NSF 24-575: EPSCoR Centers of Research Excellence in Science and Technology (EPSCoR CREST Centers)

Program Solicitation

Document Information

Document History
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National Science Foundation
Directorate for STEM Education
Division of Equity for Excellence in STEM

Supplement Due Date(s) (due by 5 p.m. submitting organization's local time):

July 07, 2025

First Monday in July, Annually Thereafter

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

December 06, 2024

July 07, 2025

First Monday in July, Annually Thereafter

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Important Information And Revision Notes

Recipients are required to use the NSF Education and Training Application (ETAP) to manage participants supported by EPSCoR CREST Centers.

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:

    EPSCoR Centers of Research Excellence in Science and Technology (EPSCoR CREST Centers)

Synopsis of Program:

    In alignment with the CREST Program goals, through this solicitation, the CREST Program seeks to expand its geographic diversity and reach by explicitly calling for proposals led by and for efforts in Established Program to Stimulate Competitive Research (EPSCoR) jurisdictions. The U.S. National Science Foundation's EPSCoR program pursues a mission to enhance the research competitiveness of targeted jurisdictions (state, territory or commonwealth) by strengthening science, technology, engineering and mathematics (STEM) capacity and capability through a diverse portfolio of investments from talent development to local infrastructure. For a list of EPSCoR jurisdictions visit https://new.nsf.gov/funding/initiatives/epscor/epscor-criteria-eligibility.

    EPSCoR CREST Center awards provide support to enhance the research capabilities of institutions through the establishment of centers that effectively integrate education and research in EPSCoR jurisdictions. EPSCoR CREST Center awards promote the development of new knowledge, enhancements of the

research productivity of individual faculty, and an expanded presence of students from EPSCoR jurisdictions in science, technology, engineering, and mathematics (STEM) disciplines.

Successful EPSCoR CREST Center proposals will demonstrate a clear vision and integration of STEM research and education and will align with the mission of the Division of Equity for Excellence in STEM (EES) with respect to the development of a STEM workforce. EPSCoR CREST Centers are also expected to provide leadership by meaningfully involving the efforts of all individuals in STEM at all levels. Centers are required to use evidence-based and innovative strategies to address workforce development issues, such as recruitment, retention, and mentorship of participants from EPSCoR jurisdictions. Successful proposals are expected to achieve national research competitiveness, broaden participation in STEM, and generate sustained, non-CREST funding from Federal, state, and/or private-sector sources.

Phase I and Phase II EPSCoR CREST Center Awards

Both Phase I and Phase II EPSCoR CREST Center awards provide multi-year support for institutions that demonstrate a strong research base. Phase I EPSCoR CREST Center awards provide funding for five years of research on a specific NSF-supported topic. Institutions may submit a Phase II EPSCoR CREST Center proposal requesting funding to continue research in the same disciplinary area as the Phase I EPSCoR Center or may submit a Phase I proposal focused on a disciplinary area that is significantly different from those of the previous award(s).

EPSCoR CREST Partnership Supplements

EPSCoR CREST Partnership Supplement requests are invited from current EPSCoR CREST Center recipients. Supplements support the establishment or strengthening of partnerships and collaborations with active CREST Centers and other nationally or internationally recognized research centers (including NSF-supported research centers), private sector research laboratories, K-12 schools, and/or informal science entities, including museums and science centers, as appropriate. Such partnerships and collaborations should aid EPSCoR CREST Centers' quest in advancing knowledge and education on a research theme of national significance.

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.

- Luis A. Cubano, Lead Program Director, telephone: (703) 292-7941, email: lcubano@nsf.gov

- Regina Sievert, Program Director, telephone: (703) 292-2808, email: rsievert@nsf.gov

- Nicole E. Gass, Program Specialist, telephone: (703) 292-8378, email: ngass@nsf.gov

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

- 47.076 --- STEM Education

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 3

The number of awards and funding for EPSCoR CREST Centers (Phase I and Phase II) and EPSCoR CREST Partnership Supplements are contingent upon the availability of funds and the submission of a sufficient number of meritorious proposals.

Anticipated Funding Amount: $4,500,000

The annual budget of a EPSCoR CREST Center award will not exceed $1,500,000 per year/$7,500,000 during a five-year period. EPSCoR CREST Partnership Supplements will not exceed $100,000.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Eligible institutions are Institutions of Higher Education that offer doctoral degrees in NSF STEM areas and are located in EPSCoR jurisdictions and are Emerging Research Institutions. Emerging Research Institutions are those that have less than $50,000,000 in research expenditures per year as reported at https://ncsesdata.nsf.gov/profiles/site?method=rankingBySource&ds=herd in three of the last five years.

  Funding of partnering organizations should be requested via subawards in the proposal; separately submitted collaborative proposals will not be accepted.

  EPSCoR CREST Partnership Supplements are accepted only from current EPSCoR CREST Center recipients.

  An institution can hold a CREST-RISE award at the same time.

Who May Serve as PI:

The Principal Investigator (PI) must hold a full-time faculty appointment at the institution submitting the proposal.

Limit on Number of Proposals per Organization: 1

Only one proposal may be submitted per eligible institution and due date.

An institution may have only one active CREST Center award at one time, irrespective of focus area or CREST Center funding solicitation number.

Institutions that have completed a Phase I or Phase II award in a disciplinary area may re-compete in other disciplinary areas that are significantly different from those of the previous award(s). To be significantly different, all personnel for the new project must not have been part of the previous award(s) and the new project must be associated with a different 6-digit Classification of Instructional Programs (CIP) code (https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=55).

Institutions with active Phase I funding should submit the Phase II proposal by the due date one year prior to the expiration of their Phase I award.

After 10 years of CREST Centers support, including a combination of EPSCoR CREST Centers or CREST Centers, an institution must wait five years before submitting another proposal for CREST Centers support.

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

Eligible individuals may be listed as the PI or co-PI on only one CREST Center proposal at the time of proposal submission.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not required

- **Preliminary Proposal Submission:** Not required

- **Full Proposals:**

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

    - Full Proposals submitted via Grants.gov: *NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov* guidelines apply (Note: The *NSF Grants.gov Application Guide* is available on the Grants.gov website and on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide).

B. Budgetary Information

- **Cost Sharing Requirements:**

    Inclusion of voluntary committed cost sharing is prohibited.

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

    Not Applicable

- **Other Budgetary Limitations:**

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

C. Due Dates

- **Supplement Due Date(s)** (due by 5 p.m. submitting organization's local time):

    July 07, 2025

    First Monday in July, Annually Thereafter

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

    December 06, 2024

    July 07, 2025

    First Monday in July, Annually Thereafter

Proposal Review Information Criteria

Merit Review Criteria:

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

Award Administration Information

Award Conditions:

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.

I. Introduction

EPSCoR Centers of Research Excellence in Science and Technology (EPSCoR CREST Centers) is managed by the Division of Equity for Excellence in STEM (EES). Across the agency and with guidance from the National Science Board, NSF is working to increase STEM skills and advance STEM opportunities for all Americans.

NSF expects that awards made under the CREST program will catalyze institutional transformation in the development of research capabilities in alignment with the institution's mission and long-term goals and that the institutions will evaluate the impact of the award in effecting this transformation. Demonstrated leadership in the involvement of all groups in STEM is expected at all levels - students, postdoctoral researchers, and faculty. The research activities supported by CREST are expected to enable the full participation of faculty, graduate students, and undergraduates in a nationally competitive research enterprise. Outcomes and activities such as publications, involvement in regional, national, and international research forums, patents and commercial dissemination of research results, professional development of postdoctoral research associates, training of doctoral and master's students, and involvement of undergraduates in research activities should all occur in ways that establish the potential for national leadership.

The ability of EPSCoR CREST Centers to leverage funding from Federal, state, and local agencies as well as to foster industrial and academic collaborations as part of a sustainable research enterprise independent from CREST Centers funding, are important outcomes. At the same time, the projects will promote synergy between education and research; develop outreach activities for pre-college students, K- 12 educators, and the general public; and serve as a model for research scholarship throughout the institution.

II. Program Description

A) EPSCoR CREST Centers

1) General Characteristics

Both Phase I and Phase II EPSCoR CREST Centers provide multi-year support for institutions that demonstrate strengths in NSF-supported fields, as evidenced by a capacity to offer doctoral degrees in one or more STEM disciplines. The EPSCoR CREST Center proposal should clearly demonstrate a strong potential for the EPSCoR CREST Center to achieve national research competitiveness and to generate future non-CREST funding from Federal, state, or private-sector sources.

EPSCoR CREST Centers integrate research and education, and must promote the development of new knowledge, enhance faculty research productivity, and increase diverse representation in STEM disciplines. EPSCoR CREST Center awards are typically 60-month continuing grants of up to $7.5 million. These funds are used to improve elements that the institution has identified as being critical to strengthening its future research capacity to increase extramural funding and research productivity in the form of publications, patents, and other research products.

The proposed EPSCoR CREST Center Director must be prepared to provide leadership in developing and overseeing an inclusive diverse team positioned to fulfill the vision of the EPSCoR CREST Center. EPSCoR CREST Centers will engage students, postdoctoral researchers, and faculty from all groups in numbers that can have a significant impact on broadening participation in the STEM workforce.

EPSCoR CREST Centers may be organized around the development of groups of individual scientists or engineers; one or more science or engineering departments; or interdisciplinary/multidisciplinary research areas. Typically, a EPSCoR CREST Center consists of three to five scientifically meritorious research projects (referred to as subprojects in this solicitation) led by independent investigators, which are relevant to the unifying central research focus and overall objective of the EPSCoR CREST Center. These interrelated research projects are supported by a common administrative core. For more details, please refer to the Proposal Preparation Instructions.

It is expected that EPSCoR CREST Center awards will add substantial, measurable value to the existing STEM research capability in areas of high national and institutional priority. Examples of areas of high national priority are data science and analytics; advanced materials, manufacturing, and robotics; cybersecurity; plant genetics/agricultural technologies;

quantum information sciences; nanotechnology; semiconductors/microelectronics technologies; climate change and clean energy; and areas outlined in the resources below:

- CHIPS and Science Act of 2022
- Industries of the Future
- Understanding the Brain
- DOE Earthshots

2) Commitment and Sustainability

Organizational commitment from administrators and leaders to the proposed activities is vital for successful EPSCoR CREST Centers and for financial and organizational sustainability of promising activities. A letter of support from the provost or equivalent university official with authority related to faculty, research, facilities and/or equipment, and education is required and should be submitted as a supplementary document.

Proposals should discuss the commitment of leadership to research capacity-building either with additional awards and/or through changes to current practices. Proposals should discuss how the successful components developed under the EPSCoR CREST Center will be sustained. Awards are expected to lead to long-term organizational changes in the ways that the institution supports faculty members in increasing their research productivity. Therefore, awards are expected to consider the sustainability and institutionalization of the EPSCoR CREST Center's activities from the beginning of the project.

3) Leadership, Management, and Oversight of the EPSCoR CREST Center

The proposed EPSCoR CREST Center team must provide the leadership to develop and lead a diverse team to fulfill the vision of the EPSCoR CREST Center. EPSCoR CREST Centers will engage students, postdoctoral researchers, and faculty from all groups in numbers that can have a significant impact on building a diverse STEM workforce. CREST is committed to a culture and climate of research that results in an inclusive and diverse workforce. For this reason, CREST strongly encourages the participation of the full spectrum of diverse talent in the identified leadership teams for EPSCoR CREST Centers.

Each proposed EPSCoR CREST Center shall convene, at least annually, an external advisory committee (EAC). The function of the EAC is to provide guidance and advice to the EPSCoR CREST Center as well as to ensure that the EPSCoR CREST Center's activities are consistent with its vision, goals, and objectives. The advisors should include representatives from those served by the EPSCoR CREST Center (e.g., IHEs, industry, state and local agencies, and national laboratories) and reflect the gamut of participants inherent in the citizenry of the United States. NSF highly encourages industry members in the EAC that can advise on intellectual property issues, acquisition of Small Business Innovation Research (SBIR) funding, and other means to support the financial and organizational sustainability of the EPSCoR CREST Center. Persons with a financial, institutional, or collaborative connection to the EPSCoR CREST Center may not serve as members of the EAC. Do not identify members of the EAC in the proposal.

Each EPSCoR CREST Center shall also have an internal steering committee to include the PI, co-PIs, and other stakeholders.

4) Collaborations / Partnerships

Collaborative efforts involving industry, other IHEs, federally funded research and development centers (FFRDCs), national laboratories, K-12 schools, museums, and science centers, and/or other national, state, or regional research and development organizations are required. Subawards to such collaborating organizations are permitted, subject to restrictions outlined in the PAPPG. The total amount of funding to all subawardee organizations cannot exceed 10% of the cumulative budget going to the prime institution.

5) Evaluation Plan

EPSCoR CREST Centers must develop a robust evaluation plan. The evaluation plan should be designed to gauge the accomplishment of the EPSCoR CREST Center's identified goals and objectives and the impacts of the EPSCoR CREST Center. Evaluation should be based on benchmarks, indicators, or expected outcomes related to EPSCoR CREST Center goals and activities.

EPSCoR CREST Centers should design evaluations that are appropriate to the EPSCoR CREST Center's proposed activities. Plans for assessing progress toward realizing the EPSCoR CREST Center's outputs, outcomes, and impacts should rely on measures that have been validated in the context in which they will be used.

Evaluation plans should be based on a theoretical model that relates the EPSCoR CREST Center's goals to activities and to outputs, outcomes, and impacts (i.e., immediate, short-term, and intermediate-term expected changes). Evaluation plans should be appropriate to the scope of the EPSCoR CREST Center and should include both formative aspects that will provide information to guide the EPSCoR CREST Center in making evidence-based decisions about changes in its activities, and summative aspects that will provide evidence of the overall impacts of the project.

The budget must include adequate resources for evaluation. The evaluation should be led by an expert independent evaluation team.

B) EPSCoR CREST Partnership Supplements

EPSCoR CREST Partnership Supplements support the establishment or strengthening of partnerships and collaborations between existing EPSCoR CREST Centers and nationally or internationally recognized research centers including NSF-supported research centers, K-12 schools, and museums and science centers. Support may be requested for activities that have a direct positive influence on the competitiveness of participating scientists and engineers, and the quality of the institution's research and training.

Supportable activities may include but are not limited to: exploratory research projects; acquisition of materials, supplies, research equipment, and instrumentation; hiring nationally competitive scientists and/or engineers; visiting scientists and engineers as short- or long-term consultants; faculty attendance at professional meetings and seminars; faculty sabbaticals and exchange programs; education activities directed toward the development of a diverse, internationally competitive and globally engaged workforce of scientists, engineers, and citizens well-prepared for a broad set of career paths; undergraduate and graduate research activities; development of outreach and other enhancement programs with neighboring institutions; and strengthening technical support personnel. The benefits to all parties in the proposed collaboration must be clearly articulated. Awarded partnership supplements will be made for a maximum of $100,000 per supplement.

C) Other Types of Funding Opportunities

For these funding opportunities, proposers must contact the cognizant NSF Program Officer and request authorization to submit a proposal.

CREST also accepts the following types of proposals: Planning proposals; Conferences; Early-concept Grants for Exploratory Research (EAGER), Research Advanced by Interdisciplinary Science and Engineering (RAISE), and Rapid Response Research (RAPID) awards. Guidance on the preparation and submission of these types of proposals is contained in PAPPG Chapter II.F.

The CREST Program also accepts supplemental funding requests to existing awards. Supplemental funding requests are different from the EPSCoR CREST Partnership Supplements described above. Supplemental funding requests can be requested for up to 20% of the original award total. Guidance on the preparation and submission of supplemental funding requests is contained in PAPPG Chapter VI.E.

III. Award Information

EPSCoR CREST Center awards are for up to 60 months with an annual budget up to $1,500,000 (i.e., a maximum of $7,500,000). Center awards are made as standard or continuing grants.

The progress and plans of each EPSCoR CREST Center will be reviewed by NSF annually, prior to approving continued NSF support. Centers that are not meeting expectations may have their level of funding reduced or may be terminated. Institutions may not receive more than two consecutive EPSCoR CREST Center awards in the same scientific area. An institution may have only one active EPSCoR CREST Center award at one time, irrespective of focus area or CREST Center funding solicitation number. This information applies to Phase I and Phase II awards.

Partner organizations external to the prime institution must be budgeted as subawardees. The total amount of funding to subawardee organizations must reflect the organization's effort and is limited to no more than $150,000 per organization per year. The total amount of funding to all subawardee organizations cannot exceed 10% of the total award made to the prime institution, for example, $750,000 for a $7,500,000 budget.

Partnership supplements will be made for a maximum amount of $100,000 per supplement, in amounts that vary with need and are subject to the availability of funds. A supplement will be an amendment to an existing CREST award.

The estimated EPSCoR CREST Center and EPSCoR CREST Partnership Supplement budgets, number of awards, and award size and duration are subject to the availability of funds.

IV. Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Eligible institutions are Institutions of Higher Education that offer doctoral degrees in NSF STEM areas and are located in EPSCoR jurisdictions and are Emerging Research Institutions. Emerging Research Institutions are those that have less than $50,000,000 in research expenditures per year as reported at https://ncsesdata.nsf.gov/profiles/site?method=rankingBySource&ds=herd in three of the last five years.

  Funding of partnering organizations should be requested via subawards in the proposal; separately submitted collaborative proposals will not be accepted.

  EPSCoR CREST Partnership Supplements are accepted only from current EPSCoR CREST Center recipients.

  An institution can hold a CREST-RISE award at the same time.

Who May Serve as PI:

The Principal Investigator (PI) must hold a full-time faculty appointment at the institution submitting the proposal.

Limit on Number of Proposals per Organization: 1

Only one proposal may be submitted per eligible institution and due date.

An institution may have only one active CREST Center award at one time, irrespective of focus area or CREST Center funding solicitation number.

Institutions that have completed a Phase I or Phase II award in a disciplinary area may re-compete in other disciplinary areas that are significantly different from those of the previous award(s). To be significantly different, all personnel for the new project must not have been part of the previous award(s) and the new project must be associated with a different 6-digit Classification of Instructional Programs (CIP) code (https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=55).

Institutions with active Phase I funding should submit the Phase II proposal by the due date one year prior to the expiration of their Phase I award.

After 10 years of CREST Centers support, including a combination of EPSCoR CREST Centers or CREST Centers, an institution must wait five years before submitting another proposal for CREST Centers support.

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

Eligible individuals may be listed as the PI or co-PI on only one CREST Center proposal at the time of proposal submission.

V. Proposal Preparation And Submission Instructions

A. Proposal Preparation Instructions

Full Proposal Preparation Instructions: Proposers may opt to submit proposals in response to this Program Solicitation via Research.gov or Grants.gov.

- Full Proposals submitted via Research.gov: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the *NSF Proposal and Award Policies and Procedures Guide* (PAPPG). The complete text of the PAPPG is available electronically on the NSF website at: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg. Paper copies of the PAPPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov. The Prepare New Proposal setup will prompt you for the program solicitation number.

- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the *NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov*. The complete text of the *NSF Grants.gov Application Guide* is available on the Grants.gov website and on the NSF website at: (https://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov.

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.

Eligible proposers intending to submit a proposal are encouraged to participate in informational webinars that will be webcast after the release of this solicitation. See the NSF CREST webpage for dates.

Proposals that are not compliant with the guidelines will be returned without review. It is the proposing organization's responsibility to ensure that the proposal is compliant with all applicable guidelines and that only one proposal is submitted by the institution.

Proposals must contain the items listed below and adhere strictly to the specified page limitations. No additional information may be provided as appendices or through links to web pages. Figures and tables must be included within the applicable page limit.

Proposals must contain sufficient detail to allow for the assessment of the intellectual merit and broader impacts of the proposed EPSCoR CREST Center, as well as the solicitation-specific review criteria identified in Section VI. below. The proposal should contain specific, measurable, and obtainable outcomes that will be used to measure the progress of the proposed EPSCoR CREST Center if funded.

EPSCoR CREST Center Proposal Structure

EPSCoR CREST Center proposals consist of the EPSCoR CREST Center Project Description and its associated research subproject narratives. The EPSCoR CREST Center proposal includes discussion of the proposer's overall plan for improving the status of STEM research and training and for broadening the participation of a diverse student population in STEM, as codified by the EPSCoR CREST Center's unifying theme or focus. The EPSCoR CREST Center proposal overview should present a clear explanation of the proposed improvement plan from a scientific, educational, and administrative or fiscal point of view. The proposal Project Summary will provide an overview of the proposed activities and will clearly delineate the NSF criteria of Intellectual Merit and Broader Impacts. The Project Summary also describes the synergy anticipated by the choice of a minimum of three subprojects (maximum of five) that are consistent with the unifying theme of the EPSCoR CREST Center. The subprojects are not pilot projects. All subprojects must be located at the institution submitting the proposal.

Consistent with the objective of broadening the participation of U.S. citizens, nationals, or permanent residents in STEM fields, the proposal should address increasing opportunities for all with the goal of broadening participation in the EPSCoR CREST Center. The contribution/role of partner organizations to the objectives should also be described.

Proposed activities should be presented in sufficient detail to allow assessment of their intrinsic merit and potential effectiveness.

EPSCoR CREST Center Research Subprojects (3 to 5 subprojects)

Each proposal must include a minimum of three (maximum of five) individual (albeit related) research projects, each of which is pertinent to the central goal of the EPSCoR CREST Center. All subprojects must be based at the same institution. Each proposed subproject may involve a subset of EPSCoR CREST Center investigators but should have a single subproject leader. The budget of the subprojects must allow for significant research to take place and must be commensurate with the scope of the projects. The subprojects are not pilot projects. Do not divide subprojects into sub-subprojects. The subprojects should result in data that can be used for the submission of a proposal to NSF or other funding sources. More details on the subproject narrative requirements are provided in section 3.i below.

Special Considerations for EPSCoR CREST Phase II Proposals

A current EPSCoR CREST Center nearing the completion of its initial five years of funding may submit a proposal for an additional five years of support. A proposal will undergo merit review alongside proposals for new EPSCoR CREST Centers. Accordingly, the achievements and future plans of existing EPSCoR CREST Centers will be evaluated comprehensively relative to progress and direction and weighed against the competition for available funds. The results from the Phase I research and broadening participation activities should be articulated clearly in parallel with the institutional transformation arising from the other EPSCoR CREST Center accomplishments of the first five years.

The Project Description for a Phase II Center should demonstrate a clear vision for a synergistic team of investigators positioned within the second five years of support to achieve major national recognition for their accomplishments including research that has the potential to be transformative. The Project Description as well as the subproject narratives should provide a systematic articulation of the research, educational, and outreach accomplishments of the Phase I Center and how these will drive the future activities of the EPSCoR CREST Center, especially in terms of a new vision and organization. The Phase II Center should be well-positioned to demonstrate a transformation of the institutional capacity for engaging individuals from EPSCoR jurisdictions in STEM. A simple continuation of the Phase I EPSCoR CREST Center, even if the scientific merits of the various research activities are strong, will not yield a competitive Phase II proposal.

A recommendation for a Phase II EPSCoR CREST Center award will be subject to the availability of funds, as well as the demonstrated potential that funding as a Phase II EPSCoR CREST Center will lead to institutional transformation in line with the aim of this solicitation. Renewed EPSCoR CREST Centers will continue to be monitored by NSF. Centers that are not meeting the exceptional expectations of a Phase II EPSCoR Center may have their level of funding reduced or terminated.

EPSCoR CREST Center Proposal Contents

Proposals must include all the following items. In cases where requirements given in this document differ from those given in the PAPPG, the guidelines provided in this solicitation take precedence.

Proposal Set-Up: Select "Prepare New Proposal" in Research.gov. Search for and select this solicitation title in Step One of the Proposal wizard. Select "Single proposal (with or without subawards)." **Separately submitted collaborative proposals will be returned without review.**

Title: The Title of the Proposed Project must begin with "EPSCoR CREST Phase I Proposal: Center for " or "EPSCoR CREST Phase II Proposal: Center for ". The title must be informative and descriptive of the project, concise (20 words or less), and use Title Case. The title should not include the institution name, any acronyms ("STEM" excepted), or quotation marks.

Senior/Key Personnel: The proposed project director must be designated as the PI.

1. Cover Sheet

For planning purposes, September 1, of the award year should be shown as the start date.

2. Project Summary (1 page)

The Project Summary must be no more than one page and consist of three sections: overview, intellectual merit, and broader impacts.

The Project Summary Overview section provides a clear and concise description of the project including its mission and vision, describes the research focus, goals for education and broadening participation, the integrative nature of the EPSCoR CREST Center, and articulate the potential legacy and national impact of the EPSCoR CREST Center if funded.

The Project Summary Intellectual Merit section describes the research focus and subprojects' synergy consistent with the unifying theme of the EPSCoR CREST Center. All subprojects must be located at the same institution.

The Project Summary Broader Impacts section describes goals for education, professional development, and broadening participation.

At the end of the Broader Impacts section add no more than five 6-digit Classification of Instructional Programs (CIP) codes that most associate with the proposed center. CIP codes are available at https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=55. Example: 26.0202, 26.0203, 26.0204

3. Project Description (Sections 3.a to 3.h - 15 pages; Section 3.i - 5 pages per subproject)

The Project Description must contain only Sections 3.a through 3.i. Sections 3.a to 3.h are limited to 15 total pages including tables and illustrations. Phase II proposals must include a progress report.

The Project Description should:

- Contain specific, measurable, and obtainable objectives that will be used to measure the progress of the EPSCoR CREST Center, if funded.
- Summarize the subproject's importance to the overall proposal plan, including synergy with the other subprojects and a discussion of how they support the overall goals and objectives of the EPSCoR CREST Center proposal.

Progress Report (Phase II Proposals Only) (1 page)

The Progress Report should provide the reviewers with an overview of the progress made during the Phase I period of support. The progress report cannot exceed 1 page. The Progress Report should:

- Provide the beginning and ending dates for the period covered.
- Summarize the objectives of the previous project period and the progress made toward their achievement.
- Explain changes to the objectives and any new directions.

- Discuss previous participants (e.g., recruitment, retention, inclusion of individuals from EPSCoR jurisdictions in STEM, including persons with disabilities).
- Discuss career development at the faculty, postdoctoral, and student levels.

3.a Problem Description and Rationale for Selected Approach

Articulate a vision for the proposed EPSCoR CREST Center that clearly outlines the research thrusts being addressed. The proposed research should be sufficiently complex, large-scale, and long-term to justify a EPSCoR CREST Center and flexible enough to permit change as the research proceeds. The proposed approaches must be innovative, and it must be clear how they will transform or significantly impact the research area. This section should:

- Describe the comprehensive plan to achieve and sustain national competitiveness, independent from CREST Centers funding, in a clearly defined area of national significance in STEM research.
- State the overall vision and long-range goals of the integrated EPSCoR CREST Center.
- Explain the unique opportunities that a EPSCoR CREST Center will provide that could not be achieved with individual support.
- Describe the proposed research areas/themes and how they integrate with each other.
- Describe how an integrated EPSCoR CREST Center is aligned with the mission of the institution and the long-term strategic goals of building the institution's research capacity.

3.b Description of the Research Objectives

Describe the proposed research areas/themes and how they integrate with each other to realize the EPSCoR CREST Center's research vision. This section should:

- Provide 5-year timelines for the activities.
- Indicate the specific role of each partner organization or participant in the research topic/goal area.
- Provide a research plan with sufficient detail to allow assessment of the scientific merit and to justify the necessity for the EPSCoR CREST Center mode of operation.
- Indicate the potential impact or expected significance the EPSCoR CREST Center's research will have on the Nation's scientific knowledge and/or technological base.

3.c Description of the Education and Career Development Objectives

Describe how the EPSCoR CREST Center will provide professional development and other appropriate opportunities to young faculty members affiliated with the EPSCoR CREST Center to assist them in establishing an independent research agenda. This section should:

- Describe how research and education will be integrated with career development objectives. Education programs and activities should be evidence-based practices developed in the context of current educational research and be monitored through a formal evaluation effort led by independent evaluators as described in 3.g.
- Describe plans for attracting and retaining students.
- Describe plans for preparing students for the submission of fellowship applications to NSF and other funders.
- Describe proposed activities in sufficient detail to allow assessment of their intrinsic merit and potential effectiveness.

3.d Broader Impacts

Describe the broader impacts objectives and outline strategies for achieving them. This section should:

- Describe plans for broadening participation through the inclusion of individuals from EPSCoR jurisdictions in STEM.

- Describe the contribution/role of students and faculty members and how they will be integrated into activities.
- Explain how mentoring will be used to provide a supportive environment for all project participants.
- Explain how progress will be measured and how strategies will be adapted, as appropriate.
- Describe proposed activities in sufficient detail to allow assessment of the intrinsic merit and potential effectiveness of the activities.

3.e Collaborations / Partnerships

Describe collaborative efforts involving industry, other IHEs, Federally Funded Research and Development Centers (FFRDCs), national laboratories, K-12 entities, museums, and science centers, or other national, state, or regional research and development organizations and how these collaborations will strengthen the EPSCoR CREST Center.

3.f Management Plan

Describe the plan for the management of the proposed EPSCoR CREST Center to ensure optimal performance. This section should:

- Present a management plan, including a diagram to explain the organizational relationships and reporting structure among the key areas of responsibility.
- Identify key members of the management team and explain their specific roles and areas of responsibility.
- Explain the role of each key participant/component.
- Describe the processes to be used to prioritize activities, allocate funds and equipment across activities, and select a replacement PI, if needed.
- Identify members of the Internal Steering Committee and an independent evaluator, external to the project.

3.g Evaluation Plan

All proposals should include an evaluation section that describes how the project evaluator/evaluation team will gauge the accomplishment of project goals and the impacts of the project. The budget must include adequate resources for project evaluation. This section should:

- Include a logic model (required) with short-term, and intermediate-term expected outcomes.
- Include a description of the evaluation design, methods, and measures that will be used.
- Include in the evaluation plan formative aspects that will provide information to guide the EPSCoR CREST Center in making evidence-based decisions about changes in its activities, and summative aspects that will provide evidence of overall impacts of the project.
- Include an evaluation design based on benchmarks, indicators, or expected outcomes related to project goals, objectives, and activities.
- Identify the person(s) who will lead the evaluation and briefly describe their academic training and professional experience that qualifies them to serve as an evaluator. Evaluator(s) may be internal or external to EPSCoR CREST institutions but should be external to the EPSCoR CREST Center itself and positioned to carry out the evaluation plan independently.

3.h Results from Prior NSF Support (included in the Project Description)

See NSF PAPPG for guidelines.

3.i Individual Subproject Narratives (5-page limit per subproject) (Minimum 3, Maximum 5 subprojects)

The subproject narratives will contain the elements of an abbreviated NSF research proposal limited to a total of 5 pages per subproject. This is in addition to the 15 pages of the project description. Begin each subproject with the subproject number, subproject title, and subproject leader. Example: Subproject 1: Research on new materials. PI: Samantha Smith.

Continue with the Subproject Summary that includes Intellectual Merit and Broader Impacts and then the remainder of the Subproject Narrative. Subproject references are to be included in the References Cited section of the EPSCoR CREST Center proposal (See section 5 below). Do not divide subprojects into sub-subprojects. The subprojects should result in data that can be used for the submission of a proposal to NSF or other funding sources.

4. Facilities, Equipment and Other Resources (1-page limit)

Provide a synopsis of institutional resources that will be available (dedicated space, access to facilities and instrumentation, faculty and staff positions, including plans to make cluster hires if appropriate, access to programs that assist with curriculum development or broadening participation, or other institutional programs that could provide support). The description should be narrative in nature and must not include any quantifiable financial information.

5. References Cited (5-page limit)

See NSF PAPPG for format guidelines.

6. Budget and Budget Justification

EPSCoR CREST Center awards will not exceed $1,500,000 annually / $7,500,000 during a five-year period.

Provide a budget for each year of the project. A cumulative budget will be generated automatically. The proposed budget should be consistent with the needs and complexity of the proposed activity. Funds also should be included for attendance at the annual PI meeting.

Submission of a budget justification outlining all requested expenditures is required. Identify items of equipment costing more than $25,000. Full justification for these is required.

Partner organizations external to the prime institution must be budgeted as subawardees. The total amount of funding to subawardee organizations must reflect the organization's effort and is limited to no more than $150,000 per organization per year. The total amount of funding to all subawardee organizations cannot exceed 10% of the cumulative budget going to the prime institution, for example $750,000 for a $7,500,000 budget.

Financial support may be provided to student participants under EPSCoR CREST projects. However, financial support may only be provided to students that are U.S. citizens, nationals, or permanent residents. Student support should be included on the "stipends" line under the "Participant Support Costs" section of the budget. Stipends to students should not replace other need-based grants and scholarships already awarded to the students.

Participants need to be paid according to institutional practices. If using a different scale, its use must be justified in the application.

7. Senior / Key Personnel Documents

In accordance with the guidance in the PAPPG, the following information must be provided for all individuals designated as Senior/Key Personnel (PI and any faculty members whose research, education, or broadening participation efforts will be supported).

- Biographical Sketch
- Current and Pending (Other) Support
- Collaborators & Other Affiliations Information
- Synergistic Activities

8. Special Information and Supplementary Documents

Required information to be included in the Supplementary Documents section.

8.a Identification of Partner Organization(s) and Project Personnel (2-page limit)

(a) List all project personnel who have a role in the management, research, education, and evaluation components of the EPSCoR CREST Center. Use the following format:

Project Personnel:

Last name, first name, institution/organization, role in the project

(b) List all project partner organizations who have a role in the management, research, education, and evaluation components of the EPSCoR CREST Center. Use the following format:

Partner institution(s) and organization(s):

Institution/organization, role in the project

8.b Ethics Plan (1-page limit)

Provide a clear statement of the EPSCoR CREST Center's proposed policies on ethics training, responsible conduct of research, and intellectual property rights. A program of training in ethics and responsible conduct of research for all faculty, postdoctoral researchers, and graduate and undergraduate students involved in the EPSCoR CREST Center is required. Training topics should include the nature of the research, methodologies used, ownership of research and ideas, roles and responsibilities regarding intellectual property, and civil treatment of colleagues.

8.c Shared Experimental Facilities (1-page limit)

When appropriate, describe the shared facilities to be established, including research instrumentation.

The following elements should be addressed in this section: maintenance and operation of facilities, including assurance of organizational commitments/support; infrastructure and technical expertise to ensure effective usage; and provisions for user fees and plans for ensuring maintenance and operation of facilities after the end of the award.

8.d Data Management and Sharing Plan (2-page limit)

Describe how the proposal conforms to NSF policy on the storage, dissemination and sharing of data and research results.

8.e Mentoring Plan (1-page limit)

Each proposal that requests funding to support postdoctoral scholars or graduate students must include a description of the mentoring activities that will be provided for such individuals. Proposers are advised that the mentoring plan may not be used to circumvent the Project Description page limitation.

8.f Undergraduate Student Mentoring Plan (1-page limit)

Each proposal that requests funding to support undergraduate students must include a description of the mentoring activities that will be provided for such individuals. Proposers are advised that the mentoring plan may not be used to circumvent the Project Description page limitation. Please note that this is different than the Mentoring Plan required by the PAPPG.

8.g Letter of Support (2-page limit) and Letters of Collaboration (2-page limit each)

A letter of support from the provost or equivalent university official with authority related to faculty, research, facilities and/or equipment, and education **must be** submitted describing the prime institution's support for and commitment to the award (including space). The institution must commit to implementing systemic changes to increase research productivity. The letter of support must express awareness of, support for, and specific commitments to the project.

The letter of support should include information related to financial and organizational sustainability and commitment of the provost or equivalent university official to the project. A letter of support that merely endorses the project or offers

nonspecific support for the project activities should not be included and the proposal will be returned without review if a general support letter is submitted.

Letters of collaboration must be provided by major partnering organizations and the program evaluator. "Major" is defined as those organizations receiving budgetary resources from the award or contributing to the impacts of the proposed work. Letters of collaboration should not be limited to the recommended language in the NSF PAPPG.

Proposals submitted without a letter of support and letters of collaboration will be returned without review.

8.h Quotes for Equipment

Include quotes for equipment costing more than $25,000.

9. Information to be submitted to NSF via the Single Copy Documents Section

Submit a list of subproject PIs. List the individual's last name, first name, middle initial, and e-mail address. These individuals must also be designated as Senior/Key Personnel in the Manage Personnel section of Research.gov and must submit Biographical Sketches, and Current and Pending (Other) Support, Collaborators and Other Affiliations information, and Synergistic Activities.

No other items or appendices are to be included.

Proposals containing items other than those required above will be returned without review.

EPSCoR CREST Partnership Supplements Contents

Supplemental funding requests should be prepared in accordance with the guidance contained in the PAPPG and must be submitted via Research.gov.

- EPSCoR CREST Partnership Supplements Project Summary

Begin the Summary of Proposed Work section with "This EPSCoR CREST Partnership Supplement"

B. Budgetary Information

Cost Sharing:

Inclusion of voluntary committed cost sharing is prohibited.

Other Budgetary Limitations:

EPSCoR CREST Center awards will not exceed $1,500,000 annually / $7,500,000 during a five-year period.

EPSCoR CREST Partnership Supplements will not exceed $100,000.

Budget Preparation Instructions:

Partner organizations external to the prime institution must be budgeted as subawardees. The total amount of funding to subawardee organizations must reflect the organization's effort and is limited to no more than $150,000 per organization per year. The total amount of funding to all subawardee organizations cannot exceed 10% of the cumulative budget going to the prime institution, for example $750,000 for a $7,500,000 budget.

Financial support may be provided to student participants under the EPSCoR CREST Center. However, financial support may only be provided to students that are U.S. citizens, nationals, or permanent residents. Student support should be included on the "stipends" line under the "Participant Support Costs" section of the budget. Stipends to students should not replace other need-based grants and scholarships already awarded to the students.

C. Due Dates

- **Supplement Due Date(s)** (due by 5 p.m. submitting organization's local time):

    July 07, 2025

    First Monday in July, Annually Thereafter

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

    December 06, 2024

    July 07, 2025

    First Monday in July, Annually Thereafter

D. Research.gov/Grants.gov Requirements

For Proposals Submitted Via Research.gov:

To prepare and submit a proposal via Research.gov, see detailed technical instructions available at: https://www.research.gov/research-portal/appmanager/base/desktop?
_nfpb=true&_pageLabel=research_node_display&_nodePath=/researchGov/Service/Desktop/ProposalPreparationand
For Research.gov user support, call the Research.gov Help Desk at 1-800-381-1532 or e-mail rgov@nsf.gov. The Research.gov Help Desk answers general technical questions related to the use of the Research.gov system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: https://www.grants.gov/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. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

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

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

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

Proposers that submitted via Research.gov may use Research.gov to verify the status of their submission to NSF. For proposers that submitted via Grants.gov, until an application has been received and validated by NSF, the Authorized

Organizational Representative may check the status of an application on Grants.gov. After proposers have received an e-mail notification from NSF, Research.gov should be used to check the status of an application.

VI. NSF Proposal Processing And Review Procedures

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

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

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

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

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

A. Merit Review Principles and Criteria

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

1. Merit Review Principles

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

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

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

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

2. Merit Review Criteria

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

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

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

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

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

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

4. How well qualified is the individual, team, or organization to conduct the proposed activities?

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

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

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

Additional Solicitation Specific Review Criteria

Reviewers will be asked to consider the integrative nature of the proposed EPSCoR CREST Center. Questions to be considered include:

1. Is there a demonstrated need for EPSCoR CREST Centers funding in order to expand the institution's research capacity?

2. What is the potential of the proposed EPSCoR CREST Center to achieve national research competitiveness?

3. Does the institution offer a Ph.D. in the center's research area and are the EPSCoR CREST investigators funded in the center's research area?

4. What is the potential for the proposed EPSCoR CREST Center to increase representation in a STEM area?

5. What is the potential for the proposed EPSCoR CREST Center to increase the career success of faculty, postdoctoral researchers, and students from EPSCoR jurisdictions in STEM?

6. To what extent are the educational activities innovative and well-integrated with the research, and how do the educational activities contribute to the unifying mission of the proposed Center?

7. To what extent are the institutional and other commitments appropriate to ensure the success of the proposed Center?

8. What is the potential of the proposed EPSCoR CREST Center to achieve sustainability from non-CREST funding?

9. To what extent are the collaborations/partnerships appropriate to support the goals of the proposed Center?

10. Was significant progress achieved on Phase I? (For Phase II proposals)

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 Internal NSF 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. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov.

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

Administrative and National Policy Requirements

Build America, Buy America

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

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

Special Award Conditions:

Recipients may expect site visits and reverse site visits by NSF-appointed evaluators per the applicable terms and conditions referenced in the award notice.

Each EPSCoR CREST Center shall convene, at least annually, an external advisory committee (EAC). The advisors should include representatives from those served by the EPSCoR CREST Center (e.g., IHEs, industry, state and local agencies, national laboratories) and reflect the gamut of participants inherent in the citizenry of the United States. NSF highly encourages industry members in the EAC that can advise on intellectual property issues, acquisition of SBIR funding, and other means to support the sustainability of the EPSCoR CREST Center. Persons with a financial, institutional, or collaborative connection to the EPSCoR CREST Center may not serve as members of the EAC.

Each EPSCoR CREST Center shall have an internal steering committee to include the PI, co-PIs, and other applicable stakeholders.

EPSCoR CREST personnel will be expected to participate in convocations of the Division of Equity for Excellence in STEM (EES) activities and PI meetings.

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.

Additional Reporting Requirements:

Recipients are required to use the NSF Education and Training Application (ETAP) to manage participants applications for CREST support.

PIs must include their unobligated balance in the Accomplishments section of the annual project report under the heading "What do you plan to do during the next reporting period to accomplish the goals?".

Acknowledgment of Support and Disclaimer

All publications, presentations, and creative works based on activities conducted during the award must acknowledge NSF CREST support and provide a disclaimer by including the following statement in the Acknowledgements or other appropriate section:

"This material is based upon work supported by the U.S. National Science Foundation EPSCoR CREST Centers under Award No. (NSF award number). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the U.S. National Science Foundation."

Program Evaluation

The Division of Equity for Excellence in STEM (EES) conducts evaluations to provide evidence on the impact of the EES programs (i.e., EPSCoR CREST Centers) on individuals' career progress, as well as professional productivity; and to provide an understanding of the program policies in achieving the program goal. Additionally, it is highly desirable to have a structured means of tracking recipients to assess the impact EPSCoR CREST Centers have had on their career. Accordingly, EPSCoR CREST Centers support recipients may be contacted for updates on various aspects of their employment history, professional activities and accomplishments, participation in international research collaborations, and other information helpful in evaluating the impact of the program. EPSCoR CREST Centers support recipients and their institutions agree to cooperate in program-level evaluations conducted by the NSF and/or contracted evaluators.

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:

- Luis A. Cubano, Lead Program Director, telephone: (703) 292-7941, email: lcubano@nsf.gov

- Regina Sievert, Program Director, telephone: (703) 292-2808, email: rsievert@nsf.gov

- Nicole E. Gass, Program Specialist, telephone: (703) 292-8378, email: ngass@nsf.gov

For questions related to the use of NSF systems contact:

- NSF Help Desk: 1-800-381-1532
- Research.gov Help Desk e-mail: rgov@nsf.gov

For questions relating to Grants.gov contact:

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

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.

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

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- **Location:**   2415 Eisenhower Avenue, Alexandria, VA 22314

- **For General Information**   (703) 292-5111
  (NSF Information Center)**:**

- **TDD (for the hearing-impaired):**   (703) 292-5090

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