NSF 24-555: Computer Science for All

Program Solicitation

Document Information

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National Science Foundation

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

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

June 04, 2024

February 12, 2025

Second Wednesday in February, Annually Thereafter

Important Information And Revision Notes

- The list of cognizant program officers has been updated.
- The descriptions of Small RPP strand and Research strand projects have been updated.

Any proposal submitted in response to this solicitation should be submitted in accordance with the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) that is in effect for the relevant due date to which the proposal is being submitted. The NSF PAPPG is regularly revised and it is the responsibility of the proposer to ensure that the proposal meets the requirements specified in this solicitation and the applicable version of the PAPPG. Submitting a proposal prior to a specified deadline does not negate this requirement.

Summary Of Program Requirements

General Information

Program Title:

Computer Science for All (CSforAll: Research and RPPs)

Synopsis of Program:

This program aims to provide *all* U.S. students with 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 both research and research-practice partnerships (RPPs) that foster the research and development needed to bring CS and CT to all schools. Specifically, this solicitation aims to provide (1) **high school teachers** with the preparation, professional development (PD) and ongoing support they need to teach rigorous computer science courses; (2) **preK-8 te**achers with the instructional materials and preparation they need to integrate CS and CT into their teaching; and (3) **schools and districts** with 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.

- Allyson Kennedy, CISE/CNS, telephone: (703) 292-8950, email: aykenned@nsf.gov
- Fengfeng Ke, EDU/DRL, telephone: (703) 292-2411, email: fke@nsf.gov
- Jeffrey Forbes, CISE/CNS, telephone: (703) 292-8950, email: jforbes@nsf.gov
- Michael Ford, EDU/DRL, telephone: (703) 292-5153, email: miford@nsf.gov
- Margaret Hjalmarson, EDU/DRL, telephone: (703) 292-5186, email: mhjalmar@nsf.gov

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

- 47.070 --- Computer and Information Science and Engineering
- 47.076 --- STEM Education

Award Information

Anticipated Type of Award: Standard Grant

Estimated Number of Awards: 27

Approximately 12-13 small Research-Practice Partnerships (RPPs), 6 medium RPPs, 3 large RPPs, and 4-5 Research strand awards.

Anticipated Funding Amount: $20,000,000

Subject to the availability of funds

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.
- Non-profit, non-academic organizations: Independent museums, observatories, research laboratories, professional societies and similar organizations located in the U.S. that are directly associated with educational or research activities.
- Tribal Nations: An American Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges as a federally recognized tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. §§ 5130-5131.

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:**
    - 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:**

    Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

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

    June 04, 2024

    February 12, 2025

    Second Wednesday in February, Annually Thereafter

Proposal Review Information Criteria

Merit Review Criteria:

National Science Board approved criteria. Additional merit review criteria 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.

I. Introduction

The goal of this program is to provide *all* U.S. students with the opportunity to participate in computer science (CS) and computational thinking (CT) education in their schools at 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)[1]. CS, as used in this solicitation, includes CT but also the broad range of understandings, competencies, and skills needed to apply computation in our digital world. It includes long-standing as well as emerging topics of problem specification and representation; algorithm development; software design, programming, and debugging; the Internet and networking; big data; cybersecurity; artificial intelligence; microelectronics; and application across a wide range of disciplines, including the associated societal impact and ethical considerations[2]. As the lead Federal agency for building the research knowledge base for CS and CT education, NSF aims to build upon past and ongoing efforts to enable rigorous and engaging CS and CT education in schools across the Nation.

II. Program Description

A. Program Characteristics

This program supports efforts that aim to provide opportunities for *all* students to participate in CS and CT learning at the pre-k, elementary, middle, and high school grade levels through research-practice partnerships (RPPs) that connect research to practice through long running and diverse collaborations. The program also supports traditional research that builds knowledge across educational pathways. Proposals are encouraged from teams in early stages of RPP formation, as well as advanced stages of RPP implementation. Proposals will be funded in four "strands" that collectively foster design, implementation at scale, and/or research:

- For the **PreK-8 Strand**, the focus is on designing, developing, and piloting instructional materials that integrate CS and/or CT into preK-8 classrooms.
- For the **High School Strand**, the focus is on preparing and supporting teachers to teach rigorous CS courses.
- For **PreK-12 Pathways Strand**, the focus is on designing pathways that support school districts in developing policies and supports for incorporating CS and/or CT across all grades and potentially the transition into introductory levels at community or four-year institutions of higher education and/or the workforce.
- For the **Research Strand**, the focus is on building strategically instrumental, or "high leverage" knowledge about the learning and teaching of introductory computer science to support key CS and/or CT understandings and abilities for all students.

Proposals in the **PreK-8 Strand, High School Strand, and the Pathways Strand** must involve RPPs, whereas proposals in the **Research Strand** are not subject to this requirement. A proposal can be submitted to only one strand, and that strand must be designated in the first line of the Project Summary.

To ensure that advances in computing education are inclusive of diverse student populations (the "for All" part of "CS for All"), proposals in any strand **must** address, in a significant manner, longstanding underrepresentation of many groups in computing relative to their participation in preK-12, postsecondary education, and the workforce (https://ncses.nsf.gov/pubs/nsf23315). **All proposals will be evaluated on the two additional Broadening Participation Criteria specific to this solicitation (see Section V.A, Project Description, below).**

B. CSforAll RPP strands

RPPs require well-organized teams of researchers, PreK-12 practitioners (teachers, administrators, and counselors), and potentially other community, foundation, policy, and industry partners. There are many ways RPP teams can work together; however, central to the partnership is shared participation in rigorous research about problems of practice by all team members. Members of these teams *work together to iteratively define and refine common goals, research questions,*

metrics, and implementations. RPPs vary across several dimensions, such as their goals, the composition of participating partners, and the approaches to and uses of research. However, they share a set of principles [3]:

- They are long-term collaborations;
- They work toward educational improvement or equitable transformation;
- They feature engagement of research with practice as a leading activity; and
- They are intentionally organized to bring together a diversity of expertise.

RPPs aim to strengthen the capacity of an organization to reliably produce valued CS and CT education outcomes for diverse groups of students. The focus is on building efforts that can succeed when implemented at scale. RPPs involve a range of stakeholders in different stages of inquiry, and research findings from the field are translated into practical use, just as practical challenges can motivate articulation of solutions and subsequent sharing of those with the field.

1. PreK-8 Strand. RPPs proposed in this strand may address a wide range of topics on the teaching and learning of CS and CT in PreK-8 grades, including but not limited to:

- development and study of prototype instructional materials for PreK-8 both for stand-alone CS and CT courses or modules as well as teaching and testing of CS and CT concepts with other content;
- development of tools and models to support underrepresented students, including girls, in prekindergarten through elementary school in computer science education;
- creation of developmentally appropriate learning progressions that underlie the design of instructional materials;
- design of classroom-based assessments to inform teaching and learning along the way;
- development of professional development (PD) and teacher support — including face-to-face and online learning communities, coaching, and mentoring — as needed for piloting of instructional materials, along with research about their use and effectiveness;
- what and how teachers learn from professional development; and
- relationships between professional development activities and subsequent enactments of instruction.

RPPs focused on innovation in research and development of instructional materials for preK-8 are encouraged, and PIs should make a clear case that curricula and materials do not currently exist to address the teaching and learning of CS and CT in the relevant grade levels or cannot be adapted to those contexts. Strong proposals will document how the new curricula or instructional materials differ in significant ways from already available materials and tools.

2. 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 teachers, many of whom have had little or no formal CS preparation. Additional issues include but are not limited to:

- recruitment of teachers;
- differential PD based on prior experiences;
- creating robust PD materials for teachers and facilitators;
- establishing online and hybrid PD approaches;
- assessing the effectiveness of PD models with respect to content knowledge, pedagogy, classroom equity, and student outcomes;
- adapting and scaling PD models for greater impact, especially with respect to inclusion and equity;
- establishing certification programs and pre-service paths for teacher PD;
- undertaking studies to inform state or local policy about CS requirements; or
- designing, piloting and assessing scalable mechanisms for ongoing support of classroom teachers.

Whereas the focus of the High School Strand is RPPs conducting implementation and improvement research on teacher preparation and support, it is possible within a project to adapt or enhance instructional materials for high school students. PIs are encouraged to focus their RPPs on studying supports for teachers who are interested in using instructional materials that already have been developed and piloted and are now scaling nationally, such as Exploring Computer Science (ECS), curricula based on the Advanced Placement® (AP) Computer Science courses and exams, or Bootstrap, the curriculum for teaching mathematics and CS together. Proposals could develop and study curricula for integrating modules on artificial intelligence, machine learning, or data science into existing computer science courses. Strong proposals will document the wide use of the proposed instructional materials with diverse students, include any available results about their effectiveness as part of the argument for focusing on the materials of choice, and will address how findings from the research will inform practitioners' choices about CS and/or CT materials.

3. PreK-12 Pathways Strand. Many districts have begun to make progress at the elementary, middle, and high school levels but need to coordinate the overall efforts, particularly to address articulation across the years of schooling. RPPs proposed in this strand may address the creation of pathways, including but not limited to:

- research and development of course sequences and alignment tools for students for PreK-12 Pathways at the school or district level;
- research and development of articulation from preK-12 Pathways to community or four-year colleges or universities in preparation for entry into CS or computationally intensive majors; or
- design and development of school, district, and/or state systems to assess and track student progress on pathways.

High-quality proposals in any of the above three RPP strands will:

- delineate clearly the CS/CT content to be taught;
- address working with communities that support the full spectrum of diverse computing talent, including the participation of groups that have been traditionally underrepresented or under-served in computing; demonstrating knowledge of the relevant literature on working with the identified communities, and providing concrete plans of action and clear metrics for documenting outcomes[4];
- document the extent to which the approach has already scaled and its potential for further scaling;
- specify jointly-developed research questions and document the investment of the partners in those questions;
- provide work plans for implementation, improvement, data collection, analysis, and use; and
- draw from RPP literature on assessing/evaluating the quality of the partnership to articulate plans for assessing the success of the work of the RPP.

Projects in the RPP Strands above should provide research results or findings on one or more of the following:

- strategies for improvement or implementation that address a shared goal of the researcher/practitioner collaborators;
- conceptual frameworks that address issues of scale, human capacity, and technical support for implementation and improvement in educational systems;
- measures of organizational learning that assess the progress of implementation and improvement;
- sustainable communities that can support implementation and improvement in the identified educational system; and/or
- documented practices with an ongoing forum for continued engagement of collaborators from various levels of the educational system.

C. CSforAll Research Strand

The aim of the Research Strand is to support the development of evidence-based knowledge that illuminates how the teaching and learning of computing best occurs and how it can be supported most effectively for diverse students under

different circumstances. Like the above three RPP strands, the Research Strand prioritizes a clear relationship between research and practice.

The Research Strand aims to enrich the knowledge base governing how students build on what and how they learn computing throughout their education pathway. Strong Research Strand proposals will support the participation of the full spectrum of diverse computing talent, including groups that have been traditionally underrepresented or under-served in computing relative to their participation in preK-14 education, with the research findings potentially contributing to the preparation of the future CS workforce (for national data, see: https://ncses.nsf.gov/pubs/nsf23315). Proposals should synthesize or demonstrate knowledge of the relevant literature that pertains to roots of underrepresentation, have a plan that explores ways of improving representation, and have clear metrics and methodologies for documenting outcomes that would test and inform that plan.

Areas of research should be considered broadly and can include but are not limited to: How students learn computer science or computational thinking as a literacy like reading and writing; How computational thinking can be supported and what developmental trajectories for CT look like; How computing competencies are learned in contexts of STEM disciplines; longitudinal impacts of computing education experiences in K-14, especially given advances like AI; How computational thinking development can be framed in ways that invite, value, and build on students' diverse cultural and linguistic resources; and What educators need to know and how they learn instructional abilities.

Strong proposals will bring to bear research expertise, approaches, and tools from scholarship on learning from other domains as appropriate, including but not limited to cognitive science, learning sciences, STEM education, social studies education, and ethics education.

D. CSforAll proposal size classes

The proposal size class should be specified in the first line of the Project Summary. Proposals in the three RPP strands may be submitted in the following **size classes**:

- **Small RPP** proposals (maximum of $300,000 for up to 2 years, plus funds for embedded Research Experiences for Undergraduates supplements) are designed to support initial steps in building a strong and well-integrated RPP team that could successfully compete for a Medium or Large proposal. These initial steps could include: establishing partnerships, exploratory research, and/or pilot implementation programs.
- **Medium RPP** proposals (maximum of $1,000,000 for up to 3 years, plus funds for embedded Research Experiences for Undergraduates supplements) are designed to support promising approaches and feasibility studies by a well-defined RPP team.
- **Large RPP** proposals (maximum of $2,000,000 for up to 4 years, plus funds for embedded Research Experiences for Undergraduates supplements) are designed to support the scaling of an evidence-based approach and implementation studies by an established RPP team that has demonstrated sustainability.

Research Strand proposals (maximum of $750,000 for up to 3 years, plus funds for embedded Research Experiences for Undergraduates supplements) are designed to support research projects that will contribute to the development of an evidence-informed knowledge base that illuminates how learning in the domain of computer science best occurs and how it can be supported most effectively for diverse students under different circumstances. As above, "Research Strand" should be specified in the first line of the Project Summary.

E. Selected Resources

See http://researchandpractice.org/csforall ⬀ or the following links for resources on RPPs:

- https://journals.sagepub.com/doi/10.3102/0013189X16631750 ⬀;
- http://www.carnegiefoundation.org/ ⬀ under Improvement Resources;
- http://rpp.wtgrantfoundation.org/ ⬀;
- http://researchandpractice.org/ ⬀; and

- http://learndbir.org/ ⤴ .

Proposers are encouraged to leverage the resources of national CS Education efforts:

- The Broadening Participation in Computing Alliances: https://bpcnet.org/alliances/ ⤴
- Exploring Computer Science curriculum: http://www.exploringcs.org/ ⤴
- The AP-Computer Science Principles course framework and exam: https://apcentral.collegeboard.org/courses/ap-computer-science-principles ⤴
- Bootstrap curriculum: https://www.bootstrapworld.org/ ⤴

Other Funding Opportunities

The CS for All program is distinct in its focus on K12 computer science education, however other programs might be relevant. For educational research projects that orient toward foundational knowledge, please see also the ECR program. For research projects that are implementing innovations or approaches for K12 STEM education in general, also see DRK12. For workforce focused efforts at K12, also consider ITEST.

References

[1] Denning, P. J. & Tedre, M. (2019). Computational Thinking. Cambridge, MA: MIT Press.

[2] Computer Science Teachers Association (2017). CSTA K-12 Computer Science Standards, Revised 2017. Retrieved from https://csteachers.org/k12standards/ ⤴ .

[3] Farrell, C.C., Penuel, W.R., Coburn, C., Daniel, J., & Steup, L. (2021). Research-practice partnerships in education: The state of the field. William T. Grant Foundation.

[4] https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf20539#one

III. Award Information

Anticipated Type of Award: Standard Grant

Estimated Number of Awards: 27 (approximately 12-13 small RPP, 6 medium RPP, 3 large RPP, 4-5 research) 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:

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain

the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.

- Non-profit, non-academic organizations: Independent museums, observatories, research laboratories, professional societies and similar organizations located in the U.S. that are directly associated with educational or research activities.

- Tribal Nations: An American Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges as a federally recognized tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. §§ 5130-5131.

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 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.E.3 provides additional information on collaborative proposals.

See PAPPG Chapter II.D.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.

Titles of proposals submitted in response to the EducateAI DCL (NSF 24-025) should begin with "EducateAI:"

Required Sections of a Proposal

1. COVER SHEET: proposals responding to this solicitation will likely be working with Human Subjects (looking at outcomes for teachers, students or both). If that is the case, on the cover sheet, mark the Human Subjects box as approved, pending, or exempt (with the exemption number corresponding to one or more of the exemption categories 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 PAPPG, Chapter II.E.5.

2. PROJECT SUMMARY: The Project Summary consists of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the broader impacts of the proposed activity.

Overview: Each proposal must include the following list of "Project Elements":

- Proposal strand
- Size class
- School districts and other institutions involved in the project
- Intended population(s) to be served

Keywords: Please provide between two and six sets of keywords at the end of the overview in the Project Summary. EDU and CISE personnel will use this information in implementing the merit review process. The keywords should describe the main scientific/engineering areas explored in the proposal. Keywords should be prefaced with "Keywords" followed by a colon and should be separated by semi-colons. Keywords should be of the type used to describe research in a journal submission and may include technical areas of expertise necessary to review the proposal.

Intellectual Merit: The statement on intellectual merit should describe the potential of the proposed activity to advance knowledge by including the (1) theoretical or theory-building approach, (2) research questions or problem statement, and (3) methodological approach.

Broader Impacts: The statement on broader impacts should describe the potential of the proposed activity to benefit society and contribute to the achievement of specific, desired societal outcomes.

3. PROJECT DESCRIPTION:

This program solicitation is particularly interested in BPC to support the full spectrum of diverse computing talent, including groups that have been traditionally underrepresented or under-served in computing. 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 intended population(s) to be served?
2. Does the proposal include specific plans or strategies for addressing or accommodating the particular needs of participants of the intended population(s)?

Reviewers will be asked to specifically evaluate the proposal on these two criteria as well as the two standard NSF Merit Review Criteria (Intellectual Merit and Broader Impacts). **Proposals that do not adequately address these additional criteria will be declined.**

RPP Strands

In addition to the guidance provided in the PAPPG on Project Description preparation, the Project Description for **Small** RPP proposals 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.

The Project Description for **Medium and Large** RPP proposals must:

- specify initial, jointly developed research questions and document the contribution of the partners to the proposed work to addressing those questions;
- provide work plans for implementation, data collection, analysis, improvement, and use;
- describe the management and administrative structures with the capacity to administer the program; and
- draw from RPP literature on assessing/evaluating the quality of the partnership to articulate plans for assessing the success of the work of the RPP.

Medium and Large projects in the RPP Strands must include an evaluation plan that describes appropriate mechanisms to assess success through project-specific external review and feedback processes provided by an independent third party. All projects must have external, critical reviews of their designs and activities (including their theoretical frameworks, as well as data collection, analysis, and reporting plans). These might include an external review panel or advisory board proposed by the project or a third-party evaluator. The external critical review should be sufficiently independent and rigorous to influence the project's activities and improve the quality of its findings. Strong proposals will (1) describe the expertise of the individuals engaging in the external review; (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:

Henrick, E., Farrell, C.C., Singleton, C. Resnick, A.F., Penuel, W.R., Arce-Trigatti, P., Schmidt, D., Sexton, S., Stamatis, K., & Wellberg, S. (2023). *Indicators of research- practice partnership health and effectiveness: Updating the five dimensions framework*. National Center for Research in Policy and Practice and National Network of Education Research-Practice Partnerships.

https://osf.io/yvgcn/ [⧉].

https://bpb-us-e1.wpmucdn.com/blogs.rice.edu/dist/0/6401/files/2023/12/RPP-Health-and-Effectiveness-Framework-2023.pdf [⧉]

Research Strand

In addition to the guidance provided in the PAPPG on Project Description preparation, the Project Description for proposals in the Research Strand must describe:

- Clear connections to previous research. Proposals in this strand must be grounded in literature that is arguably relevant to the research questions being pursued.
- Clear research plan. Proposals must include research questions that are compellingly motivated and that would contribute to a knowledge base that supports broadening participation in computer science. Proposals must include a detailed and appropriate plan for how all data will be analyzed to address the research questions. The research plan must be presented with enough detail to allow for its evaluation during review.
- A compelling explanation for how the research plan will fill an important need in the existing knowledge base about learning and teaching of computer science in relation to CSforAll program goals.
- An evaluation plan to assess success, document, and report progress toward the accomplishment of its research goals. Proposals must include plans for soliciting — and addressing — external feedback from an independent third party (e.g., through an advisory board, peer review, or other mechanism).

- A plan for dissemination. Proposals must include a strategy for reaching a broad audience with the findings of the project including, where appropriate, researchers in other fields, practitioners, policy makers, and public audiences

4. SPECIAL INFORMATION AND SUPPLEMENTARY DOCUMENTS:

List of Project Personnel

In addition to guidance provided in the PAPPG on required Special Information and Supplementary Documents, proposals should provide current, accurate information for all personnel and institutions involved in the project, as a supplementary document. 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, funded/unfunded 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 line. For example:

- Mei Lin; XYZ University; PI
- Jak Jabes; University of PQR; Senior Personnel
- Jane Brown; XYZ University; Postdoctoral Researcher
- Rakel Ademas; ABC Inc.; Paid Consultant
- Maria Wan; Welldone Institution; Unfunded Collaborator
- Rimon Greene; ZZZ University; Subawardee

Note the distinction between this and Collaborators and Other Affiliations Information, a Single Copy Document that is required for each individual designated as Senior/Key Personnel on the proposal.

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 and Research 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 non-compliant 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 RPP proposals; (4) additional requirements for Medium RPP proposals; and (5) additional requirements for Large RPP proposals.

For all proposals, regardless of size:

On the cover sheet, mark the Human Subjects box as approved, pending, or exempt (with the exemption number corresponding to one or more of the exemption categories 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.E.5.

The Project Summary must start with an "overview" section that includes a list of "Project Elements", including the proposal strand, size class, school districts and other institutions involved in the project, and issue of underrepresentation to be addressed.

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". A list of Project Personnel should be included as a Supplementary Document.

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.*

Proposals that do not comply with the requirements noted below by RWR will be returned without review.

(RWR) All proposals must address evaluation plans.

(RWR) *For Small RPP projects*:

The budget shown on the cover page and on the budget sheets must not exceed two years or $300,000, plus funds for embedded REU (Research Experiences for Undergraduates) supplements.

(RWR) *For Medium RPP projects*:

The budget shown on the cover page and on the budget sheets must not exceed three years or $1,000,000, plus funds for embedded REU supplements.

(RWR) *For Large RPP projects*:

The budget shown on the cover page and on the budget sheets must not exceed four years or $2,000,000, plus funds for embedded REU supplements.

(RWR) *For Research projects:*

The budget shown on the cover page and on the budget sheets must not exceed three years or $750,000, plus funds for embedded REU supplements

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Other Budgetary Limitations:

Budget restrictions for strands as noted in the section on Submission Checklist

Budget Preparation Instructions:

Projects should budget to have two members attend an in-person meeting of principal investigators annually.

C. Due Dates

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

    June 04, 2024

    February 12, 2025

    Second Wednesday 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/ProposalPreparationa
> For Research.gov user support, call the Research.gov Help Desk at 1-800-381-1532 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 Research.gov for further processing.

The NSF Grants.gov Proposal Processing in Research.gov informational page provides submission guidance to applicants and links to helpful resources including the NSF Grants.gov Application Guide, Grants.gov Proposal Processing in Research.gov how-to guide, and Grants.gov Submitted Proposals Frequently Asked Questions. Grants.gov proposals must pass all NSF pre-check and post-check validations in order to be accepted by Research.gov at NSF.

When submitting via Grants.gov, NSF strongly recommends applicants initiate proposal submission at least five business days in advance of a deadline to allow adequate time to address NSF compliance errors and resubmissions by 5:00 p.m. submitting organization's local time on the deadline. Please note that some errors cannot be corrected in Grants.gov. Once a proposal passes pre-checks but fails any post-check, an applicant can only correct and submit the in-progress proposal in Research.gov.

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 *Leading the World in Discovery and Innovation, STEM Talent Development and the Delivery of Benefits from Research - NSF Strategic Plan for Fiscal Years (FY) 2022 - 2026*. 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.D.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.D.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 and Sharing Plan and the Mentoring Plan, as appropriate.

Additional Solicitation Specific Review Criteria

This program solicitation is particularly interested in BPC to support the full spectrum of diverse computing talent, including groups that have been traditionally underrepresented or under-served in computing. 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 intended population(s) to be served?
2. Does the proposal include specific plans or strategies for addressing or accommodating the particular needs of participants of the intended population(s)?

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.

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: Research and 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 EDU 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 that were submitted for their consideration.

An updated list of partners, including partner-specific eligibility requirements, will be maintained on the CSforAll: Research and 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 proposers whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new recipients 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 or the Division of Acquisition and Cooperative Support 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 an NSF Grants and Agreements Officer. 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.

Administrative and National Policy Requirements

Build America, Buy America

As expressed in Executive Order 14005, Ensuring the Future is Made in All of America by All of America's Workers (86 FR 7475), it is the policy of the executive branch to use terms and conditions of Federal financial assistance awards to maximize, consistent with law, the use of goods, products, and materials produced in, and services offered in, the United States.

Consistent with the requirements of the Build America, Buy America Act (Pub. L. 117-58, Division G, Title IX, Subtitle A, November 15, 2021), no funding made available through this funding opportunity may be obligated for an award unless all iron, steel, manufactured products, and construction materials used in the project are produced in the United States. For additional information, visit NSF's Build America, Buy America webpage.

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 annual project report, and a project outcomes report for the general public.

Failure to provide the required annual or final annual 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 annual 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.

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:

- Allyson Kennedy, CISE/CNS, telephone: (703) 292-8950, email: aykenned@nsf.gov
- Fengfeng Ke, EDU/DRL, telephone: (703) 292-2411, email: fke@nsf.gov
- Jeffrey Forbes, CISE/CNS, telephone: (703) 292-8950, email: jforbes@nsf.gov
- Michael Ford, EDU/DRL, telephone: (703) 292-5153, email: miford@nsf.gov
- Margaret Hjalmarson, EDU/DRL, telephone: (703) 292-5186, email: mhjalmar@nsf.gov

For questions related to the use of NSF systems contact:

- NSF Help Desk: 1-800-381-1532
- 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.

General inquiries regarding this program should be made to: CSFORALLRPP@nsf.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.F.7 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 proposers 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 proposers 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:

Suzanne H. Plimpton
Reports Clearance Officer
Policy Office, Division of Institution and Award Support
Office of Budget, Finance, and Award Management
National Science Foundation
Alexandria, VA 22314

Website policies | Inspector General | Privacy | FOIA | No FEAR Act | USA.gov | Accessibility | Plain language |

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