EHR Core Research: Building Capacity in STEM Education Research (ECR: BCSER)

PROGRAM SOLICITATION
NSF 22-548

REPLACES DOCUMENT(S):
NSF 20-521

National Science Foundation

Directorate for Education and Human Resources
    Division of Graduate Education
    Division of Human Resource Development
    Research on Learning in Formal and Informal Settings
    Division of Undergraduate Education

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

    March 29, 2022

    February 24, 2023

    Fourth Friday in February, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES

Important Information

Innovating and migrating proposal preparation and submission capabilities from FastLane to Research.gov is part of the ongoing NSF information technology modernization efforts, as described in Important Notice No. 147. In support of these efforts, proposals submitted in response to this program solicitation must be prepared and submitted via Research.gov or via Grants.gov, and may not be prepared or submitted via FastLane.

Proposal titles should begin with BCSER.

The Project Summary should specify the proposal type as Individual Investigator Development - Experienced; Individual Investigator Development - New; Institutes for Methods and Practices in STEM Education Research; or Conference.

Revision Notes

The Individual Investigator Development (IID) track now includes two proposal types: Investigators Experienced in STEM Education Research and Investigators New to STEM Education Research.

The IID track is no longer limited to early- and mid- career investigators and accepts proposals from investigators at any stage in their career development.

The IID track now accepts proposals for up to three years.

The Institutes for Methods and Practices in STEM Education Research (IMP) track (formerly Institutes in Research Methods) now solicits a broader range of institute topics.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) (NSF 22-1), which is effective for proposals submitted, or due, on or after October 4, 2021.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

    EHR Core Research: Building Capacity in STEM Education Research (ECR: BCSER)

Synopsis of Program:

ECR's Building Capacity in STEM Education Research (ECR: BCSER) supports projects that build investigators' capacity to carry out high-quality STEM education research that will enhance the nation's STEM education enterprise. In addition, ECR: BCSER seeks to broaden the pool of researchers who can advance knowledge regarding STEM learning and learning environments, broadening participation in STEM fields, and STEM workforce development. Researchers of races and ethnicities, genders, sexual orientations, and abilities who are currently underrepresented in their participation in STEM education research and the STEM workforce, as well as faculty at minority-serving and two-year institutions, are particularly encouraged to submit proposals.

Specifically, ECR: BCSER supports activities that enable researchers to expand their areas of expertise and acquire the requisite knowledge and skills to conduct rigorous research in STEM education. Career development may be accomplished through investigator-initiated professional development and research projects or through institutes that enable researchers to integrate methodological strategies with theoretical and practical issues in STEM education.

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.

- Please direct inquiries to the ECR: BCSER Lead PO, telephone: (703) 292-8112, email: ECRBCSER@nsf.gov

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: 29

NSF expects to make 29 standard or continuing grant awards. The ECR: BCSER competition anticipates making the following awards:

Individual Investigator Development in STEM Education Research: Up to 19 awards. The maximum award amount is $350,000 for three years.

Institutes for Methods and Practices in STEM Education Research: Up to 5 awards. The maximum award amount for is $1,000,000 for three years.

Conference: Up to 5 awards. The typical award amount for a conference is $25,000 to $100,000.

Anticipated Funding Amount: $12,000,000

Anticipated funding amount is approximately $12,000,000 subject to availability of funding.

Eligibility Information

Who May Submit Proposals:

The categories of proposers eligible to submit proposals to the National Science Foundation are identified in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), Chapter I.E. Unaffiliated individuals are not eligible to submit proposals in response to this solicitation.

Who May Serve as PI:

Co-PIs are not allowed on Individual Investigator Development proposals.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

Limit on Number of Proposals per PI or co-PI:

There are no restrictions or limits.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not required

- **Preliminary Proposal Submission:** Not required

- **Full Proposals:**

  - Full Proposals submitted via Research.gov: *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) guidelines apply. The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.
  - 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: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide).

B. Budgetary Information

- **Cost Sharing Requirements:**

  Inclusion of voluntary committed cost sharing is prohibited.

- **Indirect Cost (F&A) Limitations:**

  Not Applicable

- **Other Budgetary Limitations:**

  Not Applicable

C. Due Dates

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

  March 29, 2022

  February 24, 2023

  Fourth Friday in February, Annually Thereafter

Proposal Review Information Criteria

Merit Review Criteria:

National Science Board approved criteria apply.

Award Administration Information

Award Conditions:

Standard NSF award conditions apply.

Reporting Requirements:

Standard NSF reporting requirements apply.

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I. INTRODUCTION

NSF's Directorate for Education and Human Resources (EHR) seeks to support STEM education research that advances progress toward the strategic goals of (a) the Directorate, with respect to STEM learning and learning environments, broadening participation in STEM, and STEM workforce development; and (b) the Foundation, as outlined in the NSF Strategic Plan, Building the Future: Investing in Discovery and Innovation - NSF Strategic Plan for Fiscal Years (FY) 2018 -

Insights from STEM education research inform the development of theories that explain phenomena of importance to the mission of NSF's Directorate for Education and Human Resources (EHR). Examples include theories to explain factors that impede or promote individuals' learning in various contexts; factors that contribute to persistent underrepresentation of individuals from various groups in STEM courses of study and careers; and the skills, experiences, and affective characteristics that prepare individuals for the current and emerging STEM professional workforce.

Advances in STEM education research are also essential to foster new and more effective interventions and innovations in STEM education, broadening participation, and workforce development. STEM education research generates the knowledge, theories, and understandings on which viable strategies for enhancing performance or addressing gaps in STEM learning, broadening participation in STEM, and STEM professional workforce development are based. Through EHR Core Research (ECR) and other programs, EHR supports advances in knowledge in each of these areas.

The EHR Core research (ECR) program supports multiple solicitations under the ECR umbrella, including this ECR: BCSER solicitation and the EHR Core Research (ECR: Core) solicitation, NSF 21-588. Recognizing the value of skills, expertise, and experiences that support contributions to the knowledge base, the ECR Building Capacity for STEM Education Research (ECR: BCSER) competition seeks to support projects that build investigators' competencies to carry out high-quality education research in STEM fields. The ECR: BCSER program supports both individual investigator development projects and professional development institutes that enable researchers to integrate methodological strategies and practices with theoretical and practical issues in STEM education. Researchers of races and ethnicities, genders, sexual orientations, and abilities who are currently underrepresented in their participation in STEM education research and the STEM workforce, as well as faculty at minority-serving and two-year institutions, are particularly encouraged to submit proposals. The program also supports well-focused conferences related to ECR: BCSER goals.

Through these initiatives, ECR: BCSER invests in existing STEM education research communities and also helps broaden the research foci and the pool of researchers with the skills, experiences, and expertise required to successfully conceptualize, design, and conduct studies that expand understandings critical to enhancing STEM learning, broadening participation in STEM fields, and developing the STEM professional workforce.

II. PROGRAM DESCRIPTION

ECR: BCSER supports three types of projects designed to build investigators' capacity to carry out high-quality STEM education research. The **Individual Investigator Development in STEM Education Research** track (ECR: BCSER: IID) invites proposals to support individual investigators – both experienced and new to STEM education research – who have identified specific capabilities they need to develop more fully to conduct high-quality STEM education research in a critical area, along with a detailed professional development plan that will enable the investigator to complete a research project. The **Institutes for Methods and Practices in STEM Education Research** track (ECR: BCSER: IMP) invites proposals for institutes that would provide training and support in the use of cutting-edge methodological techniques and/or research practices to advance participants' knowledge, skills and competencies in STEM education research. Proposals that seek support to conduct well-focused **conferences** (ECR: BCSER: CONF) relevant to the competition goals also are invited.

Relevant Capacity-Building Foci

To successfully conceptualize, design, and execute studies capable of making contributions to knowledge in STEM education and learning, broadening participation, and workforce development, investigators and their teams typically require a wide range of knowledge, skills, expertise, and experiences. Examples of relevant capacity-building foci span a range of topics including but not limited to:

- Deep knowledge of subject-matter literature: Domain expertise (mastery of theories and findings) is critical to investigators' ability to identify important scientific questions and articulate a theoretically derived and framed rationale for the project.
- Interdisciplinary perspectives: Theories, methodologies, analytical techniques, and findings that can have a catalytic effect when explored in the context of multiple fields. Moreover, interdisciplinary endeavors also increase the human capacity of the nation to address problems, broadening the range and diversity of scholars working toward their solution (Porter & Rafols, 2009).
- Skill operationalizing research questions and articulating theories of change: Investigators should be able to operationalize the conceptual framework that organizes the responses to the research questions before collecting data, e.g., reducing variables into measurable factors.
- Expertise in study design, research methods, and data analysis techniques and familiarity with advances in computational, quantitative, qualitative and evaluative research methodologies: Expertise in these areas is essential in arguing the feasibility and appropriateness of the proposed research to generate sufficiently robust evidence on the topic(s) of interest and in executing the study as planned. Depending upon the nature of the research proposed, experience may be required identifying appropriate measures, devising appropriate sampling strategies, developing and establishing the psychometric properties of research instruments, and aligning analytic methods with the study design.
- Expertise that could advance educational innovation: Investigators should be able to incorporate new methods and techniques in their research that will improve education quality. For example, they may consider how artificial intelligence tools or large data sets could be used or mined to enhance traditional teaching and learning methods. Areas where this research may be applicable could include intelligent tutoring systems, personalized learning, computer-adapted assessments, or in automating of teaching tasks.
- Skill synthesizing study findings through meta-analysis, meta-synthesis, and other systematic review methodologies.
- Experience collecting, managing, documenting, and archiving data (e.g., to facilitate replication and reproducibility studies[1] and secondary analyses).
- Experience building teams, establishing partnerships, leading collaborations, and mentoring junior collaborators.

Proposal Types

1. Individual Investigator Development in STEM Education Research (ECR: BCSER: IID)

ECR: BCSER supports individual investigators – both experienced and new to STEM education research – in engaging with professional development activities that will build their capacity to advance knowledge of STEM education. The primary goal of ECR: BCSER Individual Investigator Development in STEM Education Research (ECR: BCSER: IID) awards is to facilitate the acquisition of expertise that will position the investigator to successfully conceive and execute STEM education research with the potential to meaningfully advance current knowledge about STEM learning and learning environments, broadening participation in STEM, and STEM workforce development. ECR: BCSER supports activities that enable researchers to expand their areas of expertise and acquire the requisite knowledge and skills to conduct rigorous research in STEM education. ECR: BCSER encourages IID proposals that will support investigators in shifting their research foci to potentially transformative, under-researched areas, including culturally competent and equitable STEM education research. IID submissions also may request support that would enable the PI to access facilities and other resources necessary to complete the proposed STEM education research project.

When submitting a proposal to the IID track, PIs should consult the guidelines in section A or B below according to the PI's level of previous experience and expertise conducting STEM education research. Investigators experienced in STEM education research may have earned a graduate degree in a STEM education field; hold a professional position in STEM education research; and/or have published STEM education research in peer-reviewed journals. Investigators new to STEM education research typically do not have such formal training, professional positions, or publications in STEM education research. ECR: BCSER recognizes that there is a continuum of STEM education research experience and expertise. Thus, if it is not clear whether the PI would be considered experienced in or new to STEM education research, please contact ECRBCSER@nsf.gov for guidance. Researchers of races and ethnicities, genders, sexual orientations, and abilities who are currently underrepresented in their participation in STEM education research and the STEM workforce, as well as faculty at minority-serving and two-year institutions, are particularly encouraged to submit IID proposals.

A. Investigators New to STEM Education Research

IID awards to investigators new to STEM education research are intended to support investigators who are new to the field, and provide them with experiences that will build their capacity to make meaningful contributions to the STEM education knowledge base, while supporting them in establishing their careers within a STEM education research community. IID proposals from investigators new to STEM education research must include the following components.

- STEM Education Research Issues of Interest. Identify the broad area of the PI's STEM education research interests, as well as more specific issues to be addressed in a BCSER: IID pilot research project. To specify the broad area of interest, please indicate (a) one or more of the three EHR core areas (STEM Learning and Learning Environments, Broadening Participation in STEM fields, STEM Workforce Development); (b) the STEM discipline(s); (c) the level(s) of education of research participants (e.g., middle school students, undergraduate students, adult learners); and (d) the relevant educational context(s) (e.g., science museums, 9th grade mathematics courses, the mechanical engineering workforce). Then identify the specific issue(s) within this broader area for which the PI proposes to conduct pilot research. The pilot research project should be framed as part of a larger STEM education research agenda that, if pursued, would enable the PI to advance knowledge on this topic.
- Mentoring Structure. Identify the mentoring structure that will be used to guide the PI in the professional development activities and pilot research project. Include a rationale for the selection of mentors, collaborators, and/or advisory board members and descriptions of their roles in the research professional development plan. The PI must secure the commitment of one or more STEM education research mentors with expertise in their areas of interest. We also encourage the PI to arrange to regularly attend (virtually or in person) one or more STEM education research group meetings of the chosen mentor(s).
- Self-Assessment. In consultation with mentor(s), provide a self-assessment of the PI's experience and expertise for conducting STEM education research. Identify the knowledge and capabilities that need to be developed to enable the PI to conduct robust pilot research project in the STEM education area of interest.
- Professional Development Plan. In consultation with mentor(s), prepare a professional development plan to build the investigator's knowledge and capabilities, to allow them to conduct a pilot STEM education research project, and to support the PI's broader career trajectory. The plan should provide detailed information on the goals and activities that will be undertaken during the project; and the timeline for completing activities. Suitable activities might include attending conferences, short-courses, workshops, or other training; convening and consulting regularly with an advisory group; and specifying a mentoring plan. Institutes for Methods and Practices in STEM Education Research that have been funded through the ECR: BCSER competition also offer viable professional development options. The overall project timeline should indicate the rationale for the timing of the PD activities relative to the pilot research activities. PIs are strongly encouraged to identify an advisory board to provide external feedback on the outcomes and impacts of the planned PD activities on the investigator's capacity to complete the IID research activities, and the PI's STEM education research skills and experience more generally.

B. Investigators Experienced in STEM Education Research

IID awards to support experienced STEM education researchers are intended to enable researchers to expand their areas of expertise and acquire additional requisite knowledge and skills to conduct rigorous **fundamental** STEM education research. ECR: Core and ECR: BCSER define fundamental research as curiosity-driven or use-inspired basic research that makes important contributions to general, explanatory knowledge (e.g., theories) that underlies STEM education. Fundamental research generates knowledge and understanding with the potential for broad relevance. (By contrast, applied research generates knowledge primarily with specific relevance such as to a particular pedagogy, curriculum, or technology.) IID proposals from investigators experienced in STEM education research must include the following components.

- Fundamental STEM Education Research Project. Identify a fundamental STEM education research topic and articulate an appropriately scoped project related to that topic that can be completed within the project period of performance. The first step is to identify a theoretically derived and framed core issue that, if addressed, could contribute to fundamental understanding in STEM education. The IID research activity should be framed as part of a larger fundamental STEM education research agenda that, if pursued, would enable the PI to contribute to theory-building on this topic. The PI must design the BCSER: IID research activity such that it can be completed in its entirety during the period of the IID award.
- Self-Assessment. Provide a self-assessment of the PI's experience and expertise and identify specific knowledge and capabilities that will be advanced throughout the project. It is expected that investigators experienced in STEM education research will be able—independently or with assistance from colleagues or mentors—to identify specific gaps in their study design, research methods, data analysis, synthesis, and/or STEM education subject-matter expertise relevant to the successful pursuit of fundamental STEM education research.
- Professional Development Plan. Prepare a professional development plan to build the investigator's knowledge and capabilities, to allow them to conduct the proposed fundamental STEM education research project, and to support the PI's broader career trajectory. The plan should provide detailed information on the goals and activities that will be undertaken during the project; and the timeline for completing activities. Suitable activities might include attending short-courses, workshops, or other training; convening and consulting regularly with an advisory group; identifying and securing a commitment from an individual willing to serve as a mentor to the PI throughout the project period; and specifying a mentoring plan. Institutes for Methods and Practices in STEM Education Research that have been funded through the ECR: BCSER competition also offer viable professional development options. The overall project timeline should indicate the rationale for the timing of the PD activities relative to the research activities. PIs are strongly encouraged to identify a mentor and/or an advisory board to provide external feedback on the outcomes and impacts of the planned PD activities on the investigator's capacity to complete the IID research activities, and the PI's fundamental STEM education research skills and experience more generally.

2. Institutes for Methods and Practices in STEM Education Research

Institutes for Methods and Practices in STEM Education Research (ECR: BCSER: IMP) awards support field-initiated institutes that provide participants with training and support in the use of cutting-edge methodological techniques and/or practices that advance the participants' knowledge, skills, and competencies in STEM education research. Institute participants may include investigators at any stage in their career development.

IRP proposals must provide evidence of the need for the training proposed for the prioritized participants. Proposals to design and deliver institutes may present a comprehensive array of activities such as courses, online modules, summer workshop sessions, seminars, symposia, or mentoring opportunities. When possible, participants in the institutes should engage in practical experience developing and refining research-related methods and/or practices. Proposals should describe the investigators' successful prior experience in conducting similar activities, qualifications to lead such training activities, and a plan for

evaluating the institute's effectiveness in developing participants' competencies in designing and conducting robust STEM education research.

IMP PIs are strongly encouraged to submit proposals that substantively involve faculty and postdoctoral researchers who are members of groups historically underrepresented in STEM and/or those affiliated with minority serving institutions in institute activities. Due to the complex nature of developing STEM education researchers, mentoring activities may be a beneficial institute strategy for providing long-term support, particularly for participants affiliated with institutions with limited expertise in STEM education research. A non-exhaustive list of potential IMP topics is described below.

Institutes proposing to concentrate on research methodology techniques could include focuses on: 1) computational methods (e.g., learning analytics for textual, speech and video data; neural nets; artificial intelligence; methods for the analysis of large data sets); 2) quantitative methods (e.g., multilevel data designs, structural equation modeling, modern measurement methods, quasi-experimental designs, meta-analysis); 3) qualitative methods (e.g., case studies; discourse analysis, design-based research, meta-synthesis); 4) principles of modern measurement and/or instrument development; or 5) evaluative methods (e.g., formative and/or summative evaluation designs).

Other institute topics could include training for STEM education researchers on: 1) communicating, translating, and disseminating research findings to diverse audiences and stakeholders (e.g., the public, policymakers, preK-20 educators and administrators) and in multiple formats including non-academic outlets (e.g., social media; blogs; podcasts); 2) design and implementation of culturally-competent STEM education research in specific contexts (e.g., Tribal communities; home environments); 3) a working understanding of fundamental STEM education research with respect to learning theories; instructional practices that support learning for students from diverse groups; assessment and evaluation of learning and teaching; persistent inequities in STEM fields; and student motivation and persistence; 4) training on the use of specific data analytic tools and software relevant to STEM education research (e.g., video analysis; data visualization; R; hierarchical modeling software); 5) data sharing and data transparency in STEM education research (e.g., data repositories; data cleaning; codebooks); and 6) conducting rigorous and relevant interdisciplinary research in STEM education to address pressing challenges (e.g., collaborations with economists, neuroscientists, sociologists).

Conference Proposals

Proposals seeking support to conduct well-focused conferences related to the ECR: BCSER goals may also be submitted. Proposals should include a conceptual framework for the conference, draft agenda, possible participant list, the outcomes or products that will result from the conference, and how these products serve the goals of the ECR: BCSER competition. Proposals focused on transition from discipline-based research to STEM education research and building skills for the future of STEM education research are of particular interest. Proposals focused on components of the national network of NSF INCLUDES also are welcomed. Investigators are encouraged to contact a cognizant EHR Program Officer prior to submission. Typical award size is $25,000 to $100,000. Please refer to PAPPG Chapter II.E.9 for guidance about conference proposals. The specialized items requested must be included within the 15-page Project Description.

References of Potential Interest

National Science Board. (2018). *Our Nation's Future Competitiveness Relies on Building a STEM-Capable U.S. Workforce: A Policy Companion Statement to Science and Engineering Indicators 2018*. Arlington, VA: National Science Foundation.

National Science Board. (2018) *Science and Engineering Indicators*. Arlington, VA: National Science Foundation

National Academies of Sciences, Engineering, and Medicine. 2018. *Indicators for Monitoring Undergraduate STEM Education*. Washington, DC: The National Academies Press. https://doi.org/10.17226/24943.

National Academies of Sciences, Engineering, and Medicine. 2017. *Supporting Students' College Success: The Role of Assessment of Intrapersonal and Interpersonal Competencies*. Washington, DC: The National Academies Press. https://doi.org/10.17226/24697.

National Academies of Sciences, Engineering, and Medicine. 2016. *Barriers and Opportunities for 2-Year and 4-Year STEM Degrees: Systemic Change to Support Students' Diverse Pathways*. Washington, DC: The National Academies Press. https://doi.org/10.17226/21739.

Porter, A. L., & Rafols, I. (2009). Is Science Becoming More Interdisciplinary? Measuring and Mapping Six Research Fields over Time. Scientometrics 81(3), 719-745.

U.S. Department of Education and the National Science Foundation. (2013). *Common Guidelines for Education Research and Development: A Report from the Institute of Education Sciences, U.S. Department of Education and the National Science Foundation*, NSF 13-127. Arlington, VA: National Science Foundation.

[1] For guidelines on designing studies with reproducibility and replicability in mind and reporting findings to facilitate replication and reproducibility studies, see the joint IES/NSF *Companion Guidelines on Replication & Reproducibility in Education Research* (NSF 19-022).

III. AWARD INFORMATION

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.

NSF expects to make 29 standard or continuing grant awards. The ECR: BCSER competition anticipates having approximately $12,000,000 for new awards in FY 2022, subject to availability of funds, as follows:

Individual Investigator Development in STEM Education Research: Up to 19 awards. The maximum award amount is $350,000 for three years.

Institutes for Methods and Practices in STEM Education Research: Up to 5 awards. The maximum award amount for is $1,000,000 for three years.

Conference: Up to 5 awards. The typical award amount for a conference is $25,000 to $100,000.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

> The categories of proposers eligible to submit proposals to the National Science Foundation are identified in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), Chapter I.E. Unaffiliated individuals are not eligible to submit proposals in response to this solicitation.

Who May Serve as PI:

> Co-PIs are not allowed on Individual Investigator Development proposals.

Limit on Number of Proposals per Organization:

> There are no restrictions or limits.

Limit on Number of Proposals per PI or co-PI:

> There are no restrictions or limits.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

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

- Full Proposals submitted via Research.gov: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the *NSF Proposal and Award Policies and Procedures Guide* (PAPPG). The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg. Paper copies of the PAPPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov. The Prepare New Proposal setup will prompt you for the program solicitation number.
- 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: (https://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) 292-8134 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 Research.gov. PAPPG Chapter II.D.3 provides additional information on collaborative proposals.

See PAPPG Chapter II.C.2 for guidance on the required sections of a full research proposal submitted to NSF. Please note that the proposal preparation instructions provided in this program solicitation may deviate from the PAPPG instructions.

The following instructions supplement guidelines in the PAPPG and NSF *Grants.gov Application Guide*:

The Cover Sheet

- Select the **ECR: BCSER solicitation number**.
- Add **BCSER** as a prefix to the proposal title.
- **The box for Human Subjects must be checked**; this box should not be left blank. The Human Subjects box should be marked as pending if an Institutional Review Board (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. If human subjects activities are exempt from IRB review, enter appropriate exemption number in the space provided. To avoid delays in processing award recommendations, **it is strongly recommended that PIs begin the process of obtaining appropriate IRB approvals or exemptions** as needed for projects involving human subjects. No awards will be made without such approvals or exemptions.

Project Summary. The Project Summary should specify the proposal type as Individual Investigator Development - Experienced; Individual Investigator Development - New; Institutes for Methods and Practices in STEM Education Research; or Conference.

1) Individual Investigator Development in STEM Education Research Projects (ECR: BCSER: IID)

In addition to the guidance in the PAPPG, the Project Description section must address the following elements. PIs should consult the guidelines under section II.1 A or B above according to the PI's level of previous experience and expertise conducting STEM education research.

- Specific STEM education research issues of interest. For investigators experienced in STEM education research, the PI must identify a fundamental STEM education research topic and articulate an appropriately scoped project that can be completed within the project period.
- Self-assessment of the PI's experience and expertise for conducting STEM education research.
- Detailed professional development plan to build the investigator's knowledge and capabilities, to allow them to conduct the proposed STEM education research project, and to support the PI's broader career trajectory.
- For investigators new to STEM education research, at least one mentor is required. A letter of collaboration from each research mentor must be submitted as Supplementary Documentation.

Assessment and Evaluation. The third NSF merit review element considered with respect to both intellectual merit and broader impacts asks whether the project plan proposed is well-reasoned and incorporates a mechanism to assess success. In developing and describing their mechanisms to assess success, proposers should include plans to monitor and assess IID activities; specify criteria that will be used to evaluate the quality and outcomes of the IID activities; and detail any processes that will be employed to collect and analyze (quantitative and/or qualitative) data in support of evaluation.

2) Institutes for Methods and Practices in STEM Education Research (ECR: BCSER: IMP)

In addition to the guidance in the PAPPG, the project description should articulate the following:

Scope and Significance

- The scope and significance of the stated mission and goals of the institute;
- A detailed description of the curriculum, training plan, schedule of activities that are relevant to the focus of the institute, and expected outcomes;
- Evidence of the likelihood that the proposed activities will be effective in meeting the ECR: BCSER program goals;
- The likely overall impact of the proposed activities in building STEM educational research capacity.

Project Management

- Description of the organization's (investigator's) capacity to support the training, including evidence of prior success;
- Description of roles, responsibilities, and capabilities of the project team;
- Description of the anticipated number and demographics of desired participants;
- Evidence of demand for the proposed training for the targeted participants; and
- A detailed strategy to attract and support participants from underrepresented groups and minority-serving institutions.

Assessment and Evaluation. The third NSF merit review element considered with respect to both intellectual merit and broader impacts asks whether the project plan proposed is well-reasoned and incorporates a mechanism to assess success. In developing and describing their mechanisms to assess success, proposers should include plans to monitor and assess IMP activities; specify criteria that will be used to evaluate the quality and outcomes of the Institute's activities; and detail any processes that will be employed to collect and analyze (quantitative and/or qualitative) data in support of evaluation.

Budget and Budget Justification. Budgets should be in NSF format and include up to five pages of budget justification. The budget justification should be in narrative form and include detailed explanations for each line item with budget resources listed in the budget. Information about what may or may not be included in the budget or budget justification is outlined in the NSF PAPPG. For proposals with subawards, each subaward must include a separate budget and budget justification of no more than five pages.

Funds should be budgeted for the principal investigator or a project member to attend a two-day grantees' meeting in the Washington, D.C. area.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

C. Due Dates

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

    March 29, 2022

    February 24, 2023

    Fourth Friday in February, Annually Thereafter

D. Research.gov/Grants.gov Requirements

For Proposals Submitted Via Research.gov:

To prepare and submit a proposal via Research.gov, see detailed technical instructions available at: https://www.research.gov/research-portal/appmanager/base/desktop?_nfpb=true&_pageLabel=research_node_display&_nodePath=/researchGov/Service/Desktop/ProposalPreparationandSubmission.html. For Research.gov user support, call the Research.gov Help Desk at 1-800-673-6188 or e-mail rgov@nsf.gov. The Research.gov Help Desk answers general technical questions related to the use of the Research.gov 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.

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: https://www.grants.gov/web/grants/applicants.html. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical 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.

Proposers that submitted via Research.gov may use Research.gov to verify the status of their submission to NSF. For proposers that submitted via Grants.gov, until an application has been received and validated by NSF, the Authorized Organizational Representative may check the status of an application on Grants.gov. After proposers have received an e-mail notification from NSF, Research.gov should be used to check the status of an application.

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 PAPPG Exhibit III-1.

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

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Building the Future: Investing in Discovery and Innovation - NSF Strategic Plan for Fiscal Years (FY) 2018 – 2022*. 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 strategic objectives 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 must recruit, train, and prepare a diverse STEM workforce to advance the frontiers of science and participate in the U.S. technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong science, technology, engineering, and mathematics (STEM) workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

NSF's mission calls for the broadening of 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. (PAPPG 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

PAPPG 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 other underrepresented groups 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.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review.

Reviewers will be asked to evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will generally be completed and submitted by each reviewer and/or panel. 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 strives to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new awardees may require additional review and processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

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. After an administrative review has occurred, Grants and Agreements Officers perform 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.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, 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.

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 notice, 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 notice; (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 notice. 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 https://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 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 *Proposal & Award Policies & Procedures Guide* (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

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 no later than 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). No later than 120 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 Proposal & Award Policies & Procedures Guide* (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

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:

- Please direct inquiries to the ECR: BCSER Lead PO, telephone: (703) 292-8112, email: ECRBCSER@nsf.gov

For questions related to the use of FastLane or Research.gov, contact:

- FastLane and Research.gov Help Desk: 1-800-673-6188
- FastLane Help Desk e-mail: fastlane@nsf.gov.
- Research.gov Help Desk e-mail: rgov@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, "NSF Update" is an information-delivery system 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 Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on NSF's website.

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

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 (FASED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the *NSF Proposal & Award Policies & Procedures Guide* Chapter II.E.6 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 https://www.nsf.gov
>
> - **Location:**   2415 Eisenhower Avenue, Alexandria, VA 22314
>
> - **For General Information**   (703) 292-5111
>   (NSF Information Center)**:**
>
> - **TDD (for the hearing-impaired):**   (703) 292-5090
>
> - **To Order Publications or Forms:**
>
>   Send an e-mail to: nsfpubs@nsf.gov
>
>   or telephone: (703) 292-8134
>
> - **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; and 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 proposer 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 or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; 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 System of Record Notices, NSF-50, "Principal Investigator/Proposal File and Associated Records," and NSF-51, "Reviewer/Proposal File and Associated Records." 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 Office of Management and Budget (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 the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

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Office of Budget, Finance, and Award Management
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