects:

- CORTEX Accelerator Facility at Harris-Stowe State University: Total cost, \$40 million; proposed FY 2007 allocation, \$6.5 million
- Life Science Incubator at Missouri State University: Total cost, \$14 million; proposed FY 2007 allocation, \$7 million
- Center for Plant Biologics at Northwest Missouri State University: Total cost, \$15.65 million; proposed FY 2007 allocation, \$11.65 million
- Life Science Incubator at Southeast Missouri State University: Total cost, \$18.6 million; proposed FY 2007 allocation, \$5.0 million
- Health Sciences Research Center at University of Missouri-Columbia: Total cost, \$150 million; proposed FY 2007 allocation, \$87.5 million
- Life Science Incubator at University of Missouri-Columbia: Total cost, \$8.7 million; proposed FY 2007 allocation \$2.0 million
- Plant Science Research Center at University of Missouri-Columbia: Total cost, \$8.7 million; proposed FY 2007 allocation, \$2.0 million
- Transgenic Greenhouse at University of Missouri-Delta Center: Total cost, \$2.0 million; proposed FY 2007 allocation, \$2.0 million
- Life Science Incubator at UMKC: Total cost, \$15 million; proposed FY 2007 appropriation, \$12 million
- Health Sciences Center at UMKC: Total cost, \$12.9 million; proposed FY 2007 appropriation, \$3.0 million
- CET II at University of Missouri-St. Louis: Total cost, \$45 million; proposed FY 2007 appropriation, \$6.5 million.

The Lewis and Clark Discovery Fund would also allocate \$30 million to an endowment fund to be used by the Missouri Discovery Alliance. The funds would generate \$1.5 million annually and would be used to attract and retain life science companies and commercialize existing research being conducted in the state. Another \$20 million would be used to create 40 endowed professorships for Missouri research scientists.

The initiative also proposes to create a \$10 million annual tax credit program to incent private investment into qualified Missouri technology companies approved and administered by the Discovery Alliance and the Missouri DED. The first investors to invest \$500,000 in a qualified Missouri technology company may receive a 30 percent or 40 percent tax credit if the company is located in a rural or distressed area. The program also allows a tax credit guarantee for investments of more than \$500,000 and up to \$5 million on the net loss of his/her investment within 5 years of investing. This tax credit is also at 30 percent or 40 percent if the company is located in a rural or distressed area. The legislation is currently being reviewed in the Missouri General Assembly.

Contacts

Mike Mills
Deputy Director
Missouri Department of Economic Development
P.O. Box 1167
Jefferson City, MO 65102
(573) 751-3946
mike.mills@ded.mo.gov

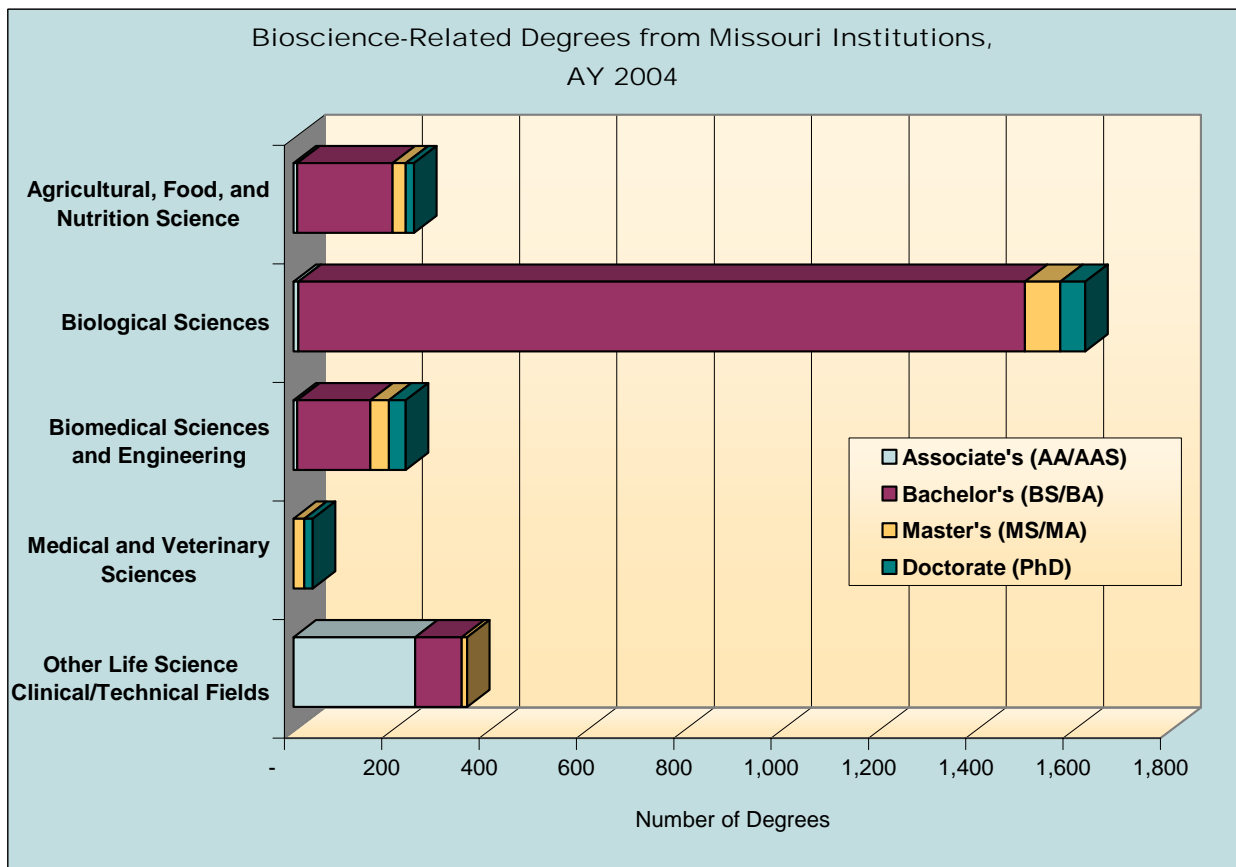
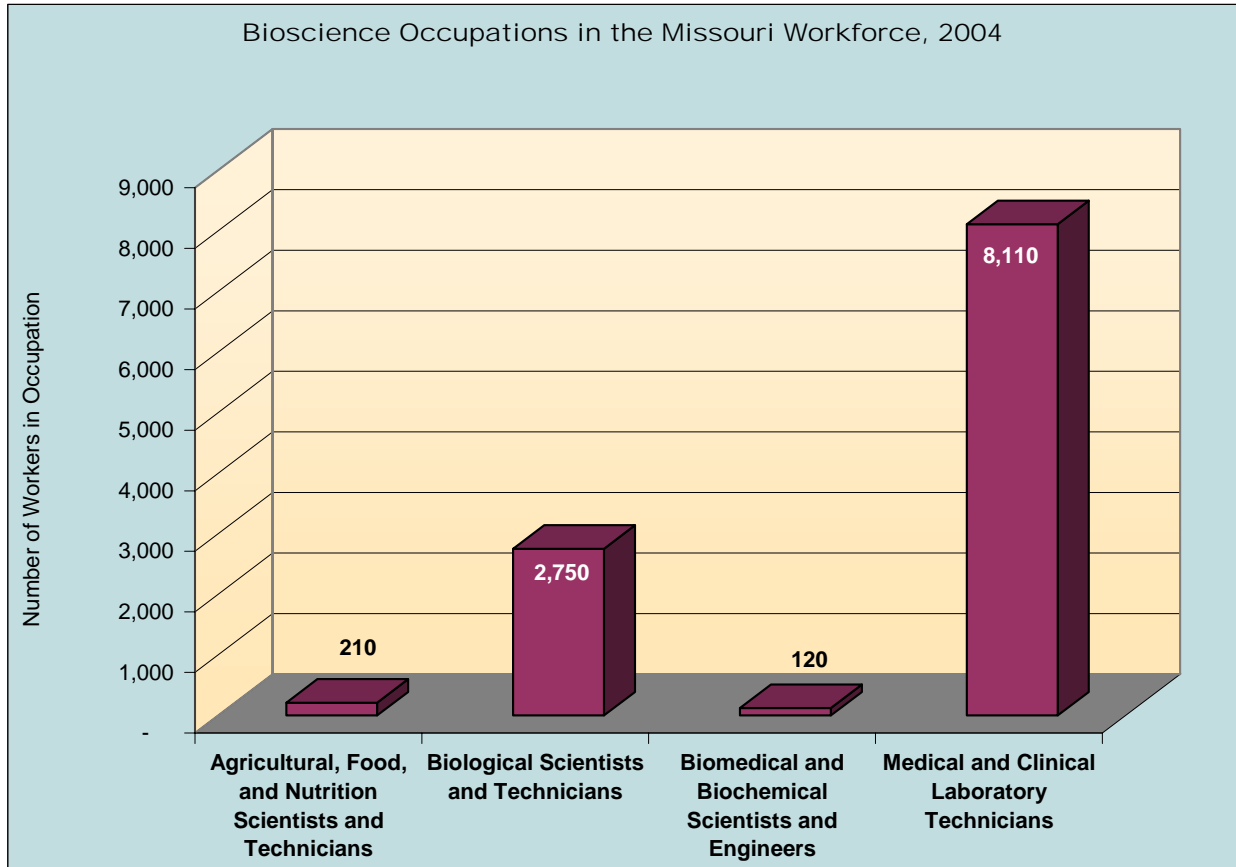
The Missouri Biotechnology Association is a nonprofit trade association dedicated to development and growth of the Missouri biotechnology and biomedical industry. By supporting basic research in the life sciences, development of a highly educated work force, and providing a friendly environment for attracting and founding new business, the Missouri Biotechnology Association seeks to make a significant impact on Missouri economic development.

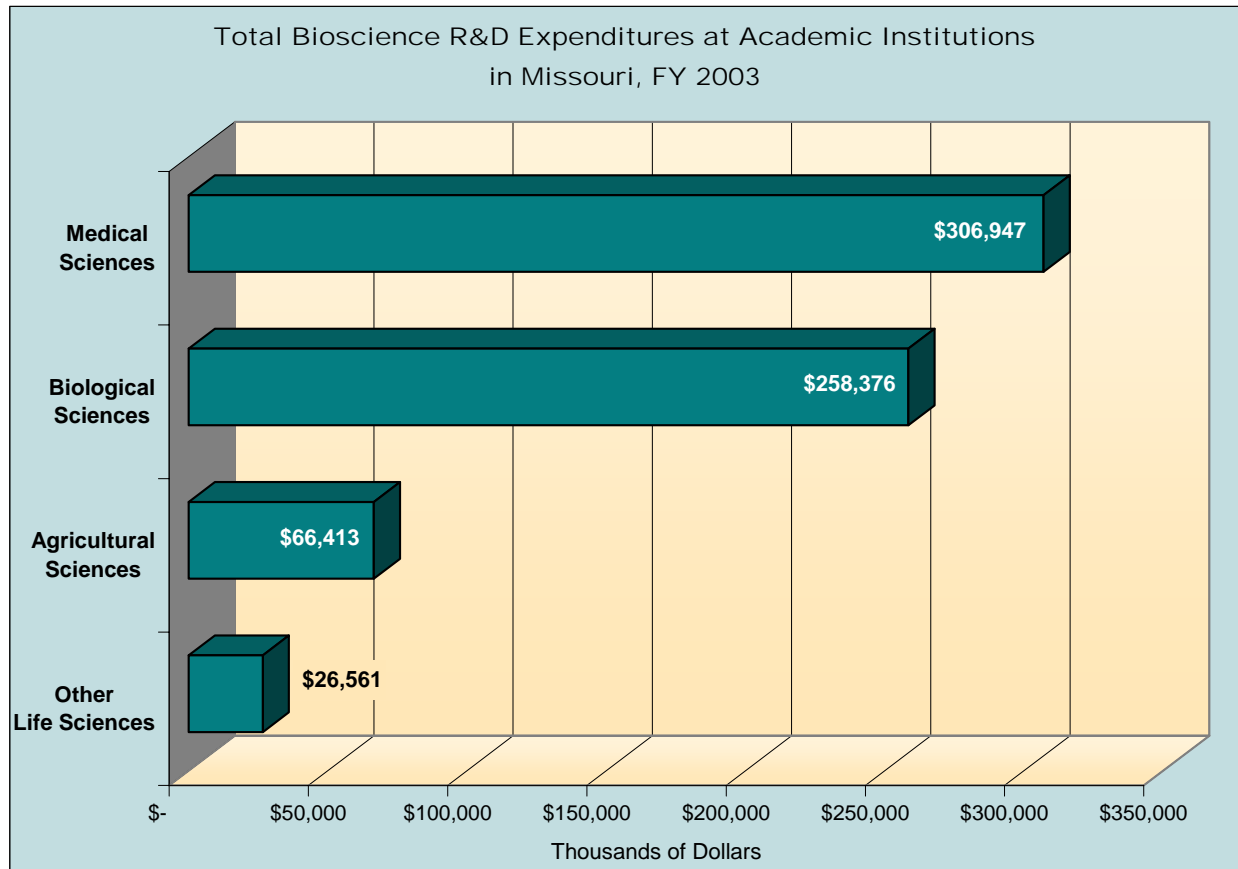
Mr. Kelly Gillespie
Executive Director
Missouri Biotechnology Association
428 East Capitol, P.O. Box 148
Jefferson City, MO 65102-0148
(573) 761-7600
gillespie@mobio.org

| Industry Subsector | Missouri | United States |
|--|-----------|---------------|
| Agricultural Feedstock & Chemicals | | |
| Establishments 2004 | 96 | 2,111 |
| 2001-2004 Establishment % Change | 15.7% | 0.4% |
| Employment 2004 | 3,853 | 104,893 |
| 2001-2004 Employment % Change | -7.6% | -6.9% |
| Share of U.S. Employment | 3.7% | 100.0% |
| Location Quotient | 1.81 | n.a. |
| Average Annual Wage 2004 | \$57,133 | \$63,383 |
| Direct-Effect Employment Multiplier | 6.37 | 10.91 |
| Total Employment Impact | 24,556 | 1,212,094 |
| Drugs & Pharmaceuticals | | |
| Establishments 2004 | 82 | 2,589 |
| 2001-2004 Establishment % Change | -2.4% | -0.6% |
| Employment 2004 | 5,240 | 313,207 |
| 2001-2004 Employment % Change | -0.4% | 2.7% |
| Share of U.S. Employment | 1.7% | 100.0% |
| Location Quotient | 0.83 | n.a. |
| Average Annual Wage 2004 | \$63,506 | \$79,303 |
| Direct-Effect Employment Multiplier | 5.62 | 9.51 |
| Total Employment Impact | 29,462 | 2,731,321 |
| Medical Devices & Equipment | | |
| Establishments 2004 | 261 | 15,190 |
| 2001-2004 Establishment % Change | -8.7% | 0.2% |
| Employment 2004 | 4,717 | 411,460 |
| 2001-2004 Employment % Change | -1.2% | -3.6% |
| Share of U.S. Employment | 1.1% | 100.0% |
| Location Quotient | 0.57 | n.a. |
| Average Annual Wage 2004 | \$40,364 | \$56,449 |
| Direct-Effect Employment Multiplier | 2.70 | 4.56 |
| Total Employment Impact | 12,714 | 1,817,705 |
| Research, Testing, & Medical Laboratories | | |
| Establishments 2004 | 342 | 20,565 |
| 2001-2004 Establishment % Change | 15.7% | 19.4% |
| Employment 2004 | 9,676 | 413,550 |
| 2001-2004 Employment % Change | 38.9% | 8.2% |
| Share of U.S. Employment | 2.3% | 100.0% |
| Location Quotient | 1.15 | n.a. |
| Average Annual Wage 2004 | \$78,858 | \$65,414 |
| Direct-Effect Employment Multiplier | 2.58 | 3.15 |
| Total Employment Impact | 24,918 | 1,272,936 |
| TOTAL PRIVATE SECTOR | | |
| Establishments 2004 | 158,354 | 8,156,137 |
| 2001-2004 Establishment % Change | 3.0% | 4.8% |
| Employment 2004 | 2,214,362 | 109,249,195 |
| 2001-2004 Employment % Change | -1.3% | -0.7% |
| Share of U.S. Employment | 2.0% | 100.0% |
| Location Quotient | n.a. | n.a. |
| Average Annual Wage 2004 | \$35,035 | \$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.





| | Missouri | United States | Rank |
|---|-----------|---------------|------|
| University R&D Expenditures, FY 2003 | | | |
| Total (\$ thousands) | \$806,907 | \$40,104,621 | 15 |
| Life Science R&D (\$ thousands) | \$659,886 | \$24,062,088 | 11 |
| Percent of Total R&D | 81.8% | 60.0% | |
| Life Sciences Per Capita | \$115.68 | \$82.74 | |
| Change in Life Sciences FY 1999–2003 | 53.3% | 52.7% | |
| NIH Support to Institutions, FY 2004 | | | |
| Total (\$ thousands) | \$496,674 | \$22,556,459 | 12 |
| Per Capita Expenditures | \$87.07 | \$77.56 | |
| Change in Expenditures FY 2000–2004 | 35.4% | 53.2% | |
| Higher Education Degrees in Bioscience Fields, AY 2004 | 2,503 | 111,329 | 13 |
| Bioscience Occupations in the Workforce, 2004 | 11,190 | 616,140 | 19 |