

**PROGRAM DESCRIPTION**

**Department of Higher Education and Workforce Development**

**HB Section(s):** 3.195

**Program Name** Public Research

**Program is found in the following core budget(s):** University of Missouri

**1a. What strategic priority does this program address?**

Research and Development

**1b. What does this program do?**

The University of Missouri - Columbia (MU), is Missouri's only state-supported member of the Association of American Universities, and is committed to provide all Missourians the benefits of a world-class research university. The Roy Blunt NextGen Precision Health building celebrated its grand opening in October 2021, ushering in a new era of leading-edge research in a facility that unites researchers, clinicians, and industry partners. NextGen is taking on society's biggest health care challenges and expanding collaborative research efforts to bring precision health to patients, no matter where they live. From major urban centers to underserved rural communities, NextGen investigators are dedicated to delivering the next generation of personalized health care solutions. MU is also home to the nation's most powerful university research reactor and is the only U.S. provider of 5 life-saving medical isotopes used in cancer and cardiac drugs. For more than 50 years, the faculty and staff of the University of Missouri Research Reactor (MURR) have promoted groundbreaking research and developed life-saving radiopharmaceuticals, benefitting people across the country and around the world. MURR operates at 10 megawatts, 6.5 days a week and 52 weeks a year. The MURR facility enables research across many disciplines – from investigating ancient cultures and how plants respond to their environment to analyzing industrial materials and developing radiopharmaceuticals that have lifesaving clinical applications. The MURR facility is a reliable resource for researchers, scientists, engineers, and students across the country.

Missouri University of Science & Technology, is known as a STEM-focused research university. The Missouri Protoplex, an advanced manufacturing research and development facility, will serve as the anchor building for Missouri S&T's planned manufacturing technology and innovation campus. Missouri S&T envisions the Protoplex Facility as headquarters for a statewide ecosystem where experts, innovators, small and large businesses, entrepreneurs, educators, and policymakers develop and adopt the technologies needed to create and sustain manufacturing jobs in Missouri. The Protoplex will house Missouri S&T's facilities operations, design, construction and space management, and environmental health and safety operations. The project is scheduled to be completed by June 2023. Both the Missouri Protoplex and manufacturing technology and innovation campus will support Missouri S&T's efforts will help Missouri manufacturers become more innovative and competitive in the global marketplace. Missouri S&T is also home to the Kummer Institute for Student Success, Research and Economic Development, which will transform Missouri S&T and the south central Missouri region by cultivating leadership and technological innovation; promoting an entrepreneurial mindset; fostering expansion of academic-industry partnerships to address emerging needs of industry; and creating jobs and economic growth.

The University of Missouri-Kansas City (UMKC), is the only comprehensive research institution in the Kansas City metropolitan area, with significant research strengths in: cellular basis of disease, data analytics, advance materials and biomaterials, equitable education, improving patient and population health, environmental sustainability, civic engagement, global cultures, history and diversity, and artistic and creative expression. UMKC unveiled its new \$32 million high-tech research center to hundreds of guests in October 2021. This five-story, 57,800-square-foot Robert W. Plaster Free Enterprise and Research Center features 11 state-of-the-art research labs. The privately funded capital project is the largest in UMKC history, with more than 25 donors and will be a resource for the Kansas City community. From independent makers to entrepreneurs and innovators, the lab spaces are available to experiment and explore new technology, new innovations in materials, and breakthroughs in application and design. Some of the technology within the labs is not available anywhere else in Kansas City, demonstrating UMKC's leadership in research and education, while helping community partners do the same.

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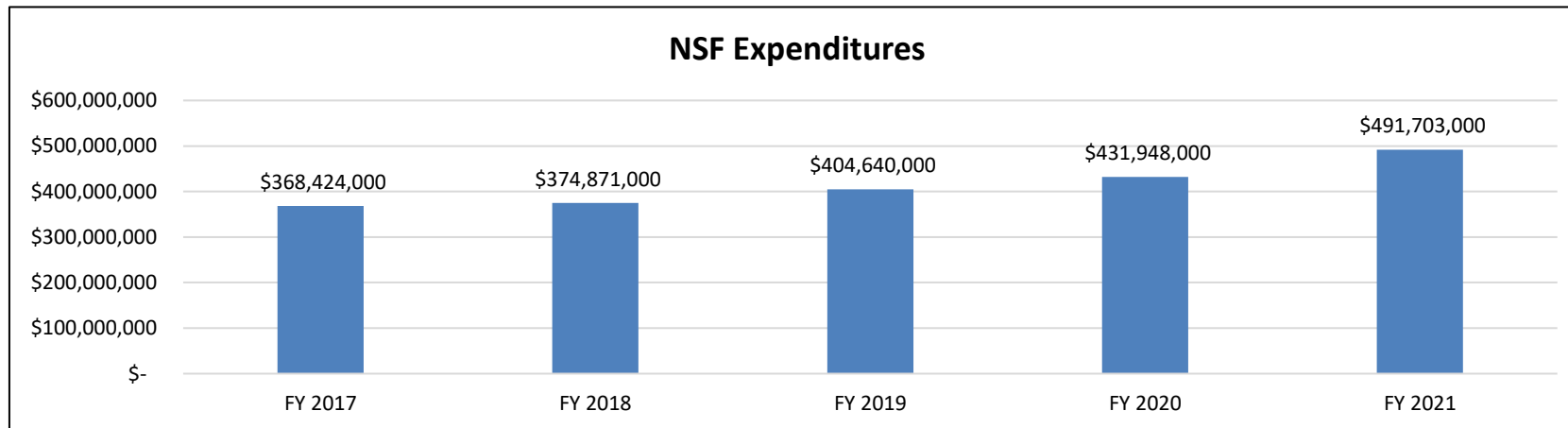
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The University of Missouri-St. Louis (UMSL), is the largest public research university in eastern Missouri. UMSL utilizes several research centers to collaborate within the state of Missouri and across the country. These facilities include the Center for Neurodynamics, Community Innovation & Action Center and the Missouri Institute of Mental Health (MIMH). MIMH has played a significant role in investigating and combating the crisis of substance abuse within Missouri and across the country.

The University of Missouri System has a statewide network of 10 research parks and business incubators, each designed to help faculty, entrepreneurs, and businesses collaborate to move innovative research to the marketplace. Because of these networks, startups and businesses across Missouri have access to innovative intellectual resources, a high-performance computing center, medical and advanced technology specialized facilities, cutting-edge plant science research, and much more.

**2a. Provide an activity measure(s) for the program.**

Total NSF Research & Development Expenditures for UM System



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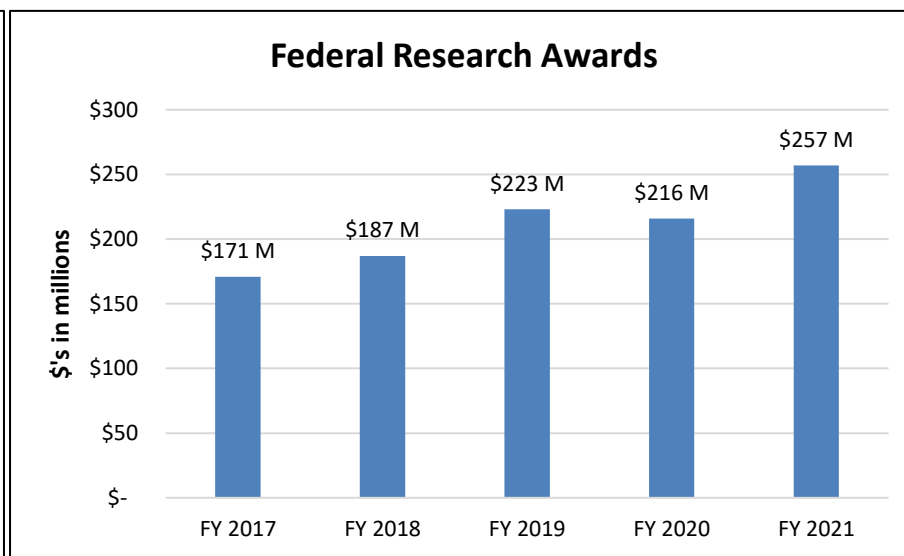
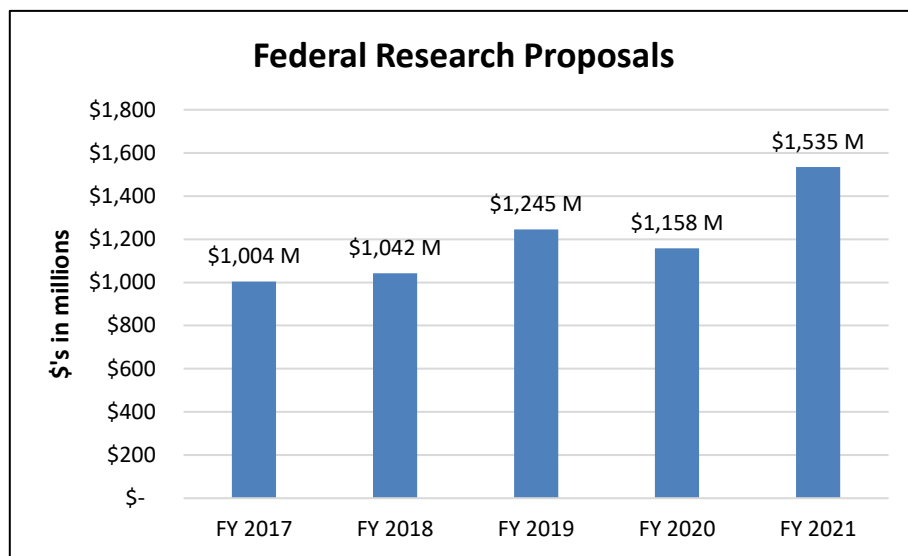
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**2b. Provide a measure(s) of the program's quality.**

National research rankings are based on total research and development expenditures as reflected in program activity measure above. The ability to increase this basis stems from the university's ability to convert research proposals submitted to awards. The following charts reflect the University's growth in federal research proposals and awards over the past five years.



**2c. Provide a measure(s) of the program's impact.**

Research and innovation emanating from the UM System's research, graduate studies, and economic development activities are continually advanced by faculty, staff, and student innovation and scholarship. As a result of research activity and spending by the UM System across all four universities, significant economic, employment and government revenue is generated throughout the state. In FY21, the UM System's research enterprise generated \$1.5 billion in economic impact and supported and sustained more than 10,000 jobs while producing over \$81.1 million in state and local tax revenue.

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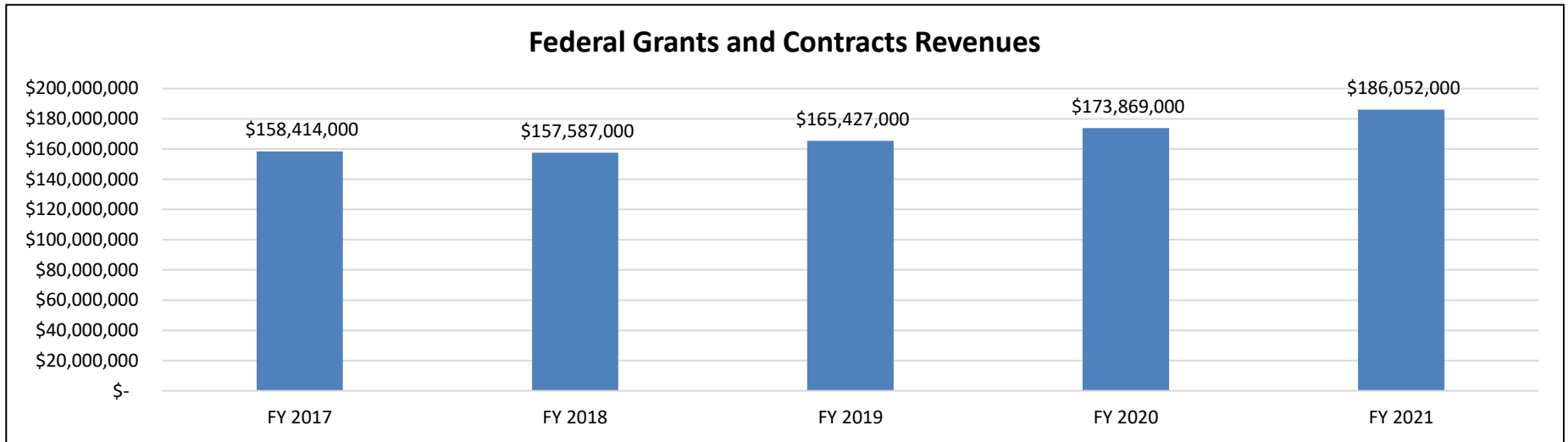
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**2d. Provide a measure(s) of the program's efficiency.**

Research and medical innovation provide multiple benefits beyond the economic and employment impacts generated by UM System operations. Significant additional economic expansion and employment are created through the commercialization of research activities within Missouri executed by the UM System and its collaborating partners, the employment of world-class researchers, and the attraction of additional federal research funding.

The chart below reflects the federal research dollars brought into the state of Missouri. One example of this federal research funding in FY 2021 comes from The University of Missouri - Columbia (MU). Innovative students and faculty have taken on the challenge of researching a global pandemic from the heart of Missouri. Whether through harnessing a \$4 million grant from the National Institutes of Health to study wastewater, investigating COVID-19's effect on the clothing industry, developing a wearable bioelectronic device to monitor patients, identifying strategies used in nursing homes to overcome challenges, or breaking down the benefits and challenges of telehealth, MU has affected timely solutions.



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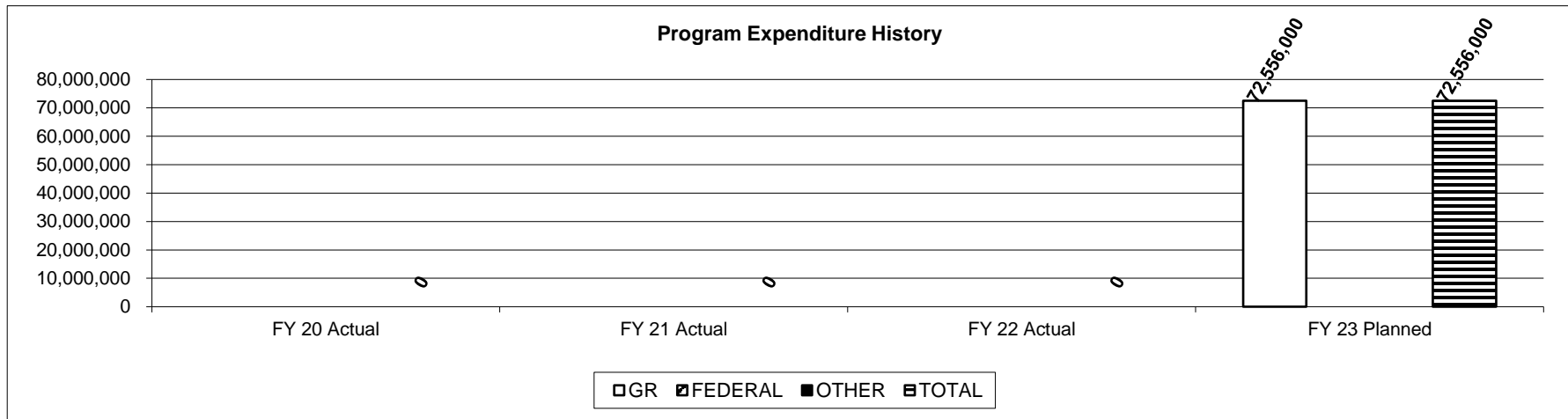
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**3. Provide actual expenditures for the prior three fiscal years and planned expenditures for the current fiscal year. (Note: Amounts do not include fringe benefit costs.)**



Note: Amounts reflected above are net Governor's withhold 3% prior to FY 2023 this line item was included as part of UM's operation of campus and program support

**4. What are the sources of the "Other " funds?**

N/A

**5. What is the authorization for this program, i.e., federal or state statute, etc.? (Include the federal program number, if applicable.)**

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**6. Are there federal matching requirements? If yes, please explain.**

Federal USDA/NIFA capacity funds match required, Hatch (Hatch Act of 1887 and Multistate Research Fund) and McIntire-Stennis. These capacity grant funds require a match totaling \$7.3 million.

**7. Is this a federally mandated program? If yes, please explain.**

No