

**INTEGRATIVE ACTIVITIES (IA)**

**\$536,720,000**  
**+\$116,450,000 / 27.7%**

**IA Funding**  
(Dollars in Millions)

	FY 2017 Actual	FY 2018 (TBD)	FY 2019 Request	Change over	
				FY 2017 Actual Amount	Percent
Convergence Accelerator: The Future of Work at the Human-Technology Frontier	-	-	\$30.00	\$30.00	N/A
Convergence Accelerator: Harnessing the Data Revolution	-	-	30.00	30.00	N/A
Evaluation and Assessment Capability <sup>1</sup>	[4.71]	-	3.00	-1.71	-36.3%
EPSCoR	162.80	-	160.00	-2.80	-1.7%
Graduate Research Fellowship Program	160.79	-	135.36	-25.43	-15.8%
Growing Convergence Research	-	-	16.00	16.00	N/A
HBCU Excellence in Research	-	-	10.00	10.00	N/A
INSPIRE	6.48	-	-	-6.48	-100.0%
Major Research Instrumentation	76.19	-	75.00	-1.19	-1.6%
Mid-scale Research Infrastructure	-	-	60.00	60.00	N/A
NSF 2026	-	-	6.50	6.50	N/A
NSF INCLUDES	1.91	-	-	-1.91	-100.0%
Planning and Policy Support	2.09	-	2.50	0.41	19.6%
Research Experiences for Undergraduates	0.64	-	-	-0.64	-100.0%
Research Investment Communications	3.47	-	3.47	-	-
Science and Technology Center Administration	0.16	-	0.15	-0.01	-6.3%
Science and Technology Policy Institute	4.74	-	4.74	-	-
STAR Metrics	1.00	-	-	-1.00	-100.0%
<b>Total</b>	<b>\$420.27</b>	<b>-</b>	<b>\$536.72</b>	<b>\$116.45</b>	<b>27.7%</b>

<sup>1</sup>Evaluation and Assessment Capability funding for FY 2017 Actual is displayed for comparability. FY 2017 activities were supported by the Other Program Related Administration. See the Program Accounts: R&RA and EHR chapter for more information.

The FY 2019 Budget Request for IA is \$536.72 million. This request highlights NSF’s continuing emphasis on building capacity across the research and education enterprise.

**About IA**

The activities supported by IA expand NSF’s capacity for discovery and innovation through the formation of new ideas and concepts, experimentation, and assessment. IA has five main goals:

- To strengthen the alignment of NSF’s activities with its mission;
- To enhance NSF’s ability to solicit, review, award, and manage a portfolio of frontier projects;
- To develop high-performance analytics and tools that reveal new insights into NSF’s award portfolio and inform policies and practices;
- To advance research infrastructure that will enable discovery across U.S. academic institutions; and
- To promote an inclusive national STEM enterprise that supports the development of STEM talent.

## **FY 2019 Activities**

### Convergence Accelerators

- NSF is initiating a new organizational structure approach called Convergence Accelerators to align its processes and operations with contemporary science and engineering research and education. The first two Convergence Accelerators will accelerate research advances for the Future of Work at the Human-Technology Frontier (FW-HTF) and Harnessing the Data Revolution for 21st-Century Science and Engineering (HDR) Big Ideas by facilitating convergent and translational activities in FW-HTF and HDR, especially through creation and leveraging of external partnerships. These Convergence Accelerators will complement HDR and FW-HTF research investments by engaging NSF directorates and offices in existing and new NSF programs that are aligned with the goals of the HDR and FW-HTF Big Ideas.

#### *Convergence Accelerator: The Future of Work at the Human-Technology Frontier (FW-HTF):*

- To promote global leadership in work productivity and quality, the FW-HTF Convergence Accelerator aims to speed up the progress of discovery and innovation at the nexus of humans, technology, and work. It is critical that emerging technologies, like artificial intelligence and robotics, augment human performance and benefit society. It is important to address the new skills that will be needed to work with new technologies in new industries and sectors in order to enable workers to migrate from old to new jobs. Partnerships with other federal agencies, industry, foundations, and international organizations will support translational aspects of convergence research, prototyping in workplace testbeds, and living laboratories, as well as promote needs-based, technology-mediated job training and retraining.

#### *Convergence Accelerator: Harnessing the Data Revolution for 21<sup>st</sup>-Century Science and Engineering (HDR):*

- Access to the next level of discovery relies on translating complex data from observations, experiments, and simulations into knowledge and eventual action. Individuals, scientific and social communities, industry, and the Nation will benefit from new data-rich capabilities, infrastructure, and services. The HDR Convergence Accelerator will surface a series of real-world, data-driven challenges requiring partnerships with other federal agencies, private industry, and international organizations to achieve maximum impact. For example, the HDR Convergence Accelerator will expand ongoing partnerships with cloud computing vendors and establish new partnerships to gain access to the most cutting-edge hardware on which the research community can develop new algorithms and solve complex problems. It will jumpstart partnerships with other federal agencies, private industry, and non-profits to gain access to interesting data and serious data challenges on which multi-disciplinary and multi-sector “tiger teams” can work to make significant advances in the near and medium terms. It will lead a change in the form and nature of collaborations required to deepen and strengthen the preparation of the next-generation workforce that effectively engages with data. Achieving these goals will position the United States as a global leader in data-driven discovery and innovation.

### Evaluation and Assessment Capability (EAC)

- EAC supports agency-wide program evaluations; improvements in data quality, and access to data and data analytics tools; and activities that inform organizational learning in the performance of NSF programs, policies, and day-to-day operations.
- A detailed discussion of EAC related and co-led activities is found later in the Program Monitoring and Evaluation section of this narrative.

### EPSCoR

- EPSCoR funding in FY 2019 will catalyze key research themes, including national research priorities within and among EPSCoR jurisdictions that engender knowledge creation, broaden participation in science and engineering, and strengthen the research opportunities available to early career faculty.

### GRFP

- GRFP invests in the STEM human capital necessary to ensure the Nation's leadership in advancing discovery and innovation in science and engineering. GRFP selects, recognizes, and financially supports graduate students with demonstrated high potential for excellence in STEM and in their chosen careers. Applications are welcome from students in all STEM disciplines supported by NSF and in STEM interdisciplinary areas, including STEM education. Fellows have opportunities for international research through Graduate Research Opportunities Worldwide (GROW) and federal internships through Graduate Research Internship Program (GRIP).
- IA provides 50 percent of NSF's funding for GRFP, with the remainder provided by EHR.
- For additional information on GRFP, see the discussion on Major Investments in STEM Graduate Education narrative in the NSF-Wide Investments chapter.

### Growing Convergence Research (GCR)

- The GCR activity answers extremely challenging, transdisciplinary research questions raised by specific compelling problems. The unifying characteristics of these problems are that: (a) if successfully answered, they are likely to have a large impact, either on fundamental understanding in science and engineering or on our ability to meet pressing societal challenges, or both; and (b) they require the integration of knowledge, tools, and ways of thinking from multiple disciplines. The GCR investment engages communities to identify the most promising convergence research areas, incubates efforts to tackle these through exploratory funding, and supports those that demonstrate the potential for significant progress with longer-term funding. In addition to supporting science and engineering research, GCR aims to grow the next generation of convergence researchers. The potential impact of GCR transcends specific research areas as it empowers the scientific enterprise to quickly and effectively adapt and respond to the rapidly changing national and global scientific and technological landscapes.

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

- HBCU-EiR: The HBCU-EiR program focuses on improving the research capacity and competitiveness of HBCUs by providing additional support for research at these institutions. IA co-funds HBCU-EiR awards with NSF's science and engineering directorates. This program was initiated in FY 2017. HBCU-EiR was formally announced with a track in the HBCU-Undergraduate Program solicitation and a first set of awards will be made in FY 2018.

### Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE)

- INSPIRE: In FY 2017, this pilot activity ended and a new funding mechanism encompassing elements of INSPIRE was developed, Research Advanced by Interdisciplinary Science and Engineering (RAISE). The RAISE mechanism supports bold, potentially transformative interdisciplinary research that transcends the scope of any individual program. RAISE guidelines are published in the NSF Proposal and Award Policy Procedures Guide and the funding mechanism is available to any researcher conducting transformational, interdisciplinary research in fields that NSF supports. Dedicated IA co-funding has been eliminated. Each directorate will support bold, potentially transformative interdisciplinary research through the RAISE mechanism, coordinating with other directorates, as necessary.

## *Integrative Activities*

### Major Research Instrumentation (MRI)

- The MRI program catalyzes new knowledge and discoveries by empowering the Nation's scientists and engineers with state-of-the-art research instrumentation. The MRI program supports instrument acquisition or development, across all fields of NSF-supported research. It supports research-intensive learning environments that promote the development of a diverse workforce, and it facilitates academic and private sector partnerships.

### Mid-scale Research Infrastructure (Mid-scale)

- NSF's science and engineering activities rely increasingly on infrastructure that is diverse in space, cost, and implementation time. Many important research questions require instrumentation and other infrastructure that fall in the gap between the scope of the MRI program and the level of activities supported by the MREFC account. To address this gap and to create opportunities for essential science, the Mid-scale program will invest in instrumentation and other infrastructure projects that require between \$4 million and \$70 million in NSF-funding. The types of project supported will span the range from expensive but relatively straightforward acquisitions, such as certain types of cyberinfrastructure, to complex one-of-a-kind instruments that require significant design and development phases prior to their implementation. Separate tracks within the Mid-scale program will fund acquisition, design/development, and implementation. When needed, both proposal review and post-award management will include appropriate design reviews involving external experts, with projects advancing to the implementation stage when they have demonstrated design readiness. The Mid-scale program will leverage national and international partnerships between NSF and other organizations, public and private, where appropriate to advance infrastructure for basic research.

### NSF 2026 Fund

- The NSF 2026 Fund, in recognition and celebration of the Nation's 250<sup>th</sup> anniversary, will invest in bold research questions that are large in scope, innovative in character, originate outside any particular directorate, and require a long-term commitment. Just as NSF recently developed its first set of Big Ideas, NSF 2026 will set up and sustain mechanisms that will engage the research community in surfacing the next set. Grand challenge initiatives that require an investment horizon of about 10 years will be identified through an "Idea Machine," which includes broad community input through crowd sourcing, blue ribbon panels, ideas labs, and other mechanisms. Transcending established scientific structures and going beyond standard operating procedures, NSF 2026 intends to ensure continuous exploration at the frontiers of discovery and innovation. NSF 2026 will support portfolio analysis, synthesis, and evaluations of NSF as well as NSF's 10 Big Idea activities (\$500,000); identifying grand challenge opportunities (\$2.0 million); and high-risk, high-reward research activities (\$4.0 million).

### NSF INCLUDES

- The goal of NSF INCLUDES is to develop a talented, innovative, and capable science and engineering workforce that reflects the diversity of the Nation. If the United States is to remain the world leader with respect to innovations and discoveries in STEM, it must identify and develop talent from all sectors of society to become tomorrow's STEM professionals. NSF INCLUDES, which began in FY 2016, is expected to continue through FY 2025. FY 2019 funding for NSF INCLUDES will be made through the EHR account.

### Planning and Policy Support (PPS)

- PPS supports select NSF-wide policy and planning activities. PPS supports annual agency awards for outstanding achievement in science and technology (the Vannevar Bush Award, Public Service Award, Alan T. Waterman Award, and National Medal of Science), and summer science internship programs that target STEM students from underrepresented groups. PPS invests in collaborations with the

National Academies, including the Government University-Industry Research Roundtable (GUIRR),<sup>1</sup> and the Committee on Science, Engineering, Medicine, and Public Policy (CoSEMPuP).<sup>2</sup>

- Beginning in FY 2019, PPS will support NSF's Proposal Management Efficiency (PME) activity, which moves from the Other Program Related Administration funding source of Organizational Excellence activities to the IA budget line in FY 2019. PME supports activities such as the NSF biennial survey of investigators and reviewers.

#### Research Investment Communications (RIC)

- RIC is a leading-edge communications effort that is essential for public awareness and broad support of science and engineering. RIC supports the creation of products and processes through traditional and social media platforms that communicate the impacts of NSF's investments in STEM for discovery, national security, and economic competitiveness to policy makers, the media, and the general public.

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

- Funding displayed on the Research Experiences for Undergraduates (REU) funding line in the above table represents FY 2017 funding of REU supplements at STCs.
- The STC program supports innovative, potentially transformative, complex research and education projects that require large-scale, long-term awards. STCs engage the Nation's intellectual talent through partnerships among academia, industry, national laboratories, and government. These collaborations create synergies that enhance the training of the next generation of scientists, engineers, and educators; and the creation of job opportunities. STCs have impressive records of research achievements, especially because of their strong partnerships with industry. IA provides support for post-award management and oversight of the existing centers. Out-year commitments to centers with existing awards that extend through FY 2019 are funded by the relevant managing directorates.
- For additional information on STCs, see the discussion on NSF Centers narrative in the NSF-Wide Investments chapter.

#### Science and Technology Policy Institutes (STPI)

- STPI is a Federally Funded Research and Development Center (FFRDC) sponsored by NSF on behalf of the White House Office of Science and Technology Policy (OSTP).

#### Science and Technology for America's Reinvestment: Measuring the Effect of Research on Innovation, Competitiveness, and Science (STAR METRICS)

- STAR METRICS was an interagency pilot activity that represented a new approach to developing information on how NSF and other federal Research and Development (R&D) investments affect the innovation ecosystem. Funding was eliminated in FY 2018, as this pilot activity had served its purpose.

### **Program Monitoring and Evaluation**

#### Workshops and Reports:

- In FY 2017, IA funded a study of Reproducibility and Replicability in Science, to be conducted by the National Academies.<sup>3</sup> The study report will describe examples of effective practices, identify gaps in knowledge, and consider the roles of researchers, professional societies, journals, universities and other research institutions, and funders in advancing reproducibility and replication. The report will include recommendations for advancing reproducibility and replication in research. The study was requested

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<sup>1</sup>GUIRR webpage (<http://sites.nationalacademies.org/pga/guirr/index.htm>).

<sup>2</sup>CoSEMPuP webpage (<http://sites.nationalacademies.org/pga/cosepup/index.htm>).

<sup>3</sup>NSF-1743856, [http://sites.nationalacademies.org/dbasse/bbcss/reproducibility\\_and\\_replicability\\_in\\_science/index.htm](http://sites.nationalacademies.org/dbasse/bbcss/reproducibility_and_replicability_in_science/index.htm).

## *Integrative Activities*

by Congress in the American Innovation and Competitiveness Act of 2017.<sup>4</sup> Completion is anticipated in FY 2019.

- In FY 2016, IA co-funded a study on Sexual Harassment in the Scientific and Technical Workforce and its Effects on the Careers of Scientists, Engineers, and Medical Professionals.<sup>5</sup> This study will be conducted by the National Academies and is also funded by several other partners: the National Institutes of Health (NIH), National Aeronautics and Space Administration (NASA), National Institute of Standards and Technology (NIST), National Oceanic and Atmospheric Administration (NOAA), and three private foundations. The study will examine sexual harassment in science, engineering, and medical programs on college and university campuses and the efficacy of institutional responses. A goal is to facilitate efforts to end sexual harassment in science, engineering, and medicine and to reduce the negative impacts these behaviors may have on the under-representation of women in these fields. Completion of the study is anticipated in summer 2018.

### Committees of Visitors (COV):

- In 2017 and 2018, none of the major IA programs were scheduled to hold a COV.
- In 2019, a COV will review the EPSCoR program.
- In 2020, a COV will review the Science and Technology Centers: Integrative Partnerships program and the Major Research Instrumentation program.

The Performance chapter provides details regarding the periodic reviews of programs and portfolios of programs by external Committees of Visitors and directorate Advisory Committees. Please see this chapter for additional information.

### Evaluation and Assessment Capability Related Activities

EAC was established to provide NSF with enhanced capability to operate from a basis of evidence in program and policy decisions; to more consistently assess the impacts of its investments; and to establish a culture of evidence-based planning and policy-making at NSF. EAC has been responsible for establishing mechanisms for NSF-wide leadership and coordination in program and portfolio evaluation, providing expert support and resources for data collection, integration, and management, and improving NSF-wide evaluation capacity.

In FY 2017, EAC continued work on 12 evaluation projects. Three are EAC-led activities; nine are collaborative projects, including evaluation/monitoring contracts with external entities, that are conducted with the lead directorates of the programs being evaluated. Each of these projects is summarized below.

#### *EAC-led activities:*

- Broader Impacts (BI). This study focuses on the nature of BI evidence in proposals, review panel summaries, and annual reports. Findings from this ongoing project continue to inform training and policies on the use of BI in NSF-funded research.
- National Academies of Sciences, Engineering, and Medicine (the National Academies). The purpose of this project is to assess the impact of NSF-funded studies and workshops convened by the National Academies. Using data provided by the National Academies and information gleaned from public websites, EAC is analyzing the number of report downloads, mention of the National Academies studies in publications and legislation, and the influence of such studies on NSF program solicitations. This work is ongoing and will be updated as NSF funds new awards to the National Academies.
- Patents. This study examines patent data from the U.S. Patent and Trademark Office (USPTO) for links to NSF awards. The results, such as time between the award of the grant and the subsequent patent,

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<sup>4</sup>Public Law 111-329, [www.congress.gov/114/plaws/publ329/PLAW-114publ329.pdf](http://www.congress.gov/114/plaws/publ329/PLAW-114publ329.pdf).

<sup>5</sup>NSF-1644492, <http://sites.nationalacademies.org/pga/cwsem/shstudy/index.htm>.

provide insights into the potential economic impacts of NSF investments. This work is ongoing; the comparison is periodically updated.

*EAC-collaborative program evaluations and studies:*

- Broadening Participation (BP). This study examines the types and impacts of BP activities across NSF programs that do not have BP as their primary objective. (BP Focused Programs and BP Emphasis Programs are listed in the Summary Tables.) It conducts empirical investigations of BP issues mentioned in proposals or through BP implementation research in annual and final reports. The results of this study will allow NSF to document, assess, and share evidence-based cases of BP for promoting innovation and discovery. Results are anticipated in FY 2018. This study is co-funded with EHR.
- Data Asset Inventory. This study will develop an inventory and assessment of the data assets currently available to support inquiry of NSF investments in human capital, particularly graduate education (excluding GRFP) and workforce development. The overarching purpose is to determine if data elements can be added to ongoing collections or standardized across collections to reduce the burden of future monitoring and evaluation efforts. Results are anticipated in FY 2018. This study is co-funded with EHR.
- GRFP. This activity encompasses the development of a data collection system that can be used to describe the fellows' graduate school experiences and track career outcomes. This system, with a potential expansion to describe the education and career trajectories of all graduate students funded by NSF, is expected to be in place in FY 2020. This study is co-funded with EHR.
- Research Experience for Undergraduates (REU). The primary purpose of this effort is to design, build, pilot, test, and analyze options for a web-based longitudinal data collection system for following the career trajectories of REU Site participants. This data collection effort will lay the groundwork for future analyses of participant outcomes. Results are anticipated in FY 2019. This study is co-funded with EHR.
- Technical assistance for NSF INCLUDES. The purpose of this project is to offer evaluation-related technical assistance to aid the initial development of design, implementation, and assessment support activities for the NSF INCLUDES Design and Development Launch Pilots. Technical assistance services may consist of, but are not limited to, coaching and training, experienced consultation/facilitation, tools and resources, technology, and peer learning. This technical assistance will be provided until the end of FY 2019. This study is co-funded with EHR, CISE, ENG and SBE.
- Evaluation of NSF INCLUDES. This comprehensive, developmental, program-level evaluation provides formative feedback to support continuous learning and improvement during the inaugural phase of the NSF INCLUDES initiative. It will assess the processes and progress of all Launch Pilots, Alliances, and Coordination Hub projects. Results from this developmental phase of the project are anticipated in FY 2019. This study is co-funded with EHR, CISE, GEO and MPS.
- NSF Innovation Corps (I-Corps™) Teams Program. This longitudinal evaluation of I-Corps™ teams focuses on the impact of the program on the participants as well as their academic institutions. The results will shed light on how I-Corps™ extends the focus of the researchers beyond the research environment. Results are anticipated in FY 2018. This study is co-funded with ENG.
- Secure and Trustworthy Cyberspace (SaTC). This study builds on STPI findings from a review of historical data from investments in cybersecurity from 2008 to 2011. The primary emphasis of the evaluation will be on data from the inception of SaTC in FY 2012 to the present. An understanding of how and in what ways SaTC makes collective progress toward its talent development goals and objectives will inform the use of these findings to refine existing and future SaTC program level activities. Results are anticipated before the end of FY 2019. This study is co-funded with CISE.
- Science, Engineering, and Education for Sustainability (SEES). This evaluation of the SEES portfolio seeks to measure the success in terms of: (1) the development of new knowledge and concepts that advance the overarching goal of a sustainable human future; (2) new and productive connections made

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among researchers in a range of disciplines; and (3) the development of a workforce capable of meeting sustainability challenges. Results are anticipated in FY 2018. This study is co-funded with GEO.

In FY 2017, two new EAC-led studies were initiated as well as three new collaborative evaluations, each of which is summarized below.

### *EAC-led studies:*

- Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS). The purpose of this study is to determine to what extent and how the scientific community has addressed the interdisciplinary nature of the three focal systems – food, energy, and water – in responses to the FY 2015 and FY 2016 NSF INFEWS solicitations. This analysis will inform changes to the next solicitation. Results are anticipated in FY 2018.
- Intergovernmental Personnel Act (IPA). The purpose of this project is to assess the effect of the policy change requiring a mandatory 10 percent institutional cost share on NSF's IPA program. Results from the pilot, expected before the end of FY 2018, will inform NSF about the effects of that policy on the Foundation's recruitment and retention of IPAs.

### *EAC-collaborative program evaluations and studies:*

- Centers for Chemical Innovation (CCI). The purpose of this comprehensive assessment is to evaluate the effectiveness of the CCI program in achieving its stated goals. Key concepts of interest are CCI's influence on the nature of collaborative practices in the chemical sciences. The results of this study will be used to communicate the impact and to strengthen the design and operation of the program. Results are anticipated in FY 2019. This study is co-funded with MPS.
- EPSCoR. The purpose of this evaluation is two-fold: (1) to develop a flexible framework to explore, define, and measure research competitiveness in relation to the unique contexts of each EPSCoR jurisdiction; and (2) to collect and use evidence of jurisdictional progress toward research competitiveness over time for strategic program improvement. An understanding of how and in what ways progress is made towards increased research competitiveness will inform the use of these findings to refine existing and tailor future EPSCoR program-level activities. Results are anticipated in FY 2020. This study is co-funded with EPSCoR.
- Geoscience Education (GeoEd). This evaluation will inform strategic direction by describing the extent to which the GeoEd portfolio is contributing to and progressing toward the achievement of program goals. The purpose of this evaluation is three-fold, to: (1) develop a flexible framework to define, measure, and explore value and impact; (2) provide evidence of the range, synergies, and variability across factors contributing to impact over time; and (3) strengthen the practice of evaluative inquiry for program improvement among GeoEd decision-makers and stakeholders. Results are anticipated in FY 2018. This study is co-funded with GEO.

All ongoing projects that began in FY 2016 and FY 2017 will continue in FY 2018. In FY 2018, EAC will focus on evaluation and assessment of NSF's 10 Big Ideas. The evidence thus generated will be used to inform day-to-day operations and performance improvement as these activities mature.

In FY 2019, several of the existing evaluations described above will continue. The work on NSF's 10 Big Ideas will continue. New collaborative evaluations on other topics are not anticipated.



**ESTABLISHED PROGRAM TO STIMULATE  
COMPETITIVE RESEARCH (EPSCoR)**

**\$160,000,000  
-\$2,800,000 / -1.7%**

**EPSCoR Funding**  
(Dollars in Millions)

	FY 2017 Actual	FY 2018 (TBD)	FY 2019 Request	Change over	
				FY 2017 Actual Amount	Percent
<b>Total</b>	<b>\$162.80</b>	<b>-</b>	<b>\$160.00</b>	<b>-\$2.80</b>	<b>-1.7%</b>
Research Infrastructure Improvement (RII)	135.75	-	132.50	-3.25	-2.4%
Co-Funding	24.92	-	25.00	0.08	0.3%
Outreach and Workshops	2.13	-	2.50	0.37	17.4%

**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 to achieve sustainable increases in research, education, training capacity, and competitiveness that will enable EPSCoR jurisdictions to have increased engagement in the science and engineering supported by NSF.

Based on FY 2017 funding, 14 percent of the EPSCoR portfolio was available for new research grants, and the remaining 86 percent supported research grants made in prior years.

EPSCoR uses three strategic investment tools: Research Infrastructure Improvement (RII) awards, Co-Funding, and Outreach/Workshops.

Research Infrastructure Improvement (RII)

- RII awards will continue to support development of physical, human, and cyber-based research infrastructure in EPSCoR jurisdictions with emphasis on collaborations among academic researchers, the private sector, and state and local governments to effect sustainable improvements in research infrastructure. These awards are designed to improve the research competitiveness of jurisdictions by strengthening their academic research infrastructure in areas of science and engineering supported by NSF and critical to the particular jurisdiction’s science and technology initiatives. RII awards also invest in workforce development, increase the participation of underrepresented groups in STEM, enable broader regional and topical collaborations among jurisdictions, and facilitate the enhancement of discovery, learning, and economic development of EPSCoR jurisdictions.

Co-Funding

- Co-Funding: EPSCoR co-invests with NSF directorates and offices on meritorious proposals from individual investigators, groups, and centers in EPSCoR jurisdictions that are submitted to the Foundation’s research and education programs, including crosscutting initiatives.

Outreach and Workshops

- The Outreach and Workshops component of EPSCoR solicits requests for workshops, conferences, and other community-based activities designed to explore opportunities in emerging areas of science and engineering, and to share best practices in strategic planning, diversity, communication, and other capacity-building areas of importance to 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.

*Integrative Activities*

**People Involved in EPSCoR Activities**

<b>Number of People Involved in EPSCoR Activities</b>			
	FY 2017	FY 2018	FY 2019
	Actual	(TBD)	Estimate
	Estimate		Estimate
Senior Researchers	626	-	600
Other Professionals	201	-	200
Postdoctoral Associates	104	-	100
Graduate Students	493	-	500
Undergraduate Students	631	-	600
K-12 Teachers	4,236	-	4,200
K-12 Students	96,153	-	94,500
<b>Total Number of People</b>	<b>102,444</b>	<b>-</b>	<b>100,700</b>