

PROGRAM ACCOUNTS: R&RA AND EHR**\$131,560,000**
+\$5,040,000 / 4.0%

Funding from program accounts Research and Related Activities (R&RA) and Education and Human Resources (EHR) covers approximately 27 percent of the total Organizational Excellence portfolio. Three activities comprise program-funded Organizational Excellence: Intergovernmental Personnel Act (IPA) costs, Program Related Administration, and Other Organizational Excellence Activities.

Summary of R&RA- and EHR-Funded Organizational Excellence

(Dollars in Millions)

	FY 2017 Actual	FY 2018 Request	FY 2019 Request	Change over	
				FY 2017 Actual	Percent
IPA Costs	\$40.52	-	\$41.61	\$1.09	2.7%
IPA Compensation	34.73	-	35.81	1.08	3.1%
IPA Lost Consulting & Per Diem	3.21	-	3.17	-0.04	-1.1%
IPA Travel	2.58	-	2.63	0.05	1.8%
Program Related Administration	\$83.91	-	\$84.45	\$0.54	0.6%
Program Related Technology	76.28	-	80.80	4.52	5.9%
Other Program Related Administration ^{1,2}	7.63	-	3.65	-3.98	-52.1%
Other Organizational Excellence Activities	\$2.09	-	\$5.50	\$3.41	162.7%
Evaluation and Assessment Capability (EAC) ²	-	-	3.00	3.00	N/A
Planning and Policy Support ¹	2.09	-	2.50	0.41	19.4%
Total, R&RA and EHR Funded Organizational Excellence	\$126.52	-	\$131.56	\$5.04	4.0%

¹ For the FY 2019 Request, \$920,000 for Proposal Management Efficiencies (PME) is moved from Other Program Related Administration to Planning and Policy Support, a line item in the IA budget within the R&RA account.

² In the FY 2018 Request, EAC was moved from Other Program Related Administration to a line item in the IA budget within the R&RA account.

Intergovernmental Personnel Act (IPA) Costs

A portion of NSF's workforce consists of temporary staff hired through the Intergovernmental Personnel Act (IPA) authority. IPAs remain employees of their home institution while serving at NSF during their temporary appointment. They are not paid directly by NSF and are not subject to federal pay, benefits, or other limitations. NSF reimburses their home institution without overhead. IPAs are eligible to receive relocation expenses, or a per diem allowance in lieu of relocation. Reimbursement for income foregone because of their assignment at NSF is allowed only for IPA agreements in place before FY 2017, per NSF's new policy released October 2016. In addition, the new policy is piloting a required 10 percent cost sharing by the IPA's home institution of the IPA's academic-year salary and fringe benefits.

The agency uses IPA science and engineering staff to help ensure that the Foundation's funding decisions are based on the best input from the field, and reflect fresh ideas and creativity. The expertise provided by these IPAs is essential to help shape the NSF research portfolio and support transformational advances across the frontiers of all fields of science, engineering, and education.

IPA Costs by Appropriation
(Dollars in Millions)

	FY 2017 Actual	FY 2018 (TBD)	FY 2019 Request	Change over	
				FY 2017 Amount	FY 2017 Actual Percent
IPA FTE Utilization¹	174	-	171	-3	-1.4%
Research and Related Activities (R&RA)					
IPA Compensation	\$31.02	-	\$31.95	\$0.93	3.0%
IPA Lost Consulting & Per Diem	2.83	-	2.80	-0.03	-1.2%
Travel	2.37	-	2.42	0.05	2.0%
Subtotal, R&RA Costs	\$36.23	-	\$37.17	\$0.94	2.6%
Education and Human Resources (EHR)					
IPA Compensation	3.71	-	3.86	0.15	4.0%
IPA Lost Consulting & Per Diem	0.37	-	0.37	-	-
Travel	0.21	-	0.21	-	-
Subtotal, EHR Costs	\$4.29	-	\$4.44	\$0.15	3.5%
Total, IPA Costs¹	\$40.52	-	\$41.61	\$1.09	2.7%

¹ FY 2017 Actual utilization and total obligations include the costs associated with approximately three IPA FTE in the Office of Budget Finance and Award Management and the Office of the Director. These three FTE are included in the 171 IPA FTE for FY 2019; however, the funding for these three IPA FTE (approximately \$300,000) is budgeted within Other Program Administration and included in the General Planning and Evaluation (P&E) activities section of this narrative.

The FY 2019 Request funding for IPA costs is \$41.61 million representing an IPA usage level of 171 FTE. FY 2019 R&RA funding for IPAs is \$37.17 million supporting 146 IPA FTE. FY 2019 EHR funding for IPAs is \$4.44 million supporting 25 IPA FTE. For both R&RA and EHR, per IPA FTE costs are estimated at a level commensurate with the FY 2017 Actual.

The FY 2019 total IPA compensation is \$35.81 million, lost consultant and per diem is \$3.17 million, and travel is \$2.63 million. Funding for these three categories is associated with full use of NSF's existing IPA FTE allocation and projected IPA costs for FY 2019.

Program Related Administration

Program Related Administration Investments
(Dollars in Millions)

	FY 2017 Actual	FY 2018 (TBD)	FY 2019 Request	Change over	
				FY 2017 Amount	FY 2017 Actual Percent
Program Related Technology	\$76.28	-	\$80.80	\$4.52	5.9%
Other Program Related Administration	7.63	-	3.65	-3.98	-52.1%
Total, Program Related Administration	\$83.91	-	\$84.45	\$0.54	0.6%

The FY 2019 Request for Program Related Administration (PRA) is \$84.45 million. PRA includes two categories of activities that support NSF's strategic goal, Enhance NSF's performance of its mission,¹ and

¹NSF (2018). Building the Future: Investing in Discovery and Innovation – NSF Strategic Plan for Fiscal Years (FY) 2018-2022. Retrieved from: www.nsf.gov/about/performance/strategic_plan.jsp

that are directly funded from NSF’s program accounts:

- Program Related Technology (PRT); and
- Other Program Related Administration (Other PRA)

Program Related Technology (\$80.80 million)

IT investments funded through the R&RA and EHR accounts support NSF’s mission activities and is approximately 76 percent of NSF’s total IT investment portfolio. These programmatic investments are called Program Related Technology (PRT). NSF’s FY 2019 Request for PRT is \$80.80 million. The remaining \$26.20 million IT investment is funded through the AOAM account and is discussed in the AOAM chapter.

Program Related Technology Investments

(Dollars in Millions)

	FY 2017 Actual	FY 2018 (TBD)	FY 2019 Request	Change over	
				FY 2017 Actual Amount	Percent
Mission-Related Applications and Services	\$50.29	-	\$51.96	\$1.68	3.3%
Mission-Related IT Operations and Infrastructure	19.78	-	21.62	1.84	9.3%
Mission-Related Security and Privacy Services	3.98	-	4.98	1.00	25.2%
Mission-Related IT Management	2.24	-	2.24	-	-
Total, Program Related Technology	\$76.28	-	\$80.80	\$4.52	5.9%

NSF accomplishes its mission by providing federal financial assistance to individuals and institutions whose proposals have been judged the most promising by a rigorous and objective review process. Each stage in the NSF proposal and award management process is supported electronically. The IT services and systems that support the proposal and review process are funded through the PRT investment, an essential element in our Nation’s support for science, engineering, and education research.

For FY 2019, NSF’s information technology priorities for PRT are to:

- Support the Agency’s commitment to “Renewing NSF”, specifically focusing on the theme titled “Make IT Work for Us” by investing in several key areas to accelerate necessary technology transformations, while providing a mechanism to transform the agency’s workforce to operate in an environment where technology augments and amplifies human performance. A total of \$4.0 million will allow NSF to:
 - Accelerate support for modernization of the IT infrastructure and systems that support the business operations of the agency, leveraging cloud offerings to the greatest extent practicable. This will position NSF to continue to operate as an agile organization and will play a major role in enabling NSF’s mission, allowing the agency to remain flexible to adapt to business process changes identified from the Renewing NSF initiative.
 - Continue modernization efforts intended to streamline and support efficiencies for managing the lifecycle of proposals, prioritizing key citizen-facing services, while continuing to explore the use of Artificial Intelligence (AI) and machine learning to amplify NSF’s ability to meet its mission.
 - Identify, develop, and implement AI-driven tools for the development of NSF staff in an increasingly data intensive and rapidly advancing IT workplace context.
- Enhance the security of NSF’s infrastructure to respond to the ever-evolving threat landscape in support of the Cybersecurity Cross-Agency Priority goal: Provide ongoing observation, assessment, analysis, and diagnosis of an organization’s cybersecurity: posture, hygiene, and operational readiness.
- Support the continued operation of iTRAK, the Foundation’s financial management system, to ensure continued interoperability with NSF’s core financial functions during the necessary transition of contract provider.

- Support the Financial Services Support investment, distinct from the iTRAK investment which supports core financials, to modernize NSF's financial management functions thereby increasing transparency and accuracy of reporting between NSF's core financial system (iTRAK) and other mission systems.
- Position the agency's IT portfolio to leverage the Technology Business Management framework for managing IT as a business.

Mission-Related Applications and Services (\$51.96 million)

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. These investments can be classified as:

- Mission Support Systems, a total of \$39.28 million, supports the following activities:
 - \$24.41 million provides for the operations and maintenance of NSF's mission support systems, which provide a suite of functionality supporting each stage in the NSF proposal and award management process.
 - \$12.87 million for continuous modernization of systems and services that support the merit review process, such as proposal management efficiencies, public access to NSF-funded research, and modernization of the content management system for the citizen-facing NSF.gov website. These modernization efforts are intended to reduce administrative burden on NSF staff and the research community, improving NSF's interactions with and increasing information available to the American public.
 - \$2.0 million for "Make IT Work for Us", accelerating integration of AI tools into the renewed merit review process. Specifically, NSF will look to consolidate and integrate functionality intended to reduce the burden on the user with practical applications of cutting-edge technologies such as AI and machine learning. In addition, NSF will leverage AI and machine learning to transform the agency's workforce, in parallel with technology transformations, ensuring the workforce remains relevant and has the necessary skillsets to evolve and meet the agency's future needs.
- NSF's Data Management and Delivery investment, \$6.40 million, centralizes and streamlines access to NSF data for agency staff, and provides analytical and visualization capabilities key to data-based decision making. NSF will prioritize efforts to expand access to key datasets and enhance existing analysis capabilities for NSF portfolio management, evaluation, and assessment activities.
- The total FY 2019 investment for iTRAK is \$8.26 million. Seventy percent of this request is funded by PRT and 30 percent is funded by AOAM. The PRT portion of the iTRAK request is \$5.78 million, to fund operations and maintenance of NSF's core financial system, and to support the necessary transition of the contract provider.

Mission-Related IT Operations and Infrastructure (\$21.62 million)

Investments in this category provide funding for operations and maintenance, as well as continuous modernization, of NSF's infrastructure, network, and telecommunications requirements. The FY 2019 Request will allow the agency to accelerate technology transformations essential to making critical infrastructure viable for cloud and shared service offerings, enabling the agency to remain flexible to adapt to increasing demands. Investments include:

- Network (\$2.36 million), includes NSF's single network, with wired and Wi-Fi connectivity, for NSF staff and visitors, and virtual meeting support.
- Data Center and Cloud (\$6.20 million), includes the resources necessary to support and monitor access to mission applications that enable execution of NSF's mission, and includes \$2.0 million in support of the "Make IT Work for Us" initiative to accelerate modernization of the IT infrastructure, improving resilience using cloud offerings, software-defined infrastructure, and automated change management processes.
- End User (\$5.09 million), funds NSF's help desk services for internal users (NSF staff) and external

users (the research community including institutions, principal investigators, reviewers, and NSF visitors), which are available 13 hours per day, five days per week.

- Other (\$7.97 million) represents costs for off-the-shelf hardware and software, and for delivery services associated with technology transformations. Categorization and reporting of these costs will continue to be refined as future phases of TBM are implemented.

Mission-Related Security and Privacy Services (\$4.98 million)

Investments in this category include automated configuration management tools that manage security patches and provide proactive protection from viruses, spyware, and other threats. This investment covers the mission-related portion of NSF's network security, application security, security control testing and tools, automated vulnerability assessment tools, and remediation and intrusion detection services.

The FY 2019 Request will support operations and monitoring support for the Continuous Diagnostics and Monitoring (CDM) tools implemented thus far—including costs for tools and services received in Phases 1 and 2 of the CDM program—and to exploit the full capabilities of CDM offerings, enabling risk-based prioritization of the most significant cybersecurity improvements.

Mission Related IT Management (\$2.24 million)

IT Management includes support for the Chief Information Officer and senior IT leadership in the areas of IT strategy and planning, enterprise architecture, capital planning, vendor management, IT budget/finance, and IT strategic communications. In FY 2019, investments in this category will position NSF to take advantage of the technology business management framework, further enhancing the agency's ability to manage IT as a business.

Other Program Related Administration (\$3.65 million)

In FY 2019, \$3.65 million for NSF’s Other PRA includes funding for two Foundation-wide activities:

- NSF support for federal E-Government initiatives that are mission-related; and
- General planning and evaluation activities that are Foundation-wide.

Funding for Other PRA is reduced in FY 2019 as Proposal Management Efficiencies (PME) and Evaluation and Assessment Capabilities (EAC) are moved to line items in the IA budget within the R&RA account. These activities are discussed below in the Other Organizational Excellence Activities section and in the IA narrative within the R&RA chapter.

Other Program Related Administration

(Dollars in Millions)

	FY 2017 Actual	FY 2018 (TBD)	FY 2019 Request	Change over FY 2017 Actual	
				Amount	Percent
Proposal Management Efficiencies ¹	\$0.32	-	-	-\$0.32	-100.0%
Evaluation and Assessment Capabilities ²	4.71	-	-	-4.71	-100.0%
E-Government Initiatives	1.44	-	1.50	0.06	4.2%
General Planning and Evaluation Activities	1.16	-	2.15	0.99	85.5%
Total, Other Program Related	\$7.63	-	\$3.65	-\$3.98	-52.1%

¹ For the FY 2019 Request, \$920,000 for Proposal Management Efficiencies (PME) is moved from Other Program Related Administration to Planning and Policy Support, a line item in the IA budget within the R&RA account.

² In the FY 2018 Request, EAC was moved from Other Program Related Administration to a line item in the IA budget within the R&RA account.

E-Government Initiatives (\$1.50 million)

The FY 2019 funding level for NSF program-supported and mission-related E-Government initiatives is consistent with the FY 2019 funding amounts provided by the initiatives' respective managing partners. The \$60,000 increase over the FY 2017 Actual reflects FY 2019 funding level changes for the following initiatives:

- The Integrated Award Environment initiative increases approximately \$87,000 for Data Rights repayment;
- Grants.gov decreases approximately \$30,000 reflecting changes to the Grants.gov funding algorithm used to determine agency contributions; and
- The Human Resources Management Line of Business increases approximately \$3,000 reflecting a five percent agency partner contribution increase.

General Planning and Evaluation Activities (\$2.15 million)

FY 2019 funding for general planning and evaluation activities supports investments on broad programmatic and policy matters of NSF-wide scope and benefit. This includes activities such as the verification and validation of performance information; IPA FTE in the office of Budget Finance and Award Management and the Office of the Director; and certain costs associated with the American Association for the Advancement of Science fellowships program. Also included is \$87,851 for interagency management councils that support cross-agency management reforms and efficiencies and \$77,716 for Cross-agency Priority (CAP) Goals. The FY 2019 funding level is based on the level of general planning and evaluation activities and projects that occurred in FY 2017 and anticipated activities for FY 2019.

Other Organizational Excellence Activities

Other Organizational Excellence Activities

(Dollars in Millions)

	FY 2017 Actual	FY 2018 (TBD)	FY 2019 Request	Change over	
				FY 2017 Actual Amount	Percent
Evaluation and Assessment Capability (EAC) ¹	[\$4.71]	-	\$3.00	-\$1.71	-36.3%
Planning and Policy Support ²	2.09	-	2.50	0.41	19.4%
Total, Other Organizational Excellence Activities	\$2.09	-	\$5.50	\$3.41	162.7%

¹ In the FY 2018 Request, EAC was moved from Other Program Related Administration to a line item in the IA budget within the R&RA account. FY 2017 activities were supported by Other Program Related Administration; the FY 2017 Actuals are displayed here for comparability.

² For the FY 2019 Request, \$920,000 for Proposal Management Efficiencies (PME) is moved from Other Program Related Administration to Planning and Policy Support, a line item in the IA budget within the R&RA account.

Evaluation and Assessment Capability (EAC) (\$3.0 million)

EAC is an integral part of NSF's operations. It supports, coordinates, and conducts NSF-wide program evaluations and evidence generation and utilization to catalyze learning and improvement through collaboration with NSF's directorates and offices. More detailed information on EAC can be found within the Integrative Activities narrative in the Research and Related Activities chapter.

Planning and Policy Support (\$2.50 million)

Planning and Policy Support is a foundation-wide activity in the Integrative Activities budget that supports select NSF-wide policy and planning activities. More detailed information on Planning and Policy Support can be found within the Integrative Activities narrative in the Research and Related Activities chapter.

