This solicitation has been archived and replaced by NSF 20-539.

Computer Science for All (CSforAll:RPP)
Researcher Practitioner Partnerships

PROGRAM SOLICITATION
NSF 18-537

REPLACES DOCUMENT(S):
NSF 17-525

National Science Foundation
Directorate for Education & Human Resources
Research on Learning in Formal and Informal Settings
Directorate for Computer & Information Science & Engineering
Division of Computing and Communication Foundations
Division of Information & Intelligent Systems
Division of Computer and Network Systems
Office of Advanced Cyberinfrastructure

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):
May 09, 2018
February 12, 2019
Second Tuesday in February, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES
This solicitation updates NSF 17-525. The updates are as follows:

- An additional strand has been added to allow proposals that focus on designing pathways facilitating school districts in developing policies and supports for incorporating computer science and computational thinking across preK-12 or preK-14;
- Proposals submitted to this solicitation may be eligible for co-funding from organizations partnering with NSF as described in Section II; and
- The two Additional Criteria on Broadening Participation have been made more prominent in the text.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 19-1), which is effective for proposals submitted, or due, on or after February 25, 2019.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:
Computer Science for All (CSforAll:RPP)
Researcher Practitioner Partnerships

Synopsis of Program:
This program aims to provide all U.S. students the opportunity to participate in computer science (CS) and computational thinking (CT) education in their schools at the preK-12 levels. With this solicitation, the National Science Foundation (NSF) focuses on researcher-practitioner partnerships (RPPs) that foster the research and development needed to bring CS and CT to all schools. Specifically, this solicitation aims to provide high school teachers with the preparation, professional development (PD) and ongoing support that they need to teach rigorous computer science courses; preK-8 teachers with the instructional materials and preparation they need to integrate CS and CT into their teaching; and schools and districts the resources needed to define and evaluate multi-grade pathways in CS and CT.

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.

- Janice Cuny, Program Officer, CISE/CNS, telephone: (703) 292-8489, email: jcuny@nsf.gov
- Karen King, Program Director, EHR/DRL, telephone: (703) 292-5124, email: kking@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):
- 47.070 — Computer and Information Science and Engineering
- 47.076 — Education and Human Resources

Award Information

Anticipated Type of Award: Standard Grant

Estimated Number of Awards: 24

approximately 10 small, 11 medium, and 3 large awards.

Anticipated Funding Amount: $20,000,000

Subject to the availability of funds

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.

Who May Serve as PI:

There are no restrictions or limits.

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:

B. Budgetary Information

- Cost Sharing Requirements:
  Inclusion of voluntary committed cost sharing is prohibited.
- Indirect Cost (F&A) Limitations:
  Not Applicable
- Other Budgetary Limitations:
C. Due Dates

- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):
  - May 09, 2018
  - February 12, 2019
  - Second Tuesday in February, Annually Thereafter

**Proposal Review Information Criteria**

Merit Review Criteria:

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

**Award Administration Information**

Award Conditions:

Standard NSF award conditions apply.

Reporting Requirements:

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

**TABLE OF CONTENTS**

Summary of Program Requirements

I. Introduction

II. Program Description

III. Award Information

IV. Eligibility Information

V. Proposal Preparation and Submission Instructions
   A. Proposal Preparation Instructions
   B. Budgetary Information
   C. Due Dates
   D. FastLane/Research.gov/Grants.gov Requirements

VI. NSF Proposal Processing and Review Procedures
   A. Merit Review Principles and Criteria
   B. Review and Selection Process

VII. Award Administration Information
   A. Notification of the Award
   B. Award Conditions
   C. Reporting Requirements

VIII. Agency Contacts

IX. Other Information

**I. INTRODUCTION**

A key goal of this program is to provide all U.S. students the opportunity to participate in computer science (CS) and computational thinking (CT) education in their schools at the preK-12 levels. CT refers to the thought processes involved in formulating problems and their solutions in such a way that the solutions can be effectively carried out by an information-processing agent (usually a computer)
As schools attempt to respond to the increasing demand for CS and CT in their curricula, they are often faced with a critical shortage of teachers. Proposals in this strand should address key issues in the preparation, professional development (PD), and ongoing support of teachers of high school CS, recognizing the need for quickly scaling effective efforts to reach thousands of teachers, many of whom have had little or no formal CS preparation. Additional issues include but are not limited to:

- study implementation in the local context;
- employ rapid changes in implementation with short-cycle methods;
- capitalize on variation in educational contexts to address the sources of variability in outcomes to understand what works, for whom, and under what conditions;
- address organizational structures and processes and their relation to innovation;
- employ measurement of change ideas, key drivers, and outcomes to continuously test working theories and to learn whether specific changes actually produce improvement; and
- reform the system in which the approach is being implemented as opposed to overlaying a specific approach on an existing system.

### Proposal Strands:

**High School Strand.** As schools attempt to respond to the increasing demand for CS and CT in their curricula, they are often faced with a critical shortage of teachers. Proposals in this strand should address key issues in the preparation, professional development (PD), and ongoing support of teachers of high school CS, recognizing the need for quickly scaling effective efforts to reach thousands of teachers, many of whom have had little or no formal CS preparation. Additional issues include but are not limited to:
The size class should also be specified in the first line of the Project Summary.

Proposals may be submitted in the following proposal size classes:

- Small proposals (maximum of $300,000 for up to 2 years) are designed to support the initial steps in establishing a strong and well-integrated RPP team that could successfully compete for a Medium or Large proposal in the near future;
- Medium proposals (maximum of $1,000,000 for up to 3 years) are designed to support the modest scaling of a promising approach by a well-defined RPP team; and
- Large proposals (maximum of $2,000,000 for up to 4 years) are designed to support the widespread scaling of an evidence-based approach by a RPP team that builds on prior collaborations.

The size class should also be specified in the first line of the Project Summary.
Co-Funding Opportunities for this Solicitation:

NSF may enter into partnerships with other agencies, foundations, and organizations interested in co-funding projects submitted to this solicitation. Principal Investigators (PIs) on proposals that meet the general eligibility requirements of one or more of these partners will be contacted by the cognizant NSF program director following submission of their proposals, and be given the option of having their proposals considered jointly by NSF and the partner(s). If a PI so chooses, a given partner’s representatives will have access to the corresponding proposal, be invited to sit in on the NSF review panel’s discussion of that proposal, and be able to discuss the reviews with the NSF CSforAll:RPP Program Directors. This consideration by one or more partners will be strictly optional; PIs who choose not to avail themselves of this option will have their proposals reviewed solely by the NSF.

The CISE Division of Computer and Network Systems (CNS) and EHR Division of Research on Learning in Formal and Informal Settings (DRL) will be responsible for receiving submitted proposals, determining compliance of proposals with the guidelines specified in the program solicitation, selecting proposals for NSF funding, and negotiating the award budgets. Once NSF’s decisions on funding have been made, relevant partner(s) will be able to choose to co-fund any of the awards submitted for their consideration.

An updated list of partners, including partner-specific eligibility requirements, will be maintained on the CSforAll:RPP program webpage.


III. AWARD INFORMATION

Anticipated Type of Award: Standard Grant

Estimated Number of Awards: 24, approximately 10 small, 11 medium, and 3 large awards.

Anticipated Funding Amount: $20,000,000

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

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.

Who May Serve as PI:

There are no restrictions or limits.

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 FastLane, Research.gov, or Grants.gov.

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Proposal & Award Policies & 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
Proposed by the project or a third-party evaluator. The external critical review should be sufficiently independent and rigorous to

- frameworks, as well as data collection, analysis, and reporting plans). These might include an external review panel or advisory board

- Small, Medium or Large projects must describe appropriate mechanisms to assess success through project-specific external review and

- Additionally, these criteria may be considered for Medium and Large projects.

- This program solicitation is particularly interested in broadening participation in CS and CT for groups that have been traditionally

- Additional Criteria:

- All proposals must explicitly address broadening participation with respect to the two

- A summary of the project (one page)

- This box should not be left blank.

- By their very nature, RPPs responding to this solicitation will almost certainly be working with Human Subjects (looking at outcomes for

- Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted

- Compliance with this requirement is critical to determining the relevant proposal processing guidelines.

- Full Proposals submitted via Research.gov: Proposals submitted in response to this program solicitation should be prepared

- Keywords should be prefaced with "Keywords" followed by a colon, and should be separated by semi-colons.

- Please provide between two and six sets of keywords at the end of the overview in the Project Summary. EHR and CISE personnel will

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

- In addition it should list the size class of the proposal (Small, Medium or Large).

- Please provide between two and six sets of keywords at the end of the overview in the Project Summary. EHR and CISE personnel will

- This box should be marked as pending if an IRB is either (1) reviewing the project plan and has not yet determined a ruling of "approved" or "exempt", or (2) the project plan has not yet been submitted to an IRB for review. Additional guidance on the use of Human Subjects is available in the PAPPG, Chapter II.D.5.

- The Project Summary consists of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the

- Please note that the proposal preparation instructions provided in this program solicitation may deviate from the PAPPG instructions.

- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be

- The first line of the Project Summary should identify the proposal strand: High School Strand, PreK-8 Strand, or PreK-12/PreK-14

- The line of the Project Summary should identify the proposal strand: High School Strand, PreK-8 Strand, or PreK-12/PreK-14

- The first line of the Project Summary should identify the proposal strand: High School Strand, PreK-8 Strand, or PreK-12/PreK-14

- The first line of the Project Summary should identify the proposal strand: High School Strand, PreK-8 Strand, or PreK-12/PreK-14
influence the project's activities and improve the quality of its findings. Successful proposals will (1) describe the expertise of the external reviewer(s); (2) explain how that expertise relates to the goals and objectives of the proposal; and (3) specify how the PI will report and use results of the project's external, critical review process. Proposers may wish to consider resources on evaluating RPPs, such as http://rpp.wtgrantfoundation.org/evaluating-research-practice-partnerships.

For Small size class proposals, the Project Description must describe:

- what is known about the issue to be investigated;
- the contributions of collaborators representing multiple perspectives;
- how the development of the collaboration will have the potential to result in a future RPP with education researchers, experts in CS/CT and schools or districts;
- the steps to build effective collaborations for achieving the project goals;
- the evaluation plan, and
- the steps and actions to further refine and develop the research question(s) and methods or design and development approaches, leveraging the expertise of the collaborators.

SPECIAL INFORMATION AND SUPPLEMENTARY DOCUMENTS:

List of Project Personnel

In addition to guidance provided in the PAPPG on required Special Information and Supplementary Documents, provide current, accurate information for all personnel and institutions involved in the project. NSF staff will use this information in the merit review process to manage reviewer selection. The list should include all PIs, Co-PIs, Senior Personnel, paid/unpaid Consultants or Collaborators, Subawardees, Postdocs, and project-level advisory committee members. This list should be numbered and include (in this order) Full name, Organization(s), and Role in the project, with each item separated by a semi-colon. Each person listed should start a new numbered line. For example:

- Mary Smith; XYZ University; PI
- John Jones; University of PQR; Senior Personnel
- Jane Brown; XYZ University; Postdoc
- Bob Adams; ABC Community College; Paid Consultant
- Susan White; DEF Corporation; Unpaid Collaborator
- Tim Green; ZZZ University; Subawardee

SINGLE COPY DOCUMENTS:

Collaborators and Other Affiliations Information:

Proposers should follow the guidance specified in Chapter II.C.1.e of the NSF PAPPG. Grants.gov Users: The COA information must be provided through use of the COA template and uploaded as a PDF attachment.

Note the distinction to the Project Personnel specified above under Special Information and Supplementary Documents: the listing of all project participants is collected by the project lead and entered as a Supplementary Document, which is then automatically included with all proposals in a project. The Collaborators and Other Affiliations are entered for each participant within each proposal and, as Single Copy Documents, these are available only to NSF staff.

SUBMISSION CHECKLIST

In an effort to assist proposal preparation, the following checklists are provided as a reminder of the items that should be checked before submitting a CSforAll:RPP proposal to this solicitation. These are a summary of the requirements described above. For the items marked with (RWR), the proposal will be returned without review if the required item is noncompliant at the submission deadline. Note that there are five lists: (1) for all proposals, unique to this solicitation; (2) for all proposals, selected items from the PAPPG; (3) additional requirements for Small proposals; (4) additional requirements for Medium proposals; and (5) additional requirements for Large proposals.

For all proposals, regardless of size:

- On the cover sheet, mark the Human Subjects box as pending, approved, or exempted (with exemption subsection indicated). This box should not be left blank. The Human Subjects box should be marked as pending if an IRB is either (1) reviewing the project plan and has not yet determined a ruling of "approved" or "exempt"; or (2) the project plan has not yet been submitted to an IRB for review. Additional guidance on the use of Human Subjects is available in the PAPPG, Chapter II.D.5.
- The first line of the overview of the Project Summary must indicate the proposal strand and size class from among the options specified in the Program Description of this solicitation.
- The last line of the Project Summary should consist of the word “Keywords” followed by a colon and between 2-6 keywords, separated by semi-colons.
- In addition to addressing Intellectual Merit and Broader Impacts, all proposals must address the two additional broadening participation criteria listed above under “Project Description.
- Letters of Collaboration are permitted as Supplementary Documents. Letters of Support are not allowed; reviewers will be instructed not to consider those letters in reviewing the merits of the proposal.
- (RWR) All proposals must address evaluation plans.

For Small proposals:

- (RWR) The budget shown on the cover page and on the budget sheets must not exceed $300,000, plus funds for embedded REU supplements.

For Medium proposals:

- (RWR) The budget shown on the cover page and on the budget sheets must not exceed $1,000,000, plus funds for embedded
REU supplements.

For Large proposals:

- (RWR) The budget shown on the cover page and on the budget sheets must not exceed $2,000,000, plus funds for embedded REU supplements.

Proposals that do not comply with the requirements will be returned without review.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Budget Preparation Instructions:

Projects should budget to have two members attend a meeting of principal investigators annually.

C. Due Dates

- Full Proposal Deadline(s) (due by 5 p.m. submitter’s local time):
  - May 09, 2018
  - February 12, 2019
  - Second Tuesday in February, Annually Thereafter

D. FastLane/Research.gov/Grants.gov Requirements

For Proposals Submitted Via FastLane or Research.gov:

To prepare and submit a proposal via FastLane, see detailed technical instructions available at: https://www.fastlane.nsf.gov/a1/newstan.htm. 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 FastLane or Research.gov user support, call the FastLane and Research.gov Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov or rgov@nsf.gov. The FastLane and Research.gov Help Desk answers general technical questions related to the use of the FastLane and Research.gov systems. 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: http://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 FastLane or 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
When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they can better understand their intent. 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.

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
After programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants.

The review and selection process involves several key steps:

1. **Scientific, Technical, and Programmatic Review**: Proposals are reviewed by reviewers and panelists, who consider specific criteria to recommend funding.

2. ** CSforAll:RPP Specific Review Criteria**: The review includes additional criteria to address broader impacts, such as broadening participation, and enhancing diversity and inclusion.

3. **Broader Impacts**: The NSF strives to ensure that proposals not only advance scientific knowledge but also contribute to societal outcomes.

4. **Co-Funding Opportunities**: Proposals may be co-funded by NSF and other agencies, including DRL and other CSforAll partners.

5. **Data Management Plan**: Proposals are evaluated on the adequacy of data management plans.

6. **Proposals Submitted**: Proposals in response to this solicitation are reviewed by Ad hoc Review and/or Panel Review, or see below for Co-Funding Review.

**New Co-Funding Opportunities for this solicitation**: NSF may enter into partnerships with other agencies, foundations, and organizations for co-funding projects. Interested partners will be contacted by the cognizant NSF program director following receipt of proposals.

**Proposals Submitted**: Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review, or see below for Co-Funding Review.

**Broader Impacts**

**Criteria for Broader Impacts**

- **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**
   - Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
   - 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-organized, 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?**

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

**Additional Solicitation Specific Review Criteria**

This program solicitation is particularly interested in broadening participation in CS and CT for groups traditionally underrepresented or underserved in CS. In addition to considering the two general NSF Merit Review Criteria, reviewers will also be asked to evaluate the following:

1. **Does the proposal identify the characteristics and needs of the identified underrepresented or underserved groups to be addressed?**
2. **Does the proposal include specific plans or strategies for addressing or accommodating the particular needs of participants of the identified underrepresented groups?**

**B. Review and Selection Process**

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review, or see below for Co-Funding Review.

**New Co-Funding Opportunities for this solicitation**: NSF may enter into partnerships with other agencies, foundations, and organizations interested in co-funding projects submitted to this solicitation. Principal Investigators (PIs) on proposals that meet the general eligibility requirements of one or more of these partners will be contacted by the cognizant NSF program director following submission of their proposals, and be given the option of having their proposals considered jointly by NSF and the partner(s). If a PI so chooses, a given partner’s representatives will have access to the corresponding proposal, be invited to sit in on the NSF review panel’s discussion of that proposal, and be able to discuss the reviews with the NSF CSforAll:RPP Program Directors. This consideration by one or more partners will be strictly optional; PIs who choose not to avail themselves of this option will have their proposals reviewed solely by the NSF.

The CISE Division of Computer and Network Systems (CNS) and EHR Division of Research on Learning in Formal and Informal Settings (DRL) will be responsible for receiving submitted proposals, determining compliance of proposals with the guidelines specified in the program solicitation, selecting proposals for NSF funding, and negotiating the award budgets. Once NSF’s decisions on funding have been made, relevant partner(s) will be able to choose to co-fund any of the awards submitted for their consideration.

An updated list of partners, including partner-specific eligibility requirements, will be maintained on the CSforAll:RPP program webpage.

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 specific 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) 292-7827 or by e-mail from nsfpubs@nsf.gov.


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.


Projects will be required to maintain a website, attend annual PI meetings, and participate in a common evaluation where appropriate.
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:

- Janice Cuny, Program Officer, CISE/CNS, telephone: (703) 292-8489, email: jcuny@nsf.gov
- Karen King, Program Director, EHR/DRL, telephone: (703) 292-5124, email: kking@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 http://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**
  (NSF Information Center):
  (703) 292-5111
- **TDD (for the hearing-impaired):**
  (703) 292-5090
- **To Order Publications or Forms:**
  Send an e-mail to: nsfpubs@nsf.gov
  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; 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 Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004). 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:

Suzanne H. Plimpton
Reports Clearance Officer
Office of the General Counsel
National Science Foundation
Alexandria, VA 22314