

# EDUCATION AND HUMAN RESOURCES (EHR)

**\$880,290,000**  
**+\$51,290,000 / 6.2%**

## EHR Funding (Dollars in Millions)

	FY 2012 Actual	FY 2012 Enacted/ Annualized FY 2013 CR	FY 2014 Request	Change Over FY 2012 Amount	FY 2012 Enacted Percent
Division of Research on Learning in Formal and Informal Settings (DRL)	\$273.23	\$272.43	\$277.87	\$5.44	2.0%
Division of Graduate Education (DGE)	237.36	236.29	245.15	8.86	3.7%
Division of Human Resource Development (HRD)	129.41	129.63	130.30	0.67	0.5%
Division of Undergraduate Education (DUE)	190.54	190.65	226.97	36.32	19.1%
<b>Total, EHR</b>	<b>\$830.54</b>	<b>\$829.00</b>	<b>\$880.29</b>	<b>\$51.29</b>	<b>6.2%</b>

Totals may not add due to rounding.

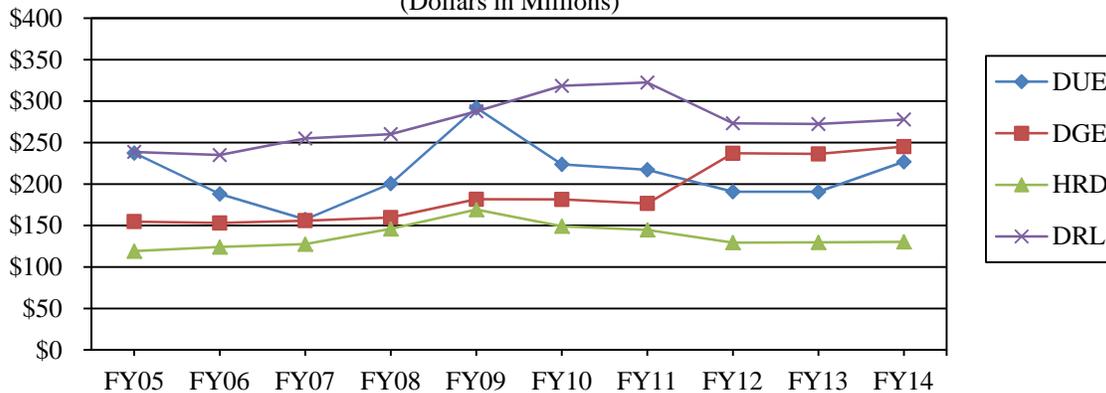
Funding for the FY 2012 Actual and the FY 2012 Enacted/Annualized FY 2013 CR are shown in the FY 2014 structure for comparability.

### About EHR

The Directorate for Education and Human Resources (EHR) makes investments toward a vision of a healthy and vital national science, technology, engineering, and mathematics (STEM) enterprise. The directorate works toward that vision through its mission, which is to support the preparation of a diverse, globally competent STEM workforce and a STEM-literate citizenry through investment in research and development on STEM education and learning.

Opportunities to learn STEM effectively – for people of all ages, from all corners of the Nation, and in many venues (e.g. classrooms and living rooms; science centers and virtual centers) – are the foundation for that scientifically literate society and strong scientific workforce. These in turn are the basis for keeping our Nation globally competitive, prosperous, and secure. EHR provides the focus for NSF’s investments to advance STEM learning, scientific literacy, and a globally competitive science and engineering workforce.

### EHR Subactivity Funding (Dollars in Millions)



FY 2009 funding reflects both the FY 2009 omnibus appropriation and funding provided through the American Recovery and Reinvestment Act of 2009 (P.L. 111-5).

## Appropriations Language

For necessary expenses in carrying out science, mathematics and engineering education and human resources programs and activities pursuant to the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-1875), including services as authorized by 5 U.S.C. 3109, authorized travel, and rental of conference rooms in the District of Columbia, ~~\$875,000,000~~\$880,290,000, to remain available until September 30, 2014-2015.

### Education and Human Resources FY 2014 Summary Statement (Dollars in Millions)

	Enacted/ Request	Carryover/ Recoveries	Adjustments to Prior Year Accounts	Total Resources	Obligations/ Estimates
FY 2012 Appropriation	\$829.00	\$0.22	\$6.49	\$835.71	\$830.54
FY 2012 Enacted/ Annualized FY 2013 CR <sup>1,2</sup>	834.07	0.96		835.03	835.03
FY 2013 Request	880.29			880.29	880.29
\$ Change from FY 2012 Enacted					\$51.29
% Change from FY 2012 Enacted					6.2%

Totals may not add due to rounding.

<sup>1</sup>This budget line includes an adjustment for an item specific to the FY 2013 continuing resolution: \$5.07 million for the 0.612 percent increase provided by the continuing resolution.

<sup>2</sup>Congressional EHR carryover is \$0.96 million; Reimbursable carryover (not shown) is \$4.20 million for a total of \$5.17 million.

## Explanation of Carryover

Within the **Education and Human Resources (EHR)** account, NSF carried over \$960,000 (2-year: \$330,000 and no-year: \$630,000) into FY 2013 for awards and contracts that were not ready for obligation in FY 2012. Obligation of these funds is expected by the end of the third quarter of FY 2013.

## FY 2014 EHR Summary

The FY 2014 Request concentrates EHR investments into three categories that form a strategic framework for the directorate's mission. Within each of these categories, EHR will continue to build and emphasize its research and development activities and prioritize other activities such as the National Science and Technology Council's Committee on STEM Education (CoSTEM); collaborations with other U.S. Departments, including the U.S. Department of Education; and partnerships with federal science mission agencies to address national priorities in STEM education.

- **Learning and learning environments:** Investments in this category seek to develop understanding of the cognitive, affective, and non-cognitive foundations of STEM learning; to study emerging contexts and tools for learning STEM concepts and skills; and to build environments that promote new, high-impact learning opportunities for tomorrow's scientists and engineers, as well as citizens and students living in an increasingly technology-oriented society.
- **Broadening participation in STEM:** Programs in this category capitalize on the Nation's diversity in order to increase the scientific workforce by engaging and building capacity in *all* people in STEM

learning and professional training, particularly those from groups that have been traditionally underrepresented in STEM fields – Blacks, Hispanics, Native Americans, women, and people with disabilities, English-language learners, and veterans.

- **STEM professional workforce:** Workforce investments are intended to improve the education and preparation of a STEM professional workforce that will be ready to capitalize on unprecedented advances in technology and science, and to address global, social, and economic challenges yet to be imagined.

Investment in these strategic categories will balance and bring additional coherence to the EHR portfolio with an eye toward impact and improved evidence. This framework positions the directorate to more readily respond to emerging opportunities created by new technologies, improvements in the STEM-education evidence base, Administration priorities, and other national or societal needs.

As part of its strategic improvement process, NSF is collaborating with the White House Office of Science and Technology Policy to address national priorities in STEM education through a coordinated STEM education investment strategy. In the past year, significant progress has been made on the National Science and Technology Council's Committee on STEM Education (CoSTEM) 5-year strategic plan. The coordination strategies and the priorities introduced in the update to Congress in February 2012<sup>1</sup> are reflected in this request. In particular, the CoSTEM emphasis on using, amassing, and improving evidence in education research and development, the priority to transform undergraduate education, and the commitment to strengthen the STEM workforce through graduate education, have shaped EHR's FY 2014 Budget Request.

### **FY 2014 Summary by Division**

EHR's Core Research and Development (R&D) activity will continue in FY 2014, through an EHR-wide program. Each division will have intellectual and program leadership for separate components of the core R&D activity.

In FY 2014, three EHR programs will be assigned to divisions different from their current placement to ensure better alignment with division missions. The Project and Program Evaluation (PPE) and Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) programs will be transferred from the Division of Research on Learning in Formal and Informal Settings (DRL) to the Division of Graduate Education (DGE). The CyberCorps: Scholarship for Service (SFS) program will be based in DGE, transferring from the Division of Undergraduate Education (DUE).

- The Division of Research on Learning in Formal and Informal Settings (DRL) will continue to support the development of innovative resources, models, and tools for K-12 STEM education; fundamental research on STEM learning; experiences that enable lifelong STEM learning inside and outside of school; teacher learning; research on national STEM education priorities; and evaluation studies and activities. In FY 2014, the Discovery Research (DR-K12) program will invest \$15 million to further support early research, development, validation, and scale-up of evidence-based approaches to improve student learning of mathematics at the K-16 levels. This will take the form of a collaboration jointly administered by the Department of Education (ED) and EHR. Lead by DRL, a formal collaboration with the Computer and Information Science and Engineering (CISE) directorate will consolidate the former Math and Science Partnership (MSP) and Computing Education for the

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<sup>1</sup> *Coordinating Federal Science, Technology, Engineering, and Mathematics (STEM) Education Investments: Progress Report*. A Report from the Federal Coordination in STEM Education Task Force Committee on STEM Education National Science and Technology Council, February 2012. [http://www.whitehouse.gov/sites/default/files/microsites/ostp/nstc\\_federal\\_stem\\_education\\_coordination\\_report.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ostp/nstc_federal_stem_education_coordination_report.pdf)

21<sup>st</sup> Century (CE21) programs into the Science, Technology, Engineering, Mathematics, including Computing Partnerships (STEM-C Partnerships) program in FY 2014. For core R&D, DRL will lead the focus on STEM learning.

- The Division of Graduate Education (DGE) invests in U.S. graduate students and innovative graduate programs to prepare tomorrow's leaders in STEM. The FY 2014 DGE budget includes a reorganization that incorporates graduate fellowship and traineeship priorities and emphases with strong ties to national priorities. The NSF Graduate Research Fellowship (GRF) program will be expanded into a National Graduate Research Fellowship program (NGRF) to incorporate features and opportunities that allow fellows to gain specialized experiences and training in key STEM areas. The proposed new NSF Research Traineeships program (NRT), which draws upon the fifteen-year old Integrative Graduate Education and Research Traineeship Program (IGERT) program, will allow for institutional traineeship program applications that focus on areas of need for both the federal government and the science and engineering enterprise, and that incorporate plans for transforming aspects of graduate programs and experiences at those institutions. For more information see the Major Investments in Science, Technology, Engineering, and Mathematics (STEM) Graduate Education narrative within the NSF-Wide Investments chapter. For core R&D, DGE will lead the focus on STEM professional workforce development.
- The Division of Undergraduate Education (DUE) provides NSF-wide leadership and expertise for transforming undergraduate STEM education to meet the needs of the 21st century through the use of evidence to improve undergraduate education. In FY 2014, DUE places a strong focus on supporting the Administration's goal of generating 100,000 new effective STEM teachers and one million more STEM graduates. In order to improve STEM education through the use and generation of evidence, the FY 2014 Budget Request includes a bold reorganization of STEM undergraduate education programs that will use existing resources more effectively through a streamlined and consolidated approach. A new NSF-wide activity, Catalyzing Advances in Undergraduate STEM Education (CAUSE), will consolidate several current DUE programs and undergraduate programs from NSF's Research and Related Activities (R&RA) account (see the CAUSE narrative in the NSF-wide Investments chapter for more detailed information). For core R&D, DUE will lead the focus on STEM learning environments.
- The Division of Human Resources Development (HRD) continues to build a diverse and well-qualified STEM workforce through broadening participation. HRD investments in Historically Black Colleges and Universities (HBCUs), Tribal Colleges and Universities (TCUs), and other minority-serving institutions remain critically important. The goal of the ADVANCE program is to develop systemic approaches to increase the representation and advancement of women in academic STEM careers, thereby contributing to the development of a more diverse science and engineering workforce. ADVANCE also has as its goal to contribute to and inform the general knowledge base on gender equity in the academic STEM disciplines. In FY 2014, HRD, through the ADVANCE program, supports the NSF Career Life Balance activity. HRD will lead the core R&D focus on broadening participation and capacity.

**Major Investments**

**EHR Major Investments**

(Dollars in Millions)

<b>Area of Investment</b>	FY 2012		FY 2014 Request	Change Over	
	FY 2012 Actual	Enacted/ Annualized FY 2013 CR		FY 2012 Enacted Amount	Percent
CAUSE	[\$71.93]	[\$97.96]	\$97.08	-\$0.88	-0.9%
I-Corps	0.36	-	0.30	0.30	N/A
INSPIRE	0.64	-	2.00	2.00	N/A
NGRF	109.24	109.64	162.57	52.93	48.3%
SaTC	44.98	45.00	25.00	-20.00	-44.4%
SEES	6.00	6.00	0.50	-5.50	-91.7%

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

- Catalyzing Advances in Undergraduate STEM Education (CAUSE): DUE will lead and support the CAUSE program, for which funding will be retained in individual directorates and offices. For more information see the CAUSE narrative within the NSF-Wide Investments chapter.
- NSF Innovation Corps (I-Corps): In FY 2014, DGE will continue to lead and support EHR’s participation in this activity at a level of \$300,000.
- Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE): In FY 2014 with DGE as the lead division, EHR will invest \$2.0 million to support the development of STEM professionals in INSPIRE-supported research areas.
- National Graduate Research Fellowship (NGRF): Administered by DGE, the current Graduate Research Fellowship (GRF) program will become the NGRF program. It will operate under the same general framework and principles currently used in GRF, and will include consultation with other agencies to help ensure the most effective practices are used and suitable targeted opportunities are provided. The stipend, duration, and cost-of-education allowance will be same as the current GRF. A \$52.93 million increase is requested in FY 2014 for a total investment of \$162.57 million within EHR. An equivalent investment (\$162.57 million) is provided through International and Integrative Activities (IIA) for a total NGRF investment of \$325.14 million. Through this expanded program, NSF will be able to award approximately 700 additional fellows bringing the total estimated number of new fellowships awarded in FY 2014 to 2,700. For more information see the Major Investments in Science, Technology, Engineering, and Mathematics (STEM) Graduate Education narrative within the NSF-Wide Investments chapter.
- Secure and Trustworthy Cyberspace (SaTC): Through the CyberCorps: Scholarship for Service (SFS) program, the DGE will support SaTC at a level of \$25.0 million.
- Science, Engineering and Education for Sustainability (SEES): In FY 2014, EHR will decrease its SEES support by \$5.50 million to a level of \$500,000 as Climate Change Education (CCE) program funding is shifted to CAUSE. The Division of Human Resources (HRD) will be responsible for EHR’s SEES investments through the Centers of Research Excellence in Science and Technology (CREST) program.

## **Program Monitoring and Evaluation**

### **STEM Education Program Evaluation:**

EHR has implemented robust processes and structures for high-quality, appropriately rigorous program evaluation and affiliated monitoring systems for programs based in the directorate. An EHR-wide Evaluation Working Group has been established and enhanced expertise in evaluation, statistics, and/or assessment has been added to each division. In FY 2013, DGE assumed leadership for the EHR-wide Evaluation Working Group. In FY 2014, the group will expand its scope and will be prepared to offer assistance and resources to NSF Research and Related Activities (R&RA) programs engaged in STEM education, especially graduate education and human capital investments, as well as collaborate with the centralized NSF Evaluation Capability. In partnership with other groups within EHR and across NSF, DGE will continue an evaluation of the current mechanisms for supporting graduate students (e.g., research assistantships, fellowships, traineeships, centers, research training groups) to develop a comprehensive strategy to increase the impact of NSF's support for graduate students and graduate education.

An EHR Evaluation 5-year Strategic Plan that will address the following goals is being implemented in FY 2013:

1. Demonstrate leadership in evaluation by building and strengthening EHR's own evaluation capacity and becoming a leading resource on STEM-education evaluation across NSF and other federal agencies.
2. Use evidence frameworks to gather and apply evidence to evaluate and continuously improve EHR programs and policies.
3. Draw on NSF, federal, and field expertise to build, use, and disseminate a research base of best practices in education evaluation and the use of evidence in educational decision making.
4. Use best practices in education evaluation to institute consistent and coherent processes and policies for gathering and using performance data.
5. Develop state-of-the-art information systems for documenting, visualizing, analyzing, synthesizing and communicating EHR's research and development portfolio.

Emphases for FY 2014 will include collaboration with the NSF Evaluation Capability in evaluation of NSF human capital investments such as NSF's investment in graduate education and in research experiences for undergraduates. Given the CoSTEM's strong emphasis on the importance of building and using evidence, the evaluation group will also collaborate as appropriate with other Federal agencies engaged in STEM-education program evaluation as a means of sharing best practices, working toward the use of common metrics and instruments, and building collaborative expertise for STEM-education evaluation across agencies.

Committees of Visitors (COV) tentatively scheduled in FY 2013 and FY 2014:

- In FY2013, COVs will review Alliances for Graduate Education and the Professoriate (AGEP), Centers for Research Excellence in Science and Technology (CREST), Historically Black Colleges and Universities–Undergraduate Program (HBCU-UP), Louis Stokes Alliances for Minority Participation (LSAMP), and Tribal Colleges and Universities Program (TCUP) in HRD; and STEM Talent Expansion Program (STEP) and Transforming Undergraduate Education in STEM (TUES) in DUE.
- In FY2014, the following programs are scheduled to be reviewed by COVs: Advancing Informal STEM Learning (AISL), Innovative Technology Experiences for Students and Teachers (ITEST), and STEM-C Partnerships in DRL; NSF Scholarships in STEM (S-STEM) and CyberCorps: Scholarship for Service (SFS) in DUE; IGERT in DGE; and ADVANCE in HRD.

Workshops and Reports:

Following the 2011 National Research Council report *Successful K-12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics*, NSF supported regional workshops on K-12 STEM education in Philadelphia, Las Vegas, Seattle, Chicago, and Baltimore. All of these were oversubscribed, and community response to these opportunities to engage with NSF-funded principal investigators in K-12 STEM education to discuss promising practices was very positive. Congress requested that NSF identify models for tracking progress toward achieving the report's recommendations. In response, the NRC convened the Committee on an Evaluation Framework for Successful K-12 STEM Education, which released a report in November 2012, *Monitoring Progress Toward Successful K-12 STEM Education: A Nation Advancing?* EHR's senior leadership has reviewed that report's recommendations and is engaging in discussions with key stakeholders to launch an implementation plan in FY 2013. ([www.nap.edu/catalog.php?record\\_id=13509](http://www.nap.edu/catalog.php?record_id=13509))

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 that chapter for additional information.

**Number of People Involved in EHR Activities**

	FY 2012		
	Actual	FY 2013	FY 2014
	Estimate	Estimate	Estimate
Senior Researchers	7,246	6,200	6,500
Other Professionals	2,262	2,600	2,700
Postdoctorates	185	200	300
Graduate Students	12,004	8,600	12,000
Undergraduate Students	8,648	5,500	5,600
K-12 teachers	40,059	47,600	48,300
K-12 Students	81,952	84,500	85,800
<b>Total Number of People</b>	<b>152,356</b>	<b>155,200</b>	<b>161,200</b>

**DIVISION OF RESEARCH ON LEARNING IN FORMAL AND INFORMAL SETTINGS (DRL)**

**\$277,870,000**  
**+\$5,440,000 / 2.0%**

**DRL Funding**  
(Dollars in Millions)

	FY 2012		FY 2014 Request	Change Over	
	FY 2012 Actual	Enacted/Annualized FY 2013 CR		FY 2012 Enacted	FY 2012 Enacted Percent
<b>Total, DRL</b>	<b>\$273.23</b>	<b>\$272.43</b>	<b>\$277.87</b>	<b>\$5.44</b>	<b>2.0%</b>
<b>Learning and Learning Environments</b>	<b>162.00</b>	<b>160.63</b>	<b>160.35</b>	<b>-0.28</b>	<b>-0.2%</b>
Core Research and Development	-	-	10.00	10.00	N/A
Discovery Research K-12 (DR-K12)	99.57	99.23	102.53	3.30	3.3%
Advancing Informal STEM Learning (AISL)	62.43	61.40	47.82	-13.58	-22.1%
<b>Broadening Participation in STEM</b>	<b>54.16</b>	<b>54.72</b>	<b>60.44</b>	<b>5.72</b>	<b>10.5%</b>
Research on Education and Learning (REAL)	54.16	54.72	60.44	5.72	10.5%
<b>STEM Professional Workforce</b>	<b>57.07</b>	<b>57.08</b>	<b>57.08</b>	-	-
Science, Technology, Engineering, Mathematics, including Computing Partnerships (STEM-C Partnerships) [formerly Math and Science Partnership (MSP)]	57.07	57.08	57.08	-	-

Totals may not add due to rounding.

Funding for the FY 2012 Actual and the FY 2012 Enacted/Annualized FY 2013 CR are shown in the FY 2014 structure for comparability.

The Division of Research on Learning in Formal and Informal Settings (DRL) will lead the directorate in research and development on STEM learning through investments in several programs: DR-K12, AISL, STEM-C Partnerships, and REAL. DRL will also engage with the other EHR divisions through the Core Research and Development (R&D) activity, focusing its expertise primarily in the areas of learning and the related aspects of learning environments. While DRL-funded research is likely to be situated in institutional and social settings and may involve development of learning resources, tools, and model learning environments, the principal goal is to characterize the STEM learning process in all its forms, by the full range of learners, in a full range of settings. This includes development of innovative and effective approaches and instruments for promoting and assessing learning. A particular focus is on understanding how to improve STEM learning and education opportunities for all learners, including those from groups traditionally underrepresented in STEM – especially women, minorities, persons with disabilities, English-language learners, and veterans.

DRL will invest in new areas of research and development driven by recent changes in modalities of schooling, which include open online courses, data-driven decision making using massive heterogeneous data sets, new STEM curricula using scientific big data, new cyberlearning capabilities, and new data and video analysis capabilities.

DRL will collaborate across the directorate in FY 2014 to emphasize:

- Understanding STEM learning in the context of emerging cyberinfrastructure, which is transforming STEM practices, STEM learning, and assessment;
- Understanding learning by learners traditionally underrepresented in STEM, including women and persons with disabilities;
- Understanding STEM learning in a variety of settings (e.g., homes, formal institutions, informal institutions), including learning that cuts across multiple settings and studies that involve the development and implementation of innovations in learning;

- Advancing assessment of STEM learning using a variety of approaches and resources, especially with the advent of common core state standards in K-12 education; and
- Understanding STEM learning at the undergraduate level by building on the knowledge base generated by the REAL program, the National Academies report on discipline-based education research<sup>2</sup>, the PCAST report<sup>3</sup> on undergraduate education, and numerous activities underway within and outside of NSF, including funded synthesis projects, workshops, and seminars.

## **FY 2014 Summary**

All funding decreases/increases represent change over the FY 2012 Enacted level.

### **Learning and Learning Environments**

- DRL will provide strategic direction and program guidance for the STEM Learning component of EHR's Core R&D activity and is working with the other EHR divisions to release a single Core R&D solicitation. DRL will invest \$10.0 million in this activity in FY 2014.
- Requested funding for DR-K12 is slightly above the FY 2012 Enacted level (+\$3.30 million to a total of \$102.53 million).
- AISL (-\$13.58 million to a total of \$47.82 million) will focus on research, model-building, and development activities to better understand effective means and innovative models for engaging today's young people and adults in learning science outside of school settings, including museums, science centers, and other informal learning venues.

### **Broadening Participation in STEM**

- REAL is increased \$5.72 million to a total of \$60.44 million. The requested increase will allow greater emphasis on investments in research and development on STEM learning. Cyberlearning and the use of big data will be a priority as will projects that focus on issues related to broadening participation in STEM, particularly for women and persons with disabilities.

### **STEM Professional Workforce**

- In FY 2014, DRL will formalize a collaboration with the Computer and Information Science and Engineering (CISE) directorate to combine the former Math and Science Partnership (MSP) program and the Computing Education for the 21<sup>st</sup> Century (CE21) program into the Science, Technology, Engineering, Mathematics, including Computing Partnerships (STEM-C Partnerships) program. DRL's investment remains at the FY12 Enacted level of \$57.08 million and with CISE's investment of \$16.50 million, the total funding for STEM-C Partnerships is \$73.58 million in FY 2014. Through STEM-C Partnerships, EHR will continue investing in activities that are designed to further understanding of the preparation and continuing education of STEM teachers and will build upon opportunities provided by new technologies that enable innovative STEM teaching and learning. In collaboration with CISE, investments will also be made with the joint goal of increasing the pool of K-16 students and teachers who develop and practice computational competencies in a variety of contexts, and increasing the pool of early postsecondary students who are engaged and have the background in computing necessary to successfully pursue degrees in computing-related and computationally-intensive fields of study.

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<sup>2</sup> National Research Council. *A Discipline-Based Education Research: Understanding and Improving Learning in Undergraduate Science and Engineering*. Washington, D.C.: The National Academies Press, 2012.

<sup>3</sup> President's Council of Advisors on Science and Technology (February 2012). *Engage to Excel, Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics*. Washington, DC.

**DIVISION OF GRADUATE EDUCATION (DGE)**

**\$245,150,000**  
**+\$8,860,000 / 3.7%**

**DGE Funding**  
(Dollars in Millions)

	FY 2012		FY 2014 Request	Change Over	
	FY 2012 Actual	Enacted/ Annualized FY 2013 CR		FY 2012 Enacted Amount	Percent
<b>Total, DGE</b>	<b>\$237.37</b>	<b>\$236.29</b>	<b>\$245.15</b>	<b>\$8.86</b>	<b>3.7%</b>
<b>Learning and Learning Environments</b>	<b>23.22</b>	<b>23.50</b>	<b>23.95</b>	<b>0.45</b>	<b>1.9%</b>
Climate Change Education (CCE)	5.50	5.50	-	-5.50	-100.0%
Project and Program Evaluation (PPE) <sup>1</sup>	17.72	18.00	23.95	5.95	33.1%
<b>STEM Professional Workforce</b>	<b>214.14</b>	<b>212.79</b>	<b>221.2</b>	<b>8.41</b>	<b>4.0%</b>
Core Research and Development	-	-	5.00	5.00	N/A
CyberCorps: Scholarship for Service (SFS) <sup>2,3</sup>	44.98	45.00	25.00	-20.00	-44.4%
NSF Innovation Corps (I-Corps)	0.36	-	0.30	0.30	N/A
INSPIRE <sup>1</sup>	0.64	-	2.00	2.00	N/A
National Graduate Research Fellowship (NGRF)	109.24	109.64	162.57	52.93	48.3%
Graduate STEM Fellows in K-12 Education (GK-12)	27.92	26.95	-	-26.95	-100.0%
NSF Research Traineeship (NRT) <sup>4</sup>	31.01	31.20	26.33	-4.87	-15.6%

Totals may not add due to rounding.

Funding for the FY 2012 Actual and the FY 2012 Enacted/Annualized FY 2013 CR are shown in the FY 2014 structure for comparability.

<sup>1</sup> In FY 2014, Project and Program Evaluation (PPE) and INSPIRE are transferred from the Division of Research on Learning in Formal and Informal Settings (DRL) to the Division of Graduate Education (DGE).

<sup>2</sup> In 2012, the Department of Justice officially changed Federal Cyber Service: Scholarship for Service (SFS) to CyberCorps: Scholarship for Service (SFS). The term CyberCorps also was registered with the U.S. trademark office for use by the federal government.

<sup>3</sup> In FY 2014, CyberCorps: Scholarships for Service/Cybercorps (SFS) is transferred from the Division of Undergraduate Education (DUE) to the Division of Graduate Education (DGE).

<sup>4</sup> NSF Research Traineeships (NRT) is a new program.

The Division of Graduate Education (DGE) supports U.S. graduate students and innovative graduate programs to prepare tomorrow’s leaders in science, technology, engineering, and mathematics (STEM). The FY 2014 DGE emphases will include:

- Advancing the knowledge and evidence base for the most effective preparation of STEM professionals;
- Developing strategies for evaluating the impact of NSF’s human capital investments in STEM professionals;
- Leveraging and linking current NSF investments to increase the NSF impact on preparation of STEM professionals by phasing out the IGERT program and introducing the new, NSF Research Traineeships (NRT) program; and
- Expanding the Graduate Research Fellowship (GRF) program into a National Graduate Research Fellowship (NGRF) program to include targeted experiences that will equip fellows from a range of STEM fields, including those fields of particular interest to Federal science mission agencies, with specialized skills and knowledge.

In FY 2014, NSF will challenge the community to expand innovation in graduate education through the NSF Research Traineeships (NRT) program, the successor to the current IGERT program. This program will build on what has been learned in the GK-12 program, IGERT, and in other national and NSF-sponsored efforts, such as the NSF Year of Dialogue, using the traineeship approach. Funded projects will support trainees and will be expected to design, implement, and study the implementation and impact of innovative practices, curricula, learning and research experiences, and graduate education policies through model traineeship programs. NSF will especially seek transformative approaches to graduate education that keep pace with science in emerging fields.

## **FY 2014 Summary**

All funding decreases/increases represent change over the FY 2012 Enacted level.

### **Learning and Learning Environments**

- In FY 2014, Climate Change Education (CCE) resources (\$5.50 million) are redirected to the newly proposed Catalyzing Advances in Undergraduate STEM Education (CAUSE) program in the Division of Undergraduate Education (DUE). For more information on CAUSE, please see the NSF-Wide Investments chapter.
- The leadership of the Project and Program Evaluation (PPE) program transfers from the Division of Research on Learning in Formal and Informal Settings (DRL) to DGE. A total of \$23.95 million will allow for continuity and further development of the program.

### **STEM Professional Workforce**

- DGE will lead the STEM Professional Workforce Preparation component of EHR's core R&D activity. The National Research Council report<sup>4</sup> on research universities shaped EHR's thinking about the STEM professional workforce, and the focus of this component extends beyond the graduate level to include the development of a range of STEM professionals, such as technicians, STEM teachers, undergraduate-level entrants to the STEM workforce, and others. This body of R&D will lead to a portfolio that supports implementation of successful approaches, practices, and models for STEM professional workforce preparation. DGE will work with other EHR divisions to release a single Core R&D solicitation. DGE will invest \$5.0 million in this activity in FY 2014.
- In FY 2014, leadership of SFS transfers from the Division of Undergraduate Education (DUE) to DGE. A total of \$25.0 million will allow for continuity of the program to develop the scientific and technical workforce in the field of cybersecurity, and to continue key collaborations with other agencies that have a direct interest in the preparation of the cybersecurity workforce, primarily the Department of Homeland Security.
- INSPIRE is funded at \$2.0 million. In FY 2014, this program will transfer from DRL to DGE to be better aligned with STEM professional workforce development considerations.
- In FY 2014, funds are not requested for GK-12, as all financial out-year obligations will be completed as planned in FY 2013.
- This FY 2014 Budget Request includes initial steps towards re-thinking of investments in STEM graduate education programs in order to use existing resources more effectively, to eliminate redundancy, and to streamline the administration of programs.
  - The current Graduate Research Fellowship (GRF) program will become the National Graduate Research Fellowship (NGRF) program. NGRF will operate under the same general framework and principles currently used in GRF, and will include consultation with other agencies to help ensure the most effective practices are used and suitable targeted opportunities are provided. A

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<sup>4</sup> National Research Council. *Research Universities and the Future of America: Ten Breakthrough Actions Vital to Our Nation's Prosperity and Security*. Washington, DC: The National Academies Press, 2012.

\$52.93 million increase over the FY 2012 Enacted is requested for a total EHR investment of \$162.57 million. An equivalent investment (\$162.57 million) is provided through International and Integrative Activities (IIA) for a total NGRF investment of \$325.14 million. Through this expanded program, NSF will be able to award approximately 700 additional fellows bringing the total estimated number of new fellowships awarded in FY 2014 to 2,700. NGRF will address, as appropriate, the emphases and preparation needs in a number of other federal fellowship programs. For more information see the Major Investments in Science, Technology, Education, and Mathematics (STEM) Graduate Education narrative in the NSF-wide Investments chapter.

- In collaboration with the Research and Related Activities (R&RA) directorates and offices, DGE will invest \$26.33 million in graduate traineeships as IGERT evolves into a new program, NSF Research Traineeships (NRT), which will encourage strong, well-documented efforts at innovation and design of graduate programs to support growth within specific priority areas (e.g., cyberinfrastructure) and solid preparation of the trainees. For more information see the Major Investments in Science, Technology, Education, and Mathematics (STEM) Graduate Education narrative in the NSF-wide Investments chapter.

**DIVISION OF HUMAN RESOURCE DEVELOPMENT (HRD)**

**\$130,300,000**  
**+\$670,000 / 0.5%**

**HRD Funding**  
(Dollars in Millions)

	FY 2012		FY 2014 Request	Change Over	
	FY 2012 Actual	Enacted/ Annualized FY 2013 CR		FY 2012 Enacted	Percent
<b>Total, HRD</b>	<b>\$129.41</b>	<b>\$129.63</b>	<b>\$130.30</b>	<b>\$0.67</b>	<b>0.5%</b>
<b>Learning and Learning Environments</b>	<b>78.79</b>	<b>78.86</b>	<b>74.86</b>	<b>-4.00</b>	<b>-5.1%</b>
ADVANCE	1.49	1.53	1.28	-0.25	-16.3%
ADVANCE: Career Life Balance (CLB)	-	-	0.25	0.25	N/A
Alliances for Graduate Education and the Professoriate (AGEP)	7.84	7.84	7.84	-	-
Centers for Research Excellence in Science and Technology (CREST)	24.21	24.24	20.24	-4.00	-16.5%
Historically Black Colleges and Universities Undergraduate Program (HBCU-UP)	31.85	31.94	31.94	-	-
Tribal Colleges and Universities Program (TCUP)	13.39	13.31	13.31	-	-
<b>Broadening Participation in STEM</b>	<b>45.48</b>	<b>45.62</b>	<b>50.62</b>	<b>5.00</b>	<b>11.0%</b>
Core Research and Development	-	-	5.00	5.00	N/A
Louis Stokes Alliances for Minority Participation (LSAMP)	45.48	45.62	45.62	-	-
<b>STEM Professional Workforce</b>	<b>5.14</b>	<b>5.15</b>	<b>4.82</b>	<b>-0.33</b>	<b>-6.4%</b>
Excellence Awards in Science and Engineering (EASE)	5.14	5.15	4.82	-0.33	-6.4%

Totals may not add due to rounding.

Funding for the FY 2012 Actual and the FY 2012 Enacted/Annualized FY 2013 CR are shown in the FY 2014 structure for comparability.

The Division of Human Resource Development (HRD) aims to grow the U.S. science, technology, engineering, and mathematics (STEM) workforce by supporting the broader participation and success of individuals currently underrepresented in STEM, building the capacity of the institutions that serve them, and conducting research on effective mechanisms and models for achieving both of those goals.

The division is committed to both knowledge building and application, including investing in the creation of new knowledge, innovations, and models for broadening participation in the STEM enterprise and translating these for use by stakeholders. The expansion of stakeholder institutional capacity to support and engage diverse populations in high-quality STEM education and research programs is critical and will be advanced by HRD's programs. Program investments will include the following:

- Supporting institutional capacity building models and strategies;
- Engaging the field in new approaches to broadening participation that can respond to changing demographics, including increased engagement with Hispanics and Hispanic-serving institutions;
- Advancing the knowledge base in broadening participation research;
- Examining model practices and their relationships to particular institution types;

- Working with the Division of Undergraduate Education (DUE) to further study issues related to persistence in STEM students, especially the role of community colleges in attracting and retaining underrepresented minority students, women, and persons with disabilities to STEM; and
- Providing intellectual and strategic leadership to government-wide implementation of the CoSTEM priority on improving STEM participation of underrepresented groups. This will occur through collaboration with HRD awardee institutions, particularly minority serving institutions, and synthesis of the knowledge base being developed through HRD investments.

### **FY 2014 Summary**

All funding decreases/increases represent change over the FY 2012 Enacted level.

#### **Learning and Learning Environments**

- HRD's STEM Learning and Learning Environments component will include investments from several existing programs (ADVANCE, AGEP, CREST, HBCU-UP, and TCUP). This portfolio provides the settings for building and implementing models that contribute to a coherent body of knowledge about successful approaches for broadening STEM participation and for building the institutional capacity needed to do so. CREST will see a decrease of \$4.0 million to a total of \$20.24 million, which will result in fewer center awards. This reflects an emphasis on working with other NSF centers programs, including the Science and Technology Centers and the Engineering Research Centers, to seek synergies with key HRD communities. In addition, CREST will support EHR's SEES-related activities in FY 2014 at a level of \$500,000.

#### **Broadening Participation in STEM**

- HRD will take responsibility for providing strategic direction and program guidance for the Broadening Participation and Institutional Capacity component of EHR's core R&D activity and will work with other EHR divisions to release a single Core R&D solicitation. HRD will invest \$5.0 million in this activity in FY 2014.
- To provide continuity in the LSAMP program, funding is sustained at the FY 2012 Enacted level, \$45.62 million.

#### **STEM Professional Workforce**

- EHR will invest \$4.82 million in the EASE program, a decrease of \$330,000 from the FY 2012 Enacted funding level. This reduction is achieved through reduced contractual costs associated with program management.

**DIVISION OF UNDERGRADUATE EDUCATION (DUE)**

**\$226,970,000**  
**+\$36,320,000 / 19.1%**

**DUE Funding**  
(Dollars in Millions)

	FY 2012		FY 2014 Request	Change Over	
	FY 2012 Actual	Enacted/ Annualized FY 2013 CR		FY 2012 Enacted Amount	FY 2012 Enacted Percent
<b>Total, DUE</b>	<b>\$190.54</b>	<b>\$190.65</b>	<b>\$226.97</b>	<b>\$36.32</b>	<b>19.1%</b>
<b>Learning and Learning Environments</b>	<b>71.57</b>	<b>71.76</b>	<b>102.08</b>	<b>30.32</b>	<b>42.3%</b>
Core Research and Development	-	-	5.00	5.00	N/A
Catalyzing Advances in Undergraduate STEM Education (CAUSE) <sup>1</sup>	-	-	97.08	97.08	N/A
<i>STEM Talent Expansion Program (STEP)</i> <sup>2</sup>	24.30	24.30	-	-24.30	-100.0%
<i>Widening Implementation and Demonstration of Evidenced-based Reforms (WIDER)</i> <sup>2</sup>	8.21	8.00	-	-8.00	-100.0%
<i>Transforming Undergraduate Education in STEM (TUES)</i> <sup>2</sup>	39.06	39.46	-	-39.46	-100.0%
<b>STEM Professional Workforce</b>	<b>118.96</b>	<b>118.89</b>	<b>124.89</b>	<b>6.00</b>	<b>5.0%</b>
Advanced Technological Education	64.07	64.00	64.00	-	-
Robert Noyce Teacher Scholarship Program (NOYCE)	54.89	54.89	60.89	6.00	10.9%

Totals may not add due to rounding.

Funding for the FY 2012 Actual and the FY 2012 Enacted/Annualized FY 2013 CR are shown in the FY 2014 structure for comparability.

<sup>1</sup> Catalyzing Advances in Undergraduate STEM Education (CAUSE) is a new program proposed for FY 2014.

<sup>2</sup> In FY 2014, the STEM Talent Expansion Program (STEP), Widening Implementation and Demonstration of Evidenced-based Reforms (WIDER), and Transforming Undergraduate Education in STEM (TUES) are consolidated into the CAUSE program.

The Division of Undergraduate Education (DUE) invests in transforming undergraduate STEM education through research and development (R&D) work on design, development, implementation, and scaling of effective STEM learning and teaching knowledge and practices. DUE's objectives are to strengthen the science and engineering workforce and prepare all undergraduate students for an increasingly technological global society.

In FY 2014, the Division of Undergraduate Education (DUE) will lead the Foundation in initiating a major program, Catalyzing Advances in Undergraduate STEM Education (CAUSE), and will promote implementation of evidence-based practices while stimulating research related to innovative models seeking to enlarge that evidence base. CAUSE will integrate and leverage the investments of EHR's STEM Talent Expansion Program (STEP), Transforming Undergraduate Education in STEM (TUES) program, Widening Implementation and Demonstration of Evidenced-based Reforms (WIDER) program, and other NSF undergraduate programs funded through the Research and Related Activities (R&RA) account. CAUSE will combine the resources of the former programs for greater impact on implementation of and research about evidence-based instructional activities; design, implementation, and study of academic and community efforts to promote student persistence in STEM majors; and systemic transformation in higher-education practice in curricular and co-curricular student support. For more information see the CAUSE narrative in the NSF-Wide Investments chapter.

DUE addresses the national need for a well-prepared STEM workforce through its Robert Noyce Teacher Scholarship (NOYCE) and Advanced Technology Education (ATE) programs. Aside from scholarship support for students, the R&D emphases within ATE and the capacity-building tracks of NOYCE invest in the design and development of tools aimed at increasing and tapping the diversity of the STEM workforce. For instance, NOYCE investments provide effective STEM teacher preparation models that can serve as a foundation to achieve the Administration's goal of training 100,000 new teachers. Collaborating across agencies with the Department of Energy and the Department of Defense, DUE contributes to the Administration's National Network for Manufacturing Innovation regional hubs by leveraging ATE investments in advanced manufacturing areas.

### **FY 2014 Summary**

All funding decreases/increases represent change over the FY 2012 Enacted level.

#### **Learning and Learning Environments**

- DUE will provide strategic direction and program guidance for the STEM Learning Environments component of EHR's Core R&D activity and will work with other EHR divisions to develop a single solicitation. DUE will invest \$5.0 million in this activity in FY 2014.
- Catalyzing Advances in Undergraduate STEM Education (CAUSE) is initiated at \$97.08 million. The program will have "tracks" that align with the goals of the former individual programs within EHR and in the R&RA directorates. For more information, see the CAUSE narrative in the NSF-wide Investments chapter.

#### **STEM Professional Workforce**

- DUE requests a \$6.0 million increase to a total of \$60.89 million in FY 2014 over the FY 2012 Enacted level for the NOYCE program to support a new Broadening Participation in STEM track. This effort is a collaboration between the Division of Human Resources Development (HRD) and DUE and will be informed by the anticipated FY 2013 National Academy of Sciences report jointly funded by DUE and HRD which is exploring persistence issues. ([http://sites.nationalacademies.org/DBASSE/BOSE/CurrentProjects/DBASSE\\_080405#.UUhppOjT30k](http://sites.nationalacademies.org/DBASSE/BOSE/CurrentProjects/DBASSE_080405#.UUhppOjT30k)) The expected release date of the report is Oct 15, 2014. Data supporting the need for such a program include the observation that two-year schools have more-diverse student bodies overall, but much lower retention rates than do four-year schools (20 percent vs. 43 percent, respectively). This activity will seek to understand the factors that support student persistence in two-year schools and the successful matriculation to and persistence in four-year schools. Projects will be supported to ascertain which practices promote the success of all students or particular groups of students underrepresented in STEM, such as the large and fast-growing numbers of Hispanic students in the United States. This program also will build on the knowledge generated by the NSF-U.S. Department of Education K-16 Mathematics Initiative, which is focusing on the transition from high school to higher education.
- Support for the ATE program is maintained at \$64.0 million to provide for continuity of the program, as well as contribute to ongoing, cross-agency collaborations in advanced manufacturing initiatives.

**EHR FY 2014 Realignment for Program Movement Between Divisions**

(Dollars in Millions)

FY 2013 Structure	FY 2014 Request	FY 2014 Structure	FY 2014 Request
<b>Undergraduate Education</b>	<b>\$154.89</b>	<b>Undergraduate Education</b>	<b>\$226.97</b>
Core Launch:STEM Learning Environments	5.00	Core Launch:STEM Learning Environments	5.00
Advanced Technological Education (ATE)	64.00	Advanced Technological Education (ATE)	64.00
Robert Noyce Scholarship Program (NOYCE)	60.89	Robert Noyce Scholarship Program (NOYCE)	60.89
CyberCorps: Scholarship for Service (SFS)	25.00		
		Catalyzing Advances in Undergraduate STEM Education (CAUSE)	97.08
Transforming Undergraduate Education in STEM (TUES)	-	<i>TUES is consolidated into CAUSE</i>	-
STEM Talent Expansion Program (STEP)	-	<i>STEP is consolidated into CAUSE</i>	-
Widening Implementation and Demonstration of Evidence-based Reforms (WIDER)	-	<i>WIDER is consolidated into CAUSE</i>	-
<b>Graduate Education</b>	<b>\$194.20</b>	<b>Graduate Education</b>	<b>\$245.15</b>
Core Launch: STEM Professional	5.00	Core Launch: STEM Professional	5.00
NSF Innovation Corps (I-Corps)	0.30	NSF Innovation Corps (I-Corps)	0.30
Graduate Research Fellowship (GRF)	162.57	<b>National Graduate Research Fellowship (NGRF)</b>	162.57
Graduate STEM Fellows in K-12 Education (GK-12)	-	Graduate STEM Fellows in K-12 Education (GK-12)	-
Integrative Graduate Education and Research Traineeship (IGERT)	26.33	<b>NSF Research Traineeships (NRT)</b>	26.33
Climate Change Education (CCE)	-	<i>CCE is consolidated into CAUSE</i>	-
		CyberCorps: Scholarship for Service (SFS)	25.00
		INSPIRE	2.00
		Project and Program Evaluation (PPE)	23.95
<b>Human Resource Development</b>	<b>\$130.30</b>	<b>Human Resource Development</b>	<b>\$130.30</b>
Core Launch: Broadening Participation and Institutional Capacity in STEM	5.00	Core Launch: Broadening Participation and Institutional Capacity in STEM	5.00
Historically Black Colleges and Universities Undergraduate Program (HBCU-UP)	31.94	Historically Black Colleges and Universities Undergraduate Program (HBCU-UP)	31.94
Louis Stokes Alliances for Minority Participation (LSAMP)	45.62	Louis Stokes Alliances for Minority Participation (LSAMP)	45.62
Tribal Colleges & Universities Program (TCUP)	13.31	Tribal Colleges & Universities Program (TCUP)	13.31
Alliances for Graduate Education and the Professoriate (AGEP)	7.84	Alliances for Graduate Education and the Professoriate (AGEP)	7.84
Centers for Research Excellence in Science and Technology (CREST)	20.24	Centers for Research Excellence in Science and Technology (CREST)	20.24
ADVANCE (including CAREER Life Balance)	1.53	ADVANCE (including CAREER Life Balance)	1.53
Excellence Awards in Science and Engineering (EASE)	4.82	Excellence Awards in Science and Engineering (EASE)	4.82
<b>Research on Learning in Formal and Informal Settings</b>	<b>\$303.82</b>	<b>Research on Learning in Formal and Informal Settings</b>	<b>\$277.87</b>
Core Launch: STEM Learning	10.00	Core Launch: STEM Learning	10.00
Discovery Research K-12 (DR-K12)	102.53	Discovery Research K-12 (DR-K12)	102.53
Advancing Informatl STEM Learning (AISL)	47.82	Advancing Informatl STEM Learning (AISL)	47.82
Research on Education and Learning (REAL)	60.44	Research on Education and Learning (REAL)	60.44
Math and Science Partnership (MSP)	57.08	<b>Science, Technology, Engineering, and Mathematics, including Computing Partnerships (STEM-C Partnerships)</b>	57.08
INSPIRE	2.00		
Project and Program Evaluation (PPE)	23.95		
Catalyzing Advances in Undergraduate STEM Education (CAUSE)	97.08		
<b>TOTAL, EHR</b>	<b>\$880.29</b>	<b>TOTAL, EHR</b>	<b>\$880.29</b>

**H-1B NONIMMIGRANT PETITIONER FEES**

**\$100,000,000**  
**+\$0 / 0%**

In FY 2014, H-1B Nonimmigrant Petitioner Fees are projected to be \$100.0 million, equal to the FY 2013 estimate.

**H-1B Nonimmigrant Petitioner Fees Funding**

(Dollars in Millions)

	FY 2012 Actual	FY 2013 Estimate	FY 2014 Request	Change Over	
				FY 2013 Estimate Amount	Percent
H-1B Nonimmigrant Petitioner Fees Funding	\$94.16	\$100.00	\$100.00	-	-

Beginning in FY 1999, Title IV of the American Competitiveness and Workforce Improvement Act of 1998 (P.L. 105-277) established an H-1B Nonimmigrant Petitioner Account in the general fund of the U.S. Treasury for fees collected for each petition for alien nonimmigrant status. That law required that a prescribed percentage of funds in the account be made available to NSF for low-income scholarships; grants for mathematics, engineering, or science enrichment courses; and systemic reform activities. In FY 2005, Public Law 108-447 reauthorized H-1B funding. NSF was provided with 40 percent of the total H-1B receipts collected. Thirty percent of H-1B receipts (75 percent of the receipts that NSF receives) are to be used for a low-income scholarship program, Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM). Ten percent of receipts (25 percent of the receipts that NSF receives) are designated for support of private-public partnerships in K-12 education through Innovative Technology Experiences for Students and Teachers (ITEST).

- **Low-income Scholarship Program: S-STEM.** The S-STEM program provides institutions with funds for student scholarships to encourage and enable academically talented U.S. students demonstrating financial need to enter the STEM workforce or STEM graduate school following completion of an associate, baccalaureate, or graduate degree in fields of science, technology, engineering, or mathematics. The program emphasizes the importance of recruiting students to STEM disciplines, mentoring and supporting students through degree completion, and partnering with employers to facilitate student career placement in the STEM workforce.

Since its inception the low-income scholarship program has received over 5,500 proposals from all types of colleges and universities and has made awards for 1,270 projects. In addition to scholarships, projects include student support activities featuring close involvement of faculty, student mentoring, academic support, curriculum development, and recognition of the students. Such activities are important in recruiting and retaining students in high-technology fields through graduation and into employment. In FY 2014, S-STEM projects will contribute to the knowledge base of scholarly research in education by carrying out research on factors (such as recruitment and retention of STEM students), which affect associate or baccalaureate degree attainment. S-STEM projects report much higher retention and graduation rates among scholarship students than among other STEM majors. Approximately 90 awards are anticipated in FY 2014, with an emphasis on increasing involvement of community colleges.

- **Private-Public Partnerships in K-12: ITEST.** The ITEST program invests in K-12 activities that address the current concern about shortages of STEM professionals and information technology workers in the U.S. and seeks solutions to help ensure the breadth and depth of the STEM workforce. ITEST funds activities for students and teachers that emphasize mathematics, science, and engineering careers, and emphasizes the importance of evaluation and research to understand the

impact of such activities. The program supports the development, implementation, testing, and scale-up of models, STEM robotics projects, and research studies to improve the STEM workforce and build a student’s capacity to participate in the STEM workforce. The solicitation places emphasis on capturing and establishing a reliable knowledge base about the dispositions toward and knowledge about STEM workforce skills in U.S. students. .

Since its inception, the ITEST program has received 1,949 proposals and funded over 200 projects that allow students and teachers to work closely with scientists and engineers on extended research projects, ranging from biotechnology to environmental resource management to programming and problem-solving. Projects draw on a wide mix of local resources, including universities, industry, museums, science and technology centers, and school districts in order to identify the characteristics that attract a wide range of young people to STEM, especially those students not successful in traditional school settings. Through a projected \$216 million federal investment since its establishment, ITEST impacts an estimated 225,000 students (grades K-12), 8,000 educators, and 3,000 parents, adult volunteers, and caregivers. Approximately 15 awards are anticipated in FY 2014.

**H-1B Financial Activities from FY 2003 - FY 2012**  
(Dollars in Millions)

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
<b>Receipts</b>	<b>\$65.34</b>	<b>\$0.57</b>	<b>\$83.68</b>	<b>\$105.32</b>	<b>\$107.36</b>	<b>\$104.43</b>	<b>\$88.66</b>	<b>\$91.22</b>	<b>\$106.11</b>	<b>\$128.99</b>
<b>Unobligated Balance start of year</b>	<b>\$63.45</b>	<b>\$83.90</b>	<b>\$29.10</b>	<b>\$89.58</b>	<b>\$98.19</b>	<b>\$63.37</b>	<b>\$50.83</b>	<b>\$52.62</b>	<b>\$50.15</b>	<b>\$60.93</b>
Obligations incurred:										
Scholarships in Science, Technology, Engineering, and Mathematics <sup>1</sup>	25.30	33.91	0.54	80.95	100.04	92.40	61.22	75.96	77.67	72.57
Grants for Mathematics, Engineering or Science Enrichment Courses	16.27									
Systemic Reform Activities	5.00	2.50	2.72							
Private-Public Partnership in K-12 <sup>2</sup>		20.87	22.69	18.45	45.90	28.72	27.86	20.85	18.62	21.59
<b>Total Obligations</b>	<b>\$46.57</b>	<b>\$57.28</b>	<b>\$25.95</b>	<b>\$99.40</b>	<b>\$145.94</b>	<b>\$121.12</b>	<b>\$89.08</b>	<b>\$96.81</b>	<b>\$96.29</b>	<b>\$94.16</b>
Unallocated Recoveries							2.20	3.12	0.96	3.55
<b>Unobligated Balance end of year</b>	<b>\$82.22</b>	<b>\$27.19</b>	<b>\$86.83</b>	<b>\$95.50</b>	<b>\$59.61</b>	<b>\$46.68</b>	<b>\$52.62</b>	<b>\$50.15</b>	<b>\$60.93</b>	<b>\$99.31</b>

Totals may not add due to rounding.

<sup>1</sup> In FY 2006, the Computer Science, Engineering, and Mathematics Scholarships (CSEMS) was renamed to Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM).

<sup>2</sup> P.L. 108-447 directs that 10 percent of the H-1B Petitioner funds go toward K-12 activities in volving private-public partnerships in a range of areas such as materials development, student externships, math and science teacher professional development, etc.

**Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM).** The S-STEM program began in 1999 under P.L. 105-277. At this time, the program was named Computer Science, Engineering, and Mathematics Scholarships (CSEMS) and supported grants for scholarships to academically-talented, financially needy students pursuing associate, baccalaureate, or graduate degrees in computer science, computer technology, engineering, engineering technology, or mathematics. Grantee institutions awarded scholarships of up to \$2,500 per year for two years to eligible students.

The CSEMS activity continued under the American Competitiveness in the 21<sup>st</sup> Century Act (P.L. 106-313) with a prescribed percentage of H-1B receipts (22 percent) which totaled approximately 59.5 percent of the total H-1B funding for NSF. P.L. 106-313 also amended P.L. 105-277 by increasing the maximum scholarship duration to four years and the annual stipend to \$3,125.

Under the Consolidated Appropriations Act, 2005 (P.L. 108-447), the prescribed percentage of H-1B receipts available for the low income scholarship program was increased to 30 percent (approximately 75 percent of the total H-1B funding for NSF). Eligibility for the scholarships was expanded from the original fields of computer science, engineering, and mathematics to include “other technology and science programs designated by the Director.” The maximum annual scholarship award amount was raised from \$3,125 to \$10,000. Language also was added allowing NSF to use up to 50 percent of funds “for undergraduate programs for curriculum development, professional and workforce development, and to advance technological education.” Because of these changes, the program was renamed in 2006 from Computer Science, Engineering, and Mathematics Scholarships (CSEMS) to Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM).

**Grants for Mathematics, Engineering, or Science Enrichment Courses.** Authorized under Title IV of the American Competitiveness and Workforce Improvement Act of 1998 (P.L. 105-277), these funds provided opportunities to students for enrollment in year-round academic enrichment courses in mathematics, engineering, or science.

**Systemic Reform Activities.** Authorized under Title IV of the American Competitiveness and Workforce Improvement Act of 1998 (P.L. 105-277), these funds supplemented the rural systemic reform efforts administered under the former EHR Division of Educational System Reform (ESR).

**Private-Public Partnerships in K-12.** The American Competitiveness in the 21<sup>st</sup> Century Act (P.L. 106-313) amended P.L. 105-277 and changed the way petitioner fees were to be expended. P.L. 106-313 directed the remaining 40.5 percent of the total H-1B funding for NSF (15 percent of H-1B receipts) toward K-12 activities involving private-public partnerships in a range of areas such as materials development, student externships, and mathematics and science teacher professional development. The Information Technology Experiences for Students and Teachers (ITEST) program was developed as a partnership activity in K-12 to increase opportunities for students and teachers to learn about, experience, and use information technologies within the context of STEM, including information technology (IT) courses. In FY 2005, P.L. 108-447 reduced the prescribed percentage of H-1B receipts available for private-public partnerships in K-12 to 10 percent (approximately 25 percent of the total H-1B funding for NSF).

### **Explanation of Carryover**

Within the H-1B Nonimmigrant Petitioner account (Mandatory), \$99.31 million was carried over into FY 2013, which consisted of \$29.66 million in ITEST and \$69.65 million in S-STEM. The carryover includes \$69.65 million in third quarter H-1B receipts (received in August 2012) and \$18.88 million in fourth quarter receipts (received in November 2012). Since NSF receives the largest quarterly payment of H-1B visa fees in August, there is insufficient time to obligate the receipts on awards before the end of the fiscal year.