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NSF Program on Fairness in Artificial Intelligence in Collaboration with Amazon (FAI)

PROGRAM SOLICITATION
NSF 21-585

REPLACES DOCUMENT(S):
NSF 20-566

National Science Foundation

Directorate for Computer and Information Science and Engineering
Division of Information and Intelligent Systems

Directorate for Social, Behavioral and Economic Sciences
Division of Behavioral and Cognitive Sciences

Amazon

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

August 03, 2021

IMPORTANT INFORMATION AND REVISION NOTES

This solicitation is a revision of NSF 20-566, the solicitation for the NSF Program on Fairness in Artificial Intelligence in Collaboration with Amazon. Significant changes include the following:

- The project budget range is now $600,000-$1,000,000 to accommodate expected program subscription and available funding.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) (NSF 20-1), which is effective for proposals submitted, or due, on or after June 1, 2020.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

NSF Program on Fairness in Artificial Intelligence in Collaboration with Amazon

Synopsis of Program:

NSF has long supported transformative research in artificial intelligence (AI) and machine learning (ML). The resulting innovations offer new levels of economic opportunity and growth, safety and security, and health and wellness, intended to be shared across all segments of society. Broad societal acceptance of large-scale deployments of AI systems rely critically on their trustworthiness which, in turn, depends on the ability to assess and demonstrate the fairness (including broad accessibility and utility), transparency, explainability, impartiality, inclusivity, and accountability of such systems. For example, the behavior of algorithms for face recognition, speech, and language, especially when integrated into decision support systems applied across different segments of society, would benefit from new foundational research in fairness of AI systems.

NSF and Amazon are partnering to jointly support computational research focused on fairness in AI, with the goal of contributing to trustworthy AI systems that are readily accepted and deployed to tackle grand challenges facing society. Specific topics of interest include, but are not limited to transparency, explainability, accountability, inclusivity, potential adverse biases (including social biases) and effects, mitigation strategies, algorithmic advances, fairness objectives, validation of fairness, participatory design, and advances in broad accessibility and utility. Funded projects will enable broadened acceptance of AI systems, helping the U.S. to further capitalize on the potential of AI technologies. Although Amazon provides partial funding for this program, it will not play a role in the selection of proposals for award.

Advancing AI is a highly interdisciplinary endeavor drawing on fields such as computer science, information science, engineering, statistics,

mathematics, cognitive science, psychology, sociology, decision science, and economics. Considerations of practice, often derived from the social, behavioral, and economic sciences, can inform new directions for computational science to better realize the benefits of algorithmic and data fairness. As such, NSF and Amazon expect these varied perspectives to be critical for the study of fairness in AI. NSF's ability to bring together multiple scientific disciplines uniquely positions the agency in this collaboration, while building AI that is fair and unbiased is an important aspect of Amazon's AI initiatives. This program supports the conduct of fundamental computer science research into theories, techniques, and methodologies that go well beyond today's capabilities and are motivated by challenges and requirements in real systems.

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. Consistent with this principle of diversity and particularly suitable for the thrust of this program, NSF and Amazon encourage proposals (either independently or in multi-institution collaborations) from investigators at institutions that serve groups historically underrepresented in STEM disciplines.

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.

- Todd Leen, Program Director, CISE/IIS, telephone: (703) 292-8930, email: tleen@nsf.gov
- Sylvia Spengler, Program Director, CISE/IIS, telephone: (703) 292-8930, email: sspengle@nsf.gov
- Steven Breckler, Program Director, SBE/BCS, telephone: (703) 292-7369, email: sbreckle@nsf.gov

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

- 47.070 --- Computer and Information Science and Engineering
- 47.075 --- Social Behavioral and Economic Sciences

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 10 to 12

Award Size: $600,000 up to a maximum of $1,000,000 for periods of up to 3 years.

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

Anticipated Funding Amount: $7,600,000

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 labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

Who May Serve as PI:

The lead PI on each proposal must bring computer science expertise to the research. Computationally focused research efforts informed by socio-technical and social behavioral needs of the field are broadly encouraged.

Individuals affiliated with Amazon may participate in proposals subject to certain limitations and allowances. These limitations and allowances apply to individuals who are currently employed by, consulting for, or on an active agreement to provide services for Amazon. Specifically:

- Such individuals may not participate in their capacity with Amazon.
- Such individuals may participate if they (i) hold a primary appointment at another organization (e.g., a primary academic appointment at an institution of higher education), as applicable to and defined by that organization, and (ii) do so strictly in their capacity at that other organization.

Proposals that violate the above restrictions may be returned without review.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

Limit on Number of Proposals per PI or Co-PI: 1

An individual may participate in at most one proposal as PI, co-PI, or Senior Personnel.

These eligibility constraints will be strictly enforced in order to treat everyone fairly and consistently. In the event that an individual

exceeds this limit, proposals received within the limit will be accepted based on the earliest date and time of proposal submission (i.e., the first proposal received will be accepted and the remainder will be returned without review). This limitation includes proposals submitted by the prime organization and any subawards included as part of a collaborative proposal. **No exceptions will be made.**

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

B. Budgetary Information

- **Cost Sharing Requirements:**

  Inclusion of voluntary committed cost sharing is prohibited.

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

  Not Applicable

- **Other Budgetary Limitations:**

  Not Applicable

C. Due Dates

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

  August 03, 2021

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:

Additional award conditions apply. Please see the full text of this solicitation for further information.

Reporting Requirements:

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

TABLE OF CONTENTS

I. INTRODUCTION

NSF has long supported transformative research in artificial intelligence (AI) and machine learning (ML). The resulting innovations offer new levels of economic opportunity and growth, safety and security, and health and wellness, intended to be shared across all segments of society. Broad acceptance and adoption of large-scale deployments of AI systems relies critically on their trustworthiness which, in turn, depends, on the ability to assess and demonstrate the fairness (including broad accessibility and utility), transparency, explainability, and accountability of such systems. For example, the behavior of algorithms for face recognition, speech, and language, especially when integrated into decision support systems applied across different segments of society, would benefit from new foundational research in fairness of AI systems.

In 2017, the National Academies of Science, Engineering, and Medicine and the Royal Society convened a forum and authored a report on *The Frontiers of Machine Learning*. The report identifies trust, transparency, interpretability, and fairness of algorithmic decision making as some of the most significant societal challenges in designing, evaluating, and deploying AI systems. In 2018, the Computing Community Consortium led *The Frontiers of Fairness in Machine Learning* workshop, exploring the definitions of fairness and causes of unfairness, and identifying the theoretical research agenda aimed at providing a scientific foundation for understanding algorithmic bias. In addition, *The National Artificial Intelligence Research and Development Strategic Plan: 2019 Update* identifies eight strategies for AI research and development, including Strategy 3: Understand and Address the Ethical, Legal, and Societal Implications, which spans efforts aimed at improving fairness, transparency, and accountability (by design), and building ethical AI systems. This solicitation aligns with that strategy.

NSF and Amazon are partnering to jointly support computational research focused on fairness in AI, with the goal of contributing to trustworthy AI systems that are readily accepted and deployed to tackle grand challenges facing society. Specific topics of interest include, but are not limited to transparency, explainability, accountability, inclusivity, potential adverse biases (including social biases) and effects, mitigation strategies, algorithmic advances, fairness objectives, validation of fairness, participatory design, and advances in broad accessibility and utility. Funded projects will enable broadened acceptance of AI systems, helping the U.S. to further capitalize on the potential of AI technologies. Although Amazon provides partial funding for this program, it will not play a role in the selection of proposals for awards.

Advancing AI is a highly interdisciplinary endeavor drawing on fields such as computer science, information science, engineering, statistics, mathematics, cognitive science, psychology, sociology, decision science, and economics. Achieving fairness in AI may be considered a socio-technical challenge. The computer science community has largely focused on statistical metrics for fairness (such as statistical parity, calibration, and so forth); many of which have their roots in the educational testing or occupational fairness assessment communities. In practice, different metrics may result in differing conclusions and leave open the question of which metric is appropriate for a specific task and whether new metrics are needed to support certain tasks. The choice of an appropriate metric goes beyond the technology domain and needs to be informed by perspectives drawn from those who participate in implementation and evaluation: policy makers, resource managers, business leaders, product developers, the justice system, and representatives from government. Furthermore, there is a need for research efforts that seek to incorporate normative and other concepts of fairness into the development, testing, and deployment of AI technologies. As such, NSF and Amazon expect these varied perspectives to be critical for the study of fairness in AI. NSF's ability to bring together multiple scientific disciplines uniquely positions the agency in this collaboration, while building AI that is fair and unbiased is an important aspect of Amazon's AI initiatives. This program supports the conduct of fundamental computer science research into theories, techniques, and methodologies that go well beyond today's capabilities and are motivated by challenges and requirements in real systems.

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. Consistent with this principle of diversity and particularly suitable for the thrust of this program, NSF and Amazon encourage proposals (either independently or in multi-institution collaborations) from investigators at institutions that serve groups historically underrepresented in STEM disciplines.

II. PROGRAM DESCRIPTION

This program will support approaches to AI fundamentals, system development and deployment that ensure benefits are broadly available across all segments of society. To achieve this objective, technologies need to be accepted across groups that differ by factors such as sociocultural identities, age, gender, health status, geography, income, and education. What individuals or groups consider acceptable, and how individuals or groups evaluate trustworthiness, are important for design, evaluation, and deployment. More broadly, methods to assure fairness need to be developed so that, when such methods are applied, they ensure acceptance, trustworthiness, and lack of adverse biases, including social bias.

AI, including ML, raises significant novel challenges around ensuring non-discrimination, due process, and explainability of decision making. Explaining the inference processes of modern ML approaches and algorithms can contribute to a better understanding of the mechanisms that affect fairness, and trust in the algorithms. Likewise, biases introduced by data sampling, data selection, algorithm design, and optimization criteria affect fairness. Hence, research that advances understanding of these factors is encouraged.

This program will support research in a broad array of topics responsive to the overall goals, including but not limited to:

- Designing fairness into AI systems;
- Transparency, explainability, inclusivity, and accountability in AI systems;
- Factors that affect algorithmic trustworthiness;

- Ethical decision-support and decision-making systems;
- Detecting and ameliorating, or designing to prevent, biases in data and algorithms; and
- Ensuring that AI systems are robustly impartial and broadly inclusive.

Specific technical contributions that address programmatic goals might include, but are not limited to:

- Algorithms and representations that can quickly and appropriately adjust to differences in training and test data arising from different population subgroups;
- Theoretical limitations on fairness, for example, proving algorithmically that certain fairness criteria are mutually inconsistent;
- Device interface design approaches that improve human interpretability of technologies and outcomes;
- Approaches that design-in socio-cultural considerations *a priori*, thereby enhancing trustworthiness and broad accessibility and utility for emerging AI and ML advances;
- Algorithmic design choices impacting fairness outcomes in speech, vision, and language applications;
- Metrics and methods for designing, piloting, and evaluating systems that mitigate against adverse biases, including social bias, and ensure fairness, including the use of human-machine collaboration and decision support; and
- Statistical methods for detecting bias in systems as they are operating.

This program supports the conduct of fundamental computer science research into theories, techniques, and methodologies that go well beyond today's capabilities. The research must: (1) be transformative, (2) embed innovations in real systems, and (3) include strong evaluation plans. (See Section V. Proposal Preparation Instructions.) The lead PI on each proposal must bring computer science expertise to the research. Computationally focused research efforts informed by socio-technical and social behavioral needs of the field are broadly encouraged. In considering such systems, proposers are encouraged to be ambitious in formulating their scientific explorations and to consider multiple contexts and to integrate disciplinary perspectives from the social, behavioral, and cognitive science (for example) as needed and appropriate to the scope of the work.

All application areas are encouraged, including but not limited to, speech, language, computer vision, logistics, educational technologies, decision support and decision making. Projects must clearly be driven by fairness considerations and show computational innovation.

Proposers should be aware of other NSF programs. For example, proposals centered on innovations in differential privacy would be more responsive to NSF's Secure and Trustworthy Cyberspace Program.

Proposers must request total project budgets ranging from $600,000 up to a maximum of $1,000,000 for periods of up to 3 years.

Principal Investigator (PI) Meetings

Up to two PI Meetings will be held annually, in Washington, DC, and another domestic location, likely Seattle, WA (or virtually, as required), with participation of at least one PI, co- PI, Senior Personnel, or NSF-approved replacement from each funded project team, along with other representatives from the research community, government, and industry.

As noted in "Budget Preparation Instructions," budgets for all projects must include funding for one or more designated project representatives (PI/co- PI/Senior Personnel or NSF-approved replacement) to attend each PI Meeting during the proposed lifetime of the award.

Broadening Participation

CISE is committed to enhancing the community's awareness of and overcoming barriers to Broadening Participation in Computing (BPC), and to providing information and resources to PIs so that they can develop interest, skills, and activities in support of BPC at all levels of the CISE community (K- 12, undergraduate, graduate, and postgraduate). All PIs are strongly encouraged to include meaningful BPC plans in the Broader Impacts sections of their submitted proposals. More information can be found on the CISE BPC webpage: https://www.nsf.gov/cise/bpc. (For those specifically interested in NSF programs on the science of broadening participation, not in the context of an FAI submission, please see the SBE Science of Broadening Participation webpage: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505235.)

An Additional and Separate Funding Opportunity

Researchers may also consider the Amazon Research Awards program (https://www.amazon.science/research-awards) as another, separate funding opportunity supporting research in fairness in AI.

III. AWARD INFORMATION

It is anticipated that 10 to 12 awards will be made, with an award size of $600,000 up to a maximum of $1,000,000, for periods of up to 3 years.

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 labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

Who May Serve as PI:

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Individuals affiliated with Amazon may participate in proposals subject to certain limitations and allowances. These limitations and allowances apply to individuals who are currently employed by, consulting for, or on an active agreement to provide services for Amazon. Specifically:

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Proposals that violate the above restrictions may be returned without review.

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There are no restrictions or limits.

Limit on Number of Proposals per PI or Co-PI: 1

An individual may participate in at most one proposal as PI, co-PI, or Senior Personnel.

These eligibility constraints will be strictly enforced in order to treat everyone fairly and consistently. In the event that an individual exceeds this limit, proposals received within the limit will be accepted based on the earliest date and time of proposal submission (i.e., the first proposal received will be accepted and the remainder will be returned without review). This limitation includes proposals submitted by the prime organization and any subawards included as part of a collaborative proposal. **No exceptions will be made.**

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 Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.
- Full Proposals submitted via 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.

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

Multi-Organizational Proposals: For collaborative proposals, the proposal must be submitted by one prime organization with funding for all other **participating organizations made through subawards**. See PAPPG Chapter II.D.3.a for additional information. The PI on a proposal to be awarded will be asked to provide contact information for the grants administrator for each organization receiving a sub-award.

Proposals submitted as separately submitted collaborative proposals (as described under PAPPG Chapter II.D.3.b) will be returned without review.

Proposal Titles:

Proposal titles should begin with the acronym “FAI” followed by a colon and then the title. For example, “FAI: Descriptive Title”.

Project Description:

Project Descriptions are limited to 15 pages in length.

In addition to the requirements specified in the PAPPG, the Project Description must include the following separate sections, clearly labeled with the headings used below (i.e., "Transformative research," "Embedding innovation in real systems," and "Evaluation"). Proposals lacking one or more of these sections will be returned without review.

- **Transformative research**
  As the central focus of the Project Description, proposals should describe the challenges that drive fundamental computer science research, incorporating multiple disciplinary perspectives as needed and appropriate to the scope of the work. All proposals should specify the research questions, hypotheses, and challenges that underpin the proposed project and clearly demonstrate its importance to fairness.

- **Embedding innovations in real systems**
  Proposals should describe how the research will include development and testing, pilots, implementations, or deployments in real systems, considering the circumstances and associated challenges with respect to fairness. Describe approaches to the dissemination of research advances, capabilities, and outcomes, with an emphasis on ensuring broad and timely access to such advances and accelerating their societal impact.

- **Evaluation**
  Proposals should describe how progress and outcomes will be evaluated. All proposals should specify the measures or metrics to be used in testing hypotheses and evaluating models and deployments. Describe the methods, measures, and criteria for assessing progress and outcomes appropriate to the proposal.

Supplementary Documents:

In the Supplementary Documents Section, upload the following:

1. A list of Project Personnel and Partner Institutions (required) (Note: In collaborative proposals, the lead organization should provide this information for all participants):

   Provide current, accurate information for all personnel and organizations involved in the project. NSF staff will use this information in the merit review process to manage reviewer selection. The list must include all PIs, co-PIs, Senior Personnel, paid/unpaid Consultants or Collaborators, Subawardees, Postdoctoral Researchers, 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:

   1. Mary Smith; XYZ University; PI
   2. John Jones; University of PQR; Senior Personnel
   3. Jane Brown; XYZ University; Postdoctoral Researcher
   4. Bob Adams; ABC Community College; Paid Consultant
   5. Susan White; DEF Corporation; Unpaid Collaborator
   6. Tim Green; ZZZ University; Subawardee

2. Collaboration Plans (required):

   Since the success of collaborative research efforts are known to depend on thoughtful coordination mechanisms that regularly bring together the various participants of the project, proposals must include a Collaboration Plan of up to 2 pages. The length of and degree of detail provided in the Collaboration Plan should be commensurate with the complexity of the proposed project and be responsive to the themes outlined in Section V.A. Project Description. Where appropriate, the Collaboration Plan might include: 1) the specific roles of the project participants in all organizations involved; 2) information on how the project will be managed across all the investigators, organizations, and/or disciplines; 3) identification of the specific coordination mechanisms that will enable cross-sector, cross-investigator, cross-organization, and/or cross-discipline scientific integration (e.g., yearly conferences, graduate student exchange, project meetings at conferences, use of the grid for videoconferences, software repositories, etc.); and 4) specific references to the budget line items that support collaboration and coordination mechanisms. **If a proposal does not include a Collaboration Plan of up to 2 pages, that proposal will be returned without review**.

3. Data Management Plan (required):

   See Chapter II.C.2.j of the PAPPG for full policy implementation.

   For additional information on the Dissemination and Sharing of Research Results, see: https://www.nsf.gov/bfa/dias/policy/dmp.jsp.

   For specific guidance for Data Management Plans submitted to the Directorate for Computer and Information Science and Engineering (CISE) see: https://www.nsf.gov/cise/cise_dmp.jsp.

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Budget Preparation Instructions:

Budgets for all projects must include funding for one or more designated project representatives (PI/co-PI/Senior Personnel or NSF- approved replacement) to attend each PI Meeting during the proposed lifetime of the award. For budget preparation purposes, PIs should assume two meetings will be held annually, one in the Washington, DC, area and one in another domestic location, likely Seattle, WA.

The budget submitted with the proposal should include all necessary project funds without regard to the two funding organizations; NSF and Amazon will inform selected PIs of the breakdown in funding between the two organizations and will request revised budgets at that point.

C. Due Dates

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

  August 03, 2021

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: https://www.grants.gov/web/grants/applicants.html. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

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

Proposers that submitted via 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

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

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

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Building the Future: Investing in Discovery and Innovation - NSF Strategic Plan for Fiscal Years (FY) 2018 – 2022*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions must recruit, train, and prepare a diverse STEM workforce to advance the frontiers of science and participate in the U.S. technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong science, technology, engineering, and mathematics (STEM) workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

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

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to

promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

1. Merit Review Principles

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

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

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

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

2. Merit Review Criteria

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

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

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

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

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

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

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. NSF values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and other underrepresented groups in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education.

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

Additional Solicitation Specific Review Criteria

- How effectively does the proposal address transformative research responsive to the goals of the program (i.e., fundamental computer science research, incorporating multiple disciplinary perspectives as needed and appropriate to the scope of the work, and contributing to fairness)?
- How effectively does the proposal embed innovations in real systems and address dissemination for broad and timely access to such advances?
- How effectively does the proposal evaluate progress and outcomes?

B. Review and Selection Process

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

NSF will manage and conduct the peer review process for this solicitation; Amazon will not participate in (or observe) the review process or receive proposal information. NSF will only share with Amazon summary-level information that is necessary to evaluate the program, specifically the number of proposal submissions, number of submitting organizations, and numbers of proposals rated across various review categories. Also, NSF will share select information defined in Section VII.B Special Award Conditions for the purpose of Amazon making awards and evaluating the program.

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.)

Funding Support and Budget Revisions

Individual awards selected for joint funding by NSF and Amazon will be funded through separate NSF and Amazon funding instruments. For each such project, NSF support will be provided via an NSF Continuing or Standard Grant and Amazon support will be provided via an Amazon agreement (contract or gift).

The budget submitted with the proposal should include all necessary project funds without regard to the two funding organizations; NSF and Amazon will inform selected PIs of the breakdown in funding between the two organizations, and will request revised budgets at that point.

NSF will share with Amazon the PI and co-PI names, email addresses, institutions/organizations, and the yearly and cumulative NSF budget requests for each institution/organization selected for funding to enable Amazon’s award processing.

Amazon participation in research

At the request of an awardee, or of NSF with the awardee's consent, Amazon researchers may consult on the projects, and may be in a position to host student interns who wish to gain further industry experience. Such personnel will be available to the academic researchers solely for the benefit of the academic researchers and will not attempt to control or direct the research.

- To the extent that Amazon personnel provide expertise at the request of an awardee, such expertise should be understood as advice and not as compulsory for the awardee.
- Amazon does not seek, and the awardee should not share with Amazon, any information that the awardee does not intend to share publicly.
- Amazon may refer awardees to publicly available software (prototypes or products), computing infrastructure, or other support related to its products or research; however, in no case will any awardee be required to use Amazon's offered contributions.

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.

Special Award Conditions:

NSF and Amazon intend to jointly support each project selected for funding through NSF and Amazon's respective awards and agreements. NSF and Amazon will manage its respective awards and agreements at its own discretion.

1. Reports and Meetings

Amazon may require awardees to submit project reports in a format specified by Amazon and participate in phone calls, meetings or on-site reviews. NSF may participate in any Amazon-required meetings or phone calls at its discretion. Awardees will be instructed not to share non-public or otherwise confidential information in any reports, discussions, or presentations with Amazon. NSF project reports will not be shared with Amazon.

2. Intellectual Property (IP), Publishing, and Licensing

NSF and Amazon will require Awardees to agree to distribute all source code that has been authored while working on a Fairness in AI award under a BSD, Apache or other equivalent open source license. Software licenses that require as a condition of use, modification, and/or distribution that the software or other software incorporated into, derived from, or distributed with, the software be licensed by the user to third-parties for the purpose of making and/or distributing derivative works are not permitted. Licenses not appropriate include any version of GNU's General Public License (GPL) or Lesser/Library GPL (LGPL), the Artistic License (e.g., PERL), and the Mozilla Public License. Exceptions to this policy may be granted, subject to the mutual agreement of NSF and Amazon, to address the problem of participation in established open source software projects or standards already licensed under GPL, LGPL, or other copy-left open source licenses.

Fairness in AI projects that generate data or software in performing the work under an award will agree, as a condition of the award, not to incorporate any third-party code or background IP, except by separate prearrangement with NSF and Amazon, into this software that would limit or restrict its ability to be distributed under an open source license.

Awardees may file patent applications, provided that, as part of the NSF grant or Amazon agreement terms, they separately grant to NSF and Amazon a non-exclusive, worldwide, royalty-free, sub-licensable license to all intellectual property rights in any inventions or works of authorship resulting from research conducted under the joint award. Awardees may delay publishing of data and software describing inventions to first permit the filing of patent applications. That said, awardees will promptly publish all results, data, and software generated in performance of the research.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer no later than 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). No later than 120 days following expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

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

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

More comprehensive information on NSF Reporting Requirements and other important information on the administration of NSF awards is contained in the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

Awardees will be required to include appropriate acknowledgment of NSF and Amazon support in reports and/or publications on work performed under an award. An example of such an acknowledgement would be: "This material is based upon work supported by the NSF Program on Fairness in AI in Collaboration with Amazon under Award Title and No. [Recipient enters project title and awards number(s)]. Any opinion, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation or Amazon."

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:

- Todd Leen, Program Director, CISE/IIS, telephone: (703) 292-8930, email: tleen@nsf.gov
- Sylvia Spengler, Program Director, CISE/IIS, telephone: (703) 292-8930, email: sspengle@nsf.gov
- Steven Breckler, Program Director, SBE/BCS, telephone: (703) 292-7369, email: sbreckle@nsf.gov

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

- FastLane and Research.gov Help Desk: 1-800-673-6188

- FastLane Help Desk e-mail: fastlane@nsf.gov
- Research.gov Help Desk e-mail: rgov@nsf.gov.

For questions relating to Grants.gov contact:

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

IX. OTHER INFORMATION

The NSF website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this website by potential proposers is strongly encouraged. In addition, "NSF Update" is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on NSF's website.

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

ABOUT THE NATIONAL SCIENCE FOUNDATION

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

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

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

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the *NSF Proposal & Award Policies & Procedures Guide* Chapter II.E.6 for instructions regarding preparation of these types of proposals.

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

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

About Amazon

Amazon is a Fortune 100 company guided by four principles: customer obsession rather than competitor focus, passion for invention, commitment to operational excellence, and long-term thinking. From packaging engineers to Amazon Go chefs to robotics experts, we employ more than 200,000 people in the U.S and over 560,000 worldwide. We fundamentally believe that scientific innovation is essential. For more information, visit https://www.aboutamazon.com/, https://www.amazon.science/ , and follow @AmazonNews.

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) 292-8134

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

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See System of Record Notices, NSF-50, "Principal Investigator/Proposal File and Associated Records," and NSF-51, "Reviewer/Proposal File and Associated Records." Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton
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Policy Office, Division of Institution and Award Support
Office of Budget, Finance, and Award Management
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