

**INTEGRATIVE ACTIVITIES (IA)**

**\$646,370,000**

**IA Funding**  
(Dollars in Millions)

	FY 2022 Actual <sup>1</sup>	FY 2023 Estimate Base	Disaster Relief Supplemental Base	FY 2023 Estimate Total	FY 2024 Request <b>REVISED</b>	Change over FY 2023 Base Total <sup>2</sup>	
						Amount	Percent
EPSCoR <sup>2</sup>	\$215.06	\$205.00	\$50.00	\$255.00	\$280.68	\$25.68	10.1%
Equity and Compliance in Research	-	5.00	-	5.00	5.00	-	-
Evaluation & Assessment Capability	6.63	7.00	-	7.00	10.00	3.00	43%
Facility Operations Transition	-	-	-	-	12.00	12.00	N/A
Growing Convergence Research	16.86	16.00	-	16.00	16.43	0.43	3%
Growing Research Access for Nationally Transformative Equity & Diversity (GRANTED) <sup>2</sup>	-	34.18	10.82	45.00	50.00	5.00	11%
HBCU Excellence in Research	18.52	10.00	15.00	25.00	37.93	12.93	52%
Major Research Instrumentation <sup>2</sup>	78.01	63.75	20.00	83.75	92.75	9.00	11%
Mid-scale Research Infrastructure <sup>2</sup>	40.00	40.00	15.00	55.00	50.00	-5.00	-9%
Modeling and Forecasting	1.51	3.00	-	3.00	3.00	-	-
Planning & Policy Support	4.40	3.00	3.00	6.00	6.00	-	-
Research Investment Communications	5.46	1.30	4.70	6.00	6.50	0.50	8%
Research Security Strategy and Policy	1.27	10.00	-	10.00	13.00	3.00	30%
STC Class of 2023	-	-	24.00	24.00	24.00	-	-
STC Admin	0.60	0.60	-	0.60	0.60	-	-
Science & Technology Policy Institute	4.98	1.00	4.68	5.68	5.81	0.13	2%
Strategic Initiatives Resources <sup>2</sup>	-	[10.0]	[20.0]	[30.0]	32.67	[2.67]	N/A
<b>Total</b>	<b>\$393.30</b>	<b>\$399.83</b>	<b>\$147.20</b>	<b>\$547.03</b>	<b>\$646.37</b>	<b>\$99.34</b>	<b>18.2%</b>

<sup>1</sup> Excludes \$35.33 million in American Rescue Plan Supplemental funding.

<sup>2</sup> FY 2023 funding includes one-time funding through the Strategic Initiatives line for targeted investments for EPSCoR co-funding (\$10.0 million), GRANTED

<sup>3</sup> Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

**About IA**

IA investments catalyze transformative advances in science and technology by incubating new ideas and communities, supporting innovation in research and in NSF’s own processes, and promoting the integration of research and education. They enhance the competitiveness of the Nation’s research through activities that build capacity for science and engineering (S&E) and broaden participation in research and research training, especially along organizational and geographic axes. They expand NSF’s capacity to generate and use evidence for developing strategy and decision making.

IA invests in strategic activities that span the disciplinary spectrum, incubates new cross-cutting activities, and explores emerging ideas. IA provides a flexible mechanism to support emerging program priorities, including equity and compliance in research, research security, and effective communications about NSF’s research investments. Sustained strategic investments include instrumentation, infrastructure, and cross-cutting collaborative research.

IA provides funding for innovative programs designed to enhance the ability of jurisdictions, institutions, and individuals to conduct globally competitive research. IA’s jurisdictional and institutional capacity-building programs include Established Program to Stimulate Competitive

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Research (EPSCoR), Growing Research Access for Nationally Transformative Equity and Diversity (GRANTED), Historically Black Colleges and Universities - Excellence in Research (HBCU-EiR), and Major Research Instrumentation (MRI). The Alan T. Waterman honorary award recognizes and invests in emerging talent. IA also supports Science and Technology Centers: Integrative Partnerships (STC), a program that promotes discovery and innovation through center-scale collaborative research and knowledge transfer.

IA promotes and supports the use of evidence in NSF decision making, leads strategic planning for evidence-building activities, compiles data and statistics on key NSF processes, and conducts or oversees studies of NSF programs and other activities to guide continuous improvements.

### **IA FY 2024 Activities**

#### Established Program to Stimulate Competitive Research (EPSCoR)

- EPSCoR investments assist NSF in its statutory function “to strengthen research and education in the sciences and engineering, including independent research by individuals, throughout the United States, and to avoid undue concentration of such research and education.”
- EPSCoR provides strategic programs and opportunities that stimulate sustainable improvements to EPSCoR jurisdictions’ R&D capacity and capability. EPSCoR aims to stimulate research that enhances jurisdictional competitiveness in NSF disciplinary and multidisciplinary research programs, especially those that drive economic growth.
- At the FY 2024 Request level, increased funding will support capacity building efforts to expand research partnerships in critical fields, such as quantum information science and engineering, biotechnology, and artificial intelligence. Additionally, FY 2024 funding increases will support advancement of interjurisdictional research and development capacity across different institution types.

#### Equity and Compliance in Research

- In FY 2024, NSF will continue to support its ability to maximize program delivery in an equitable manner, to include strategic planning and implementation, training, stakeholder engagement, complaint processing and investigation, partnership and international engagement, proactive compliance and recruitment and outreach activities. These activities respond to the need to address inequities in program delivery, Sexual Assault/Harassment Prevention & Response (SAHPR)<sup>1</sup> related concerns and requirements in executive orders (EO) (e.g., EO 14035 on Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce;<sup>2</sup> EO 13985 on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government;<sup>3</sup> and EO 14020 on Establishment of the White House Gender Policy Council<sup>4</sup>) and are informed by NSF’s Racial Equity Task Force Report.

#### Evaluation and Assessment Capability (EAC)

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<sup>1</sup> [www.nsf.gov/geo/opp/documents/USAP%20SAHPR%20Report.pdf](http://www.nsf.gov/geo/opp/documents/USAP%20SAHPR%20Report.pdf)

<sup>2</sup> [www.whitehouse.gov/briefing-room/presidential-actions/2021/06/25/executive-order-on-diversity-equity-inclusion-and-accessibility-in-the-federal-workforce/](http://www.whitehouse.gov/briefing-room/presidential-actions/2021/06/25/executive-order-on-diversity-equity-inclusion-and-accessibility-in-the-federal-workforce/)

<sup>3</sup> [www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/](http://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/)

<sup>4</sup> [www.whitehouse.gov/briefing-room/presidential-actions/2021/03/08/executive-order-on-establishment-of-the-white-house-gender-policy-council/](http://www.whitehouse.gov/briefing-room/presidential-actions/2021/03/08/executive-order-on-establishment-of-the-white-house-gender-policy-council/)

- EAC engages in strategic planning of evidence-building activities in support of the Agency's mission. This includes leading the development of the Agency's learning agenda, annual evaluation plan, inventory and analysis of evidence-building activities, and other activities that support the generation and use of evidence for decision making. Furthermore, EAC oversees or conducts evidence-building activities—including evaluations, foundational fact-finding, policy analysis, and other types of studies and analyses—in response to questions prioritized in the Agency's learning agenda, in the annual evaluation plan, or by leadership and staff in response to emerging needs.
- At the FY 2024 Request level, funding will support studies prioritized in the Agency-wide learning agenda and focused on enabling program improvements. This funding enables EAC to provide needed Agency-wide support that complements the work conducted by NSF directorates and offices. In partnership with other agencies, the FY 2024 Request includes support for the Analytics for Equity initiative.

#### Facility Operation Transition

- Facility Operation Transition reflects NSF's strategic commitment to a smooth transition from MREFC to O&M funding of new major facilities, as well as achievement of a balanced portfolio between facilities and investigator research, both of which were emphasized in the NSB's Congressionally requested 2019 report entitled "Study of Operations and Maintenance Costs for NSF Facilities" (NSB-2018-17).<sup>5</sup> The Facility Operation Transition funding will be used to (1) partially support initial O&M of new facilities so that the full O&M costs can be gradually absorbed into the managing division or directorate, and (2) partially support divestment of lower-priority facilities, the full cost of which may significantly impact individual division or directorate funding. For more information see the Facilities Overview narrative in the Major Facilities section of the Research Infrastructure chapter.

#### Growing Convergence Research (GCR)

- GCR supports innovative basic research that falls outside traditional disciplines and uses novel, transdisciplinary approaches to solve complex problems. Key project characteristics are: (1) they have the potential to make a significant impact, either on fundamental understanding in S&E or on the Nation's ability to meet pressing societal challenges, or both; and (2) they require the deep integration of knowledge, tools, and ways of thinking from across multiple disciplines. GCR also grows the next generation of convergence researchers. GCR incubates the capacity of research teams to address pressing, emerging research challenges that are large in scope, innovative in character, originate outside of any particular NSF directorate, and may require a multi-year commitment. In FY 2024, GCR investments will support three to seven new research collaborations and the continuation of three to six projects begun in FY 2022.

#### Growing Research Access for Nationally Transformative Equity and Diversity (GRANTED)

- In FY 2024, NSF will invest in GRANTED, which is designed to lead to improvements in the Nation's research enterprise, including external funding support and service capacity and capabilities, especially within emerging and underserved research institutions. GRANTED funding will aim to mitigate the barriers to competitiveness at underserved institutions, including minority-serving institutions and emerging research institutions, within the Nation's research enterprise as NSF contributes to the Administration's priority on equity. GRANTED activities will support the

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<sup>5</sup> [www.nsf.gov/pubs/2018/nsb201817/nsb201817.pdf](http://www.nsf.gov/pubs/2018/nsb201817/nsb201817.pdf)

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enhancement of research administration and post-award management, the strengthening of the structure of research enterprise positions and career pathways, improved skill training, sharing and scaling of research enterprise practices and models, and expansion of partnerships between and across institutions and organizations that support research enterprise services. GRANTED will also partner with national and regional professional societies to grow the Nation's research capacity within underserved communities and institutions.

### Historically Black Colleges and Universities – Excellence in Research (HBCU-EiR)

- The HBCU-EiR program focuses on improving the research capacity and competitiveness of HBCUs by supporting new research opportunities at these institutions. In FY 2024, investments in HBCU-EiR will fund 40 to 75 HBCU-EiR research grants managed by NSF research and education directorates. NSF will provide supplemental support to HBCU-EiR research activities involving postdoctoral researchers, graduate and undergraduate students. Additionally, HBCU-EiR will support funding mechanisms to enhance institutional research capacity and competitiveness, which may also include providing co-funding to NSF directorates in support of meritorious STEM research and STEM education research proposals from HBCUs.

### Major Research Instrumentation (MRI)

- MRI invests in shared-use S&E research instrumentation as well as equipment and instrumentation to conserve or reduce the consumption of helium. Approximately 75 new awards will support instrument and equipment development and acquisition in all of NSF's S&E domains. MRI's investments also contribute to research-intensive learning environments that enhance the training of a diverse S&E workforce and facilitate partnerships between academia and the private sector.

### Mid-scale Research Infrastructure Track-1 (Mid-scale RI-1)

- The Mid-scale RI-1 activity funded through the IA budget within the R&RA account is one component of NSF's Mid-scale Research Infrastructure program. It aims to significantly advance the Nation's capabilities for conducting potentially transformative research and maintaining U.S. leadership in global S&E. Mid-scale RI-1 investments support: (1) the implementation of research infrastructure projects between \$4.0 million and \$20.0 million; and (2) the design of future mid-scale research infrastructure projects. In FY 2024, Mid-scale RI-1 will invest \$50.0 million in projects emerging from the FY 2023 competition.

### Modeling and Forecasting

- NSF will improve its enterprise analytics capability in support of advancing research, improving equity in science, and securing global leadership. NSF will expand its capacity to leverage modeling of internal and external data to generate timely and actionable insights to inform agency strategy, investments, and programmatic decisions. NSF will harness big data (both structured and unstructured), data science (including AI techniques such as machine learning), and statistical modeling to advance portfolio analysis, monitor program participation, promote partnerships, and understand the outcomes of NSF's investments to advance scientific discovery and achieve societal goals. Results of this work will provide valuable information to promote excellence in achieving NSF's mission.

### Planning and Policy Support (PPS)

- PPS includes funding for a wide range of activities, many of which are focused on generating

evidence and convening stakeholders in support of planning, policy development, and management efficiencies. Examples include conducting NSF surveys of principal investigators and reviewers, supporting studies of NSF's merit review process, strengthening enterprise analytics capability, engaging in annual agency award activities (such as the Alan T. Waterman Award and National Medal of Science), and supporting summer science internship programs that target STEM students from underrepresented groups. PPS also provides funding to support collaborations with the National Academies of Science, Engineering, and Medicine (the National Academies) for the Committee on Science, Engineering, Medicine, and Public Policy (CoSEMPuP)<sup>6</sup>; the Federal Demonstration Partnership<sup>7</sup>; and studies, workshops, and letter reports spanning multiple research domains. In FY 2024, PPS will continue to invest in catalytic activities—workshops, conferences, and long-term planning exercises, focused on emerging themes and agency innovations—as well as capacity-building activities for national priorities. PPS will invest in advancing public engagement in STEM visioning and in catalyzing research on robust indicators of rigor in research.

#### Research Investment Communications (RIC)

- RIC invests in leading-edge communication essential to build public and stakeholder awareness and support for S&E. RIC creates products and processes through various digital platforms to make NSF's investments in STEM readily available and easily understandable to everyone. In FY 2024, RIC informs policy makers, stakeholders, the media, and the general public about the impact of NSF's investments on their daily lives and the Nation's future.

#### Research Security Strategy and Policy

- In FY 2024, NSF will continue expanding capabilities and competencies to protect the U.S. science and engineering enterprise through its Research Security Strategy and Policy activity. Major components and activities of NSF's Research Security portfolio implemented and available by FY 2024 include: developing a common framework for understanding research security within the U.S. research community and with international colleagues; in partnership with other federal research agencies, establishing uniform mechanisms for research investigators to provide consistent information (i.e., their appointments, activities, and sources of financial support); and scaling up analytic capabilities to proactively identify conflicts of commitment and vulnerabilities of pre-publication research. Furthermore, NSF will focus on the delivery of training resources to the research community to ensure a clear understanding of research security issues, NSF disclosure requirements, and the tenets of beneficial international collaboration. Several of these activities are responsive to the January 2022 National Science and Technology Council implementation guidance for National Security Presidential Memorandum 33 (NSPM-33) on National Security Strategy for United States Government-Supported Research and Development<sup>8</sup> and to the research security provisions in the August 2022 CHIPS and Science Act.
- FY 2024 funding for NSF's Research Security activity is \$13.0 million and will support the continued planning and implementation of the Research Security and Integrity Information Sharing and Analysis Organization (RSI-ISA), as required in Sec. 10338 of the CHIPS and Science Act, and the Research on Research Security program, guided by the results of a JASON study completed in March 2023, which will support partnerships and collaborations of U.S. federal agencies and non-

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<sup>6</sup> [www.nationalacademies.org/cosempup/committee-on-science-engineering-medicine-and-public-policy](http://www.nationalacademies.org/cosempup/committee-on-science-engineering-medicine-and-public-policy)

<sup>7</sup> [www.thefdp.org/default/](http://www.thefdp.org/default/)

<sup>8</sup> [www.whitehouse.gov/wp-content/uploads/2022/01/010422-NSPM-33-Implementation-Guidance.pdf](http://www.whitehouse.gov/wp-content/uploads/2022/01/010422-NSPM-33-Implementation-Guidance.pdf)

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profit organizations.

- The RSI-ISAO will serve as a clearinghouse for information, empowering the research community to mitigate potential foreign interference risks to safeguard the U.S.-funded research enterprise.
- The Research on Research Security program will assess the characteristics that distinguish research security from research integrity, improve the quantitative understanding of the scale and scope of research security risks, and develop methodologies to assess the potential impact of research security threats, among others.
- In FY 2023, NSF made four awards to develop research security training modules for the research community. In FY 2024, NSF will focus on delivering these modules to make them easily accessible to the research community and on evaluation of these modules.

### Science and Technology Centers: Integrative Partnerships Program (STC)

- The STC program supports exceptionally innovative, complex research and education projects that require large-scale, long-term awards. STCs engage the Nation's intellectual talent in world-class research through partnerships across academia, industry, national laboratories, other public and private entities, and via international collaborations. These partnerships create synergies that enhance the training of the next generation of scientists, engineers, and educators and contributes to NSF's mission to broaden the participation of members of underrepresented groups in STEM. In FY 2024, \$24.0 million supports the second year of four Class of 2023 centers. STC Administration supports post-award management of STC awards, including site visits by review teams. For more information on the STC program portfolio, see the NSF Centers Programs narrative in the NSF-Wide Investment chapter.

### Science and Technology Policy Institute (STPI)

- STPI is a Federally Funded Research and Development Center sponsored by NSF on behalf of the White House Office of Science and Technology Policy (OSTP). STPI provides analysis of significant domestic and international science and technology policies and developments for OSTP and other federal agencies.

### Strategic Initiatives Resources

- Through the Strategic Initiatives Resources, NSF will support activities responding to national priorities that may not align with a specific disciplinary focus or project scope. In FY 2024, this activity will emphasize the Administration's priority on climate research related activities.

## **People Involved in IA-Funded Activities**

For detail on the People Numbers, please see the Summary Tables chapter.

**ESTABLISHED PROGRAM TO STIMULATE COMPETITIVE RESEARCH (EPSCoR) \$280,680,000**

**EPSCoR Funding**  
(Dollars in Millions)

	FY 2022 Actual <sup>1</sup>	FY 2023 Estimate Base	Disaster Relief Supplemental Base	FY 2023 Estimate Total	FY 2024 Request	Change over FY 2023 Base Total <sup>2</sup>	
						Amount	Percent
<b>Total</b>	<b>\$215.06</b>	<b>\$205.00</b>	<b>\$50.00</b>	<b>\$255.00</b>	<b>\$280.68</b>	<b>\$25.68</b>	<b>10.1%</b>
Research Infrastructure Improvement	162.83	148.65	50.00	198.65	221.69	23.04	11.6%
Co-Funding	52.12	55.00	-	55.00	56.14	1.14	2.1%
Outreach and Workshops	0.11	1.35	-	1.35	2.85	1.50	111.1%

<sup>1</sup> FY 2023 funding includes one-time funding above Congressional directed level of \$245.0 million through the Strategic Initiatives Resources line for targetted investments for EPSCoR co-funding (\$10.0 million).

<sup>2</sup> Captures both the FY 2023 Omnibus appropriation and the Disaster Relief Supplemental base.

**About EPSCoR**

EPSCoR assists NSF in its statutory function “to strengthen research and education in science and engineering throughout the United States and to avoid undue concentration of such research and education.” EPSCoR seeks to advance excellence in science and engineering research and education, enhancing the competitiveness of EPSCoR jurisdictions in the science and engineering domains supported by NSF.

In general, about 16 percent of the EPSCoR portfolio is available to support new research grants. The remaining 84 percent supports grants made in prior years.

EPSCoR uses three strategic investment tools: Research Infrastructure Improvement (RII) awards, Co-Funding, and Outreach/Workshops. In FY 2024, RII will expand to include new opportunities to transform and enhance research capacity and competitiveness of EPSCoR jurisdictions.

Research Infrastructure Improvement (RII)

- RII investments support development of physical, human, and cyber-based research infrastructure in EPSCoR jurisdictions, with an emphasis on collaborations among academic researchers, the private sector, and state and local governments, to affect sustainable improvements in research infrastructure. RII projects are designed to improve the research competitiveness of jurisdictions by strengthening their academic research infrastructure in areas of S&E supported by NSF that are critical to the jurisdiction’s science and technology initiatives.
- In FY 2024, EPSCoR continues the RII Track-2: Focused EPSCoR Collaborations (RII Track-2 FEC), which builds inter-jurisdictional collaborative teams of EPSCoR investigators in scientific focus areas consistent with NSF priorities. These awards have a particular focus on the development of early career/junior faculty. In FY 2024, awards will support the Administration’s R&D priority area of climate change.
- The RII Track-4: EPSCoR Research Fellows @NASA sub-track supports faculty at minority-serving institutions, women’s colleges, and primarily undergraduate institutions in EPSCoR jurisdictions to collaborate with researchers at NASA research centers. In FY 2024, this activity will expand NASA research center eligibility and participation.
- In FY 2024, new programmatic opportunities will launch in response to provisions in the CHIPS and Science Act (P.L. 117-167) and three reports issued during FY 2022: (1) Envisioning the Future

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of NSF EPSCoR report<sup>9</sup>, (2) a Government Accountability Office issued report,<sup>10</sup> and (3) an exploratory analysis and conceptual framework for examining research competitiveness<sup>11</sup>. New programs will provide support to develop and coordinate core research, networks of research teams, and incubator activities to impact the jurisdiction's research ecosystem. These activities will connect individuals, institutions, and research networks and leverage other funding mechanisms, including current NSF and other federal investments. These investments will allow jurisdictions to develop both breadth and depth in discipline-specific research capacity, as well as create pathways for innovative systemic change strategies that support research and translational activities in the jurisdiction. Furthermore, these activities will nurture and expand research and economic development networks and educate and train a diverse workforce.

### Co-Funding

- EPSCoR co-funding supports awards in response to meritorious proposals from individual investigators, collaborative groups, and center-scale teams based in EPSCoR-eligible jurisdictions. These proposals are submitted across all of the Foundation's research and education programs, including crosscutting initiatives, where they undergo merit review and are selected for award based on NSF's intellectual merit and broader impact criteria. EPSCoR prioritizes co-funding for awards that advance its programmatic goals, including those supporting new investigators. In FY 2024, the program will place increased emphasis on expanding support of meritorious STEM research and education proposals from EPSCoR jurisdictions across NSF, with a specific focus on early career faculty, academic research infrastructure, capacity building for center-scale and network-focused competitions, and projects that make major, potentially transformational impacts toward physical and cyberinfrastructure and the development of a diverse STEM workforce. EPSCoR co-funding ensures support for projects that might not be funded without the combined, leveraged resources of EPSCoR and the managing programs.

### Outreach and Workshops

- The Outreach component of EPSCoR solicits requests for workshops, conferences, and other community-based activities. These are designed to explore opportunities in emerging areas of S&E and to share best practices in strategic planning, diversity, communication, and other capacity-building areas of importance in EPSCoR jurisdictions. EPSCoR also supports outreach travel that enables NSF staff from all directorates and offices to directly engage and inform the EPSCoR research community about NSF opportunities, priorities, programs, and policies.

### Strategic Partnership and Evaluation Activities

- In FY 2024, NSF EPSCoR continues to implement a cohesive evaluation framework to study processes and outcomes that contribute to academic research competitiveness. EPSCoR will continue to identify and collect high-quality data and will work with jurisdictions to use the framework to identify opportunities for increasing their competitiveness in NSF research programs and for other federal and private S&E funding.

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<sup>9</sup> <https://beta.nsf.gov/funding/initiatives/epscor/future-nsf-epscor>

<sup>10</sup> [www.gao.gov/assets/gao-22-105043.pdf](http://www.gao.gov/assets/gao-22-105043.pdf)

<sup>11</sup> <https://nsf.gov-resources.nsf.gov/2022-06/EPSCoR%20Base%20Period%20Final%20Report%20-%20%28508%20Compliant%29.pdf>