

# Research Visioning for Computer and Information Science and Engineering (CISE): Future Research Directions for the CISE Community (CISE-RV)

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## PROGRAM SOLICITATION NSF 22-567



National Science Foundation

Directorate for Computer and Information Science and Engineering

**Letter of Intent Due Date(s) (required)** (due by 5 p.m. submitter's local time):

May 10, 2022

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

October 05, 2022

## IMPORTANT INFORMATION AND REVISION NOTES

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

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

## SUMMARY OF PROGRAM REQUIREMENTS

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### General Information

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**Program Title:**

Research Visioning for Computer and Information Science and Engineering (CISE): Future Research Directions for the CISE Community (CISE-RV)

**Synopsis of Program:**

Society's reliance on information, communication, computing and cyberinfrastructure in all aspects of daily life increases more and more each day. Innovations in these areas are now central to how we work, live, learn, communicate, shop, travel, socialize and conduct scientific research – a testament to the tremendous progress in computer and information science and engineering in the last 50 years fueled by strong research breakthroughs in all areas including artificial intelligence, hardware, networking, robotics, software, systems, and theory. The unprecedented growth and reach of information, communication, computing and cyberinfrastructure, and the constantly increasing demand for innovations and novel applications presents new fundamental and translational research challenges that need to be addressed. The information, communication, computing and cyberinfrastructure research community needs to stay ahead of the curve in this constantly evolving landscape.

The National Science Foundation's Directorate for Computer and Information Science and Engineering (CISE) seeks to fund a community-driven organization that will identify ambitious new fundamental and translational research directions that align with national and societal priorities and thereby catalyze the computing research community's pursuit of innovative, high-impact research. Specifically, CISE calls on the information, communication, computing and cyberinfrastructure research community to establish a CISE Research Visioning activity (CISE-RV) to facilitate the articulation of compelling long-term research visions and establish multi-directional communication pathways for stakeholders with interest in information, communication, computing and cyberinfrastructure research, including those in academia, industry, government, professional societies, virtual organizations, international entities, and the general public. It is anticipated that through its activities the CISE-RV will strengthen connectivity and increase coordination across these diverse stakeholders and enable rapid and efficient community response to emerging opportunities and areas of national need.

The CISE-RV should have representation from academia, industry, professional societies, and other stakeholders in the CISE fields, and

should be inclusive of all disciplines including computer science, computer engineering, information sciences, cyberinfrastructure, and related fields. Through its proposed activities, the CISE-RV should provide the information, communication, computing and cyberinfrastructure research community with a sustainable process for identifying future research challenges and enabling the CISE research community to speak with a unified voice.

NSF anticipates funding a single award for up to five years, with the funding for each year of the award in the range of \$1,000,000 to \$2,000,000 per year. The CISE-RV in the steady state phase is expected to have a four-year time frame. Proposers that need a startup phase to develop and setup the organizational structure, in addition to the four-year steady state phase, may request up to one year of additional support, thereby requesting up to five years of support. Proposers are encouraged to take into consideration, when developing their proposed budgets, the effort required to start up and maintain steady state, varying annual budget requests accordingly.

**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.*

- Mitra Basu, Division of Computing and Communication Foundations (CCF), telephone: (703) 292-8649, email: [mbasu@nsf.gov](mailto:mbasu@nsf.gov)
- Ralph F. Wachter, Division of Computer and Network Systems (CNS), telephone: (703) 292-8950, email: [rwachter@nsf.gov](mailto:rwachter@nsf.gov)
- Hector Munoz-Avila, Division of Information Intelligent Systems (IIS), telephone: (703) 292-4481, email: [hmunoz@nsf.gov](mailto:hmunoz@nsf.gov)
- Tefvik Kosar, Office of Advanced Cyberinfrastructure (OAC), telephone: (703) 292-7992, email: [tkosar@nsf.gov](mailto:tkosar@nsf.gov)

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

- 47.070 --- Computer and Information Science and Engineering

## Award Information

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**Anticipated Type of Award:** Cooperative Agreement

**Estimated Number of Awards:** 1

NSF anticipates funding a single award for 5 years, subject to the availability of funds.

If a proposal involves multiple organizations, it must be submitted as a single proposal with sub awards: separately submitted collaborative proposals are not permitted.

**Anticipated Funding Amount:** \$5,000,000 to \$9,000,000

NSF anticipates funding a single award for 5 years, subject to the availability of funds, with the funding for each year of the award in the range of \$1,000,000 to \$2,000,000, not to exceed \$2,000,000 in any one year and not to exceed \$9,000,000 in total over 5 years. Proposers are encouraged to take into consideration when developing their proposed budget that expenses necessary to effect and sustain the organization will likely increase from establishment through maintenance phases, consistent with an increasing scope of activities over time.

## Eligibility Information

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**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:**

Either the PI or a co-PI should hold a primary appointment at an institution of higher education accredited in and having a campus located in the US. There is no constraint on the role of the PI within the submitting organization. The proposal must document the PI's experience with leading and managing an organization involving and/or representing diverse constituents from the broad computer science, information science and engineering community.

**Limit on Number of Proposals per Organization: 1**

An organization may submit only one CISE-RV proposal in which it is the lead institution. This limit has been set to ensure that a single organization submits a strong and focused proposal that leverages all the resources available to that organization. In the event that an organization exceeds this limit, proposals will be accepted based on earliest date and time of proposal submission, i.e., the first proposal from that organization will be accepted, and the remainder will be returned without review. No exceptions will be made.

**Limit on Number of Proposals per PI or co-PI: 1**

An individual may be designated as PI or co-PI on at most one project team submitting to this solicitation. In the event that an individual exceeds this limit, proposals will be accepted based on earliest date and time of proposal submission, i.e., the first proposal involving that

individual as a PI or co-PI will be accepted, and the remainder will be returned without review. No exceptions will be made.

## Proposal Preparation and Submission Instructions

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### A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.
- **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](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](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

- **Letter of Intent Due Date(s) (required)** (due by 5 p.m. submitter's local time):

May 10, 2022
- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

October 05, 2022

## Proposal Review Information Criteria

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### 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

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### 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.

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## I. INTRODUCTION

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Society's reliance on information, communication, computing and cyberinfrastructure in all aspects of daily life increases more and more each day. Innovations in these areas are now central to how we work, live, learn, communicate, shop, travel, socialize and conduct scientific research – a testament to the tremendous progress in computer and information science and engineering in the last 50 years fueled by strong research breakthroughs in all computational areas including artificial intelligence, hardware, networking, robotics, software, systems, and theory. The unprecedented growth and reach of information, communication, computing and cyberinfrastructure, and the constantly increasing demand for innovations and novel applications in these areas presents new fundamental and translational research challenges that need to be addressed. The information, communication, computing and cyberinfrastructure research community needs to stay ahead of the curve in this constantly evolving landscape.

The information, communication, computing and cyberinfrastructure research community already conducts visioning exercises in various field areas often in conjunction with technical conferences, professional societies, and government agencies. There is, however, an ongoing pressing need for thought leadership at a holistic level, capable of assessing the directionality of the information, communication, computing and cyberinfrastructure fields broadly, and identifying longer-term (fundamental and translational) research visions and roadmaps that serve as catalysts and enablers for the research community. It is critical that these activities have input and broad support from all relevant stakeholders, and the outcomes and recommendations are widely recognized by the research community.

## II. PROGRAM DESCRIPTION

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NSF's CISE directorate seeks to fund a community-driven organization that will serve as a community proxy responsible for facilitating the identification of compelling research challenges and opportunities emerging within CISE fields and between CISE fields and other fields. An important goal of the organization will be to communicate future research visions across stakeholders with interest in information, communication computing and cyberinfrastructure research including those in academia, industry, government, professional societies, virtual organizations, and the general public.

The proposed CISE-RV should:

- Engage all fields of computer and information science and engineering including emerging areas and applications, and areas overlapping with other science and engineering fields;
- Embrace a diverse organizational model that strives to balance factors like diversity of topics, demography, geography, institution types and departments, and rank/career stages;
- Facilitate the generation of ambitious medium- and long-range (fundamental and translational) research visions that have broad support from the information, communication, computing and cyberinfrastructure research community;
- Enable rapid and efficient community response to emerging opportunities and areas of national and societal need;
- Communicate the research visions and their importance to a wide range of stakeholders including the research community itself, and also others in industry and government, as well as more broadly to the general public; and
- Evaluate outcomes including meetings and workshops, topics considered at these meetings, and effectiveness of communication and dissemination efforts.

A CISE-RV proposal should clearly describe:

- The **organizational structure** for providing leadership and oversight of the CISE-RV activities and outputs, and outline specific diversity goals and plans to achieve the desired goals of the CISE-RV. The CISE-RV proposals should establish a leadership body with members from academia, industry and other relevant stakeholder groups that meets the diversity goals of the organization. The CISE-RV proposals should present innovative organizational structures that are designed to be agile and responsive to constantly evolving priorities and changes in direction. The proposal should provide details on operational support, staff and related expenses for management of logistics, the recruitment of experts, communication of CISE-RV outcomes and products, and community engagement activities. Proposals are expected to describe the technical, leadership, organizational and management expertise of the PIs, but the solicitation does not require prior experience in setting up and running a research visioning organization.
- An **ambitious and forward-looking visioning strategy** to identify mid- to long-term research opportunities that take into account multiple factors including national, international and societal priorities, industrial and commercial needs, research trends within the core CISE fields, and research trends at the intersection of CISE and other science and engineering fields. The proposal should identify visioning areas currently deemed as high priority and justify the reasons for these choices with respect to the visioning strategy. The proposal should describe and justify the different visioning mechanisms to be employed: e.g., visioning workshops, request for information symposia, virtual meetings, ideas labs, conference open-mic sessions, white papers, etc. The proposal should have a broad visioning strategy that has a well-developed and sustainable community engagement component that goes beyond traditional in-person visioning meetings.
- A comprehensive **communication and engagement strategy** for multi-directional communication with the information, communication computing and cyberinfrastructure research community, government, industry, and international stakeholders, and the general public. The CISE-RV is expected to publish high quality meeting reports, white papers, roadmaps, and popular press articles, maintain a website with up-to-date information on accomplishments and activities and access to products; and have a strong social media presence. The proposal should also describe innovative mechanisms for strengthening and growing pathways to engage the whole of the CISE research community in an effort to get broader input for

strategic visioning, build consensus around visioning outcomes, and amplify these outcomes to a broader audience. Proposers are encouraged to include specific plans for broadening participation to include all types of institutions including Research in Undergraduate Institutions and [Minority Serving Institutions](#). Proposals should contain specific activities for multi-directional engagement with thought leaders in (1) academia including conference leadership, research coordination networks, professional societies, and virtual organizations; (2) government entities and committees including federal agencies, the President's Council of Advisors on Science and Technology, the National Academies Computer Science and Telecommunications Board, and the National Coordination Office for Networking and Information Technology Research & Development; and (3) industry including commercial entities in computing, communications and information and emerging areas that consume this technology. Proposers are encouraged to consider dedicated personnel for these engagement activities as needed.

- An **evaluation framework** for assessing the organizational structure, diversity goals, visioning strategy and outcomes, and communication and engagement strategy. This framework should clearly identify the metrics and methods to be used in the evaluation data to be collected and analyzed, and plans on how the evaluation results would inform and improve the various components of the CISE-RV in the short, medium and longer terms. The evaluation component could comprise a self-assessment, an external evaluation, or both. Proposers are encouraged to include funds for evaluation in the budget as needed.

NSF anticipates funding a single award for up to five years, with the funding for each year of the award in the range of \$1,000,000 to \$2,000,000 per year. The CISE-RV in the steady state phase is expected to have a four-year time frame. Proposers that need a startup phase to develop and setup the organization structure, in addition to the four-year steady state phase, may request up to one year of additional support, thereby requesting up to five years of support. Proposers are encouraged to take into consideration, when developing their proposed budgets, the effort required to start up and maintain steady state, varying annual budget requests accordingly.

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### III. AWARD INFORMATION

**Anticipated Type of Award:** Cooperative Agreement

**Estimated Number of Awards:** 1

NSF anticipates funding a single award for 5 years, subject to the availability of funds.

If a proposal involves multiple organizations, it must be submitted as a single proposal with sub awards: separately submitted collaborative proposals are not permitted.

**Anticipated Funding Amount:** \$5,000,000 to \$9,000,000

NSF anticipates funding a single award for 5 years, subject to the availability of funds, with the funding for each year of the award in the range of \$1,000,000 to \$2,000,000, not to exceed \$2,000,000 in any one year and not to exceed \$9,000,000 in total over 5 years. Proposers are encouraged to take into consideration when developing their proposed budget that expenses necessary to effect and sustain the organization will likely increase from establishment through maintenance phases, consistent with an increasing scope of activities over time.

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

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### 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:**

Either the PI or a co-PI should hold a primary appointment at an institution of higher education accredited in and having a campus located in the US. There is no constraint on the role of the PI within the submitting organization. The proposal must document the PI's experience with leading and managing an organization involving and/or representing diverse constituents from the broad computer science, information science and engineering community.

**Limit on Number of Proposals per Organization:** 1

An organization may submit only one CISE-RV proposal in which it is the lead institution. This limit has been set to ensure that a single organization submits a strong and focused proposal that leverages all the resources available to that organization. In the event that an organization exceeds this limit, proposals will be accepted based on earliest date and time of proposal submission, i.e., the first proposal from that organization will be accepted, and the remainder will be returned without review. No exceptions will be made.

**Limit on Number of Proposals per PI or co-PI:** 1

An individual may be designated as PI or co-PI on at most one project team submitting to this solicitation. In the event that an individual

exceeds this limit, proposals will be accepted based on earliest date and time of proposal submission, i.e., the first proposal involving that individual as a PI or co-PI will be accepted, and the remainder will be returned without review. No exceptions will be made.

#### **Additional Eligibility Info:**

The submitting organization should be committed to the advancement of basic research and education in computing, information science and engineering. The PI from the lead institution should consider partnering with co-PIs from other institution types to ensure representation that includes institutions of higher education (with a strong track record in fundamental computing, information science and engineering research) and relevant private and public sector organizations, including industry and professional societies. The submitting organization could be pre-existing or formed for the purpose of establishing the CISE-RV but must be a legal entity eligible to receive federal funding.

Collaborative Proposals: If multiple organizations are involved in a proposal, it must be submitted as a single proposal with subawards. Collaborative proposals arranged as separate submissions from multiple organizations will not be accepted for this solicitation. PAPPG Chapter II.D.3 provides additional information on collaborative proposals.

## **V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS**

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### **A. Proposal Preparation Instructions**

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#### **Letters of Intent (required):**

A Letter of Intent (LOI) is required for all proposals submitted to this solicitation. LOIs are used by NSF to gauge the level of effort for review. They will not be used as pre-approval mechanisms for the submission of proposals, and no feedback will be provided to the submitters. **Proposals submitted without Letters of Intent will be returned without review.**

The Letter of Intent should be submitted no later than the deadline specified in this solicitation. The subject heading of the letter should include the title of the proposal and the name of the lead organization. Each LOI must include the following:

- **Project Title:** The title must begin with "CISE-RV".
- **Project Synopsis** (up to 2500 characters): In the Synopsis section, provide a brief summary of the project, including the organizational and management principles for the CISE-RV.
- **The Team:** In the Other Comments section, provide (1) The name and departmental affiliation (if any) of the Principal Investigator (PI). (2) The name(s) and departmental affiliation(s) (if any) of the Co-PI(s) and all senior personnel. (3) The names(s) of any additional participating institutions or organizations, including all sub-awardees.

If multiple organizations are involved in a project, the LOI should be submitted by the lead organization. Only one LOI may be submitted per project, and the LOI must be specific to the project, project title and PI.

#### **Letter of Intent Preparation Instructions:**

When submitting a Letter of Intent through Research.gov in response to this Program Solicitation please note the conditions outlined below:

- Submission by an Authorized Organizational Representative (AOR) is required when submitting Letters of Intent.
- Submission of multiple Letters of Intent is not permitted

**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](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](mailto: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](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](mailto: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.

#### **For this solicitation, the following supplementary guidance is provided:**

**Collaborative Proposals:** If multiple organizations are involved in a proposal, it must be submitted as a single proposal with subawards. Collaborative proposals arranged as separate submissions from multiple organizations will not be accepted for this solicitation. PAPPG Chapter II.D.3 provides additional information on collaborative proposals.

**Investigators and Institutions:** The Principal Investigator and Lead Institution should be identical in the Letter of Intent and in the Full Proposal. However, additional personnel and participating institutions/organizations may be included in the Full Proposal that were not listed in the Letter of Intent.

**Proposal Title:** The title must include the prefix “CISE-RV”. Minor alterations in title between the Letter of Intent and Full Proposal are permitted.

**Project Description (up to 20 pages):** In addition to the guidance provided in the NSF PAPPG, including the requirement for a separate section labeled “Broader Impacts”, the following sections should be included in the Project Description (included in the 20-page limit):

*Organizational Structure and Project Staffing:*

1. Describe the CISE-RV’s relationship to the proposing organization.
2. Explain how CISE-RV will be developed to ensure that the broad research interests of the information, communication, computing and cyberinfrastructure research community are represented. Proposers are encouraged to engage the broadest range of stakeholders, including representatives of academia, industry, professional societies, and other stakeholders in the CISE fields. Community engagement plan should encompass diversity of discipline, demography, geography and institution types and departments and career stages, and is expected to include key CISE fields.
3. Provide a leadership and executive structure. Describe the selection process for leaders and executives.
4. Discuss the administrative and organizational structure of the CISE-RV, including any necessary advisory, administrative and expert support activities.
5. Describe the relevant qualifications of the PI, co-PI, and other senior personnel.
6. Describe the roles of sub-awardees and/or consultants (if any).

*Visioning Strategy:*

1. Describe a broad visioning strategy that has a well-developed and sustainable virtual engagement component that goes beyond traditional in-person visioning meetings.
2. Identify visioning areas currently deemed as high priority and justify the process for selecting these areas with respect to the overall visioning strategy.
3. Describe and justify the different visioning mechanisms to be employed: e.g. visioning workshops, requests for information, symposia, virtual meetings, ideas labs, conference open-mic sessions, white papers, roadmaps, etc.

*Communication and Engagement Strategy:*

1. Describe specific activities for multi-directional engagement with stakeholders in academia, conference leadership, government agencies, industry, research coordination networks, professional societies, virtual organizations and the general public.
2. Describe how project outcomes will be disseminated, including publishing high quality meeting reports, white papers, roadmaps, popular press articles; and establishing a website with up-to-date information on accomplishments and activities and access to products, as well as how the organization will maintain a strong social media presence.
3. Describe mechanisms for strengthening and growing pathways to engage the CISE research community in an effort to get broader input for strategic visioning, build consensus around visioning outcomes, and amplify these outcomes to a broader audience.

*Evaluation Plan:*

1. Describe the evaluation framework that will be used to assess the impact of CISE-RV visioning and communication strategies.
2. Describe and justify the proposed metrics and methods that will be employed.

**Budget and Budget Justification:** It is anticipated that expenses necessary to effect and sustain this organization will increase from establishment through maintenance phases, consistent with an increasing scope of activities over time. Proposers are encouraged to take this into consideration when developing their proposed budget.

**Facilities, Equipment and Other Resources:** Describe physical space, resources and infrastructure that will be available to support the work of the CISE-RV, including office equipment, teleconference and communications capabilities, and institutional meeting space necessary to achieve project goals.

**Supplementary Documents:**

1. Provide, as a supplementary documentation of collaborative arrangements of significance to the proposal through **Letters of Collaboration** (if applicable) for each partner who will participate in the CISE-RV. There are two types of collaboration, one involving individuals/organizations that are included in the budget, and the other involving individuals/organizations that are not included in the budget. Collaborations that are included in the budget should be described in the Project Description. Any substantial collaboration with individuals/organizations not included in the budget should be described in the Facilities, Equipment and Other Resources section of the proposal (see NSF PAPPG Chapter II.C.2.i). In either case, whether or not the collaborator is included in the budget, a letter of collaboration (not to exceed two pages) from each named participating organization other than the submitting lead, non-lead, and/or subawardee organizations should be provided at the time of submission of the proposal. Such letters should explicitly state the nature of the collaboration, appear on the organization’s letterhead and be signed by the appropriate organizational representative. These letters must not otherwise deviate from the format provided in the NSF PAPPG Chapter II.C.2.j. Please note that letters of support may not be submitted. Such letters do not document collaborative arrangements of significance to the project, but primarily convey a sense of enthusiasm for the project and/or highlight the qualifications of the PI or co-PI. Reviewers will be instructed not to consider these letters of support in reviewing the merits of the proposal.
2. Provide, as a supplementary document, a table that describes the following for each member of the management team, including all sub-awardees and consultants: Name, Administrative Position/Project Title, Activities Assigned, Proposed Level of Effort, Responsibilities for Achievement of Key Milestones and Outcomes.

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## **B. Budgetary Information**

**Cost Sharing:**

Inclusion of voluntary committed cost sharing is prohibited.

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## **C. Due Dates**

- **Letter of Intent Due Date(s) (required)** (due by 5 p.m. submitter's local time):

May 10, 2022

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

October 05, 2022

## D. Research.gov/Grants.gov Requirements

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### For Proposals Submitted Via Research.gov:

To prepare and submit a proposal via Research.gov, see detailed technical instructions available at: [https://www.research.gov/research-portal/appmanager/base/desktop?\\_nfpb=true&\\_pageLabel=research\\_node\\_display&\\_nodePath=/researchGov/Service/Desktop/ProposalPreparationandSubmission.html](https://www.research.gov/research-portal/appmanager/base/desktop?_nfpb=true&_pageLabel=research_node_display&_nodePath=/researchGov/Service/Desktop/ProposalPreparationandSubmission.html). For Research.gov user support, call the Research.gov Help Desk at 1-800-673-6188 or e-mail [rgov@nsf.gov](mailto: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](mailto:support@grants.gov). The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

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

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

## VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

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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/](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

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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

Reviewers will be asked to comment explicitly on the issues discussed below for each proposal:

#### Organizational Structure

- Is the organization and management structure sufficient to meet the project goals? Does the organizational structure involve the necessary stakeholder range? Does the submitting organization have experience with similar types of projects? How qualified are the PIs and other named personnel to meet the project goals? Are appropriate milestones and associated activities included?
- Does the submitting organization have access to appropriate physical space, resources, and infrastructure to achieve the goals of the CISE-RV?
- Does the proposal have a viable plan to engage thought leaders from relevant (1) academia; (2) government entities; and (3) industry?

#### Visioning Strategy

- How well does the submitting organization represent the broad information, communication computing and cyberinfrastructure research community, particularly academic and industry communities including the communities supported by the CISE Directorate? Is the proposed organization sufficiently

- broad to play a community proxy role?
- Does the proposing team have the appropriate perspective on current CISE research activities and priorities?
- Are the proposed visioning approaches/activities well-positioned to catalyze the identification of bold and high-impact (fundamental and translational) research directions?
- Does the proposal include effective and timely mechanisms for gathering from the CISE research community and other stakeholders critical information and insights on future research directions?

#### Communication and Engagement Strategy

- Does the proposal include a clear and compelling plan for communicating future research visions to all relevant stakeholders?

#### Evaluation Framework

- Does the proposal include a credible evaluation plan with appropriate metrics?

## B. Review and Selection Process

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

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

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

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### A. Notification of the Award

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Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process.)

### B. Award Conditions

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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](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](mailto: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](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg).

#### Special Award Conditions:

#### Ensuring Adequate COVID-19 Safety Protocols

- a. This clause implements Section 3(b) of Executive Order 14042, Ensuring Adequate COVID Safety Protocols for Federal Contractors, dated September 9, 2021 (published in the Federal Register on September 14, 2021, 86 FR 50985). Note that the Department of Labor has included “cooperative agreements” within the definition of “contract-like instrument” in its rule referenced at Section 2(e) of this Executive Order, which provides:

For purposes of this order, the term “contract or contract-like instrument” shall have the meaning set forth in the Department of Labor’s proposed rule, “Increasing the Minimum Wage for Federal Contractors,” 86 Fed. Reg. 38816, 38887 (July 22, 2021). If the Department of Labor issues a final rule relating to that proposed rule, that term shall have the meaning set forth in that final rule.

- b. The awardee must comply with all guidance, including guidance conveyed through Frequently Asked Questions, as amended during the performance of this award, for awardee workplace locations published by the Safer Federal Workforce Task Force (Task Force Guidance) at <https://www.saferfederalworkforce.gov/contractors/>
- c. *Subawards*. The awardee must include the substance of this clause, including this paragraph (c), in subawards at any tier that exceed the simplified acquisition threshold, as defined in Federal Acquisition Regulation 2.101 on the date of subaward, and are for services, including construction, performed in whole or in part within the United States or its outlying areas. That threshold is presently \$250,000.
- d. *Definition*. As used in this clause, *United States or its outlying areas* means:
1. The fifty States;
  2. The District of Columbia;
  3. The commonwealths of Puerto Rico and the Northern Mariana Islands;
  4. The territories of American Samoa, Guam, and the United States Virgin Islands; and
  5. The minor outlying islands of Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Palmyra Atoll, and Wake Atoll.
- e. The Foundation will take no action to enforce this article, where the place of performance identified in the award is in a U.S. state or outlying area subject to a court order prohibiting the application of requirements pursuant to the Executive Order (hereinafter, “Excluded State or Outlying Area”. A current list of such Excluded States and Outlying Areas is maintained at <https://www.saferfederalworkforce.gov/contractors/>.

## C. Reporting Requirements

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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](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg).

The activities of the awardee organization will be monitored through brief monthly reports of financial and technical status, by regularly scheduled teleconferences and quarterly progress reports. Reports should account for the activities of the awardee, sub-awardees and major sub-contractors. In lieu of a fourth quarter report, an annual progress report including future plans will be submitted by the awardee to the cognizant Program Officer. NSF will provide the format for these reports within three months of the award date. Quarterly and annual reports must address progress of the CISE-RV regarding the responsibilities outlined in the Solicitation.

## VIII. AGENCY CONTACTS

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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:

- Mitra Basu, Division of Computing and Communication Foundations (CCF), telephone: (703) 292-8649, email: [mbasu@nsf.gov](mailto:mbasu@nsf.gov)
- Ralph F. Wachter, Division of Computer and Network Systems (CNS), telephone: (703) 292-8950, email: [rwachter@nsf.gov](mailto:rwachter@nsf.gov)
- Hector Munoz-Avila, Division of Information Intelligent Systems (IIS), telephone: (703) 292-4481, email: [hmunoz@nsf.gov](mailto:hmunoz@nsf.gov)
- Tevfik Kosar, Office of Advanced Cyberinfrastructure (OAC), telephone: (703) 292-7992, email: [tkosar@nsf.gov](mailto:tkosar@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](mailto:fastlane@nsf.gov).
- Research.gov Help Desk e-mail: [rgov@nsf.gov](mailto: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](mailto:support@grants.gov).

## IX. OTHER INFORMATION

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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

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

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

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

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <https://www.nsf.gov>

- **Location:** 2415 Eisenhower Avenue, Alexandria, VA 22314
- **For General Information** (NSF Information Center): (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**
  - Send an e-mail to: [nsfpubs@nsf.gov](mailto: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  
Reports Clearance Officer  
Policy Office, Division of Institution and Award Support  
Office of Budget, Finance, and Award Management  
National Science Foundation  
Alexandria, VA 22314

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