

**National Science Foundation (NSF) Program Plan  
American Recovery and Reinvestment Act of 2009  
Updated May 2010**

**Education and Human Resources (EHR) Program Recovery Plan  
CFDA Number: 47.082**

**Objectives**

**Program Purpose**

The EHR Program promotes excellence in STEM education through the development of a diverse and well-prepared workforce of scientists, technicians, engineers, mathematicians, and educators; a well-informed citizenry; and access to the ideas and tools of science and engineering for all. The purposes of the EHR Program are to produce STEM K-12 teachers who commit to teaching in high need school districts; develop STEM K-12 master teachers and school based instructional leaders in mathematics and science education; and broaden graduate training and talent for industry, national laboratories, and non-governmental agencies through a new professional science master's degree program. The ARRA EHR resources totaling \$100 million are managed by the Divisions of Undergraduate Education and Graduate Education to expand the Robert Noyce Teacher Scholarship Program and the Math and Science Partnership (MSP) Program and to establish the Science Master's (SM) Program.

**Public Benefits**

The results of EHR's ARRA investments will contribute to the STEM instructional workforce through the Robert Noyce Teacher Scholarship Program and the Math and Science Partnership Program. The Noyce Program produces STEM K-12 teachers who commit to teaching in high need school districts. The MSP Program focuses on the development of STEM K-12 master teachers and school based instructional leaders in mathematics and science education. Both of these programs build capacity in the instructional workforce to improve K-12 math and science learning. For Noyce and MSP, NSF has many highly rated STEM education proposals for K-12 STEM workforce development in hand to consider for funding with ARRA funds. These projects would otherwise be declined for lack of funds. Therefore, the ARRA resources will increase even more the funding rates for effective teacher education proposals. The ARRA funds will also contribute to the 21<sup>st</sup> century science and engineering (S&E) STEM workforce through an investment in a Science Master's (SM) Program. The SM Program will further broaden graduate training and talent for industry, the national laboratories, and non-governmental agencies. This new ARRA program will hold a competition in 2009 and make awards early in FY 2010.

## Measures

### Robert Noyce Teacher Scholarship Program

*Number of new awards to lead institutions of higher education.* The target for FY 2009 (67) was met.

*Number of new Noyce pre-service teachers and teacher participants.* This measure represents the total number of teachers and teacher participants supported over the 5-year duration of awards. NSF exceeded its FY 2009 target. The cumulative target for FY 2013 is 1,530. Annual targets are as follows:

	Annual Target	Actual FY 2009
FY 2009	30	124
FY 2010	370	
FY 2011	415	
FY 2012	415	
FY 2013	300	
5-year total	1530	

*Number of new teachers teaching in high need districts.* This measure represents the total number of people moving into teaching in high need districts over the 5-year duration of awards. The cumulative target for FY 2013 is 1,440. Annual targets are as follows:

	Annual Target	Actual FY 2009
FY 2009	0	0
FY 2010	28	
FY 2011	270	
FY 2012	475	
FY 2013	667	
5-year total	1440	

### Math and Science Partnership Program

*Number of new awards to lead institutions.* The target for FY 2009 (9) was met.

*Number of MSP teacher leader/master teacher participants.* This measure represents the total number of people supported over the 5-year duration of awards. The cumulative target for FY 2013 is 369. Interim targets are as follows:

	Annual Target	Actual FY 2009
FY 2009	15	24
FY 2010	133	
FY 2011	73	
FY 2012	74	
FY 2013	74	
5-Year Total	369	

*Number of Post-baccalaureate credential or master's degree recipients.* This measure represents the total number of people receiving master's degrees or other credential over the 5-year duration of awards. The cumulative target for FY 2013 is 331. Interim targets are as follows:

	Annual Target	Actual FY 2009
FY 2009	13	18
FY 2010	119	
FY 2011	67	
FY 2012	66	
FY 2013	66	
5-Year Total	331	

### **Science Master's (SM) Program**

Number of new awards to lead institutions. This is a new program in FY 2010, so the target for FY 2009 was 0. The target for FY 2010 is 21.

Number of students supported. This measure represents the total number of people to be supported over the 3-year duration of awards. The target for FY 2012 is 220. These awards were just obligated in May 2010. NSF is still developing targets for interim years.

Number of students earning science master's degrees. This measure represents the total number of degree recipients over the 3-year duration of awards. The target for FY 2012 is 200. These awards were just obligated in May 2010. NSF is still developing targets for interim years.

## Schedule and Milestones

**Robert Noyce Teacher Scholarship Program:** Awards to lead institutions were to be made by September 30, 2009. This milestone was met. Scholarships will be given to pre-service teachers and teacher participants by September 30, 2010.

**Math and Science Partnership (MSP) Program:** Awards to lead institutions were to be made by September 30, 2009. This milestone was met. Institute Partnerships: Teacher Institutes for the 21<sup>st</sup> Century and Phase II: Professional Development and Research Activities will be implemented by September 30, 2010.

**Science Master's (SM) Program:** Awards will be made by September 30, 2010. Synthesis of the first year's annual project reports will be completed by September 30, 2011.

## Projects and Activities

### Robert Noyce Teacher Scholarship Program

The Noyce Program seeks to encourage talented STEM majors and professionals to become K-12 math and science teachers. The program provides funds to institutions of higher education to support scholarships, stipends, and academic programs for undergraduate STEM majors and post-baccalaureate students holding STEM degrees who commit to teaching in high-need K-12 school districts. The ARRA funds will support Phase I proposals from institutions that have not previously been funded or are requesting funding for a department or academic unit that has not participated in a previous Noyce award. These funds will also support Phase II proposals from institutions that have previously been funded and whose award expiration date occurs on or before December 31, 2009, enabling these institutions to support additional cohorts of prospective teachers while conducting longitudinal studies of previous cohorts. In addition, ARRA funds will support proposals submitted under the Noyce Program's NSF Teaching Fellowships and Master Teacher Fellowships track.

### Math and Science Partnership (MSP) Program

The Math and Science Partnerships Program supports innovative partnerships to improve K-12 student achievement in math and science. MSP projects are expected to raise the achievement levels of all students and significantly reduce achievement gaps in the math and science performance of diverse student populations. The ARRA funds will support three categories of proposals: (1) Institute Partnerships – Teacher Institutes for the 21<sup>st</sup> Century, which focus on meeting national needs for teacher leaders/master teachers who have deep knowledge of disciplinary content for teaching and are fully prepared to be school- or district-based leaders in math or the sciences; (2) Phase II Partnerships for prior MSP Partnerships awardees who focus on specific innovative areas of their work where evidence of the potential for significant positive impact is clearly documented; and (3) MSP-Start Partnerships for awardees new to the MSP Program, especially from

minority-serving institutions, community colleges, and primarily undergraduate institutions, to support the necessary data analysis, project design, evaluation, and team building activities needed to develop a full MSP Targeted or Institute Partnership.

### **Science Master's (SM) Program**

The Science Master's program is currently under development, with a program solicitation expected to be released in summer 2009 and awards made in FY 2010. The program aims to provide a two-year course of graduate training to prepare individuals for employment.

### **Review Process**

NSF places high priority on its stewardship responsibilities and is cognizant of the responsibilities imposed through its receipt of \$100 million in ARRA funding for the EHR program. The Foundation plans to fully use and, in places, enhance its comprehensive set of policies and procedures that currently guide program staff through business, financial, and award administration from pre-award through close-out. At the pre-award stage, NSF's world-standard merit review system selects the highest-quality scientific research and education proposals for funding. Its comprehensive set of fully documented policies and procedures guide NSF staff and awardees alike through the business, financial, and award requirements that govern pre-award through close-out. Warranted contract and grant specialists make awards to institutions with the business capacity requisite to manage federal resources and specifically exclude those institutions debarred from receipt of funds by Federal government agencies. The *Award and Administration Guide (AAG)* (Part II of the *NSF Proposal & Award Policies & Procedures Guide*) [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=papp](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=papp) sets forth NSF policies for the award and administration of grants and cooperative agreements that ensure compliance with federal regulations. The AAG governs the setting of award terms and conditions, grant administration, financial requirements, grantee standards, cost allowability, and grant administration and misconduct. NSF is including special terms and conditions for ARRA-funded awards as per OMB guidance. NSF's comprehensive Award Monitoring and Business Assistance Program (AMBAP) provides advanced post award oversight for the universe of NSF's high risk awards through a combination of desk reviews, site visits, and Federal Financial Report (FFR) transactional testing. Desk reviews and site visits provide oversight of critical policies and procedures that follow well-established protocols; they verify that financial information received provide reasonable assurance that awards are likely to be administered in accordance with NSF's agreement provisions and other relevant administrative regulations. Transactions for low- and medium-risk awards are subject to verification through statistical sampling to ensure that funding is not used for expressly unallowable costs. NSF will leverage its current, comprehensive programs to ensure rigorous monitoring for Recovery Act funds. ARRA awards will carry additional weight in the annual risk assessment, ensuring that their coverage will be significant. Through this combined set of activities, on-site visits, desk review, and/or transactional testing, NSF will ensure that the entire high risk award universe receives post award review. We believe that the extraordinary measures NSF

has taken to conceive and implement AMBAP are having a positive impact on awardee institutions and are mitigating the risk of potential misuse of funds. In designing this program, we have been very careful to complement, rather than supplant, the auditing responsibilities of the Office of the Inspector General (OIG). Should we, in the course of the Foundation's post-award oversight activities, find issues that rise to the level of audit or investigative scrutiny, we will refer them to NSF OIG.

The Noyce Program supports a program monitoring system, *the Noyce Annual Survey*, for annual standardized data collection across projects. An evaluation of the program was just completed and a set of requirements are under development for a new program evaluation. The MSP Program has a program monitoring system, *The MSP Management and Information System*, for annual standardized data collection across projects. MSP also has an on-going independent program evaluation. Plans are underway for building a monitoring and evaluation framework for the Science Master's Program. The program will have a cross-project monitoring system and a third-party program evaluation, as well as required project level evaluation.

### **Cost and Performance Plan**

The National Science Foundation will report performance information to the public on its Recovery Act awards on its website ([www.nsf.gov/recovery](http://www.nsf.gov/recovery)) and through the Research Spending and Results (RS&R) offering in Research.gov (<http://www.research.gov/rgov/anonymous.portal>). The NSF Recovery Act website is the Foundation's primary means of communicating results of Recovery Act investments. The RS&R mechanism in Research.gov provides near real-time data that is updated based on recipient report submissions. Information available in RS&R includes awardee or award information (full text search); funds obligated to date; project director or principal investigator, including co-project director and co-principal investigator; award date; awardee location; primary location of performance; and performance Congressional district. All awards in the EHR Program will be made through the Education and Human Resources Directorate, which has developed plans to meet the priorities and targets described above. Through self-monitoring of its Recovery Act award portfolio, the Foundation will take advantage of opportunities to make course corrections and changes in procedures in order to fully meet its priorities under the legislation. The Foundation will report on its Recovery Act research, education, and infrastructure investments in a timely manner through its website and Research.gov.

**Energy Efficiency Spending Plans:** Not applicable.

**Program Plan Award Types:** Competitive Grant Program

### **Recipient Applicant Type**

Other Public Institutions/Organizations  
Other Private Institutions/Organizations

### **Beneficiary Type**

Education (0-8)  
Education (9-12)  
Education (13+)

**National Science Foundation: EHR Account**  
**ARRA Obligations and Outlays as of March 31, 2010**

(Dollars in Millions)

	FY10 Target	Total, FY 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010	Feb 2010	Mar 2010	Apr 2010	May 2010	Jun 2010	Jul 2010	Aug 2010	Sept 2010
<b>Education &amp; Human Resources</b>														
Projected Obligations (Submitted Nov 2009)	\$100	\$85	\$85	<i>\$85</i>	<i>\$85</i>	<i>\$85</i>	<i>\$85</i>	<i>\$85</i>	<i>\$100</i>	<i>\$100</i>	<i>\$100</i>	<i>\$100</i>	<i>\$100</i>	<i>\$100</i>
Actual Obligations through March & Revised Projections (as of April 2010)	\$100	\$85	\$85	\$85	\$85	\$85	\$85	\$85	\$85	\$100	\$100	\$100	\$100	\$100
Projected Outlays (Submitted Nov 2009)	\$50	\$0	<i>\$3</i>	<i>\$6</i>	<i>\$9</i>	<i>\$12</i>	<i>\$15</i>	<i>\$20</i>	<i>\$25</i>	<i>\$30</i>	<i>\$35</i>	<i>\$40</i>	<i>\$45</i>	<i>\$50</i>
Actual Outlays through March <sup>1</sup> & Revised Projections (as of April 2010)	\$39	\$0	\$0	\$1	\$1	\$1	\$2	\$2	\$4	\$8	\$12	\$13	\$26	\$39
<i>Delta</i>														
Obligations	-	-	-	-	-	-	-	(\$15)	(\$15)	-	-	-	-	-
Outlays	(\$11)	-	(\$3)	(\$5)	(\$8)	(\$11)	(\$13)	(\$18)	(\$21)	(\$22)	(\$23)	(\$27)	(\$19)	(\$11)

Italicized data indicate projections.

Totals may not add due to rounding.

<sup>1</sup>Actual Outlays for October through March are subject to change up to 40 days from the end of the second quarter (March 31).