

# NSF 24-595: Regional Resilience Innovation Incubator (R2I2)

## Program Solicitation

### Document Information

#### Document History

- **Posted:** August 8, 2024

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#### U.S. National Science Foundation

Directorate for Geosciences

Division of Research, Innovation, Synergies, and Education

Directorate for Technology, Innovation and Partnerships

Innovation and Technology Ecosystems

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

December 16, 2024

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

January 16, 2025



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## Important Information And Revision Notes

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

## Summary Of Program Requirements

### General Information

#### Program Title:

Regional Resilience Innovation Incubator (R2I2)

#### Synopsis of Program:

The Regional Resilience Innovation Incubators (R2I2) is a cross-directorate NSF solicitation led by the Directorate for Geosciences (GEO) and the Directorate for Technology, Innovation and Partnerships (TIP). R2I2 will support community- engaged team science to co-design high-impact solutions to climate-related societal challenges that leverage recent advances in fundamental climate change and Earth system science research. Each R2I2 project will address specific regional climate challenges and will develop and demonstrate solutions to those challenges that can be effectively applied in real- world settings. Investment in R2I2 will leverage past federal investments in addressing climate change and will provide a bridge connecting advancements in basic science with local knowledge, informed decision making, and technological innovations for societal applications.

R2I2 will be implemented in two phases, concept creation and implementation. This solicitation, focused on Phase-1, will fund a series of pilot projects focusing on project concept creation and refinement for solutions specific to a U.S. climate region.

Targeted areas for establishing R2I2 incubators will be based on **ten** climate regions defined by the [Fifth National Climate Assessment](#) (Table 1.1): Northeast, Southeast, U.S. Caribbean, Midwest, Northern Great Plains, Southern Great Plains, Northwest, Southwest, Alaska, and Hawaii & U.S. Affiliated Pacific Islands.

Although geographic diversity will be a factor considered when determining the portfolio of awards, the review process may result in funding multiple projects in one climate region and none in others. Individual R2I2 projects may propose solutions that apply to more than one climate region defined above. This solicitation will also fund an award for the creation of a R2I2 National Office (RNO) to support the collective and coordinated implementation of R2I2 award activities.

NSF envisions the release of a separate solicitation for Phase-2 implementation projects in fiscal year 2026, subject to the availability of funds. Only Phase-1 award recipients will be eligible to submit Phase-2 proposals. Phase-2 awards will be selected based on a merit review of Phase-2 proposals and performance during Phase-1.

### **Broadening Participation In Stem:**

NSF recognizes the unique lived experiences of individuals from communities that are underrepresented and/or underserved in science, technology, engineering, and mathematics (STEM) and the barriers to inclusion and access to STEM education and careers. NSF highly encourages the leadership, partnership, and contributions in all NSF opportunities of individuals who are members of such communities supported by NSF. This includes leading and designing STEM research and education proposals for funding; serving as peer reviewers, advisory committee members, and/or committee of visitor members; and serving as NSF leadership, program, and/or administrative staff. NSF also highly encourages demographically diverse institutions of higher education (IHEs) to lead, partner, and contribute to NSF opportunities on behalf of their research and education communities. NSF expects that all individuals, including those who are members of groups that are underrepresented and/or underserved in STEM, are treated equitably and inclusively in the Foundation's proposal and award process.

NSF encourages IHEs that enroll, educate, graduate, and employ individuals who are members of groups underrepresented and/or underserved in STEM education programs and careers to lead, partner, and contribute to NSF opportunities, including leading and designing STEM research and education proposals for funding. Such IHEs include, but may not be limited to, community colleges and two-year institutions, mission-based institutions such as Historically Black Colleges and Universities (HBCUs), Tribal Colleges and Universities (TCUs), women's colleges, and institutions that primarily serve persons with disabilities, as well as institutions defined by enrollment such as Predominantly Undergraduate Institutions (PUIs), Minority-Serving Institutions (MSIs), and Hispanic Serving Institutions (HSIs).

"Broadening participation in STEM" is the comprehensive phrase used by NSF to refer to the Foundation's goal of increasing the representation and diversity of individuals, organizations, and geographic regions that contribute to STEM teaching, research, and innovation. To broaden participation in STEM, it is necessary to address issues of equity, inclusion, and access in STEM education, training, and careers. Whereas all NSF programs might support broadening participation components, some programs primarily focus on supporting broadening participation research and projects. Examples can be found on the NSF [Broadening Participation in STEM](#) website.

### **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.*

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

- 47.050 --- Geosciences
- 47.084 --- NSF Technology, Innovation and Partnerships

**Award Information**

**Anticipated Type of Award:** Standard Grant or Continuing Grant or Cooperative Agreement

**Estimated Number of Awards:** 17

NSF expects to make up to 16 Phase-1 awards across all regions of the United States of America as a result of this solicitation and 1 award for a R2I2 National Office.

**Anticipated Funding Amount:** \$10,000,000

NSF anticipates a total budget of up to \$10,000,000 will be available in FY 2025 to support Phase-1 proposals and a coordinating office for R2I2 projects, subject to the quality of submitted proposals and the availability of funds.

**Eligibility Information**

**Who May Submit Proposals:**

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.
- Non-profit, non-academic organizations: Independent museums, observatories, research laboratories, professional societies and similar organizations located in the U.S. that are directly associated with educational or research activities.
- For-profit organizations: U.S.-based commercial organizations, including small businesses, with strong capabilities in scientific or engineering research or education and a passion for innovation.
- State and Local Governments
- Tribal Nations: An American Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges as a federally recognized tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. §§ 5130-5131.
- NSF sponsored Federally Funded Research and Development Centers (FFRDCs) may submit proposals provided that they do not include costs for which federal funds have already been awarded or are expected to be awarded.

**Who May Serve as PI:**

The PI and any Co-PIs must hold an appointment at an organization that is eligible to submit as described under "Who May Submit Proposals." At least one PI or Co-PI from a Phase-1 award must be included as a PI or Co-PI on the Phase-2 proposal that is based on that Phase-1 award. The same individual who served as PI for the Phase-1 award does not have to be PI for the Phase-2 proposal, however any change of PI and Co-PI should be fully explained in the Phase-2 proposal.

### Limit on Number of Proposals per Organization:

There are no restrictions or limits.

### Limit on Number of Proposals per PI or co-PI: 2

An individual may participate **as lead PI on at most one proposal** for this solicitation. A lead PI may serve as a Co-PI on one other proposal.

If any individual exceeds this participation limit, any proposal submitted to this solicitation with this individual listed as PI or Co-PI, **after the second proposal is received at NSF**, will be returned without review (RWR). No exceptions will be made.

## Proposal Preparation and Submission Instructions

### 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:**

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

### C. Due Dates

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

December 16, 2024
- **Full Proposal Deadline(s)** (due by 5 p.m. submitting organization's local time):

January 16, 2025

## Proposal Review Information Criteria

### Merit Review Criteria:

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

### **Award Administration Information**

#### **Award Conditions:**

Standard NSF award conditions apply.

#### **Reporting Requirements:**

Standard NSF reporting requirements apply.

## **I. Introduction**

The NSF Directorate for Geosciences (GEO), in partnership with the Directorate for Technology, Innovation, and Partnerships (TIP), seeks to support translation of research into practical, scalable solutions to climate-related regional resilience problems through innovative collaborations. These collaborations must leverage fundamental knowledge gained through recent research investments in climate change and Earth system science in cooperation with local expertise and experience. Each Regional Resilience Innovation Incubator (R2I2) will bring together diverse, interdisciplinary teams of scientists, innovators, community members, policy makers, entrepreneurs, and investors to address climate challenges through the rapid translation of use-inspired research outcomes into real-world deployment-ready solutions. Communities that will benefit most from the potential solutions are expected to actively participate in R2I2 projects. The engagement of individuals from historically excluded groups in STEM is strongly encouraged.

Given the complexity and interconnection of weather and climate impacts, resilient solutions demand [convergent, interdisciplinary research](#) collaborations that bring together a multitude of factors impacting the Earth system. The National Academy of Science, Engineering, and Medicine (NASEM) consensus study on Next Generation [Earth Systems Science at the National Science Foundation](#) [🔗](#) (2022) notes that engagement and partnerships with diverse constituents must be prioritized to benefit society and address Earth systems-related problems at community, state, national, and international scales. As highlighted in the [IPCC AR6 synthesis report](#) [🔗](#), key barriers to climate adaptation include, among other factors, resource limitations, lack of private sector and citizen engagement, limited research and/or slow and low uptake of adaptation science.

The R2I2 program builds on NSF investments in programs such as [Coastlines and People](#), [Navigating the New Arctic](#) and [Dynamics of Socio-Environmental Systems](#). R2I2 projects will complement recent NSF climate change related initiatives such as the [Global Centers](#) for international, interdisciplinary, collaborative research and the [Civic Innovation Challenge](#) which funds research driven by community priorities.

The recently announced [Confronting Hazards, Impacts and Risks for a Resilient Planet Program \(CHIRRP\)](#) invites projects focusing on innovative and transformative research that advances Earth system hazard knowledge and risk mitigation in partnership with affected communities. While R2I2 and CHIRPP both support resilience research, CHIRPP focuses on advancing knowledge whereas R2I2 focuses on solutions and existing scientific knowledge to address climate-related regional resilience problems.

The R2I2 program will be synergistic with both the NSF Convergence Accelerators and the [NSF Regional Innovation Engines \(RIEs\)](#) programs but will be unique in the way it emphasizes practical climate solutions across the entire Nation. R2I2 will build upon fundamental geoscience research by integrating innovation, entrepreneurship, and [translational research](#) to achieve solution-focused goals with measurable impacts.

Innovative social, technological, and nature-based solutions to climate change related problems will draw from NSF investments in Earth systems research, research on social, behavioral, and economic sciences, coupled human and natural systems, and engineering research. Potential solutions may include, but are not limited to, innovative planning and policy solutions to address environmental justice issues and reduce exposure to climate hazards, nature-inspired design to develop resilient communities, social or technological solutions to increase climate resilience, novel statistical

and mathematical methods to evaluate climate-induced risks, or new AI and modeling tools to address challenges faced by specific industries such as the financial sector and insurance agencies. Proposers are encouraged to engage students in their proposed activities and provide training in community-engaged team science and entrepreneurship.

Phase-1 R2I2 pilot proposals must identify specific regional climate challenge(s) that will be addressed and a suite of potential solutions to the identified climate challenge(s). A Phase-1 R2I2 proposal may choose to focus on the single most pressing climate challenge impacting the region, or multiple coupled climate challenges. Within the context of this solicitation, a climate challenge may be thought of as a societal problem for which the causes can be traced back to climate change and that requires translation of interdisciplinary research to develop a regional solution. The proposed solution(s) needs to be accompanied by metrics to evaluate success. Proposers should use SMART (Specific, Measurable, Achievable, Relevant, and Time-Bound) or similar metrics to define and evaluate their proposed solutions. To facilitate translation, solutions should be cost-effective or have a pathway to cost effectiveness and practicality. Commercial success of every solution is not a requirement, though ultimately each R2I2 project must demonstrate a path to becoming self-sustainable in operations beyond the Phase-2 funding period.

## **II. Program Description**

### **A. Program Objectives**

R2I2s will catalyze domestic innovation and increase community engagement to solve societal and technological challenges imposed by cascading climate impacts through rapid translation of the outcomes of basic geoscience research and discovery. Successful R2I2s will:

- Identify and address regional climate challenge(s) by building upon knowledge gained from research in Earth system science.
- Provide innovative, scalable, and practical solutions to the regional climate challenge through interdisciplinary collaboration and engagement of impacted communities.
- Link the research community with public and private sectors to build community capacity. The need for innovation and translation should result in novel team building and new partnerships in the co-design and deployment of solutions.
- Engage partners and relevant constituents through practices such as: team science, engaged scholarship, experiential learning, co- production and knowledge-to-action frameworks. Empower partners to solve urgent societal challenges at a regional and local scale.
- Train the future generation of scientists, engineers, and technologists in community-engaged team science and engineering. Expand workforce development by providing entrepreneurial training with emphasis on the regional populations most impacted by climate shifts.
- Amplify community-engaged programs and enable diverse interdisciplinary teams to build climate change-resilient communities through strategic partnerships.
- Serve as an exemplar for how Earth system science can be catalyzed through intentional translation to benefit society on regional scale.

### **R2I2 Regional Domains**

Targeted areas for establishing R2I2 are based on ten climate regions defined by the [Fifth National Climate Assessment](#): Northeast, Southeast, U.S. Caribbean, Midwest, Northern Great Plains, Southern Great Plains, Northwest, Southwest, Alaska, and Hawaii & U.S. Affiliated Pacific Islands. Although geographic diversity will be strongly considered, merit review-based selection of proposals may result in multiple awards within one climate region.

### **B. Program Characteristics**

The R2I2 program will support use-inspired research and enable the application and translation of outcomes of Earth system science research into climate solutions that benefit society through a two-phase process. In Phase-1, NSF will

support partnership building and the planning and development of the R2I2 challenge(s) and potential solution(s). Phase-2 funding will be provided via a separate subsequent solicitation to implement plans developed under Phase-1 awards.

NSF's overall vision for Phases-1 and -2 of the R2I2 program is outlined below. Specific details on the requirements for Phase-1 proposals are provided in Section V, under the Proposal Preparation and Submission Instructions.

### **Phase 1 Overview: Solution Ideation and Refinement**

Phase-1 funding is up to \$500,000 for a two-year duration to support partnership building, refinement of the proposed regional climate challenge, and conceptual development of potential solutions.

Phase-1 awards enable recipients to lay the groundwork for establishing a Phase-2 R2I2. During Phase-1, the recipient will develop the incubator structure and scope while establishing partnerships and a roadmap for Phase-2 project objectives and deliverables. During the award period, Phase-1 teams are expected to identify personnel with the appropriate mix of disciplinary expertise needed to form a successful R2I2 team in advance of submitting a Phase-2 proposal. Successful teams will include appropriate community members (e.g., civic entities, industry, Institutions of Higher Education, non-profits, government entities, and others), each with a specified role(s) in facilitating the transition of research outputs into practical uses.

Anticipated activities during Phase-1 include, but are not limited to, defining a regional climate challenge with one or more proposed solutions, developing the vision and plan for executing/implementing the solutions, building and strengthening collaborations with relevant partners and community members to achieve proposed solutions within a 3–5-year timeline, and defining metrics for success. After 12 months of effort, as a supplement to the NSF annual project report, Phase-1 teams will be required to submit their proposed solutions for the regional climate challenge(s) and metrics of success. At the end of the Phase-1 award, recipients are expected to be well-prepared to deliver the proposed solutions in a Phase-2 R2I2 project. Teams will be expected to articulate the purpose and vision of the Phase-2 R2I2, the climate challenge that would be addressed, a plan for continuous engagement with impacted community members as well as those ultimately implementing the solution, an estimate of community impact, and management and operational plans for the R2I2 to achieve the successful implementation of proposed solutions.

Successful R2I2 Phase-1 full proposals must:

- Present ideas that will result in transformative progress rather than incremental progress in addressing a specific climate challenge or a defined set of climate challenges in a geographic region.
- Demonstrate community need and engagement; and be driven by a bold vision for high-impact, use-inspired, ready-to-implement plan. This plan should be backed by robust research and include perspectives from impacted community members across the spectrum.
- Use specific measurable goals for successfully addressing the regional climate challenge with defined outcomes to be achieved within 3–5-years after the award of the Phase-2 proposal. Metrics for success should be identified and an assessment plan should be provided that defines success for each of the proposal goals.
- Have teams that consist of a lead organization and a team of partners. Since team and partnership building is an essential activity under Phase-1 awards, PIs need to ensure that team building and planning during Phase-1 includes partnerships between the private sector, academia, local and state governments, non-governmental organizations, and relevant community members, as appropriate.

### **Phase-2 Overview: Solution execution and evaluation**

It is anticipated that, subject to the availability of funding, NSF will release a R2I2 Phase-2 solicitation in FY 2026 inviting proposals from Phase-1 award recipients. Phase-2 award recipients will be selected based on merit review of Phase-2 proposals and performance during Phase-

1. NSF anticipates funding Phase-2 proposals at up to \$3.0M/year for a period of up to 5 years. For Phase-2 awards, R2I2s must demonstrate strong organizational commitment to produce impactful implementation-ready results and will require



dedicated full-time staff to lead multi-institutional cross-disciplinary teams. Sustainability plans to scale up and continue the work beyond the incubator funding period must be addressed.

### **R2I2 National Office**

NSF expects to fund one award for a R2I2 National Office (RNO) through this solicitation. The RNO will support the collective and coordinated operation of the regional R2I2 awards. The initial award for the RNO will be for a 2-year period with a base funding of \$1M/year. The RNO award will be funded through a cooperative agreement. Depending on the performance of the RNO and the continuation of the R2I2 program, the award may be extended via renewal cooperative agreement.

The R2I2 National Office will support the R2I2 projects through the following activities:

- Serve as the lead organization for communicating information across the R2I2 projects.
- Develop a strategy for the broad dissemination of knowledge generated by R2I2 award recipients to the general public.
- Convene at least quarterly meetings of R2I2 award recipients for knowledge sharing and coordination of efforts. Convene an annual PI meeting that will be designed in consultation with NSF staff and R2I2 Phase-1 PIs.
- Develop an overarching web presence for R2I2 that provides easy navigation between pages for the individual pilot projects.
- Provide a data repository for R2I2 recipients. This centralized data repository must follow the FAIR (Findability, Accessibility, Interoperability, and Reusability) guidelines for scientific data management to ensure that the data repository is compatible with data generated by R2I2 projects.
- Assist with broad dissemination of high-level lessons learned and promising practices from R2I2 Phase-1 awards. Employ a full-time community engagement specialist that will be a resource for R2I2 award recipients.
- Provide trainings that support and enhance the workforce development goals of the R2I2 Phase-1 projects.
- Develop a framework for shared governance across R2I2 Phase-1 awards on topics that require cross-project and cross-region coordination.

The RNO office will be an important partner with the R2I2 award recipients but will not engage in overall governance or management responsibilities for the R2I2 awards. Through the cooperative agreement mechanism, the successful R2I2 National Office recipient can expect substantial interaction with and oversight from NSF to ensure that R2I2 award recipients receive the cross-award coordination, communication, and support needed for success.

## **III. Award Information**

**Anticipated Type of Award:** Standard Grant or Continuing Grant or Cooperative Agreement

**Estimated Number of Awards:** 17

NSF expects to make up to 16 Phase-1 awards across all regions of the United States of America as a result of this solicitation and 1 award for a R2I2 National Office.

**Anticipated Funding Amount:** \$10,000,000

NSF anticipates a total budget of up to \$10,000,000 will be available in FY 2025 to support Phase-1 proposals and a coordinating office for R2I2 projects, subject to the quality of submitted proposals and the availability of funds.

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

## **IV. Eligibility Information**

**Who May Submit Proposals:**

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.
- Non-profit, non-academic organizations: Independent museums, observatories, research laboratories, professional societies and similar organizations located in the U.S. that are directly associated with educational or research activities.
- For-profit organizations: U.S.-based commercial organizations, including small businesses, with strong capabilities in scientific or engineering research or education and a passion for innovation.
- State and Local Governments
- Tribal Nations: An American Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges as a federally recognized tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. §§ 5130-5131.
- NSF sponsored Federally Funded Research and Development Centers (FFRDCs) may submit proposals provided that they do not include costs for which federal funds have already been awarded or are expected to be awarded.

#### **Who May Serve as PI:**

The PI and any Co-PIs must hold an appointment at an organization that is eligible to submit as described under "Who May Submit Proposals." At least one PI or Co-PI from a Phase-1 award must be included as a PI or Co-PI on the Phase-2 proposal that is based on that Phase-1 award. The same individual who served as PI for the Phase-1 award does not have to be PI for the Phase-2 proposal, however any change of PI and Co-PI should be fully explained in the Phase-2 proposal.

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

There are no restrictions or limits.

#### **Limit on Number of Proposals per PI or co-PI: 2**

An individual may participate **as lead PI on at most one proposal** for this solicitation. A lead PI may serve as a Co-PI on one other proposal.

If any individual exceeds this participation limit, any proposal submitted to this solicitation with this individual listed as PI or Co-PI, **after the second proposal is received at NSF**, will be returned without review (RWR). No exceptions will be made.

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

Foreign organizations: For cooperative projects involving U.S. and foreign organizations, support will only be provided for the U.S. portion.

## **V. Proposal Preparation And Submission Instructions**

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

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

Letters of intent for Phase-1 are required and must be submitted via Research.gov, even if full proposals will be submitted via Grants.gov.

Letters of intent must be submitted by 5:00pm submitting organization's local time on the due date indicated elsewhere in this solicitation.

The Letters of Intent will not be used as pre-approval mechanism for the submission of proposals and no feedback will be provided to submitters. The Letters of Intent will be used by NSF to assess requirements for proposal review. For more information on Letters of Intent, please review the NSF PAPPG. Note that no Supplementary Documents are allowed.

Letters of Intent MUST include the following:

- Title that begins with "NSF R212:" followed by the project title. The rest of the title of the proposal should describe the project in precise, informative language, without use of acronyms so that a technically literate reader can understand the project.

Synopsis (not to exceed one page) that includes the following:

- A clear definition of the region and challenge (or challenges) of focus, the desired societal outcome(s), and partnerships.
- A brief description of the specific goals of the proposal and how the proposed resilience research uses Earth system knowledge to develop a suite of resilience solutions that will be refined after the award of Phase-1 proposal. Describe how the deliverable would impact society at a regional scale.
- Relevant professional expertise of the Principal Investigator and Co-Principal Investigators and how it aligns with the proposed project. For proposals with intent to involve multiple organizations and partnerships, the same information should be provided for all sub- awardees that have been identified at the time.
- Articulation of how the tangible outcomes for improved regional resilience to climate change will be evaluated.

#### **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.
- A Minimum of 0 and Maximum of 4 Other Senior Project Personnel are permitted
- A Minimum of 0 and Maximum of 30 Other Participating Organizations are permitted
- Submission of multiple Letters of Intent is 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).

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

**Collaborative Proposals.** All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via Research.gov. PAPPG Chapter II.E.3 provides additional information on collaborative proposals.

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

**Proposal Title:** The title of the proposal MUST begin with "NSF R212:" followed by the project title. The rest of the title of the proposal should describe the project in precise, informative language, without use of acronyms so that a technically literate reader can understand the project.

**Project Description:** The project description should provide a clear statement of the work to be undertaken and must include the objectives for the period of the proposed work and the expected significance. In addition to the guidance contained in the PAPPG, including the requirement for a separate section labeled "Broader Impacts", the Project Description should include the following:

**Phase 1 Proposals:** The project description should include the following sections (1 through 7):

1. **Objectives and significance of proposed activity**
2. **Community needs:** Describe the demonstrated community needs to be addressed and the impact of the proposed solution(s).
3. **Earth System Research Translation:** Explain how the work conducted in Phase-1 will integrate Earth system knowledge into feasible resilience solutions through transdisciplinary research. A techno-economic analysis to demonstrate project costs and feasibility in translation of research to solutions is highly recommended.
4. **Partnerships including Roles and Responsibilities Table:** Describe how constituents from multiple kinds of organizations, including academic and non-academic partners are poised to form deep and diverse partnerships in support of the proposed use- inspired research. Every team is expected to include members from at least two types of organizations (e.g. industry, government, non- government organizations, academia). Describe the roles and responsibilities of all individuals and major groups and entities included in the project.
5. **Coordination Plan:** Describe a mechanism for how collaboration and team effectiveness will be promoted.
6. **Deliverables:** Describe potential solutions that will be explored, and developed during Phase-1, and how they will be executed and evaluated should the project continue beyond Phase-1, including a timeline for these deliverables. Phase 2 projects can be 3-5 year awards with defined outcomes and final project deliverables are expected at that time. Define plans for sustainability of the incubators beyond Phase-2 funding by NSF.
7. **Broader Impacts:** Describe the range of activities that will help this project achieve the broader impacts sought by the program including societal impact, broadening participation, workforce development and/or education. Broadening participation is an important aspect for equitable resilience solutions, therefore the Broader Impacts Section MUST include a separate sub-section outlining a specific plan for broadening participation.

**R212 National Office Proposals:** The project description should:

- Demonstrate that the organization has experience coordinating research at a national level.
- Articulate the unique strengths of the organization that position the organization to be a trusted entity for addressing climate challenges.
- Show a history of impactful engagement with affected community members and relevant partners.

- Have demonstrated expertise in communication, data management, workforce development, project management, and convening diverse groups for coordinated efforts.
- Describe the institutional processes, resources, and technical staff that will be utilized to launch the R2I2 National Office. Connect institutional mission and/or priorities to the goals of the R2I2 program.
- Leverage existing partnerships and have a clear strategy to enable growth of new partnerships to support R2I2 efforts. Such efforts may include building infrastructure that links with synergistic initiatives funded at NSF or by other federal agencies.

#### **Supplementary Documents:**

The proposal should include applicable supplementary documents as instructed in the PAPPG. The following items are to be provided as additional supplementary documents and do not count against the 15-page limit for the project description.

#### **Letters of Collaboration**

Letters of collaboration should be limited to stating the intent to collaborate and should not contain endorsements or evaluation of the proposed project. Endorsements for the project are not acceptable and including them in the proposal will result in a return without review of the proposal. Refer to PAPPG for further details.

**Note:** There is no limit on the number of letters of collaboration.

**Data Management and Sharing Plan:** In addition to the general elements of the Data Management and Sharing Plan described in the PAPPG, the proposal must include details about the data repository hosted by the RNO. The Data Management and Sharing Plan should address procedures for receiving, curating, and providing community access to data submitted to the RNO data repository. The Data Management and Sharing Plan should follow the FAIR (Findability, Accessibility, Interoperability, and Reusability) guidelines for scientific data management to ensure that data generated from the projects are compatible with data repository provided by the RNO.

**Mentoring Plan:** As described in the PAPPG, each proposal that requests funding to support postdoctoral researchers or graduate students must upload a description of the mentoring activities that will be provided for such individuals. Note that the R2I2 program differs in duration and goals from traditional academic research efforts. The Mentoring Plan should reflect how mentoring will be appropriate for the specific roles of graduate students or postdoctoral researchers in the project.

**Single Copy Documents:** Single Copy Documents are used by NSF staff but are not available to the reviewers.

Suggested Reviewers and Reviewers Not to Include (optional).

### **B. Budgetary Information**

#### **Cost Sharing:**

Inclusion of voluntary committed cost sharing is prohibited.

#### **Other Budgetary Limitations:**

The proposed budget for Phase-1 projects can be up to \$500,000 for a two-year duration. In Phase-1 proposals, funds may be requested to support partnership building, refinement of the proposed regional climate challenge, and conceptual development of potential solutions.

Proposed budget for the R2I2 National Office (RNO) may be up to \$1M/year not exceeding a total of \$2M for a two-year period. The RNO proposal should budget funds for hosting the annual PI meeting, including expenses such as venue and travel expenses for attendees.

### **C. Due Dates**

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

December 16, 2024

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

January 16, 2025

Note: Due dates will be adjusted to allow 120 days time from solicitation release to LOI submission.

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

##### **For Proposals Submitted Via Research.gov:**

To prepare and submit a proposal via Research.gov, see detailed technical instructions available at:

[https://www.research.gov/research-portal/appmanager/base/desktop?\\_nfpb=true&\\_pageLabel=research\\_node\\_display&\\_nodePath=/researchGov/Service/Desktop/ProposalPreparationanc](https://www.research.gov/research-portal/appmanager/base/desktop?_nfpb=true&_pageLabel=research_node_display&_nodePath=/researchGov/Service/Desktop/ProposalPreparationanc)  
For Research.gov user support, call the Research.gov Help Desk at 1-800-381-1532 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/applicants>. 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 Research.gov for further processing.

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

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

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

#### **VI. NSF Proposal Processing And Review Procedures**

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

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

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Leading the World in Discovery and Innovation, STEM Talent Development and the Delivery of Benefits from Research - NSF Strategic Plan for Fiscal Years (FY) 2022 - 2026*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

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

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

## **A. Merit Review Principles and Criteria**

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

### **1. Merit Review Principles**

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

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.

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

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

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

## 2. Merit Review Criteria

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

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

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

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

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

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



5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

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

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

### **Additional Solicitation Specific Review Criteria**

The R2I2 Phase-1 is intended to foster the development of creative and innovative project ideas that have the potential to solve intractable climate problems faced by communities across the U.S. NSF anticipates that awards made through this solicitation will be high-risk/high-impact, as solutions proposed may use bold “ready to implement” ideas, approaches, and/or technologies that have not been widely employed before. Projects that involve the application of novel, collaborative, or interdisciplinary approaches to address specific solutions for regional climate challenges will receive priority.

The following additional elements will be considered in the review of R2I2 Phase-1 proposals:

- To what extent is the proposed project driven by a bold vision for innovative, scalable, and practical solutions to the regional climate challenge? Is the project backed by robust research and engage multiple constituents through interdisciplinary collaboration and engagement of impacted communities?
- To what extent are specific, measurable goals addressing a regional climate challenge, and defined outcomes that can be accomplished in a 3–5-year time scale during the execution of the project (Phase-2 award) period articulated?
- To what extent are there demonstrated connections with the broader community who are among the beneficiaries of the proposed solutions?
- Does the proposed project amplify community-engaged programs and enable diverse interdisciplinary teams to build climate change-resilient communities through strategic partnerships?

### **B. Review and Selection Process**

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review, or R2I2 NSF Working Group.

Proposals will be evaluated by panel and/or ad-hoc review.

Reviewers will be asked to evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will generally be completed and submitted by each reviewer and/or panel. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF strives to be able to tell proposers whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new recipients may require additional review and

processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

After programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements or the Division of Acquisition and Cooperative Support for review of business, financial, and policy implications. After an administrative review has occurred, Grants and Agreements Officers perform the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

## **VII. Award Administration Information**

### **A. Notification of the Award**

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

### **B. Award Conditions**

An NSF award consists of: (1) the award notice, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award notice; (4) the applicable award conditions, such as Grant General Conditions (GC-1)\*; or Research Terms and Conditions\* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award notice. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

\*These documents may be accessed electronically on NSF's Website at [https://www.nsf.gov/awards/managing/award\\_conditions.jsp?org=NSF](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).

### **Administrative and National Policy Requirements**

#### **Build America, Buy America**

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

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

### **C. Reporting Requirements**

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

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

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

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

## **VIII. Agency Contacts**

*Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.*

General inquiries regarding this program should be made to:

- Subhashree Mishra, telephone: (703) 292-5008, email: [r2i2@nsf.gov](mailto:r2i2@nsf.gov)
- Amanda S. Adams, telephone: (703) 292-5008, email: [r2i2@nsf.gov](mailto:r2i2@nsf.gov)
- Lina C. Patino, telephone: (703) 292-5008, email: [lpatino@nsf.gov](mailto:lpatino@nsf.gov)
- Alan J. Cohen, telephone: (703) 292-5008, email: [r2i2@nsf.gov](mailto:r2i2@nsf.gov) Aurali
- E. Dade, telephone: (703) 292-5008, email: [r2i2@nsf.gov](mailto:r2i2@nsf.gov) Danielle F.
- Sumy, telephone: (703) 292-5008, email: [r2i2@nsf.gov](mailto:r2i2@nsf.gov) Lori A.
- Ziolkowski, telephone: (703) 292-5008, email: [r2i2@nsf.gov](mailto:r2i2@nsf.gov)

For questions related to the use of NSF systems contact:

- NSF Help Desk: 1-800-381-1532
- [Research.gov](#) Help Desk e-mail: [rgov@nsf.gov](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

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 (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.F.7 for instructions regarding preparation of these types of proposals.

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

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

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

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

- **Location:** 2415 Eisenhower Avenue, Alexandria, VA 22314
- **For General Information** (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 proposers will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding proposers or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See [System of Record Notices, NSF-50](#), "Principal Investigator/Proposal File and Associated Records," and [NSF-51](#), "Reviewer/Proposal File and Associated Records." Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

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

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

[Vulnerability disclosure](#) | [Inspector General](#) | [Privacy](#) | [FOIA](#) | [No FEAR Act](#) | [USA.gov](#) | [Accessibility](#) | [Plain language](#) |



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 Tel: (703) 292-5111,

