



**Missouri S&T Faculty Funding
Booklet
Volume 1: Federal Grants
(March 2026)**

A curated guide to federal research funding aligned to Missouri S&T strengths

VOLUME 1: FEDERAL FUNDERS

Office of the Vice Chancellor for Research and Innovation

At Missouri S&T, our mission is to accelerate discovery and innovation that advance society, strengthen the nation's economy and security, and educate the next generation of STEM leaders. This Federal Funding Booklet was designed to help you navigate high-value sponsors whose priorities align with S&T's core strengths.

Inside, you'll find concise overviews of major federal agencies, the fields of study they typically support, how to apply, and how proposals are reviewed. We have linked directly to official agency resources to ensure you can move from idea to action quickly.

Our Proposal Development Unit and the broader Division of Research and Innovation stand ready to support you, from early ideation and team formation to strategic reviews and complex, multi-institution proposals. I invite you to engage with our team early and often. Together, we will continue elevating S&T's impact as a nationally prominent R1 research university.

Kamal H. Khayat, P.Eng., Ph.D., FACI, FRILEM
Vice Chancellor for Research and Innovation

CONTENTS

Glossary	4
National Science Foundation	5
Department of Energy	6
Advanced Research Projects Agency – Energy	7
Office of Naval Research	8
Army Research Laboratory/Army Research Office	9
Air Force Office of Scientific Research/Air Force Research Lab	10
Defense Advanced Research Projects Agency	11
National Aeronautics and Space Administration	12
National Institutes of Health	13
National Institute of Standards and Technology	14
Department of Homeland Security – Science & Technology Directorate	15
Department of Transportation	16
National Oceanic and Atmospheric Administration	17
Environmental Protection Agency	18
United States Geological Survey	19
Department of Agriculture – National Institute of Food and Agriculture	20
Nuclear Regulatory Commission	21

GLOSSARY

BAA: Broad Agency Announcement — a competitive mechanism for basic and applied research.

FOA/NOFO: Funding Opportunity Announcement / Notice of Funding Opportunity.

PAPPG: NSF Proposal & Award Policies & Procedures Guide.

NSPIRES: NASA Solicitation and Proposal Integrated Review and Evaluation System.

ROSES: NASA Research Opportunities in Space and Earth Science annual omnibus solicitation.

MURI/DURIP/YIP: DoD multi-investigator, instrumentation, and young investigator programs.

Peer Review: Expert evaluation of scientific and technical merit used by federal agencies.

U.S. National Science Foundation (NSF)



Official link: [NSF – Official Home Page](#)

Agency overview: NSF is an independent federal agency that supports fundamental research and education across all fields of science and engineering. NSF invests via competitive merit review to advance knowledge and promote the progress of science.

Supported fields of study: All STEM fields; engineering, computer and information science, materials, geosciences, math and physical sciences, social/behavioral/economic sciences relevant to STEM education; translation and use-inspired research via the Directorate for Technology, Innovation and Partnerships (TIP).

Large-scale programs: NSF also supports major research enterprises through a portfolio of large-scale programs. These include:

- Engineering Research Centers (ERCs): fundamental research, engineering innovation, workforce development, and industry partnership
- Science and Technology Centers (STCs): transformational research questions
- Materials Research Science and Engineering Centers (MRSECs): for shared experimental infrastructure and integrated materials research
- Industry–University Cooperative Research Centers (I/UCRCs): academic research and industrial needs through membership-based consortia.

Application process: Identify a program or solicitation on [nsf.gov](#); prepare and submit via [Research.gov](#) or [Grants.gov](#) following the Proposal & Award Policies & Procedures Guide (PAPPG).

Review process: Competitive peer review using two criteria: Intellectual Merit and Broader Impacts; reviews via ad hoc experts, panels, or both; program officers consider reviews and portfolio balance to recommend funding.

U.S. Department of Energy — Office of Science (DOE)



U.S. DEPARTMENT *of* ENERGY

Official link: [DOE Office of Science – Official Home Page](#)

Agency overview: DOE is the nation’s largest supporter of basic research in the physical sciences and the lead federal agency for fundamental research underpinning the energy future; it funds research at universities and national labs and supports 28 user facilities.

Supported fields of study: Basic Energy Sciences, Advanced Scientific Computing, Biological & Environmental Research, Fusion Energy Sciences, High Energy Physics, Nuclear Physics, Isotope R&D and Production.

Large-scale programs: DOE also supports large, multi-institution research efforts focused on fundamental energy science and national laboratory partnerships. Flagship programs include **Energy Frontier Research Centers (EFRCs)**, which bring together interdisciplinary teams to address foundational scientific challenges underpinning energy technologies, and **Energy Innovation Hubs**, which integrate research, development, and early translation around priority areas.

Application process: Respond to Funding Opportunity Announcements (FOAs) posted at [energy.gov/science](#) and [Grants.gov](#); proposals follow Grants Policy and Guidance.

Review process: Expert peer review evaluating scientific/technical merit, approach, investigator/team and resources, and budget reasonableness.

Advanced Research Projects Agency–Energy (DOE ARPA-E)



Official link: [ARPA-E – Official Home Page](#)

Agency overview: ARPA-E funds high-risk, high-reward energy technologies with potential for transformational impact, through focused programs, OPEN solicitations, and Exploratory Topics. Strong emphasis on commercialization via Technology-to-Market and SCALEUP.

Supported fields of study: Transformative energy generation, conversion, storage, efficiency, industrial decarbonization, advanced materials and manufacturing for energy.

Application process: Submit concept papers and full applications in ARPA-E eXCHANGE in response to specific Notices of Funding Opportunity (NOFOs).

Review process: Rigorous scientific and technical merit review; selections consider impact potential, program fit, and commercialization pathways with active program management.

Office of Naval Research (ONR)



Official link: [Office of Naval Research – Official Home Page](#)

Agency overview: ONR invests in science and technology to enable future Navy and Marine Corps capabilities, primarily via Broad Agency Announcements (BAAs) and topic-specific calls.

Supported fields of study: Autonomy, AI/ML, cyber, ocean engineering, sensing, materials, energetics, human performance, manufacturing, resilient infrastructure relevant to naval needs.

Application process: Engage with white papers when encouraged; submit full proposals per long-range BAA or specific calls on SAM.gov/Grants.gov.

Review process: Peer/scientific review; evaluation considers technical merit, program relevance, and funds availability; cost realism as appropriate.

Army Research Laboratory / Army Research Office (ARO)



Official link: [DEVCOM Army Research Laboratory – Official Home Page](#)

Agency overview: DEVCOM ARL (including ARO) supports foundational research that operationalizes science for overmatch, via an open BAA with targeted opportunities.

Supported fields of study: Networked intelligent systems, materials and manufacturing, human-AI teaming, cyber, quantum, energetics, among others.

Application process: Respond to the ARL Foundational Research BAA; white papers are often encouraged prior to full proposals.

Review process: Evaluated on scientific merit, approach, team/resources, budget, and other factors; selections via scientific/peer review and program relevance.

Air Force Office of Scientific Research (AFOSR)



Official link: [AFOSR – Official Home Page](#)

AFOSR is the basic research arm of the Department of the Air Force. It “*manages the Department of the Air Force’s basic research program*” and is a component of the Air Force Research Laboratory. AFOSR’s mission is to “*discover, shape, and champion high-risk basic research to profoundly impact the future Air and Space Force.*” AFOSR funds fundamental science carried out in universities, industry, and government laboratories, supporting more than 1,600 grants across 300+ institutions.

Application process: Proposals are submitted under the AFOSR core BAA through Grants.gov or as directed in special program announcements. AFOSR accepts unclassified basic research proposals on a rolling basis. Investigators are encouraged to discuss ideas with the appropriate program officer identified in the BAA.

Official link: <https://www.afrl.af.mil/>

AFRL is the Air Force’s overarching science and technology laboratory. It “leads the discovery, development, and integration of warfighting technologies for air, space, and cyberspace forces” across eight technical directorates. AFRL conducts and funds applied research, advanced technology development, and prototype/experimentation efforts. Examples range from sensors, space vehicles, and autonomy to directed energy, munitions, aerospace systems, and human performance.

Application process: AFRL BAAs are posted on SAM.gov and Grants.gov. Most are open, two-step BAAs - white papers are evaluated first, and only selected applicants are invited to submit full proposals. This process is explicitly defined in multiple AFRL BAAs (e.g., Air Dominance, Cyber Advancement, Trusted Systems).

Review process: Scientific peer review evaluates technical merit and originality, potential impact on future Air & Space Force capabilities, portfolio/program officer alignment, and availability of funds.

Defense Advanced Research Projects Agency (DARPA)



Official link: [DARPA – Official Home Page](#)

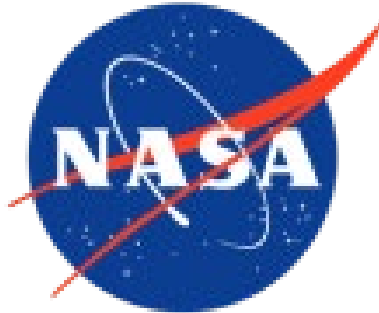
Agency overview: DARPA makes high-risk, high-payoff investments across defense S&T; universities often participate via BAAs, HR0011-series solicitations, and topic-specific opportunities.

Supported fields of study: Microelectronics, AI, autonomy, cybersecurity, biotech, advanced manufacturing, materials, space, quantum, and more.

Application process: Follow each office's BAA; many use a two-stage process (abstract/executive summary then full proposal).

Review process: Scientific/technical review against BAA-specific criteria; selections based on merit, relevance, and programmatic balance; may use grants, cooperative agreements, contracts, or Other Transactions.

National Aeronautics and Space Administration (NASA)



Official link: <https://www.nasa.gov/get-involved/#NASA-Research>

Agency overview: NASA funds basic and applied research across Earth science, planetary, heliophysics, astrophysics, space tech, and aeronautics, primarily via ROSES annual omnibus NRA.

Supported fields of study: Earth and space science, remote sensing, autonomous systems, advanced materials and manufacturing for aerospace, aeronautics.

Application process: Register in NSPIRES; respond to ROSES elements and other NRAs/BAAs; some elements use two-step or dual-anonymous peer review.

Review process: Peer review by expert panels (merit, relevance, cost reasonableness) followed by programmatic review; awards via grants/cooperative agreements/contracts.

National Institutes of Health (NIH)



Official link: [NIH – Official Home Page](#)

Agency overview: NIH is the largest public funder of biomedical research. Engineering and computing intersect NIH priorities via bioengineering, imaging, smart health, data science, and translational technologies.

Supported fields of study: Biomedical engineering, biosensors, materials for health, AI for health, environmental health, and neuroscience technologies.

Large-scale programs: NIH supports team-science and consortium-based research to address complex biomedical and public health challenges that exceed the scope of individual grants. Major mechanisms include Centers (P30, P50, U-series), Research Program Project Grants (P01), and large multi-site cooperative agreements, which emphasize coordination, shared cores, and harmonized research objectives. These programs typically involve significant institutional commitment, cross-disciplinary collaboration, and long-term funding horizons.

Application process: Find Funding Opportunity Announcements (FOAs) in NIH Guide; submit via ASSIST/Grants.gov.

Review process: Two-level peer review: initial scientific merit review (CSR/IC study sections) using five core criteria (Significance, Investigator(s), Innovation, Approach, Environment), then Advisory Council review.

National Institute of Standards and Technology (NIST)



Official link: [NIST – Official Home Page](#)

Agency overview: NIST advances measurement science, standards, and technology to enhance economic security and quality of life; funds extramural research through NOFOs and cooperative programs.

Supported fields of study: Advanced manufacturing, cyber-physical systems, cybersecurity, quantum information science, materials characterization, and resilience.

Application process: Respond to NIST NOFOs on Grants.gov; follow program-specific instructions.

Review process: Merit review consistent with DOC/NIST policies; criteria typically include technical merit, relevance to NIST mission, and team/resources.

U.S. Department of Homeland Security – Science & Technology Directorate (DHS S&T)



Official link: [DHS S&T – Official Home Page](#)

Agency overview: DHS S&T funds R&D to strengthen the nation’s security and resilience, including university-based Centers of Excellence and open calls.

Supported fields of study: Cybersecurity, critical infrastructure, explosives detection, disaster resilience, data analytics, and CBRN defense.

Application process: Monitor S&T opportunities on SAM.gov/Grants.gov; follow each NOFO/BAA instructions.

Review process: Peer/scientific review with programmatic evaluation for homeland security impact.

U.S. Department of Transportation (DOT)



U.S. Department of Transportation

Official link: [U.S. Department of Transportation – Official Home Page](#)

Agency overview: DOT supports transportation research through FHWA, FAA, FTA, PHMSA, and others; universities engage via University Transportation Centers (UTCs), cooperative agreements, and topical NOFOs.

Supported fields of study: Infrastructure materials, intelligent transportation systems, autonomous and connected vehicles, aviation systems, and rail and pipeline safety.

Application process: Respond to NOFOs and UTC competitions on Grants.gov.

Review process: Merit review per NOFO; criteria typically include technical merit, relevance to national transportation goals, and team capability.

National Oceanic and Atmospheric Administration (NOAA)



Official link: [NOAA – Official Home Page](#)

Agency overview: NOAA supports research on oceans, coasts, weather, climate, and resilience, including cooperative institutes and competitive grants.

Supported fields of study: Weather and climate modeling, environmental sensing, resilient coasts, water resources, materials and infrastructure for coastal resilience.

Application process: Respond to NOAA NOFOs on Grants.gov; many programs use a two-step application process.

Review process: Merit review for scientific/technical merit and NOAA mission relevance; panel and programmatic review.

U.S. Environmental Protection Agency (EPA)



Official link: [U.S. EPA – Official Home Page](#)

Agency overview: EPA's Office of Research and Development funds STAR and other grants for environmental and human health research supporting regulatory science and innovation.

Supported fields of study: Air and water quality, materials and sensors, sustainable chemistry, risk assessment, and community resilience.

Application process: Apply to EPA NOFOs via Grants.gov; follow EPA solicitation guidance.

Review process: External peer review for scientific merit followed by programmatic review; conflict-of-interest and integrity protections apply.

U.S. Geological Survey (USGS)



Official link: [U.S. Geological Survey – Official Home Page](#)

Agency overview: USGS supports research on water, ecosystems, energy and minerals, natural hazards, and core science systems, often via cooperative agreements with universities.

Supported fields of study: Hydrology, geospatial analytics, critical minerals, hazards (earthquakes, landslides), remote sensing, and data science.

Application process: Monitor Grants.gov and USGS program sites for NOFOs and cooperative agreements.

Review process: Merit review and programmatic evaluation for mission relevance and public impact.

U.S. Department of Agriculture – National Institute of Food and Agriculture (USDA NIFA)



Official link: [USDA NIFA – Official Home Page](#)

Agency overview: NIFA invests in agricultural research, education, and extension; engineering and computing intersect through AI in agriculture, advanced materials, automation, and sustainability.

Supported fields of study: Sustainable and smart agriculture, AI/robotics, bioproducts, water/soil systems, food safety, and bioeconomy.

Application process: Respond to NIFA RFAs (e.g., AFRI) via Grants.gov.

Review process: Peer panel review for scientific merit and national needs relevance; award decisions consider program priorities and portfolio balance.

U.S. Nuclear Regulatory Commission (NRC)



Official link: [U.S. NRC – Official Home Page](#)

Agency overview: NRC funds education grants, research, and scholarships/fellowships to support the nuclear workforce and safety research.

Supported fields of study: Nuclear engineering education and research, reactor safety, materials, and instrumentation.

Application process: See NRC grants and cooperative agreements on Grants.gov.

Review process: Merit review evaluating technical quality, NRC mission relevance, and capacity to deliver outcomes.

About This Booklet & Missouri S&T

About the Proposal Development Unit (PDU): The PDU partners with faculty to find opportunities, strategize pursuits, build competitive teams, develop proposal narratives and budgets, coordinate complex submissions, and provide red-team reviews. Services include capture planning, concept-to-solicitation alignment, editing, securing graphics support, templates, and project management for center-scale proposals. The PDU compiled this booklet under the auspices of the Office of Research and Innovation and asks faculty to email shauba@mst.edu with any updates, additions, or corrections pertinent to the broader campus community.

About the Division of Research and Innovation: The Division advances S&T's research enterprise and innovation ecosystem. The office provides pre- and post-award support, research development, center and institute facilitation, core facilities, technology commercialization, industry partnerships, and entrepreneurship programming.

About Missouri S&T: A nationally prominent R1 public technological research university, Missouri S&T is renowned for strength in engineering, computing, materials, manufacturing, infrastructure, energy, environmental resilience, and applied sciences. Our faculty, students, and partners collaborate to deliver discoveries and solutions that benefit Missouri, the nation, and the world.