

Robert Noyce Teacher Scholarship Program

PROGRAM SOLICITATION NSF 13-526

REPLACES DOCUMENT(S): NSF 12-525



National Science Foundation

Directorate for Education & Human Resources
Division of Undergraduate Education

Letter of Intent Due Date(s) (**optional**) (due by 5 p.m. proposer's local time):

February 20, 2013

Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):

March 20, 2013

IMPORTANT INFORMATION AND REVISION NOTES

A revised version of the **NSF Proposal & Award Policies & Procedures Guide** (PAPPG), [NSF 13-1](#), was issued on October 4, 2012 and is effective for proposals submitted, or due, on or after January 14, 2013. Please be advised that the guidelines contained in [NSF 13-1](#) apply to proposals submitted in response to this funding opportunity. Proposers who opt to submit prior to January 14, 2013, must also follow the guidelines contained in [NSF 13-1](#).

Please be aware that significant changes have been made to the PAPPG to implement revised merit review criteria based on the National Science Board (NSB) report, [National Science Foundation's Merit Review Criteria: Review and Revisions](#). While the two merit review criteria remain unchanged (Intellectual Merit and Broader Impacts), guidance has been provided to clarify and improve the function of the criteria. Changes will affect the project summary and project description sections of proposals. Annual and final reports also will be affected.

A by-chapter summary of this and other significant changes is provided at the beginning of both the [Grant Proposal Guide](#) and the [Award & Administration Guide](#).

Please note that this program solicitation may contain supplemental proposal preparation guidance and/or guidance that deviates from the guidelines established in the [Grant Proposal Guide](#).

1. The Phase II category of proposals is now available for the Teaching Fellowship/Master Teaching Fellowship track.
2. The maximum award size for Phase II Monitoring and Evaluation proposals has been increased to \$300,000.
3. Capacity Building Projects have been expanded.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Robert Noyce Teacher Scholarship Program

Synopsis of Program:

The Robert Noyce Teacher Scholarship Program seeks to encourage talented science, technology, engineering, and mathematics majors and professionals to become K-12 mathematics and science teachers. The Noyce Scholarship Track 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 earn a teaching credential and commit to teaching in high-need K-12 school districts. The NSF Teaching Fellowship/Master Teaching Fellowship Track provides funding to support STEM professionals who enroll as NSF Teaching Fellows in master's degree programs leading to teacher certification by providing academic courses, professional development, and salary supplements while they are fulfilling a four-year teaching commitment in a high-need school district. This track also supports the development of NSF Master Teaching Fellows by providing professional development and salary supplements for exemplary mathematics and science teachers to become Master Teachers in high-need school districts. Capacity Building Projects support the

development of new programs and activities to increase the capacity for institutions to provide innovative teacher preparation programs that enable increasing numbers of STEM majors and STEM professionals to become effective K-12 mathematics and science teachers and to develop the capacity to prepare Master science and mathematics teachers.

Cognizant Program Officer(s):

Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.

- Joan T. Prival, Lead Program Director, telephone: (703) 292-4635, email: jprival@nsf.gov
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Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.076 --- Education and Human Resources

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 43 to 56

Anticipated Funding Amount: \$53,450,000 for new and continuing Noyce awards in FY 2013, pending availability of funding.

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Universities and two- or four-year colleges (including community colleges) accredited in, and having a campus located in the United States, or consortia of such institutions, or U.S. nonprofit entities that have established consortia among such institutions of higher education.

PI Limit:

The PI, or at least one Co-PI, must be a STEM faculty member in a mathematics, science, engineering or computer science department.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- Letters of Intent: Submission of Letters of Intent is optional. Please see the full text of this solicitation for further information.
- Preliminary Proposal Submission: Not Applicable
- Full Proposals:
 - Full Proposals submitted via FastLane: NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal Guide (GPG) Guidelines apply. The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg.
 - Full Proposals submitted via Grants.gov: NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide)

B. Budgetary Information

- Cost Sharing Requirements: Cost Sharing is Required. For purposes of this solicitation, and in accordance with Federal requirements, the terms "matching" and "cost sharing" are synonymous. Please see the full text of this solicitation

for further information.

- Indirect Cost (F&A) Limitations: Not Applicable
- Other Budgetary Limitations: Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- Letter of Intent Due Date(s) (**optional**) (due by 5 p.m. proposer's local time):

February 20, 2013

- Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):

March 20, 2013

Proposal Review Information Criteria

Merit Review Criteria: National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

Award Administration Information

Award Conditions: Standard NSF award conditions apply.

Reporting Requirements: Additional reporting requirements apply. Please see the full text of this solicitation for further information.

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I. INTRODUCTION

The Robert Noyce Teacher Scholarship Program, first authorized under the National Science Foundation Authorization Act of 2002 (P.L. 107-368) and reauthorized in 2007 under the [America COMPETES Act](#) (P.L. 110-69) and the [America COMPETES Reauthorization Act of 2010](#) (P.L. 111-358) responds to the critical need for K-12 teachers of science, technology, engineering, and mathematics (STEM) by encouraging talented STEM students and professionals to pursue teaching careers in elementary and secondary schools. The program provides funding to institutions of higher education to provide scholarships, stipends, and programmatic support to recruit and prepare STEM majors and professionals to become K-12 teachers. The program seeks to increase the number of K-12 teachers with strong STEM content knowledge who teach in high-need school districts. For that reason scholarship and stipend recipients are required to complete two years of teaching in a high-need school district for each year of support. In addition, the program supports the recruitment and development of NSF Teaching Fellows, STEM professionals who complete Master's degrees leading to teacher certification and then receive salary supplements while fulfilling a 4-year teaching requirement in a high-need school district. It also supports the development of NSF Master Teaching Fellows by providing professional development and salary supplements for current STEM teachers with leadership potential while they are teaching for five years in a high-need school district. A goal of the program is to recruit individuals with strong STEM backgrounds who might otherwise not have considered a career in K-12 teaching. The program seeks to inspire institutions of higher education to develop

and sustain a culture where successful STEM students, including those of the highest achievement and ability, are encouraged and supported when they express a desire to pursue K-12 teaching careers in mathematics and science.

The Noyce program addresses the goal established by the President's Council of Advisors on Science and Technology, "of ensuring over the next decade the recruitment, preparation, and induction support of at least 100,000 new STEM middle and high school teachers who have strong majors in STEM fields and strong content-specific pedagogical preparation, by providing vigorous support for programs designed to produce such teachers." (PCAST, 2010). By supporting the recruitment and preparation of strong STEM teachers who will teach in high-need school districts, the program supports the *NSF Strategic Plan for 2011-2016* performance goal to "Prepare and engage a diverse STEM workforce motivated to participate at the frontiers." The Noyce program supports the role of NSF as central to discovering, studying, and promoting pathways for STEM teacher education through research and development.

II. PROGRAM DESCRIPTION

The Robert Noyce Teacher Scholarship Program consists of three categories of projects:

1. The Robert Noyce Teacher Scholarship Track provides scholarships, internships, and programs for undergraduate STEM majors and stipends for STEM professionals seeking to become K-12 teachers. This track includes two types of proposals: Phase I proposals support new projects and Phase II proposals support the continuation, further development and evaluation of activities funded under a previous award. A Phase II proposal may continue to provide scholarships and stipends or may be used exclusively for continuing the evaluation of the previous award.
2. The NSF Teaching Fellowships and Master Teaching Fellowships Track supports fellowships and programs for STEM professionals and recent STEM graduates enrolling in a master's degree program leading to certification to teach a STEM discipline. It also provides fellowships for current mathematics and science teachers to participate in a program for developing Master Teachers. Phase I proposals support new projects while Phase II proposals support the continuation and further development and evaluation of a previous award.
3. Capacity Building Projects provide an opportunity for institutions to establish the infrastructure and partnerships for implementing a future Noyce Teacher Scholarship or NSF Teaching Fellowship project by supporting the development of new teacher preparation programs for STEM majors and STEM professionals and new programs for developing STEM Master Teachers. Capacity Building projects also support efforts to synthesize and disseminate effective practices developed by the Noyce community.

TRACK I: ROBERT NOYCE TEACHER SCHOLARSHIP TRACK

The Robert Noyce Teacher Scholarship Track awards grants to institutions of higher education (as defined in section 101(a) of the Higher Education Act of 1965) in the United States, or consortia of such institutions, or nonprofit entities that have established consortia among such institutions of higher education to provide scholarships and programs for juniors and seniors who are majoring in science, technology, engineering, or mathematics (STEM) and stipends for STEM professionals or recent STEM graduates seeking to become teachers.

In addition to scholarships and programmatic support for the scholars themselves, grant support may also be used for summer internships for freshman and sophomore undergraduate students to provide early field experiences in formal and informal STEM education settings that will spark an interest in teaching. Proposals may address either the scholarship or the stipend program or both programs.

Recruitment efforts should be designed to recruit individuals with strong STEM backgrounds who might otherwise not have considered a career in K-12 teaching. Scholarship and stipend recipients should be selected on the basis of academic merit, with consideration given to financial need and the diversity of participants in the program. Institutions are expected to provide the programs and support to enable scholarship and stipend recipients to obtain teacher certification or licensing and to become successful elementary or secondary STEM teachers. This support should be based on effective, evidence-based strategies. It should be available to recipients throughout their participation in the program and continue after they have completed the program to ease their transition into teaching and aid retention during and beyond the obligatory service period. Program activities for scholarship and stipend recipients may include early field experiences, including internships in formal and informal STEM education and STEM research settings.

Proposals must provide evidence that existing teacher preparation efforts are effective at preparing scholarship and stipend recipients to become successful science and mathematics teachers in elementary or secondary schools or describe ways in which program effectiveness will be improved. Graduates of these teacher preparation programs will have strong content knowledge, including knowledge of science and engineering practices and mathematics proficiency skills, and pedagogical skills that will enable them to become effective science and mathematics teachers. Successful proposals also will provide evidence of functioning partnerships between institutions of higher education and school districts and an infrastructure that is supportive of new teachers.

The project leadership team is expected to include both STEM discipline faculty and education faculty working in collaboration with public school districts and master K-12 teachers. Proposals are expected to have significant participation of STEM faculty on the leadership team and in implementation of the project. A STEM disciplinary faculty member must serve as PI or Co-PI. All team members should play key roles in leading and implementing the project.

Partnerships between two-year and four-year institutions are particularly encouraged.

Scholarships for STEM Majors

Scholarship recipients must be U.S. citizens or nationals, or permanent resident aliens, must be majoring in a science discipline, mathematics, engineering, or computer science and must be in the last 2 years of a baccalaureate degree program. Scholarship amounts must be at least \$10,000 per year; however, no individual may receive a scholarship for any year that exceeds the yearly cost of attendance at the institution (as defined in section 472 of the Higher Education Act of 1965 (20 U.S.C. 1087l)).

It is expected that these students will graduate with a major in a STEM discipline and will obtain teacher certification or licensing. Students enrolled in institutions requiring a fifth year or post-baccalaureate program for teacher certification may apply the scholarship to the post-baccalaureate program. A recipient may receive up to three years of scholarship support, beginning in the junior year and continuing through the post-baccalaureate study leading to certification. Part-time students may receive prorated scholarships not to exceed 6 years of support. Recipients of scholarships must commit to completion of two years of service as a mathematics or science teacher in a high-need school district for each year of scholarship support. Service must be completed within 8 years after graduation from the program for which the scholarship was awarded. The term "a high-need local educational

agency" as defined in section 201 of the Higher Education Act of 1965 (20 U.S.C. 1021) means a local educational agency (school district) that serves an elementary or secondary school located in an area which is characterized by at least one of the following:

- (A) a high percentage of individuals from families with incomes below the poverty line;
- (B) a high percentage of secondary school teachers not teaching in the content area in which they were trained to teach; or
- (C) a high teacher turnover rate.

Summer Internships

Proposals focusing on undergraduate scholarships may also include summer internships for undergraduate freshmen and sophomores to introduce students to early experiences in STEM education and provide examples of the integration of research and education. These internships are expected to be well-structured, providing meaningful experiences for the students with the goal of sparking their interest in STEM teaching as a career, thereby increasing the pool of Noyce Scholarship applicants. Settings for internships may include formal and informal STEM education venues, such as summer science and mathematics camps, summer school, science museums, nature centers, or science research laboratories. An emphasis on science and engineering practices that focus on model-based and quantitative reasoning is expected. Proposals may include academic year follow-up activities to enhance the summer internship experience.

Stipends for STEM Professionals

Stipends of at least \$10,000, but not greater than the yearly cost of attendance, are available for a maximum of one year for STEM professionals, including retirees, who hold a baccalaureate, master's, or doctoral degree in science, mathematics, computer science, or engineering and enroll in a teacher certification program. Stipend recipients must be U.S. citizens or nationals, or permanent resident aliens. Recipients of stipends must commit to serving two years as a mathematics or science teacher in a high-need local educational agency, as defined above, within 4 years after completion of the program for which the stipend was awarded. Current K-12 teachers seeking new certification or re-certification are not eligible to receive Noyce scholarships or stipends under this track.

Evaluation and Research

All projects are expected to include an evaluation plan for measuring the impact of the project and effectiveness of proposed strategies in recruiting, preparing, and retaining STEM majors and professionals in teaching careers as well as the effectiveness of the Noyce scholarship/stipend recipients as teachers. To the extent possible, project evaluation should address teacher effectiveness in terms of the impact on student learning. The evaluation should include a mechanism for tracking the scholarship/stipend recipients as they fulfill their teaching obligation and a method for collecting demographic data on these individuals. In addition to the project-specific evaluation, all projects will be expected to cooperate with an NSF third-party monitoring and evaluation of program impact that will require annual data collection. Individual project evaluation and research, as well as the overall program evaluation, are expected to contribute to the knowledge base of strategies for attracting, preparing, and retaining effective teachers with strong STEM content knowledge. Targeted research studies that explore how specific strategies for attracting, preparing, and retaining teachers in high-need districts might have a particular result or impact are encouraged. Through these efforts, the Noyce program expects to expand the research evidence related to effective teacher preparation while also increasing the number of well-prepared science and mathematics teachers in high-need school districts. Research conducted within the context of a Noyce Scholarship project should be designed to improve our understanding of what makes an excellent STEM teacher, and how best to prepare, support, and retain highly effective STEM teachers.

Programmatic Support

Proposals may also include funds budgeted for program development and enhancement to enable undergraduate STEM majors to complete a STEM degree while also completing teacher certification requirements within 5 years or to enable STEM professionals to earn a teaching credential. Institutions are encouraged to develop innovative programs that will enable undergraduate STEM majors and STEM professionals to become effective elementary or secondary teachers in high-need school districts. Program components designed to attract students and STEM professionals into teaching, to provide high quality preparation for their success as teachers, and to retain them in the teaching workforce may include early field experiences, internships, research experiences, academic courses in STEM content and pedagogy, as well as activities and support for new teachers during the induction period.

Up to 25% of the proposed Direct Costs may be allocated for activities that contribute to the effectiveness of the program, including program development and enhancement, activities associated with recruiting and preparing the teachers, marketing the program, and conducting research, monitoring and evaluation activities.

At least 75% of the proposed Direct Costs must be allocated for support of the Scholars themselves, both the scholarships/stipends and funds that involve the students in the activities of the program. For more information see Budget Limitations below.

Categories of Proposals

The Robert Noyce Teacher Scholarship Track provides funding for two categories of proposals:

- Phase I proposals are invited from institutions that have not previously been funded under the Robert Noyce Scholarship Program or are requesting funding to support Noyce Scholars from a department or academic unit that has not participated in a previous Noyce award. For example, a current or previous awardee that administered a Noyce scholarship program exclusively for mathematics majors under prior or current funding may submit a new proposal focusing on science majors.
- Phase II proposals are invited from institutions that have previously been funded under the Robert Noyce Scholarship program and whose award expiration date occurs on or before December 31, 2013.

Phase I

Phase I projects provide scholarships and internships for juniors and seniors who are majoring in a science discipline, engineering, computer science, or mathematics and stipends for STEM professionals seeking to become teachers. In addition, Phase I proposals may offer paid summer internships in formal or informal STEM educational settings, including internships in industry, university or federal laboratories as a strategy for interesting students in teaching. Proposals may address the undergraduate scholarship component or the post-baccalaureate stipend component or both.

Phase II

Within Phase II, two options are available: Scholarship and Stipend (S&S) Projects and Monitoring and Evaluation (M&E) projects. Phase II S&S Awards provide funds for prior awardees to support additional cohorts of scholarship and stipend recipients and to expand and extend the evaluation and research efforts initiated under the original award.

Phase II M&E Awards provide funding to support the continued monitoring of Noyce scholarship or stipend recipients to ensure they

have completed their teaching requirement and to measure project outcomes and impact through longitudinal evaluation studies. Phase II M&E Awards do not include funding for additional cohorts of scholarship or stipend recipients.

All Phase II proposals are expected to show evidence of the success of, and what was learned from, the previous award that warrants additional funding. These proposals must include plans for conducting longitudinal evaluation studies of students supported under the previous Noyce award as well as monitoring and evaluation of new cohorts of students as applicable. Proposals must include plans for evaluating the impact of the program on recruitment and retention of teachers, the impact on the institution, and the effectiveness of the Noyce recipients as K-12 teachers.

Budget Limitations

Note: Cost sharing is not required or allowed for the Noyce Scholarship track (Track I) and therefore should not be included in the proposal.

The maximum total budget for Phase I proposals is \$1,200,000 with a project duration of up to 5 years. Proposals requesting lower levels of funding are also appropriate.

The maximum total budget for Phase II S&S proposals is \$800,000 with a project duration of up to 5 years.

The maximum total budget for proposals in the Phase II M&E category is \$300,000 with a project duration of up to 3 years.

At least 75% of the total proposed Phase I or Phase II S&S Direct Costs must be for support directly received by the participants, including stipends and salary supplements. This portion of the budget may also support other activities that directly benefit the participants, such as stipends for mentors, conference travel, professional development costs, and other activities that will enhance the development of Noyce Scholars during their preservice and induction years.

Up to 25% of the proposed Phase I or Phase II S&S Direct Costs may be allocated for activities that contribute to the effectiveness of the program, including activities associated with recruiting and preparing the teachers, marketing the program, developing academic components of the program, and conducting research, monitoring and evaluation activities. This restriction does not apply to Phase II M&E proposals.

In order to encourage collaboration between four-year colleges and universities and two-year colleges, Phase I projects involving such collaboration may request an additional \$250,000 over five years, resulting in a total budget of \$1,450,000. Proposals for Capacity Building Projects may request an additional \$50,000 over 2 years for collaborations between two-year and four-year institutions. In such partnerships, the distribution of effort and funds between the four-year institution and the two-year college and the participation of faculty from all partnering institutions should reflect a genuine collaboration.

Additional specific requirements for Phase I and Phase II proposals are described in Section V. Proposal Preparation and Submission Instructions.

Institutional Responsibilities for Phase I and Phase II Scholarship Projects

The institution shall require that each recipient of a scholarship or stipend accepts the terms of the scholarship or stipend and agrees to provide the institution with annual certification of employment and up-to-date contact information. The recipients must also agree to participate in surveys conducted by the institution of higher education, project evaluator, and program evaluators as part of project-level and program evaluation efforts. Monitoring the compliance of scholarship and stipend recipients with respect to completing their service requirements will be the responsibility of the institution of higher education receiving the award. Failure to satisfy the academic requirements of the program or to complete the service requirement will result in forfeiture of the scholarship or stipend award, which will revert to a loan with repayments pro-rated accordingly to reflect partial service completed. The institution is responsible for collecting the repayment amounts, including interest, consistent with the provisions of part B or D of Title IV of the Higher Education Act of 1965. All forfeited scholarship or stipend funds, less grantee costs associated with collection of the repayment not to exceed 5% of the forfeited amount, will be returned to the United States Treasury and may not be re-used by the awardee institution. The institution is expected to establish procedures that ensure compliance with the service requirement, with allowances for extreme hardship or other circumstances for which it is not in the best interests of the school district or not feasible for the scholarship/stipend recipient to fulfill the service obligation. The institution may establish procedures for waiving or suspending repayment of scholarships or stipends in cases of extreme hardship or other circumstances that would preclude the fulfillment of the service obligation.

TRACK 2: NSF TEACHING FELLOWSHIPS AND MASTER TEACHING FELLOWSHIPS (TF/MTF)

The NSF Teaching Fellowships and Master Teaching Fellowships track of the Robert Noyce Teacher Scholarship Program offers awards to institutions to administer fellowships and programmatic support to STEM professionals and recent STEM graduates. These individuals, referred to as NSF Teaching Fellows, enroll in a master's degree program leading to teacher certification or licensing. This track also provides fellowships to mathematics and science teachers, referred to as NSF Master Teaching Fellows, who have a master's degree and participate in a program for developing Master Teachers. All eligible institutions, including institutions with current Noyce Phase I or Phase II Scholarship Track awards, may submit proposals to the NSF Teaching Fellowship and Master Teaching Fellowship track.

NSF Teaching Fellowship and Master Teaching Fellowship proposals require partnerships that include:

- 1) a department within an institution of higher education (IHE) that provides an advanced program of study in mathematics and science;
- 2) a department or entity within an IHE that provides a teacher preparation program or a 2-year institution that offers a teacher preparation program, a dual-enrollment program, or an articulation agreement with an IHE that credentials teachers;
- 3) at least one high-need school district (as defined above) and public school(s) within this district; and
- 4) at least one nonprofit organization with the capacity and expertise to support the goals of the project.

Proposals may focus on Teaching Fellows or on Master Teaching Fellows or may support both groups. Proposals focusing on Master Teaching Fellows are expected to involve the Master Teaching Fellows in the institution's preservice teacher education program.

Projects involving NSF Teaching Fellows should provide academic courses, activities, and clinical teaching experiences leading to a master's degree and teacher certification or licensing. Institutions are expected to provide the programs and support, including evidence-based strategies, to enable the Teaching Fellows to complete a master's degree and obtain teacher certification or licensing within one to two years and to become successful elementary or secondary teachers. Projects should also provide mentoring and professional development while the teachers are fulfilling their four-year teaching requirement. This support should be

based on effective, evidence-based strategies and should be available to recipients during their participation in the program and continue after completion of their preservice program to ease the transition into teaching and aid retention during and beyond the obligatory service period.

Proposals supporting the development of NSF Master Teaching Fellows should offer the academic courses, professional development and leadership training to prepare participants to become Master Teachers in elementary and secondary schools. Master Teaching Fellows are required to have a Master's degree to be eligible to participate in the Fellowship program. Strategies should be research-based and designed to contribute to the knowledge base of Master Teacher development.

Teaching Fellows and Master Teaching Fellows should be selected on the basis of professional achievement and academic merit, including demonstration of advanced content knowledge in science, technology, engineering or mathematics through performance on a nationally recognized assessment. Implicit in advanced STEM content knowledge is the understanding of science and engineering practices and mathematics proficiency skills. In addition to these criteria, Master Teaching Fellows should have demonstrated success in improving student achievement in the STEM areas in which they teach and the use of formative assessment strategies to improve student learning. Consideration should also be given to promoting the participation of underrepresented populations. Fellowship recipients must be U.S. citizens or nationals, or permanent resident aliens.

It is expected that Teaching Fellows and Master Teaching Fellows will be prepared to assume leadership roles within their schools or within the high-need school districts in which they are teaching. Activities may include serving as mentors for new teachers, participating in curriculum development projects, participating in preservice teacher education, and assisting in the planning and implementation of professional development for other teachers. Projects supporting both NSF Teaching Fellows and Master Teaching Fellows will be expected to integrate and coordinate efforts, leading to a community of preservice and inservice Teaching Fellows.

NSF Teaching Fellows are required to serve as mathematics or science teachers in elementary or secondary schools in high-need school districts for 4 years and must complete this requirement within 6 years of completing the Master's degree program. NSF Master Teaching Fellows are required to teach for 5 years in a high-need school district and must complete this requirement within 7 years of the start of participation in the program.

Proposals must provide evidence of exemplary current or proposed teacher preparation and professional development efforts to ensure that the NSF Teaching Fellows become successful science and mathematics teachers in elementary or secondary schools and to ensure NSF Master Teaching Fellows become effective Master Teachers. Successful proposals will provide evidence of functioning partnerships between institutions of higher education and school districts and an infrastructure that is supportive of new teachers and that enables Master Teachers to serve in leadership roles.

Evaluation and Research

All projects are expected to include an evaluation plan for measuring the impact of the project and effectiveness of proposed strategies in attracting, preparing, and retaining STEM professionals in teaching careers as well as the effectiveness of the NSF Teaching Fellows as science or mathematics teachers and the effectiveness of Master Teaching Fellows as teacher leaders. To the extent possible, teacher effectiveness should be addressed in terms of the teacher's impact on student learning. The evaluation plan should include a mechanism for tracking the Fellowship recipients as they fulfill their teaching obligation and a method for collecting demographic data on these individuals. In addition to the project-specific evaluation, all projects will be expected to cooperate with an NSF third party monitoring and evaluation of program impact that will require annual data collection. Individual project evaluation, as well as the overall program evaluation, are expected to contribute to the knowledge base of strategies for attracting and retaining effective teachers with strong STEM content knowledge.

Research studies that address questions relevant to the strategies and programs offered under this track are encouraged. It is anticipated that through these efforts, the Noyce program will expand the research evidence related to effective teacher preparation while also increasing the quantity of well-prepared science and mathematics teachers in high-need school districts. Research conducted within the context of a Noyce TF/MTF project should be designed to improve the understanding of what makes an excellent STEM teacher, and how best to prepare, support, and retain effective STEM teachers and teacher leaders.

Stipends and Salary Supplements

NSF Teaching Fellows will receive a one-year stipend of at least \$10,000, not to exceed the cost of attendance, while the Fellow is enrolled in the master's degree program. Fellows enrolled part-time may receive a prorated stipend.

A key aspect of the NSF Teaching Fellowship and Master Teaching Fellowship Track, required under the America COMPETES Act (P.L. 107-368), is the provision of salary supplements to the Teaching Fellows as they are fulfilling their teaching obligation. Following completion of the master's degree program, Teaching Fellows receive an annual salary supplement for 4 years while continuing to teach in a high-need school district. Master Teaching Fellows receive the salary supplement for 5 years while they are participating in the program and teaching in a high-need school district. The salary supplement must be at least \$10,000 per year. The school district must agree not to reduce the base salary of the Fellow while the salary supplement is being received.

Categories of Proposals

The Teaching Fellowship/Master Teaching Fellowship (TF/MTF) Track offers two categories of proposals:

Phase I proposals support a new Teaching Fellowship/Master Teaching Fellowship project. Phase II proposals may be submitted by institutions previously funded under the Noyce TF/MTF track seeking to support additional cohorts of Fellows or to conduct evaluation and research studies on previously supported cohorts. Institutions that received a TF/MTF award in 2009 are eligible to submit Phase II TF/MTF proposals in response to this solicitation.

Phase I

Phase I TF/MTF projects provide Teaching Fellowships and teacher certification through a Master's degree program for STEM professionals (career changers), including retirees as well as recent STEM graduates seeking to become teachers. These projects also provide Fellowships and programs to support the development of Master Teachers. Proposals may focus on preservice Teaching Fellows or Master Teaching Fellows or both.

Phase II

Within Phase II, two options are available: Fellowship Projects and Monitoring and Evaluation (M&E) projects. Phase II Fellowship Awards provide funds for prior awardees to support additional cohorts of Fellowship recipients and to expand and extend the evaluation and research efforts initiated under the original award.

Phase II M&E Awards provide funding to support the continued monitoring of Noyce Fellowship recipients to ensure they have completed their teaching requirement and to measure project outcomes and impact through longitudinal evaluation studies. Phase II

M&E Awards do not include funding for additional Fellowships.

All Phase II proposals are expected to show evidence of the success of, and what was learned from, the previous award that warrants additional funding. These proposals must include plans for conducting longitudinal evaluation studies of students supported under the previous Noyce award as well as monitoring and evaluation of new cohorts of students as applicable. Proposals must include plans for evaluating the impact of the program on recruitment and retention of teachers, the impact on the institution, and the effectiveness of the Noyce recipients as K-12 teachers and teacher leaders, including their impact on student learning. The original project should have met its goals in terms of recruitment of Fellows and the proposal should provide evidence that the institution has the capacity to recruit and place additional cohorts of Fellows in high need school districts.

Budget Limitations

The maximum total budget for NSF Teaching Fellowship/Master Teaching Fellowship Phase I proposals is \$3,000,000 with a duration of up to 5 years (for proposals supporting one cohort of Fellows) or 6 years (for proposals supporting two cohorts of Fellows). Proposals requiring a lower level of funding may also be appropriate based on the scope of the project. Since Teaching Fellows and Master Teaching Fellows are expected to participate in a five-year Fellowship program, proposals supporting two cohorts may submit a budget for 6 years to enable full support of both cohorts.

In order to encourage collaborations between four-year colleges and universities and two-year colleges, Phase I projects involving such collaboration may request an additional \$250,000, resulting in a total budget of \$3,250,000. In such partnerships, the distribution of effort and funds between the four-year institution and the two-year college and the participation of faculty from all partnering institutions should reflect a genuine collaboration.

The maximum total budget for Phase II TF/MTF proposals is \$1.8 million with a project duration of up to 5 years.

The maximum total budget for TF/MTF proposals in the Phase II M&E category is \$300,000 with a project duration of up to 3 years.

At least 75% of the proposed Direct Costs must be for support directly received by the participants, including stipends and salary supplements. This portion of the budget may also support other activities that directly benefit the participants, such as stipends for mentors, conference travel for Fellows, professional development costs, and other activities that will enhance the development of Teaching Fellows and support Master Teacher Fellows in their leadership roles.

Up to 25% of the proposed Direct Costs may be allocated for activities that contribute to the effectiveness of the program including program development and enhancement, recruiting and preparing the teachers, and conducting research, monitoring and evaluation activities. This restriction does not apply to Phase II M&E projects.

Matching Requirement

As required by the America COMPETES Act, an institution submitting a proposal under the TF/MTF Track must provide matching funds from non-Federal sources to support the activities of the project. Proposals requesting \$1.5 million or more must provide matching funds of at least 50% of the amount of the request and at least half of the match must be cash as defined by 2 CFR § 215.2. For proposals requesting less than \$1.5 million, cost sharing of at least 30 percent of the amount of the grant request is required, at least half of which must be in cash. For example, a proposal requesting NSF funds in the amount of \$1.0 million must provide at least \$300,000 in cost share. At least 50% of the match (\$150,000 in this case) must be provided in cash; the remainder may be provided as in-kind support. The proposed cost sharing must be shown on line M on the proposal budget. Documentation of the availability of cost sharing must be included in the proposal. The budget narrative should explicitly identify the cash and in-kind portions of the match. Any additional funds (up to \$250,000) requested to support the involvement of community colleges are exempt from the matching requirement. Cost sharing is not required for Capacity Building Projects, Noyce Scholarship Track proposals, or TF/MTF Phase II Monitoring and Evaluation proposals.

Only items that would be allowable under the applicable cost principles, if charged to the project, may be included in the awardee's contribution to cost sharing. Contributions may be made from any non-Federal source, including non-Federal grants or contracts, and may be cash or in-kind (2 CFR § 215.23). It should be noted that contributions counted as cost sharing toward projects of another Federal agency may not be counted towards meeting the specific cost sharing requirements of the NSF award.

All cost sharing amounts are subject to audit. Failure to provide the level of cost sharing reflected in the approved award budget may result in termination of the NSF award, disallowance of award costs and/or refund of award funds to NSF.

Institutional Responsibilities for TF/MTF Projects

The institution shall require that each Fellow accepts the terms of the Fellowship and agrees to provide the institution with annual certification of employment and up-to-date contact information and to participate in surveys provided by the institution of higher education and program evaluators as part of project-level and program evaluation efforts. Monitoring the compliance of scholarship and stipend recipients with respect to their service requirements will be the responsibility of the institution of higher education receiving the award. Failure to satisfy the academic requirements of the master's degree program, in the case of Teaching Fellows, or to complete the service requirement will result in repayment of the stipend, which will revert to a loan with repayments pro-rated accordingly to reflect partial service completed. The institution is responsible for collecting the repayment amounts, including interest, consistent with the provisions of part B or D of Title IV of the Higher Education Act of 1965. All forfeited stipend funds, less grantee costs associated with collection of the repayment not to exceed 5% of the forfeited amount, will be returned to the United States Treasury. Funds collected as repayments may not be used by the awardee. The institution is expected to establish procedures that ensure compliance with the service requirement with allowances for extreme hardship or other circumstances for which it is not in the best interests of the school district or not feasible for the Fellow to fulfill the service obligation. The institution may establish procedures for waiving or suspending repayment of scholarships or stipends in cases of extreme hardship or other circumstances that would preclude the fulfillment of the service obligation.

If the Fellow decides not to fulfill the teaching requirement after having served for one year, the Fellow shall return the full amount of the Fellowship awarded during enrollment in the master's degree program, reduced by one-fourth for each year of service completed, plus one half of the total salary supplements received. If a Master Teaching Fellow decides not to fulfill the teaching requirement after one year of service, the Fellow shall return half of the total amount of salary supplements received.

CAPACITY BUILDING PROJECTS

In an effort to expand the Nation's capacity for producing science and mathematics teachers, the Noyce Scholarship program offers grants to institutions to develop new programs that prepare STEM majors and STEM professionals to become K-12 science and mathematics teachers. Capacity Building Projects provide an opportunity for institutions to develop innovative models and strategies for recruiting, preparing, and supporting new teachers and to establish the infrastructure for implementing a future Noyce Scholarship or Teaching Fellowship/Master Teaching Fellowship project. Expected outcomes of capacity building projects include innovative teacher preparation programs that enable undergraduates to complete a major in mathematics, engineering, computer science, or a

science discipline while also receiving teacher certification in a STEM field and new programs that prepare individuals who already hold a STEM degree to become certified to teach in K-12 schools. Capacity Building Projects are expected to expand the capacity of institutions to address defined teacher shortages in STEM areas.

Projects may include, but are not limited to, the development of new or revised courses, new degree requirements, early field experiences, programs to support new teachers, development of evaluation and research designs, programs that involve Master Teachers in preservice education, strengthened collaborations between STEM departments and education schools/colleges/departments, collaborations between two-year and four-year institutions, new partnerships with school districts, informal science education institutions, and industry, and conducting needs assessments to determine areas of teacher shortages and interest among STEM professionals. Activities related to TF/MTF capacity building may also include the identification of matching funds and securing agreements with school districts regarding salary supplements. Programs developed under Capacity Building grants should be consistent with the goals of the Robert Noyce Teacher Scholarship program and should address the preparation of teachers to teach in high-need school districts and the potential for expanding and diversifying the pool of teacher candidates. Program development should be research-based and should be designed to provide clear measures of program effectiveness. Collaborations between currently funded successful Noyce projects and institutions seeking to develop capacity for recruiting and preparing STEM teachers are encouraged.

Capacity Building projects may also focus on developing the capacity of the larger teacher preparation community to expand efforts to document, disseminate, and implement evidence-based practices for preparing effective STEM teachers and teacher leaders. Capacity Building projects may include workshops or conferences that focus on particular challenges or effective practices in recruiting and preparing STEM teachers for high-need school districts. As the Noyce community grows, there is a growing body of knowledge and the need to synthesize that knowledge, and identify and disseminate resources and evidence-based practices to the larger STEM community. Proposals focusing on synthesis studies of Noyce project results, disseminating resources, and enhancing Noyce project evaluation efforts are also appropriate as capacity building projects. These efforts should ultimately serve the broader community of STEM educators.

Budget Limitations

The maximum total budget for Capacity Building Projects is \$300,000 with project duration of up to 2 years. Capacity Building Proposal budgets may include an additional \$50,000 over 2 years for collaborations between two-year and four-year institutions. In such partnerships, the distribution of effort and funds between the four-year institution and the two-year college and the participation of faculty from all partnering institutions should reflect a genuine collaboration.

Information about current awards funded under the Robert Noyce Scholarship Program can be found at the Division of Undergraduate Education website: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5733&org=DUE&from=home

Additional resources can be found at www.nsfnoyce.org.

References

National Research Council. (2010). *Preparing teachers: Building evidence for sound policy*. Committee on the Study of Teacher Preparation Programs in the United States, Center for Education. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

National Research Council (2011). *Successful K-12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics*. Washington, DC: National Academy Press.

National Science Foundation/National Science Board (2010), *Preparing the Next Generation of STEM Innovators: Identifying and Developing our Nation's Human Capital*.

National Science Foundation (2011), *Empowering the Nation Through Discovery and Innovation, NSF Strategic Plan for 2011-2016*.

President's Council of Advisors on Science and Technology (2010). *Prepare and Inspire: K-12 Education in Science, Technology, Engineering, and Math (STEM) for America's Future*. <http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-stem-ed-final.pdf>

III. AWARD INFORMATION

NSF expects to make an estimated 43-56 Noyce Scholarship Program awards under this solicitation, including 20-25 Noyce Phase I Scholarship awards, 3-5 Noyce Phase II Scholarship awards, 8-10 NSF Teaching Fellow/Master Teaching Fellow awards, 2-4 Phase II Fellowship awards, and 10-12 Capacity Building awards. The anticipated funding amount is approximately \$53.45 million for new and continuing Noyce awards in FY 2013, pending availability of funding.

Noyce Scholarship Track

Phase I Awards

Depending on the quality of submissions, NSF expects to fund approximately 20-25 Noyce Phase I awards of up to \$1,200,000 (or \$1,450,000 in the case of partnerships with two-year colleges) for a total award amount and duration of up to 5 years. Up to 25% of the proposed Direct Costs may be allocated for activities associated with program development and enhancement, recruitment and preparation of teachers, and conducting research and monitoring, evaluation as detailed in Section II "Program Description" above.

Phase II Awards

Depending on the quality of submissions, NSF expects to fund approximately 3-5 Noyce Phase II awards. Phase II S&S proposals may request up to \$800,000 for a total award amount and duration of up to 5 years. Up to 25% of the proposed Direct Costs may be allocated for activities associated with program development and enhancement, recruitment and preparation of teachers, marketing, research, and monitoring and evaluation as detailed in Section II "Program Description" above. Phase II M&E Proposals may request up to \$300,000 in total budget for duration of up to 3 years.

NSF Teaching Fellowship and Master Teaching Fellowship (TF/MTF) Track

Phase I TF/MTF Awards

Depending on the quality of submissions, NSF expects to fund approximately 8-10 TF/MTF Phase I awards of up to \$3,000,000 (or \$3,250,000 in the case of partnerships with two-year colleges) for a total award amount and duration of up to 5 or 6 years. Up to 25% of the proposed Direct Costs may be allocated for activities associated with program development and enhancement, recruitment and preparation of teachers, marketing, research, and monitoring and evaluation, as detailed in Section II "Program Description" above. Cost sharing is required in the amount of at least 30% of the total funds requested if the total amount of NSF funding requested is below \$1.5 million and at least 50% of total funds if the request is \$1.5 million or more. At least 50% of the match must be in cash; the remainder may be in-kind support.

Phase II TF/MTF Awards

Depending on the quality of submissions, NSF expects to fund 2-4 Phase II Fellowship awards of up to \$1.8 million for a total award amount and duration of 5 years. Phase II TF/MTF Monitoring and Evaluation awards may request up to \$300,000 in total budget for a duration of up to 3 years.

Up to 25% of the proposed Direct Costs for Phase II Fellowship awards may be allocated for activities associated with program development and enhancement, recruitment and preparation of teachers, marketing, research, and monitoring and evaluation, as detailed in Section II "Program Description" above. This budget allocation does not apply to Phase II Monitoring and Evaluation proposals.

Cost sharing is required for Phase I and Phase II Fellowship awards in the amount of at least 30% of the total funds requested if the total amount of NSF funding requested is below \$1.5 million and at least 50% of total funds if the request is \$1.5 million or more. At least 50% of the match must be in cash; the remainder may be in-kind support. Cost sharing is not required for TF/MTF Phase II Monitoring and Evaluation proposals and therefore should not be included in the proposal budget.

Capacity Building Awards

Depending on the quality of submissions, NSF expects to fund approximately 10-12 Capacity Building Awards of up to \$300,000 (or \$350,000 in the case of partnerships with two-year colleges) and duration of two years. There are no cost sharing requirements or budget allocation requirements for Capacity Building Proposals.

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- Universities and two- or four-year colleges (including community colleges) accredited in, and having a campus located in the United States, or consortia of such institutions, or U.S. nonprofit entities that have established consortia among such institutions of higher education.

PI Limit:

The PI, or at least one Co-PI, must be a STEM faculty member in a mathematics, science, engineering or computer science department.

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent(*optional*):

Letters of Intent for Noyce Scholarship Proposals:

A Letter of Intent is optional, but encouraged, before submitting a full proposal. The Letter of Intent is not a preliminary proposal and no feedback will be provided. It is intended to enhance the efficiency of the review process. Letters of Intent should be electronically submitted through FastLane by the posted deadline. The Letter of Intent should indicate the category of proposal (Phase I, Phase II S&S, Phase II M&E, Phase I or Phase II Teaching Fellow/Master Teaching Fellow (TF/MTF), or Capacity Building Project). It should include a brief synopsis of the project, indicating the grade level (elementary, middle, or high school) and disciplinary focus of the project. Additional institutions, organizations, and school districts should be listed in the Participating Organizations section of the FastLane Letter of Intent.

Letter of Intent Preparation Instructions:

When submitting a Letter of Intent through FastLane in response to this Program Solicitation please note the conditions outlined below:

- Sponsored Projects Office (SPO) Submission is not required when submitting Letters of Intent
- A Minimum of 0 and Maximum of 4 Other Senior Project Personnel are allowed

- A Minimum of 0 and Maximum of 25 Other Participating Organizations are allowed
- Category of Proposal is required when submitting Letters of Intent
- Submission of multiple Letters of Intent is allowed

Full Proposal Preparation Instructions: Proposers may opt to submit proposals in response to this Program Solicitation via Grants.gov or via the NSF FastLane system.

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Grant Proposal Guide (GPG). The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.
- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. Chapter II, Section D.4 of the Grant Proposal Guide provides additional information on collaborative proposals.

Important Proposal Preparation Information: FastLane will check for required sections of the proposal, in accordance with *Grant Proposal Guide* (GPG) instructions described in Chapter II.C.2. The GPG requires submission of: Project Summary; Project Description; References Cited; Biographical Sketch(es); Budget; Budget Justification; Current and Pending Support; Facilities, Equipment & Other Resources; Data Management Plan; and Postdoctoral Mentoring Plan, if applicable. If a required section is missing, FastLane will not accept the proposal.

Please note that the proposal preparation instructions provided in this program solicitation may deviate from the GPG instructions. If the solicitation instructions do not require a GPG-required section to be included in the proposal, insert text or upload a document in that section of the proposal that states, "Not Applicable for this Program Solicitation." Doing so will enable FastLane to accept your proposal.

The following instructions supplement the guidelines in the GPG and NSF Grants.gov Application Guide.

Proposals submitted to the NSF Teaching Fellowship/Master Teaching Fellowship (TF/MTF) track, excluding Capacity Building proposals, must be submitted via the NSF FastLane system.

Cover Sheet

While filling out the cover sheet in FastLane, it is important to choose the Robert Noyce Scholarship program solicitation number indicated on the cover of this document. Select Noyce Scholarship Program from the list of programs in the "NSF Unit Consideration" section. This choice must be specified in order to have access to the DUE Project Data Form, which is required for Noyce proposals. If using Grants.gov, the program solicitation number will be prepopulated by Grants.gov on the NSF Grant Application Cover Page.

Human Subjects

- Mark HUMAN SUBJECTS box as pending, approved, or ruled exempt (with exemption subsection indicated). **This box should not be left blank.**
- HUMAN SUBJECTS box should be marked as pending if an IRB is either (1) reviewing the project plan and has not yet determined a ruling of "approved" or "exempt", or (2) the project plan has not yet been submitted to an IRB for review.

Projects involving research with human subjects, or the reporting of information gathered from human subjects, must ensure that subjects are protected in conformance with the relevant federal policy known as the Common Rule (*Federal Policy for the Protection of Human Subjects*, 45 CFR 690). All projects involving human subjects must either (1) have approval from the organization's Institutional Review Board (IRB) before issuance of an NSF award or, (2) must affirm that the IRB or an appropriate knowledgeable authority previously designated by the organization (not the Principal Investigator) has declared the research exempt from IRB review, in accordance with the applicable subsection, as established in section 101(b) of the Common Rule. If the box for "Human Subjects" is checked on the Cover Sheet along with either (1) the IRB approval date, or (2) the exemption subsection from the Common Rule identified, then no additional certification is required. In the event the proposal is recommended for funding and IRB review is pending, certification of IRB approval or exemption should be submitted to NSF in electronic form as soon as it is available. Delays in obtaining IRB certification may result in NSF being unable to make an award. For more information regarding the protection of human subjects, consult: <http://www.nsf.gov/bfa/dias/policy/human.jsp>

Project Summary

For Noyce proposals, the one-page Project Summary should indicate the specific category of proposal (Phase I, Phase II S&S, Phase II M&E, TF/MTF Phase I, TF/MTF Phase II, or Capacity Building). Name all institutions, including school districts and non-profit organizations, that are involved in the proposal. The Project Summary must include an Overview, a statement on the Intellectual Merit of the proposed activity, and a statement on the Broader Impacts of the proposed work. Proposals that do not separately address the overview, Intellectual Merit and Broader Impacts in the Project Summary will not be accepted.

Project Description

Noyce Phase I Proposals should include and clearly identify the following elements in the Project Description section:

- Results from Prior NSF Support: Address prior support relevant to the proposed project; provide a summary of the results of the completed work, including accomplishments, described in two separate sections, related to the Intellectual Merit and

Broader Impact activities supported by the award;

- A discussion of the broader impacts of the proposed activities provided as a separate section within the narrative.
- A description of the proposed scholarship or stipend program, including the number and size of scholarships, internships, and stipends; the rationale for the number and size of scholarships and/or stipends; and projected cumulative number of new teachers to be produced over the duration of the program with a comparison to number of teachers currently produced by the proposing institution(s);
- A description of the teacher preparation program in which the Noyce scholarship or stipend recipients will be enrolled, including a description of the academic requirements and other components of the program, the extent to which the proposed strategies reflect effective practices based on research, and description of any modifications or course revisions that will be developed and implemented. The proposal must include evidence of exemplary teacher preparation efforts to ensure that scholarship and stipend recipients become successful science and mathematics teachers in elementary and secondary schools. For proposals involving more than one institution, the proposal should describe the teacher preparation program at each participating institution and the role and responsibility of each institution in the project;
- A description of recruitment activities and specific marketing strategies designed to attract a large and diverse pool of applicants;
- A description of the selection process that will ensure the most qualified applicants are selected based on academic merit, with consideration given to financial need and increasing participation of minorities, persons with disabilities, and underrepresented genders relative to specific teaching areas;
- A description of the management and administrative structure and the capability for administering the scholarship or stipend program;
- Evidence of an infrastructure that is supportive of new teachers. Include a description of the activities and support mechanisms that will be available to recipients to ensure they are able and willing to fulfill their commitment to teaching in high-need schools;
- Evidence of collaboration between STEM faculty and education faculty;
- Evidence of functioning partnerships between institutions of higher education and school districts;
- A description of plans to monitor and enforce compliance with the required teaching commitment;
- Evidence that the institution is committed to making the program a central institutional focus;
- Plans for disseminating the results of the project; and
- An evaluation plan that will assess the effectiveness of the project in attracting, preparing, and retaining STEM individuals in teaching careers. The plan should include methodologies for measuring the effectiveness of the Noyce scholarship/stipend recipients as teachers. Measures of teaching effectiveness may include data related to teaching practice and student learning. The evaluation plan should also include a mechanism for tracking the scholarship/stipend recipients during the period in which they are fulfilling their service obligation and a plan for collecting demographic data and statistics on scholarship and stipend recipients. The proposal should identify an independent evaluator with expertise to conduct an objective evaluation.
- Proposals that include a research study must provide a detailed research plan including a description of the research design and methodologies aligned with research questions relevant to the Noyce program, which will contribute to the knowledge base of effective teacher preparation.

Noyce Phase II Scholarship and Stipend (S&S) Proposals should include the following elements in the Project Description section:

- Results from Prior NSF Support: Describe the outcomes of prior support under the previous Robert Noyce Scholarship grant including the number of students supported through scholarships and/or stipends with major field of study and level of teaching, and the number who have begun teaching in their certification area in a high-need school district. The success of the project in increasing the number of STEM majors or STEM professionals who enter the teaching workforce should be a particular focus of this discussion. The proposal should explain how the results of the prior work and evaluation findings have informed the proposed work. Provide a summary of the results of the completed work, including accomplishments, described in two separate sections, related to the Intellectual Merit and Broader Impact activities supported by the award;
- A discussion of the broader impacts of the proposed activities provided as a separate section within the narrative.
- A description of the proposed scholarship or stipend program, including the number and size of scholarships and stipends and rationale for the number and size of scholarships and/or stipends, and projected cumulative number of new teachers to be produced over the duration of the program, including a comparison to number of teachers currently produced by the proposing institution(s);
- A description of the teacher preparation program in which the Noyce scholarship or stipend recipients will be enrolled, including a description of the academic requirements and other components of the program, and the extent to which the proposed strategies reflect effective practices based on research. The proposal must include evidence of exemplary teacher preparation efforts to ensure that scholarship and stipend recipients become successful science and mathematics teachers in elementary and secondary schools;
- A description of recruitment activities designed to attract a large and diverse pool of applicants;
- A description of the selection process that will ensure the most qualified applicants are selected based on academic merit, with consideration given to financial need and increasing participation of minorities, persons with disabilities, and underrepresented genders relative to specific teaching areas;
- A description of the management and administrative structure and capability for administering the scholarship or stipend program;
- Evidence of an infrastructure that is supportive of new teachers. Include a description of the activities and support mechanisms that will be available to recipients to ensure they are able and willing to fulfill their commitment to teaching;
- Evidence of collaboration between STEM faculty and education faculty;
- Evidence of functioning partnerships between institutions of higher education and school districts;
- A description of plans to monitor and enforce compliance with the required teaching commitment;
- Discussion of how the proposed project builds on and expands activities established under the prior support, beyond simply continuing the work;
- Discussion of plans to sustain activities and impact of the project beyond Phase II support;
- Evidence that the program is a central institutional focus;
- Evidence of the impact of the Noyce Scholarship project on STEM and Education departments;
- Plans for disseminating the results of the project; and
- Details of the plan to expand and extend the evaluation and research activities initiated under the original award. Evaluation studies should include longitudinal studies to measure the impact of the project on individuals supported under the first award in terms of their performance as teachers, their completion of the teaching requirement, and their retention in the teaching profession. In addition, plans for monitoring and evaluating the impact of the project on new cohorts should be included. The evaluation plan should address recruitment, preparation, and retention of the Noyce Scholars and should lead to results that will inform the community of what works and why. This study should go beyond the required tracking of recipients to include indicators of the effectiveness of the program in attracting STEM majors into teaching, the impact of the program on departments and the institution, and the effectiveness of the Noyce Scholars as measured by their performance in the classroom and their impact on student learning. The proposal should include plans to disseminate the findings of this study through peer-reviewed publications and national conferences. The proposal should identify an independent evaluator with expertise to conduct an objective evaluation. Research studies must include a detailed research

plan which describes the research design and methodologies aligned with research questions relevant to the Scholarship track, which will contribute to the knowledge base of effective teacher preparation. The proposal should include plans to disseminate the research findings through peer-reviewed publications and national conferences.

Noyce Phase II Monitoring and Evaluation (M&E) Proposals

The Project Description for the Phase II Monitoring and Evaluation should address Results from Prior NSF Support, particularly regarding the previous Noyce Scholarship award, plans for an expanded evaluation and research effort and dissemination of results, as described above. Provide a summary of the results of the completed work, including accomplishments, described in two separate sections, related to the Intellectual Merit and Broader Impact activities supported by the award. The Project Description must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities.

Phase I NSF Teaching Fellowship/Master Teaching Fellowship proposals should include the following elements in the Project Description section:

- Results from Prior NSF Support: Address prior support relevant to the proposed project. Provide a summary of the results of the completed work, including accomplishments, described in two separate sections, related to the Intellectual Merit and Broader Impact activities supported by the award.
- A discussion of the broader impacts of the proposed activities provided as a separate section within the narrative.
- A description of the proposed program, including: the number and size of fellowships; the rationale for the number and size of fellowships; the number and amount of salary supplements that will be provided; and, for proposals supporting NSF Teaching Fellows, the projected cumulative number of new teachers to be produced over the duration of the program, including a comparison to number of teachers currently produced by the proposing institution(s);
- A description of the master's degree program in which the Teaching Fellows will be enrolled, including a description of the academic requirements and other components of the program, the extent to which the proposed strategies reflect effective practices based on research, and description of any modifications or course revisions that will be developed and implemented. The proposal must include evidence of exemplary teacher preparation efforts to ensure that the Teaching Fellows become successful science and mathematics teachers in elementary and secondary schools. For proposals involving more than one institution, the proposal should describe the teacher preparation program at each participating institution and the role and responsibility of each institution in the project; and/or
- A description of the professional development program offered to the Master Teaching Fellows that will enable them to become Master Teachers.
- A description of recruitment activities and specific marketing strategies designed to attract a large and diverse pool of applicants;
- A description of the selection process that will ensure the most qualified applicants are selected, including a description of the nationally recognized content knowledge assessment that will be used;
- A description of the management and administrative structure and the capability for administering all aspects of the fellowship program, including the disbursement of salary supplements;
- In the case of Teaching Fellows: Evidence of an infrastructure that is supportive of new teachers. Include a description of the activities and support mechanisms that will be available to recipients to ensure they are able and willing to fulfill their commitment to teaching;
- In the case of Master Teaching Fellows: Evidence of an infrastructure that will support and facilitate their work as master teachers;
- Evidence of collaboration between STEM faculty and education faculty;
- Evidence of functioning partnerships between institutions of higher education, school districts, and non-profit organizations;
- A description of cost sharing, including source and amount;
- A description of plans to monitor and enforce compliance with the required teaching commitment;
- Evidence that the institution is committed to making the program a central institutional focus;
- Plans for disseminating results;
- Plans for sustaining the activities beyond the NSF funding period;
- An evaluation plan that will provide information, as applicable, on the effectiveness of the project in attracting, preparing, and retaining STEM professionals in teaching careers and the effectiveness of the project in developing Master Teachers. The evaluation plan should include methodologies for measuring the effectiveness of the Fellows as teachers or as Master Teachers and should collect information on the activities that define the role of the Master Teacher. The evaluation plan should include a mechanism for tracking the Fellows during the period in which they are fulfilling their service obligation and a plan for collecting demographic data and statistics on the Fellows. The proposal should identify an independent evaluator with expertise to conduct an objective evaluation. Research studies must include a detailed research plan which describes the research design and methodologies aligned with research questions relevant to the TF/MTF track, which will contribute to the knowledge base of effective teacher preparation.

Phase II TF/MTF

In addition to the elements described above, the following areas are specific for a Phase II project:

- Results from Prior NSF Support: Describe the outcomes of prior support under the previous NSF Teaching Fellowship/Master Teaching Fellowship grant including the number of students/teachers supported through Fellowships with major field of study and level of teaching, and the number who are teaching in a high-need school district. Provide a summary of the results of the completed work, including accomplishments, described in two separate sections, related to the Intellectual Merit and Broader Impact activities supported by the award. The success of the project in increasing the number of STEM majors or STEM professionals who enter the teaching workforce should be a particular focus of this discussion. The proposal should explain how the results of the prior work and evaluation findings have informed the proposed work.
- Provide, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities.
- Evidence of a strong induction program for new teachers.
- For Phase II proposals that include Master Teaching Fellows, a description of the roles and responsibilities of previously supported Master Teaching Fellows and the infrastructure that has enabled them to fulfill these responsibilities.
- Evidence that the institution considers this effort to be a central institutional focus;
- Plans for sustaining the activities beyond the NSF funding period;
- Details of a plan to expand and extend the evaluation and research activities initiated under the original award. Evaluation studies should include longitudinal studies to measure the impact of the project on individuals supported under the first award in terms of their performance as teachers, their completion of the teaching requirement, and their retention in the teaching profession. The evaluation plan should address recruitment, preparation, and retention of the NSF Teaching Fellows and/or Master Teaching Fellows and should lead to results that will inform the community of what works and why. This study should go beyond the required tracking of recipients to include indicators of the effectiveness of the program in attracting STEM majors and professionals into teaching, the impact of the program on departments and the institution, and the effectiveness of the Noyce Fellows as measured by their performance in the classroom and their impact on student learning. The proposal should identify an independent evaluator with expertise to conduct an objective evaluation.

Research studies must include a detailed research plan which describes the research design and methodologies aligned with research questions relevant to the TF/MTF track, which will contribute to the knowledge base of effective teacher preparation. The proposal should include plans to disseminate the findings of this study through peer-reviewed publications and national conferences.

TF/MTF Phase II Monitoring and Evaluation

- The Project Description for the Phase II Monitoring and Evaluation should address Results from Prior NSF Support, particularly regarding the previous TF/MTF award, plans for an expanded evaluation and research effort and dissemination of results as described above. Provide a summary of the results of the completed work, including accomplishments, described in two separate sections, related to the Intellectual Merit and Broader Impact activities supported by the award. The Project Description must contain, as a separate section within the narrative, a discussion of the broader impacts of the proposed activities.

Capacity Building Proposals should include the following elements in the Project Description section:

- Results from Prior NSF Support: Address prior support relevant to the proposed project. Provide a summary of the results of the completed work, including accomplishments, described in two separate sections, related to the Intellectual Merit and Broader Impact activities supported by the award.
- A discussion of the broader impacts of the proposed activities provided as a separate section within the narrative,
- Information about the context and rationale for the proposed project.
- A description of the activities planned, timeline, and outcomes expected to result from the proposal.
- Plans for evaluating progress and outcomes of the project.

Additional Requirements for Proposals

The PI and Co-PI leadership must include at least one faculty member in a mathematics, science, engineering or computer science department. Letters of support from the Dean of Arts & Sciences, Dean of Education, department chairs, and school district Superintendent(s) or comparable administrators should be submitted as evidence of institutional support for the proposal. School district letters submitted in support of a TF/MTF proposal should indicate that the district will support the award of salary supplements and will not lower the base salary of Fellows receiving the supplements. Letters should be uploaded into the Supplementary Documentation section in FastLane. For Grants.gov users, supplementary documents should be attached in Field 11 of the R&R Other Project Information Form.

A Project Data Form must be submitted as part of all proposals. The information on this form is used to direct proposals to appropriate reviewers and to determine the characteristics of projects supported by the Division of Undergraduate Education. In FastLane, this form will show up in the list of forms for your proposal only after you have (1) selected the "Noyce" program solicitation number on the Cover Sheet and (2) saved the Cover Sheet. Grants.gov users should refer to Section VI.6. of the NSF Grants.gov Application Guide for specific instructions on how to submit the DUE Project Data Form.

The Facilities, Equipment & Other Resources section must be completed.

Include a Current and Pending Support form for each individual named as senior personnel.

Supplementary Documents

In addition to Letters of Support, the following documents should be included in the Supplementary Documents section of the proposal:

1. Postdoctoral Mentoring Plan (maximum 1 page): The NSF Proposal & Award Policies & Procedures Guide (PAPPG) includes guidelines implementing the mentoring provisions of the America COMPETES Act (ACA) (Pub. L. No. 110-69, Aug. 9, 2007.) As specified in the ACA, each proposal that requests funding to support postdoctoral researchers must include a description of the mentoring activities that will be provided for such individuals. This plan should be added to the Supplementary Documents Section and identified by subheading "Postdoctoral Mentoring Plan".

2. Data Management Plan. Provide a description of the project's data management plan, as a maximum 2-page supplementary document. This information should be clearly identified by the subheading "Data Management Plan" and should be placed in the Supplementary Documents section of the proposal. It should describe how the proposal will conform to NSF policy on the dissemination and sharing of research results (see [AAG Chapter VI.D.4](#)). Links to data management requirements and plans relevant to specific Directorates, Offices, Divisions, Programs, or other NSF units are available on the NSF website at: <http://www.nsf.gov/bfa/dias/policy/dmp.jsp>. See [Chapter II.C.2.j](#) of the GPG for further information about the implementation of this requirement.

B. Budgetary Information

Cost Sharing: Cost sharing is required.

The proposed cost sharing must be shown on Line M on the proposal budget. Documentation of the availability of cost sharing must be included in the proposal. The budget narrative should identify the cash and in-kind portions of the match and source(s). Only items which would be allowable under the applicable cost principles, if charged to the project, may be included as the awardee's contribution to cost sharing. Contributions may be made from any non-Federal source, including non-Federal grants or contracts, and may be cash or in-kind (2 CFR § 215.23); however at least 50% of the cost share must be cash. It should be noted that contributions counted as cost-sharing toward projects of another Federal agency may not be counted towards meeting the specific cost-sharing requirements of the NSF award. All cost-sharing amounts are subject to audit. Failure to provide the level of cost-sharing required by the NSF solicitation and reflected in the approved award budget may result in termination of the NSF award, disallowance of award costs and/or refund of award funds to NSF.

Administrative requirements related to cost sharing may be found in 2 CFR § 215.23, "Cost Sharing or Matching." For additional information on cost principles consult: 2 CFR Part 220, Cost Principles for Educational Institutions (OMB Circular A-21); or 2 CFR Part 230, Cost Principles for Nonprofit Organizations (OMB Circular A-122), as applicable.

Other Budgetary Limitations:

Noyce Phase I, Noyce Phase II S&S, and NSF TF/MTF Fellowship proposals: At least 75% of the proposed Direct Costs (amount on Line H. of the budget form) must be for direct support of the participants, including scholarships and stipends. Up to 25% of the proposed Direct Costs may be allocated for activities associated with program development and enhancement, recruiting and

preparing the teachers, marketing the program, and conducting research, monitoring and evaluation as detailed under Program Support in Section II "Program Description" above. This limitation does not apply to Noyce Phase II M&E, TF/MTF Phase II M&E, or Capacity Building Projects.

Budget Preparation Instructions:

Scholarships, Fellowships, internships, and stipends for should be indicated in Section F.1 Participant Support - "Stipends" of the FastLane budget (or Section E.2. on the Grants.gov R&R Budget Form). Enter the number of participants supported in each budget year in section F of the budget form.

Funds should be included for the PI or another member of the leadership team and one current or former Noyce Scholar or Teaching Fellow or Master Teaching Fellow to attend the annual meeting of Noyce Program grantees convened by NSF in Washington, DC.

A budget justification should be provided for the main budget as well as any subaward budgets. It should explain the expenditures under each budget category and provide a table or statement identifying the expenditures that provide direct support of the participants (at least 75% of the total Direct Costs). The budget justification for TF/MTF proposals should clearly identify the source and nature of matching funds.

C. Due Dates

- Letter of Intent Due Date(s) (**optional**) (due by 5 p.m. proposer's local time):

February 20, 2013

- Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):

March 20, 2013

D. FastLane/Grants.gov Requirements

- For Proposals Submitted Via FastLane:

Detailed technical instructions regarding the technical aspects of preparation and submission via FastLane are available at: <https://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Further instructions regarding this process are available on the FastLane Website at: <https://www.fastlane.nsf.gov/fastlane.jsp>.

- For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: http://www07.grants.gov/applicants/app_help_reso.jsp. In addition, the NSF Grants.gov Application Guide provides additional technical guidance regarding preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

Submitting the Proposal: Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program for acknowledgement and, if they meet NSF requirements, for review. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF either as *ad hoc* reviewers, panelists, or both, who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal. In addition, Program Officers may obtain comments from site visits before recommending final action on proposals. Senior NSF staff further review recommendations for awards. A flowchart that depicts the entire NSF proposal and award process (and associated timeline) is included in the GPG as [Exhibit III-1](#).

A comprehensive description of the Foundation's merit review process is available on the NSF website at: <http://www.nsf.gov/bfa/dias/policy/meritreview/>.

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in

Empowering the Nation Through Discovery and Innovation: NSF Strategic Plan for Fiscal Years (FY) 2011-2016. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the core strategies in support of NSF's mission is to foster integration of research and education through the programs, projects and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students, and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the variety of learning perspectives.

Another core strategy in support of NSF's mission is broadening opportunities and expanding participation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines, which is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

1. Merit Review Principles

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These "Broader Impacts" may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

2. Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. Both criteria are to be given full consideration during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (*GPG Chapter II.C.2.d.i.* contains additional information for use by proposers in development of the Project Description section of the proposal.) Reviewers are strongly encouraged to review the criteria, including *GPG Chapter II.C.2.d.i.*, prior to the review of a proposal.

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

- Intellectual Merit: The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- Broader Impacts: The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to
 - a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
 - b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. NSF values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and

mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education.

Proposers are reminded that reviewers will also be asked to review the Data Management Plan and the Postdoctoral Researcher Mentoring Plan, as appropriate.

Additional Solicitation Specific Review Criteria

In considering the above criteria, reviewers will be asked to comment on the following:

Noyce Phase I Proposals:

- Capacity and ability of the institution to effectively conduct the program
- Number and quality of students that will be served by the program
- Justification for number of students served and the amount of the stipend and scholarship awards
- Ability of the program to recruit STEM majors who would not otherwise pursue a career in teaching
- Quality and feasibility of recruitment and marketing strategies
- Quality of the preservice educational program
- Extent to which STEM faculty and education faculty are collaborating in developing and implementing the program
- Quality of the preservice student-support and new teacher-support infrastructure
- Extent to which the proposed strategies reflect effective practices based on research
- Degree to which the proposed programming will enable scholarship or stipend recipients to become successful mathematics and science teachers
- Feasibility and completeness of an evaluation/research plan that will measure the effectiveness of the proposed strategies and add to knowledge base about STEM teacher preparation
- Plans for disseminating results of the evaluation/research studies
- Institutional support for the program and the extent to which the institution is committed to making the program a central organizational focus

Noyce Phase II S&S Proposals:

- Evidence that the previously funded project was consistent with the criteria listed above
- Evidence of institution and school district support for continuing the project
- Demonstrated success of the previously funded project in terms of recruitment of STEM majors and/or STEM professionals into K-12 teaching and preparation to become effective teachers
- Evidence that the project has recruited STEM majors who would not otherwise pursue a career in teaching
- Evidence that a high-quality support structure for new teachers is in place
- Plans for advancing the work beyond the original project
- Plans for conducting a longitudinal evaluation study of previous cohorts of Noyce Scholarship and/or stipend recipients as well as evaluation and monitoring of new cohorts to address teacher and student outcomes
- Evaluation/research plans that build on and strengthen the previous evaluation/research effort
- Plans for disseminating results of the evaluation/research studies
- Plans for sustainability

Noyce Phase II M&E Proposals:

- Evidence that the previously funded project was consistent with the criteria listed above for Phase I proposals
- Plans for conducting a longitudinal evaluation study of previous cohorts of Noyce Scholarship and/or stipend recipients focusing on their effectiveness as teachers, their completion of the teaching requirement, and their retention in the teaching profession.
- Evaluation/research plans that build on and strengthen the previous evaluation/research effort
- Plans for disseminating results of the evaluation/research studies

TF/MTF Phase I Proposals:

- Capacity and ability of the institution to effectively conduct the program
- Number and quality of Fellows that will be served by the program
- Justification for number of Fellows served and amount of stipend and salary supplements
- For NSF Teaching Fellows: Ability of the program to recruit individuals who would not otherwise pursue a career in teaching and to recruit underrepresented groups
- Quality and feasibility of recruitment and marketing strategies
- Quality of the master's degree program leading to teacher certification, preservice student support, and new teacher support infrastructure for NSF Teaching Fellows
- Quality of the professional development that will be provided for NSF Master Teaching Fellows
- Extent to which the proposed strategies reflect effective practices based on research
- Extent to which STEM faculty and education faculty are collaborating in developing and implementing a program with curriculum based on the specialized pedagogy needed to enable teachers to effectively teach math and science and to assume leadership roles in their schools.
- Degree to which the proposed programming will enable the participants to become successful mathematics and science teachers or Master Teachers.
- Feasibility and completeness of an objective evaluation plan that will measure the effectiveness of the proposed strategies; quality of research plan that will add to the knowledge base about STEM teacher preparation
- Institutional support for the program and the extent to which the institution is committed to making the program a central organizational focus
- Evidence of cost sharing commitments
- Plans for disseminating results
- Plans for sustainability beyond the period of NSF funding

TF/MTF Phase II

- Evidence that the previously funded project was consistent with the criteria listed above
- Evidence of institution and school district support for continuing the project
- Demonstrated success of the previously funded project in terms of recruitment of STEM majors and/or STEM professionals into K-12 teaching and preparation to become effective teachers and/or recruitment and preparation of Master Teachers. -
- Evidence that a high-quality support structure for new teachers is in place
- Plans for advancing the work beyond the original project

- Plans for conducting a longitudinal evaluation study of previous cohorts of Noyce Fellowship recipients as well as evaluation and monitoring of new cohorts to address teacher and student outcomes
- Evaluation/research plans that build on and strengthen the previous evaluation/research effort
- Plans for disseminating results of the evaluation/research studies
- Plans for sustainability

TF/MTF Phase II M&E Proposals:

- Evidence that the previously funded project was consistent with the criteria listed above for Phase I proposals
- Plans for conducting a longitudinal evaluation study of previous cohorts of Noyce Fellowship recipients focusing on their effectiveness as teachers, their completion of the teaching requirement, and their retention in the teaching profession.
- Evaluation/research plans that build on and strengthen the previous evaluation/research effort
- Plans for disseminating results of the evaluation/research studies

Capacity Building Projects:

- Clarity of proposed plans and activities that will lead to a well-designed program consistent with the requirements of the Noyce Scholarship Program.
- Clear statement of objectives to be completed and expected outcomes of the project.
- Evaluation plans that will measure stated objectives and outcomes.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (GC-1); * or Research Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the *NSF Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer at least 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). Within 90 days following expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report, will delay NSF review and processing of any future funding increments as well as any pending proposals for all identified PIs and co-PIs on a given award. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project-reporting system, available through Research.gov, for preparation and submission of annual and final project reports. Such reports provide information on accomplishments, project participants (individual and organizational), publications, and other specific products and impacts of the project. Submission of the report via Research.gov constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report also must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

More comprehensive information on NSF Reporting Requirements and other important information on the administration of NSF awards is contained in the *NSF Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

All projects will be required to participate in program monitoring and evaluation activities conducted by a third party as part of the Directorate for Education and Resources' program evaluation efforts that will require annual data collection.

VIII. AGENCY CONTACTS

Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- Joan T. Prival, Lead Program Director, telephone: (703) 292-4635, email: jprival@nsf.gov
- Kathleen B. Bergin, 835 N, telephone: (703) 292-5171, email: kbergin@nsf.gov
- William Grisham, telephone: (703) 292-2260, email: wgrisham@nsf.gov
- Jose Herrera, telephone: (703) 292-5128, email: jherrera@nsf.gov
- Michael Jacobson, telephone: (703) 292-4641, email: mjacobso@nsf.gov
- Herbert H. Richtol, telephone: (703) 292-4648, email: hrichtol@nsf.gov
- Gary White, telephone: (703) 292-4618, email: gwhite@nsf.gov
- Terry S. Woodin, 835 N, telephone: (703) 292-4657, email: twoodin@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

IX. OTHER INFORMATION

The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, National Science Foundation Update is a free e-mail subscription service designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Regional Grants Conferences. Subscribers are informed through e-mail when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the [NSF web site](#).

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this new mechanism. Further information on Grants.gov may be obtained at <http://www.grants.gov>.

Related Programs:

Additional related programs supporting teacher education:

Math and Science Partnership

Research Experiences for Teachers (RET) in Engineering

Investigators seeking to engage in more extensive research on topics related to teacher preparation are encouraged to consider the Discovery Research K-12 (DRK-12) and Research and Evaluation on Education in Science and Engineering (REESE) programs in the Division of Research on Learning in Formal and Informal Settings (DRL).

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 55,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Arctic and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <http://www.nsf.gov>

- Location: 4201 Wilson Blvd. Arlington, VA 22230
- For General Information (NSF Information Center): (703) 292-5111
- TDD (for the hearing-impaired): (703) 292-5090
- To Order Publications or Forms:
 - Send an e-mail to: nsfpubs@nsf.gov
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