Robert Noyce Scholarship Program

Program Solicitation

NSF 06-528
***Replaces Document* NSF 05-528**

National Science Foundation
Directorate for Education and Human Resources
Division of Undergraduate Education

Letter of Intent Due Date(s) ***(optional):***

February 28, 2006

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

April 03, 2006

REVISIONS AND UPDATES

1. Institutions not previously funded under the Robert Noyce Scholarship Program may submit proposals under the Phase I category:

2. Institutions previously funded under the Robert Noyce Scholarship Program may submit two types of proposals under the Phase II category: (1) Scholarship and Stipend proposals to support new cohorts of Noyce Scholars and to conduct longitudinal evaluation studies of previously funded cohorts, or (2) Monitoring and Evaluation proposals to support the continued monitoring of previously supported cohorts of students and to conduct longitudinal evaluation studies, but not to provide funding for new scholarships or stipends.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Robert Noyce Scholarship Program

Synopsis of Program:

The Robert Noyce Scholarship program seeks to encourage talented science, technology, engineering, and mathematics majors and professionals to become K-12 mathematics and science teachers. The program provides funds to institutions of higher education to support scholarships, stipends, and programs for students who commit to teaching in high need K-12 schools.

Cognizant Program Officer(s):

- Joan T. Prival, Lead Program Director, Directorate for Education & Human Resources, Division of Undergraduate

Education, 835 N, telephone: (703) 292-4635, fax: (703) 292-9015, email: jprival@nsf.gov
- Kathleen A. Parson, Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4653, fax: (703) 292-9015, email: kparson@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.076 --- Education and Human Resources

Eligibility Information

- **Organization Limit:**

  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 may submit proposals.

- **PI Eligibility Limit:** None Specified.
- **Limit on Number of Proposals:** An institution, on its own or as a member of a consortium, may submit no more than one proposal per competition.

Award Information

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 13 to 18 - Pending the availability of funding, it is anticipated that there will be 10 - 12 Phase I awards and 3 - 6 Phase II awards.
- **Anticipated Funding Amount:** $7,000,000

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.
- **Full Proposal Preparation Instructions:** This solicitation contains information that supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **Indirect Cost (F&A) Limitations:**

  No indirect costs are allowed for Phase I and Phase II Scholarship and Stipend projects. Indirect costs are allowed for Phase II Monitoring and Evaluation projects.

- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- **Letters of Intent *(optional):***
  February 28, 2006
- **Full Proposal Deadline Date(s)** (due by 5 p.m. submitter's local time):
  April 03, 2006

Proposal Review Information

- **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:** Standard NSF reporting requirements apply.

TABLE OF CONTENTS

I. INTRODUCTION

It is estimated that the nation's schools will need to hire 2.2 million teachers, including 240,000 middle and high school mathematics and science teachers, in the next decade due to projected enrollment increases, anticipated retirements, and the attrition of new teachers (National Commission on Mathematics and Science Teaching for the 21st Century, 2000). Furthermore, the demand for certified teachers has increased as student course-taking in high school science and mathematics has increased and as states implement the teacher quality requirements of No Child Left Behind with respect to teacher content knowledge in the assigned field of teaching (CCSSO, 2003).

Research on effective teachers has shown persistent correlations between student performance and teacher quality (Sanders and Rivers, 1996; Jordan, Mendro, and Weerasinghe, 1997). Teachers' content knowledge, particularly in science and mathematics, is an important factor in determining student achievement (Goldhaber and Brewer, 1996, National Research Council, 2000). A large percentage of science and mathematics teachers lack even a minor in their teaching field, with 56% of public secondary students receiving instruction in the physical sciences from teachers without a major or minor in the physical sciences and 27% of students receiving mathematics instruction in classes taught by teachers lacking a minor in mathematics. Although the problem of out-of-field teaching is widespread, students in high-poverty schools are 77% more likely to be taught by an out-of-field teacher than students in low poverty schools (Ingersoll, 1999, 2002). As many as 50% of new teachers in urban school districts leave the teaching profession within their first three years, further exacerbating shortages and misassignment of teachers. A survey of urban school districts conducted by the Council of the Great City

Schools and Recruiting New Teachers, Inc., in 1998-99, indicated that 95% of responding urban school districts had an immediate demand for high school science and mathematics teachers. Eighty percent reported a need for middle school science and mathematics teachers (Urban Teacher Collaborative, 2000).

The Robert Noyce Scholarship Program, authorized under the National Science Foundation Authorization Act of 2002 (P.L. 107-368), responds to the critical need for K-12 teachers of science, technology, engineering, and mathematics by encouraging talented science, technology, engineering, and mathematics (STEM) students and STEM 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 for STEM majors and STEM professionals to enter and complete teacher credentialing programs. Scholarship recipients are required to complete two years of teaching in a high need school district for each year of scholarship or stipend support. The program seeks to increase the number of K-12 teachers with strong STEM content knowledge who teach in high need school districts.

II. PROGRAM DESCRIPTION

The NSF Robert Noyce Scholarship program 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 for juniors and seniors who are majoring in science, technology, engineering, or mathematics (STEM) and stipends for STEM professionals seeking to become teachers. 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. Proposals may address either the scholarship or the stipend program or both programs. 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 program and support to enable scholarship and stipend recipients to obtain teacher certification or licensing and to become successful elementary or secondary teachers. 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 their completion of the program to ease the transition into teaching and aid retention during and beyond the obligatory service period. Program activities for scholarship and stipend recipients may include serving as resources for science and mathematics instruction in K-12 classrooms. The project leadership team is expected to include STEM discipline faculty.

Scholarships for STEM Majors

Scholarship amounts must be at least $7,500 per year but no more than $10,000 per year; however, no individual may receive a scholarship for any year that exceeds the yearly cost of attendance (as defined in section 472 of the Higher Education Act of 1965 (20 U.S.C. 1087ll)). Scholarship recipients must be U.S. citizens or nationals, or permanent resident aliens, must be majoring in mathematics, engineering, or a science discipline, and must be in the last 2 years of a baccalaureate degree program. It is expected that these students will complete a major in a STEM discipline. 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 two years of scholarship support. Recipients of scholarships must commit to completion of two years of service as a mathematics or science teacher for each year the scholarship is received. Service must be performed within 6 years after graduation from the program for which the scholarship was awarded and must be performed in a high need local educational agency that meets one or more of the following criteria:

A. It has at least one school in which 50 percent or more of the enrolled students are eligible for participation in the free and reduced price lunch program established by the Richard B. Russell National School Lunch Act (42 U.S.C.1751 et seq.).

B. It has at least one school in which: (i) more than 34 percent of the academic classroom teachers at the secondary level (across all academic subjects) do not have an undergraduate degree with a major or minor in, or a graduate degree in, the academic field in which they teach the largest percentage of their classes; or (ii) more than 34 percent of the teachers in two of the academic departments do not have an undergraduate degree with a major or minor in, or a graduate degree in, the academic field in which they teach the largest percentage of their classes.

C. It has at least one school whose teacher attrition rate has been 15 percent or more over the last three school years.

Stipends for STEM Professionals

Stipends of up to $10,000 are available for a maximum of one year for science, technology, engineering, or mathematics

(STEM) professionals who hold a baccalaureate, masters, or doctoral degree in science, mathematics, 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 6 years after graduation or 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.

Categories of Proposals

In FY 2006, the Robert Noyce Scholarship Program 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.
- 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 September 30, 2006.

Phase I proposals provide scholarships for juniors and seniors who are majoring in a science discipline, technology, engineering, or mathematics (STEM) and stipends for STEM professionals seeking to become teachers. Proposals may address the scholarship component or the stipend component or both. Up to 15% of the proposed budget may be allocated for administrative and program costs associated with recruiting and preparing the teachers, providing support for the teachers as they begin teaching, and conducting monitoring and evaluation activities.

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 expand and extend the evaluation efforts initiated under the original award and to support additional cohorts of scholarship and stipend recipients. Phase II proposals are expected to show evidence of the success of 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. Proposals must include plans for evaluating the impact of the program on recruitment of teachers and the effectiveness of the Noyce recipients as K-12 teachers. Up to 20% of the budget may be allocated for administrative and program costs and for evaluation and research activities associated with the Phase II S&S project. The maximum total budget for Phase I and Phase II S&S proposals is $500,000 with a project duration of up to 4 years.

Phase II M&E Awards provide funding to measure project outcomes through longitudinal evaluation studies and the continued monitoring of Noyce recipients to ensure they have completed their teaching requirement. Since M &E awards do not include funds for awarding additional scholarships and stipends, indirect costs may be included in the proposal budget. The maximum total budget for proposals in this category is $150,000 with a project duration of up to 3 years.

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

Institutional Responsibilities

The institution shall require that each recipient of the 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 and to participate in surveys provided by the institution of higher education as part of an evaluation program. 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. It is expected that 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 with repayments pro-rated accordingly to reflect partial service completed. The institution is responsible for collecting the repayment amounts, including interest, in accordance with P.L. 107-368, SEC. 10 (g). All forfeited scholarship or stipend funds, less grantee administrative costs associated with collection of the repayment not to exceed 5% of the forfeited amount, will be returned to the United States Treasury. 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.

Eligible institutions must provide evidence of exemplary teacher preparation efforts to ensure that scholarship and stipend recipients become successful science and mathematics teachers in elementary or secondary schools. 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. 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 individuals in teaching careers as well as the effectiveness of the Noyce scholarship/stipend recipients as teachers. The evaluation plan

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 data collection. It is expected that individual project evaluation, as well as the overall program evaluation, will contribute to the knowledge base of effective strategies for attracting and retaining effective teachers with strong STEM content knowledge.

Proposers may wish to explore the resources related to K-12 teacher education available at MSPnet, http://www.hub.mspnet.org/ , an electronic learning community for the Math and Science Partnership (MSP) program. Information about current awards funded under the Robert Noyce Scholarship Program resources 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

References

Council of Chief State School Officers (2003). State Indicators of Science and Mathematics Education 2003. Washington, DC: Author

Goldhaber, D.D. and D.J. Brewer (1997). Evaluating the Effect of Teacher Degree Level on Educational Performance. In W.J. Fowler (ed.), *Developments in School Finance, 1996.* Washington, DC: National Center for Education Statistics

Ingersoll, R.M. (1999). The Problem of Underqualified Teachers in American Secondary Schools. *Educational Researcher*, 28 (2): 26-37.

Ingersoll, R.M. (2002). *Out-of-field Teaching: Educational Inequality and the Organization of Schools: An Exploratory Analysis.* Seattle, WA: University of Washington Center for the Study of Teaching and Policy

Jordan, H., R. Mendro, & D. Weerasinghe. (1997). *Teacher Effects on Longitudinal Student Achievement.*

National Commission on Mathematics and Science Teaching for the 21st Century (2000). *Before It's Too Late.* Jessup, MD: Education Publications Center.

National Research Council (2001). *Educating Teachers of Science, Mathematics, and Technology: New Practices for the New Millennium* (Committee on Science and Mathematics Teacher Preparation). Washington, DC: National Academy Press.

Sanders, W.L. and J. C. Rivers, (1966). *Cumulative and Residual Effects of Teachers on Future Academic Achievement.* Knoxville, TN: University of Tennessee Value-Added Research and Assessment Center.

Urban Teacher Collaborative (2000). *The Urban Teacher Challenge: Teacher Demand in the Great City Schools.* Washington, D.C: Council of the Great City Schools.

III. ELIGIBILITY INFORMATION

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 may submit proposals. An institution, on its own or as a member of a consortium, may submit no more than one proposal per competition.

IV. AWARD INFORMATION

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds. The anticipated funding amount in FY 2006 is $7 million.

Phase I Awards

Depending on the quality of submissions and the availability of funds, NSF expects to fund approximately 10 -12 awards of

up to $500,000 for a total award amount and duration of 3 to 4 years. Up to 15% of the proposed budget may be allocated for administrative and program costs, including monitoring and evaluation as detailed in Section II "Program Description" above.

Phase II Awards

Depending on the quality of submissions and the availability of funds, NSF expects to fund approximately 3 - 6 Phase II awards. Phase II S&S proposals may request up to $500,000 for a total award amount and duration of 3 to 4 years. Up to 20% of the proposed budget may be allocated for administrative and program costs, including monitoring and evaluation as detailed in Section II "Program Description" above. Phase II M&E Proposals may request up to $150,000 in total budget for a duration of 3 years. Indirect costs may be charged in Phase II M&E proposals.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent *(optional):*

Letters of Intent:

A Letter of Intent is optional, but encouraged, before submitting a full proposal. The Letter of Intent is not a preliminary proposal. It is intended to enhance the efficiency of the review process. Letters of Intent should be electronically submitted through FastLane by February 28, 2006. The Letter of Intent should indicate the category of proposal (Phase I, Phase II S&S, or Phase II M&E). It should include a brief synopsis of the project, indicating the grade level (elementary, middle, or high school) and discipline focus of the project. Additional institutions and school districts should be listed in the Participating Organizations section of the FastLane Letter of Intent.

Full Proposal Instructions:

Proposals submitted in response to this program announcement/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 pubs@nsf.gov.

The following instructions supplement the GPG guidelines.

Project Summary

The one-page Project Summary should indicate the specific category of proposal (Phase I, Phase II S&S, or Phase II M&E) and name all institutions, including school districts, that are involved in the proposal. Proposers are reminded that the Project Summary must explicitly address, in separately labeled statements, both NSB-approved merit review criteria: Intellectual Merit and Broader Impacts. Proposals failing to explicitly address Intellectual Merit and Broader Impacts in the Project Summary will be returned without review.

Project Description

Phase I Proposals must include the following elements in the Project Description section:

- Results from Prior NSF Support: Address prior support relevant to the proposed project.
- A description of the proposed scholarship or stipend program, including the number and size of scholarships and stipends, academic requirements, 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. 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 to administer 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 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; and
- An evaluation plan that will provide information on the effectiveness of the project in attracting, preparing, and retaining STEM individuals in teaching careers and should include methodologies for measuring the effectiveness of the Noyce scholarship/stipend recipients as teachers. The evaluation plan should 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.

Phase II Scholarship and Stipend (S&S) Proposals should include the following:

- Results from Prior NSF Support: Describe the outcomes of prior support under the previous Robert Noyce Scholarship grant to include 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 the teaching requirement 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.
- A description of the proposed scholarship or stipend program, including the number and size of scholarships and stipends, academic requirements, 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. 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 to administer 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 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;
- Discussion of how the proposed project builds on 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 institution has made the program a central institutional focus.
- Evidence of the impact of the Noyce Scholarship project on STEM departments.
- Details of a plan to expand and extend the evaluation activities initiated under the original award. Evaluation studies should include longitudinal studies to measure the impact of the project on students 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.

Phase II Monitoring and Evaluation (M&E) 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 the teaching requirement 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 provide results of the evaluation activities.

- Details of a plan to expand and extend the evaluation activities initiated under the original award. Evaluation studies should include longitudinal studies to measure the impact of the project on students 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 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.

Additional Requirements for Phase I and Phase II Proposals

The PI and Co-PI leadership must include at least one faculty member from a STEM discipline. Letters of support from the Dean of Arts & Sciences, Dean of Education, and school district Superintendent(s) or comparable administrators should be submitted as evidence of institutional support for the proposal. Letters should be uploaded into the Supplementary Documentation section in FastLane.

A Project Data Form must be submitted (via FastLane) 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.

Proposers are reminded to identify the program announcement/solicitation number (06-528) in the program announcement/ solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost Sharing:

Cost sharing is not required by NSF in proposals submitted under this Program Solicitation.

Indirect Cost (F&A) Limitations:

No indirect costs are allowed for Phase I and Phase II Scholarship and Stipend projects. Indirect costs are allowed for Phase II Monitoring and Evaluation projects.

Other Budgetary Limitations:

Phase I proposals: Up to 15% of the proposed budget may be allocated for administrative and program costs, including monitoring and evaluation, as detailed in Section II "Program Description" above.

Phase II S&S proposals: Up to 20% of the proposed budget may be allocated for administrative and program costs, including monitoring and evaluation, as detailed in Section II "Program Description" above.

Budget Preparation Instructions:

Scholarships and stipends should be indicated in Section F.1 Participant Support - "Stipends" of the FastLane budget.

C. Due Dates

Proposals must be submitted by the following date(s):

Letters of Intent *(optional):*

February 28, 2006

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

April 03, 2006

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this announcement/solicitation through the FastLane system. Detailed instructions for proposal 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 announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

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. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: http://www.fastlane.nsf.gov

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 (NSB 97-72). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued Important Notice 127, Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the Grant Proposal Guide Chapter III.A for further information). The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?
How important is the proposed activity to advancing knowledge and understanding within its own field or across

different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?
How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

NSF staff will give careful consideration to the following in making funding decisions:

Integration of Research and Education
One of the principal strategies in support of NSF's goals 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 diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities
Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- 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.

Additional Review Criteria:

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

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
- Ability of the program to recruit STEM majors who would not otherwise pursue a career in teaching
- Quality of the preservice educational 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 plan that will measure the effectiveness of the proposed strategies
- Institutional support for the program and the extent to which the institution is committed to making the program a central organizational focus

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
- Evidence that the project has recruited STEM majors who would not otherwise pursue a career in teaching
- Evidence that a high quality new teacher support structure is in place
- Demonstrated success of the previously funded project in terms of recruitment of STEM majors and/or STEM professionals into K12 teaching and preparation to become effective teachers
- 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
- Plans for disseminating results of the evaluation studies
- Plans for sustainability

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.
- Plans for disseminating results of the evaluation studies.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/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.

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 Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

NSF is striving to be able to tell proposers whether their proposals have been declined or recommended for funding within six months. The time interval begins on the closing date of an announcement/solicitation, or the date of proposal receipt, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

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 Division 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.A. 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 (NSF-GC-1); * or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

Consistent with the requirements of OMB Circular A-16, *Coordination of Geographic Information and Related Spatial Data Activities*, and the Federal Geographic Data Committee, all NSF awards that result in relevant geospatial data must be submitted to Geospatial One-Stop in accordance with the guidelines provided at: www.geodata.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II,

available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Website at http://www.gpo.gov/.

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

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. 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 FastLane, for preparation and submission of annual and final project reports. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding this program should be made to:

- Joan T. Prival, Lead Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4635, fax: (703) 292-9015, email: jprival@nsf.gov
- Kathleen A. Parson, Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4653, fax: (703) 292-9015, email: kparson@nsf.gov

For questions related to the use of FastLane, contact:

- Ms.Antoinette Allen, Computer Specialist, Division of Undergraduate Education, telephone: (703) 292-4646, email: duefl@nsf.gov
- FastLane Help Desk, telephone: 1-800-673-6188, email: fastlane@nsf.gov

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF Website at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's MyNSF News Service (http://www.nsf.gov/mynsf/) to be notified of new funding opportunities that become available.

Related Programs:

- Teacher Professional Continuum (NSF 05-580)

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

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: pubs@nsf.gov

  or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or

Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

OMB control number: 3145-0058.

The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749