THE UNIVERSITY OF MISSOURI-COLUMBIA SUMMARY OF GRANTS AND CONTRACTS

SINCE 1839, SCIENCE AND EDUCATION IN THE PUBLIC INTEREST

# Research Yields Dividends Despite Tough Fiscal Outlook

# MU Investigators Again Generate Record Levels of Research Support

he previous twelve months have ushered in a variety of fiscal changes and challenges that no one at the University of Missouri-Columbia could have anticipated. How we respond to these will likely affect the University and its research enterprise for years to come.

Fiscal year 2002 began in recession, a national economic downturn exacerbated by the terrible events of September 11 and uncertainties related to our nation's subsequent war on international terrorism. Private sector accounting scandals, soft corporate earnings, increasing joblessness and the threat of further armed conflict have stalled what many

FY 2002 Annual Report

Fiscal Year in
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#### www.research.missouri.edu

Published by the Office of Research, University of Missouri-Columbia 205 Jesse Hall, Columbia, MO 65211 (573) 882-9500 • Fax: (573) 884-8371 Institutional Research: Sam Peterson (petersons@missouri.edu). Editing and design: Charles E. Reineke. Photos courtesy of MU Publications & Alumni Communications. d what many hoped would be a sustained period of eco-

nomic recovery.

Like many states around the country, Missouri has struggled to cope with this new economic reality. During the previous year, state revenue from capital gains and other taxes fell precipitously, thus creating an atmosphere of fiscal crisis in Jefferson City. In May 2002, just two months before the end of the fiscal year, Governor Holden announced the state did not

have sufficient revenue on hand to meet its FY 2002 obligations. Faced with a \$230 million dollar shortfall — and the prospect of further deficits in the future — state lawmakers turned to withholdings and budget cutbacks to meet their constitutional requirement of a balanced budget.

Perhaps no state-supported institution was so hard hit by this turn of events as the University of Missouri-Columbia. During the previous fiscal year, for example, MU and MU Health Care suffered \$42 million in total withholdings of previously approved state appropriations. In addition, the Columbia campus was forced to begin fiscal year 2003 with a 10 percent rate reduction to its core state budget — a percentage which translates to \$23 million — plus the state's standard 3 percent annual withholding.

More bad news may come. According to Chancellor Richard Wallace, the state's economic forecast continues to be dismal, and additional withholdings are possible during the current fiscal year. The Coordinating Board for Higher Education — the nine gubernatorial appointees with oversight responsibility for the state system of higher education — has recommended a flat state appropriation for fiscal year 2004.

As a result, MU has been forced to cut costs in a variety of ways: Student fees have been increased 8.4 percent and a \$9 per credit hour surcharge was assessed in the fall; scheduled faculty and staff salary increases were canceled; and departmental operating budgets have been reduced. An offer of early retirement has meant the loss of many of our most experienced faculty. Some staff positions have been cut through layoffs. More jobs may be lost in the coming year.

THESE ARE INDEED difficult times. But there is also reason for optimism. "I believe we have the strength and the integrity as a campus community to weather our current challenges and to emerge as a stronger, more focused institution," Chancellor Wallace wrote recently. MU's research enterprise is poised to play a lead role in this reemergence.

MU's sponsored project's enterprise has, in fact, surged forward, growing at a rate that surpasses those of nearly all of our national peer institutions. In FY 2002, expenditures by MU scientists and scholars topped \$141 million, the largest

#### **Externally Sponsored Grants and Contracts** FY 2002 Instruction and Research Public Service Totals Proposals Submitted 1,449 463 1,912 1,780 830 Active Funded Projects 2,610 \$45,252,882 \$171,371,573 Newly Awarded Projects \$126,118,691 \$94,864,346 Expenditures \$46,906,286 \$141,770,632

number ever recorded by the University. Federal money spent on sponsored projects increased most dramatically, up 16 percent to \$114.4 million from \$98.6 million last year. Federal awards, indicative of dollars to be expended in future investigations, have also increased dramatically (see box below).

Ironically, this boost in funding is due in large part to the foresight of state lawmakers who, in better economic times, wisely chose to provide funding

Want more data? Visit the 'query- building' tool in the publications section of our web site: www.research.missouri.edu

for MU's mission enhancement planning — planning intended to move the University closer to its goal of becoming a truly world-class research institution. "When the state invested in the University several years ago, we used the extra funds to bring in nationally known researchers and build the infrastructure to support our life science and research plans," says Robert Hall, interim vice provost for research. "This year's external funding increase demonstrates how well that investment has performed for the state and its citizens."

Currently there are dozens of MU projects and investigations that have been selected for fiscal support from agencies both public and private. Among those that are particularly noteworthy: ■ A \$2.1 million grant from the National Institute of Nursing Research for a study on the effectiveness of smoking cessation intervention during pregnancy. Linda Bullock, an assistant professor in the Sinclair School of Nursing, is directing the study.

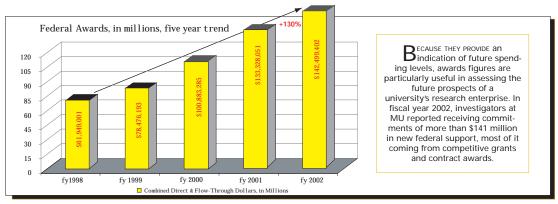
■ A \$3.4 million grant from the National Library of Medicine for biomedical and health infomatics research training. The grant will provide the latest information to state health providers, thus enabling patients to benefit from the latest in treatment methods. Joseph Hales, an MU

assistant professor and director of the health informatics program, is directing the grant.

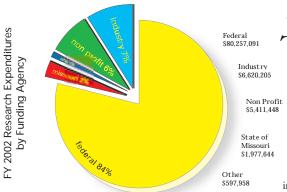
■ A \$2.2 million grant from the National Science Foundation to continue study of the maize

genome. The goal is to use genomic mapping to develop disease- and pest-resistant corn, thus increasing yields and feeding more people both in the United States and abroad. Ed Coe, Agricultural Research Service scientist, MU professor of agronomy, and director of the Missouri Maize Project, is principal investigator for the project.

These and other projects show that even in tough fiscal times, investing in MU research pays dividends: "The investment from mission enhancement has allowed the University to recruit first-class research faculty and build first-class facilities," says Provost Brady Deaton. "Only with this type of commitment can we develop technologies to save lives and improve living conditions around the world."



# Sponsored Research



# MU Researchers Continue to Attract High Levels of Support

OTAL SPONSORED RESEARCH expenditures at the University of Missouri-Columbia topped \$90 million for the first time in FY 2002, with scientists and scholars working in the areas of medicine, biology and agriculture accounting for 70 percent of spending.

Expenditures generated from federal sources alone most as a result of competitive grants — totaled more than \$80 million in FY 2002, an increase of 25 percent above last year's all-time high.

These gains are in keeping with a trend of dramatic increases in sponsored programs awards and expenditures during the past five years. This upsurge in support is all the more impressive when viewed in the context of our peer institutions. Over the past two fiscal years, for example, MU has ranked within the top

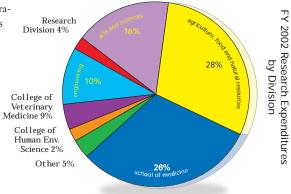
quartile of the 34 public members of the Association of American Universities in terms

of its rate of research expenditure growth.

The key to building and sustaining this momentum involves encouraging what administrators describe as a "continuing culture change" on the Columbia campus. It's a change that began just over six years ago,

as Jack O. Burns, vice provost for research from 1996 to 2001, challenged MU scientists and scholars to aggressively pursue extramural funding. Investigators from virtually all academic areas have since embraced the idea of seeking extramural support.

In FY 2002, for example, investigators at MU garnered more than \$94.8 million in total sponsorship, up from just over \$81.6 million during the previous fiscal year. The College of Agriculture, Food and Natural Resources led all MU divisions with \$25.7 million in research expenditures, followed by the School of Medicine with \$24.7 million, and the College of Arts and Sciences with \$14.8 million. 🗖



# **Expenditures and Awards**

PONSORSHIP BY the federal government, Missouri's state government and various Sponsorship By the Jeaeral government, trassource some State of the University's research corporate and nonprofit agencies is crucial to the health of the University's research enterprise. In this report you will encounter charts and graphs that reflect the extent of these agencies' involvement in MU research. Most are expressed in terms of expenditures, which represent resources spent by a researcher during a given fiscal year. Others are expressed as awards, which show the total amount of funds available for use, money often expended over a period of years.

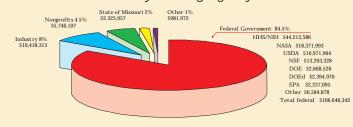
| Divisions   | fy 1998      | fy 1999      | fy 2000      | fy 2001      | fy 2002      |
|---|--------------|--------------|--------------|--------------|--------------|
| College of Agriculture, Food and<br>Natural Resources | \$15,564,866 | \$19,700,082 | \$23,077,327 | \$22,399,175 | \$25,708,633 |
| School of Medicine                                    | \$17,301,497 | \$19,498,039 | \$20,745,297 | \$23,239,999 | \$24,755,825 |
| College of Arts & Science                             | \$8,774,101  | \$10,255,355 | \$12,411,490 | \$11,840,727 | \$14,813,352 |
| College of Engineering                                | \$4,241,247  | \$6,388,906  | \$8,476,383  | \$9,732,166  | \$9,497,605  |
| College of Veterinary Medicine                        | \$3,931,851  | \$5,747,790  | \$5,030,682  | \$7,247,528  | \$8,864,168  |
| Research Division                                     | \$4,545,301  | \$4,115,937  | \$4,869,308  | \$3,558,552  | \$4,142,611  |
| College of Human Environ. Sciences                    | \$970,114    | \$1,409,540  | \$1,154,854  | \$1,392,658  | \$2,223,976  |
| Sinclair School of Nursing                            | \$353,996    | \$420,998    | \$434,429    | \$494,530    | \$1,661,546  |
| College of Education                                  | \$381,833    | \$643,764    | \$737,090    | \$646,933    | \$1,039,213  |
| School of Health Professions                          | \$43,351     | \$150,981    | \$188,808    | \$321,030    | \$932,121    |
| School of Journalism                                  | \$510,612    | \$897,479    | \$527,928    | \$448,479    | \$406,682    |
| Graduate School                                       | \$1,205      | \$15,382     | \$255,187    | \$208,931    | \$355,287    |
| Other   | \$16,300     | \$418,312    | \$189,315    | \$122,184    | \$463,327    |
| Total   | \$56,636,274 | \$69 662 565 | \$78 098 098 | \$81,652,892 | \$94 864 346 |

# Mission Enhancement Fuels Funding Boost For University's Sponsored Programs

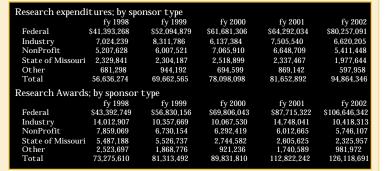
This report has in the past detailed the positive effect of state support for the University's mission enhancement plan — a strategy designed in part to boost MU's prominence in national and international research circles by attracting outstanding scientists and scholars to MU.

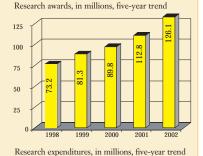
While the current budget situation has forced the University to put the latter phases of its enhancement biring on hold, administrators say sponsored programs have benefitted greatly from those already on board. "I think we're still on the positive side of things," says Robert Hall, interim vice provost for research. "The reason is that mission enhancement has enabled us to entice new and very well qualified faculty to our campus, people who have worked very hard to get their research programs up and running. We can see the result in continually increasing external support. As long as we can retain those investigators, we are going to see our research enterprise continue to post numbers that are extremely respectable."

# Research Awards By Funding Agency and Amount



Total fy 2002 Sponsored Research Awards \$126,118,691





100 80 60 40 40 20

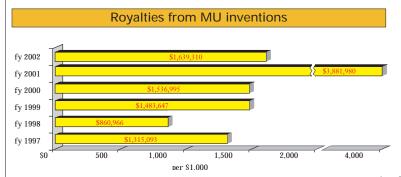
1998

1999

2001

2000

# TECHNOLOGY DEVELOPMENT



# The Business of Bringing Dis

HE RESEARCH LABORATORY is an exciting place complex scientific questions. Often this work make their way to the marketplace where the The Office of Technology & Special Projects work and commercialization continuum. First, OTSP reciev staff and student inventors. Next OTSP evaluates thes invention can be patented and if it has commercial pot criteria, OTSP works with the inventor(s) and an outsi commercialize the invention, usually by licensing the r on the company's sales. When the technology is suffici

prise, OTSP will also assist in establishing a start-up company.

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Toxic

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fy 2002 fy 2001 fy 2000 fy 1999 fy 1998 fy 1997

Patent applications filed

The past year saw a record number of invention disclosures and patent applications filed, and the technology and special projects office is currently developing an incentive plan that will stimulate additional disclosures by rewarding faculty for participating in the patent process. With a more substantial patent portfolio, licenses and licensing income are expected to increase substantially in future years.

# OTSP is also working to establish a "technology business incubator" that will nurture start-up companies during their early, most vulnerable, years. In addition, we will establish a fund to develop new technologies to the point at which they become attractive to licensees or investors eager to provide capital for a start-up company built around the technology. In short, MU is taking a more aggressive and entrepreneurial approach to commercializing the discoveries of its researchers. And by contributing in this way to the public good, the inventors and the

Patent applications pending fy 2002 fy 2001 fy 2000 fy 1999 fy 1998

> 20 30 40 50 60

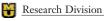
Patents issued fy 2002 fy 2001 fy 2000 fy 1999 fy 1998 fy 1997

# Life Sciences Structure Takes Shape

University will benefit as well.  $\square$ 

THEN COMPLETED in the spring of 2004, MU's 124,000 square foot Life Sciences Center will provide state-of-theart research and instructional facilities for MU scientists working to enhance human health, boost food production, and improve the global environment. Interdisciplinary teams of scientists will use the center for research, teaching and outreach, thus laying the groundwork for next-generation breakthroughs in molecular and cell biology, genetics and bioinformatics. In addition, collaborative interactions among research groups located in the center, the campus community and other regional centers of research excellence will stimulate interdisciplinary discoveries and provide new opportunities for extramural funding.





fy 1997

# inging Discoveries To Market

is an exciting place, a place where creative minds tackle . Often this work results in important discoveries that etplace where they impact human lives. cial Projects works at the interface of this discovery irst, OTSP recieves invention disclosures from faculty, TSP evaluates these to determine whether the potential s commercial potential. When disclosures meet those or(s) and an outside counsel to obtain a patent and to by licensing the rights to it in exchange for royalties :hnology is sufficiently robust to sustain a new enterart-up company.

# A Promising Path to a Less Toxic Future

A genetically-modified bacterium developed by MU scientists may offer a new approach for federal agencies and private-sector companies struggling to clean up the nearly 40 million tons of radioactive soil and debris that litter the American landscape. Biochemistry professors Judy Wall and David Emerich say Desulfovibrio desulfuricans, one of two bacteria that show promise,

sustains itself by "pushing" electrons

onto other compounds. Understanding this process could ultimately allow scientists to reduce the toxicity levels of some of the planet's most dangerous refuse. The project was one of five selected nationally to receive more than \$3 million from the DOE's new "Genomes to Life" program.



# This Little Pig Could Save Your Life

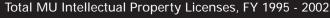
ORE THAN 6,000 Americans died waiting for an organ transplant last year, and more than 78,000 are waiting today. Xenotransplantation the transplanting of an organ from one species to another — offers a potential solution to the shortage. With the successful birth of a special litter of pigs at the University of Missouri-Columbia, researchers are one step closer to making xenotransplants a

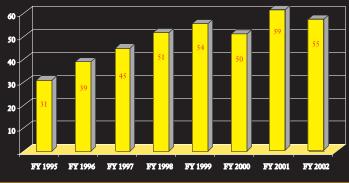
"They're transgenic, which means they have genetic material from another species," says Randy Prather, the MU professor of animal science whose pioneering work in nuclear transfer cloning made these particular pigs possible. Prather's pigs look just like other pigs, but with a unique characteristic: Their hooves and snouts are bright yellow. "These animals prove that we can make genetic modifications to express desired traits," says Prather.

because it means it's possible to change the

"For xenotransplantation, this is a large step A nose for advances in genetics genetic makeup of the cells to prevent the body's rejection of transplanted organs." In addition to organ transplants, genetic modifications could one day benefit university and private-sector researchers working toward achieving biomedicine and agricultural advancements, he adds.

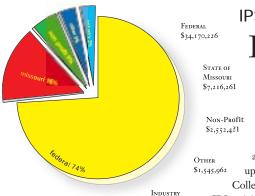






# Instruction &

# **PUBLIC SERVICE**



FY 2002 IPS Totals by agency (above) and division (right)

# IPS Funding Remains Strong in FY 2002

INSTRUCTION AND PUBLIC SERVICE (IPS) activities, conducted in concert with scholarly and scientific research, comprise an integral part of the MU mission. "Research in and of itself is a laudable thing, but if investigators don't use their knowledge to make things better for the planet and its people then they have left much undone," says Robert Hall, interim vice provost for research.

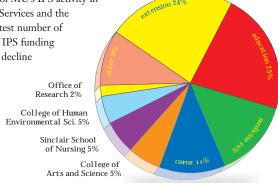
In FY 2002, total IPS expenditures at the University topped \$46 million, only slightly less than last year's all-time high. Award totals also declined, but remained at levels consistent with the strong upward trend of the previous five years. University Extension and the College of Education each accounted for close to 50 percent of sponsored IPS activities, with programs in agriculture and medicine combining for another 25 percent of expenditure totals. Among other areas showing robust growth were

the School of Health Professions, which more than tripled its expenditure total during the previous fiscal year, and the School of Journalism, which

improved on its historic high from last year. As in previous

years, the federal government remained the largest sponsor of MU's IPS activity in FY 2002, with the U.S. Department of Health and Human Services and the Department of Education combining to contribute the greatest number of federal dollars. State government was also a major source of IPS funding in FY 2002, weighing in at 15 percent of total support. The decline

in award totals (see box at right) can be attributed to a reduction in future commitments from many of these same federal and state agencies - a decrease due, in turn, to a softening economy and a shift in government funding priorities. Federal awards during FY 2002 fell 21 percent to \$35.8 million while awards originating from the State of Missouri declined 17 percent to \$6.9 million.





# Choosing to Make a Difference

NEWER TALENTED young people are pursuing careers as public servants, a situation with potentially dire consequences for our democracy, say scholars at MU's Truman School of Public Affairs. "There has been a long-term trend away from interest in public service because people believe they'll have less fulfilling careers ..." according to Bart Wechsler, director of the Truman School. "In the past 30 years, there also has been a steady stream of public service bashing that has influenced career choices." MU, along with some 350 other institutions, recently joined a national campaign designed to alter such attitudes. That campaign, "A Call to Serve: Leaders in Education Allied for Public Service," hopes to rekindle a spirit of public mindedness by sponsoring events on federal careers, highlighting successful federally-employed alumni, and encouraging public figures to appear on campus. ublic service is meaningful work that helps individual people." Wechsler says. "It is a career

for people who want to make a difference. It appeals to different motives than just making money.

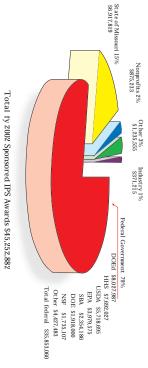
| Instruction & Public Serv.<br>Expenditures By Division    |  |   |  |   |  |  |  |
|---|--|---|--|---|--|--|--|
| Coll ege of Business<br>Student Affairs<br>Other<br>TOTAL | College of Veterinary Medicine School of Journal ism School of Law | Graduate School School of Health Professions Office of the Provost College of Engineering | Sinclair School of Nursing College of Human Environ. Sci. College of Arts & Science Office of Research | College of Education University Extension School of Medicine College of Agriculture, Food and Natural Resources |  |  |  |
| 1,364,183<br>94,041<br>0<br>38,738,630                    | 341,418<br>112,754<br>108,900                                      | 634,083<br>87,852<br>724,218<br>603,596   | 1,610,803<br>1,917,722<br>2,417,366<br>649,181   | FY 1998<br>9,225,449<br>6,625,760<br>5,942,224<br>6,279,080   |  |  |  |
| 1,488,532<br>135,886<br>124,176<br>39,658,560             | 415,269<br>101,082<br>34,109                                       | 971,457<br>199,731<br>713,988<br>838,144  | 1,939,666<br>1,994,767<br>2,712,316<br>448,676   | FY 1999<br>10,014,316<br>6,920,903<br>5,729,159<br>4,876,383  |  |  |  |
| 875,658<br>161,124<br>75,675<br>40,580,119                | 235,748<br>291,459<br>73,786                                       | 680,182<br>313,886<br>922,322<br>647,171  | 2,378,638<br>1,817,681<br>2,144,178<br>586,203   | FY 2000<br>11,168,476<br>5,997,721<br>5,666,927   |  |  |  |
| 117,188<br>503,429<br>224,645<br>47,396,113               | 739,569<br>358,325<br>216,782                                      | 807,219<br>209,176<br>818,328<br>806,205  | 2,967,157<br>2,312,026<br>2,695,248<br>919,230   | FY 2001<br>10,560,061<br>10,973,395<br>6,599,422<br>5,568,708   |  |  |  |
| 1.970<br>0<br>354,317<br>46,906,286                       | 387,605<br>368,428<br>191,933                                      | 1,021,380<br>799,162<br>744,948<br>431,864  | 2,302,891<br>2,174,711<br>2,123,255<br>1,170,864   | FY 2002<br>11,763,029<br>11,573,780<br>6,450,993  |  |  |  |

# Despite Retreat from Record Highs, IPS Totals Show Continued Vigor

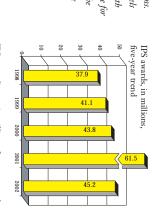
A FIER CHALKING UP record-breaking A lincreases in FY 2001, award and expenditure totals reported by investigators working in instruction and public service showed declines in FY 2002. The outlook for continued extramural support for IPS activities remains positive, bowever, with investigators in the College of Education, University

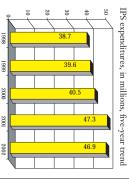
Extension, and the School of Health Professions leading the way in recording significant gains. Several individual researchers working within these divisions have attracted noteworthy levels of support, among them Marybeth Brown, the School of Health Professions' first HealthSoluth Professor of Physical Therapy, whose research findings have confirmed the benefits of exercise for the elderly, and Barhara Roys, professor of middle and secondary education and director of the Show-Me Project, whose work is geared toward implementation of a standards-based middle grades mathematics curriculum for our nation's schools.

# IPS Awards By Funding Agency and Amount







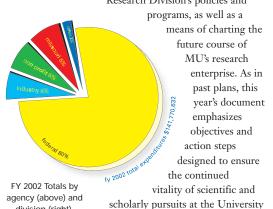


# MU RESEARCH 2002 AND BEYOND.

# MU Research: Exploring New Frontiers of Research and Scholarship for Missouri and the Nation

University Extension 8% \$11,927,115

OALS SET IN THE 2002-03 Master Plan for Research and Technology Development serve both as benchmarks for determining the effectiveness of the Research Division's policies and



of Missouri-Columbia.

our communications as efficient and service-minded as possible. These efforts include development of training and certification programs by the Office of Sponsored Program Administration and the implementation of the PeopleSoft grants module.

# Goal 3: FACILITATE SPONSORED PROJECTS

In fiscal year 2001, the Office of Sponsored Program Administration continued to reduce mean proposal review time and mean award implementation time, while again receiving favorable marks on a nationwide benchmarking study. Sponsored programs also implemented an electronic approval process for grant data forms. Action steps for fiscal year 2003 will include development of electronic feedback tools and preparation for more widespread e-submission processes for grant proposals.

## Goal 4: RESEARCH COMPLIANCE

College of Education 9%

As the national compliance environment continues to evolve, MU's institutional

College of Arts and Scier \$16,936,607

review boards for both human and animal subjects must reemphasize researcher education. IRBs have made great strides in School of Medicine 22% \$31,206,818 this direction, sponsoring workshops, enhancing training modules, and making available new Internet-based compliance

tools. In addition, increased

staffing levels and expanded office facilities are allowing IRBs to more quickly respond to investigators, as well as to initiate cooperative programs with other research institutions.

# Goal 2: Enhance Research Communications

Illumination, the division's award-winning magazine, continues to help audiences across the state and nation better understand and appreciate the world of MU research. We are also working via the Internet and other means to make

represented faculty, staff and students; and boost the quan-

tity and quality of proposals through grant-writing support.

### Goal 5: NURTURE TECHNOLOGY DEVELOPMENT

The Office of Technology and Special Projects is working to enhance the technology transfer infrastructure; to extend technology development outreach; and to improve the

division (right).

**P**ROGRAMS

Goal 1: STRENGTHEN ACADEMIC

Maintaining funding for internal

mural funding, remain important

programs, as well as boosting extra-

objectives. In addition, the Office of

increase support for MU humanities

emphasize the continued importance of

the MU Research Council and PRIME fund-

ing; sustain a nurturing environment for under-

Research will continue its work to

through its faculty fellow position;

process by which faculty scientists turn research findings into marketable products. Already this approach is paying dividends: last year patent applications and licensing income increased to record levels and invention disclosures reached an all-time high. Goals for the future include: increasing MU's patent budget to the AAU median; updating intellectual property policies; and boosting the number of invention disclosures, patent applications, and small business startups using MU-licensed technologies.

# Goal 6: FACILITATE GOVERNMENTAL RELATIONS

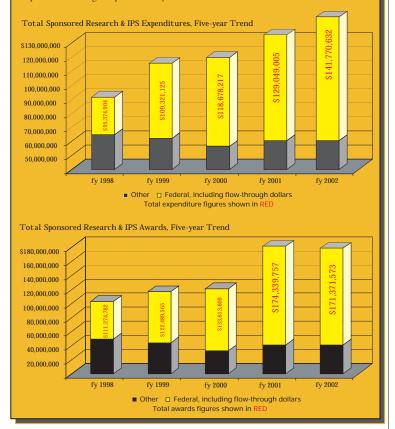
In these difficult fiscal times, it is imperative that MU researchers and administrators work diligently to maintain and enhance our traditionally-strong relationships with federal and state agencies. Development of a coherent agenda for the future, work toward master agreements with state agencies, and continued progress toward relicensing the MU Research Reactor remain important elements of the research division's contribution to MU's governmental relations.

ANT TO LEARN more? You can view the full range of these activities, as well as details related to rest of the 2002-3 *Master Plan for Research and Technology Development* via the "publications" link found on the Office of Research Web site:

www.research.missouri.edu.

# Research and Instruction & Public Service FY 2002 Totals

Budget difficulties notwithstanding, during fiscal year 2002 scientists and scholars at MU again attracted record levels of combined research and IPS funding. As in previous years, this rate of growth remains among the highest of MU's peer institutions. Such gains reflect the hard work of hundreds of MU investigators and their students working in a wide range of fields, says Robert Hall, interim vice provost for research. And they portent an increasingly bright future. "We have a very solid organization, and I believe we have every reason to be optimistic ... We're in a good geographical situation sitting here between St. Louis and Kansas City — two vibrant urban centers poised to emerge as end points of a new biotechnology research and development corridor — and we have an increasingly diverse campus that boasts a healthy range of research interests. Our new vice provost for research will have every reason to feel extremely optimistic when walking into this situation, and I think that individual will have every opportunity to continue the success that this institution has experienced during the past several years."







University of Missouri-Columbia Office of Research 205 Jesse Hall Columbia, MO 65211

www.research.missouri.edu

# mission

THE UNIVERSITY OF MISSOURI-COLUMBIA, established in 1839, is the oldest public research institution west of the Mississippi River.

MU's mission in research and student education is to provide enhanced opportunities and challenges in the humanities, arts, sciences and selected professional fields. MU also aspires to achieve national and international prominence for its research and educational contributions. As such, we are committed to building on our research strengths in basic and applied biological and biomedical sciences; nuclear and related



physical and engineering sciences; and selected social and behavioral sciences. We will continue to strengthen our leadership role in agriculture and journalism. And because of our large enrollment of undergraduates, MU will enhance the core disciplines required for all those seeking baccalaureate degrees, giving special attention to areas such as languages and mathematical sciences that provide the necessary foundation for a truly educated citizenry.