

DIRECTORATE FOR MATHEMATICAL AND PHYSICAL SCIENCES (MPS)

\$1,835,790,000

MPS Funding
(Dollars in Millions)

	FY 2022 Actual ¹	Disaster Relief Supplemental				FY 2023 Estimate Total	Change over		
		FY 2023 Estimate Base	Relief Supplemental		FY 2023 Estimate Total		FY 2024 Request	FY 2023 Base Amount	Total ² Percent
			Base	RI Damage					
Astronomical Sciences (AST)	\$283.61	\$283.57	\$8.76	-	\$292.33	\$303.33	\$11.00	3.8%	
Chemistry (CHE)	265.19	264.46	4.37	-	268.83	279.83	11.00	4.1%	
Materials Research (DMR)	338.75	338.78	0.63	-	339.41	350.41	11.00	3.2%	
Mathematical Sciences (DMS)	248.32	247.99	4.00	-	251.99	262.99	11.00	4.4%	
Physics (PHY)	309.89	308.90	4.23	-	313.13	324.13	11.00	3.5%	
Office of Strategic Initiatives (OSI) ³	169.50	169.20	48.45	2.50	220.15	315.10	97.45	44.8%	
Total	\$1,615.26	\$1,612.90	\$70.44	\$2.50	\$1,685.84	\$1,835.79	\$152.45	9.1%	

¹ Excludes \$80.70 million in American Rescue Plan supplemental funding.

² Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

³ Formerly titled Office of Multi-Disciplinary Activities (OMA)

About MPS

Research in the foundational physical sciences is the central theme of projects supported by MPS. The core areas of astronomical sciences, chemistry, materials research, mathematical sciences, and physics continue to advance and transform knowledge and support the development of the next generation of scientists. Sciences funded by MPS encompass an enormous range: from the smallest objects and shortest timescales studied to distances and timescales that are the size and age of the universe. MPS continues to foster and support interdisciplinary scientific programs that span in scope and complexity, ranging from individual investigator awards to large, multi-user facilities. Individual investigators and small teams receive most awards, but centers, institutes, and facilities are all integral and essential to MPS-funded research. This convergence of disciplines and various ways to organize researchers allows MPS to invest in advancing basic sciences that will underpin and enable innovations in the technologies of the future, enabling collaborations such as with the TIP Directorate, and help to support a strong U.S. economy for decades to come.

Through its centers and institutes programs, MPS will continue to support leading-edge science research and the development of the next generation of scientists engaged in research ranging from fundamental to translational science. MPS centers and institutes span a broad range of areas, from addressing challenges in fundamental mathematics to the development of advanced new materials.

Research tools and infrastructure are key priorities that MPS will continue funding. Mid-scale research infrastructure in astronomical sciences, chemistry, materials research, and physics continue to be important to the advancement of those disciplines. Large scale research infrastructure is also highly important and provides opportunities for partnerships with international entities, other federal agencies, and private foundations, as is evidenced by facilities such as the Atacama Large Millimeter/submillimeter Array, the Gemini Observatory, the National High Magnetic Field Laboratory, and the Large Hadron Collider (LHC). Construction activities began in April 2020 to upgrade the two primary LHC detectors, A Toroidal LHC Apparatus and the Compact Muon Solenoid, in preparation for high luminosity operation of the LHC. The Vera C. Rubin Observatory Project on the summit of Cerro Pachón in Chile is advancing the physical infrastructure available for astronomical sciences as well as

pioneering a state-of-the-art data management system and the largest digital camera ever constructed. The recently inaugurated Daniel K. Inouye Solar Telescope in Hawaii, the world's most powerful solar observatory, enables observation of our sun from the photosphere to the chromosphere, to the outermost corona, to better understand and predict phenomena like solar storms and space weather.

The MPS directorate's Request builds on past efforts and aligns with NSF's articulated FY 2024 priorities. There are exciting new opportunities emerging, research efforts that are maturing, and established programs and activities that continue to meet important goals and support science that will transform the Nation's future. The requested funding will enable MPS to sustain core research programs, supporting the highest priority centers, institutes, and facilities—including the design and development of future major facilities, and supporting early-career investigators. MPS will also enhance its investment in advancing emerging industries, such as quantum information science and engineering, advanced manufacturing, biotechnology, microelectronics, the spectrum innovation initiative, and artificial intelligence; continue support for climate research; increase support for clean energy technology; and increase support to promote equity and broadening participation in STEM research.

In FY 2024, MPS will continue support of the existing Quantum Leap Challenge Institutes and increase support for the Expanding Capacity in Quantum Information Science and Engineering program, which increases research capacity and broadens participation in QISE and enriches the talent and diversity in the workforce pipeline to help fulfill the needs of industry, government, and academia. In collaboration with other NSF directorates, including TIP, MPS will support a pilot phase program with the goal of establishing the National Quantum Virtual Laboratory (NQVL) as an overarching infrastructure platform designed to facilitate the translation of basic science and engineering to innovative technologies, while at the same time emphasizing and advancing the scientific and technical value of the research.

MPS will add a fellow-to-faculty component to the Mathematical and Physical Sciences Ascending Postdoctoral Research Fellowship (MPS-Ascend) program to facilitate the transition of postdoctoral fellows to tenure track positions. The program will help broaden the participation in MPS fields among members of groups that have been historically excluded and are currently underrepresented. MPS will also increase its investment in the broadening participation partnership programs in all five of its research divisions.

At FY 2024 Request level and in support of the CHIPS and Science Act on research infrastructure, MPS will collaborate with other NSF directorates and offices, including OIA, to help establish the Revitalization of American Academic Research Infrastructure (RAARI) program to provide instrumentation and infrastructure support for emerging research institutions (ERIs) to address one of the major barriers ERIs encounter in recruiting and retaining faculty and involving students in cutting edge research.

Climate change and its impacts clearly represents one of the greatest challenges facing civilization today. MPS will support research in providing scientific modeling tools needed to advance our understanding of the physical basis of climate change and develop mitigation and adaptation solutions. MPS-supported research will also significantly contribute to innovation in clean and sustainable energy resources, creating solutions to problems that require fundamentally new ideas.

Major Investments

MPS Major Investments

(Dollars in Millions)

Area of Investment ^{1,2}	FY 2022 Actual ³	FY 2023 Estimate Base Total ³	FY 2024 Request	Change over FY 2023 Estimate Base Total ⁴	
				Amount	Percent
Advanced Manufacturing	\$156.42	\$128.33	\$133.33	\$5.00	3.9%
Advanced Wireless Research	17.00	17.00	17.00	-	-
Artificial Intelligence	134.18	75.21	84.20	8.99	12.0%
Biotechnology	75.63	62.20	62.20	-	-
Climate: Clean Energy Technology	123.08	123.83	123.57	-0.26	-0.2%
Climate: USGCRP	13.44	12.00	14.63	2.63	21.9%
Microelectronics/Semiconductors	50.96	31.00	33.00	2.00	6.5%
MPS Partnerships for Research and Education	9.73	12.50	32.50	20.00	160.0%
MPS Postdoctoral Fellowships	8.69	20.76	41.40	20.64	99.4%
Quantum information Science	229.87	179.00	214.00	35.00	19.6%
Secure & Trustworthy Cyberspace	1.27	1.25	1.25	-	-

¹ Major investments may have funding overlap and thus should not be summed.

² This table reflects this directorate's support for selected areas of investment. In other directorate narratives, areas of investment displayed in this table may differ and thus should not be summed across narratives.

³ FY 2022 Actual may be greater than future fiscal years due to the receipt of more meritorious proposals than expected.

⁴ Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

To learn more about the cross-agency themes and initiatives supported by MPS, such as Advanced Manufacturing, Advanced Wireless, Artificial Intelligence, Biotechnology, Clean Energy Technology, USGCRP, Microelectronics/Semiconductors, and Secure and Trustworthy Cyberspace, see individual narratives in the NSF-Wide Investments chapter.

- Artificial Intelligence: MPS will strengthen its investments in AI and machine learning techniques for sciences, including establishing AI Institutes for Astronomical Sciences as well as initiating new research tools, such as Autonomous Laboratories and Digital Twins.
- Quantum Information Science: As steward of this program agency-wide, MPS will continue investment in the existing Quantum Leap Challenge Institutes and increase investment in the Expand QISE program. MPS will also support a pilot phase program with the goal of establishing the NQVL. For more information, see the QIS narrative in the NSF-Wide Investments chapter.
- MPS partnerships for Research and Education: MPS will increase investment in its broadening participation partnership programs across all five divisions.

- MPS Postdoctoral Fellowships: Postdoctoral research is a critical stage in preparation for professional careers. MPS will increase investment in its fellowship programs and add a fellow-to-faculty component to the MPS-Ascend program.

Centers Programs

MPS Funding for Centers Programs

(Dollars in Millions)

	FY 2022 Actual	FY 2023 Estimate Base Total ¹	FY 2024 Request	Change over FY 2023 Estimate Base Total ¹	
				Amount	Percent
Artificial Intelligence Research Institutes (MPS)	\$6.14	\$5.00	\$13.00	\$8.00	160.0%
Centers for Chemical Innovation (CHE)	27.46	27.70	27.70	-	-
Materials Centers (DMR)	53.27	56.80	57.00	0.20	0.4%
Quantum Leap Challenge Institutes (MPS) ²	58.37	21.85	20.00	-1.85	-8.5%
STC: Center for Integrated Quantum Materials (DMR) ³	3.73	-	-	-	N/A
STC: STC on Real-Time Functional Imaging (DMR)	5.00	5.00	5.00	-	-
STC: Center for Integration of Modern Optoelectronic Materials on Demand (DMR)	5.00	5.00	5.00	-	-
STC: Center for Bright Beams (PHY)	5.00	5.00	5.00	-	-
Spectrum Innovation Initiative Center (MPS)	5.75	5.00	5.00	-	-
Total	\$169.72	\$131.35	\$137.70	\$6.35	4.8%

¹ Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

² Since FY 2020, Quantum Leap Challenge Institutes (QLCI) funding has been a vital source of NSF's overall \$50 million investment in multidisciplinary centers for quantum research and education. The FY 2022 Actual is higher reflecting the forward funding of future award increments.

³ This 2013 class STC received its final funding increment in FY 2022.

For detailed information on individual centers programs, please see the Cross Theme Topics section of the NSF-Wide Investments chapter.

People Numbers and Funding Profiles

For info on NSF's People Numbers and Funding Profile tables, please see the Summary Tables chapter.

Major Facilities

MPS Funding for Major Facilities

(Dollars in Millions)

	Division	FY 2023 Estimate		Disaster Relief Supplemental	Change over FY 2023 Estimate		
		FY 2022 Actual	Base Total ¹	RI Damage Mitigation	FY 2024 Request	Base Total ¹	Percent
Arecibo Observatory (AO) ²	AST	\$2.42	\$3.00	-	\$3.00	-	-
Green Bank Observatory (GBO) ³	AST	15.53	10.83	-	9.55	-1.28	-11.8%
IceCube Neutrino Observatory	PHY	3.60	3.83	-	4.02	0.19	5.0%
Large Hadron Collider (LHC)	PHY	21.51	20.50	-	20.50	-	-
Laser Interferometer Gravitational-Wave Observatory (LIGO)	PHY	45.00	45.00	-	50.00	5.00	11.1%
National High Magnetic Field Laboratory (NHMFL) ³	DMR	38.91	39.91	-	38.57	-1.34	-3.4%
National Radio Astronomy Observatory (NRAO) ^{3,4}	AST	102.71	93.66	-	98.35	4.69	5.0%
NRAO O&M ⁵		52.09	43.03	-	43.59	0.56	1.3%
Atacama Large Millimeter Array (ALMA) O&M		50.63	50.63	-	54.76	4.13	8.2%
National Solar Observatory (NSO) ³	AST	26.54	26.56	-	27.67	1.11	4.2%
NSO O&M		6.96	5.88	-	6.24	0.36	6.1%
Daniel K. Inouye Solar Telescope (DKIST) O&M		19.58	20.68	-	21.43	0.75	3.6%
NSF's National Optical-Infrared Astronomy Research Laboratory (NOIRLab) ³	AST	56.39	73.57	2.50	82.21	8.64	11.7%
NOIRLab O&M (Mid-Scale Observatories & Community Science and Data Center) ⁶		25.80	28.49	2.00	23.68	-4.81	-16.9%
Gemini Observatory O&M		25.38	22.98	0.50	24.73	1.75	7.6%
Vera C. Rubin Observatory O&M		5.20	22.10	-	33.80	11.70	52.9%
Total		\$312.62	\$316.86	\$2.50	\$333.87	\$17.01	5.4%

¹ Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

² In FY 2024, NSF will transition from a cooperative agreement for operations of Arecibo Observatory to a contract for maintenance of the site.

³ Funding in FY 2023 and FY 2024 does not include potential additional funding that may be provided by MPS' Office of Strategic Initiatives (formerly Office of Multidisciplinary Activities) for deferred maintenance projects.

⁴ Included within NRAO's total funding is NSF's contribution to VLBA at \$3.43 million per year.

⁵ Includes funding for the ngVLA program office.

⁶ Includes support for the Windows on the Universe Center for Astronomy Outreach, ongoing activities at the WIYN telescope, and potential future participation in the U.S. Extremely Large Telescope program.

For detailed information on individual facilities, please see the Research Infrastructure section of the NSF-Wide Investments chapter.

DIVISION OF ASTRONOMICAL SCIENCES (AST)

AST Funding

(Dollars in Millions)

	FY 2022 Actual ¹	Disaster Relief			Change over		
		FY 2023 Estimate Base	Supplemental Base	FY 2023 Estimate Total	FY 2024 Request	FY 2023 Base Amount	Total ² Percent
Total	\$283.61	\$283.57	\$8.76	\$292.33	\$303.33	\$11.00	3.8%
Research	63.71	72.52	-	72.52	78.78	6.26	8.6%
Education	3.67	4.60	-	4.60	4.60	-	-
Infrastructure	216.23	206.45	8.76	215.21	219.95	4.74	2.2%

¹ Does not captured funding provided by the American Rescue Plan supplemental appropriation.

² Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

AST funds grants for astronomical research and provides access to world-class astronomical observing facilities via cooperative agreements. These observatories enable scientific advances by providing access on a competitive basis to thousands of astronomers each year. AST also supports the development of advanced technologies and instrumentation and manages the electromagnetic spectrum for scientific use by the entire NSF community. The AST portfolio includes research on the nature of planets, stars, galaxies, and the structure of the universe. Through collaboration with the Division of Physics, astrophysicists are able to probe the universe through three distinct “windows”—electromagnetic waves, high-energy particles, and gravitational waves—and across the time domain. This leads to a deeper understanding of the composition and evolution of the cosmos, including the nature of the mysterious dark matter and dark energy that comprise more than 95 percent of the universe. AST observatories and research programs have enabled the detection of planets orbiting other stars and will support the search for life on these other worlds.

In general, about 17 percent of the division portfolio is available to support new research grants. The remaining 83 percent supports research grants made in prior years.

DIVISION OF CHEMISTRY (CHE)

CHE Funding

(Dollars in Millions)

	FY 2022 Actual ¹	FY 2023 Estimate Base	Disaster Relief Supplemental Base	FY 2023 Estimate Total	FY 2024 Request	Change over FY 2023 Base Total ²	
						Amount	Percent
Total	\$265.19	\$264.46	\$4.37	\$268.83	\$279.83	\$11.00	4.1%
Research	252.66	254.89	-	254.89	265.39	10.50	4.1%
Education	3.53	4.04	-	4.04	4.04	-	-
Infrastructure	9.00	5.53	4.37	9.90	10.40	0.50	5.1%

¹ Does not captured funding provided by the American Rescue Plan supplemental appropriation.

² Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

CHE supports discovery research and workforce development in chemistry that have the potential to be transformative to major commercial sectors of the U.S. economy: energy, pharmaceuticals, medical applications, plastics, electronics, food, agriculture, and transportation. CHE investments also support highly competitive and rapidly evolving fields that include advanced manufacturing, quantum information sciences, data mining and artificial intelligence, sensor and instrument development, biotechnology, clean energy, sustainable chemistry, and climate research. Experimental, computational, and theoretical chemical research is integrated into core chemistry programs with a strong emphasis on sustainability and the protection of natural resources and environment. CHE encourages researchers to apply chemical understanding and tools to other fields, including biology, engineering, materials research, geosciences, mathematics/statistics, computing, and social sciences. Investments across fields not only expedite chemical understanding, innovation, and translation to market, but also have significant ramifications for the training and deployment of the future STEM workforce. The division uses multiple funding mechanisms to support individuals and team science as well as interdisciplinary user facilities.

In general, about 69 percent of the division portfolio is available to support new research grants. The remaining 31 percent supports research grants made in prior years.

DIVISION OF MATERIALS RESEARCH (DMR)

DMR Funding

(Dollars in Millions)

	FY 2022 Actual ¹	FY 2023 Estimate Base	Disaster Relief Supplemental Base	FY 2023 Estimate Total	FY 2024 Request	Change over FY 2023 Amount	Base Total ² Percent
Total	\$338.75	\$338.78	\$0.63	\$339.41	\$350.41	\$11.00	3.2%
Research	246.74	287.02	-	287.02	280.88	-6.14	-2.1%
Education	5.74	3.00	-	3.00	3.00	-	-
Infrastructure	86.27	48.76	0.63	49.39	66.53	17.14	34.7%

¹ Does not captured funding provided by the American Rescue Plan supplemental appropriation.

² Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

Materials are ubiquitous and are the building blocks of technology and innovation. The development and deployment of advanced materials are major drivers of U.S. economic growth and essentially contribute to assuring national competitiveness and security. Materials research happens at the intersection of materials science and engineering with chemistry, physics, biology and mathematics. It directly and fundamentally impacts life and society, as it shapes our understanding of the world and enables critical advances in electronics, communications, transportation, and health-related fields. DMR invests in the discovery, prediction, design, and harnessing of new materials and materials phenomena, and in the development of the next generation of materials scientists. DMR creates a broad enterprise of investments across scales, including single investigators, teams, and centers; singularly focused research and areas requiring interdisciplinarity; and infrastructure ranging from small instruments to national mid- and large-scale user facilities. DMR investments are contributing to U.S. leadership in high-field magnet science and further aim at democratizing national access to high-magnetic fields. DMR also supports materials-relevant instrumentation and technique development broadly in x-ray and neutron science, nanofabrication, as well as automated and autonomous tools coupled to AI.

In general, about 26 percent of the division portfolio is available to support new research grants. The remaining 74 percent supports research grants made in prior years.

DIVISION OF MATHEMATICAL SCIENCES (DMS)

DMS Funding
(Dollars in Millions)

	FY 2022 Actual ¹	FY 2023 Estimate Base	Disaster Relief Supplemental Base	FY 2023 Estimate Total	FY 2024 Request	Change over FY 2023 Amount	Base Total ² Percent
Total	\$248.32	\$247.99	\$4.00	\$251.99	\$262.99	\$11.00	4.4%
Research	237.58	238.63	-	238.63	248.99	10.36	4.3%
Education	10.74	9.36	4.00	13.36	14.00	0.64	4.8%

¹ Does not captured funding provided by the American Rescue Plan supplemental appropriation.

² Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

DMS provides the major federal support for research in the mathematical sciences. DMS investments support research at the forefront of fundamental, applied, and computational mathematics, and statistics that accelerates discovery and innovation. DMS partnerships with other science and engineering disciplines in turn inspire development of new theories and methods applicable to current and future national priority areas such as artificial intelligence, quantum information science, biotechnology, clean energy, and climate science. DMS prioritizes the development and advancement of future researchers in the mathematical sciences, through dedicated workforce programs, enhanced by broadening participation. DMS also supports institutes which advance mathematics and statistics research through thematic programs and workshops on current and emerging trends. DMS builds strong partnerships to expand the impact of its research investments. An example is the DMS partnership with SBE and BIO within NSF and NIH/NIDA to develop next generation epidemiological models to address the urgent need for reliable modeling tools to inform decision making and to evaluate public health policies during pandemics and other public health crises. DMS partners with private foundations such as the Simons Foundation on programs that support a variety of activities including the National Institute for Theory and Mathematics in Biology and research centers on the Mathematical and Scientific Foundations of Deep Learning.

In general, about 56 percent of the division portfolio is available to support new research grants. The remaining 44 percent supports research grants made in prior years.

DIVISION OF PHYSICS (PHY)

PHY Funding

(Dollars in Millions)

	FY 2022 Actual ¹	FY 2023 Estimate Base	Disaster Relief Supplemental Base	FY 2023 Estimate Total	FY 2024 Request	Change over FY 2023 Amount	Base Total ² Percent
Total	\$309.89	\$308.90	\$4.23	\$313.13	\$324.13	\$11.00	3.5%
Research	213.54	216.80	-	216.80	220.67	3.87	1.8%
Education	4.09	5.02	-	5.02	5.02	-	-
Infrastructure	92.25	87.08	4.23	91.31	98.44	7.13	7.8%

¹ Does not captured funding provided by the American Rescue Plan supplemental appropriation.

² Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

PHY supports fundamental research addressing frontier areas of physics that lead to the understanding of the make-up of the universe, from the formation of stars and galaxies to the principles of life processes on Earth. This research covers a range of physics subfields: atomic, molecular and optical physics, elementary particle physics, gravitational physics, nuclear physics, particle astrophysics and cosmology, physics of living systems, plasma physics, and quantum information science. PHY is the primary supporter of all U.S. research in gravitational physics and the leading supporter of fundamental research in atomic, molecular and optical physics. PHY is a major partner with DOE in support of elementary particle physics, particle astrophysics, nuclear physics, and plasma physics. PHY also has the only U.S. program designed for the support of physics research in living systems. The development of the most advanced cutting-edge computational resources, innovative technology, and new instrumentation is a key part of physics research. Tools developed by the physics community continuously have major impacts in other scientific and engineering fields, allowing PHY to contribute significantly to emerging new technologies such as quantum information science and artificial intelligence.

In general, about 30 percent of the division portfolio is available to support new research grants. The remaining 70 percent supports research grants made in prior years.

OFFICE OF STRATEGIC INITIATIVES (OSI)

OSI Funding

(Dollars in Millions)

	FY 2022 Actual ¹	Disaster Relief Supplemental			FY 2023 Estimate Total	FY 2024 Request	Change over FY 2023 Base Total ²	
		FY 2023 Estimate Base	RI Damage Base	Mitigation			Amount	Percent
Total	\$169.50	\$169.20	\$48.45	\$2.50	\$220.15	\$315.10	\$97.45	44.8%
Research	152.30	143.66	5.54	-	149.20	177.47	28.27	18.9%
Education	1.43	10.00	-	-	10.00	30.00	20.00	200.0%
Infrastructure	15.77	15.54	42.91	2.50	60.95	107.63	49.18	84.1%

¹ Does not captured funding provided by the American Rescue Plan supplemental appropriation.

² Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

The MPS Office of Multidisciplinary Activities (OMA) will be renamed the “Office of Strategic Initiatives” (OSI) to reflect the mission, activities, and portfolio of the office. In partnership with MPS divisions and programs, OSI strategically invests in research, education, and infrastructure to support novel and strategic projects that are not readily accommodated by traditional organizational structures and procedures. Funding will focus on strategic priority areas relevant to MPS. As the steward for QIS, OSI will work with all MPS divisions, BIO, EDU, ENG, CISE and OISE to promote convergent approaches to advance quantum science and technology. MPS is the steward for Windows on the Universe (WoU), supporting AST, PHY, and GEO/OPP in activities that bring together fundamental research in electromagnetic waves, high-energy particles, and gravitational waves; and grow the nation’s multi-messenger astrophysics, engineering, and data science workforce. OSI will supplement facility funding related to deferred and major maintenance projects as well as design and development of next generation facilities. OSI will collaborate with all MPS divisions to support their investments in AI for sciences and the science of AI, clean energy, and climate science research. OSI is the steward for the Spectrum Innovation Initiative (SII), which promotes transformative use and management of the electromagnetic spectrum with a focus on dynamic and agile spectrum utilization, benefiting multiple research areas. OSI will foster broadening participation through the MPS-Ascend program and the Launching Early-Career Academic Pathways in the Mathematical and Physical Sciences program and continue to place high priority on the Alliances for Graduate Education and the Professoriate: Graduate Research Supplement program and the MPS Graduate Research Supplements to Veterans program.

In general, about 42 percent of the division portfolio is available to support new research grants. The remaining 58 percent supports research grants made in prior years.

