INFORMATION TECHNOLOGY (IT)   **$174,040,000**

NSF's IT is the second largest component of the Organizational Excellence portfolio, funded at $174.04 million in the FY 2025 Request. FY 2025 funding for NSF's IT investment is provided through the AOAM and R&RA accounts.

Information technology, technology innovation, and data are critical to the agency's mission. NSF needs to position itself with the right structure and resources so we can continue to provide outstanding information technology services to our staff and the external research community. With that in mind, in FY 2024, the agency has created a new Office, similar to the Office of Information and Resource Management (OIRM) and the Office of Budget, Finance and Award Management (BFA), called the Office of the Chief Information Officer (OCIO). The Office Head also serves as the Chief Information Officer and Chief Technology Officer. All of NSF's IT activities and functions, as described in this narrative, will reside in this new Office and allow NSF's IT functions to work even more effectively and efficiently.

Historically, IT investments funded via NSF's program accounts (the R&RA and EDU accounts) are referred to as Program Related Technology (PRT) investments and are funded under an umbrella term call Program Related Administration (PRA). In FY 2025, PRT is consolidated within the R&RA account and PRA is renamed to Mission Support Services (MSS). Beginning in FY 2025, NSF proposes to create MSS as a formal Activity line within the R&RA account. Information about the creation of this new activity line can be found within the Organizational Excellence Overview narrative as well as the R&RA Overview narrative.

NSF IT Portfolio Investments by Appropriation

IT Investments by Appropriation
(Dollars in Millions)

	FY 2023 Base Plan	FY 2024 (TBD)	FY 2025 Request	Change over FY 2023 Base Plan Amount	Change over FY 2023 Base Plan Percent	Funding Source
AOAM IT	$38.53	-	$44.08	$5.55	14.4%	AOAM
Program Related Technology (PRT)	108.72	-	129.96	21.24	19.5%	R&RA[1]
Total	**$147.25**	**-**	**$174.04**	**$26.79**	**18.2%**	

[1] In FY 2023, PRT was funded across the R&RA and EDU accounts in roughly an 85/15 split. Going forward, in FY 2025, with the establishment of the Mission Support Services activity in the R&RA account, all PRT funding will be funded via the R&RA account only.

Agency IT investments funded through the AOAM account support the agency's operations to ensure high quality, reliable, and secure administrative applications and associated IT infrastructure support and services to meet the needs of the Foundation. This funding accounts for one quarter (25 percent) of NSF's total IT investment at the FY 2025 Request.

Program Related Technology (PRT) investments support NSF's programmatic activities and associated services. PRT investments are mission-related IT and Data Management investments that support the merit review process, including pre-award planning and activities; receipt of proposals; processing

proposals; reviewing proposals; award decisions, documentation, and notification; funding awards; post-award oversight; dissemination of award results; and award close-out. As noted above, in FY 2025, PRT funding is consolidated within the R&RA account and will be funded under the new R&RA activity line Mission Support Services. PRT investments in the FY 2025 Request account for three quarters (75 percent) of NSF's FY 2025 total funding for IT investments.

NSF's IT priorities for FY 2025 reflect NSF's commitment to providing excellent, equitable, and secure Federal services and customer experiences, while continuing to enhance Federal IT and cybersecurity as key enablers of mission delivery.

In FY 2025, NSF will preserve secure, reliable information technology operations and ongoing modernization of the agency's IT infrastructure and systems that support the business operations of the agency, while enabling innovation and new modernization to support NSF's strategic objectives. Advances supported by this submission include IT initiatives to: (1) Strengthen Established NSF, supporting the Foundation in expanding the frontiers of knowledge and technology; (2) Enable Participation by the "Missing Millions" to bring new, diverse perspectives into the Nation's scientific enterprise; (3) Accelerate Technology and Innovation at speed and scale; (4) Promote a Hybrid and Equitable Workforce, reducing administrative burden and ensuring equity through optimized support; and (5) Enable Data-driven Decision Making, augmenting IT services with intelligence using predictive and prescriptive technologies.

At FY 2025 Request, while part of the cost increase ($7.49 million or 28 percent) is driven by inflation, the majority ($19.30 million or 72 percent) is devoted to incremental development, new modernization, and innovation that will continue based on the aforementioned priorities, including:
- Employ innovative and emerging technology capabilities to accelerate discovery and strengthen state-of-the art research, enabling NSF to increase agility of merit review and administrative functions while strengthening and empowering the agency's workforce and providing platforms for development and testing of new technology tools and capabilities;
- Continue technology transformations geared toward broadening participation, improving the customer experience, and increasing engagement both internally and for public-facing digital services, with a continued focus on modernization and digitization;
- Increase investment in technologies that enable NSF to enhance and evolve processes and to operate at speed and scale, such as utilizing technology to eliminate manual processes, improve integration between human resource management systems, and modernizing agency financial management capabilities to support budget formulation and acquisition management;
- Maintain and expand the agency's flexible and scalable IT infrastructure and systems, including technologies to support hybrid work, providing advanced technology capabilities to reduce administrative burden and facilitate information sharing to ensure equity while preserving secure, reliable operations; and
- Enable and enhance NSF's capabilities for data-driven decision making, building and maturing a unified data ecosystem that leverages next generation analytics and artificial intelligence (AI).

NSF IT Portfolio Investments by Category

Investments in NSF's IT Portfolio can be grouped across five main categories: Administrative Applications Services and Support; Mission-Related Applications and Services; IT Operations and Infrastructure; IT Security and Privacy; and IT Management. Funding for the activities under these

investment categories is split between AOAM and PRT.

Information Technology Portfolio by Category

(Dollars in Millions)

	FY 2023 Base Plan	FY 2024 (TBD)	FY 2025 Request	Change over FY 2023 Base Plan		Funding Source
				Amount	Percent	
Administrative Applications Services and Support	$11.61	-	$12.69	$1.08	9.3%	AOAM
Mission-Related Applications and Services	67.91	-	85.86	17.95	26.4%	PRT
IT Operations and Infrastructure	52.16	-	57.94	5.78	11.1%	AOAM/PRT
Security and Privacy Services	12.67	-	14.54	1.87	14.8%	AOAM/PRT
IT Management	2.90	-	3.01	0.11	3.8%	AOAM/PRT
Total	**$147.25**	**-**	**$174.04**	**$26.79**	**18.2%**	

Administrative Applications Services and Support ($12.69 million; AOAM only)

Investments in this category support administrative applications, such as the NSF website, NSF's human resources management systems, and NSF's financial management system.

- iTRAK is NSF's financial management system, of which seventy percent will be funded by PRT through the R&RA and EDU accounts, and 30 percent will be funded by the AOAM account. The AOAM portion of the FY 2025 funding supports ongoing operations and maintenance of the system as well as routine technical refresh.
- Other administrative application services provide for operations and maintenance of agency administrative and collaboration tools and support services. FY 2025 funding in this area will support operations and maintenance of NSF.gov as well as ongoing operation of the agency's contract writing system.
- Funding allows continued operations and maintenance of the systems that support strategic management of NSF human capital, including those that enable the effective recruitment, retention, reskilling, and rewarding of NSF staff in alignment with NSF's Strategic Objective 4.2: Invest in People.[1] Funding in FY 2025 will support ongoing operations for the agency's core human capital management systems.
- This provides support for NSF's data management capabilities, including operation of the NSF by the Numbers dashboard, to provide interactive approaches for leveraging agency award, proposal, and budget data in support of NSF's mission.

Mission-Related Applications and Services ($85.86 million; PRT only)

Investments in this category fund the applications and services that support the merit review process, including pre-proposal planning; receipt of proposals; processing proposals; reviewing proposals; award decisions, documentation, and notification; funding awards; post-award oversight; dissemination of award results; and award close-out. Mission-related applications and services also support changes in process and technology resulting from new funding mechanisms and agreement types related to NSF's expanded responsibilities under the CHIPS and Science Act. These investments can be classified as:

- Mission Support Systems, which include support for a wide range of activities:
  - Operations and maintenance of NSF's mission support systems, which provide a suite of

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[1] Leading the World in Discovery; and Innovation; STEM Talent Development; Delivery of Benefits from Research - NSF Strategic Plan for Fiscal Years (FY) 2022 - 2026 | NSF - National Science Foundation www.nsf.gov/pubs/2022/nsf22068/nsf22068.pdf

functionality supporting each stage in the NSF proposal and award management process. Work in this area incorporates modernization of legacy merit review system platforms as well as ongoing needs for new functionality as it is incrementally deployed for production use. Funding in FY 2025 will also provide operational support for agency partnership systems which became operational in FY 2023.

- Continuous modernization of systems and services that support the merit review process. FY 2025 efforts will continue to prioritize modernization of public-facing services, designing and delivering a high-quality, integrated digital experience that maximizes access and usability and enables users to complete transactions in an efficient and accurate manner. Specific investments include:
  - Web Modernization: Continues efforts to expand the capabilities and information shared through NSF's website, which provides the general public, science and engineering research communities, and education communities with access to high quality information and services. In FY 2025, NSF will build on previous work to modernize, redesign, and unify NSF.gov content, and will continue agile development of NSF.gov with accessible features and content aligned with United States Web Design System (USWDS) standards. NSF will also continue modernization of the agency's intranet site using human-centered design principles and promote a suite of digital platform tools and services to support and enhance customer experience.
  - Public Access: Supports continued use of the NSF Public Access Repository (NSF-PAR) as a controlled platform for ensuring open, immediate, and equitable access to NSF research, utilizing integration with third-party services and leveraging application programming interfaces that support machine-to-machine communication to enhance public access to high-quality Federal data and reduce burden on the research community. FY 2025 efforts provide continued support for the expansion of the NSF-PAR, to ensure publications resulting from federally funded research are publicly accessible without an embargo on their free and public release and to enhance access to research outputs within the federated cross-agency repository.
  - Intelligent Automation of Grants Management Systems: This investment provides for incremental development and new modernization of IT systems/applications that support NSF's evolving grants management lifecycle. Investments aligned to this initiative in FY 2025 will focus on continued efforts to expand account management, including the ongoing consolidation of researcher profiles, and modernize legacy capabilities to support proposal routing, clearance, and processing, using innovative tools to reduce burden and provide portfolio management features to improve user experience.
  - Improve Service Delivery: This initiative focuses on expanding IT service delivery by providing new and improved capabilities to NSF staff. FY 2025 funding will focus on efforts to move eligible directorate-level tools and technologies to an enterprise support model.
  - Interactive Panel Systems (IPS) Replacement: Continues modernization of the interactive panel system, used by reviewers to collaborate with fellow panelists and review, rank, and recommend proposals. In FY 2025, funding will support development of new functionality to support ad hoc reviews, as well as operations and maintenance support of the new IPS.
  - Innovation Management: Continues the adoption and implementation of advanced tools and technologies to promote innovation, research and development, and emerging technologies to support agency priorities. Specifically, FY 2025 funding will support continued efforts to empower internal innovators, enabling broader enterprise adoption of locally developed tools and technologies, accelerated experimentation with emerging

technologies, continued use of new and advanced capabilities such as machine learning and low-code/no-code technologies, and expansion of efforts to support artificial intelligence (AI) governance, innovation, and risk management.

- NSF's Data Management and Delivery investment: NSF has prioritized agency initiatives to build a data fabric and improve access to Federal data assets and strengthen data infrastructure, further supporting the agency's use of data and evidence. FY 2025 funding includes continued investments in infrastructure, services and systems that accelerate access to secured, real-time, well-documented enterprise data, and to external data needed by NSF to broaden participation and improve strategic decision-making. This infrastructure will enable all agency staff to leverage data and analytics to achieve NSF's mission. In addition, ongoing support is provided to drive effective and informed data governance to empower all staff through knowledge sharing and training in data literacy and data analytics. In FY 2025, key priorities in this area include expansion of innovative technologies for advanced text analytics and initial rollout of a new data fabric framework to connect distributed NSF data assets.
- Support for NSF's core financial system, iTRAK: As noted above 70 percent of this request is funded by PRT with the remaining 30 percent funded by AOAM under Administrative Applications Services and Support. In FY 2025, the PRT support for iTRAK will enable NSF to begin planning for the next generation agency financial system.
- Financial services support: Enables continued agency efforts to modernize, streamline, and achieve higher efficiencies in NSF's core business and operations systems to improve transparency and accuracy of reporting between iTRAK and other mission systems that support agency awards, budget, contracting, oversight, and financial reporting functions. In FY 2025, NSF will prioritize development of a budget formulation system to enable the collection, analysis, modeling, and reporting of budget-related data from across the agency, and will continue enhancements to core business and operations systems, reducing manual data collection and implementing system enhancements that improve user experience.
- Human Resource System Modernization: This is an ongoing investment to modernize and enhance core agency systems for strategic management of human capital and administrative resource management. In FY 2025, NSF will prioritize new strategic workforce planning tools to improve tracking and forecasting of agency workforce needs and modernize NSF's learning management platform to help staff build new skills and advance their careers.

IT Operations and Infrastructure ($57.94 million; $23.18 million AOAM and $34.76 million PRT)
The FY 2025 funding will support NSF's ongoing enhancements to agency capabilities related to network, infrastructure, computing power including data center and cloud, customer support, and database administration. Specifically, the investments in this category are classified as:

- Network: Provides access to administrative applications, services, and technologies for virtual collaboration via a single network with wired and Wi-Fi connectivity for NSF staff and visitors. FY 2025 funding supports ongoing modernization of NSF's infrastructure, network, and telecommunications services, including the agency's continued adoption of Internet Protocol Version 6 (IPv6) technologies.
- Data Center and Cloud: Continues the agency use of cloud services and technologies, including the use of cloud-based email and collaboration tools. FY 2025 funding will support continued adoption and use of secure cloud infrastructure to modernize legacy systems and infrastructure, increasing resilience of IT services and applications, improving speed of deployment, and supporting NSF's service recovery capability while delivering new capabilities in alignment with zero trust architecture principles. Support for Data Center Facilities and Power is not included in

the AOAM IT or PRT budgets discussed in this narrative but is included in the agency's IT Portfolio summary reporting and mentioned here for transparency. Funding for Data Center Facilities and Power is supported under Space Rental and referenced in the Space Rental narrative.

- End User: Provides help desk services and customer care support for internal users (NSF staff) and external users (the research community including institutions, principal investigators, reviewers, and NSF visitors), as well as support for agency-provided workstations, mobile devices, and peripherals. FY 2025 funding in this area supports ongoing improvements to service delivery, including new technology capabilities to improve customer experience for NSF staff and external users, and continued expansion of central IT services as tools, technologies, and devices evolve.
- Platform: Reflects NSF's use, management, and acquisition of application and data-related services that support and enable business applications. In FY 2025, NSF will continue efforts to modernize database platforms and migrate to cloud-based platform configurations.
- Output: Supports NSF's Print Center services. These costs are not part of the AOAM IT or PRT budget discussed in this narrative but are included in the agency's IT Portfolio summary reporting and mentioned here for transparency. Funding for Print Center services are supported under Building and Administrative Services and discussed further in that section of the Administrative Support narrative.

Security and Privacy Services ($14.54 million; $7.60 million AOAM, $6.94 million PRT)
Investments in this category support the portion of NSF's IT security program which provides security and compliance oversight for NSF's administrative applications and mission support systems, including NSF's High Value Assets, under the direction of the NSF Chief Information Security Officer (CISO). In FY 2025, NSF will maintain investments in staff, tools, and professional services aligned with the National Institute of Standards and Technology (NIST) framework categories (Identify, Protect, Detect, Respond, Recover). These investments support the Foundation's hybrid workforce with modern and secure capabilities, prioritizing secure, reliable operations and around-the clock security monitoring through NSF's Security Operations Center (SOC). The FY 2025 level includes continued funding for modern cybersecurity measures to protect agency systems and sensitive information, such as ongoing efforts to modernize and maintain agency systems in alignment with zero trust architecture principles; efforts related to identification and management of supply chain risks; vulnerability and incident response activities; and continued efforts to ensure protection of agency information and systems through the use of encryption and phishing-resistant multifactor authentication. In FY 2025, additional funding will support implementation and ongoing operations for NSF's Sensitive Compartmented Information Facility (SCIF) in the Alexandria facility.

IT Management ($3.01 million; $610,000 AOAM, $2.40 million PRT)
IT Management includes support for the Chief Information Officer, Chief Technology Officer, Chief Information Security Officer, Chief Data Officer, Senior Agency Official for Privacy, and senior IT leadership in the areas of IT strategy and planning, enterprise architecture, capital planning, vendor management, IT budget/finance, IT strategic communications, and support for policy and reporting efforts related to Federal IT, including compliance with the Federal Information Technology Acquisition Reform Act (FITARA). In FY 2025, investments in this category will enable NSF to continue implementation of the TBM framework, to include initial expansion of the program into service-level mapping of data for all standard investments, as required by OMB, further enhancing the agency's ability to manage IT as a business.

Individual Directorate/Office IT Costs Outside of NSF's Central IT Budget

With increased availability of IT tools and solutions, NSF's investment in non-central ("distributed") IT continues to grow. In an effort to increase transparency and show continuous improvement in NSF's reporting and understanding of its IT expenditures, NSF's Chief Information Officer is working to formalize reporting and governance of distributed IT investments at NSF that are funded outside of the central IT budget (AOAM IT and PRT) discussed above. Currently, NSF has identified about $6.27 million of distributed IT costs that are being actively tracked and are included in the FY 2025 IT Portfolio summary reporting.

NSF Funding for E-Government Initiatives

The tables below show NSF's contributions and service fees for various E-Government and Line of Business (LoB) initiatives. These costs are not part of the AOAM IT or PRT budget discussed in this narrative but are included in the agency's IT Portfolio summary reporting and mentioned here for transparency. The FY 2025 levels are consistent with the funding amounts provided by the initiatives' respective managing partners.

NSF FY 2025 Request Funding for E-Government and
Line of Business (LoB) Initiatives

| Initiative | NSF Total | Appropriations Account | |
		AOAM	R&RA
Budget Formulation/Execution LoB	$130,000	-	$130,000
E-Rulemaking	22,071	22,071	-
Federal Audit Clearing House	109,023	-	109,023
Financial Management LoB	139,094	-	139,094
Geospatial LoB	25,000	-	25,000
Grants.gov	366,000	-	366,000
Human Resources Management LoB	68,478	-	68,478
Integrated Acquisition Environment (IAE)	519,508	24,000	495,508
Performance LoB	100,000	-	100,000
Total	**$1,479,174**	**$46,071**	**$1,433,103**

NSF's Total Cybersecurity Investments

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National Science Foundation
Total Cybersecurity Investment per the
National Institute of Standards and Technology (NIST) Categorization

(Dollars in Millions)

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NIST Category	FY 2023 Base Plan			FY 2024 (TBD)			FY 2025 Request		
	AOAM	R&RA	EDU	AOAM	R&RA	EDU	AOAM	R&RA	EDU
Identify	$1.11	$4.73	$0.41	-	-	-	$1.48	$5.57	-
Protect[1]	8.18	191.56	76.46	-	-	-	10.89	189.07	74.47
Detect	2.77	4.50	0.45	-	-	-	3.77	5.57	-
Respond	0.38	1.15	0.06	-	-	-	0.47	1.25	-
Recover	0.43	1.15	0.06	-	-	-	0.54	1.24	-
Account Total	**$12.87**	**$203.10**	**$77.44**	**-**	**-**	**-**	**$17.15**	**$202.69**	**$74.47**
NSF Total			**$293.41**			**-**			**$294.31**

[1] The Protect category includes investments within the R&RA and EDU account for Cybersecurity Research and Development which represents funding provided by NSF for activities aimed at providing or enhancing security to the broader Federal, military, or national digital ecosystems.